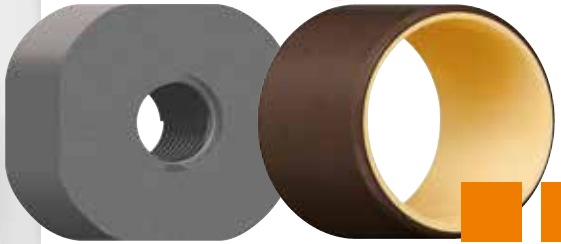
polymer...

igus-asean.com ... ... dry-tech® ... bearing technology ... 2021 ...







... motion? plastics! ... linear systems and ball bearings

bearings

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www.igus-asean.com/dry-tech

Tech up, Cost down

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



Available from stock.

Ready to ship from 24hrs, earlier upon request.

The delivery times indicated are the average time until the ordered goods are dispatched.



No minimum order value! No surcharges!

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



Service

Monday to Friday 8.30am to 5.30pm



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Malaysia	+603 7803 0618
Indonesia	+62 21 7588 1933
Thailand	+66 (0)2 587 4899
Vietnam	+84 28 3636 4189
Myanmar	+95 1 29 97 97
Philippines	+63 2 8250 126/135



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Product finder, configurator, online catalogue,
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Download 3D CAD models free of charge and quickly find the product you are looking for with our product finders and intelligent filters.



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For example, you can use our online live chat.



Do you have any questions?

If you have any questions, simply call us or
use our online tools at **www.igus-asean.com**

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Plastic plain bearings
- Online service life calculation
- Product finder online

From page 19



Clip bearings, piston rings and more
- Online service life calculation
- Product finder online

From page 577



Slewing rings
- Product finder and service life calculation online

From page 627



iglidur® for design freedom
- Online service life calculation
- Product finder online

From page 657



iglidur® tribo 3D printing
- Online service life calculation
- 3D printing service online

From page 701



Spherical bearings
- Online service life calculation
- Product finder online

From page 729



Ball bearings and accessories
- Online service life calculation
- System solution configurator online

From page 873



Modular linear technology
- Online service life calculation
- System configurator online

From page 941



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

From page 1231



Drive technology
- Online service life calculation
- System configurator online

From page 1351

Imperial dimensions

From page 1547

Online tools and more

From page 1623

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Proven.
Predictable.
Performance.

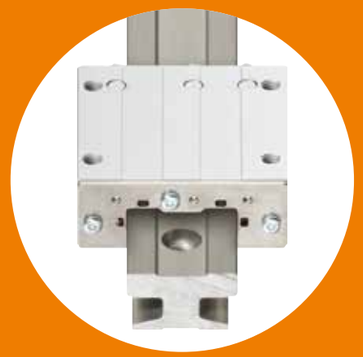
iglidur® plastic plain bearings from igus® are lubrication-free, maintenance-free, cost-effective and versatile. They are suitable for mass-produced automotive products or for the construction of special machines, for underwater applications, for the food and packaging industry, for extreme resistance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

Longer service life, no maintenance, available immediately.

The most cost-effective bearing for any application

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





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



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



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



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

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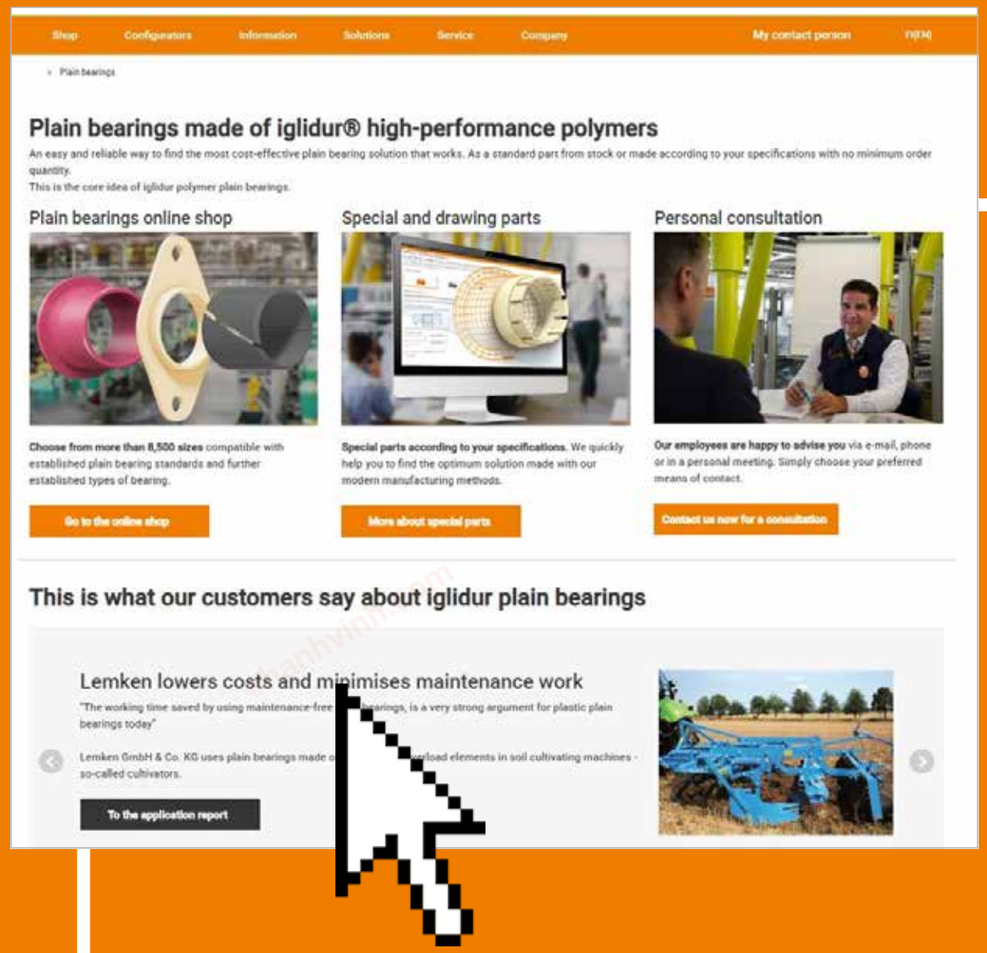
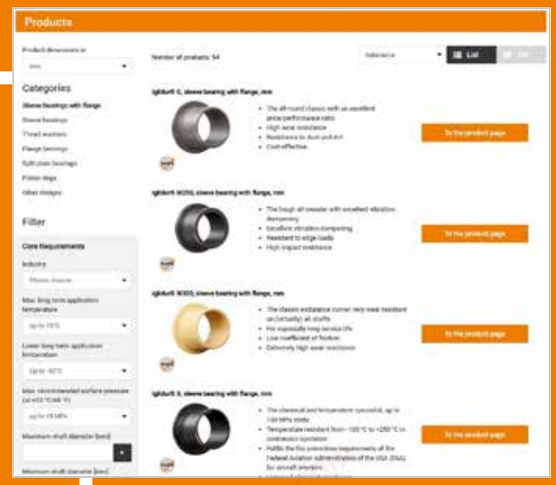
Reduce process costs: bearings technology on the web

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

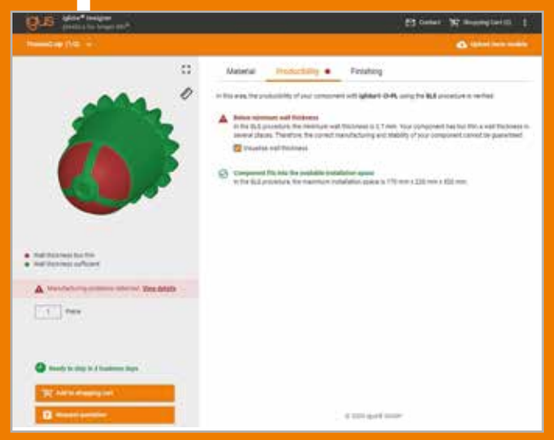
- Online tools for calculating service life
- 3D CAD files
- DXF data
- Download of current catalogues, brochures, videos and assembly instructions
- Application pictures
- Imperial dimensions
- Personal support
- Catalogue and sample ordering
- Online price list and online shop

More than 40 online tools help you to quickly find, configure and calculate the right product. No registration necessary. 3D CAD models online for downloading. Easy to use.
▶ **www.igus-asean.com/CAD**





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



3D PRINTING SERVICE
Simply upload the CAD model in the iglidur® design tool, the price and the delivery time are shown directly. Including feasibility assessment for wall thickness and undercuts. Order surfaces smoothed ex works or coloured in one of 12 standard colours
▶ **www.igus-asean.com/idd**



CALCULATE
iglidur® service life calculation
Simple and quick input of your application parameters allows a precise calculation of the life cycle

Online shopping – 24hrs!

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- 3D printing
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Visit our website and make use of all the advantages
▶ **www.igus-asean.com**

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Quality from the igus® test laboratory

Tested thousands of times.
Proven millions of times.

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

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

▶ **www.igus-asean.com/test**

All products are tested and available from a single source.

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

Certified according to ISO 9001:2015

Certified according to IATF 16949:2016

Clean-Room

RoHS

FDA

online DVGW

reddot design award



igus® quality assurance ...



... 100% visual inspection ...



... tested in the 250m² dry-tech® lab



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



... 549 customer tests per year ...



... or heavy duty tests up to 250MPa





The results of more than 15,000 tests are fed to our database for the online calculation every year.

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Worldwide, quick and reliable. The igus® service

Delivery and consultation daily from 8.30am to 5.30pm!

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

Take advantage of further service options from igus®:

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

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

24 hrs

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



24 – 48 hrs

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



24 – 72 hrs

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



3 – 10 days

Machined components or 3D printed special parts
Example:
Machined shafts made to design or machined plain bearings.



speedigus® – igus® production service for customer-specific parts.



3 – 6 weeks

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





Shipped from 24hrs



No minimum order quantity.



Online order tracking

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Free igus® online services

reduce process costs ... Discover potential ... gain knowledge...

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

From your application evaluation to our free in-house exhibitions directly on your premises, to specific tests performed exactly according to your requirements.
We are always happy to work with you and support you.
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Handle and test
Free sample parts for tests and prototypes.



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Free assessment at your premises.



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Free in-house exhibitions at your premises. We take care of everything.



Information service
Get the right kind of news for you. White papers, innovations, trade show invitations.



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



Reduce process costs
Find and configure products and calculate service life – all free of charge online.



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



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



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



Quickly available on site, worldwide
More than 700 field representatives are there for you in 35 countries.



Metal often interchangeable with plastics
We undertake a free replacement check and calculate the savings potential.



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



Products developed for you
Numerous innovations every year, many of them to meet customer requests.



energy chain recycling
Send back your old plastic energy chain and receive an igus® voucher.



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



Free 3D CAD library
Quickly generate complete 3D models, free of charge and with no registration.



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

Your very special request
Tell us your wishes or critical views any time.

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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 are on stock, to allow us to complete customer requests within hours and ship.
igus® is continuing its growth trend and is focusing more than ever on sophisticated yet simpler solutions for all applications and budgets.



Material preparation

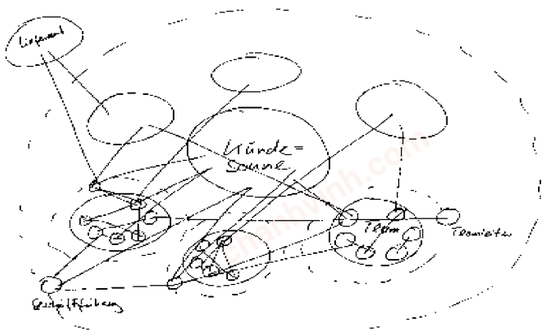

Injection moulding


Warehouse


Assembly factory


Toolmaking


Open offices



"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."



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Fit and forget

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

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

Go online and find solutions for almost every branch of industry
▶ www.igus-asean.com/industry



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



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



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



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



Flexible without fault: Adjustable camera tripod with drylin® W slider guide 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 iglidur® bearing guarantees smooth and wear-resistant movements.

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Global standards – igus® is close to you

Individual consultation worldwide by phone or at your premises. 35 subsidiaries worldwide.

A large network of sales engineers are at your disposal in Germany and worldwide. We will gladly provide consultation at your premises, supply assembly instructions and tools to installation sites, as well as measure installation spaces and check environmental conditions on site.
There are 4,150 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 will work with you to find a solution and provide a sample for your application free of charge
- **We are wherever you need us:** numerous e-chain® and plain bearing consultants are at your disposal at any time
- Hands-on with our products at 200 trade shows worldwide
- Individually at your premises with our mobile company trade show stand

▶ **www.igus-asean.com/worldwide**



In a face-to-face meeting



Technical consultation at your premises



Worldwide open offices – for example in China



igus® at trade shows



igus® company trade show stand



Worldwide modular factories – for example in the USA





igus® Offices
igus® Distributors

All addresses on last page.

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All products that are marked "New" in the catalogue have been added since the last version of the catalogue was published in February 2019.

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iglidur®

Polymer plain bearings



...plastics

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

Rollercoaster

Here iglidur® Z plain bearings led to significant reduction of the costs. This was achieved by eliminating the maintenance work completely during the season. With iglidur® Z plain 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 pre-loaded 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)



Hay spreader

Main reasons for iglidur® plain 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® plain 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 bearing

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



Bag forming, filling and sealing machine

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

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iglidur® plain bearings | Product overview

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

Materials for general purpose



The classic all-rounder: iglidur® G
▶ Page 81



Even more universal: iglidur® G1
▶ Page 97



The robust all-rounder according to ISO 2795: iglidur® M250
▶ Page 107



Specialist for pivoting, rolling applications and more: iglidur® P210
▶ Page 117



For series production: iglidur® P230
▶ Page 125



The cost-effective outdoor all-rounder: iglidur® P
▶ Page 131



Versatile and cost-effective: iglidur® K
▶ Page 141

iglidur® plain bearings made from tribo-plastics: endurance runner



Low-cost material for high-volume production: iglidur® GLW
▶ Page 149

Materials for long service life



The versatile endurance runner: iglidur® J
▶ Page 159



The classic endurance runner up to 30MPa: iglidur® W300
▶ Page 171



Specialist for pivoting and pulsating loads: iglidur® J3
▶ Page 183

New



Proven long-life material in black iglidur® J3B
▶ Page 191



High dimensional stability at high temperatures: iglidur® J350
▶ Page 199



Ideal for plastic shafts: iglidur® J260
▶ Page 207

iglidur® plain bearings made from tribo-plastics: endurance runner



Endurance runner up to +180°C: iglidur® W360
▶ Page 215



For fast rotating applications: iglidur® L250
▶ Page 223



For high rotational speeds: iglidur® L350
▶ Page 231



For extreme rotational speeds: iglidur® L500
▶ Page 239



Low-cost: iglidur® R
▶ Page 247



Low-cost with silicone: iglidur® D
▶ Page 255



Specialist for aluminium shafts: iglidur® J200
▶ Page 261

New



Ideal for pivoting movement: iglidur® E7
▶ Page 267

iglidur® plain bearings made from tribo-plastics: high temperature

Materials for use at high temperatures



The chemical and temperature specialist: iglidur® X
▶ Page 279



Extremely long service life under extreme conditions: iglidur® Z
▶ Page 289



The high temperature specialists up to +250°C: iglidur® X6
▶ Page 299



For soft shafts and high temperatures: iglidur® V400
▶ Page 307



All-rounder for steam sterilisation: iglidur® HSD350
▶ Page 315



For hot liquids: iglidur® UW500
▶ Page 323

iglidur® plain bearings made from tribo-plastics: high media resistance

Materials with good media resistance



Endurance runner with high media resistance: iglidur® H1
▶ Page 333



Extremely long service life under water: iglidur® H370
▶ Page 341



The classic with high resistance to media and temperature: iglidur® H
▶ Page 351



High temperature endurance runner: iglidur® C500
▶ Page 359



The low cost specialist for chemicals and temperatures: iglidur® H2
▶ Page 367

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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 377



The endurance runner at higher temperatures in the food sector: iglidur® A350
▶ Page 385



The media and temperature specialist in the food sector: iglidur® A500
▶ Page 393



The all-rounder for food:
iglidur® A180
▶ Page 401



The "food-classic" for low speeds:
iglidur® A200
▶ Page 409



Food bearing with high media resistance up to +90°C: iglidur® A160
▶ Page 419



Suitable for contact with drinking water:
iglidur® UW160
▶ Page 427



For the tobacco industry:
iglidur® T220
▶ Page 435

iglidur® plain bearings made from tribo-plastics: for high loads

Materials for heavy-duty applications



The durable heavy-duty bearing:
iglidur® Q2
▶ Page 445



New

Cost-effective heavy-duty bearing:
iglidur® Q2E
▶ Page 453



The peak of stability:
iglidur® Q
▶ Page 459



Heavy-duty on soft shafts:
iglidur® Q290
▶ Page 467



The heavy-duty bearing up to 200MPa static and 140MPa dynamic: iglidur® TX1
▶ Page 473

iglidur® plain bearings made from tribo-plastics: specialists

Materials for special application areas



Electrically conductive:
iglidur® F
▶ Page 485



The ESD-compatible all-rounder:
iglidur® F2
▶ Page 493



The automotive standard:
iglidur® H4
▶ Page 501



For fast rotation under water:
iglidur® UW
▶ Page 509



New

For continuous direct sunlight:
iglidur® J UV
▶ Page 517



The biopolymer:
iglidur® N54
▶ Page 525

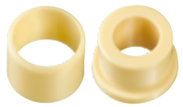


Low-cost all-rounder for fire protection:
iglidur® G V0
▶ Page 533

iglidur® plain bearings made from tribo-plastics: specialists



Versatile and cost-effective:
iglidur® J2
▶ Page 541



The first antibacterial iglidur® plain bearing:
iglidur® AB
▶ Page 549



Complies with DIN EN 45545 HL3, R22/R23:
iglidur® RW370
▶ Page 557



The variable one:
iglidur® B
▶ Page 565



Free from PTFE and silicone:
iglidur® C
▶ Page 571

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iglidur® plain bearings | Technical properties – quick selection

iglidur®	G	G1	M250	P210	P230	P	K	GLW	J	W300	J3	J3B	J350	J260	W360	L250	L350	L500	R	D
Installation tolerances	E10	E10	D11	E10	E10	E10	E10	E10	E10	E10	E10	E10	F10	E10	E10	E10	F10	F10	E10	E10
Descriptive technical specifications																				
Wear resistance at +23°C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Wear resistance at +90°C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Wear resistance at +150°C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Low coefficient of friction	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Low moisture absorption	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Wear resistance under water	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
High media resistance	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Resistant to edge pressures	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Resistant to impacts/shock	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Resistant to dirt	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
For high loads (> 60MPa)	●	●						●					●		●					
Electrically conductive																				
Approvals and standards																				
Dimensions in accordance with DIN	ISO 3547	ISO 3547	ISO 2795	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	
FDA-compliant																				
EU10/2011-compliant																				
Fire class in accordance with UL-94	HB	HB	V-2	HB	HB	HB	HB	HB	HB	HB	HB	HB	V-0	V-2	HB	HB	V-0	V-0	HB	HB
Mould test DIN EN ISO 846	●	●							●				●							
Fogging DIN 75201-B	●		●	●				●												
Availabilities / variants																				
Type S, sleeve	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Type F, with flange	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Type T, thrust washer	●		●						●	●										
Bar stock, round material			●	●				●	●	●	●		●	●					●	
Bar stock, plate									●											
Bar stock, tube									●											
Machined parts made from bar stock			●	●					●	●	●		●	●					●	
tribo-tape liner																				
Page	81	97	107	117	125	131	141	149	159	171	183	191	199	207	215	223	231	239	247	255

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iglidur® plain bearings | Technical properties – quick selection

iglidur®	J200	E7	X	Z	X6	V400	HSD350	UW500	H1	H370	H	C500	H2	A181	A350	A500	A180	A200	A160
Installation tolerances	E10	E10	F10	F10	F10	F10	F10	F10	F10	F10	F10	F10	F10	E10	F10	F10	E10	D11	E10
Descriptive technical specifications																			
Wear resistance at +23°C																			
Wear resistance at +90°C																			
Wear resistance at +150°C																			
Low coefficient of friction																			
Low moisture absorption																			
Wear resistance under water																			
High media resistance																			
Resistant to edge pressures																			
Resistant to impacts/shock																			
Resistant to dirt																			
For high loads (> 60MPa)			●	●	●			●	●	●	●	●	●		●	●			
Electrically conductive			●		●			●		●									
Approvals and standards																			
Dimensions in accordance with DIN		ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547		ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 2795	ISO 3547
FDA-compliant														●	●	●	●	●	●
EU10/2011-compliant														●	●	●	●	●	●
Fire class in accordance with UL-94	HB	HB	V-0	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
Mould test DIN EN ISO 846			●						●										
Fogging DIN 75201-B																			
Availabilities / variants																			
Type S, sleeve		●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●
Type F, with flange		●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●
Type T, thrust washer			●	●															
Bar stock, round material	●	●	●				●		●		●	●		●	●	●	●		●
Bar stock, plate															●				
Bar stock, tube																			
Machined parts made from bar stock	●		●				●		●		●	●		●	●	●	●		●
tribo-tape liner						●													●
Page	261	267	279	289	299	307	315	323	333	341	351	359	367	377	385	393	401	409	419

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iglidur® plain bearings | Technical properties – quick selection

iglidur®	UW160	T220	Q2	Q2E	Q	Q290	F	F2	H4	UW	J UV	N54	G V0	J2	AB	RW370	B	C
Installation tolerances	E10	E10	E10	E10	E10	D11	D11	E10	F10	E10	E10	E10	E10	E10	E10	F10	D11	D11
Descriptive technical specifications																		
Wear resistance at +23°C	■■■	■■■	■■■	■■■	■■■■	■■■■	■	■■	■■	■■	■■■■	■	■■	■	■■	■■■	■	■
Wear resistance at +90°C	■	■	■■	■■	■■	■■	■	■	■■	■■	■■■■	■	■■	■	■	■■■	■	■
Wear resistance at +150°C	■	■	■■	■■	■■	■■	■	■	■■	■	■	■	■■	■	■	■■■	■	■
Low coefficient of friction	■■	■■	■■■	■■■	■■■■	■■■■	■	■■	■■	■■	■■■■	■■	■■	■■	■■	■■■■	■■	■■
Low moisture absorption	■■■■	■■■■	■■	■■	■■	■	■	■■	■■■■	■■■■	■■■■	■	■■	■■■	■■■	■■■■	■	■
Wear resistance under water	■■■■	■■	■	■	■	■	■	■	■■■■	■■■■	■■■■	■	■	■■	■■	■■■■	■	■
High media resistance	■■■■	■■■	■■■	■■■	■■■	■■■	■	■■	■■■■	■■■■	■■■■	■	■■	■■■	■■■	■■■■	■	■
Resistant to edge pressures	■■■	■■■	■■■■	■■■■	■■■	■■■■	■■■	■■	■■■	■■	■■■■	■■	■■■	■■■	■■■	■■■■	■■■■	■■■
Resistant to impacts/shock	■■■	■■■	■■■■	■■■■	■■■	■■■■	■■■	■■■	■■■	■■■	■■■■	■■	■■■■	■■■	■■■	■■■■	■■■■	■■■
Resistant to dirt	■■■	■■■	■■■■	■■■■	■■■	■■■■	■■■	■■■	■■■	■■■	■■■■	■■	■■■	■■■	■■■	■■■■	■■■■	■■■
For high loads (> 60MPa)			●	●	●	●	●	●	●				●			●		
Electrically conductive							●	●										
Approvals and standards																		
Dimensions in accordance with DIN	ISO 3547		ISO 3547		ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	
FDA-compliant		●																
EU10/2011-compliant																		
Fire class in accordance with UL-94	HB	HB	HB	HB	HB	HB	HB	HB	V-0	HB	HB	HB	V-0	HB	HB	V-0	HB	HB
Mould test DIN EN ISO 846													●					
Fogging DIN 75201-B																		
Availabilities / variants																		
Type S, sleeve	●		●	●	●	●	●	●	●	●	●	●	●		●	●		
Type F, with flange	●		●	●	●	●	●	●	●	●	●	●	●		●	●		
Type T, thrust washer																		
Bar stock, round material	●	●						●						●	●	●		
Bar stock, plate																		
Bar stock, tube																		
Machined parts made from bar stock	●	●						●						●	●	●		
tribo-tape liner																		
Page	427	435	445	453	459	467	485	493	501	509	517	525	533	541	549	557	565	571

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iglidur® plain bearings | Material properties

iglidur®	Unit	G	G1	M250	P210	P230	P	K	GLW	J	W300	J3	J3B	J350	J260	W360	L250	L350	L500	R	D	J200	E7
General properties																							
Density	[g/cm³]	1.46	1.58	1.14	1.40	1.57	1.58	1.52	1.36	1.49	1.24	1.42	1.42	1.44	1.35	1.34	1.5	1.54	1.53	1.39	1.4	1.72	1.05
Colour																							
Max. moisture absorption at +23°C and 50% relative humidity	[% weight]	0.7	0.2	1.4	0.3	0.1	0.2	0.1	1.3	0.3	1.3	0.3	0.3	0.3	0.2	0.2	0.7	0.4	0.1	0.2	0.3	0.2	0.1
Max. total moisture absorption	[% weight]	4.0	1.7	7.6	0.5	0.3	0.4	0.6	5.5	1.3	6.5	1.3	1.3	1.6	0.4	1.6	3.9	1.4	0.3	1.1	1.1	0.7	0.1
Coefficient of sliding friction, dynamic against steel	[µ]	0.08 – 0.15	0.08 – 0.15	0.18 – 0.40	0.07 – 0.19	0.06 – 0.21	0.06 – 0.21	0.06 – 0.21	0.10 – 0.24	0.06 – 0.18	0.08 – 0.23	0.06 – 0.20	0.09 – 0.23	0.10 – 0.20	0.06 – 0.20	0.07 – 0.21	0.08 – 0.19	0.15 – 0.20	0.19 – 0.26	0.09 – 0.25	0.08 – 0.26	0.11 – 0.17	0.08 – 0.17
pv value, max. (dry)	[MPa·m/s]	0.42	0.60	0.12	0.4	0.30	0.39	0.3	0.3	0.34	0.23	0.5	0.5	0.45	0.35	0.35	0.4	3.0	4.0	0.27	0.27	0.3	0.22
Mechanical properties																							
Flexural modulus	[MPa]	7,800	11,486	2,700	2,500	6,532	5,300	3,500	7,700	2,400	3,500	2,700	2,895	2,000	2,200	3,829	1,950	15,882	12,015	1,950	2,000	2,800	1,477
Flexural strength at +20°C	[MPa]	210	178	112	70	173	120	80	235	73	125	70	65	55	60	119	67	210	201	70	72	58	22
Compressive strength	[MPa]	78	115	52	50	101	66	60	74	60	61	60	n.s.	60	50	n.s.	47	210	70	68	70	43	18
Max. permissible surface pressure at +20°C	[MPa]	80	91	20	50	60	50	50	80	35	60	45	44	60	40	75	45	59	70	23	23	23	18
Shore D hardness		81	81	79	75	80	75	72	78	74	77	73	76	80	77	n.s.	68	80	81	77	78	70	61
Physical and thermal properties																							
Max. continuous operating temperature	[°C]	+130	+180	+80	+100	+110	+130	+170	+100	+90	+90	+90	+90	+180	+120	+180	+90	+180	+250	+90	+90	+90	+70
Max. short-term operating temperature	[°C]	+220	+220	+170	+160	+180	+200	+240	+160	+120	+180	+120	+110	+220	+140	+200	+180	+210	+315	+110	+110	+120	+90
Min. operating temperature	[°C]	–40	–40	–40	–40	–30	–40	–40	–40	–50	–40	–50	–50	–100	–100	–40	–40	–100	–100	–50	–50	–50	–50
Thermal conductivity	[W/m · K]	0.24	0.46	0.24	0.25	0.34	0.25	0.25	0.24	0.25	0.24	0.25	0.30	0.24	0.24	0.24	0.24	0.61	0.45	0.25	0.25	0.24	0.24
Coefficient of thermal expansion at +23°C	[$K^{-1} \cdot 10^{-5}$]	9	3.5	10	8	5	4	3	17	10	9	13	12.7	7	13	6	10	7	6	11	11	8	25
Electrical properties																							
Specific contact resistance	[Ωcm]	> 10^{13}	> 10^{9}	> 10^{13}	> 10^{12}	> 10^{12}	> 10^{13}	> 10^{12}	> 10^{11}	> 10^{13}	> 10^{13}	> 10^{12}	> 10^{12}	> 10^{13}	> 10^{12}	> 10^{13}	> 10^{10}	> 10^{5}	> 10^{10}	> 10^{12}	> 10^{14}	> 10^{8}	> 10^{9}
Surface resistance	[Ω]	> 10^{11}	> 10^{11}	> 10^{11}	> 10^{11}	> 10^{12}	> 10^{12}	> 10^{12}	> 10^{11}	> 10^{12}	> 10^{12}	> 10^{12}	> 10^{12}	> 10^{10}	> 10^{10}	> 10^{12}	> 10^{11}	> 10^{5}	> 10^{12}	> 10^{12}	> 10^{14}	> 10^{8}	> 10^{9}
Page		**81**	**97**	**107**	**117**	**125**	**131**	**141**	**149**	**159**	**171**	**183**	**191**	**199**	**207**	**215**	**223**	**231**	**239**	**247**	**255**	**261**	**267**

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iglidur® plain bearings | Material properties

iglidur®	Unit	X	Z	X6	V400	HSD350	UW500	H1	H370	H	C500	H2	A181	A350	A500	A180	A200	A160	UW160	T220
General properties																				
Density	[g/cm³]	1.44	1.4	1.53	1.51	1.39	1.49	1.53	1.66	1.71	1.37	1.72	1.38	1.42	1.28	1.46	1.14	1.00	1.04	1.28
Colour																				
Max. moisture absorption at +23°C and 50% relative humidity	[% weight]	0.1	0.3	0.1	0.1	0.6	0.1	0.1	0.1	0.1	0.3	0.1	0.2	0.6	0.3	0.2	1.5	0.1	0.1	0.3
Max. total moisture absorption	[% weight]	0.5	1.1	0.5	0.2	1.2	0.5	0.3	0.1	0.3	0.5	0.2	1.3	1.9	0.5	1.3	7.6	0.1	0.1	0.5
Coefficient of sliding friction, dynamic against steel	[µ]	0.09–0.27	0.06–0.14	0.09–0.25	0.15–0.20	0.07–0.23	0.20–0.36	0.06–0.20	0.07–0.17	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	0.17–0.31	0.20–0.32
pv value, max. (dry)	[MPa·m/s]	1.32	0.84	1.35	0.5	0.3	0.35	0.80	0.74	1.37	0.7	0.58	0.31	0.40	0.28	0.31	0.09	0.25	0.22	0.28
Mechanical properties																				
Flexural modulus	[MPa]	8,100	2,400	16,000	4,500	2,150	16,000	2,800	11,100	12,500	3,300	10,300	1,913	2,000	3,600	2,300	2,500	1,151	1,349	1,800
Flexural strength at +20°C	[MPa]	170	95	290	95	67	260	55	135	175	100	210	48	110	140	88	116	19	22	65
Compressive strength	[MPa]	100	65	190	47	44	140	78	79	81	110	109	60	78	118	78	54	37	32	55
Max. permissible surface pressure at +20°C	[MPa]	150	150	150	45	30	140	80	75	90	80	110	31	60	120	28	18	15	15	40
Shore D hardness		85	81	89	74	77	86	77	82	87	80	88	76	76	83	76	81	60	60	76
Physical and thermal properties																				
Max. continuous operating temperature	[°C]	+250	+250	+250	+200	+180	+250	+200	+200	+200	+250	+200	+90	+180	+250	+90	+80	+90	+90	+100
Max. short-term operating temperature	[°C]	+315	+310	+315	+240	+210	+300	+240	+240	+240	+300	+240	+110	+210	+300	+110	+170	+100	+100	+160
Min. operating temperature	[°C]	–100	–100	–100	–50	–40	–100	–40	–40	–40	–100	–40	–50	–100	–100	–50	–40	–50	–50	–40
Thermal conductivity	[W/m · K]	0.60	0.62	0.55	0.24	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	0.50	0.24
Coefficient of thermal expansion at +23°C	[$K^{-1} \cdot 10^{-5}$]	5	4	1.1	3	7	4	6	5	4	9	4	11	8	9	11	10	11	18	11
Electrical properties																				
Specific contact resistance	[Ωcm]	$< 10^5$	$> 10^{11}$	$< 10^5$	$> 10^{12}$	$> 10^{13}$	$< 10^9$	$> 10^{12}$	$< 10^5$	$< 10^5$	$> 10^{14}$	$> 10^{15}$	$> 10^{12}$	$> 10^{11}$	$> 10^{14}$	$> 10^{12}$	$> 10^{13}$	$> 10^{12}$	$> 10^{12}$	$> 10^{10}$
Surface resistance	[Ω]	$< 10^3$	$> 10^{11}$	$< 10^3$	$> 10^{12}$	$> 10^{14}$	$< 10^9$	$> 10^{11}$	$< 10^5$	$< 10^2$	$> 10^{13}$	$> 10^{14}$	$> 10^{12}$	$> 10^{11}$	$> 10^{13}$	$> 10^{11}$	$> 10^{12}$	$> 10^{12}$	$> 10^{12}$	$> 10^{10}$
Page		279	289	299	307	315	323	333	341	351	359	367	377	385	393	401	409	419	427	435

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iglidur® plain bearings | Material properties

iglidur®	Unit	Q2	Q2E	Q	Q290	TX1	F	F2	H4	UW	J UV	N54	G V0	J2	AB	RW370	B	C
General properties																		
Density	[g/cm³]	1.46	1.46– 1.69	1.4	1.27	2.1	1.25	1.52	1.79	1.52	1.49	1.13	1.53	1.44	1.11	1.34	1.15	1.1
Colour																		
Max. moisture absorption at +23°C and 50% relative humidity	[% weight]	1.1	1.5	0.9	3.0	n.s.	1.8	0.2	0.1	0.2	0.3	1.6	0.7	0.2	0.8	0.25	1.0	1.0
Max. total moisture absorption	[% weight]	4.6	5.0	4.9	9.3	0.1	8.4	0.4	0.2	0.8	1.3	3.6	4.0	1.3	1.6	1.2	6.3	6.9
Coefficient of sliding friction, dynamic against steel	[µ]	0.22– 0.42	0.22– 0.42	0.05– 0.15	0.14– 0.26	0.09– 0.37	0.10– 0.39	0.16– 0.22	0.08– 0.25	0.15– 0.35	0.08– 0.19	0.15– 0.23	0.07– 0.20	0.11– 0.27	0.18– 0.31	0.13– 0.17	0.18– 0.28	0.17– 0.25
pv value, max. (dry)	[MPa·m/s]	0.7	0.7	0.55	0.70	0.89	0.34	0.31	0.70	0.11	0.30	0.5	0.5	0.23	0.25	1.2	0.15	0.10
Mechanical properties																		
Flexural modulus	[MPa]	8,370	n.s.	4,500	3,074	12,000	11,600	7,418	7,500	9,600	2,400	1,800	7,900	3,605	1,850	2,997	1,800	1,900
Flexural strength at +20°C	[MPa]	240	235	120	97	55	260	93	120	90	72	70	140	101	50	100	55	60
Compressive strength	[MPa]	130	n.s.	89	68	220	98	61	50	70	n.s.	30	100	77	40	129	20	30
Max. permissible surface pressure at +20°C	[MPa]	120	135	100	55	200	105	47	65	40	35	36	75	46	25	75	40	40
Shore D hardness		80	80	83	80	n.s.	84	72	80	78	74	74	80	n.s.	70	80	69	72
Physical and thermal properties																		
Max. continuous operating temperature	[°C]	+130	+100	+135	+140	+120	+140	+120	+200	+90	+90	+80	+130	+90	+70	+170	+100	+90
Max. short-term operating temperature	[°C]	+200	+140	+155	+180	+170	+180	+165	+240	+110	+120	+120	+210	+110	+140	+190	+130	+130
Min. operating temperature	[°C]	–40	–30	–40	–40	–60	–40	–40	–40	–50	–50	–40	–40	–50	–40	–50	–40	–40
Thermal conductivity	[W/m · K]	0.24	n.s.	0.23	0.24	0.24	0.65	0.61	0.24	0.6	0.3	0.24	0.25	0.25	0.24	0.22	0.24	0.24
Coefficient of thermal expansion at +23°C	[$K^{-1} \cdot 10^{-5}$]	8	n.s.	5	7	3	12	5	5	6	10	9	9	7	10	5	12	15
Electrical properties																		
Specific contact resistance	[Ωcm]	> 10^{13}	> 10^{12}	> 10^{15}	> 10^{12}	> 10^{11}	< 10^{3}	< 10^{9}	> 10^{13}	< 10^{5}	> 10^{13}	> 10^{13}	> 10^{12}	> 10^{13}	> 10^{12}	> 10^{12}	> 10^{10}	> 10^{10}
Surface resistance	[Ω]	> 10^{11}	> 10^{12}	> 10^{12}	> 10^{12}	> 10^{13}	< 10^{2}	< 10^{9}	> 10^{12}	< 10^{5}	> 10^{13}	> 10^{11}	> 10^{11}	> 10^{12}	> 10^{12}	> 10^{12}	> 10^{9}	> 10^{9}
Page		445	453	459	467	473	485	493	501	509	517	525	533	541	549	557	565	571

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

Proven. Predictable. Performance.



Proven.

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

Predictable.

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

Performance.

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



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

iglidur® | High-performance polymers

Properties and design

iglidur® plain bearings made from high-performance polymers

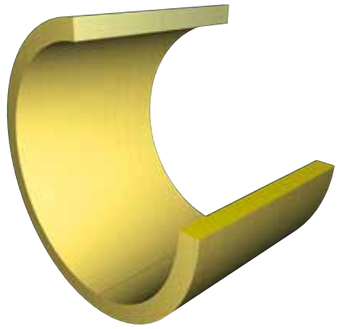
Wear-resistant tribo-polymers improved by precise additions of strengthening materials and solid lubricants, tested thousands of times and proven millions of times – that is iglidur®. igus® engineers develop and test more than 267 new plastic compounds every year. The finely tuned combination of plastic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

▶ www.igus-asean.com/online-tools

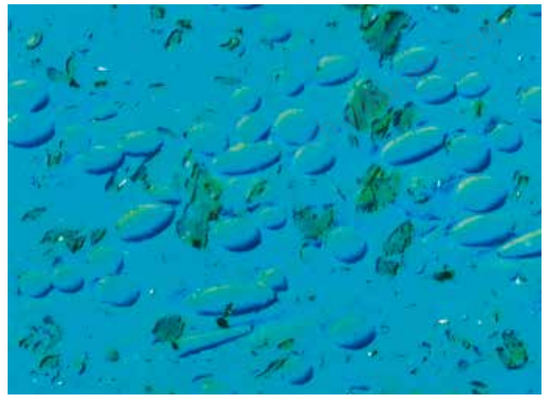
General properties of iglidur® plain bearings

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

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



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



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

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Properties and design

The traditional solution

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

Base polymers and technical fibres

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

Incorporated self-lubrication

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



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

The iglidur® solution: the self-lubricating effect

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

- Base polymer
- Fibres and filling material
- Solid lubricants

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

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

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

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

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

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

Load

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

Radial bearing:

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

Thrust bearing:

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

In these equations:

F **load in [N]**

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

b1 **bearing length in [mm]**

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

Max. recommended surface pressure

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

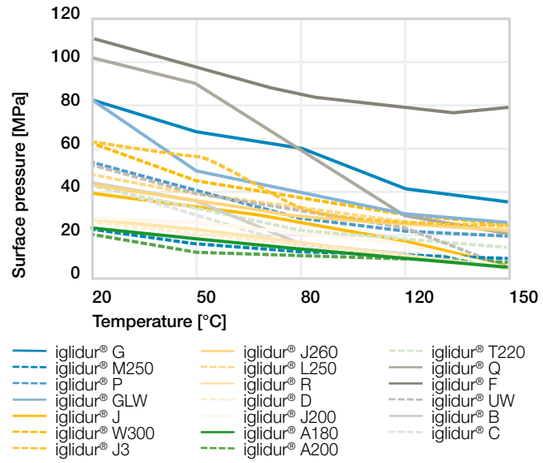
▶ Material properties, **page 56**

Load and temperature

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

Pressure and speed

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



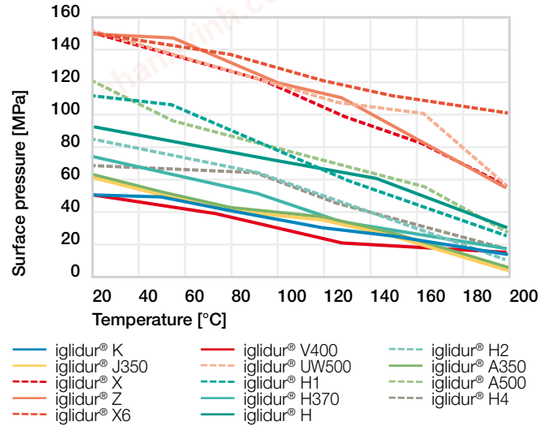


Diagram 02–03: Maximum recommended surface pressure as a function of temperature

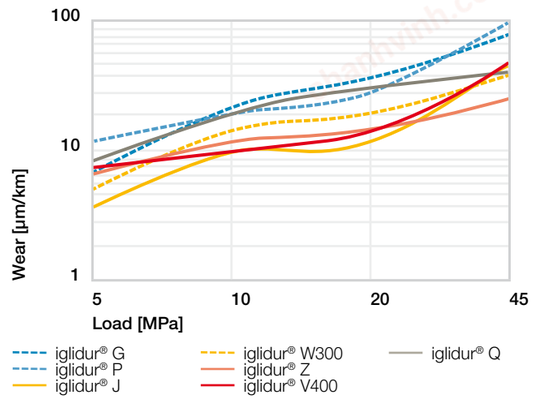


Diagram 04: Wear of iglidur® plain bearings under medium and high pressures

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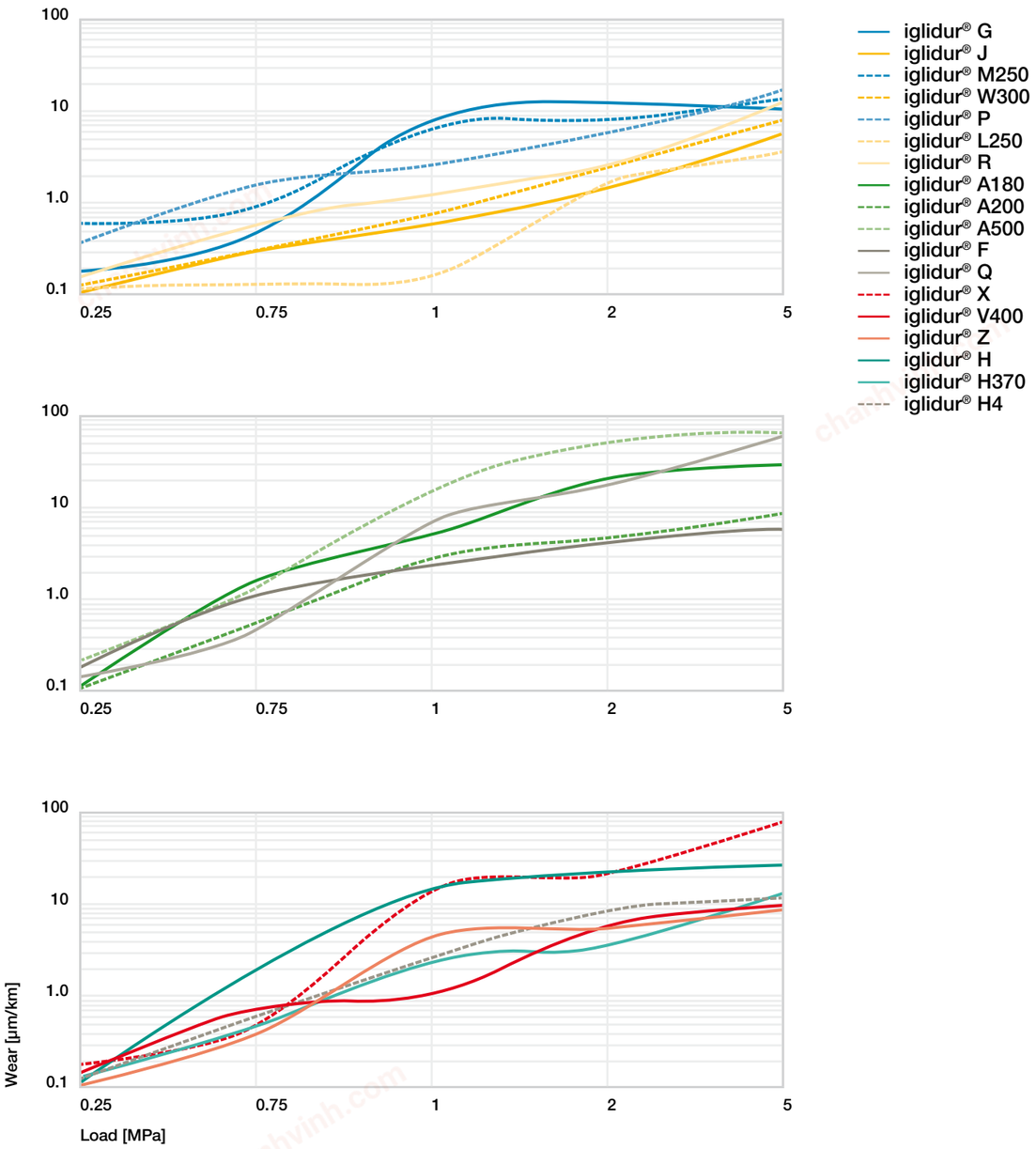
Pressure and wear

The 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

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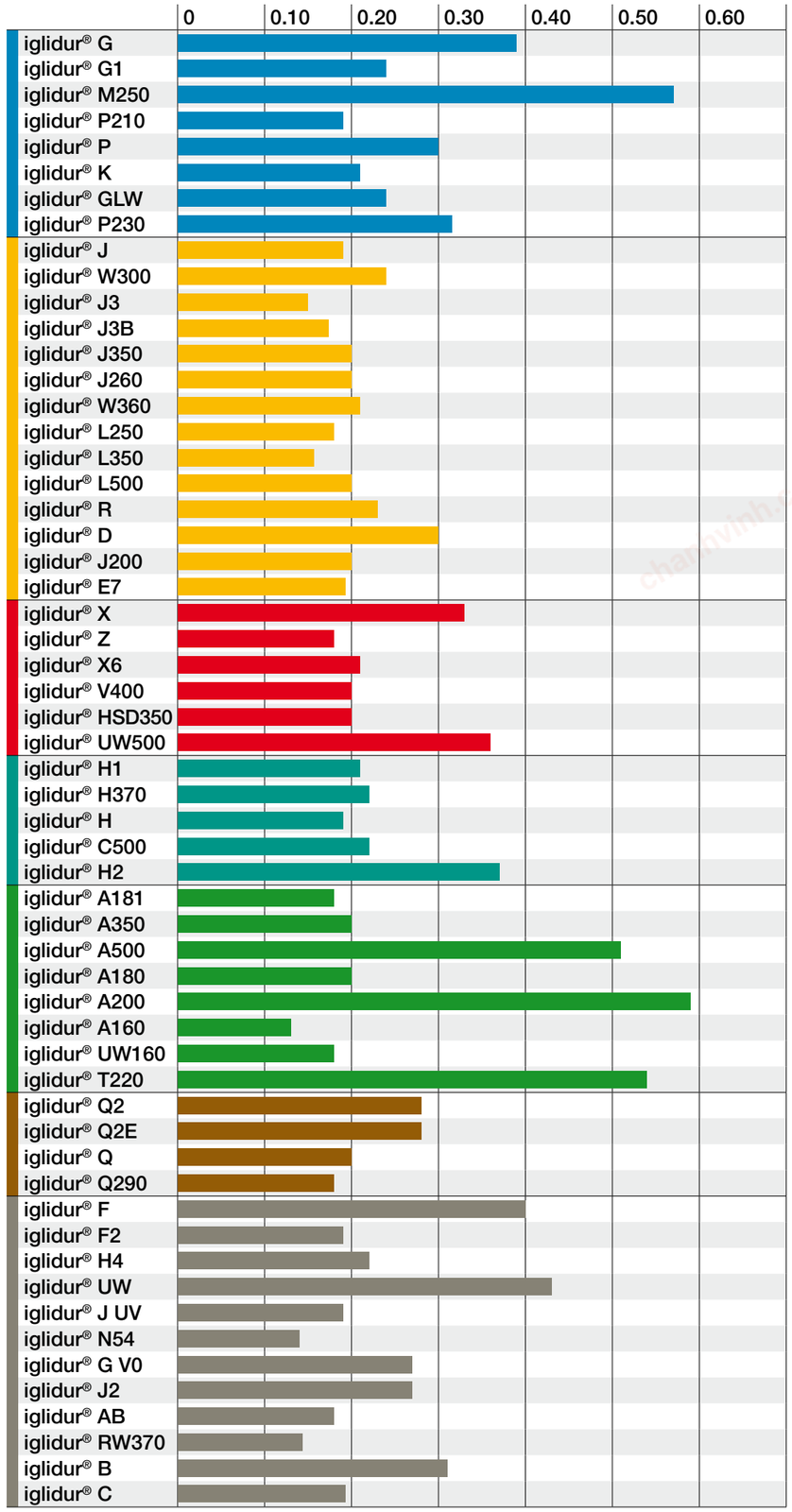
Pressure and coefficient of friction



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

▶ Coefficient of friction, **page 47**

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

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Surface Speed

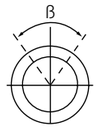
The peripheral speed is always significant in plain bearings. The absolute speed is not crucial, but the relative speed between the shaft and the bearing. The surface speed is expressed in meters per second [m/s] and calculated from the speed n [rpm] with the following formula.
With varying speeds for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

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

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

In these equations:

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



Permissible surface speeds

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

Surface speed and wear

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

Surface speed and coefficient of friction

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

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® G1	1.3	2.5	1.0	1.8	5.0	6.0
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® P230	1.0	2.0	0.7	1.4	3.0	4.0
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® J3B	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® L350	3.0	4.0	1.5	3.0	4.0	6.0
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® E7	0.5	0.8	0.4	0.6	2.0	3.0
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® 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® Q2E	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® J UV	1.5	2.2	1.1	1.7	8.0	12.0
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® plain bearings in m/s; long and short-term

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pv value and coefficient of friction

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

Correction factor

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

Lubrication

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

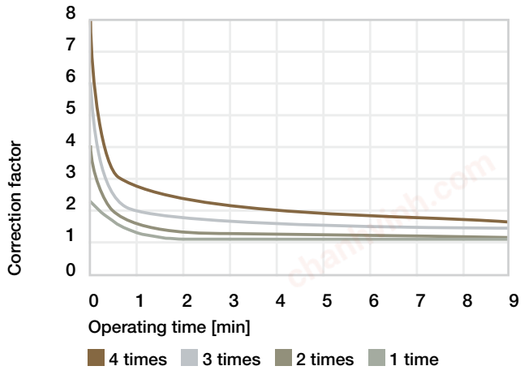

Diagram 09: Correction factor for p · v

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

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

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

Table 03: Heat conductivity values of shaft or housing materials

Coefficient of friction

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

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

Coefficient of friction and surfaces

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

pv value

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

In these equations:

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



Picture 05: Better products for less – a key element is the industry's largest test lab. 3,800m² lab, more than 12,000 tests and 2 billion test strokes per year.

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Temperatures

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

Application temperatures

The minimum application temperature is the temperature below which the material is so rigid and hard that it becomes too brittle for standard applications. The maximum continuous application temperature is the temperature 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.

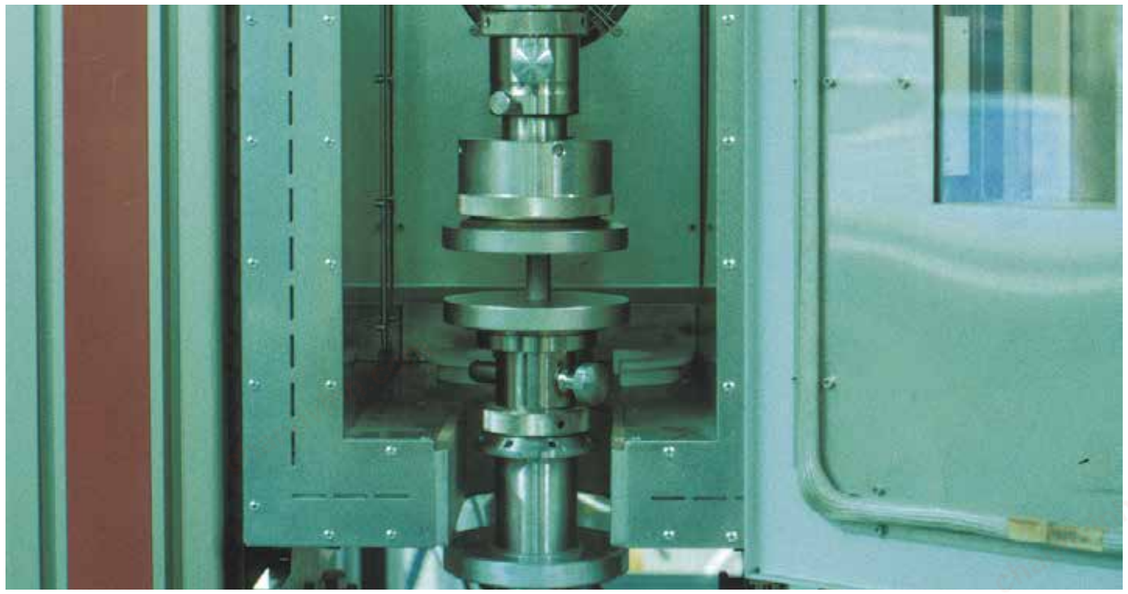
If the plain bearings are moved axially or axial forces occur, there is more opportunity for the bearing to lose press-fit. In these cases, axial securing of the bearing is necessary in addition to the press-fit. The table 04 shows the temperature at which additional securing of the iglidur® plain bearing 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 41**) show the maximum recommended surface pressure [p] of the iglidur® plain bearings as a function of temperature. With increasing temperature, this value decreases continuously. With plain bearings it is important to note that, due to the friction, the bearing temperature may be higher than the ambient temperature.

Coefficient of thermal expansion

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



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

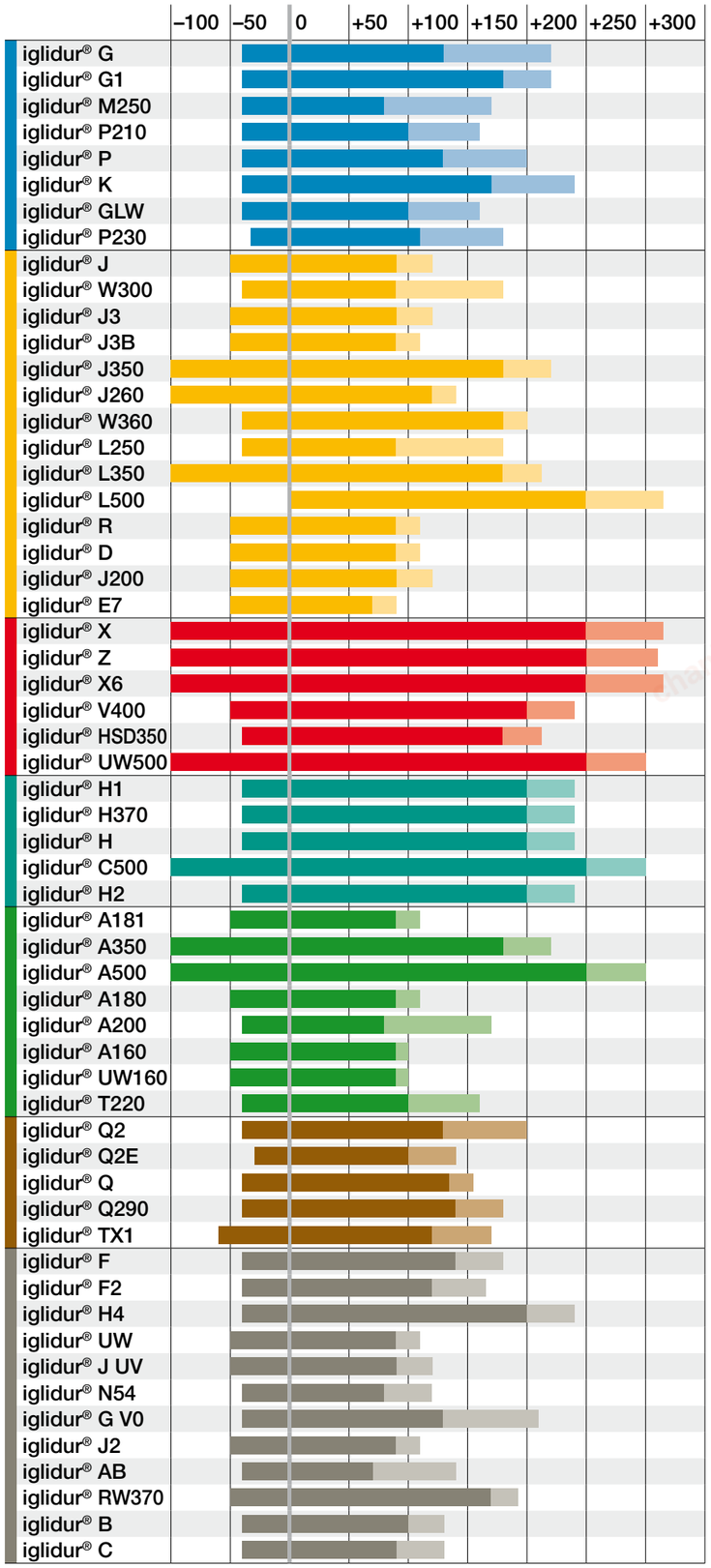


Diagram 10: Comparison of the continuous and short-term upper application temperature limits [°C]

Material	Temperature [°C]
iglidur® G	+80
iglidur® G1	+120
iglidur® M250	+60
iglidur® P210	+50
iglidur® P	+90
iglidur® K	+70
iglidur® GLW	+80
iglidur® P230	+100
iglidur® J	+60
iglidur® W300	+60
iglidur® J3	+60
iglidur® J3B	+60
iglidur® J350	+140
iglidur® J260	+80
iglidur® W360	+90
iglidur® L250	+55
iglidur® L350	+140
iglidur® L500	+135
iglidur® R	+50
iglidur® D	+50
iglidur® J200	+60
iglidur® E7	+30
iglidur® X	+135
iglidur® Z	+145
iglidur® X6	+165
iglidur® V400	+100
iglidur® HSD350	+130
iglidur® UW500	+150
iglidur® H1	+80
iglidur® H370	+100
iglidur® H	+120
iglidur® C500	+130
iglidur® H2	+110
iglidur® A181	+60
iglidur® A350	+140
iglidur® A500	+130
iglidur® A180	+60
iglidur® A200	+50
iglidur® A160	+60
iglidur® UW160	+70
iglidur® T220	+50
iglidur® Q2	+70
iglidur® Q2E	+75
iglidur® Q	+50
iglidur® Q290	+80
iglidur® TX1	+100
iglidur® F	+105
iglidur® F2	+70
iglidur® H4	+110
iglidur® UW	+80
iglidur® J UV	+60
iglidur® N54	+60
iglidur® G V0	+100
iglidur® J2	+60
iglidur® AB	+50
iglidur® RW370	+120
iglidur® B	+50
iglidur® C	+40

Table 04: Temperature at which additional securing of the iglidur® plain bearing is required

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Wear resistance

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

▶ Shaft materials, **page 52**

Wear under load

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

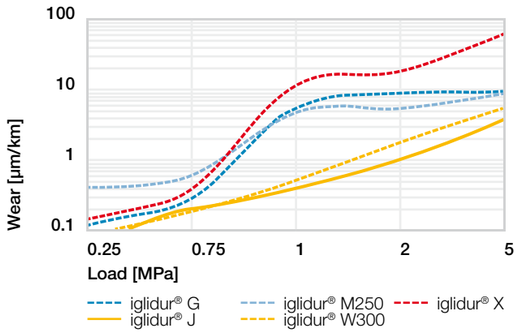


Diagram 11: Wear of iglidur® plain bearings under low pressures, Cf53 shaft, v = 0.1m/s

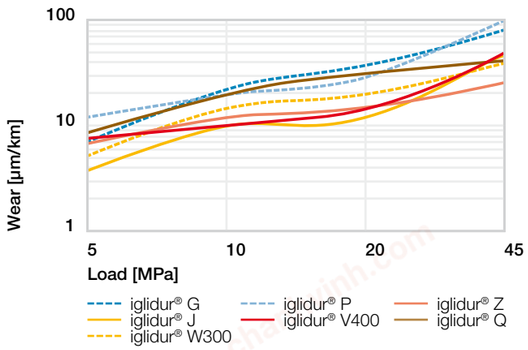


Diagram 12: Wear of iglidur® plain bearings at medium and high pressures, shaft: Cf53, v = 0.1m/s

Wear and temperature

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

Wear during abrasive dirt accumulation

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

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

Wear and surfaces

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

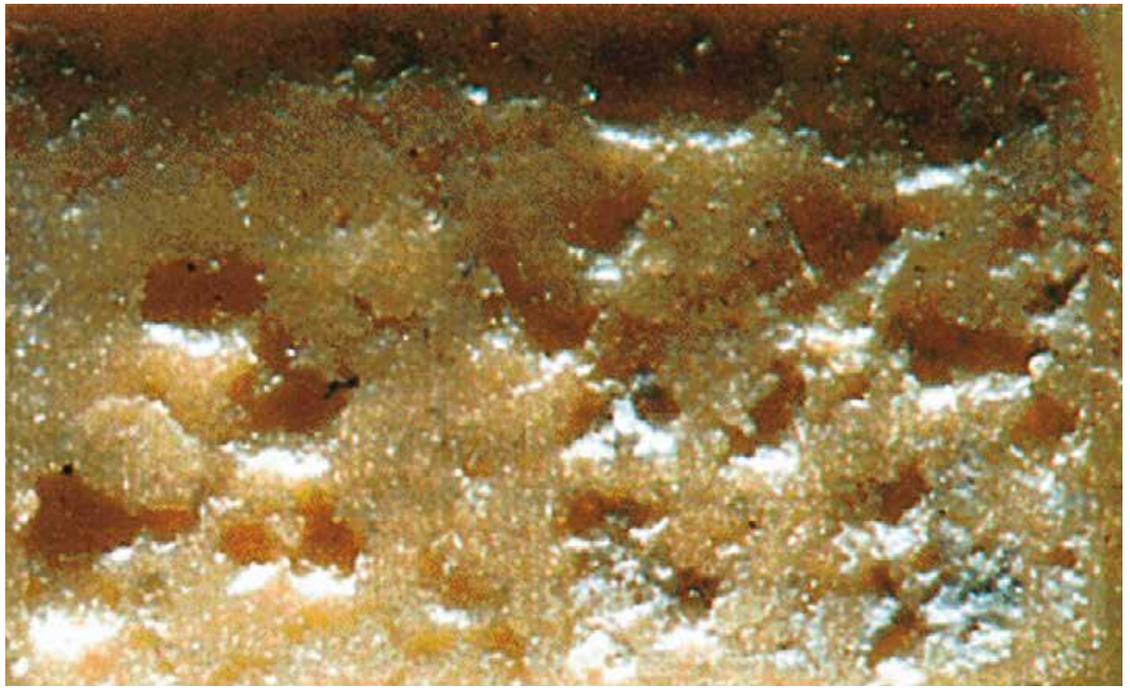
It is significant to note that wear by erosion is non-linear, random and cannot be accurately predicted.



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



Picture 8: Wear experiments with aluminium shafts



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

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Wear and shaft materials

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

▶ Coefficient of friction, **page 47**
▶ Wear resistance, **page 50**

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

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



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



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

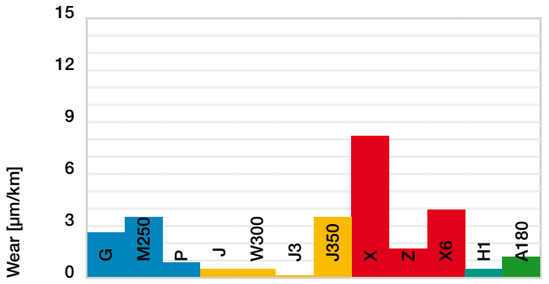

Diagram 13: Wear with Cf53 shaft, p = 1MPa, v = 0.30m/s, Ra = 0.20µm

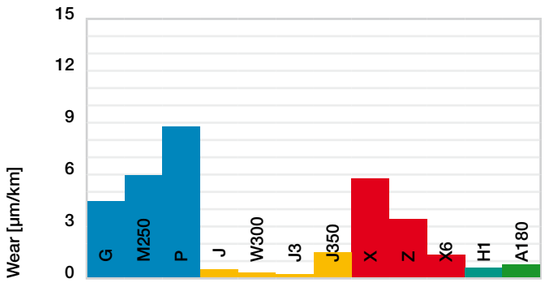

Diagram 14: Wear with 304 stainless steel shaft, p = 1MPa, v = 0.30m/s, Ra = 0.20µm

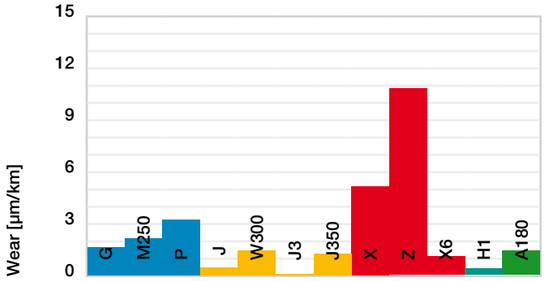

Diagram 15: Wear with HR carbon steel shaft, p = 1MPa, v = 0.30m/s, Ra = 0.20µm

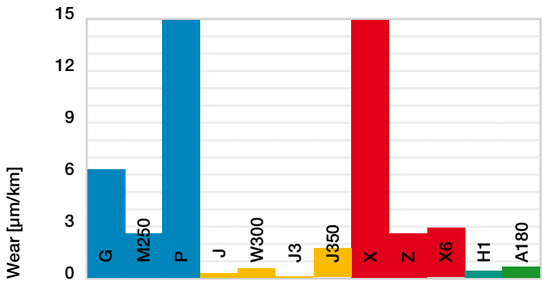

Diagram 16: Wear with Cf53 hard-chromed shaft, p = 1MPa, v = 0.30m/s, Ra = 0.20µm

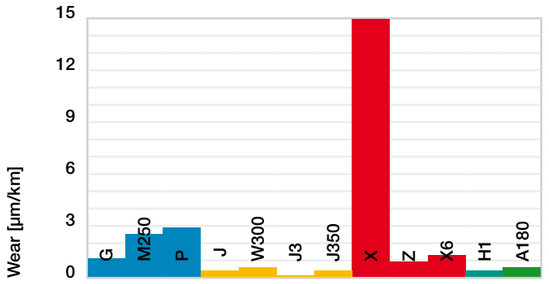

Diagram 17: Wear with hard-anodised aluminium shaft, p = 1MPa, v = 0.30m/s, Ra = 0.20µm

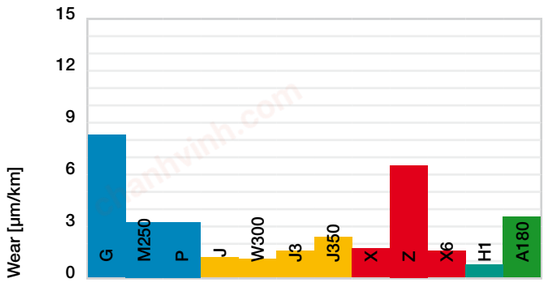

Diagram 18: Wear with free cutting steel shaft, p = 1MPa, v = 0.30m/s, Ra = 0.20µm

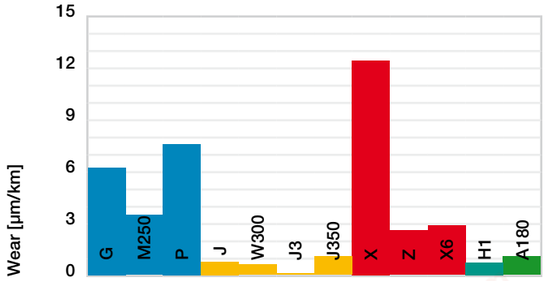

Diagram 19: Wear with high grade steel shaft, p = 1MPa, v = 0.30m/s, Ra = 0.20µm

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Chemical resistance

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

▶ Chemical table, **page 1636**

Applications in the food industry

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

Material	Hydro-carbons	Greases, oils, without additives	Weak acids	Weak alkaline
iglidur® G	+	+	0 to –	+
iglidur® G1	+	+	0 to –	+
iglidur® M250	+	+	0 to –	+
iglidur® P210	–	–	0	–
iglidur® P	–	+	0	–
iglidur® K	+	+	0 to –	+
iglidur® GLW	+	+	0 to –	+
iglidur® P230	+	+	+	+
iglidur® J	+	+	0 to –	+
iglidur® W300	+	+	0 to –	+
iglidur® J3	+	+	0 to –	+
iglidur® J3B	+	+	0 to –	+
iglidur® J350	+ up to 0	+	+	+
iglidur® J260	+	0 to –	–	+ up to 0
iglidur® W360	+	+	0 to –	+
iglidur® L250	+	+	0 to –	+
iglidur® L350	+ up to 0	+	+	+
iglidur® L500	+	+	+	+
iglidur® R	+	+	0 to –	+
iglidur® D	+	+	0 to –	+
iglidur® J200	+	+	0 to –	+
iglidur® E7	+	+	0 to –	+
iglidur® X	+	+	+	+
iglidur® Z	+	+	+	+
iglidur® X6	+	+	+	+
iglidur® V400	+	+	+	+
iglidur® HSD350	+	+	+	+
iglidur® UW500	+	+	+	+
iglidur® H1	+	+	+ up to 0	+
iglidur® H370	+	+	+ up to 0	+
iglidur® H	+	+	+ up to 0	+
iglidur® C500	+	+	+	+
iglidur® H2	+	+	+ up to 0	+
iglidur® A181	+	+	0 to –	+
iglidur® A350	+ up to 0	+	+	+
iglidur® A500	+	+	+	+
iglidur® A180	+	+	0 to –	+
iglidur® A200	+	+	0 to –	+
iglidur® A160	+	+	+	+
iglidur® UW160	+	+	+	+
iglidur® T220	–	+	0	–
iglidur® Q2	+	+	0 to –	+
iglidur® Q2E	+	+	0 to –	+
iglidur® Q	+	+	0 to –	+
iglidur® Q290	+	+	0 to –	+
iglidur® TX1	+	+	+	+
iglidur® F	+	+	0 to –	+
iglidur® F2	–	+	0	–
iglidur® H4	+	+	+ up to 0	+
iglidur® UW	+	+	0 to –	+
iglidur® J UV	+	+	0 to –	+
iglidur® N54	+	+	0 to –	+
iglidur® G V0	+	+	0 to –	+
iglidur® J2	+	+	0 to –	+
iglidur® AB	+	+	0 to –	+
iglidur® RW370	–	+	+	+
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 at room temperature [+20°C]

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Resistance to weathering

Radioactive radiation

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

Resistance to weathering

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 table 08. The results show that iglidur® plain bearings are suitable for outside use. Only for a few iglidur® materials are any changes expected.

Vacuum

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

Electrical properties

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

Material	Radiation resistance
X, Z, UW500, A160	$1 \cdot 10^5$ Gy
X6, A500	$2 \cdot 10^5$ Gy
M250, J3, A200, N54	$1 \cdot 10^4$ Gy
L250	$3 \cdot 10^4$ Gy
V400, C	$2 \cdot 10^4$ Gy
P, K	$5 \cdot 10^2$ Gy
G, G1, J, W300, P210, P230, J260, J200, R, D, C500, A180, UW160, T220, F, F2, Q, Q2, UW, G V0, J2, B, GLW, L500, Q290, AB, J UV, Q2E, E7, J3B	$3 \cdot 10^2$ 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 iglidur®	Resistance to weathering
G	4
G1	n.s.
M250	2
P210	5
P	5
K	4
GLW	4
P230	n.s.
J	4
W300	3
J3	4
J3B	n.s.
J350	5
J260	5
W360	4
L250	3
L350	n.s.
L500	5
R	4
D	5
J200	4
E7	5
X	5
Z	5
X6	5
V400	5
HSD350	5
UW500	5
H1	5
H370	5
H	5
C500	4
H2	5
A181	4
A350	5
A500	2
A180	1
A200	1
A160	5
UW160	5
T220	4
Q2	5
Q2E	n.s.
Q	4
Q290	1
TX1	n.s.
F	3
F2	4
H4	5
UW	3
J UV	5
N54	4
G V0	4
J2	3
AB	3
RW370	5
B	3
C	3

Table 08: UV resistance of iglidur® plain bearings, 1 low resistance, 5 highest resistance
Determination of bending specifications according to DIN EN ISO 178 after weathering with double stroke 4 of ASTM G154. Two alternating statuses (total time: 2,000hrs). Status 1: Irradiation with UVA-340, irradiance 1.55W/m²/nm and 70°C for 8hrs. Status 2: no irradiation, condensation at 50°C for 4hrs.

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Fitting instructions

iglidur® plain bearings are press-fit bearings. The inner diameter adjusts only after press-fit in the proper housing hole with a recommended (H7) tolerance. The press-fit excess dimension can be up to 2% of the inner diameter. This ensures the secure press-fitting of the bearing. Axial or radial movement in the housing are also prevented this way. The hole in the housing should be produced with the recommended tolerance (H7) for all bearings and be smooth, flat and chamfered at between 20 and 30 degrees. The bearing should be press-fitted using a flat press. The use of centring or calibrating pins can cause damage to the bearings and bring a greater amount of clearance.

Adhesion

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

Machining

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



Picture 12: 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 13–50mm (PT-1350) and 6–20mm (PT-0620) and even permits assembly using a hammer – simple and fast.



PT-1350



PT-0620

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

Table 09: Guidelines for machining

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Tolerances and measurement system

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

Testing methods

iglidur® plain bearings are press-fit bearings for housings with a H7 standard hole. This press-fitting of the bearing fixes the bearing in the housing, and the inner diameter of the plain bearing is also formed upon press-fit.
The bearing size test is performed when the bearing is installed in a hole with the minimum specified dimension; both using a 3 point probe and a plug gauge:

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

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



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

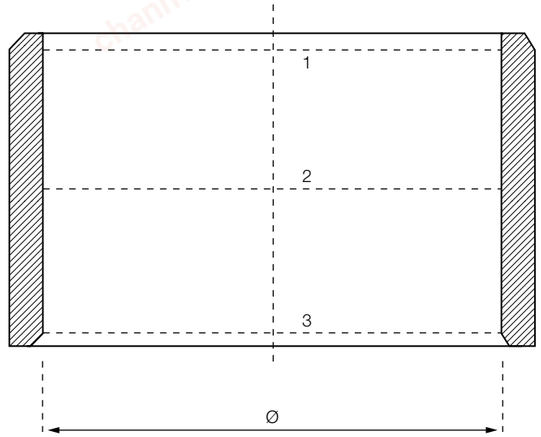

Diagram 20: Positions of the measurement lines

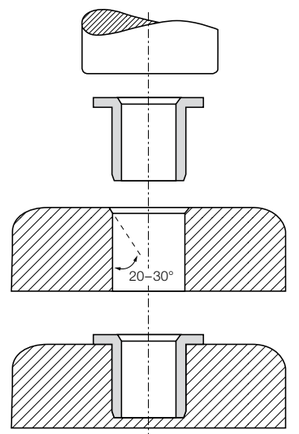

Diagram 21: Press-fit of the bearing (section view)

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Tolerances

Installation tolerances

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

ISO tolerances for iglidur® plain bearings [mm]

Diameter d1	Housing H7	Shaft h9	Tolerances according to ISO 3547-1 E10	E11	F10	D11
up to 3	+0.000 +0.010	–0.025 +0.000	+0.014 +0.054	+0.014 +0.074	+0.006 +0.046	+0.020 +0.080
> 3 to 6	+0.000 +0.012	–0.030 +0.000	+0.020 +0.068	+0.020 +0.095	+0.010 +0.058	+0.030 +0.105
> 6 to 10	+0.000 +0.015	–0.036 +0.000	+0.025 +0.083	+0.025 +0.115	+0.013 +0.071	+0.040 +0.130
> 10 to 18	+0.000 +0.018	–0.043 +0.000	+0.032 +0.102	+0.032 +0.142	+0.016 +0.086	+0.050 +0.160
> 18 to 30	+0.000 +0.021	–0.052 +0.000	+0.040 +0.124	+0.040 +0.170	+0.020 +0.104	+0.065 +0.195
> 30 to 50	+0.000 +0.025	–0.062 +0.000	+0.050 +0.150	+0.050 +0.210	+0.025 +0.125	+0.080 +0.240
> 50 to 80	+0.000 +0.030	–0.074 +0.000	+0.060 +0.180	+0.060 +0.250	+0.030 +0.150	+0.100 +0.290
> 80 to 120	+0.000 +0.035	–0.087 +0.000	+0.072 +0.212	+0.072 +0.292	+0.036 +0.176	+0.120 +0.340
>120 to 180	+0.000 +0.040	–0.100 +0.000	+0.085 +0.245	+0.085 +0.335	+0.043 +0.203	+0.145 +0.395

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

Material	E10	E11	F10	D11
iglidur® H370			●	
iglidur® H			●	
iglidur® C500			●	
iglidur® H2			●	
iglidur® A181	●			
iglidur® A350			●	
iglidur® A500			●	
iglidur® A180	●			
iglidur® A200				●
iglidur® A160	●			
iglidur® UW160	●			
iglidur® T220	●			
iglidur® Q2	●			
iglidur® Q2E		●		
iglidur® Q	●			
iglidur® Q290	●			
iglidur® F				●
iglidur® F2	●			
iglidur® H4			●	
iglidur® UW	●			
iglidur® J UV	●			
iglidur® N54	●			
iglidur® G V0	●			
iglidur® J2	●			
iglidur® AB	●			
iglidur® RW370			●	
iglidur® B				●
iglidur® C				●

Table 10: Tolerances of iglidur® plain bearing materials

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igus® formulas

Surface pressure

Radial bearing:

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

Thrust bearing:

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

Surface speed

Rotational movement:

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

Pivoting movement:

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

pv value

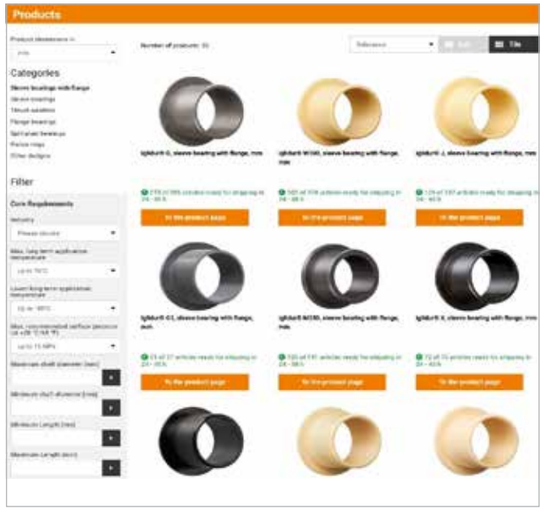
$$pv_{perm.} = \left(\frac{[K1 \cdot \pi \cdot \lambda k \cdot \Delta T]}{\mu \cdot s} + \frac{[K2 \cdot \pi \cdot \lambda s \cdot \Delta T]}{\mu \cdot b1 \cdot 2}\right) \cdot 10^{-3}$$

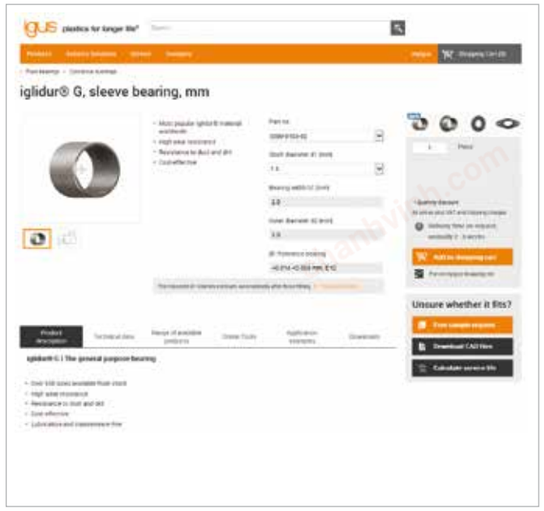
Friction force

$$F_R = \mu \cdot F$$

Short cuts and formulae for polymer plain bearings			
F	=	Load	[N]
F_R	=	Friction force	[N]
$d1$	=	Inner diameter of the bearing	[mm]
$b1$	=	Bearing length	[mm]
$d2$	=	Outer diameter of the bearing	[mm]
p	=	Surface pressure	[N/mm²]
v	=	Surface Speed	[m/s]
n	=	Revolutions per minute	
β	=	Angle	[°]
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-asean.com/G and you'll find more details, 3D CAD files, DXF files, PDF downloads, application examples and many more for your chosen igus® product.

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

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



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iglidur® standards | Materials overview

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

Materials for general purpose



The classic all-rounder: iglidur® G
▶ Page 81



Even more universal: iglidur® G1
▶ Page 97



The robust all-rounder according to ISO 2795: iglidur® M250
▶ Page 107



Specialist for pivoting, rolling applications and more: iglidur® P210
▶ Page 117



The cost-effective outdoor all-rounder: iglidur® P
▶ Page 131

iglidur® plain bearings made from tribo-plastics: endurance runner

Materials for long service life



The versatile endurance runner: iglidur® J
▶ Page 159



The classic endurance runner up to 30MPa: iglidur® W300
▶ Page 171



Specialist for pivoting and pulsating loads: iglidur® J3
▶ Page 183



High dimensional stability at high temperatures: iglidur® J350
▶ Page 199

iglidur® plain bearings made from tribo-plastics: high temperature

Materials for use at high temperatures



The chemical and temperature specialist: iglidur® X
▶ Page 279



Extremely long service life under extreme conditions: iglidur® Z
▶ Page 289

iglidur® plain bearings made from tribo-plastics: high media resistance

Materials with good media resistance



Endurance runner with high media resistance: iglidur® H1
▶ Page 333



Extremely long service life under water: iglidur® H370
▶ Page 341

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 377



The endurance runner at higher temperatures in the food sector: iglidur® A350
▶ Page 385



The media and temperature specialist in the food sector: iglidur® A500
▶ Page 393

iglidur® plain bearings made from tribo-plastics: for high loads

Materials for heavy-duty applications



The durable heavy-duty bearing: iglidur® Q2
▶ Page 445

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The most suitable bearing for any application

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

- Lubrication and maintenance-free
- Service life can be calculated online
- No minimum order quantities, no surcharges
- No minimum order quantity
- More than 1,900 dimensions

	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 81	130	80	0.22	1.75	
iglidur® G1 – more universal The advanced development of iglidur® G ▶ Page 97	180	91	0.21	1.88	
iglidur® M250 – the robust all-rounder according to ISO 2795 Excellent vibration dampening ▶ Page 107	80	20	0.56	2.10	
iglidur® P210 – specialist for pivoting, rolling applications and more Good coefficient of friction and wear on almost every shaft ▶ Page 117	100	50	0.17	0.38	
iglidur® P – the cost-effective outdoor all-rounder No moisture absorption even with high ambient humidity ▶ Page 131	130	50	0.24	1.8	
iglidur® J – the versatile endurance runner High wear resistance on (almost) all shafts, very low coefficient of friction ▶ Page 159	90	35	0.16	0.29	
iglidur® W300 – the classic endurance runner up to 30MPa Excellent wear resistance on (virtually) all shafts ▶ Page 171	90	60	0.18	0.33	

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

	Temperature [°C] [123]	Surface pressure [MPa] [124]	Coefficient of friction [µ] [125]	Wear [µm/km] [125]	Price index
iglidur® J3 – the new endurance runner: specialist for pivoting and pulsating loads Up to 10MPa up to three times more wear-resistant than iglidur® J ▶ Page 183	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 199	180	60	0.16	1.14	
iglidur® X – the chemical and temperature specialist Up to 150MPa static ▶ Page 279	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 289	250	150	0.18	1.00	
iglidur® H1 – endurance runner with high media resistance Excellent coefficient of friction and wear ▶ Page 333	200	80	0.17	0.29	
iglidur® H370 – extremely long service life under water High media resistance ▶ Page 341	200	75	0.17	1.20	
iglidur® A181 – the universal bearing for food contact FDA and EU10/2011-compliant ▶ Page 377	90	31	0.18	0.48	
iglidur® A350 – the endurance runner at higher temperatures in the food sector FDA and EU10/2011-compliant, extremely wear-resistant ▶ Page 385	180	60	0.17	1.79	
iglidur® A500 – the media and temperature specialist in the food sector; FDA and EU10/2011-compliant; extremely wear-resistant for high temperatures ▶ Page 393	250	120	0.36	4.10	
iglidur® Q2 – the durable heavy-duty bearing Combined wear resistance and compressive strength at high loads ▶ Page 445	130	120	0.17	1.50	

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

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iglidur® standards | Technical properties – quick selection

iglidur® standard product range

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

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iglidur® standards | Material properties table

iglidur® standard product range

iglidur®	Unit	G	G1	M250	P210	P	J	W300	J3	J350	X	Z	H1	H370	A181	A350	A500	Q2
General properties																		
Density	[g/cm³]	1.46	1.58	1.14	1.40	1.58	1.49	1.24	1.42	1.44	1.44	1.4	1.53	1.66	1.38	1.42	1.28	1.46
Colour																		
Max. moisture absorption at +23°C and 50% relative humidity	[% weight]	0.7	0.2	1.4	0.3	0.2	0.3	1.3	0.3	0.3	0.1	0.3	0.1	0.1	0.2	0.6	0.3	1.1
Max. total moisture absorption	[% weight]	4.0	1.7	7.6	0.5	0.4	1.3	6.5	1.3	1.6	0.5	1.1	0.3	0.1	1.3	1.9	0.5	4.6
Coefficient of sliding friction, dynamic, against steel	[µ]	0.08–0.15	0.08–0.15	0.18–0.40	0.07–0.19	0.06–0.21	0.06–0.18	0.08–0.23	0.06–0.20	0.10–0.20	0.09–0.27	0.06–0.14	0.06–0.20	0.07–0.17	0.10–0.21	0.10–0.20	0.26–0.41	0.22–0.42
pv value, max. (dry)	[MPa·m/s]	0.42	0.60	0.12	0.4	0.39	0.34	0.23	0.5	0.45	1.32	0.84	0.80	0.74	0.31	0.40	0.28	0.7
Mechanical properties																		
Flexural modulus	[MPa]	7,800	11,486	2,700	2,500	5,300	2,400	3,500	2,700	2,000	8,100	2,400	2,800	11,100	1,913	2,000	3,600	8,370
Flexural strength at +20°C	[MPa]	210	178	112	70	120	73	125	70	55	170	95	55	135	48	110	140	240
Compressive strength	[MPa]	78	115	52	50	66	60	61	60	60	100	65	78	79	60	78	118	130
Max. permissible surface pressure at +20°C	[MPa]	80	91	20	50	50	35	60	45	60	150	150	80	75	31	60	120	120
Shore D hardness		81	81	79	75	75	74	77	73	80	85	81	77	82	76	76	83	80
Physical and thermal properties																		
Max. continuous operating temperature	[°C]	+130	+180	+80	+100	+130	+90	+90	+90	+180	+250	+250	+200	+200	+90	+180	+250	+130
Max. short-term operating temperature	[°C]	+220	+220	+170	+160	+200	+120	+180	+120	+220	+315	+310	+240	+240	+110	+210	+300	+200
Min. operating temperature	[°C]	–40	–40	–40	–40	–40	–50	–40	–50	–100	–100	–100	–40	–40	–50	–100	–100	–40
Thermal conductivity	[W/m · K]	0.24	0.46	0.24	0.25	0.25	0.25	0.24	0.25	0.24	0.60	0.62	0.24	0.5	0.25	0.24	0.24	0.24
Coefficient of thermal expansion at +23°C	[$K^{-1} \cdot 10^{-5}$]	9	3.5	10	8	4	10	9	13	7	5	4	6	5	11	8	9	8
Electrical properties																		
Specific contact resistance	[Ωcm]	> 10^{13}	> 10^{9}	> 10^{13}	> 10^{12}	> 10^{13}	> 1013	> 1013	> 10^{12}	> 10^{13}	< 10^{5}	> 10^{11}	> 10^{12}	< 10^{5}	> 10^{12}	> 10^{11}	> 10^{14}	> 10^{13}
Surface resistance	[Ω]	> 10^{11}	> 10^{11}	> 10^{11}	> 10^{11}	> 10^{12}	> 10^{12}	> 10^{12}	> 10^{12}	> 10^{10}	< 10^{3}	> 10^{11}	> 10^{11}	< 10^{5}	> 10^{12}	> 10^{11}	> 10^{13}	> 10^{11}

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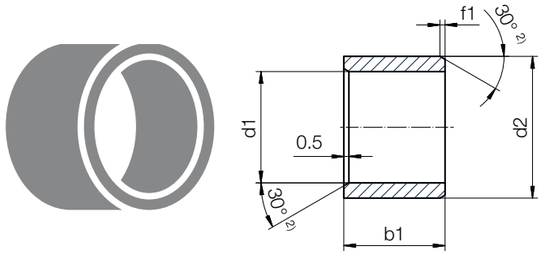
iglidur® standards | Product range

Sleeve bearings (form S)



2) Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Order key

Type	Dimensions [mm]					
☐ S	M-	04	05-	04		
iglidur® material	Form S	Metric	Inner Ø d1	Outer Ø d2	Total 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 1550

iglidur® standards | Product range

Absolute flexibility: all iglidur® standard sizes available from stock

G	The classic all-rounder
G1	More universal
M(250)	The robust all-rounder according to ISO 2795
P210	Specialist for pivoting, rolling applications and more
P	The cost-effective outdoor all-rounder
J	The versatile endurance runner
W(300)	The classic endurance runner up to 30MPa
J3	The new endurance runner: specialist for pivoting 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

_SM

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)

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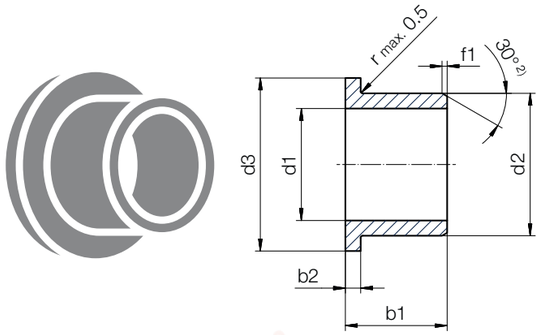
iglidur® standards | Product range

Flanged bearing (form F)



2) Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Order key

Type	Dimensions [mm]				
☐ F	M-	06	08-	04	
iglidur® material	Form F	Metric	Inner Ø d1	Outer Ø d2	Total 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 1552

Dimensions [mm]

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

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

Absolute flexibility: all iglidur® standard sizes available from stock

G	The classic all-rounder
G1	More universal
M(250)	The robust all-rounder according to ISO 2795
P210	Specialist for pivoting, rolling applications and more
P	The cost-effective outdoor all-rounder
J	The versatile endurance runner
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J3	The new endurance runner: specialist for pivoting and pulsating loads
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 [mm]

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

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

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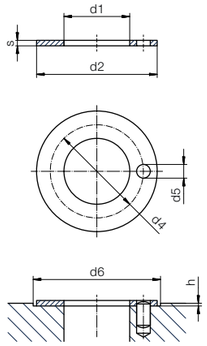

Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available

Order key

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

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

Choose the suitable material and dimensions for your application

Dimensions [mm]

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

[4] Design without fixing hole

iglidur® standards | Product range

Absolute flexibility: all iglidur® standard sizes available from stock

_TM

Dimensions [mm]

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

[4] Design without fixing hole



Materials for general purpose

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Materials for general purpose

The iglidur® materials summarised in this group 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. With reduced moisture absorption and improved wear and temperature behaviour for many applications, iglidur® G1 represents an advanced development of this classic. The iglidur® GLW is specially suitable for solutions in large batches. iglidur® P and iglidur® K have a similar potential as iglidur® G paired with significantly reduced moisture absorption, which is advantageous for use in wet environments.

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert



iglidur® G
The classic all-rounder

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



iglidur® G1
More universal

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



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

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



iglidur® P210
Specialist for pivoting, rolling applications and more

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

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

All-rounder



iglidur® P230
The low-cost all-rounder

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



iglidur® P
The cost-effective outdoor all-rounder

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



iglidur® K
Versatile and cost-effective

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



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

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

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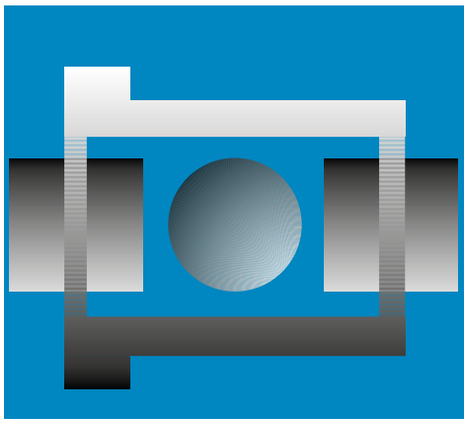

The classic all-rounder

Excellent price-performance ratio

iglidur® G

When to use it?

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

When not to use?

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

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Bearing technology | Plain bearing | iglidur® G

Ø
1.5 –
195.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 584

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

The classic all-rounder
Excellent price-performance ratio

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

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

Typical application areas

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

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® G
+130°C
80MPa

Technical data

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

Table 01: Material properties

–40°C up to +130°C

80MPa

HB

RoHS-II

ISO 3547-1

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

Moisture absorption
Under standard climatic conditions, the moisture absorption of iglidur® G plain bearings is approximately 0.7% weight. The saturation limit in water is 4.0% weight. This must be taken into account for these types of applications.

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

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

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

Mechanical properties
With increasing temperatures, the compressive strength of iglidur® G plain bearings decreases. Diagram 02 shows this inverse relationship. However, at the long-term maximum temperature of +130°C the permissible surface pressure is around 35MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® G at radial loads. The plastic deformation is minimal up to a pressure of approximately 100MPa. However, it is also dependent on the service time.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® G

Permissible surface speeds

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

Surface speed, page 44

Temperature

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

Application temperatures, page 49
Additional securing, page 49

Friction and wear

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

Coefficient of friction and surfaces, page 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 a ground surface with an average surface finish Ra = 0.8μm is recommended. Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® G. It is important to notice that with increasing loads, the recommended hardness of the shaft increases. The "soft" shafts tend to wear more easily and thus the wear of the overall system increases. If the loads exceed 2MPa it is important to recognise that the wear rate (the gradient of the curves) clearly decreases with the hard shaft materials. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 52

Installation tolerances

iglidur® G plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.0	0.7	4.0
short-term	m/s	2.0	1.4	5.0

Table 03: Maximum surface speeds

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

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

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

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

iglidur® G
+130°C
80MPa

Technical data

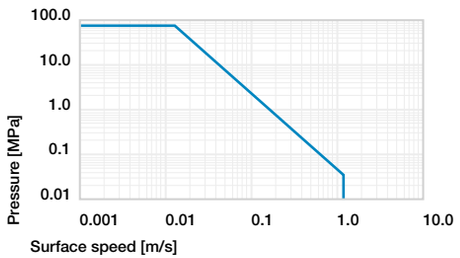

Diagram 01: Permissible pv values for iglidur® G plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

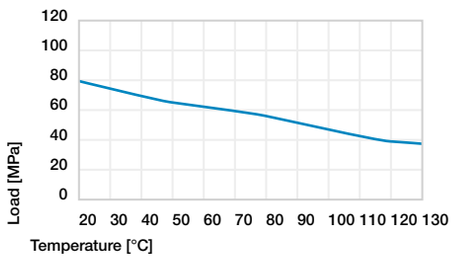

Diagram 02: Maximum recommended surface pressure as a function of temperature (80MPa at +20°C)

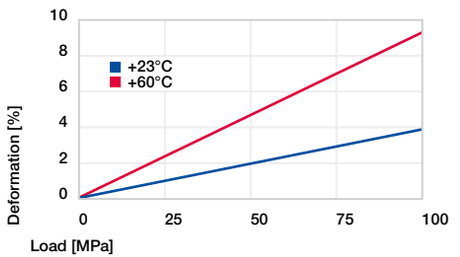

Diagram 03: Deformation under pressure and temperature

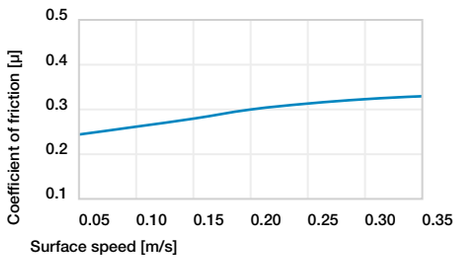

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

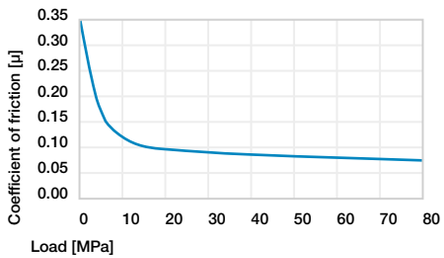

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

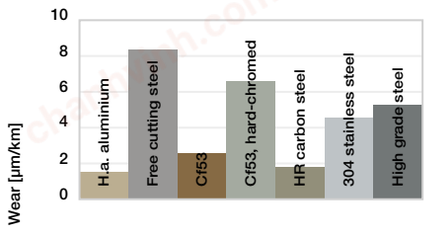

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

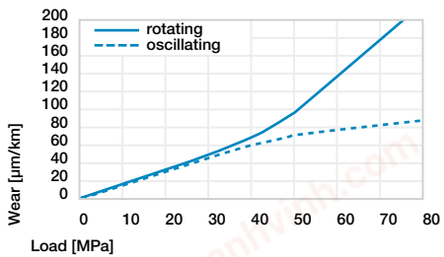

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

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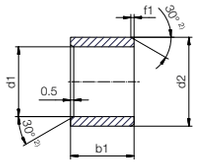
Bearing technology | Plain bearing | iglidur® G

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

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

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

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
6.0		8.0	8.0	GSM-0608-08
6.0	+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		10.0	12.0	GSM-0810-12
8.0	+0.025	10.0	13.8	GSM-0810-13
8.0	+0.083	10.0	14.0	GSM-0810-14
8.0		10.0	15.0	GSM-0810-15
8.0		10.0	16.0	GSM-0810-16
8.0		10.0	18.0	GSM-0810-18
8.0		10.0	20.0	GSM-0810-20
8.0		10.0	22.0	GSM-0810-22
8.0		10.0	25.0	GSM-0810-25

[3] After press-fit. *Testing methods, page 57*

iglidur® G
+130°C
80MPa

Product range

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

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

[3] After press-fit. *Testing methods, page 57*

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Bearing technology | Plain bearing | iglidur® G

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
19.0	+0.040 +0.124	22.0	6.0	GSM-1922-06
19.0		22.0	28.0	GSM-1922-28
19.0		22.0	35.0	GSM-1922-35
20.0	+0.020 +0.072	21.0	20.0	GSM-2021-20
20.0		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 +0.124	23.0	25.0	GSM-2023-25
20.0		23.0	30.0	GSM-2023-30
20.0		23.0	35.0	GSM-2023-35
22.0		24.0	8.0	GSM-2224-08
22.0		24.0	10.0	GSM-2224-10
22.0		24.0	12.0	GSM-2224-12
22.0		24.0	15.0	GSM-2224-15
22.0		24.0	17.0	GSM-2224-17
22.0		24.0	20.0	GSM-2224-20
22.0		24.0	30.0	GSM-2224-30
22.0		24.0	48.0	GSM-2224-48
22.0		25.0	15.0	GSM-2225-15
22.0		25.0	20.0	GSM-2225-20
22.0		25.0	25.0	GSM-2225-25
22.0		25.0	30.0	GSM-2225-30
22.0		25.0	38.5	GSM-2225-38.5
24.0	+0.020 +0.072	25.0	25.0	GSM-2425-25
24.0		27.0	6.0	GSM-2427-06
24.0		27.0	15.0	GSM-2427-15
24.0	+0.040 +0.124	27.0	20.0	GSM-2427-20
24.0		27.0	24.0	GSM-2427-24
24.0		27.0	25.0	GSM-2427-25
24.0		27.0	30.0	GSM-2427-30
25.0	+0.020 +0.072	26.0	23.0	GSM-2526-23
25.0		26.0	25.0	GSM-2526-25
25.0	+0.040 +0.124	28.0	12.0	GSM-2528-12
25.0		28.0	15.0	GSM-2528-15
25.0		28.0	20.0	GSM-2528-20
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		30.0	16.0	GSM-2630-16
27.0	+0.040 +0.124	30.0	5.0	GSM-2730-05
28.0		32.0	10.5	GSM-2832-105
28.0		32.0	12.0	GSM-2832-12
28.0		32.0	15.0	GSM-2832-15
28.0		32.0	20.0	GSM-2832-20
28.0		32.0	23.0	GSM-2832-23
28.0		32.0	25.0	GSM-2832-25
28.0		32.0	30.0	GSM-2832-30
28.0	+0.065 +0.195	35.0	19.0	GSM-2835-19
28.0		35.0	28.0	GSM-2835-28
29.0	+0.040 +0.124	33.0	6.0	GSM-2933-06
30.0	+0.020 +0.072	31.0	5.0	GSM-3031-05
30.0		31.0	12.0	GSM-3031-12
30.0		31.0	30.0	GSM-3031-30
30.0	+0.040 +0.124	34.0	12.0	GSM-3034-12
30.0		34.0	15.0	GSM-3034-15
30.0		34.0	20.0	GSM-3034-20
30.0		34.0	24.0	GSM-3034-24
30.0		34.0	25.0	GSM-3034-25
30.0		34.0	30.0	GSM-3034-30
30.0		34.0	35.0	GSM-3034-35
30.0		34.0	40.0	GSM-3034-40
30.0		34.0	52.5	GSM-3034-525
32.0		36.0	15.0	GSM-3236-15
32.0		36.0	20.0	GSM-3236-20
32.0		36.0	30.0	GSM-3236-30
32.0		36.0	40.0	GSM-3236-40
35.0		39.0	14.0	GSM-3539-14
35.0		39.0	20.0	GSM-3539-20
35.0		39.0	25.0	GSM-3539-25
35.0		39.0	30.0	GSM-3539-30
35.0	+0.050 +0.150	39.0	40.0	GSM-3539-40
35.0		39.0	50.0	GSM-3539-50
35.0		41.0	50.0	GSM-3541-50
36.0		40.0	20.0	GSM-3640-20
37.0		41.0	20.0	GSM-3741-20
38.0		42.0	25.0	GSM-3842-25
40.0		44.0	10.0	GSM-4044-10
40.0		44.0	16.5	GSM-4044-16
40.0		44.0	20.0	GSM-4044-20
40.0		44.0	30.0	GSM-4044-30

[3] After press-fit. *Testing methods, page 57*

iglidur® G
+130°C
80MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
40.0	+0.050 +0.150	44.0	40.0	GSM-4044-40
40.0		44.0	50.0	GSM-4044-50
40.0		44.0	52.5	GSM-4044-525
42.0		46.0	40.0	GSM-4246-40
44.0		48.0	20.0	GSM-4448-20
45.0		50.0	10.0	GSM-4550-10
45.0		50.0	20.0	GSM-4550-20
45.0		50.0	22.0	GSM-4550-22
45.0		50.0	23.5	GSM-4550-235
45.0		50.0	30.0	GSM-4550-30
45.0		50.0	38.0	GSM-4550-38
45.0		50.0	40.0	GSM-4550-40
45.0		50.0	50.0	GSM-4550-50
50.0		55.0	20.0	GSM-5055-20
50.0		55.0	25.0	GSM-5055-25
50.0		55.0	30.0	GSM-5055-30
50.0		55.0	40.0	GSM-5055-40
50.0		55.0	50.0	GSM-5055-50
50.0		55.0	60.0	GSM-5055-60
52.0	+0.060 +0.180	57.0	20.0	GSM-5257-20
55.0		60.0	20.0	GSM-5560-20
55.0		60.0	40.0	GSM-5560-40
55.0		60.0	50.0	GSM-5560-50
55.0		60.0	60.0	GSM-5560-60
60.0		65.0	30.0	GSM-6065-30
60.0		65.0	40.0	GSM-6065-40
60.0		65.0	50.0	GSM-6065-50
60.0		65.0	60.0	GSM-6065-60
60.0		65.0	70.0	GSM-6065-70
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	104.0	GSM-6570-104
65.0		70.0	30.0	GSM-6570-30
65.0		70.0	50.0	GSM-6570-50
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	100.0	GSM-8085-100
80.0		85.0	60.0	GSM-8085-60
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	100.0	GSM-100105-100
100.0	+0.072 +0.212	105.0	21.5	GSM-100105-21.5
100.0		105.0	30.0	GSM-100105-30
100.0		105.0	32.0	GSM-100105-32
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*

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Ordering note
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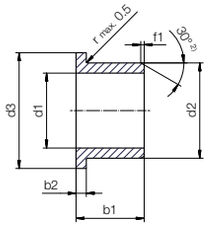
Bearing technology | Plain bearing | iglidur® G

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

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

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

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

[3] After press-fit. *Testing methods, page 57*

Product range

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

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

[3] After press-fit. *Testing methods, page 57*

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Bearing technology | Plain bearing | iglidur® G

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
16.0		18.0	24.0	9.0	1.00	GFM-1618-09
16.0		18.0	24.0	12.0	1.00	GFM-1618-12
16.0		18.0	24.0	16.0	1.00	GFM-1618-16
16.0		18.0	24.0	17.0	1.00	GFM-1618-17
16.0		18.0	24.0	21.0	1.00	GFM-1618-21
17.0		19.0	25.0	9.0	1.00	GFM-1719-09
17.0		19.0	25.0	16.0	1.00	GFM-1719-16
17.0		19.0	25.0	25.0	1.00	GFM-1719-25
18.0	+0.032	20.0	26.0	4.0	1.00	GFM-1820-04
18.0	+0.102	20.0	26.0	6.0	1.00	GFM-1820-06
18.0		20.0	22.0	6.0	1.00	GFM-182022-06
18.0		20.0	26.0	9.0	1.00	GFM-1820-09
18.0		20.0	26.0	11.0	1.00	GFM-1820-11
18.0		20.0	26.0	12.0	1.00	GFM-1820-12
18.0		20.0	26.0	17.0	1.00	GFM-1820-17
18.0		20.0	26.0	22.0	1.00	GFM-1820-22
18.0		20.0	26.0	30.0	1.00	GFM-1820-30
18.0		20.0	26.0	32.0	1.00	GFM-1820-32
18.0		22.0	26.0	28.0	2.00	GFM-1822-28
20.0	+0.020	21.0	26.0	3.5	0.50	GFM-2021-035
20.0	+0.072	21.0	25.0	15.0	0.50	GFM-2021-15
20.0		21.0	25.0	20.0	0.50	GFM-2021-20
20.0		23.0	30.0	7.0	1.50	GFM-2023-07
20.0		23.0	26.0	7.0	1.50	GFM-202326-07
20.0		23.0	30.0	11.5	1.50	GFM-2023-11
20.0		23.0	28.0	15.0	1.50	GFM-202328-15
20.0		23.0	30.0	16.5	1.50	GFM-2023-16
20.0		23.0	29.0	20.0	1.50	GFM-202329-20
20.0		23.0	30.0	21.5	1.50	GFM-2023-21
20.0	+0.040	23.0	26.0	21.5	1.50	GFM-202326-21
22.0	+0.124	24.0	30.0	25.0	1.00	GFM-2224-25
22.0		25.0	29.0	4.5	1.50	GFM-222529-045
22.0		25.0	30.0	21.5	1.50	GFM-222530-215
22.0		25.0	30.0	25.0	1.50	GFM-222530-25
22.0		25.0	35.0	31.5	1.50	GFM-222535-315
24.0		27.0	32.0	7.0	1.50	GFM-2427-07
24.0		27.0	32.0	10.5	1.50	GFM-2427-10
25.0	+0.020	26.0	30.0	25.0	0.50	GFM-2526-25
	+0.072					
25.0		27.0	32.0	7.0	1.00	GFM-2527-07
25.0		27.0	32.0	48.0	1.00	GFM-2527-48
25.0		28.0	30.0	10.0	1.50	GFM-252830-10
25.0		28.0	35.0	11.5	1.50	GFM-2528-11
25.0	+0.040	28.0	35.0	16.5	1.50	GFM-2528-16
25.0	+0.124	28.0	35.0	21.5	1.50	GFM-2528-21
26.0		30.0	37.0	12.0	2.00	GFM-2630-12
27.0		30.0	38.0	20.0	1.50	GFM-2730-20
28.0		30.0	36.0	10.0	1.00	GFM-2830-10

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

[3] After press-fit. *Testing methods, page 57*

iglidur® G
+130°C
80MPa

Product range

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

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

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
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Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/G

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

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

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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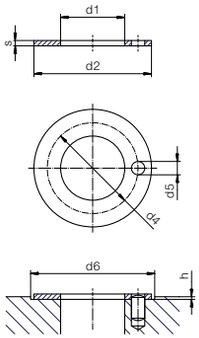
Bearing technology | Plain bearing | iglidur® G

Thrust washer (form T)





Dimensions according to ISO 3547-1 and special dimensions

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

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

4) Design without fixing hole

iglidur® G
+130°C
80MPa

Product range

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

4) Design without fixing hole

Available from stock
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Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/G

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

Discount scaling		
1 – 9	50 – 99	500 – 999
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25 – 49	200 – 499	2,500 – 4,999

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Free shipping within local Regular Service Area.

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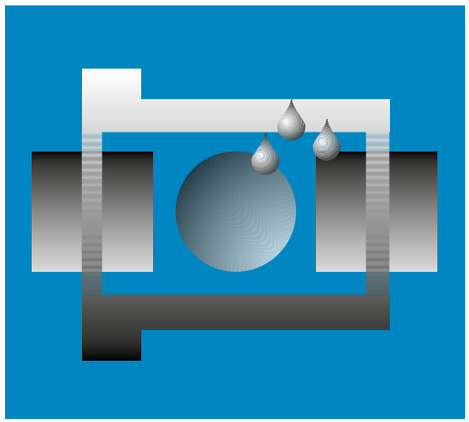

More universal

The advanced development of iglidur® G

iglidur® G1

When to use it?

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

When not to use?

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

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Bearing technology | Plain bearing | iglidur® G1

Ø
4.0 – 50.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

More universal
The advanced development of iglidur® G

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

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

Typical application areas

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

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® G1
+180°C
91MPa

Technical data

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

Table 01: Material properties

–40°C up to +180°C

91MPa

HB

RoHS-II

ISO 3547-1

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

Moisture absorption

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

Vacuum

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

Radiation resistance

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

Resistance to weathering

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

Mechanical properties

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

Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® G1

Permissible surface speeds

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

Surface speed, page 44

Temperature

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

Application temperatures, page 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).

Coefficient 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® G1 a ground surface with an average surface finish Ra = 0.8μm is recommended. Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® G1. It can be observed that iglidur® G1 achieves good to very good wear results with all shaft materials. The results for stainless steel types are most likely slightly lower. Diagram 07 compares the wear in rotating and pivoting applications. As with many of the iglidur® materials, wear rate is better in pivoting applications.

Shaft materials, page 52

Installation tolerances

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

Testing methods, page 57

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.3	1.0	5.0
short-term	m/s	2.5	1.8	6.0

Table 03: Maximum surface speeds

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

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

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

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

Technical data

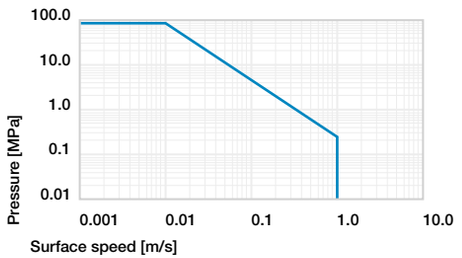

Diagram 01: Permissible pv values for iglidur® G1 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

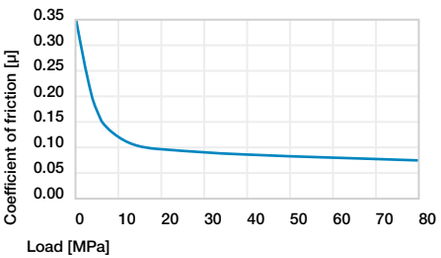

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

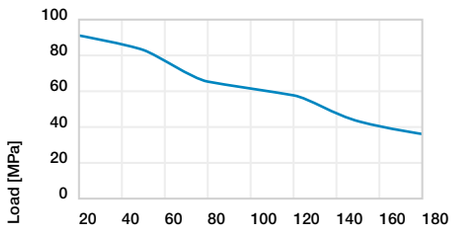

Diagram 02: Maximum recommended surface pressure as a function of temperature (91MPa at +20°C)

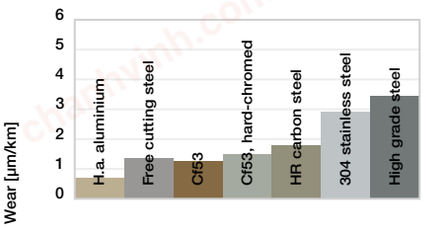

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

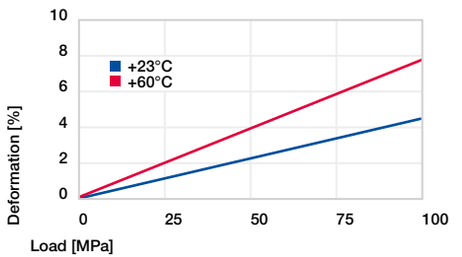

Diagram 03: Deformation under pressure and temperature

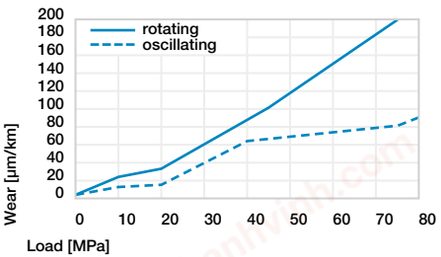

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

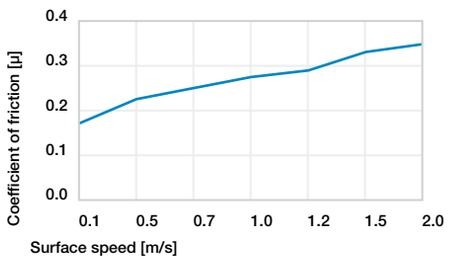

Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

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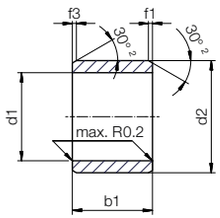
Bearing technology | Plain bearing | iglidur® G1

Sleeve bearing (form S)





2) Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

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

d1 [mm]	d1 Tolerance3)	d2 [mm]	b1 h13 [mm]	Part No.
4.0		5.5	4.0	G1SM-0405-04
4.0		5.5	6.0	G1SM-0405-06
5.0	+0.010	7.0	5.0	G1SM-0507-05
5.0	+0.058	7.0	10.0	G1SM-0507-10
6.0		8.0	6.0	G1SM-0608-06
6.0		8.0	8.0	G1SM-0608-08
6.0		8.0	10.0	G1SM-0608-10
8.0		10.0	8.0	G1SM-0810-08
8.0		10.0	10.0	G1SM-0810-10
8.0		10.0	12.0	G1SM-0810-12
10.0	+0.013	12.0	8.0	G1SM-1012-08
10.0	+0.071	12.0	10.0	G1SM-1012-10
10.0		12.0	12.0	G1SM-1012-12
10.0		12.0	15.0	G1SM-1012-15
10.0		12.0	20.0	G1SM-1012-20
12.0		14.0	10.0	G1SM-1214-10
12.0		14.0	12.0	G1SM-1214-12
12.0		14.0	15.0	G1SM-1214-15
12.0		14.0	20.0	G1SM-1214-20
13.0		15.0	10.0	G1SM-1315-10
13.0		15.0	20.0	G1SM-1315-20
14.0	+0.016	16.0	15.0	G1SM-1416-15
14.0	+0.086	16.0	20.0	G1SM-1416-20
14.0		16.0	25.0	G1SM-1416-25
15.0		17.0	15.0	G1SM-1517-15
15.0		17.0	20.0	G1SM-1517-20
15.0		17.0	25.0	G1SM-1517-25
16.0		18.0	15.0	G1SM-1618-15
16.0		18.0	20.0	G1SM-1618-20

d1 [mm]	d1 Tolerance3)	d2 [mm]	b1 h13 [mm]	Part No.
16.0		18.0	25.0	G1SM-1618-25
18.0	+0.016	20.0	15.0	G1SM-1820-15
18.0	+0.086	20.0	20.0	G1SM-1820-20
18.0		20.0	25.0	G1SM-1820-25
20.0		23.0	10.0	G1SM-2023-10
20.0		23.0	15.0	G1SM-2023-15
20.0		23.0	20.0	G1SM-2023-20
20.0		23.0	25.0	G1SM-2023-25
20.0		23.0	30.0	G1SM-2023-30
22.0		25.0	15.0	G1SM-2225-15
22.0		25.0	20.0	G1SM-2225-20
22.0		25.0	25.0	G1SM-2225-25
22.0		25.0	30.0	G1SM-2225-30
24.0		27.0	15.0	G1SM-2427-15
24.0		27.0	20.0	G1SM-2427-20
24.0	+0.020	27.0	25.0	G1SM-2427-25
24.0	+0.104	27.0	30.0	G1SM-2427-30
25.0		28.0	15.0	G1SM-2528-15
25.0		28.0	20.0	G1SM-2528-20
25.0		28.0	25.0	G1SM-2528-25
25.0		28.0	30.0	G1SM-2528-30
28.0		32.0	20.0	G1SM-2832-20
28.0		32.0	25.0	G1SM-2832-25
28.0		32.0	25.0	G1SM-2832-30
30.0		34.0	20.0	G1SM-3034-20
30.0		34.0	25.0	G1SM-3034-25
30.0		34.0	30.0	G1SM-3034-30
30.0		34.0	40.0	G1SM-3034-40

3) After press-fit. *Testing methods, page 57*

iglidur® G1
+180°C
91MPa

Product range

d1 [mm]	d1 Tolerance3)	d2 [mm]	b1 h13 [mm]	Part No.
32.0		36.0	20.0	G1SM-3236-20
32.0		36.0	30.0	G1SM-3236-30
32.0		36.0	40.0	G1SM-3236-40
35.0		39.0	20.0	G1SM-3539-20
35.0	+0.025	39.0	30.0	G1SM-3539-30
35.0	+0.125	39.0	40.0	G1SM-3539-40
35.0		39.0	50.0	G1SM-3539-50
40.0		44.0	20.0	G1SM-4044-20
40.0		44.0	30.0	G1SM-4044-30
40.0		44.0	40.0	G1SM-4044-40

d1 [mm]	d1 Tolerance3)	d2 [mm]	b1 h13 [mm]	Part No.
40.0		44.0	50.0	G1SM-4044-50
45.0		50.0	20.0	G1SM-4550-20
45.0		50.0	30.0	G1SM-4550-30
45.0		50.0	40.0	G1SM-4550-40
45.0	+0.025	50.0	50.0	G1SM-4550-50
50.0	+0.125	55.0	20.0	G1SM-5055-20
50.0		55.0	30.0	G1SM-5055-30
50.0		55.0	40.0	G1SM-5055-40
50.0		55.0	50.0	G1SM-5055-50
50.0		55.0	60.0	G1SM-5055-60

3) After press-fit. *Testing methods, page 57*

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Detailed information about delivery time online.
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Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/G1

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

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

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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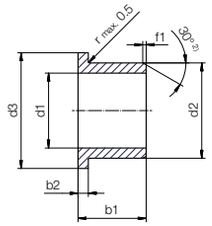
Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

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

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

[3] After press-fit. *Testing methods, page 57*

iglidur® G1
+180°C
91MPa

Product range

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

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/G1

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

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

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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The robust all-rounder according to ISO 2795

Excellent vibration dampening

iglidur® M250

When to use it?

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

When not to use?

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

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Bearing technology | Plain bearing | iglidur® M250

Ø
1.0 – 75.0mm



Also available as:

Bar stock, round bar
Page 672

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 584

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

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

The self-lubricating plain bearing made from iglidur® M250 distinguishes itself through its impact resistance, vibration dampening and wear resistance. They excel in applications in which vibration dampening is necessary, for example, in fitness and packaging machines.

- Over 450 sizes available from stock
- Excellent vibration dampening
- Suitable for high edge pressures
- Suitable for impact loads
- Thick-walled according to ISO 2795
- Dirt can become embedded for shaft protection
- Lubrication-free
- Maintenance-free
- Thrust washers available only in imperial sizes, from page 1601

Typical application areas

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

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® M250
+80°C
20MPa

Technical data

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

Table 01: Material properties

–40°C up to +80°C

20MPa

V-2

RoHS-II

ISO 2795

The self-lubricating plain bearing made from iglidur® M250 distinguishes itself through its impact resistance, vibration dampening and wear resistance. 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.

Moisture absorption
Under standard climatic conditions, the moisture absorption of iglidur® M250 plain bearings is approximately 1.4% weight. The saturation limit in water is 7.6% weight. This must be taken into account for these types of applications.

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

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

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

Mechanical properties
With increasing temperatures, the compressive strength of iglidur® M250 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
iglidur® M250 plain bearings can withstand a maximum recommended surface pressure of 20MPa. Compared with other iglidur® materials iglidur® M250 plain bearings are highly elastic. By this elasticity they can yield very well, but retain their original shape again. A plastic deformation is minimal up to the maximum recommended surface pressure.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® M250

Permissible surface speeds

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

Surface speed, page 44

Temperature

Short-term application temperatures up to +170°C are permitted. However, iglidur® M250 plain bearings can only be exposed to this temperature if no additional load is applied. The maximum long-term application temperature is +80°C. This is also the point of the wear limit, i. e. the temperature over which the wear increases exponentially. For temperatures over +60°C an additional securing is required.

Application temperatures, page 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).

Coefficient 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. If you observe the coefficient of friction, then the ideal shaft surface finish for iglidur® M250 bearings is Ra = 0.6mm. Diagrams 06 and 07 show the test results of iglidur® M250 plain bearings running against various shaft materials. Up to loads of 2MPa the shaft material plays a relatively small role for rotational movements. Therefore, a suitable shaft material must be considered for higher loads. These are hardened shafts, such as Cf53 or hard-chromed. Diagram 07 shows that iglidur® M250 is considerably better for rotational than for pivoting movements. However, it must be mentioned that pivoting movements often cause high vibrations. Here, iglidur® M250 can utilise its special dampening properties. In our test, these vibrations are excluded for clarity so that the comparison between rotation and pivoting operation is accurate.

Shaft materials, page 52

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

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.8	0.6	2.5
short-term	m/s	2.0	1.4	5.0

Table 03: Maximum surface speeds

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

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

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

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

iglidur® M250
+80°C
20MPa

Technical data

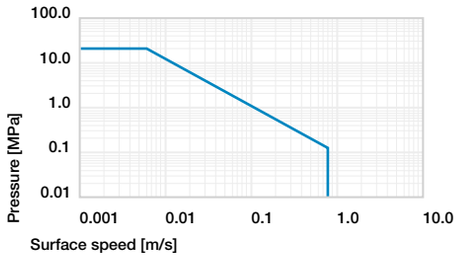

Diagram 01: Permissible pv values for iglidur® M250 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

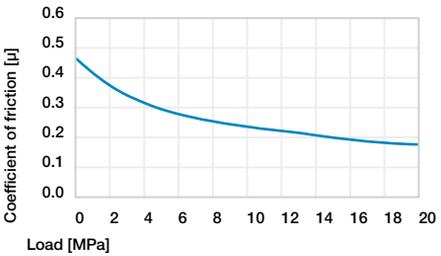

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

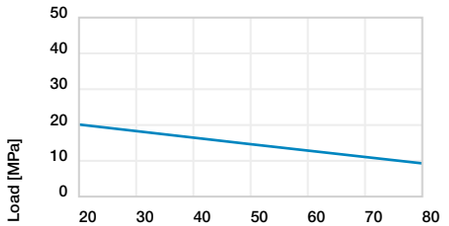

Diagram 02: Maximum recommended surface pressure as a function of temperature (20MPa at +20°C)

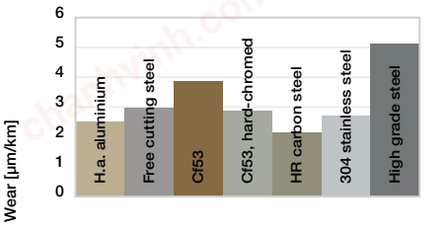

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

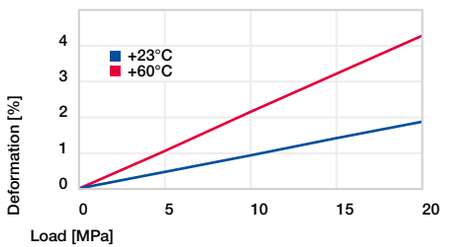

Diagram 03: Deformation under pressure and temperature

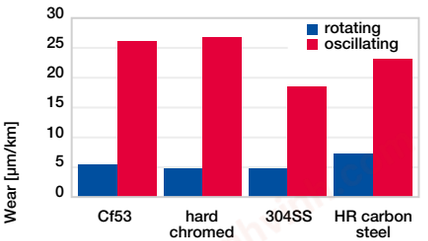

Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

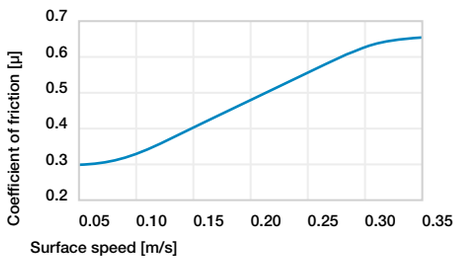

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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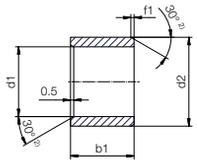
Bearing technology | Plain bearing | iglidur® M250

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 2795 and special dimensions

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

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
1.0		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 +0.080	5.0	3.0	MSM-0205-03
2.5		6.0	3.0	MSM-0206-03
3.0		5.0	3.0	MSM-0305-03
3.0		5.0	4.0	MSM-0305-04
3.0		6.0	3.0	MSM-0306-03
3.0		6.0	4.0	MSM-0306-04
4.0		5.5	4.0	MSM-0405-04
4.0		5.5	6.0	MSM-0405-06
4.0		7.0	3.0	MSM-0407-03
4.0		7.0	4.0	MSM-0407-04
4.0		7.0	6.0	MSM-0407-06
4.0		8.0	4.0	MSM-0408-04
4.0		8.0	6.0	MSM-0408-06
5.0		7.0	5.0	MSM-0507-05
5.0		7.0	10.0	MSM-0507-10
5.0	+0.030 +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		10.0	8.0	MSM-0610-08
6.0	+0.030 +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		11.0	8.0	MSM-0811-08
8.0	+0.040 +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
10.0		12.0	10.0	MSM-1012-10
10.0		12.0	12.0	MSM-1012-12

[3] After press-fit. *Testing methods, page 57*

iglidur® M250
+80°C
20MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
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		14.0	8.0	MSM-1014-08
10.0		14.0	10.0	MSM-1014-10
10.0	+0.040 +0.130	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		16.0	20.0	MSM-1416-20
14.0		16.0	25.0	MSM-1416-25
14.0		16.0	29.0	MSM-1416-29
14.0	+0.050 +0.160	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		22.0	16.0	MSM-1622-16
16.0		22.0	20.0	MSM-1622-20
16.0		22.0	25.0	MSM-1622-25
18.0	+0.050 +0.160	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		24.0	8.0	MSM-2224-08
22.0		25.0	15.0	MSM-2225-15
22.0		25.0	20.0	MSM-2225-20
22.0		25.0	25.0	MSM-2225-25
22.0		25.0	30.0	MSM-2225-30
22.0	+0.065 +0.195	26.0	15.0	MSM-2226-15
22.0		28.0	10.0	MSM-2228-10
22.0		28.0	15.0	MSM-2228-15
22.0		28.0	20.0	MSM-2228-20
22.0		28.0	30.0	MSM-2228-30
24.0		27.0	15.0	MSM-2427-15
24.0		27.0	20.0	MSM-2427-20
24.0		27.0	25.0	MSM-2427-25
24.0		27.0	30.0	MSM-2427-30
24.0		30.0	15.0	MSM-2430-15
24.0		30.0	20.0	MSM-2430-20
24.0		30.0	30.0	MSM-2430-30
25.0		28.0	12.0	MSM-2528-12
25.0		28.0	15.0	MSM-2528-15
25.0		28.0	20.0	MSM-2528-20
25.0		28.0	25.0	MSM-2528-25
25.0		28.0	30.0	MSM-2528-30
25.0		30.0	20.0	MSM-2530-20

[3] After press-fit. *Testing methods, page 57*

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Bearing technology | Plain bearing | iglidur® M250

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
25.0		30.0	30.0	MSM-2530-30
25.0		30.0	40.0	MSM-2530-40
25.0		32.0	10.0	MSM-2532-10
25.0		32.0	12.0	MSM-2532-12
25.0		32.0	20.0	MSM-2532-20
25.0		32.0	30.0	MSM-2532-30
25.0		32.0	35.0	MSM-2532-35
25.0		32.0	40.0	MSM-2532-40
26.0		30.0	20.0	MSM-2630-20
26.0		32.0	30.0	MSM-2632-30
27.0		34.0	20.0	MSM-2734-20
27.0		34.0	30.0	MSM-2734-30
27.0	+0.065 +0.195	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	+0.065 +0.195	38.0	20.0	MSM-3038-20
30.0		38.0	30.0	MSM-3038-30
30.0		38.0	40.0	MSM-3038-40
30.0		40.0	40.0	MSM-3040-40
32.0		36.0	20.0	MSM-3236-20
32.0		36.0	30.0	MSM-3236-30
32.0		36.0	40.0	MSM-3236-40
32.0		40.0	20.0	MSM-3240-20
32.0		40.0	30.0	MSM-3240-30
32.0		40.0	40.0	MSM-3240-40
35.0		39.0	20.0	MSM-3539-20
35.0		39.0	30.0	MSM-3539-30
35.0		39.0	40.0	MSM-3539-40
35.0		39.0	50.0	MSM-3539-50
35.0		42.0	50.0	MSM-3542-50
40.0	+0.080 +0.240	44.0	20.0	MSM-4044-20
40.0		44.0	30.0	MSM-4044-30
40.0		44.0	40.0	MSM-4044-40
40.0		44.0	50.0	MSM-4044-50
40.0		46.0	20.0	MSM-4046-20
45.0		50.0	20.0	MSM-4550-20
45.0		50.0	30.0	MSM-4550-30
45.0		50.0	40.0	MSM-4550-40
45.0		50.0	50.0	MSM-4550-50
50.0		55.0	20.0	MSM-5055-20
50.0		55.0	30.0	MSM-5055-30
50.0		55.0	40.0	MSM-5055-40
50.0		55.0	50.0	MSM-5055-50
50.0		55.0	60.0	MSM-5055-60
75.0	+0.100 +0.290	80.0	60.0	MSM-7580-60

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/M250

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

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

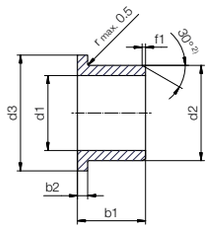
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® M250
+80°C
20MPa

Bearing technology | Plain bearing | iglidur® M250

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 2795 and special dimensions

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

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
1.0		3.0	5.0	2.0	1.00	MFM-0103-02
1.5	+0.020 +0.080	4.0	6.0	2.0	1.00	MFM-0104-02
2.0		5.0	8.0	3.0	1.50	MFM-0205-03
2.5		6.0	9.0	3.0	1.50	MFM-0206-03
3.0		6.0	9.0	4.0	1.50	MFM-0306-04
4.0		8.0	12.0	4.0	2.00	MFM-0408-04
4.0		8.0	12.0	6.0	2.00	MFM-0408-06
4.0		8.0	12.0	8.0	2.00	MFM-0408-08
5.0		9.0	13.0	5.0	2.00	MFM-0509-05
5.0		9.0	13.0	6.0	2.00	MFM-0509-06
5.0		9.0	13.0	8.0	2.00	MFM-0509-08
6.0	+0.030 +0.105	8.0	12.0	4.0	1.00	MFM-0608-04
6.0		8.0	12.0	8.0	1.00	MFM-0608-08
6.0		10.0	14.0	4.0	2.00	MFM-0610-04
6.0		10.0	14.0	6.0	2.00	MFM-0610-06
6.0		10.0	14.0	10.0	2.00	MFM-0610-10
6.0		11.0	14.0	4.0	2.00	MFM-0611-04
6.0		12.0	14.0	6.0	3.00	MFM-0612-06
6.0		12.0	14.0	10.0	3.00	MFM-0612-10
7.0		11.0	15.0	6.0	2.00	MFM-0711-06
7.0		11.0	15.0	8.0	2.00	MFM-0711-08
8.0		9.0	13.0	5.5	0.50	MFM-0809-055
8.0	+0.040 +0.130	10.0	15.0	5.5	1.00	MFM-0810-05
8.0		10.0	15.0	7.5	1.00	MFM-0810-07
8.0		10.0	15.0	9.5	1.00	MFM-0810-09
8.0		11.0	13.0	5.0	2.00	MFM-0811-05
8.0		11.0	13.0	8.0	2.00	MFM-0811-08
8.0		12.0	16.0	6.0	2.00	MFM-0812-06
8.0		12.0	16.0	8.0	2.00	MFM-0812-08
8.0		12.0	16.0	12.0	2.00	MFM-0812-12
8.0		14.0	18.0	6.0	3.00	MFM-0814-06
8.0		14.0	16.0	6.0	3.00	MFM-081416-06
8.0		14.0	18.0	10.0	3.00	MFM-0814-10
8.0		14.0	16.0	10.0	3.00	MFM-081416-10
9.0		14.0	19.0	6.0	2.00	MFM-0914-06
9.0		14.0	19.0	10.0	2.00	MFM-0914-10
9.0		14.0	19.0	14.0	2.00	MFM-0914-14
10.0		12.0	18.0	7.0	1.00	MFM-1012-07
10.0		12.0	18.0	9.0	1.00	MFM-1012-09
10.0		12.0	18.0	9.0	1.00	MFM-1014-09
10.0		12.0	18.0	12.0	1.00	MFM-1012-12
10.0	+0.040 +0.130	12.0	18.0	17.0	1.00	MFM-1012-17
10.0		14.0	19.0	8.0	2.00	MFM-101419-08
10.0		14.0	19.0	10.0	2.00	MFM-1014-10
10.0		14.0	19.0	12.0	1.50	MFM-101419-12
10.0		14.0	20.0	12.0	2.00	MFM-101420-12
10.0		14.0	17.5	14.0	1.00	MFM-1014-14
10.0		14.0	17.5	19.0	1.00	MFM-1014-19
10.0		14.0	17.5	24.0	1.00	MFM-1014-24
10.0		14.0	17.5	34.0	1.00	MFM-1014-34
10.0		16.0	20.0	6.0	3.00	MFM-101620-06
10.0		16.0	22.0	8.0	3.00	MFM-1016-08
10.0		16.0	22.0	10.0	3.00	MFM-1016-10
10.0		16.0	20.0	10.0	3.00	MFM-101620-10
10.0		16.0	22.0	16.0	3.00	MFM-1016-16

[3] After press-fit. *Testing methods, page 57*

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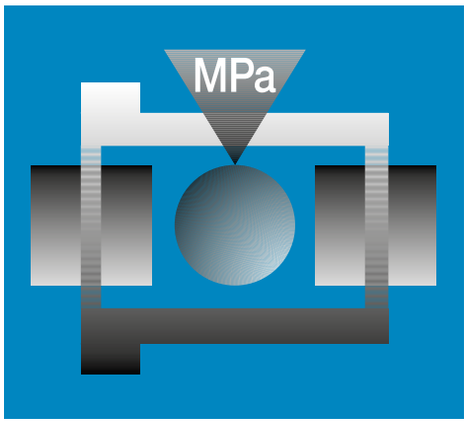
d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
12.0		14.0	20.0	7.0	1.00	**MFM-1214-07**
12.0		14.0	20.0	9.0	1.00	**MFM-1214-09**
12.0		14.0	20.0	12.0	1.00	**MFM-1214-12**
12.0		14.0	20.0	17.0	1.00	**MFM-1214-17**
12.0		16.0	22.0	10.0	2.00	**MFM-1216-10**
12.0		16.0	22.0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

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

[3] After press-fit. *Testing methods, page 57*





Specialist for pivoting, rolling applications and more

Low coefficient of friction and wear on almost every shaft

iglidur® P210

When to use it?

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

When not to use?

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

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Bearing technology | Plain bearing | iglidur® P210

Ø
4.0 – 50.0mm



Also available as:

Bar stock, round bar
Page 672

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
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Two hole flange bearings
Page 603

Moulded special parts
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igubal® spherical balls
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Specialist for pivoting, rolling applications and more

Low coefficient of friction and wear on almost every shaft

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

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

Typical application areas

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

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

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Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® P210
+100°C
50MPa

Technical data

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

–40°C up to +100°C

50MPa

HB

RoHS-II

ISO 3547-1

Table 01: Material properties

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

Moisture absorption
Under standard climatic conditions, the moisture absorption of iglidur® P210 plain bearings is approximately 0.3% weight. The saturation limit in water is 0.5% weight. This low moisture absorption is well below the values of iglidur® G.

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

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

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

Mechanical properties
With increasing temperatures, the compressive strength of iglidur® P210 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® P210 at radial loads. At the maximum recommended surface pressure of 50MPa at room temperature the deformation is less than 3%.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® P210

Permissible surface speeds

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

Surface speed, page 44

Temperature

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

Application temperatures, page 49
Additional securing, page 49

Friction and wear

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

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

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

Shaft materials, page 52

Installation tolerances

iglidur® P210 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.0	0.7	3.0
short-term	m/s	2.0	1.4	4.0

Table 03: Maximum surface speeds

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

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

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

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

iglidur® P210
+100°C
50MPa

Technical data

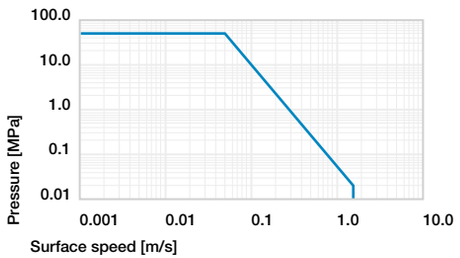

Diagram 01: Permissible pv values for iglidur® P210 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

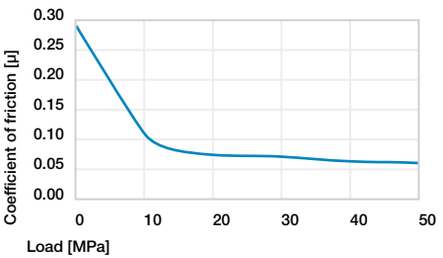

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

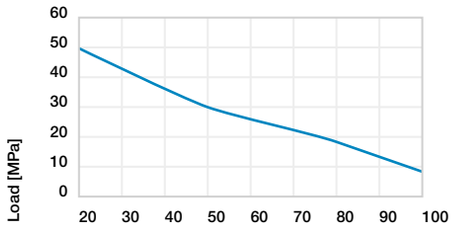

Diagram 02: Maximum recommended surface pressure as a function of temperature (50MPa at +20°C)

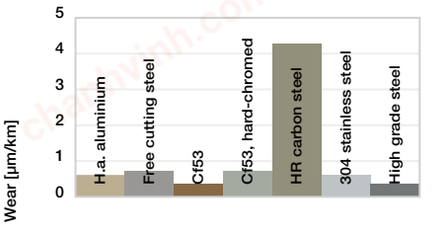

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

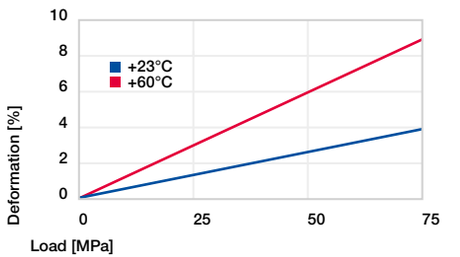

Diagram 03: Deformation under pressure and temperature

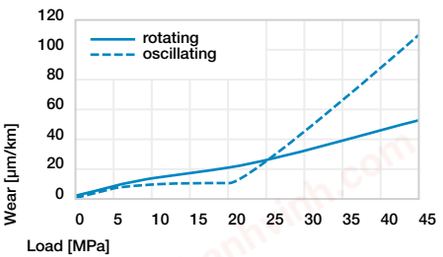

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

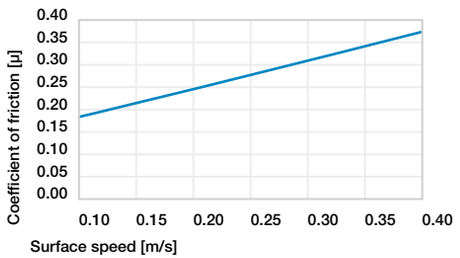

Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

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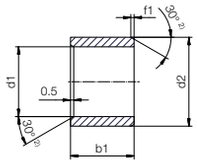
Bearing technology | Plain bearing | iglidur® P210

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

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

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

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

[3] After press-fit. *Testing methods, page 57*

iglidur® P210
+100°C
50MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
32.0		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	+0.050	39.0	30.0	P210SM-3539-30
35.0	+0.150	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		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	+0.050	50.0	50.0	P210SM-4550-50
50.0	+0.150	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*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/P210

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

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

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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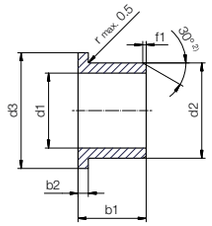
Bearing technology | Plain bearing | iglidur® P210

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

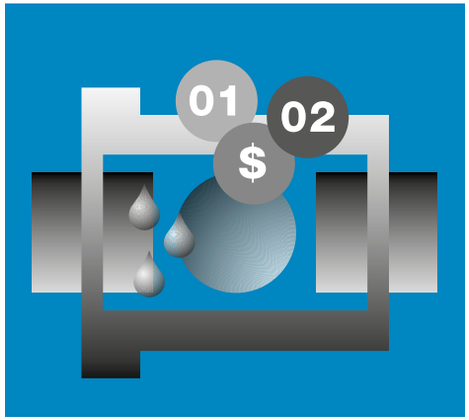
Order example: P210FM-0608-04 – no minimum order quantity.
P210 iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 04 Total length b1

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

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

[3] After press-fit. *Testing methods, page 57*





The low-cost all-rounder

Well-balanced properties at a low price

iglidur® P230

When to use it?

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

When not to use?

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

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Bearing technology | Plain bearing | iglidur® P230

Ø
–



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

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

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

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

Typical application areas

- Industrial series-production applications
- Machine building and jig construction
- Two-wheeler

Descriptive technical specifications	–	+
Wear resistance at +23°C		
Wear resistance at +90°C		
Wear resistance at +150°C		
Low coefficient of friction		
Low moisture absorption		
Wear resistance under water		
High media resistance		
Resistant to edge pressures		
Suitable for shock and impact loads		
Resistant to dirt		

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® P230
+110°C
60MPa

Technical data

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

–30°C up to +110°C

60MPa

HB

RoHS-II

ISO 3547-1

Table 01: Material properties

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

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® P230 plain bearings is approximately 0.1% weight. The saturation limit in water is 0.3% weight. This low moisture absorption is well below the values of iglidur® M250 or iglidur® G.

Vacuum

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

Radiation resistance

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

Resistance to weathering

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

Mechanical properties

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

Diagram 03 shows the elastic deformation of iglidur® P230 at radial loads. At the maximum recommended surface pressure of 60MPa 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

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Bearing technology | Plain bearing | iglidur® P230

Permissible surface speeds

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

Surface speed, page 44

Temperature

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

Application temperatures, page 49
Additional securing, page 49

Friction and wear

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

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

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

Shaft materials, page 52

Installation tolerances

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

Testing methods, page 57

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.0	0.7	3.0
short-term	m/s	2.0	1.4	4.0

Table 03: Maximum surface speeds

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

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

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

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

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

Technical data

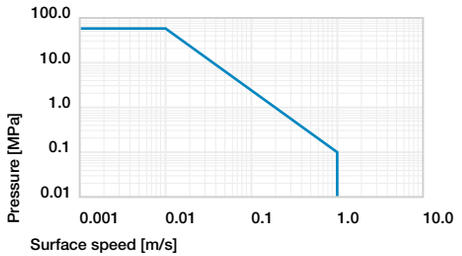

Diagram 01: Permissible pv values for iglidur® P230 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

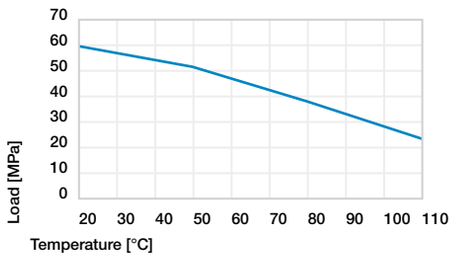

Diagram 02: Maximum recommended surface pressure as a function of temperature (60MPa at +20°C)

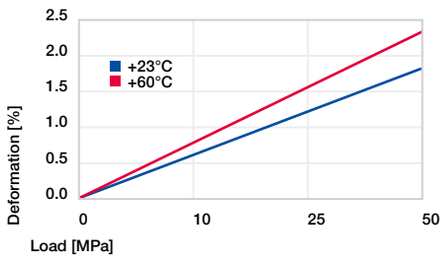

Diagram 03: Deformation under pressure and temperature

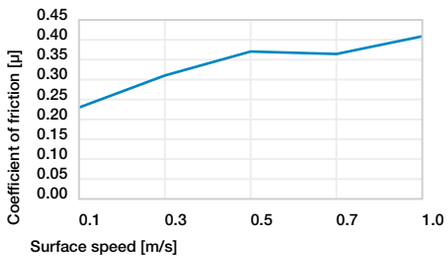

Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

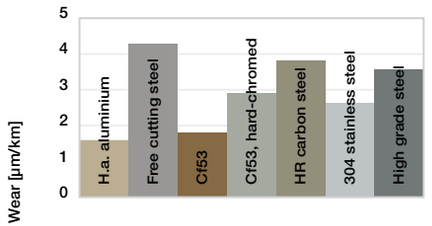

Diagram 05: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

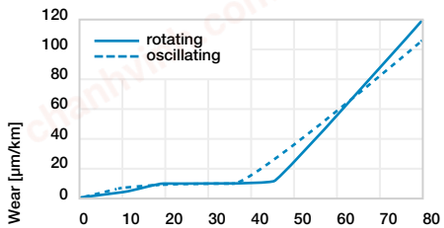

Diagram 06: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

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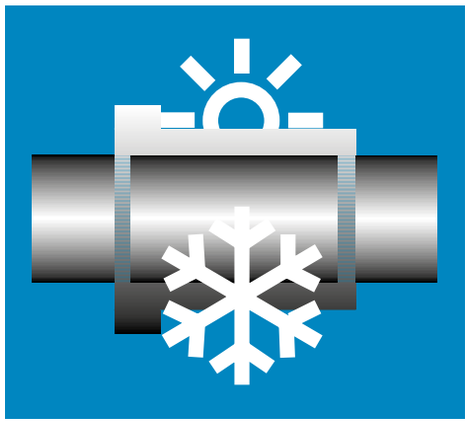

The cost-effective outdoor all-rounder

No moisture absorption even with high ambient humidity

iglidur® P

When to use it?

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

When not to use?

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

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Bearing technology | Plain bearing | iglidur® P

Ø
3.0 – 95.0mm



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

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

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

Typical application areas

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

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 584

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

iglidur® P
+130°C
50MPa

Technical data

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

Table 01: Material properties

–40°C up to +130°C

50MPa

HB

RoHS-II

ISO 3547-1

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

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

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

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

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

Mechanical properties
With increasing temperatures, the compressive strength of iglidur® P plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® P at radial loads. At the maximum recommended surface pressure of 50MPa the deformation is less than 4%.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® P

Permissible surface speeds

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

Surface speed, page 44

Temperature

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

Application temperatures, page 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). iglidur® P plain bearings obtain a minimum coefficient of friction on shafts with a surface finish Ra from 0.1 – 0.2µm. Both smoother and rougher shaft surface finish cause the friction to clearly increase.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

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

Shaft materials, page 52

Installation tolerances

iglidur® P plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.0	0.7	3.0
short-term	m/s	2.0	1.4	4.0

Table 03: Maximum surface speeds

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

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

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

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

iglidur® P
+130°C
50MPa

Technical data

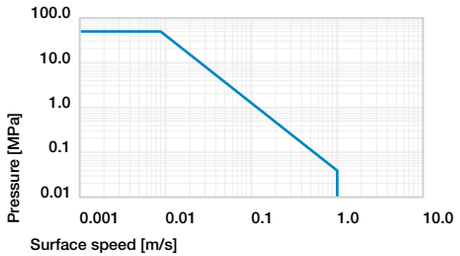

Diagram 01: Permissible pv values for iglidur® P plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

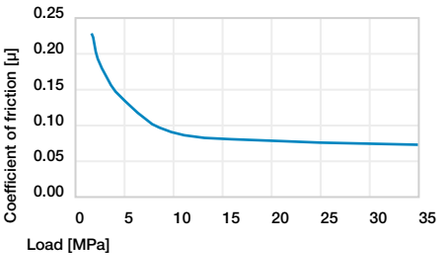

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

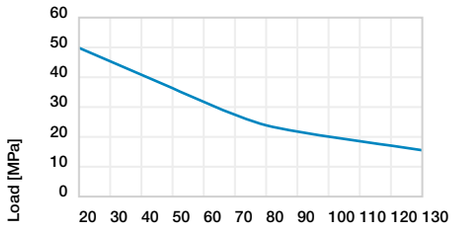

Diagram 02: Maximum recommended surface pressure as a function of temperature (50MPa at +20°C)

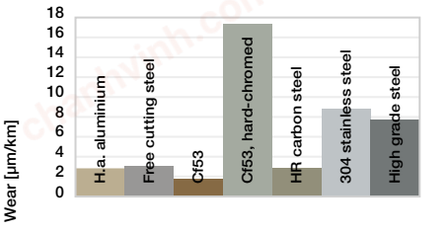

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

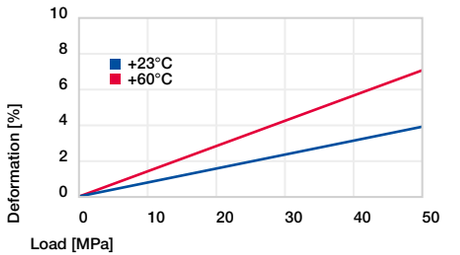

Diagram 03: Deformation under pressure and temperature

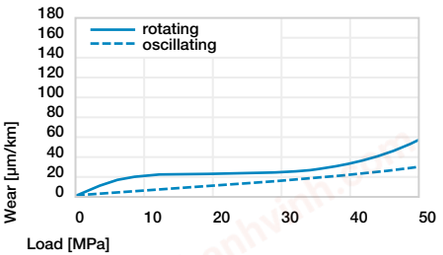

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

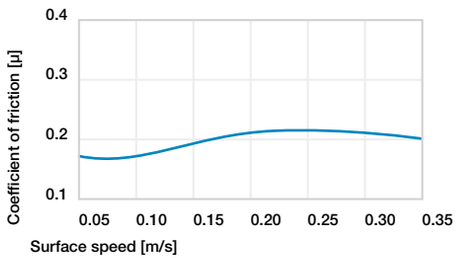

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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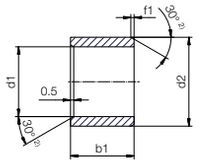
Bearing technology | Plain bearing | iglidur® P

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

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

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

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
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	18.0	25.0	PSM-1618-25
16.0	+0.102	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	23.0	30.0	PSM-2023-30
22.0	+0.124	24.0	42.0	PSM-2224-42
22.0		24.0	45.0	PSM-2224-45
22.0		25.0	15.0	PSM-2225-15
22.0		25.0	20.0	PSM-2225-20
22.0		25.0	25.0	PSM-2225-25
22.0		25.0	30.0	PSM-2225-30
22.0		25.0	45.0	PSM-2225-45
23.0		25.0	37.0	PSM-2325-37
23.0		25.0	58.0	PSM-2325-58
23.0		25.0	68.0	PSM-2325-68

[3] After press-fit. *Testing methods, page 57*

iglidur® P
+130°C
50MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
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		28.0	30.0	PSM-2528-30
25.0	+0.040	28.0	35.0	PSM-2528-35
26.0	+0.124	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

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
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	+0.050	44.0	58.0	PSM-4044-58
45.0	+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	+0.060	65.0	50.0	PSM-6065-50
60.0	+0.180	65.0	60.0	PSM-6065-60
65.0		70.0	50.0	PSM-6570-50
75.0		80.0	80.0	PSM-7580-80
90.0	+0.072	95.0	100.0	PSM-9095-100
95.0	+0.212	100.0	100.0	PSM-95100-100

[3] After press-fit. *Testing methods, page 57*

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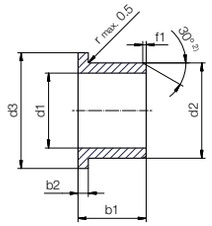
Bearing technology | Plain bearing | iglidur® P

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

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

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

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

[3] After press-fit. *Testing methods, page 57*

iglidur® P
+130°C
50MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
30.0	+0.040	34.0	42.0	26.0	2.00	**PFM-3034-26**
30.0	+0.124	34.0	42.0	30.0	2.00	**PFM-3034-30**
30.0		34.0	42.0	37.0	2.00	**PFM-3034-37**
35.0		39.0	47.0	16.0	2.00	**PFM-3539-16**
35.0	+0.050	39.0	47.0	26.0	2.00	**PFM-3539-26**
40.0	+0.150	44.0	52.0	30.0	2.00	**PFM-4044-30**
40.0		44.0	52.0	40.0	2.00	**PFM-4044-40**
45.0	+0.050	50.0	58.0	50.0	2.00	**PFM-4550-50**
50.0	+0.150	55.0	63.0	50.0	2.00	**PFM-5055-50**
60.0		65.0	73.0	40.0	2.00	**PFM-6065-40**
60.0	+0.060	65.0	73.0	50.0	2.00	**PFM-6065-50**
70.0	+0.180	75.0	83.0	50.0	2.00	**PFM-7075-50**
80.0		85.0	93.0	100.0	2.50	**PFM-8085-100**

[3] After press-fit. *Testing methods, page 57*

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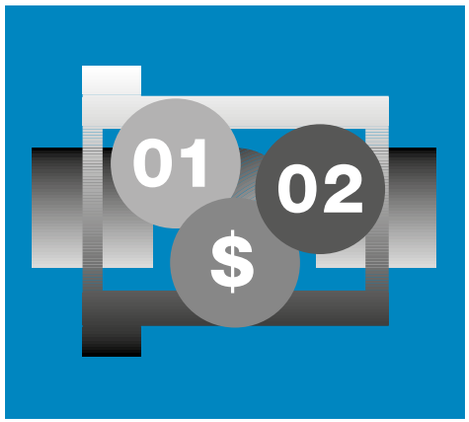

Versatile and cost-effective

For medium temperatures and wet environments

iglidur® K

When to use it?

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

When not to use?

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

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Bearing technology | Plain bearing | iglidur® K

Ø
6.0 – 20.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

Versatile and cost-effective
For medium temperatures and wet environments

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

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

Typical application areas

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

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® K
+170°C
50MPa

Technical data

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

Table 01: Material properties

–40°C up to +170°C

50MPa

HB

RoHS-II

ISO 3547-1

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

Moisture absorption

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

Vacuum

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

Radiation resistance

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

Resistance to weathering

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

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® K plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® K at radial loads. At the maximum recommended surface pressure of 50MPa the deformation is less than 3%. A possible deformation could be, among others, dependant on the duty cycle of the load.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® K

Permissible surface speeds

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

Surface speed, page 44

Temperature

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

Application temperatures, page 49
Additional securing, page 49

Friction and wear

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

Coefficient of friction and surfaces, page 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® K a ground surface with an average surface finish Ra = 0.15 – 0.2μm is recommended. Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® K. It is important to notice that with increasing loads, the recommended hardness of the shaft increases. The "soft" shafts tend to wear more easily and thus increase the wear of the overall system, if the loads exceed 2MPa. The comparison of rotation and pivoting shows that the wear is almost identical at a pressure up to 5MPa. The higher the loads, the greater the difference (diagram 07).

Shaft materials, page 52

Installation tolerances

iglidur® K plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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). In relation to the installation tolerance, the inner diameter changes with the absorption of humidity.

Testing methods, page 57

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.0	0.7	3.0
short-term	m/s	2.0	1.4	4.0

Table 03: Maximum surface speeds

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

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

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

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

Technical data

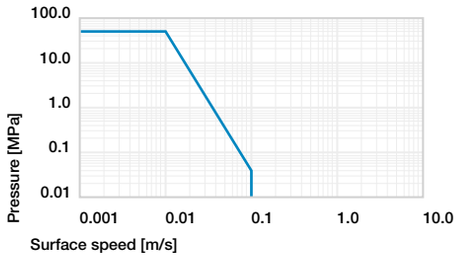

Diagram 01: Permissible pv values for iglidur® K plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

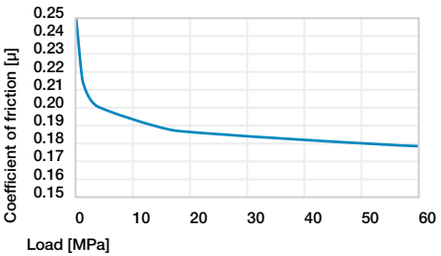

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

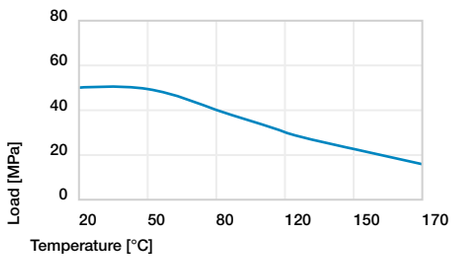

Diagram 02: Maximum recommended surface pressure as a function of temperature (50MPa at +20°C)

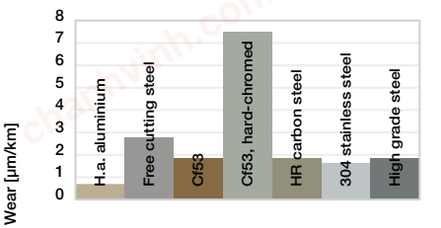

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

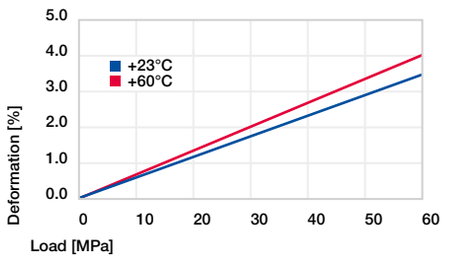

Diagram 03: Deformation under pressure and temperature

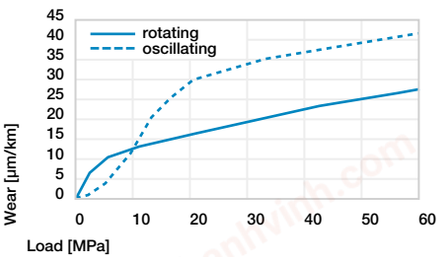

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

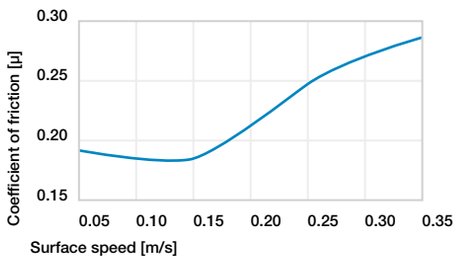

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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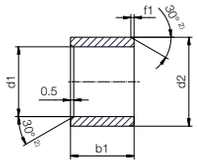
Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

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

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

[3] After press-fit. *Testing methods, page 57*

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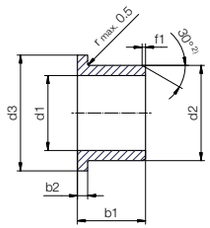
+170°C
50MPa

Bearing technology | Plain bearing | iglidur® K

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 6–12	Ø 12–30
f1 [mm]	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

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

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

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/K

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

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

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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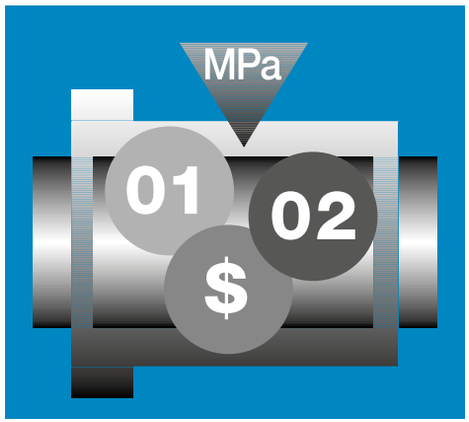

Low-cost material for high-volume production

For applications with mainly static loads

iglidur® GLW

When to use it?

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

When not to use?

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

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Bearing technology | Plain bearing | iglidur® GLW

Ø
–



Also available as:

Bar stock, round bar
Page 673

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

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

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

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

Typical application areas

- Automation
- Automotive
- Industrial handling

Descriptive technical specifications	–	+
Wear resistance at +23°C	■■	
Wear resistance at +90°C	■■	
Wear resistance at +150°C	■	
Low coefficient of friction	■■	
Low moisture absorption	■	
Wear resistance under water	■	
High media resistance	■■■	
Resistant to edge pressures	■■■	
Suitable for shock and impact loads	■■■■	
Resistant to dirt	■■■■	

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® GLW
+100°C
80MPa

Technical data

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

–40°C up to +100°C

80MPa

HB

RoHS-II

ISO 3547-1

Table 01: Material properties

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

Moisture absorption

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

Vacuum

In vacuum, any present moisture is released as vapour.

Radiation resistance

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

Resistance to weathering

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

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® GLW plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® GLW at radial loads. At the maximum recommended surface pressure of 80MPa 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

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Bearing technology | Plain bearing | iglidur® GLW

Permissible surface speeds

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

Surface speed, page 44

Temperature

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

Application temperatures, page 49
Additional securing, page 49

Friction and wear

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

Coefficient of friction and surfaces, page 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® GLW a ground surface with an average surface finish Ra = 0.1 – 0.2μm is recommended. Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® GLW. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 52

Installation tolerances

iglidur® GLW plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.8	0.6	2.5
short-term	m/s	1.0	0.7	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.10 – 0.24	0.09	0.04	0.04

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

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

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

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

iglidur® GLW
+100°C
80MPa

Technical data

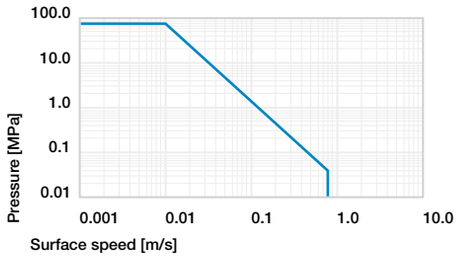

Diagram 01: Permissible pv values for iglidur® GLW plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

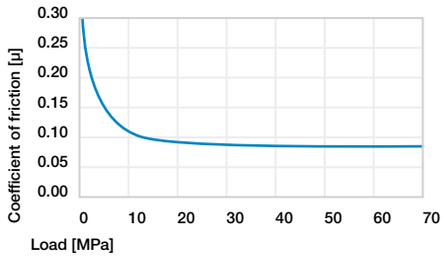

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

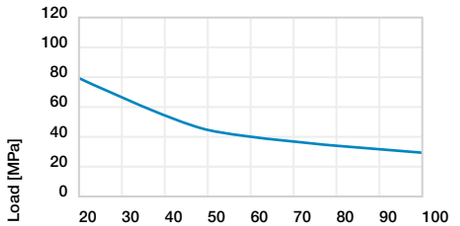

Diagram 02: Maximum recommended surface pressure as a function of temperature (80MPa at +20°C)

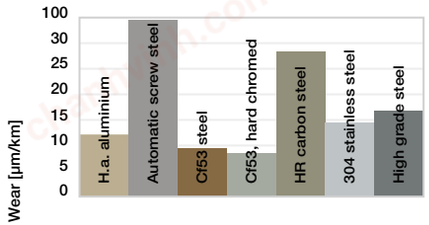

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

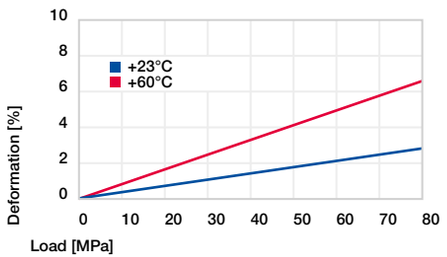

Diagram 03: Deformation under pressure and temperature

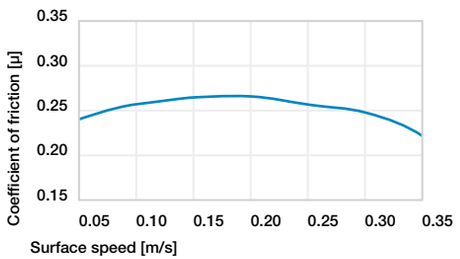

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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Materials for long service life

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Materials for long service life

Every iglidur® plain bearing is naturally optimised for wear, but the materials in this group are characterised by very low rates of wear and therefore the ability to provide a long service life.
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.

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert



iglidur® J
The versatile endurance runner

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



iglidur® W300
The classic endurance runner up to 30MPa

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



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

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



iglidur® J3B
Proven long-life material in black

Temperature [°C] [123]	+90	– +
Surface pressure [MPa] [124]	44	– +
Coefficient of friction [µ] [125]	0.17	– +
Wear [µm/km] [125]	0.07	– +
Price index		– +



iglidur® J350
Endurance runner with high dimensional stability at high temperatures

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



iglidur® J260
Ideal for plastic shafts

Temperature [°C] [123]	+120	– +
Surface pressure [MPa] [124]	40	– +
Coefficient of friction [µ] [125]	0.16	– +
Wear [µm/km] [125]	0.11	– +
Price index		– +

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

Endurance runner



iglidur® W360
Endurance runner up to +180°C

Temperature [°C] [123]	+180	– +
Surface pressure [MPa] [124]	75	– +
Coefficient of friction [µ] [125]	0.07	– +
Wear [µm/km] [125]	0.24	– +
Price index		– +



iglidur® L250
For fast rotating applications

Temperature [°C] [123]	+90	– +
Surface pressure [MPa] [124]	45	– +
Coefficient of friction [µ] [125]	0.18	– +
Wear [µm/km] [125]	0.20	– +
Price index		– +



iglidur® L350
For high rotational speeds

Temperature [°C] [123]	+180	– +
Surface pressure [MPa] [124]	59	– +
Coefficient of friction [µ] [125]	0.12	– +
Wear [µm/km] [125]	1.50	– +
Price index		– +



iglidur® L500
For extreme rotational speeds

Temperature [°C] [123]	+250	– +
Surface pressure [MPa] [124]	70	– +
Coefficient of friction [µ] [125]	0.19	– +
Wear [µm/km] [125]	1.00	– +
Price index		– +



iglidur® R
Low-cost

Temperature [°C] [123]	+90	– +
Surface pressure [MPa] [124]	23	– +
Coefficient of friction [µ] [125]	0.20	– +
Wear [µm/km] [125]	0.95	– +
Price index		– +



iglidur® D
Low-cost with silicone

Temperature [°C] [123]	+90	– +
Surface pressure [MPa] [124]	23	– +
Coefficient of friction [µ] [125]	0.25	– +
Wear [µm/km] [125]	1.91	– +



iglidur® J200
Specialist for linear movement

Temperature [°C] [123]	+90	– +
Surface pressure [MPa] [124]	23	– +
Coefficient of friction [µ] [125]	0.15	– +
Wear [µm/km] [125]	1.30	– +
Price index		– +



iglidur® E7
Ideal for pivoting movement

Temperature [°C] [123]	+70	– +
Surface pressure [MPa] [124]	18	– +
Coefficient of friction [µ] [125]	0.13	– +
Wear [µm/km] [125]	0.14	– +
Price index		– +

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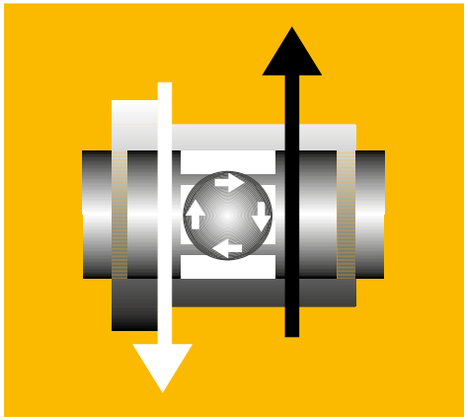

The versatile endurance runner

Wear resistance on (almost) all shafts, very low coefficient of friction

iglidur® J

When to use it?

- For high speeds
- When highest wear resistance at low to medium pressures is required
- Low wear against different shafts
- When a low coefficient of friction in dry operation is requested
- For vibration dampening
- When good chemical resistance is required
- For best performance with soft shaft materials
- Low moisture absorption

When not to use?

- When high pressures occur
  iglidur® G, iglidur® W300
- When short-term temperatures higher than +120°C occur
  iglidur® G, iglidur® Z
- When a cost-effective plain bearing for occasional movements is necessary
  iglidur® G

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Bearing technology | Plain bearing | iglidur® J

Ø 1.5 – 120.0mm



Also available as:

Bar stock, round bar
Page 674

Bar stock, plate
Page 684

tribo-tape liner
Page 691

Piston rings
Page 584

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 848

The versatile endurance runner

Wear resistance on (almost) all shafts, very low coefficient of friction

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

- Over 250 sizes available from stock
- High wear resistance
- Low coefficient of friction
- Vibration-dampening
- High chemical resistance
- Recommended for soft shafts
- Low moisture absorption

Typical application areas

- Automation
- Printing industry
- Beverage industry
- Aerospace engineering
- Cleanroom

Descriptive technical specifications	–	+
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

Technical data

General properties			Testing method
Density	g/cm³	1.49	
Colour		yellow	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	1.3	
Coefficient of friction, dynamic, against steel	µ	0.06 – 0.18	
pv value, max. (dry)	MPa · m/s	0.34	
Mechanical properties			
Flexural modulus	MPa	2,400	DIN 53457
Flexural strength at +20°C	MPa	73	DIN 53452
Compressive strength	MPa	60	
Max. recommended surface pressure (+20°C)	MPa	35	
Shore D hardness		74	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+120	
Min. application temperature	°C	–50	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	10	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties

–50°C up to +90°C

35MPa

HB

RoHS-II

ISO 3547-1

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

Moisture absorption
Under standard climatic conditions, the moisture absorption of iglidur® J plain bearings is approximately 0.3% weight. The saturation limit in water is 1.3% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

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

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

Resistance to weathering
iglidur® J plain bearings are resistant to weathering. The material properties are slightly affected. Discoloration occurs.

Mechanical properties
With increasing temperatures, the compressive strength of iglidur® J plain bearings decreases. Diagram 02 shows this inverse relationship. However, at the long-term maximum temperature of +90°C the permissible surface pressure is around 20MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this. With a maximum recommended surface pressure of 35MPa, iglidur® J plain bearings are not suitable for extreme loads. Diagram 03 shows the elastic deformation of iglidur® J at radial loads.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® J

Permissible surface speeds

The low coefficient of friction and the very low stick slip tendency of iglidur® J plain bearings are particularly important at very low speeds. However, iglidur® J can also be used for high speeds of over 1m/s. In both cases the static friction is very low and stick slip does not occur. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 44

Temperature

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

Application temperatures, page 49
Additional securing, page 49

Friction and wear

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

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

The friction and wear are also dependent, to a large degree, on the shaft material. With increasing shaft surface finish, the coefficient of friction also increases. For iglidur® J a ground surface with an average surface finish Ra = 0.1 – 0.3μm is recommended. Diagrams 06 and 07 show the test results of iglidur® J plain bearings running against various shaft materials. When compared to most iglidur® materials, iglidur® J plain bearings have very low wear results at low loads compared with all shaft materials tested. Also, for increasing loads up to 5MPa, 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

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, 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

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.5	1.1	8.0
short-term	m/s	3.0	2.1	10.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.06 – 0.18	0.09	0.04	0.04

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

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

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

Technical data

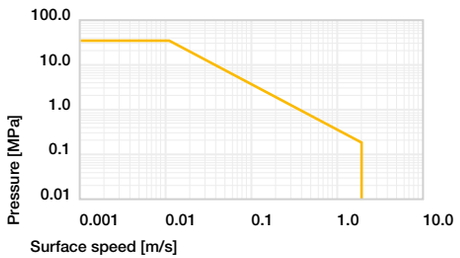

Diagram 01: Permissible pv values for iglidur® J plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

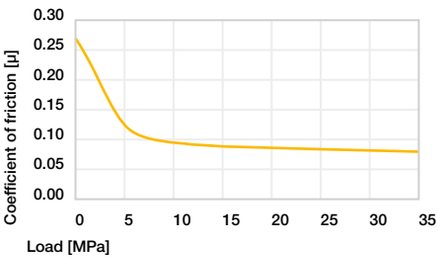

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

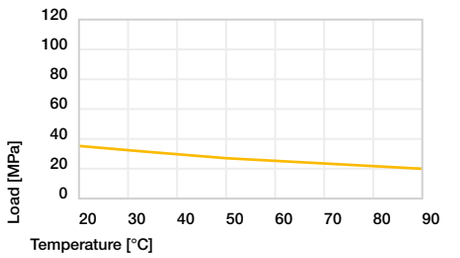

Diagram 02: Maximum recommended surface pressure as a function of temperature (35MPa at +20°C)

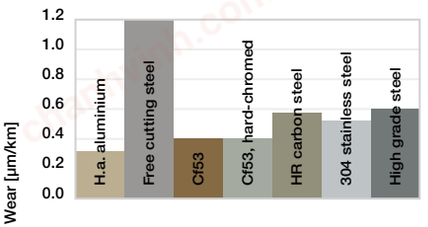

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

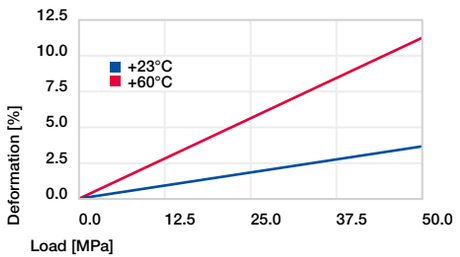

Diagram 03: Deformation under pressure and temperature

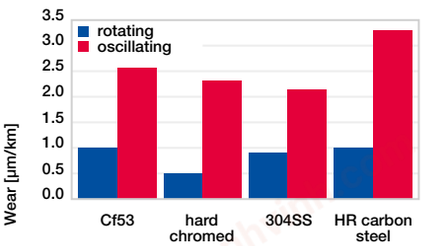

Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

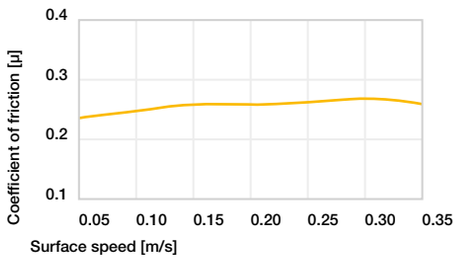

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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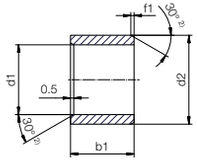
Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: JSM-0104-02 – no minimum order quantity.
J iglidur® material S Sleeve bearing M Metric 01 Inner Ø d1 04 Outer Ø d2 02 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
1.5	+0.014 +0.054	4.0	2.0	JSM-0104-02
2.0		3.5	7.0	JSM-0203-07
2.0	+0.020 +0.080	5.0	2.5	JSM-0205-02
2.5		6.0	2.5	JSM-0206-02
3.0	+0.014 +0.054	4.5	5.0	JSM-0304-05
3.0		4.5	9.0	JSM-0304-09
3.0	+0.020 +0.080	5.0	4.0	JSM-0305-04
3.0		7.0	14.0	JSM-0307-14
3.0		8.0	4.0	JSM-0308-04
3.0		8.0	5.0	JSM-0308-05
4.0	+0.020 +0.068	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		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	+0.010 +0.058	7.0	3.0	JSM-0607-03
6.0		7.0	5.0	JSM-0607-05
6.0		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 +0.068	8.0	4.3	JSM-0608-043
6.0		8.0	6.0	JSM-0608-06
6.0		8.0	8.0	JSM-0608-08
6.0	+0.020 +0.068	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	+0.025 +0.083	9.0	5.0	JSM-0709-05
7.0		9.0	7.0	JSM-0709-07
7.0		9.0	9.0	JSM-0709-09
7.0		9.0	12.5	JSM-0709-125
8.0		10.0	3.0	JSM-0810-03
8.0		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 +0.130	12.0	10.0	JSM-0812-10
8.0		12.0	12.0	JSM-0812-12
9.0	+0.025 +0.083	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		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
10.0		14.0	16.0	JSM-1014-16

[3] After press-fit. *Testing methods, page 57*

iglidur® J
+90°C
35MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
12.0	+0.032 +0.102	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		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 +0.160	16.0	12.0	JSM-1216-12
12.0		16.0	17.0	JSM-1216-17
13.0	+0.032 +0.102	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		16.0	8.0	JSM-1416-08
14.0		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	+0.032 +0.102	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		17.0	25.0	JSM-1517-25
15.0		18.0	10.0	JSM-1518-10
16.0	+0.050 +0.160	18.0	10.0	JSM-1618-10
16.0		18.0	12.0	JSM-1618-12
16.0		18.0	15.0	JSM-1618-15
16.0		18.0	20.0	JSM-1618-20
16.0		18.0	25.0	JSM-1618-25
16.0	+0.050 +0.160	20.0	16.0	JSM-1620-16
16.0		22.0	16.0	JSM-1622-16
16.0		22.0	20.0	JSM-1622-20
17.0	+0.032 +0.102	19.0	6.0	JSM-1719-06
18.0		20.0	10.0	JSM-1820-10
18.0		20.0	15.0	JSM-1820-15
18.0		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 +0.124	22.0	20.0	JSM-2022-20
20.0		22.0	30.0	JSM-2022-30
20.0		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	+0.065 +0.195	26.0	6.0	JSM-2026-06
20.0		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	+0.040 +0.124	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		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	+0.065 +0.195	30.0	40.0	JSM-2530-40
25.0		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	+0.040 +0.124	34.0	20.0	JSM-3034-20
30.0		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
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		39.0	50.0	JSM-3539-50

[3] After press-fit. *Testing methods, page 57*

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d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
36.0		40.0	45.0	**JSM-3640-45**
40.0		44.0	20.0	**JSM-4044-20**
40.0	+0.050	44.0	30.0	**JSM-4044-30**
40.0	+0.150	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	50.0	30.0	**JSM-4550-30**
45.0	+0.125	50.0	40.0	**JSM-4550-40**
45.0		50.0	50.0	**JSM-4550-50**
50.0		55.0	20.0	**JSM-5055-20**
50.0	+0.050	55.0	30.0	**JSM-5055-30**
50.0	+0.150	55.0	40.0	**JSM-5055-40**
50.0		55.0	50.0	**JSM-5055-50**
50.0		55.0	60.0	**JSM-5055-60**
55.0		60.0	60.0	**JSM-5560-60**
60.0		65.0	60.0	**JSM-6065-60**
65.0	+0.060	70.0	50.0	**JSM-6570-50**
70.0	+0.180	75.0	60.0	**JSM-7075-60**
75.0		80.0	60.0	**JSM-7580-60**
80.0		85.0	100.0	**JSM-8085-100**
80.0		86.0	60.0	**JSM-8086-60**
100.0	+0.072	105.0	100.0	**JSM-100105-100**
110.0	+0.212	115.0	60.0	**JSM-110115-60**

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/J

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

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

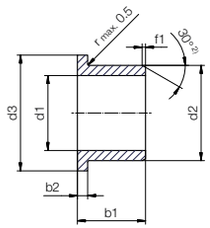
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® J
+90°C
35MPa

Bearing technology | Plain bearing | iglidur® J

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: JFM-0304-03 **– no minimum order quantity.**
J iglidur® material F Flange bearing M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
3.0		4.5	7.5	3.0	0.75	**JFM-0304-03**
3.0	+0.014 +0.054	4.5	7.5	4.5	0.75	**JFM-0304-045**
3.0		4.5	7.5	5.0	0.75	**JFM-0304-05**
3.0	+0.020 +0.080	6.0	9.0	10.0	1.50	**JFM-0306-10**
4.0		5.5	9.5	3.0	0.75	**JFM-0405-03**
4.0		5.5	9.5	6.0	0.75	**JFM-0405-06**
5.0		6.0	10.0	5.0	0.50	**JFM-0506-05**
5.0		7.0	11.0	3.0	1.00	**JFM-0507-03**
5.0	+0.020 +0.068	7.0	11.0	5.0	1.00	**JFM-0507-05**
6.0		8.0	12.0	4.0	1.00	**JFM-0608-04**
6.0		8.0	12.0	6.0	1.00	**JFM-0608-06**
6.0		8.0	12.0	8.0	1.00	**JFM-0608-08**
6.0		8.0	12.0	10.0	1.00	**JFM-0608-10**
6.0	+0.030 +0.105	10.0	14.0	10.0	2.00	**JFM-0610-10**
8.0		10.0	15.0	3.8	1.00	**JFM-0810-038**
8.0		10.0	15.0	5.0	1.00	**JFM-0810-05**
8.0		10.0	15.0	6.0	1.00	**JFM-0810-06**
8.0		10.0	15.0	7.0	1.00	**JFM-0810-07**
8.0		10.0	15.0	8.0	1.00	**JFM-0810-08**
8.0	+0.025	10.0	15.0	9.5	1.00	**JFM-0810-09**
8.0	+0.083	10.0	15.0	10.0	1.00	**JFM-0810-10**
8.0		10.0	12.0	16.0	1.00	**JFM-081012-16**
8.0		10.0	12.5	10.0	1.00	**JFM-0810125-10**
8.0		10.0	14.0	10.0	1.00	**JFM-081014-10**
8.0		10.0	16.0	11.0	2.00	**JFM-081016-11**
8.0		12.0	16.0	6.0	2.00	**JFM-0812-06**
8.0		12.0	16.0	9.0	2.00	**JFM-0812-09**
10.0		12.0	18.0	5.0	1.00	**JFM-1012-05**
10.0		12.0	18.0	7.0	1.00	**JFM-1012-07**
10.0		12.0	18.0	9.0	1.00	**JFM-1012-09**
10.0		12.0	18.0	10.0	1.00	**JFM-1012-10**
10.0	+0.025	12.0	18.0	12.0	1.00	**JFM-1012-12**
10.0	+0.083	12.0	18.0	15.0	1.00	**JFM-1012-15**
10.0		12.0	18.0	17.0	1.00	**JFM-1012-17**
10.0		12.0	18.0	18.0	1.00	**JFM-1012-18**
10.0		12.0	15.0	3.5	1.00	**JFM-101215-035**
10.0		14.0	17.5	14.0	1.00	**JFM-1014-14**
10.0		16.0	22.0	16.0	3.00	**JFM-1016-16**
11.0		13.0	18.0	5.0	1.00	**JFM-1113-05**
12.0		14.0	20.0	4.0	1.00	**JFM-1214-04**
12.0		14.0	20.0	5.0	1.00	**JFM-1214-05**
12.0		14.0	20.0	7.0	1.00	**JFM-1214-07**
12.0	+0.032	14.0	20.0	9.0	1.00	**JFM-1214-09**
12.0	+0.102	14.0	20.0	12.0	1.00	**JFM-1214-12**
12.0		14.0	20.0	15.0	1.00	**JFM-1214-15**
12.0		14.0	20.0	17.0	1.00	**JFM-1214-17**
12.0		14.0	18.0	4.5	1.00	**JFM-121418-045**
12.0		14.0	18.0	10.0	1.00	**JFM-121418-10**
12.0	+0.050 +0.160	18.0	24.0	8.0	3.00	**JFM-1218-08**
12.0		18.0	24.0	12.0	3.00	**JFM-1218-12**
12.0		18.0	22.0	20.0	3.00	**JFM-1218-20**
14.0	+0.032 +0.102	16.0	22.0	3.0	1.00	**JFM-1416-03**
14.0		16.0	22.0	10.0	1.00	**JFM-1416-10**
14.0		16.0	22.0	12.0	1.00	**JFM-1416-12**

[3] After press-fit. *Testing methods, page 57*

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Bearing technology | Plain bearing | iglidur® J

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
14.0		16.0	22.0	17.0	1.00	**JFM-1416-17**
14.0		18.0	22.0	20.0	2.00	**JFM-141822-20**
14.0		18.0	25.0	24.0	2.00	**JFM-141825-24**
15.0	+0.032	17.0	23.0	4.0	1.00	**JFM-1517-04**
15.0	+0.102	17.0	23.0	5.5	1.00	**JFM-1517-055**
15.0		17.0	23.0	9.0	1.00	**JFM-1517-09**
15.0		17.0	23.0	12.0	1.00	**JFM-1517-12**
15.0		17.0	23.0	17.0	1.00	**JFM-1517-17**
15.0	+0.050 +0.160	21.0	27.0	20.0	3.00	**JFM-1521-20**
16.0		18.0	24.0	6.0	1.00	**JFM-1618-06**
16.0	+0.032	18.0	24.0	12.0	1.00	**JFM-1618-12**
16.0	+0.102	18.0	24.0	16.0	1.00	**JFM-1618-16**
16.0		18.0	24.0	17.0	1.00	**JFM-1618-17**
16.0	+0.050	22.0	28.0	12.0	3.00	**JFM-1622-12**
16.0	+0.160	22.0	28.0	15.0	3.00	**JFM-1622-15**
17.0		19.0	25.0	9.0	1.00	**JFM-1719-09**
17.0		19.0	25.0	21.0	1.00	**JFM-1719-21**
18.0		20.0	26.0	4.0	1.00	**JFM-1820-04**
18.0	+0.032	20.0	26.0	12.0	1.00	**JFM-1820-12**
18.0	+0.102	20.0	26.0	17.0	1.00	**JFM-1820-17**
18.0		20.0	26.0	22.0	1.00	**JFM-1820-22**
18.0		21.0	25.0	12.0	1.00	**JFM-1821-12**
19.0		22.0	26.0	23.0	1.00	**JFM-1922-23**
19.0		22.0	26.0	36.0	1.00	**JFM-1922-36**
20.0		23.0	30.0	11.5	1.50	**JFM-2023-11**
20.0	+0.040	23.0	30.0	15.5	1.50	**JFM-2023-15.5**
20.0	+0.124	23.0	30.0	16.5	1.50	**JFM-2023-16**
20.0		23.0	30.0	21.5	1.50	**JFM-2023-21**
20.0	+0.065	26.0	32.0	15.0	3.00	**JFM-2026-15**
20.0	+0.195	26.0	32.0	20.0	3.00	**JFM-2026-20**
20.0		26.0	32.0	25.0	3.00	**JFM-2026-25**
22.0		25.0	32.0	8.0	1.50	**JFM-222532-08**
24.0	+0.040	30.0	36.0	30.0	3.00	**JFM-2430-30**
25.0	+0.124	28.0	35.0	6.0	1.50	**JFM-2528-06**
25.0		28.0	35.0	11.5	1.50	**JFM-2528-11**
25.0		28.0	35.0	12.0	1.50	**JFM-2528-12**

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
25.0		28.0	35.0	14.5	1.50	**JFM-2528-14.5**
25.0	+0.040	28.0	35.0	21.5	1.50	**JFM-2528-21**
25.0	+0.124	28.0	39.0	5.0	1.50	**JFM-252839-05**
25.0		28.0	39.0	7.5	1.50	**JFM-252839-075**
25.0	+0.065	32.0	38.0	20.0	4.00	**JFM-2532-20**
25.0	+0.195	32.0	38.0	25.0	4.00	**JFM-2532-25**
28.0		32.0	35.0	7.0	2.00	**JFM-283235-07**
28.0		32.0	39.0	20.0	2.00	**JFM-283239-20**
30.0	+0.040	32.0	40.0	12.0	1.00	**JFM-303240-12**
30.0	+0.124	34.0	42.0	16.0	2.00	**JFM-3034-16**
30.0		34.0	42.0	20.0	2.00	**JFM-3034-20**
30.0		34.0	42.0	26.0	2.00	**JFM-3034-26**
30.0	+0.080 +0.240	38.0	44.0	20.0	4.00	**JFM-3038-20**
30.0	+0.065	38.0	44.0	30.0	4.00	**JFM-3038-30**
30.0	+0.195	38.0	44.0	36.0	4.00	**JFM-3038-36**
35.0		39.0	47.0	12.0	2.00	**JFM-3539-12**
35.0		39.0	47.0	16.0	2.00	**JFM-3539-16**
35.0		39.0	47.0	26.0	2.00	**JFM-3539-26**
40.0		44.0	52.0	20.0	2.00	**JFM-4044-20**
40.0	+0.050	44.0	52.0	30.0	2.00	**JFM-4044-30**
40.0	+0.150	44.0	52.0	40.0	2.00	**JFM-4044-40**
45.0		50.0	58.0	12.0	2.00	**JFM-4550-12**
45.0		50.0	58.0	20.0	2.00	**JFM-4550-20**
45.0		50.0	58.0	50.0	2.00	**JFM-4550-50**
50.0		55.0	63.0	11.5	2.00	**JFM-5055-115**
50.0		55.0	63.0	50.0	2.00	**JFM-5055-50**
55.0		60.0	68.0	50.0	2.00	**JFM-5560-50**
60.0	+0.060	65.0	73.0	37.0	2.00	**JFM-6065-37**
60.0	+0.180	65.0	73.0	50.0	2.00	**JFM-6065-50**
60.0		70.0	78.0	60.0	2.00	**JFM-6570-60**
70.0		75.0	83.0	50.0	2.00	**JFM-7075-50**
90.0		95.0	103.0	100.0	2.50	**JFM-9095-100**
100.0	+0.072	105.0	113.0	100.0	2.50	**JFM-100105-100**
110.0	+0.212	115.0	123.0	100.0	2.50	**JFM-110115-100**
120.0		125.0	133.0	100.0	2.50	**JFM-120125-100**

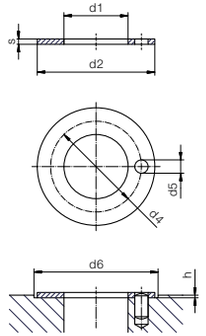
[3] After press-fit. *Testing methods, page 57*

iglidur® J
+90°C
35MPa

Bearing technology | Plain bearing | iglidur® J

Thrust washer (form T)





Dimensions according to ISO 3547-1 and special dimensions

Order example: JTM-1224-015 **– no minimum order quantity.**
J iglidur® material T Thrust washer M Metric 12 Inner Ø d1 24 Outer Ø d2 015 Thickness s

d1 +0.25 [mm]	d2 –0.25 [mm]	d4 –0.12 +0.12 [mm]	d5 +0.375 +0.125 [mm]	h +0.2/–0.2 [mm]	d6 +0.12 [mm]	s –0.05 [mm]	Part No.
12	24	18	1.5	1	24	1.5	**JTM-1224-015**
12	34	[4]	[4]	1	34	1.5	**JTM-1234-015**
14	20	[4]	[4]	1	20	1.5	**JTM-1420-015**
20	36	28	3	1	36	1.5	**JTM-2036-015**
28	42	35	3	1	42	2	**JTM-2842-020**
30	39	[4]	[4]	1	39	1.5	**JTM-3039-015**
56	70	[4]	[4]	0.7	70	1	**JTM-5670-010**
139	188	[4]	[4]	1.5	188	2	**JTM-139188-020**

[4] Design without fixing hole

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/J

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

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

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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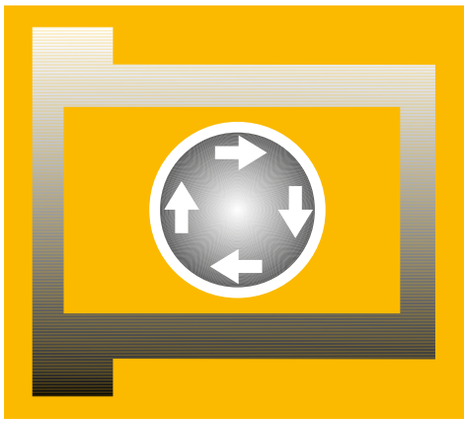

The classic endurance runner up to 30MPa

Excellent wear resistance on (virtually) all shafts

iglidur® W300

When to use it?

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

When not to use?

- For high loads starting at 50MPa
  iglidur® Q
- When continuous operating temperatures are higher than +90°C
  iglidur® H, iglidur® X
- For very wet environments
  iglidur® P
- When a cost-effective plain bearing is required
  iglidur® G

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Bearing technology | Plain bearing | iglidur® W300

Ø
2.0 –
120.0mm



Also available as:

Bar stock, round bar
Page 674

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 584

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 845

The classic endurance runner up to 30MPa
Excellent wear resistance on (virtually) all shafts

iglidur® W300 gives excellent wear resistance, even in harsh environments or when used with rough shafts. Of all iglidur® materials, iglidur® W300 is the most resistant to these conditions.

- Over 400 sizes available from stock
- Very long service life
- Low coefficient of friction
- Very wear-resistant
- Suitable for applications with soft shafts
- Lubrication-free
- Maintenance-free

Typical application areas

- Automation
- Printing industry
- Woodworking
- Mechatronics
- Test engineering and quality assurance

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® W300
+90°C
60MPa

Technical data

General properties			Testing method
Density	g/cm³	1.24	
Colour		yellow	
Max. moisture absorption at +23°C and 50% r.h.	% weight	1.3	DIN 53495
Max. moisture absorption	% weight	6.5	
Coefficient of friction, dynamic, against steel	µ	0.08 – 0.23	
pv value, max. (dry)	MPa · m/s	0.23	
Mechanical properties			
Flexural modulus	MPa	3,500	DIN 53457
Flexural strength at +20°C	MPa	125	DIN 53452
Compressive strength	MPa	61	
Max. recommended surface pressure (+20°C)	MPa	60	
Shore D hardness		77	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+180	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	9	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

–40°C up to +90°C

60MPa

HB

RoHS-II

ISO 3547-1

Table 01: Material properties

iglidur® W300 gives excellent wear resistance, even in harsh environments or when used with rough shafts. This material is the most tolerant of these external effects out of all the iglidur® range.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® W300 plain bearings is approximately 1.3% weight. The saturation limit in water is 6.5% weight. This must be taken into account for these types of applications.

Vacuum

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

Radiation resistance

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

Resistance to weathering

iglidur® W300 plain bearings have limited resistance to weathering. The material properties are affected. Discoloration occurs. Practical tests under real application conditions are recommended.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® W300 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
iglidur® W300 presents a very high compressive strength in spite of its high elasticity. Diagram 03 shows the elastic deformation of iglidur® W300 at radial loads. At the maximum recommended surface pressure of 60MPa the deformation is less than 3%.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® W300

Permissible surface speeds

Even at higher surface speeds, the coefficient of friction of iglidur® W300 plain bearings remains the same. In relation to other materials, somewhat higher surface speeds can be attained, for example, up to 1.5m/s rotating and up to 6.0m/s linear. The 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

Temperature

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

Application temperatures, page 49
Additional securing, page 49

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the load. In contrast to other iglidur® materials, the coefficient of friction of iglidur® W300 remains consistently low at higher rotational speeds.

Coefficient of friction and surfaces, page 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. 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 surface finish of 0.4 – 0.5μm have proven to be the best. For iglidur® W300, the wear resistance is still excellent with this surface finish as the friction adopts the minimum value. Diagram 06 shows results of testing different shafts. Hardened shafts are preferred for applications for higher loads. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 52

Installation tolerances

iglidur® W300 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.0	0.7	4.0
short-term	m/s	1.5	1.8	6.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.08 – 0.23	0.09	0.04	0.04

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

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

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

Technical data

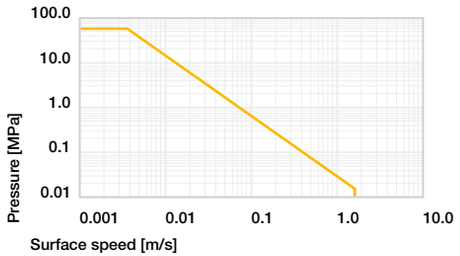

Diagram 01: Permissible pv values for iglidur® W300 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

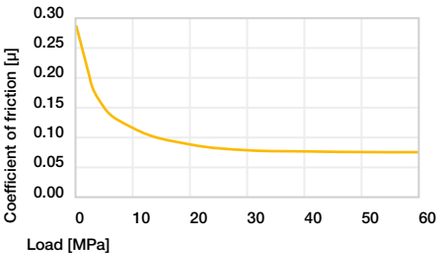

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

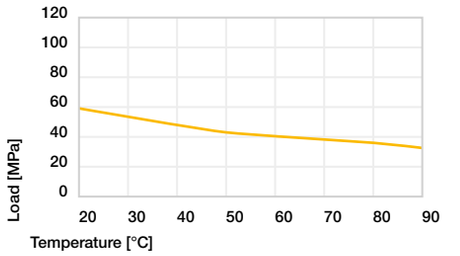

Diagram 02: Maximum recommended surface pressure as a function of temperature (60MPa at +20°C)

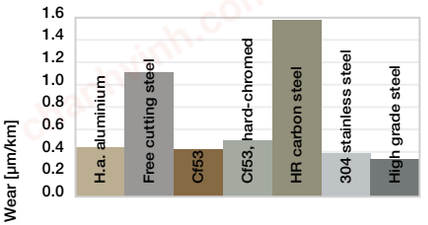

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

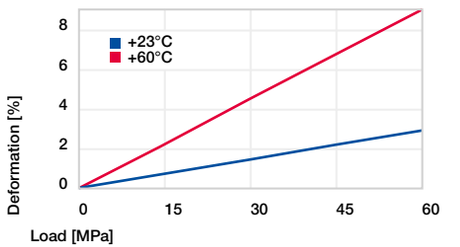

Diagram 03: Deformation under pressure and temperature

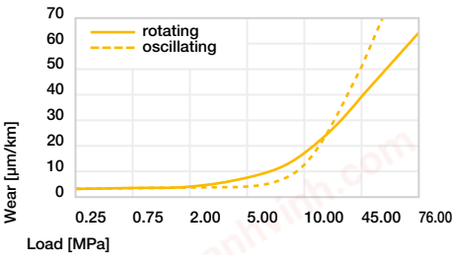

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

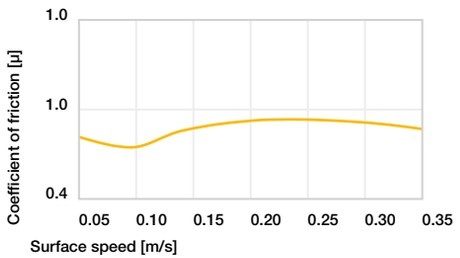

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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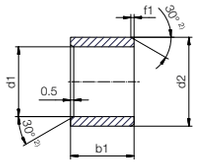
Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: WSM-0203-03 – no minimum order quantity.
W300 iglidur® material S Sleeve bearing M Metric 02 Inner Ø d1 03 Outer Ø d2 03 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
2.0		3.5	3.0	WSM-0203-03
2.0		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		5.5	8.0	WSM-0405-08
4.0	+0.020	5.5	10.0	WSM-0405-10
5.0	+0.068	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	7.0	14.0	WSM-0607-14
	+0.058			
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

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
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		12.0	6.0	WSM-1012-06
10.0	+0.025	12.0	8.0	WSM-1012-08
10.0	+0.083	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		14.0	10.0	WSM-1214-10
12.0	+0.032	14.0	12.0	WSM-1214-12
12.0	+0.102	14.0	15.0	WSM-1214-15
12.0		14.0	20.0	WSM-1214-20
12.0		14.0	25.0	WSM-1214-25
13.0		15.0	7.0	WSM-1315-07
13.0		15.0	10.0	WSM-1315-10
13.0		15.0	15.0	WSM-1315-15
13.0		15.0	20.0	WSM-1315-20

[3] After press-fit. *Testing methods, page 57*

iglidur® W300
+90°C
60MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
14.0		16.0	7.2	WSM-1416-07
14.0		16.0	10.0	WSM-1416-10
14.0		16.0	15.0	WSM-1416-15
14.0		16.0	20.0	WSM-1416-20
14.0		16.0	25.0	WSM-1416-25
14.0		16.0	33.0	WSM-1416-33
15.0		17.0	10.0	WSM-1517-10
15.0		17.0	15.0	WSM-1517-15
15.0		17.0	20.0	WSM-1517-20
15.0		17.0	25.0	WSM-1517-25
16.0		18.0	7.0	WSM-1618-07
16.0		18.0	8.0	WSM-1618-08
16.0	+0.032	18.0	11.5	WSM-1618-11
16.0	+0.102	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		23.0	10.0	WSM-2023-10
20.0		23.0	12.0	WSM-2023-12
20.0		23.0	15.0	WSM-2023-15
20.0	+0.040	23.0	20.0	WSM-2023-20
20.0	+0.124	23.0	23.0	WSM-2023-23
20.0		23.0	25.0	WSM-2023-25
20.0		23.0	30.0	WSM-2023-30
22.0		24.0	15.0	WSM-2224-15
22.0		24.0	20.0	WSM-2224-20
22.0		24.0	30.0	WSM-2224-30
22.0		24.0	35.0	WSM-2224-35
22.0		24.0	45.0	WSM-2224-45
22.0		25.0	15.0	WSM-2225-15
22.0		25.0	20.0	WSM-2225-20
22.0		25.0	25.0	WSM-2225-25

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
22.0		25.0	30.0	WSM-2225-30
24.0		27.0	15.0	WSM-2427-15
24.0		27.0	20.0	WSM-2427-20
24.0		27.0	25.0	WSM-2427-25
24.0		27.0	30.0	WSM-2427-30
25.0		28.0	12.0	WSM-2528-12
25.0		28.0	14.0	WSM-2528-14
25.0		28.0	15.0	WSM-2528-15
25.0		28.0	20.0	WSM-2528-20
25.0		28.0	25.0	WSM-2528-25
25.0		28.0	30.0	WSM-2528-30
25.0		28.0	50.0	WSM-2528-50
26.0		30.0	16.0	WSM-2630-16
26.0	+0.040	30.0	25.0	WSM-2630-25
28.0	+0.124	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		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	+0.050	40.0	7.0	WSM-3540-07
40.0	+0.150	44.0	20.0	WSM-4044-20
40.0		44.0	30.0	WSM-4044-30
40.0		44.0	40.0	WSM-4044-40
40.0		44.0	50.0	WSM-4044-50
45.0		50.0	20.0	WSM-4550-20
45.0		50.0	30.0	WSM-4550-30
45.0		50.0	40.0	WSM-4550-40
45.0		50.0	50.0	WSM-4550-50
50.0		55.0	20.0	WSM-5055-20
50.0		55.0	30.0	WSM-5055-30

[3] After press-fit. *Testing methods, page 57*

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d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
50.0		55.0	40.0	**WSM-5055-40**
50.0	+0.050	55.0	50.0	**WSM-5055-50**
50.0	+0.150	55.0	55.0	**WSM-5055-55**
50.0		55.0	60.0	**WSM-5055-60**
55.0		60.0	40.0	**WSM-5560-40**
55.0	+0.060	60.0	60.0	**WSM-5560-60**
60.0	+0.180	65.0	30.0	**WSM-6065-30**
60.0		65.0	60.0	**WSM-6065-60**

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
65.0		70.0	60.0	**WSM-6570-60**
70.0	+0.060	75.0	60.0	**WSM-7075-60**
75.0	+0.180	80.0	100.0	**WSM-7580-100**
80.0		85.0	100.0	**WSM-8085-100**
80.0		85.0	20.0	**WSM-8085-20**
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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10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

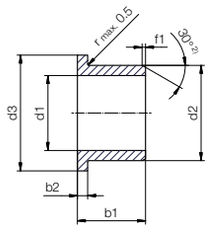
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® W300
+90°C
60MPa

Bearing technology | Plain bearing | iglidur® W300

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: WFM-0204-03 **– no minimum order quantity.**
W300 iglidur® material F Flange bearing M Metric 02 Inner Ø d1 04 Outer Ø d2 03 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
2.5		4.0	6.5	3.0	0.75	**WFM-0204-03**
3.0	+0.014 +0.054	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		5.5	9.5	3.0	0.75	**WFM-0405-03**
4.0	+0.020 +0.068	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		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	+0.020 +0.068	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		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	+0.025 +0.083	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**

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
10.0		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	+0.025	12.0	18.0	9.0	1.00	**WFM-1012-09**
10.0	+0.083	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		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	+0.032	14.0	20.0	20.0	1.00	**WFM-1214-20**
13.0	+0.102	15.0	22.0	6.0	1.00	**WFM-1315-06**
14.0		16.0	22.0	4.0	1.00	**WFM-1416-04**
14.0		16.0	22.0	5.0	1.00	**WFM-1416-05**
14.0		16.0	22.0	8.0	1.00	**WFM-1416-08**
14.0		16.0	22.0	12.0	1.00	**WFM-1416-12**
14.0		16.0	22.0	17.0	1.00	**WFM-1416-17**
14.0		16.0	22.0	29.0	1.00	**WFM-1416-29**
15.0		17.0	23.0	9.0	1.00	**WFM-1517-09**
15.0		17.0	23.0	12.0	1.00	**WFM-1517-12**
15.0		17.0	23.0	17.0	1.00	**WFM-1517-17**

[3] After press-fit. *Testing methods, page 57*

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d1	d1 Tolerance[3]	d2	d3 d13[3]	b1 h13	b2 h13	Part No.
[mm]		[mm]	[mm]	[mm]	[mm]	
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	8.0	1.50	**WFM-2023-08**
20.0		23.0	30.0	8.5	1.50	**WFM-2023-085**
20.0		23.0	30.0	11.5	1.50	**WFM-2023-11**
20.0		23.0	30.0	14.5	1.50	**WFM-2023-14**
20.0		23.0	30.0	16.5	1.50	**WFM-2023-16**
20.0		23.0	30.0	21.5	1.50	**WFM-2023-21**
24.0	+0.040	27.0	32.0	10.5	1.50	**WFM-2427-10**
25.0	+0.124	28.0	35.0	11.5	1.50	**WFM-2528-11**
25.0		28.0	35.0	16.5	1.50	**WFM-2528-16**
25.0		28.0	35.0	21.5	1.50	**WFM-2528-21**
25.0		28.0	32.0	30.0	1.50	**WFM-2528-30**
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	+0.040	34.0	42.0	16.0	2.00	**WFM-3034-16**
30.0	+0.124	34.0	42.0	26.0	2.00	**WFM-3034-26**
30.0		34.0	42.0	37.0	2.00	**WFM-3034-37**
32.0		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	+0.060	65.0	73.0	60.0	2.00	**WFM-6065-60**
65.0	+0.180	70.0	78.0	60.0	2.00	**WFM-6570-60**
70.0		75.0	83.0	100.0	2.50	**WFM-7075-100**
75.0		80.0	88.0	100.0	2.50	**WFM-7580-100**
80.0		85.0	93.0	100.0	2.50	**WFM-8085-100**
90.0	+0.072	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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10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

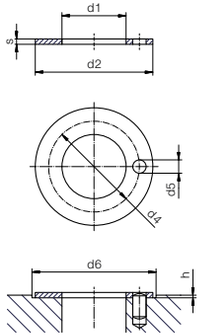
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® W300
+90°C
60MPa

Bearing technology | Plain bearing | iglidur® W300

Thrust washer (form T)





Dimensions according to ISO 3547-1 and special dimensions

Order example: WTM-0509-006 **– no minimum order quantity.**
W300 iglidur® material T Thrust washer M Metric 05 Inner Ø d1 09 Outer Ø d2 006 Thickness s

d1 +0.25	d2 –0.25	d4 –0.12 +0.12	d5 +0.375 +0.125	h +0.2/–0.2	d6 +0.12	s –0.05	Part No.
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
5	9.5	[4]	[4]	0.3	9.5	0.6	**WTM-0509-006**
6	20	13	1.5	1	20	1.5	**WTM-0620-015**
8	18	13	1.5	1	18	1.5	**WTM-0818-015**
10	18	[4]	[4]	0.7	18	1	**WTM-1018-010**
10	18	[4]	[4]	1	18	1.5	**WTM-1018-015**
12	24	18	1.5	1	24	1.5	**WTM-1224-015**
14	26	20	2	1	26	1.5	**WTM-1426-015**
15	24	19.5	1.5	1	24	1.5	**WTM-1524-015**
16	30	23	2	1	30	1.5	**WTM-1630-015**
18	32	25	2	1	32	1.5	**WTM-1832-015**
18	44	30	7	1	44	1.5	**WTM-1844-015**
20	36	28	3	1	36	1.5	**WTM-2036-015**
22	38	30	3	1	38	1.5	**WTM-2238-015**
24	42	33	3	1	42	1.5	**WTM-2442-015**
26	44	35	3	1	44	1.5	**WTM-2644-015**
28	40	38	4	1	48	1.5	**WTM-2840-015**
28	48	38	4	1	48	1.5	**WTM-2848-015**
32	54	43	4	1	54	1.5	**WTM-3254-015**
38	62	50	4	1	62	1.5	**WTM-3862-015**
42	66	54	4	1	66	1.5	**WTM-4266-015**
48	74	61	4	1.5	74	2	**WTM-4874-020**
52	78	65	4	1.5	78	2	**WTM-5278-020**
62	90	76	4	1.5	90	2	**WTM-6290-020**
82	110	[4]	[4]	1.5	110	2	**WTM-82110-020**
102	130	[4]	[4]	1.5	130	2	**WTM-102130-020**
120	150	[4]	[4]	1.5	150	2	**WTM-120150-020**

[4] Design without fixing hole

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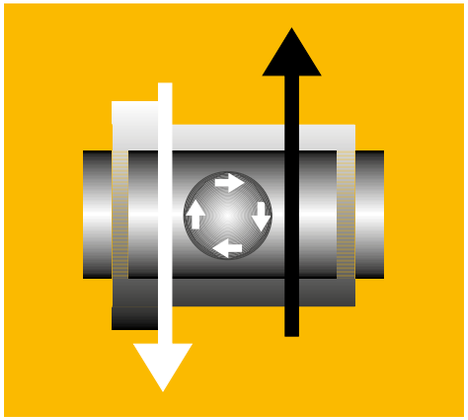

The new endurance runner: specialist for pivoting applications and pulsating loads

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

iglidur® J3

When to use it?

- When optimising wear resistance compared to iglidur® J
- When very low coefficients of friction in dry operation are required
- When high wear resistance at low loads is required
- When low moisture absorption is fundamental
- When good liquid media resistance is required

When not to use?

- When a wear-resistant plain bearing for linear motion is required
  iglidur® J
- When continuous operating temperatures are higher than +90°C
  iglidur® J260
- When radial surface pressure is higher than 45MPa
  iglidur® W300

chanhvinh.com

Bearing technology | Plain bearing | iglidur® J3

Ø
2.0 – 50.0mm



Also available as:

Bar stock, round bar
Page 675

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 584

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

The new endurance runner: specialist for pivoting applications and pulsating loads

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

iglidur® J3 is a material with improved wear resistance at low to medium loads and high speed. The service life is up to 300% longer than iglidur® J – the proven top endurance runner material.

- Low coefficient of friction
- High media resistance
- Low moisture absorption
- PTFE-free
- Lubrication-free
- Maintenance-free

Typical application areas

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

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® J3
+90°C
45MPa

Technical data

General properties			Testing method
Density	g/cm³	1.42	
Colour		yellow	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	1.3	
Coefficient of friction, dynamic, against steel	µ	0.06 – 0.20	
pv value, max. (dry)	MPa · m/s	0.50	
Mechanical properties			
Flexural modulus	MPa	2,700	DIN 53457
Flexural strength at +20°C	MPa	70	DIN 53452
Compressive strength	MPa	60	
Max. recommended surface pressure (+20°C)	MPa	45	
Shore D hardness		73	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+120	
Min. application temperature	°C	–50	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	13	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties

–50°C up to +90°C

45MPa

HB

RoHS-II

ISO 3547-1

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

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® J3 plain bearings is approximately 0.3% weight. The saturation limit in water is 1.3% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® J3 bearings.

Radiation resistance

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

Resistance to weathering

iglidur® J3 plain bearings are resistant to weathering. The material properties are slightly affected. Discoloration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® J3 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® J3 at radial loads. At the maximum recommended surface pressure of 45MPa 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

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Bearing technology | Plain bearing | iglidur® J3

Permissible surface speeds

iglidur® J3 is also suitable for medium to high surface speeds. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 44

Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +90°C. For temperatures over +60°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

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

Coefficient of friction and surfaces, page 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® J3 a ground surface with an average surface finish Ra = 0.1 – 0.3μm is recommended. The diagram 06 shows that iglidur® J3 can be combined with various shaft materials. Diagram 07 shows rotating and pivoting applications in comparison. With higher load, the wear increases more for rotating than for pivoting movements.

Shaft materials, page 52

Installation tolerances

iglidur® J3 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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). In relation to the installation tolerance, the inner diameter changes with the absorption of humidity.

Testing methods, page 57

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.5	1.1	8.0
short-term	m/s	3.0	2.1	10.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.06 – 0.20	0.09	0.04	0.04

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

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

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

Technical data

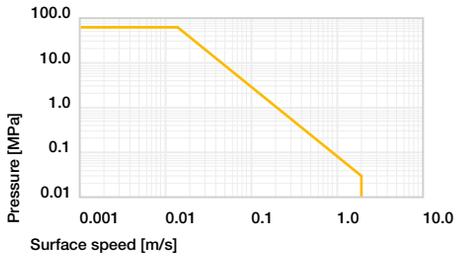

Diagram 01: Permissible pv values for iglidur® J3 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

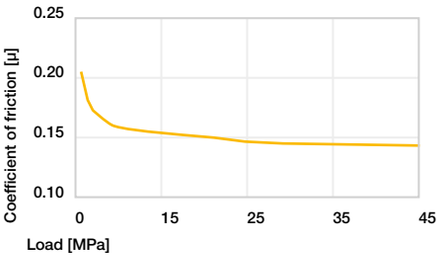

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

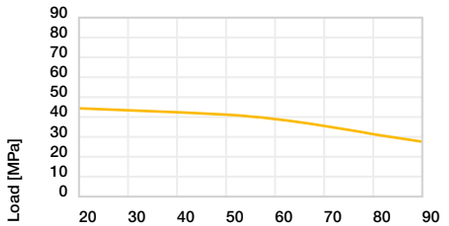

Diagram 02: Maximum recommended surface pressure as a function of temperature (45MPa at +20°C)

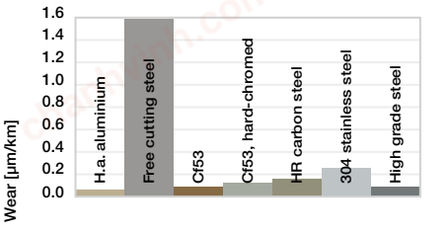

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

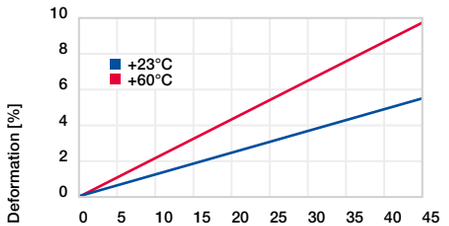

Diagram 03: Deformation under pressure and temperature

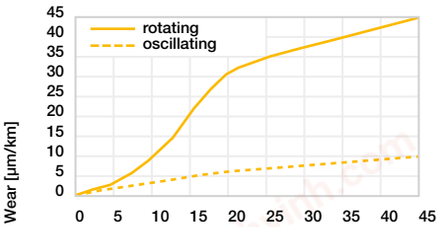

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

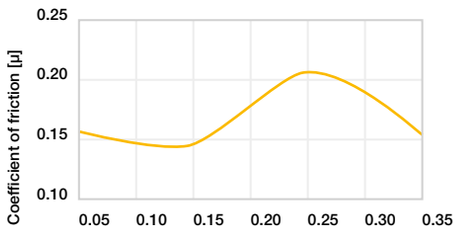

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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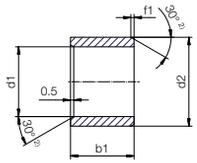
Bearing technology | Plain bearing | iglidur® J3

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: J3SM-0304-05 – no minimum order quantity.
J3 iglidur® material S Sleeve bearing M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
3.0	+0.014 +0.054	4.5	5.0	J3SM-0304-05
4.0		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	20.0	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		15.0	10.0	J3SM-1315-10
13.0	+0.032 +0.102	15.0	20.0	J3SM-1315-20
14.0		16.0	15.0	J3SM-1416-15
14.0		16.0	20.0	J3SM-1416-20
14.0		16.0	25.0	J3SM-1416-25
15.0		17.0	15.0	J3SM-1517-15
15.0		17.0	20.0	J3SM-1517-20
15.0		17.0	25.0	J3SM-1517-25

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
15.0		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	18.0	25.0	J3SM-1618-25
18.0	+0.102	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	27.0	15.0	J3SM-2427-15
24.0	+0.124	27.0	20.0	J3SM-2427-20
24.0		27.0	25.0	J3SM-2427-25
24.0		27.0	30.0	J3SM-2427-30
25.0		28.0	15.0	J3SM-2528-15
25.0		28.0	20.0	J3SM-2528-20
25.0		28.0	25.0	J3SM-2528-25
25.0		28.0	30.0	J3SM-2528-30
28.0		32.0	20.0	J3SM-2832-20
28.0		32.0	25.0	J3SM-2832-25
28.0		32.0	30.0	J3SM-2832-30
30.0		34.0	20.0	J3SM-3034-20

[3] After press-fit. *Testing methods, page 57*

iglidur® J3
+90°C
45MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
30.0	+0.040 +0.124	34.0	25.0	J3SM-3034-25
30.0		34.0	30.0	J3SM-3034-30
30.0		34.0	40.0	J3SM-3034-40
32.0		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

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
40.0	+0.050 +0.150	44.0	40.0	J3SM-4044-40
40.0		44.0	50.0	J3SM-4044-50
45.0		50.0	20.0	J3SM-4550-20
45.0		50.0	30.0	J3SM-4550-30
45.0		50.0	40.0	J3SM-4550-40
45.0		50.0	50.0	J3SM-4550-50
50.0		55.0	20.0	J3SM-5055-20
50.0		55.0	30.0	J3SM-5055-30
50.0		55.0	40.0	J3SM-5055-40
50.0		55.0	50.0	J3SM-5055-50
50.0		55.0	60.0	J3SM-5055-60

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/J3

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

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

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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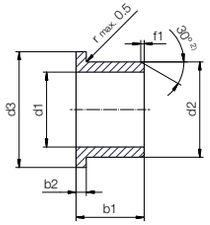
Bearing technology | Plain bearing | iglidur® J3

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

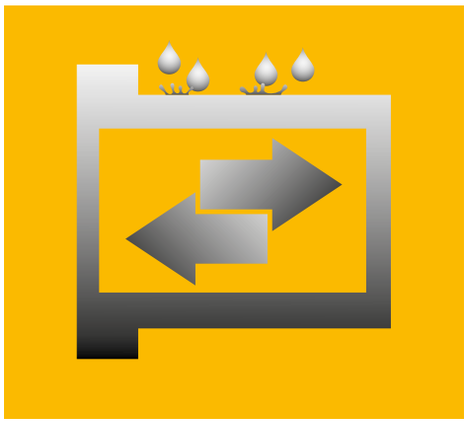
Dimensions according to ISO 3547-1 and special dimensions

Order example: J3FM-0304-05 – no minimum order quantity.
J3 iglidur® material F Flange bearing M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
2.0	+0.014	3.5	5.0	5.0	0.75	J3FM-0203505-05
3.0	+0.054	4.5	7.5	5.0	0.75	J3FM-0304-05
5.0		7.0	11.0	5.0	1.00	J3FM-0507-05
6.0	+0.020	8.0	12.0	4.0	1.00	J3FM-0608-04
6.0	+0.068	8.0	12.0	6.0	1.00	J3FM-0608-06
6.0		8.0	12.0	8.0	1.00	J3FM-0608-08
8.0		10.0	15.0	5.5	1.00	J3FM-0810-05
8.0		10.0	15.0	7.5	1.00	J3FM-0810-07
8.0		10.0	15.0	9.5	1.00	J3FM-0810-09
8.0		10.0	15.0	10.0	1.00	J3FM-0810-10
10.0	+0.025 +0.083	12.0	18.0	7.0	1.00	J3FM-1012-07
10.0		12.0	18.0	9.0	1.00	J3FM-1012-09
10.0		12.0	18.0	10.0	1.00	J3FM-1012-10
10.0		12.0	18.0	12.0	1.00	J3FM-1012-12
10.0		12.0	18.0	17.0	1.00	J3FM-1012-17
12.0		14.0	20.0	7.0	1.00	J3FM-1214-07
12.0		14.0	20.0	9.0	1.00	J3FM-1214-09
12.0	+0.032	14.0	20.0	12.0	1.00	J3FM-1214-12
12.0	+0.102	14.0	20.0	17.0	1.00	J3FM-1214-17
14.0		16.0	22.0	12.0	1.00	J3FM-1416-12
14.0		16.0	22.0	17.0	1.00	J3FM-1416-17
15.0		17.0	23.0	9.0	1.00	J3FM-1517-09
15.0	+0.032 +0.102	17.0	23.0	12.0	1.00	J3FM-1517-12
15.0		17.0	23.0	17.0	1.00	J3FM-1517-17
16.0		18.0	24.0	12.0	1.00	J3FM-1618-12
16.0		18.0	24.0	17.0	1.00	J3FM-1618-17
18.0		20.0	26.0	12.0	1.00	J3FM-1820-12
18.0		20.0	26.0	17.0	1.00	J3FM-1820-17
18.0		20.0	26.0	22.0	1.00	J3FM-1820-22
18.0		21.0	25.0	12.0	1.00	J3FM-1821-12
20.0		23.0	30.0	11.5	1.50	J3FM-2023-11
20.0	+0.040	23.0	30.0	16.5	1.50	J3FM-2023-16
20.0	+0.124	23.0	30.0	21.5	1.50	J3FM-2023-21
25.0		28.0	35.0	11.5	1.50	J3FM-2528-11
25.0		28.0	35.0	16.5	1.50	J3FM-2528-16
25.0		28.0	35.0	21.5	1.50	J3FM-2528-21
30.0		34.0	42.0	16.0	2.00	J3FM-3034-16
30.0		34.0	42.0	26.0	2.00	J3FM-3034-26
35.0		39.0	47.0	16.0	2.00	J3FM-3539-16
35.0	+0.050 +0.150	39.0	47.0	26.0	2.00	J3FM-3539-26
40.0		44.0	52.0	30.0	2.00	J3FM-4044-30
40.0		44.0	52.0	40.0	2.00	J3FM-4044-40
45.0		50.0	58.0	50.0	2.00	J3FM-4550-50

[3] After press-fit. *Testing methods, page 57*





Proven long-life material in black

Wear-resistant endurance runner up to 10MPa

iglidur® J3B

When to use it?

- When optimising wear resistance compared to iglidur® J
- When low moisture absorption is fundamental
- When good liquid media resistance is required
- When high wear resistance at low loads is required
- When very low coefficients of friction in dry operation are required

When not to use?

- When a wear-resistant plain bearing for linear motion is required
  iglidur® J
- When continuous operating temperatures are higher than +90°C
  iglidur® J260
- When radial surface pressure is higher than 45MPa
  iglidur® W300

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Bearing technology | Plain bearing | iglidur® J3B

Ø
6.0 – 20.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

Proven long-life material in black
Wear-resistant endurance runner up to 10MPa

The proven long-life material iglidur® J3 is now available in black as well. The endurance runner is a specialist for pivoting and pulsating loads and also media-resistant.

- Aesthetically suitable
- Low coefficient of friction
- Is especially long-lasting in the most varied of applications
- Low moisture absorption

Typical application areas

- Furniture industry
- Sports and leisure
- Two-wheel technology

Descriptive technical specifications			
Wear resistance at +23°C	–	●●●●●○	+
Wear resistance at +90°C	–	●●●●●○	+
Wear resistance at +150°C	–	●○○○○○	+
Low coefficient of friction	–	●●●●●○	+
Low moisture absorption	–	●●●●○○	+
Wear resistance under water	–	●●●●○○	+
High media resistance	–	●●●●○○	+
Resistant to edge pressures	–	●●●●○○	+
Suitable for shock and impact loads	–	●●●●○○	+
Resistant to dirt	–	●●●●○○	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® J3B
+90°C
44MPa

Technical data

General properties			Testing method
Density	g/cm³	1.42	
Colour		black	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	1.3	
Coefficient of friction, dynamic, against steel	µ	0.08 – 0.17	
pv value, max. (dry)	MPa · m/s	0.50	
Mechanical properties			
Flexural modulus	MPa	2,895	DIN 53457
Flexural strength at +20°C	MPa	65	DIN 53452
Compressive strength	MPa	k. A.	
Max. recommended surface pressure (+20°C)	MPa	44	
Shore D hardness		76	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+110	
Min. application temperature	°C	–50	
Thermal conductivity	W/m · K	0.30	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	12.7	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

–50°C up to +90°C

44MPa

HB

RoHS-II

ISO 3547-1

Table 01: Material properties

With respect to its general mechanical and thermal specifications, iglidur® J3B is directly comparable to our classic, iglidur® J.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® J3B plain bearings is approximately 0.3% weight. The saturation limit in water is 1.3% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® J3B bearings.

Radiation resistance

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

Resistance to weathering

iglidur® J3B plain bearings have not yet been tested for their resistance to weathering. Please consult igus® if you're planning to use them outdoors.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® J3B plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® J3B at radial loads. At the maximum recommended surface pressure of 44MPa 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

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Bearing technology | Plain bearing | iglidur® J3B

Permissible surface speeds

iglidur® J3B is also suitable for medium to high surface speeds. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 44

Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +60°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

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

Coefficient of friction and surfaces, page 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® J3B a ground surface with an average surface finish Ra = 0.1 – 0.3μm is recommended. Diagram 06 shows results of testing different shafts. Diagram 07 shows rotating and pivoting applications in comparison. With higher load, the wear increases more for rotating than for pivoting movements.

Shaft materials, page 52

Installation tolerances

iglidur® J3B plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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). In relation to the installation tolerance, the inner diameter changes with the absorption of humidity.

Testing methods, page 57

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.5	1.1	8.0
short-term	m/s	3.0	2.1	10.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.08 – 0.17	0.09	0.04	0.04

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

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

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

Technical data

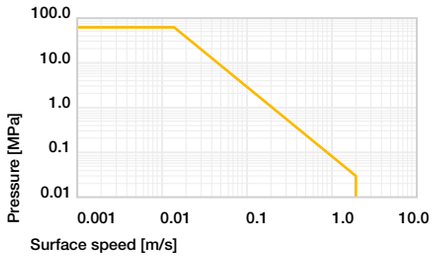

Diagram 01: Permissible pv values for iglidur® J3B plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

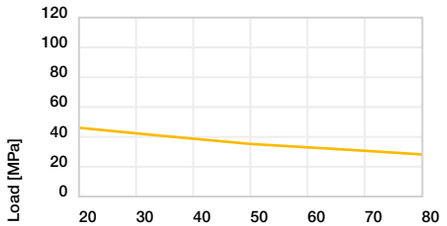

Diagram 02: Maximum recommended surface pressure as a function of temperature (44MPa at +20°C)

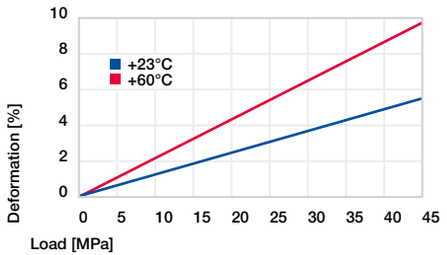

Diagram 03: Deformation under pressure and temperature

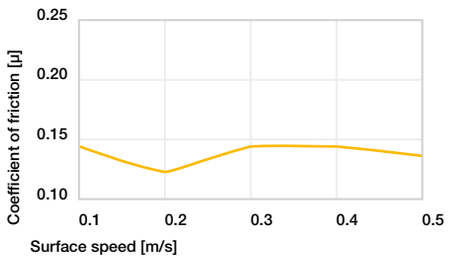

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

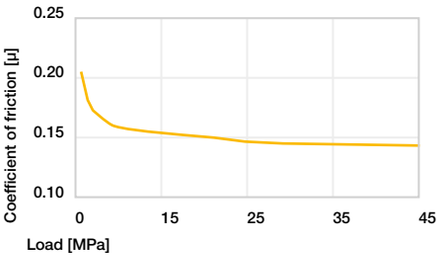

Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

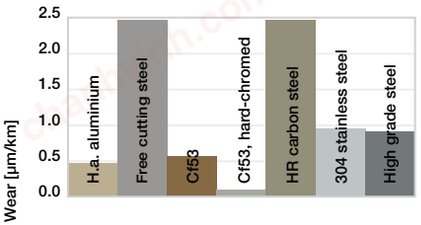

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

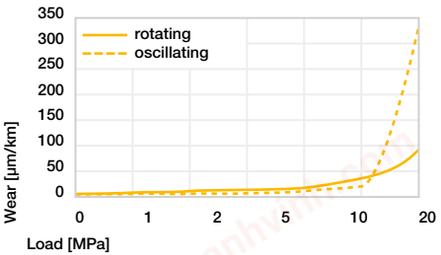

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

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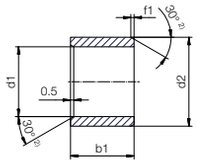
Bearing technology | Plain bearing | iglidur® J3B

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: J3BSM-0608-06 – no minimum order quantity.
J3B iglidur® material S Sleeve bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	6.0	**J3BSM-0608-06**
8.0	+0.025 +0.083	10.0	10.0	**J3BSM-0810-10**
10.0		12.0	10.0	**J3BSM-1012-10**
12.0	+0.032 +0.102	14.0	12.0	**J3BSM-1214-12**
16.0		18.0	15.0	**J3BSM-1618-15**
20.0	+0.040 +0.124	23.0	20.0	**J3BSM-2023-20**

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/J3B

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

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

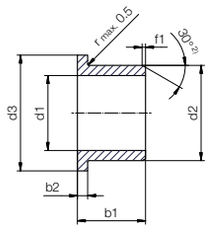
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® J3B
+90°C
44MPa

Bearing technology | Plain bearing | iglidur® J3B

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: J3BFM-0608-06 – no minimum order quantity.
J3B iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	12.0	8.0	1.00	**J3BFM-0608-06**
8.0	+0.025 +0.083	10.0	15.0	9.5	1.00	**J3BFM-0810-10**
10.0		12.0	18.0	9.0	1.00	**J3BFM-1012-10**
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	**J3BFM-1214-12**
16.0		18.0	24.0	17.0	1.00	**J3BFM-1618-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	**J3BFM-2023-21**

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/J3B

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

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

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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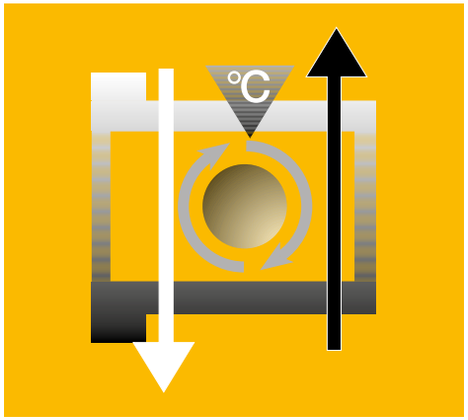

Endurance runner with high dimensional stability at high temperatures

Can be used with many kinds of shafts and loads

iglidur® J350

When to use it?

- When a wear-resistant bearing for rotational movement at medium and high loads is required
- When a cost-effective plain bearing for high temperatures is required
- When press-fit up to +150°C is necessary
- When the bearing is exposed to shock loading

When not to use?

- When continuous operating temperatures are higher than +180°C
  iglidur® X
- When the lowest friction is required
  iglidur® J
- When a cost-effective plain bearing with low friction is required
  iglidur® D, iglidur® R
- For high rotational speeds
  iglidur® J

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Bearing technology | Plain bearing | iglidur® J350

Ø
4.0 – 50.0mm



Also available as:

Bar stock, round bar
Page 675

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 584

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

Endurance runner with high dimensional stability at high temperatures

Can be used with many kinds of shafts and loads

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

- Recommended for steel shafts
- Continuous operating temperatures up to +180°C
- Suitable for medium and high loads
- Suitable for rotating applications
- Lubrication-free
- Maintenance-free

Typical application areas

- Automation
- Mechanical engineering
- Automotive
- Glass industry

Descriptive technical specifications	–	+
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® J350
+180°C
60MPa

Technical data

General properties			Testing method
Density	g/cm³	1.44	
Colour		yellow	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	1.6	
Coefficient of friction, dynamic, against steel	µ	0.10 – 0.20	
pv value, max. (dry)	MPa · m/s	0.45	
Mechanical properties			
Flexural modulus	MPa	2,000	DIN 53457
Flexural strength at +20°C	MPa	55	DIN 53452
Compressive strength	MPa	60	
Max. recommended surface pressure (+20°C)	MPa	60	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+180	
Max. application temperature short-term	°C	+220	
Min. application temperature	°C	–100	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	7	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{10}$	DIN 53482

Table 01: Material properties

–100°C up to +180°C

60MPa

V-0

RoHS-II

ISO 3547-1

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

Moisture absorption

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

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® J350 bearings.

Radiation resistance

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

Resistance to weathering

iglidur® J350 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolorations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® J350 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
iglidur® J350 plain bearings are adequate for medium and high loads. Diagram 03 shows the elastic deformation of iglidur® J350 at radial loads. It shows the material behaviour submitted to a short-term load. The ambient temperatures are only noticeable at 60MPa.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® J350

Permissible surface speeds

iglidur® J350 plain bearings are suitable for low and medium speeds in rotating and oscillating applications. The wear rates, however, are much better in the case of rotating applications. iglidur® J350 is also excellent for linear movements.

Surface speed, page 44

Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. The wear-rate of iglidur® J350 bearings changes very little at high temperatures. In some cases, wear even decreases at +100°C. For temperatures over +140°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

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

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagrams 06 and 07 show the test results of iglidur® J350 plain bearings running against various shaft materials. iglidur® J350 plain bearings can be combined with various shaft materials. One shaft – bearing combination stands out when looking at the wear results of the test: iglidur® J350 with soft 304 stainless steel. Not many bearing materials are suitable for use with this rather difficult soft stainless steel material (304 stainless steel) and achieve good wear results. Also, good properties are reached with hard-anodised aluminium shafts. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 52

Installation tolerances

iglidur® J350 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.3	1.0	4.0
short-term	m/s	3.0	2.3	8.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.10 – 0.20	0.09	0.04	0.04

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

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

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

iglidur® J350
+180°C
60MPa

Technical data

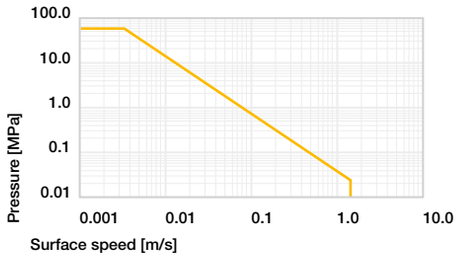

Diagram 01: Permissible pv values for iglidur® J350 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

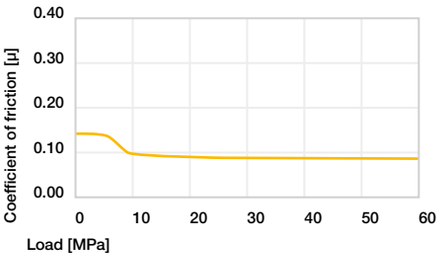

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

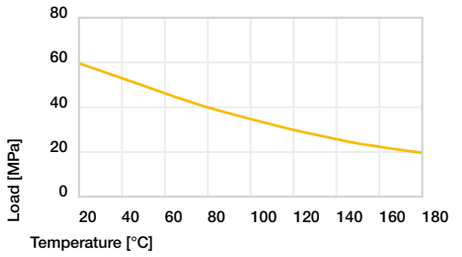

Diagram 02: Maximum recommended surface pressure as a function of temperature (60MPa at +20°C)

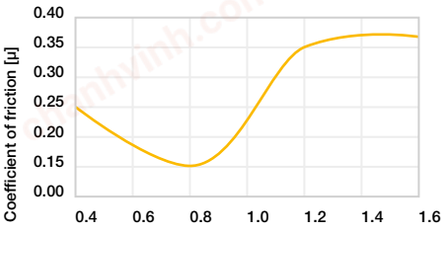

Diagram 06: Coefficient of friction as a function of the shaft surface (Cf53 shaft)

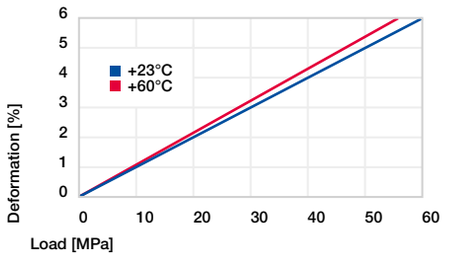

Diagram 03: Deformation under pressure and temperature

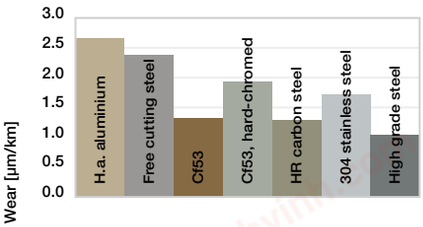

Diagram 07: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

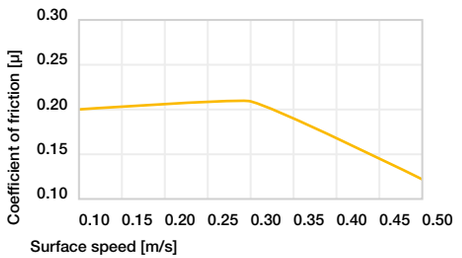

Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

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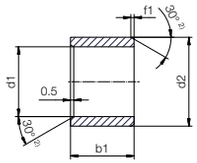
Bearing technology | Plain bearing | iglidur® J350

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: J350SM-0405-04 – no minimum order quantity.
J350 iglidur® material S Sleeve bearing M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
4.0	+0.010 +0.058	5.5	4.0	J350SM-0405-04
4.0		5.5	6.0	J350SM-0405-06
5.0		7.0	5.0	J350SM-0507-05
5.0		7.0	10.0	J350SM-0507-10
6.0		8.0	6.0	J350SM-0608-06
6.0		8.0	8.0	J350SM-0608-08
6.0		8.0	10.0	J350SM-0608-10
8.0		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	+0.013 +0.071	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		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	+0.016 +0.086	16.0	15.0	J350SM-1416-15
14.0		16.0	20.0	J350SM-1416-20
14.0		16.0	25.0	J350SM-1416-25
15.0		17.0	15.0	J350SM-1517-15
15.0		17.0	20.0	J350SM-1517-20
15.0		17.0	25.0	J350SM-1517-25
16.0		18.0	4.0	J350SM-1618-04
16.0		18.0	15.0	J350SM-1618-15
16.0	+0.016 +0.086	18.0	20.0	J350SM-1618-20
16.0		18.0	25.0	J350SM-1618-25
18.0		20.0	15.0	J350SM-1820-15
18.0		20.0	20.0	J350SM-1820-20
18.0		20.0	25.0	J350SM-1820-25
20.0		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	+0.020 +0.104	27.0	25.0	J350SM-2427-25
24.0		27.0	30.0	J350SM-2427-30
25.0		28.0	15.0	J350SM-2528-15
25.0		28.0	20.0	J350SM-2528-20
25.0		28.0	25.0	J350SM-2528-25
25.0		28.0	30.0	J350SM-2528-30
25.0		28.0	45.0	J350SM-2528-45
28.0		32.0	20.0	J350SM-2832-20
28.0		32.0	25.0	J350SM-2832-25
28.0		32.0	30.0	J350SM-2832-30
30.0		34.0	20.0	J350SM-3034-20
30.0		34.0	25.0	J350SM-3034-25
30.0		34.0	30.0	J350SM-3034-30

[3] After press-fit. *Testing methods, page 57*

iglidur® J350
+180°C
60MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
30.0	+0.020 +0.104	34.0	40.0	J350SM-3034-40
32.0	+0.025 +0.125	36.0	20.0	J350SM-3236-20
32.0		36.0	30.0	J350SM-3236-30
32.0		36.0	40.0	J350SM-3236-40
35.0		39.0	20.0	J350SM-3539-20
35.0		39.0	30.0	J350SM-3539-30
35.0		39.0	40.0	J350SM-3539-40
35.0		39.0	50.0	J350SM-3539-50
40.0		44.0	20.0	J350SM-4044-20
40.0		44.0	30.0	J350SM-4044-30
40.0	+0.025 +0.125	44.0	40.0	J350SM-4044-40
40.0		44.0	50.0	J350SM-4044-50
45.0		50.0	20.0	J350SM-4550-20
45.0		50.0	30.0	J350SM-4550-30
45.0		50.0	40.0	J350SM-4550-40
45.0		50.0	50.0	J350SM-4550-50
50.0		55.0	20.0	J350SM-5055-20
50.0		55.0	30.0	J350SM-5055-30
50.0		55.0	40.0	J350SM-5055-40
50.0		55.0	50.0	J350SM-5055-50
50.0		55.0	60.0	J350SM-5055-60

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/J350

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

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

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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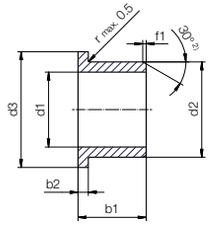
Bearing technology | Plain bearing | iglidur® J350

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

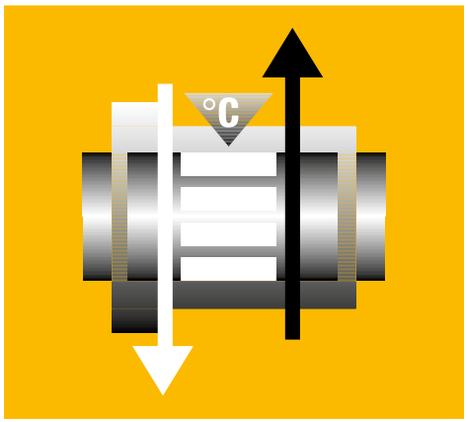
Order example: J350FM-0608-04 – no minimum order quantity.
J350 iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.010 +0.058	8.0	12.0	4.0	1.00	**J350FM-0608-04**
6.0		8.0	12.0	6.0	1.00	**J350FM-0608-06**
6.0		8.0	12.0	8.0	1.00	**J350FM-0608-08**
8.0	+0.013 +0.071	10.0	15.0	5.5	1.00	**J350FM-0810-05**
8.0		10.0	15.0	7.5	1.00	**J350FM-0810-07**
8.0		10.0	15.0	9.5	1.00	**J350FM-0810-09**
8.0		10.0	15.0	10.0	1.00	**J350FM-0810-10**
10.0		12.0	18.0	7.0	1.00	**J350FM-1012-07**
10.0		12.0	18.0	9.0	1.00	**J350FM-1012-09**
10.0		12.0	18.0	10.0	1.00	**J350FM-1012-10**
10.0		12.0	18.0	12.0	1.00	**J350FM-1012-12**
10.0		12.0	18.0	17.0	1.00	**J350FM-1012-17**
12.0	+0.016 +0.086	14.0	20.0	7.0	1.00	**J350FM-1214-07**
12.0		14.0	20.0	9.0	1.00	**J350FM-1214-09**
12.0		14.0	20.0	12.0	1.00	**J350FM-1214-12**
12.0		14.0	20.0	17.0	1.00	**J350FM-1214-17**
14.0		16.0	22.0	12.0	1.00	**J350FM-1416-12**
14.0		16.0	22.0	17.0	1.00	**J350FM-1416-17**
15.0		17.0	23.0	9.0	1.00	**J350FM-1517-09**
15.0		17.0	23.0	12.0	1.00	**J350FM-1517-12**
15.0		17.0	23.0	17.0	1.00	**J350FM-1517-17**

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
16.0	+0.016 +0.086	18.0	24.0	12.0	1.00	**J350FM-1618-12**
16.0		18.0	24.0	17.0	1.00	**J350FM-1618-17**
18.0		20.0	26.0	12.0	1.00	**J350FM-1820-12**
18.0		20.0	26.0	17.0	1.00	**J350FM-1820-17**
18.0		20.0	26.0	22.0	1.00	**J350FM-1820-22**
20.0	+0.020 +0.104	23.0	30.0	11.5	1.50	**J350FM-2023-11**
20.0		23.0	30.0	16.5	1.50	**J350FM-2023-16**
20.0		23.0	30.0	21.5	1.50	**J350FM-2023-21**
25.0		28.0	35.0	11.5	1.50	**J350FM-2528-11**
25.0		28.0	35.0	16.5	1.50	**J350FM-2528-16**
25.0		28.0	35.0	21.5	1.50	**J350FM-2528-21**
30.0		34.0	42.0	16.0	2.00	**J350FM-3034-16**
30.0		34.0	42.0	22.0	2.00	**J350FM-3034-22**
30.0		34.0	42.0	26.0	2.00	**J350FM-3034-26**
30.0		34.0	42.0	37.0	2.00	**J350FM-3034-37**
35.0	+0.025 +0.125	39.0	47.0	16.0	2.00	**J350FM-3539-16**
35.0		39.0	47.0	26.0	2.00	**J350FM-3539-26**
40.0		44.0	52.0	30.0	2.00	**J350FM-4044-30**
40.0		44.0	52.0	40.0	2.00	**J350FM-4044-40**
45.0		50.0	58.0	50.0	2.00	**J350FM-4550-50**

[3] After press-fit. *Testing methods, page 57*





Ideal for plastic shafts

Wear-resistant at medium temperatures and loads

iglidur® J260

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

When not to use?
- When high surface pressures occur
  iglidur® Z
- When continuous operating temperatures are higher than +120°C
  iglidur® J350
- When universal wear resistance is required
  iglidur® J

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Bearing technology | Plain bearing | iglidur® J260

Ø
6.0 – 20.0mm



Also available as:

Bar stock, round bar
Page 676

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

Ideal for plastic shafts
Wear-resistant at medium temperatures and loads

Time and again the iglidur® J260 material proves its worth where the maximum service life and best coefficient of friction are required under special application conditions – particularly in connection with plastic shafts!

- For low and medium loads
- High media resistance
- Slightly higher temperature rating than iglidur® J
- Long service life - even on polymer shafts and other special cases

Typical application areas

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

Descriptive technical specifications	–	+
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® J260
+120°C
40MPa

Technical data

General properties			Testing method
Density	g/cm³	1.35	
Colour		yellow	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	0.4	
Coefficient of friction, dynamic, against steel	µ	0.06 – 0.20	
pv value, max. (dry)	MPa · m/s	0.35	
Mechanical properties			
Flexural modulus	MPa	2,200	DIN 53457
Flexural strength at +20°C	MPa	60	DIN 53452
Compressive strength	MPa	50	
Max. recommended surface pressure (+20°C)	MPa	40	
Shore D hardness		77	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+120	
Max. application temperature short-term	°C	+140	
Min. application temperature	°C	–100	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	13	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{10}$	DIN 53482

Table 01: Material properties

–100°C up to +120°C

40MPa

V-2

RoHS-II

ISO 3547-1

Similar to the classic, iglidur® J, iglidur® J260 is an endurance runner with outstanding wear behaviour, but provides increased reserves at its long-term application temperature of +120°C.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® J260 plain bearings is approximately 0.2% weight. The saturation limit in water is 0.4% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® J260 bearings.

Radiation resistance

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

Resistance to weathering

iglidur® J260 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolorations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® J260 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® J260 at radial loads. At the maximum recommended surface pressure of 40MPa 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

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Bearing technology | Plain bearing | iglidur® J260

Permissible surface speeds

iglidur® J260 has been developed for low to medium surface speeds. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 44

Temperature

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

Application temperatures, page 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 (diagrams 04 and 05).

Coefficient 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® J260 a ground surface with an average surface finish Ra = 0.8μm is recommended. Diagram 06 shows the test results of iglidur® J260 plain bearings running against various shaft materials. It is important to notice that with increasing loads, the recommended hardness of the shaft increases. The "soft" shafts tend to wear more easily and thus increase the wear of the overall system, if the loads exceed 2MPa. The comparison of rotating and pivoting movements in diagram 07 makes it very clear that iglidur® J260 plain bearings are most suited for rotating operation.

Shaft materials, page 52

Installation tolerances

iglidur® J260 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	**m/s**	1.0	0.7	3.0
short-term	**m/s**	2.0	1.4	4.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.06 – 0.20	0.09	0.04	0.04

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

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

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

iglidur® J260
+120°C
40MPa

Technical data

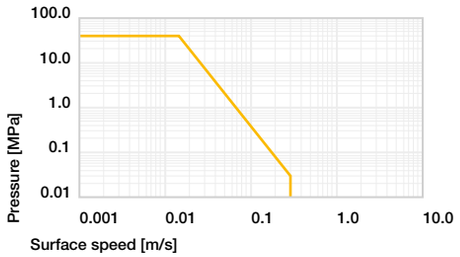

Diagram 01: Permissible pv values for iglidur® J260 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

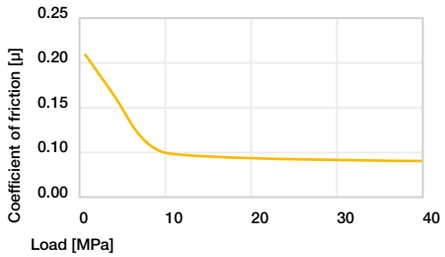

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

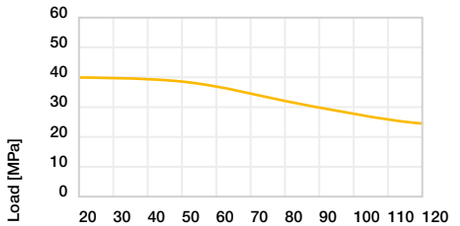

Diagram 02: Maximum recommended surface pressure as a function of temperature (40MPa at +20°C)

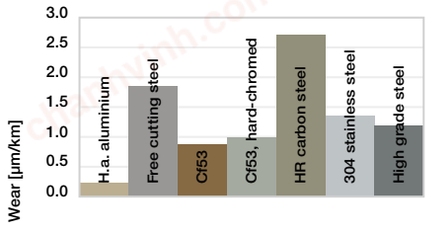

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

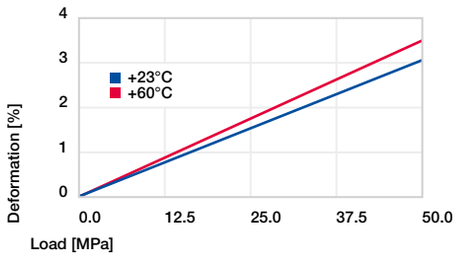

Diagram 03: Deformation under pressure and temperature

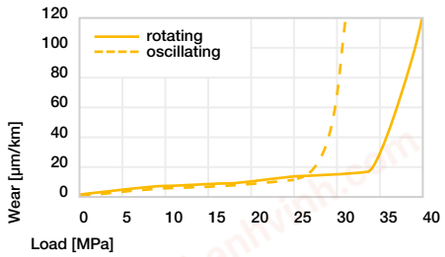

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

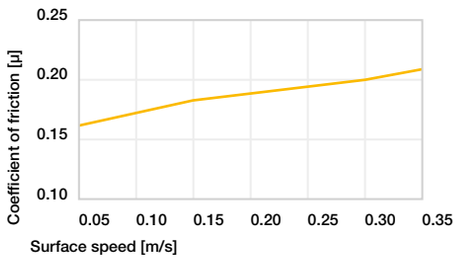

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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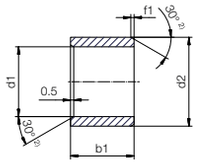
Bearing technology | Plain bearing | iglidur® J260

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: J260SM-0608-06 – no minimum order quantity.
J260 iglidur® material S Sleeve bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	6.0	J260SM-0608-06
8.0	+0.025 +0.083	10.0	6.0	J260SM-0810-06
8.0		10.0	10.0	J260SM-0810-10
10.0		12.0	10.0	J260SM-1012-10
12.0	+0.032 +0.102	14.0	12.0	J260SM-1214-12
12.0		14.0	15.0	J260SM-1214-15
16.0		18.0	13.5	J260SM-1618-135
16.0		18.0	15.0	J260SM-1618-15
18.0		20.0	12.0	J260SM-1820-12
18.0		20.0	20.0	J260SM-1820-20
20.0	+0.040 +0.124	23.0	20.0	J260SM-2023-20

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/J260

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

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

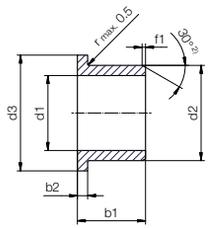
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® J260
+120°C
40MPa

Bearing technology | Plain bearing | iglidur® J260

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: J260FM-0608-06 – no minimum order quantity.
J260 iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	J260FM-0608-06
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	J260FM-0810-10
10.0		12.0	18.0	10.0	1.00	J260FM-1012-10
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	J260FM-1214-12
16.0		18.0	24.0	17.0	1.00	J260FM-1618-17
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	J260FM-2023-21

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

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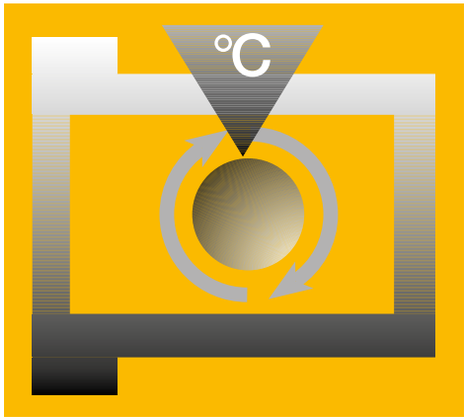

Endurance runner up to +180°C

For applications that are clean and dry

iglidur® W360

When to use it?

- When an extremely wear-resistant plain bearing is required for medium loads
- When a low coefficient of friction at higher temperatures is required
- When continuous operating temperatures are higher than +90°C

When not to use?

- When a wear-resistant plain bearing is sought for the standard temperature range and low to medium loads
  iglidur® J
- When the maximum temperature resistance and high wear resistance is required
  iglidur® Z, iglidur® J350, iglidur® V400
- When the highest wear resistance under water is required
  iglidur® UW, iglidur® H370

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Bearing technology | Plain bearing | iglidur® W360

Ø
6.0 – 20.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

Endurance runner up to +180°C
For applications that are clean and dry

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

- High wear resistance
- Temperature-resistant up to +180°C
- Suitable for wet environments
- Good price-performance ratio
- Lubrication-free
- Maintenance-free

Typical application areas
- Material handling
- Automation
- Two-wheel technology
- Electromobility

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® W360
+180°C
75MPa

Technical data

General properties			Testing method
Density	g/cm³	1.34	
Colour		yellow	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	1.6	
Coefficient of friction, dynamic, against steel	µ	0.07 – 0.21	
pv value, max. (dry)	MPa · m/s	0.35	
Mechanical properties			
Flexural modulus	MPa	3,829	DIN 53457
Flexural strength at +20°C	MPa	119	DIN 53452
Compressive strength	MPa	75	
Max. recommended surface pressure (+20°C)	MPa	75	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+180	
Max. application temperature short-term	°C	+200	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	6	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties

–40°C up to +180°C

75MPa

HB

RoHS-II

ISO 3547-1

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

Moisture absorption
The moisture absorption of iglidur® W360 is low and can be disregarded when used in a humid environment. With a full saturation of 1.6% weight, however, underwater use is only possible to a very restricted extent.

Vacuum
In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® W360 bearings.

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

Resistance to weathering
iglidur® W360 plain bearings are resistant to weathering. The material properties are slightly affected. Discoloration occurs.

Mechanical properties
With increasing temperatures, the compressive strength of iglidur® W360 plain bearings decreases. Diagram 02 shows this inverse relationship. However, at the long-term maximum temperature of +180°C the permissible surface pressure is around 10MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
iglidur® W360 plain bearings are suitable for a broad range of loads. Diagram 03 shows the deformation under temperature. It shows the material behaviour submitted to a short-term load.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® W360

Permissible surface speeds

iglidur® W360 plain bearings are suitable for low and medium speeds in rotating and oscillating applications. The wear rates, however, are much better in the case of rotating applications. iglidur® W360 is also excellent for linear movements.

Surface speed, page 44

Temperature

The temperature resistance makes iglidur® W360 a universal material for plain bearings in different industries. Short-term application temperatures up to +200°C are permitted. For temperatures over +90°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

The coefficient of friction of iglidur® W360 in dry operation against steel is very good. They constantly remain at a low level regardless of the speed. Diagram 04 illustrates this relationship. As the load increases, the coefficient of friction decreases. The correlation is especially strong up to approximately 15MPa (diagram 05).

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

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 1.6MPa (diagram 06). Diagram 07 shows results of testing different shafts. iglidur® W360 plain bearings are suitable for all sliding surfaces. During rotation with a load of 1MPa, all HC aluminium, Cf53 and stainless steel shafts stand out. A similar picture also exists with other loads or pivoting movements. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 52

Installation tolerances

iglidur® W360 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the E10 tolerances.

Testing methods, page 57

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.2	0.9	3.0
short-term	m/s	2.7	2.0	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.07 – 0.21	0.09	0.04	0.04

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

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

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

Technical data

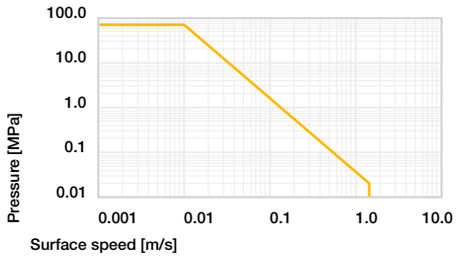

Diagram 01: Permissible pv values for iglidur® W360 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

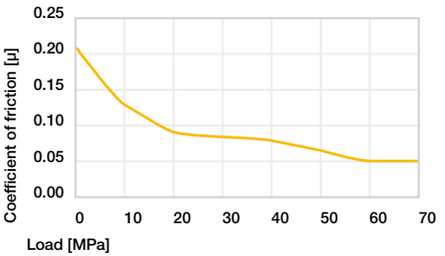

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

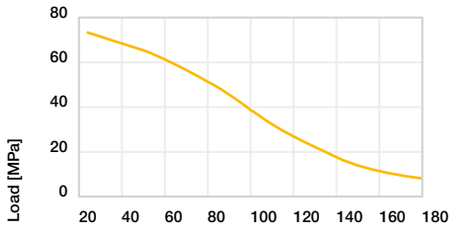

Diagram 02: Maximum recommended surface pressure as a function of temperature (75MPa at +20°C)

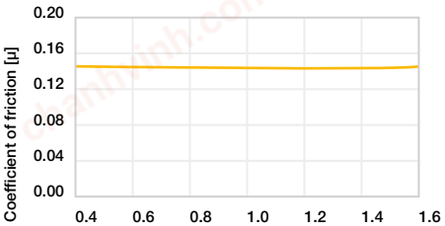

Diagram 06: Coefficient of friction as a function of the shaft surface (Cf53 shaft)

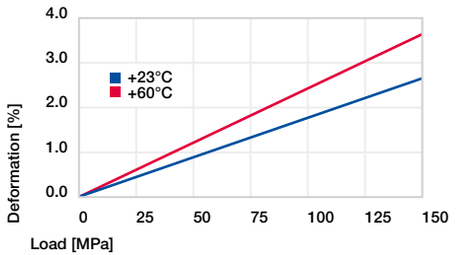

Diagram 03: Deformation under pressure and temperature

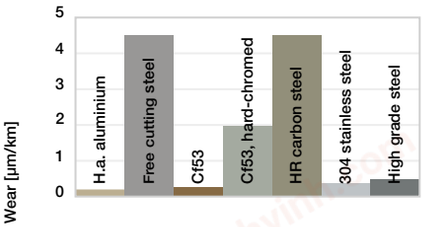

Diagram 07: Wear, rotating with different shaft materials, p = 1MPa, v = 0.3m/s

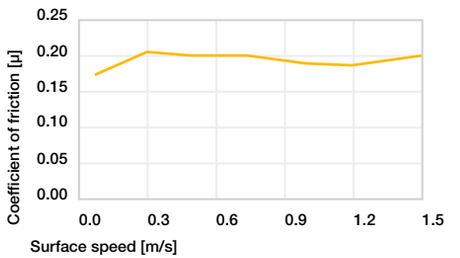

Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

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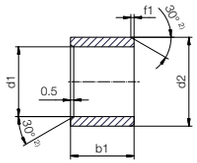
Bearing technology | Plain bearing | iglidur® W360

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: W360SM-0608-06 – no minimum order quantity.
W360 iglidur® material S Sleeve bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	6.0	**W360SM-0608-06**
8.0	+0.025 +0.083	10.0	10.0	**W360SM-0810-10**
10.0		12.0	10.0	**W360SM-1012-10**
12.0	+0.032 +0.102	14.0	12.0	**W360SM-1214-12**
16.0		18.0	15.0	**W360SM-1618-15**
20.0	+0.040 +0.124	23.0	20.0	**W360SM-2023-20**

[3] After press-fit. *Testing methods, page 57*

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Detailed information about delivery time online.
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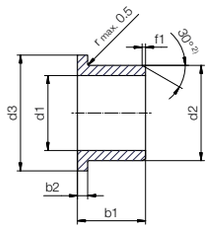
iglidur® W360
+180°C
75MPa

Bearing technology | Plain bearing | iglidur® W360

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: W360FM-0608-06 – no minimum order quantity.
W360 iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	**W360FM-0608-06**
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	**W360FM-0810-10**
10.0		12.0	18.0	10.0	1.00	**W360FM-1012-10**
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	**W360FM-1214-12**
16.0		18.0	24.0	17.0	1.00	**W360FM-1618-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	**W360FM-2023-21**

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/W360

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

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

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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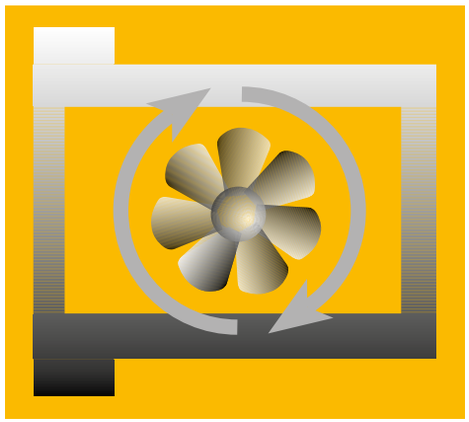

For fast rotating applications

Low coefficient of friction under low load

iglidur® L250

When to use it?

- For rotating applications at high speed
- When the highest service life is required
- For low load applications
- When a low noise level is required
- For very low coefficient of friction

When not to use?

- When high pressure occurs
  iglidur® Q, iglidur® W300
- When continuous operating temperatures are higher than +90°C
  iglidur® V400
- When low moisture absorption is required
  iglidur® H1, iglidur® J

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Bearing technology | Plain bearing | iglidur® L250

Ø
6.0 – 20.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

For fast rotating applications
Low coefficient of friction under low load

Plain bearings for high speed rotation applications, especially for fans and motors.

- Suitable for high rotating speeds
- Very low coefficients of friction
- Very wear-resistant
- Lubrication-free
- Maintenance-free

Typical application areas

- Automotive industry
- Electronics industry
- Mechatronics
- Optical industry
- Test engineering and quality assurance

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® L250
+90°C
45MPa

Technical data

General properties			Testing method
Density	g/cm³	1.50	
Colour		beige	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.7	DIN 53495
Max. moisture absorption	% weight	3.9	
Coefficient of friction, dynamic, against steel	µ	0.08 – 0.19	
pv value, max. (dry)	MPa · m/s	0.40	
Mechanical properties			
Flexural modulus	MPa	1,950	DIN 53457
Flexural strength at +20°C	MPa	67	DIN 53452
Compressive strength	MPa	47	
Max. recommended surface pressure (+20°C)	MPa	45	
Shore D hardness		68	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+180	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	10	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{10}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

–40°C up to +90°C

45MPa

HB

RoHS-II

ISO 3547-1

Table 01: Material properties

iglidur® L250 is a bearing material for high rotation speeds and low coefficient 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.

Moisture absorption

With regard to applications where the smallest bearing clearances are concerned, please take the moisture absorption into consideration.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® L250 bearings.

Radiation resistance

Plain bearings made from iglidur® L250 are resistant up to a radiation intensity of $3 \cdot 10^4$Gy. Higher radiation weakens the material and may result in a significant decrease in mechanical properties.

Resistance to weathering

iglidur® L250 plain bearings have limited resistance to weathering. The material properties are affected. Discoloration occurs. Practical tests under real application conditions are recommended.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® L250 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® L250 at radial loads. At the maximum recommended surface pressure of 45MPa 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

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Bearing technology | Plain bearing | iglidur® L250

Permissible surface speeds

iglidur® L250 has been developed especially for high surface speeds with low loads. Besides the physical limit, which is pre-set by the heating of the bearing, the coefficient of wear also acts limiting if rapidly high glide paths emerge at high peripheral speeds and the permitted wear limit is thus reached earlier. The maximum speeds are shown in table 03.

Surface speed, page 44

Temperature

The iglidur® L250 plain bearings can be used in short-term temperatures up to +180°C. Note that a mechanical securing of the bearing is recommended from temperatures of +55°C. Higher temperatures can also cause the plain bearing to lose its press-fit and move in the hole.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

In the best pairing (with 304 stainless steel shafts), coefficient of friction of 0.14µ is already reached with low loads. Coefficient of friction under 0.1 was measured already below 10MPa (diagrams 04 and 05).

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

As seen in diagram 06, many shafts are recommendable for low loads and low rotations. The low coefficient of friction is additionally retained over a wide range of recommendable shaft surfaces finish. For loads higher than 1MPa, particular attention should be paid to the shaft material used.

Shaft materials, page 52

Installation tolerances

iglidur® L250 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.0	0.7	2.0
short-term	m/s	1.5	1.1	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.08 – 0.19	0.09	0.04	0.04

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

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

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

iglidur® L250
+90°C
45MPa

Technical data

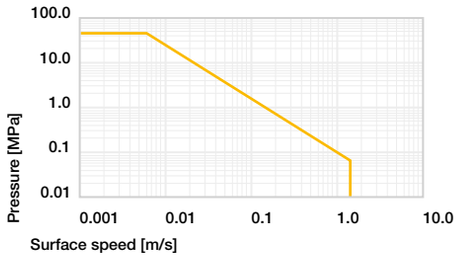

Diagram 01: Permissible pv values for iglidur® L250 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

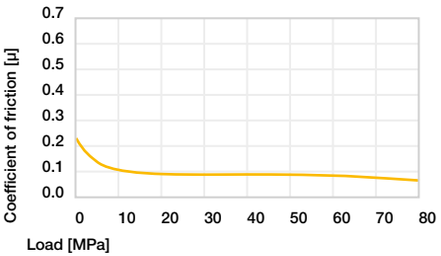

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

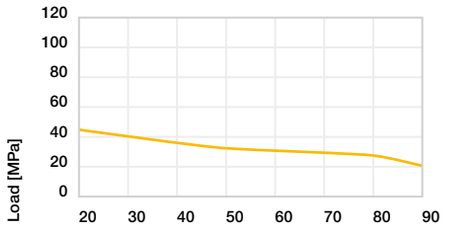

Diagram 02: Maximum recommended surface pressure as a function of temperature (45MPa at +20°C)

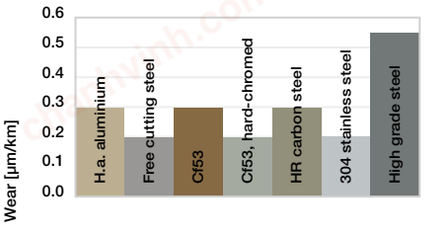

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

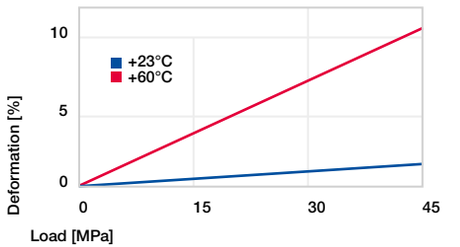

Diagram 03: Deformation under pressure and temperature

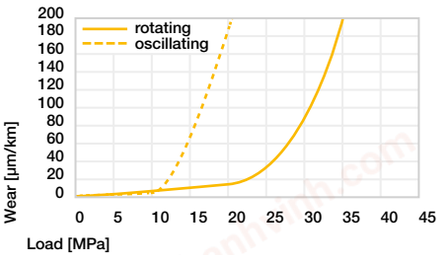

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

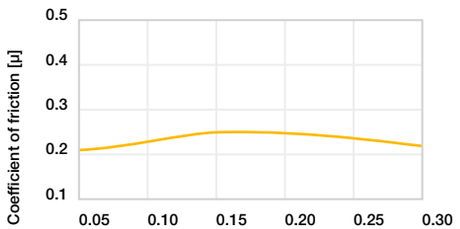

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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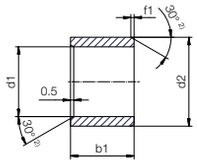
Bearing technology | Plain bearing | iglidur® L250

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: L250SM-0608-06 **– no minimum order quantity.**
L250 iglidur® material S Sleeve bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	6.0	**L250SM-0608-06**
8.0	+0.025 +0.083	10.0	10.0	**L250SM-0810-10**
10.0		12.0	10.0	**L250SM-1012-10**
12.0	+0.032 +0.102	14.0	12.0	**L250SM-1214-12**
16.0		18.0	15.0	**L250SM-1618-15**
20.0	+0.040 +0.124	23.0	20.0	**L250SM-2023-20**

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/L250

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

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

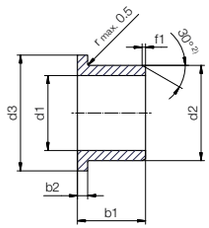
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® L250
+90°C
45MPa

Bearing technology | Plain bearing | iglidur® L250

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: L250FM-0608-06 **– no minimum order quantity.**
L250 iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	**L250FM-0608-06**
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	**L250FM-0810-10**
10.0		12.0	18.0	10.0	1.00	**L250FM-1012-10**
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	**L250FM-1214-12**
16.0		18.0	24.0	17.0	1.00	**L250FM-1618-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	**L250FM-2023-21**

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/L250

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

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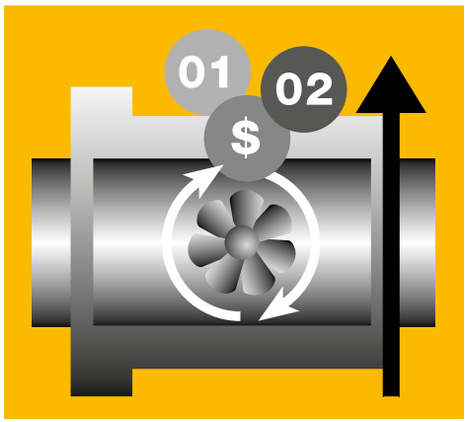

For high rotational speeds

High performance at lower cost

iglidur® L350

When to use it?

- For rotating applications at high speed
- When the highest service life is required
- For high pv values with low loads
- At operating temperatures up to +180°C (long-term, short-term up to max. +210°C)

When not to use?

- When a universal bearing for high temperatures is required
  iglidur® X
- When medium to high pressures occur
  iglidur® G, iglidur® Q
- For oscillating applications
  iglidur® W300, iglidur® J350

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Bearing technology | Plain bearing | iglidur® L350

Ø
3.0 – 10.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

For high rotational speeds
High performance at lower cost

iglidur® L350 is extremely long-lasting. Developed for the best coefficient of wear and friction at speeds of 1.5m/s and more, this material outperforms classic plain bearings in high-speed rotation operation.

- Up to 3.5m/s rotating
- Temperature-resistant up to +210°C in continuous use
- Low moisture absorption
- Good price-performance ratio
- Extremely wear-resistant
- Lubrication and maintenance-free
- Standard range from stock

Typical application areas

- Electric motors
- Fans
- Household appliances

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
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Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® L350
+180°C
59MPa

Technical data

General properties			Testing method
Density	g/cm³	1.54	
Colour		dark grey	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.4	DIN 53495
Max. moisture absorption	% weight	1.4	
Coefficient of friction, dynamic, against steel	µ	0.07 – 0.18	
pv value, max. (dry)	MPa · m/s	3.00	
Mechanical properties			
Flexural modulus	MPa	15,882	DIN 53457
Flexural strength at +20°C	MPa	210	DIN 53452
Compressive strength	MPa	210	
Max. recommended surface pressure (+20°C)	MPa	59	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+180	
Max. application temperature short-term	°C	+210	
Min. application temperature	°C	–100	
Thermal conductivity	W/m · K	0.61	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	7	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^5$	DIN IEC 93
Surface resistance	Ω	$> 10^5$	DIN 53482

Table 01: Material properties

–100°C up to +180°C

59MPa

V-0

RoHS-II

ISO 3547-1

With iglidur® L350, another lubrication and maintenance-free material is now available, which is designed for continuous high speeds. Due to the low thermal expansion and low moisture absorption, bearings can be manufactured with minimal potential to expand. iglidur® L350 is especially suitable for use in fans, blowers or electric motors – and the costs are also lower.

Moisture absorption

The very low moisture absorption of 0.4% weight in standard climatic conditions and 1.4% weight at maximum water absorption also enables continuous operation in high humidity or in liquid media.

Vacuum

In vacuum, the moisture content is released as vapour. Due to its low moisture absorption, use in a vacuum is possible.

Radiation resistance

Plain bearings made from iglidur® L350 are resistant up to a radiation intensity of $2 \cdot 10^2$Gy. Higher radiation affects the material and may result in a significant decrease in mechanical properties.

Resistance to weathering

iglidur® L350 plain bearings have not yet been tested for their resistance to weathering. Please consult igus® if you're planning to use them outdoors.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® L350 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® L350 at radial loads. At the maximum recommended surface pressure of 59MPa 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

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Bearing technology | Plain bearing | iglidur® L350

Permissible surface speeds

iglidur® L350 has been developed especially for high surface speeds with low loads. Due to the high temperature resistance of iglidur® L350, the limit of the bearing has been increased significantly. In addition, the extremely low wear allows the high acceleration speeds to be reached and maintained.The maximum speeds are shown in table 03.

Surface speed, page 44

Temperature

The iglidur® L350 plain bearings can be used in temperatures up to +210°C for the short-term. Note that a mechanical securing of the bearing is recommended from temperatures of +140°C. Higher temperatures can sometimes cause the plain bearings to lose their press-fit and move in the housing.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

The very low coefficient of friction remains, even at high speeds. Diagram 04 shows this relationship on a steel shaft at 0.75MPa surface pressure.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagram 05 compares the wear of a sintered bearing with that of bearings made of the materials iglidur® L500 and L350. At a surface speed of 1.5m/s or more, the wear of the sintered bearing increases exponentially whereas the wear of the iglidur® plain bearings almost remains the same up to a speed of more than 3m/s.

Shaft materials, page 52

Installation tolerances

iglidur® L350 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 57

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	3.0	1.5	4.0
short-term	m/s	4.0	3.0	6.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.07 – 0.18	0.06	0.04	0.03

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

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

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

Technical data

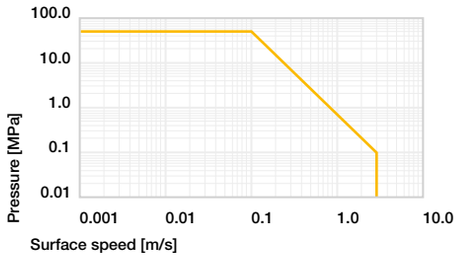

Diagram 01: Permissible pv values for iglidur® L350 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

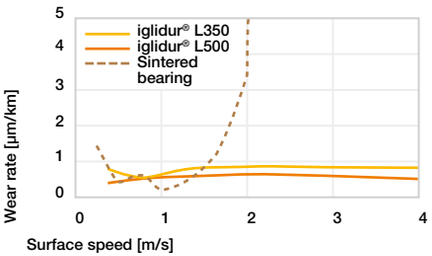

Diagram 05: Rotating wear against Cf53, p = 0.25MPa, T = +23°C

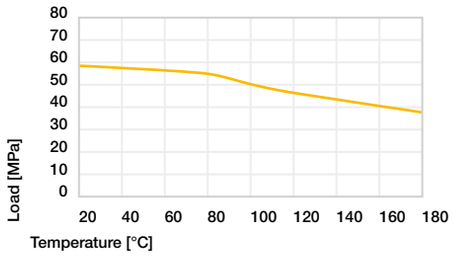

Diagram 02: Maximum recommended surface pressure as a function of temperature (59MPa at +20°C)

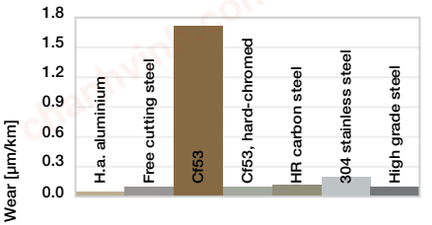

Diagram 06: Wear, rotating with different shaft materials, p = 1MPa, v = 0.3m/s

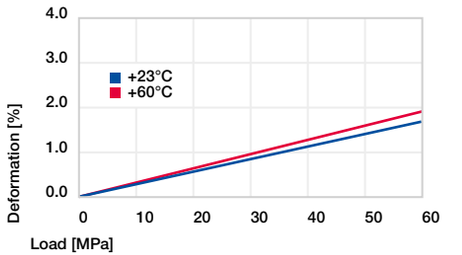

Diagram 03: Deformation under pressure and temperature

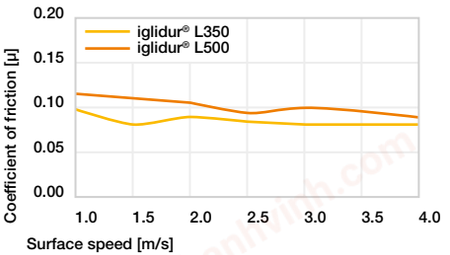

Diagram 07: Rotating coefficient of friction - "High speed" against Cf53, p = 1MPa (except for iglidur® L250), T = +23°C

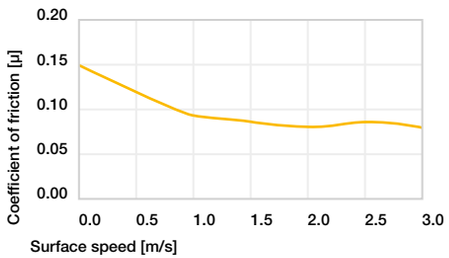

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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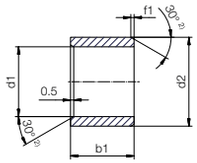
Bearing technology | Plain bearing | iglidur® L350

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12
f1 [mm]	0.3	0.5

Dimensions according to ISO 3547-1 and special dimensions

Order example: L350SM-0304-03 **– no minimum order quantity.**
L350 iglidur® material S Sleeve bearing M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
3.0	+0.006 +0.046	4.5	3.0	**L350SM-0304-03**
4.0	+0.010 +0.058	5.5	4.0	**L350SM-0405-04**
5.0		7.0	5.0	**L350SM-0507-05**
6.0		8.0	6.0	**L350SM-0608-06**
8.0	+0.013 +0.071	10.0	10.0	**L350SM-0810-10**
10.0		12.0	10.0	**L350SM-1012-10**

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/L350

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

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

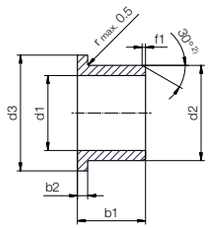
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® L350
+180°C
59MPa

Bearing technology | Plain bearing | iglidur® L350

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12
f1 [mm]	0.3	0.5

Dimensions according to ISO 3547-1 and special dimensions

Order example: L350FM-0304-05 **– no minimum order quantity.**
L350 iglidur® material F Flange bearing M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
3.0	+0.006 +0.046	4.5	7.5	5.0	0.75	**L350FM-0304-05**
4.0	+0.010 +0.058	5.5	9.5	6.0	0.75	**L350FM-0405-06**
5.0		7.0	11.0	7.0	1.00	**L350FM-0507-07**
6.0		8.0	12.0	8.0	1.00	**L350FM-0608-08**
8.0	+0.013 +0.071	10.0	15.0	9.0	1.00	**L350FM-0810-09**
10.0		12.0	18.0	9.0	1.00	**L350FM-1012-09**

[3] After press-fit. *Testing methods, page 57*

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Detailed information about delivery time online.
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Online ordering
Including delivery times, prices, online tools
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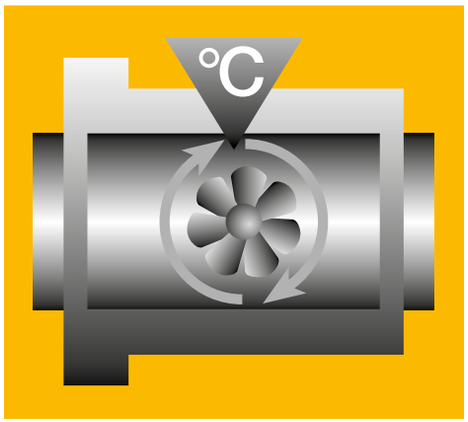

For extreme rotational speeds

Temperature-resistant and media-resistant

iglidur® L500

When to use it?

- For rotating applications at high speed
- When the highest service life is required
- For high pv values with low loads
- At continuous operating temperatures up to +250°C (short-term up to max. +350°C)

When not to use?

- When a universal plain bearing for high temperatures is required
  iglidur® X
- When medium to high pressures occur
  iglidur® G, iglidur® Q
- For oscillating applications
  iglidur® W300, iglidur® J350

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Bearing technology | Plain bearing | iglidur® L500

Ø
3.0 – 10.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

For extreme rotational speeds
Temperature-resistant and media-resistant

Specially developed for fast continuous operation under low loads, iglidur® L500, inter alia, is intended for fan and electric motor applications.

- Temperature-resistant up to +250°C
- For rotational movements with surface speeds up to 5m/s
- Very wear-resistant
- Low moisture absorption
- Low thermal expansion
- Lubrication-free
- Maintenance-free

Typical application areas

- Cooling fans
- Electric motors
- Fans, etc.

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® L500
+250°C
70MPa

Technical data

General properties			Testing method
Density	g/cm³	1.53	
Colour		black	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.3	
Coefficient of friction, dynamic, against steel	µ	0.08 – 0.15	
pv value, max. (dry)	MPa · m/s	4.00	
Mechanical properties			
Flexural modulus	MPa	12,015	DIN 53457
Flexural strength at +20°C	MPa	201	DIN 53452
Compressive strength	MPa	70	
Max. recommended surface pressure (+20°C)	MPa	70	
Shore D hardness		81	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+250	
Max. application temperature short-term	°C	+315	
Min. application temperature	°C	–100	
Thermal conductivity	W/m · K	0.45	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	6	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{10}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

–100°C up to +250°C

70MPa

V-0

RoHS-II

ISO 3547-1

Table 01: Material properties

iglidur® L500 is a plain bearing material for high speeds and fast sliding movements with low loads. Due to the low thermal expansion and low moisture absorption, bearings can be manufactured with minimal potential to expand. Applications which feature these advantages are fans, small motors, fast-running sensors or the magnet technology.

Moisture absorption

The very low moisture absorption of 0.1% weight in standard climatic conditions and 0.3% weight at maximum water absorption also enables continuous operation in high humidity or in liquid media.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

Plain bearings made from iglidur® L500 are resistant up to a radiation intensity of $3 \cdot 10^2$Gy. Higher radiation weakens the material and may result in a significant decrease in mechanical properties.

Resistance to weathering

iglidur® L500 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolorations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® L500 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® L500 at radial loads. At the maximum recommended surface pressure of 70MPa 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

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Bearing technology | Plain bearing | iglidur® L500

Permissible surface speeds

iglidur® L500 has been developed especially for high surface speeds with low loads. Due to the high temperature resistance of iglidur® L500, the limit of the bearing has been increased significantly. In addition, the extremely low wear allows the high acceleration speeds to be reached and maintained. The maximum speeds are shown in table 03.

Surface speed, page 44

Temperature

The iglidur® L500 plain bearings can be used in short-term temperatures up to +315°C. For temperatures over +135°C an additional securing is required. Higher temperatures can also cause the plain bearing to lose its press-fit and move in the hole.

Application temperatures, page 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 20MPa (diagram 05).

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagram 07 shows the result of a comparison test between iglidur® L500 and a sintered bearing. The wear of the sintered bearing increases exponentially above 1.5m/s, while the iglidur® L500 plain bearing retains a near constant wear rate up to and above 4m/s.

Shaft materials, page 52

Installation tolerances

iglidur® L500 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 57

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+
Strong alkalines	+

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	4.0	1.5	5.0
short-term	m/s	5.0	3.0	8.0

Table 03: Maximum surface speeds

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

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

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

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

Technical data

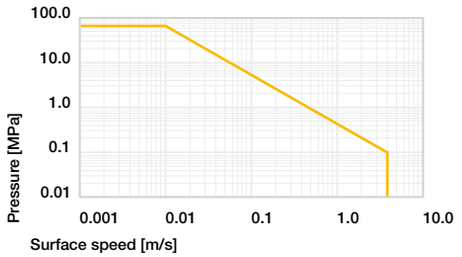

Diagram 01: Permissible pv values for iglidur® L500 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

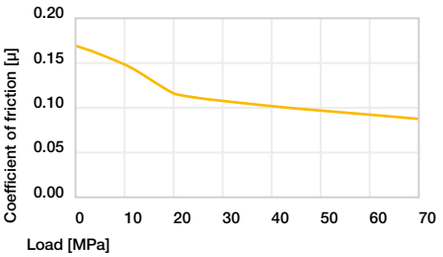

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

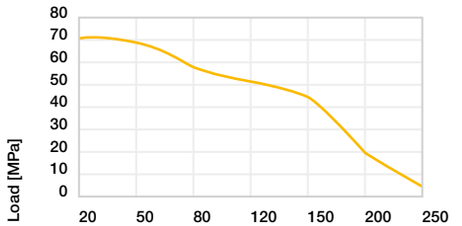

Diagram 02: Maximum recommended surface pressure as a function of temperature (70MPa at +20°C)

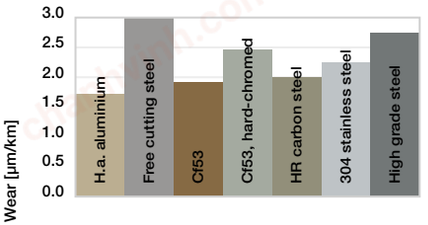

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

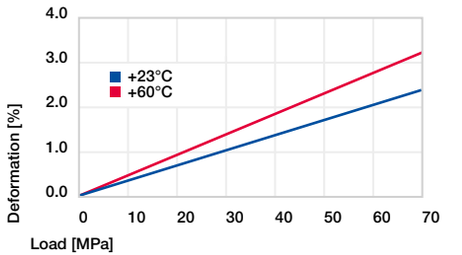

Diagram 03: Deformation under pressure and temperature

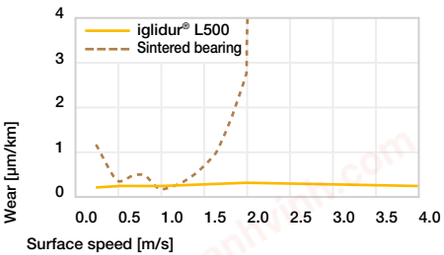

Diagram 07: Rotating wear against Cf53, p = 0.25MPa, T = +23°C

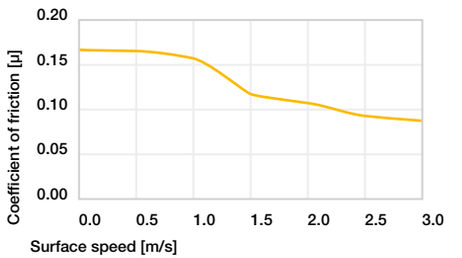

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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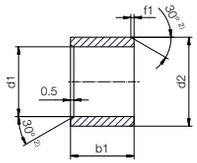
Bearing technology | Plain bearing | iglidur® L500

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12
f1 [mm]	0.3	0.5

Dimensions according to ISO 3547-1 and special dimensions

Order example: L500SM-0304-03 **– no minimum order quantity.**
L500 iglidur® material S Sleeve bearing M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
3.0	+0.006 +0.046	4.5	3.0	**L500SM-0304-03**
4.0	+0.010 +0.058	5.5	4.0	**L500SM-0405-04**
5.0		7.0	5.0	**L500SM-0507-05**
6.0		8.0	6.0	**L500SM-0608-06**
8.0	+0.013 +0.071	10.0	10.0	**L500SM-0810-10**
10.0		12.0	10.0	**L500SM-1012-10**

[3] After press-fit. *Testing methods, page 57*

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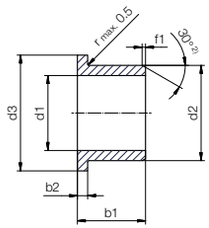
Free shipping within local Regular Service Area.

iglidur® L500
+250°C
70MPa

Bearing technology | Plain bearing | iglidur® L500

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12
f1 [mm]	0.3	0.5

Dimensions according to ISO 3547-1 and special dimensions

Order example: L500FM-0304-05 **– no minimum order quantity.**
L500 iglidur® material F Flange bearing M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
3.0	+0.006 +0.046	4.5	7.5	5.0	0.75	**L500FM-0304-05**
4.0	+0.010 +0.058	5.0	9.5	4.0	0.75	**L500FM-0405-04**
5.0		7.0	11.0	7.0	1.00	**L500FM-0507-07**
6.0		8.0	12.0	8.0	1.00	**L500FM-0608-08**
8.0	+0.013 +0.071	10.0	15.0	9.5	1.00	**L500FM-0810-09**
10.0		12.0	18.0	9.5	1.00	**L500FM-1012-09**

[3] After press-fit. *Testing methods, page 57*

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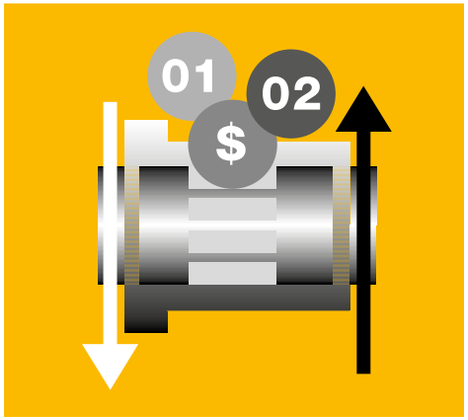

Low-cost
Abrasion-resistant
iglidur® R

When to use it?

- When high wear resistance at low loads is required
- When a cost-effective plain bearing is required
- When very low coefficients of friction in dry operation are required
- When high edge loads occur
- When you are looking for low water absorption
- When PTFE and silicone are not allowed in your application

When not to use?

- When high pressure occurs
  iglidur® G
- When continuous operating temperatures are higher than +90°C
  iglidur® G, iglidur® P
- When the best wear resistance is required
  iglidur® J

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Bearing technology | Plain bearing | iglidur® R

Ø
2.0 – 35.0mm



Also available as:

Bar stock, round bar
Page 676

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 846

Low-cost
Abrasion-resistant

Low-cost material with low coefficient of friction and good wear resistance at low to medium loads.

- High wear resistance
- Low coefficient of friction
- Cost-effective
- Low moisture absorption
- Lubrication-free
- Maintenance-free

Typical application areas

- Sports and leisure
- Model making
- Furniture industry
- Mechatronics

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® R
+90°C
23MPa

Technical data

General properties			Testing method
Density	g/cm³	1.39	
Colour		dark red	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	1.1	
Coefficient of friction, dynamic, against steel	µ	0.09 – 0.25	
pv value, max. (dry)	MPa · m/s	0.27	
Mechanical properties			
Flexural modulus	MPa	1,950	DIN 53457
Flexural strength at +20°C	MPa	70	DIN 53452
Compressive strength	MPa	68	
Max. recommended surface pressure (+20°C)	MPa	23	
Shore D hardness		77	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+110	
Min. application temperature	°C	–50	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	11	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties

–50°C up to +90°C

23MPa

HB

RoHS-II

ISO 3547-1

The development of the iglidur® R as a bearing material focused on high performance and very low cost. Especially in the dry operation low coefficient of friction and wear were to be achieved. Plain bearings made from iglidur® R are supported by a combination of solid lubricants. The PTFE and silicon-free material achieves extremely low coefficient of friction in dry operation and runs largely free of stick-slip effects.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® R plain bearings is approximately 0.2% weight. The saturation limit in water is 1.1% weight. This must be taken into account for these types of applications.

Vacuum

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

Radiation resistance

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

Resistance to weathering

iglidur® R plain bearings are resistant to weathering. The material properties are slightly affected. Discoloration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® R plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® R at radial loads. At the maximum recommended surface pressure of 23MPa the deformation is about 4% at room temperature. A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.

Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® R

Permissible surface speeds

iglidur® R plain bearings are suitable for high surface speeds. Speeds of up to 5.0m/s are permitted in linear motions. The maximum values shown in table 03 can only be achieved at low pressures. The specified values show the speed at which due to friction an increase in temperature up to the long-term permitted value can occur.

Surface speed, page 44

Temperature

With increasing temperatures, the compressive strength of iglidur® R plain bearings decreases. Diagram 02 shows this inverse relationship. The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +50°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05). iglidur® R is especially suitable for applications in which high pv values are induced mainly through the high surface speed rather than surface pressure. Less distinct is the dependency of the coefficient of friction of the iglidur® R plain bearings on the shaft surface.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagrams 06 and 07 show the test results of iglidur® R plain bearings running against various shaft materials. At 0.3m/s and 1MPa, the high grade steel and Cf53 shafts are the best materials. With increasing loads the iglidur® R bearings feature the best wear behaviour with Cf53 and 304 stainless steel shafts. In pivoting applications, the hard-chromed shaft proves to be the ideal mating surface. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 52

Installation tolerances

iglidur® R plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.8	0.6	3.5
short-term	m/s	1.2	1.0	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.09 – 0.25	0.09	0.04	0.04

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

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

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

iglidur® R
+90°C
23MPa

Technical data

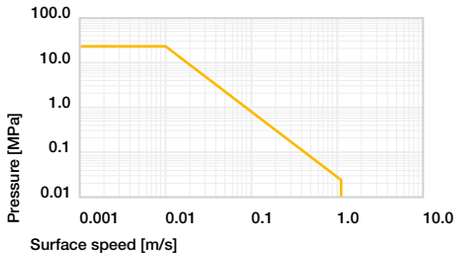

Diagram 01: Permissible pv values for iglidur® R plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

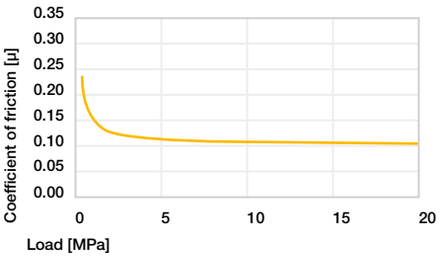

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

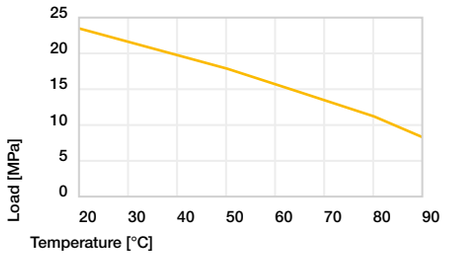

Diagram 02: Maximum recommended surface pressure as a function of temperature (23MPa at +20°C)

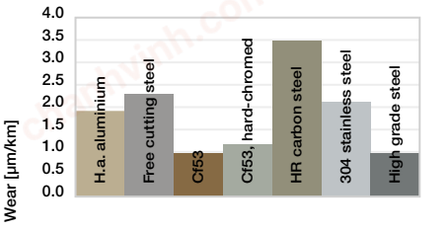

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

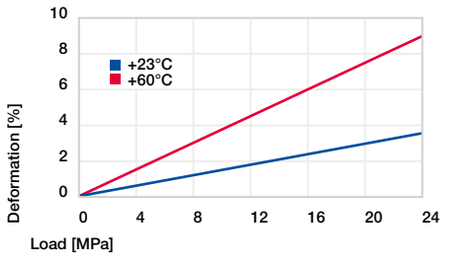

Diagram 03: Deformation under pressure and temperature

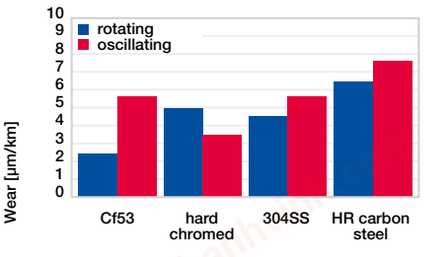

Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

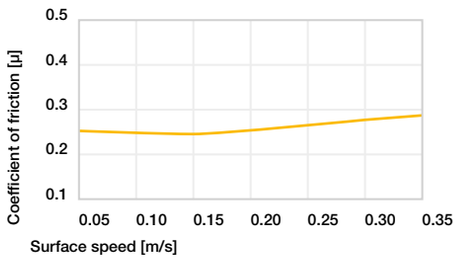

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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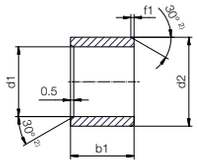
Bearing technology | Plain bearing | iglidur® R

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: RSM-0203-07 – no minimum order quantity.
R iglidur® material S Sleeve bearing M Metric 02 Inner Ø d1 03 Outer Ø d2 07 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
2.0	+0.014 +0.054	3.6	7.0	RSM-0203-07
4.0	+0.020 +0.068	5.5	4.0	RSM-0405-04
5.0		7.0	5.0	RSM-0507-05
6.0		8.0	6.0	RSM-0608-06
8.0	+0.025 +0.083	10.0	10.0	RSM-0810-10
10.0		12.0	5.0	RSM-1012-05
10.0		12.0	10.0	RSM-1012-10
10.0		12.0	15.0	RSM-1012-15
12.0	+0.032 +0.102	14.0	12.0	RSM-1214-12
14.0		16.0	15.0	RSM-1416-15
15.0		17.0	15.0	RSM-1517-15
16.0		18.0	15.0	RSM-1618-15
18.0		20.0	25.0	RSM-1820-25
20.0	+0.040 +0.124	23.0	15.0	RSM-2023-15
20.0		23.0	20.0	RSM-2023-20
25.0		28.0	25.0	RSM-2528-25
28.0		32.0	12.0	RSM-2832-12
30.0		34.0	25.0	RSM-3034-25
30.0		34.0	30.0	RSM-3034-30
35.0	+0.050 +0.150	39.0	30.0	RSM-3539-30

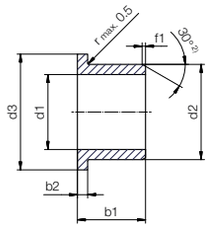
[3] After press-fit. *Testing methods, page 57*

iglidur® R
+90°C
23MPa

Bearing technology | Plain bearing | iglidur® R

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: RFM-0405-03 – no minimum order quantity.
R iglidur® material F Flange bearing M Metric 04 Inner Ø d1 05 Outer Ø d2 03 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
4.0	+0.020 +0.068	5.5	9.0	3.0	0.75	RFM-0405-03
4.0		5.5	9.5	4.0	0.75	RFM-0405-04
5.0		7.0	11.0	5.0	1.00	RFM-0507-05
6.0		8.0	12.0	6.0	1.00	RFM-0608-06
8.0	+0.025 +0.083	10.0	15.0	5.0	1.00	RFM-0810-05
8.0		10.0	15.0	10.0	1.00	RFM-0810-10
10.0		12.0	18.0	10.0	1.00	RFM-1012-10
10.0		12.0	18.0	18.0	1.00	RFM-1012-18
12.0	+0.032 +0.102	14.0	20.0	10.0	1.00	RFM-1214-10
12.0		14.0	20.0	12.0	1.00	RFM-1214-12
14.0		16.0	22.0	17.0	1.00	RFM-1416-17
15.0		17.0	23.0	17.0	1.00	RFM-1517-17
16.0		18.0	24.0	17.0	1.00	RFM-1618-17
18.0		20.0	26.0	17.0	1.00	RFM-1820-17
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	RFM-2023-21
22.0		25.0	29.0	4.5	1.50	RFM-222529-045
25.0		28.0	35.0	21.5	1.50	RFM-2528-21

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/R

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

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

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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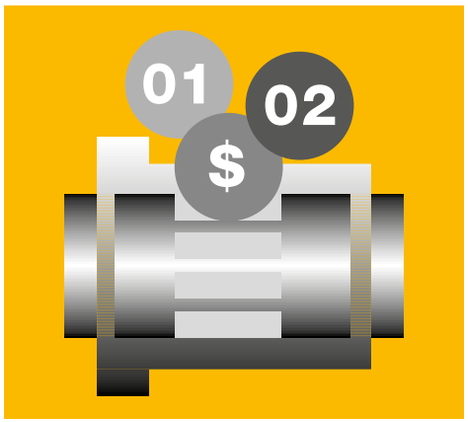

Low-cost with silicone
Abrasion-resistant
iglidur® D

When to use it?

- When low coefficient of friction is required
- For high speeds
- For low load
- When a cost-effective plain bearing is required

When not to use?

- When high pressure occurs
  iglidur® G
- When the part should be free of silicone
  iglidur® J, iglidur® R
- When continuous operating temperatures are higher than +90°C
  iglidur® G, iglidur® P

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Bearing technology | Plain bearing | iglidur® D

Ø
–



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

Low-cost with silicone
Abrasion-resistant

Low-cost-material with low coefficient of friction and good wear resistance at low loads.

- Low coefficient of friction
- For low loads
- Cost-effective
- Vibration-dampening
- Very low moisture absorption
- Lubrication-free
- Suitable for high surface speeds

Typical application areas

- Sports and leisure
- Model making
- Furniture industry
- Mechatronics

Descriptive technical specifications	–	+
Wear resistance at +23°C		
Wear resistance at +90°C		
Wear resistance at +150°C		
Low coefficient of friction		
Low moisture absorption		
Wear resistance under water		
High media resistance		
Resistant to edge pressures		
Suitable for shock and impact loads		
Resistant to dirt		

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® D
+90°C
23MPa

Technical data

General properties			Testing method
Density	g/cm³	1.40	
Colour		green	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	1.1	
Coefficient of friction, dynamic, against steel	µ	0.08 – 0.26	
pv value, max. (dry)	MPa · m/s	0.27	
Mechanical properties			
Flexural modulus	MPa	2,000	DIN 53457
Flexural strength at +20°C	MPa	72	DIN 53452
Compressive strength	MPa	70	
Max. recommended surface pressure (+20°C)	MPa	23	
Shore D hardness		78	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+110	
Min. application temperature	°C	–50	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	11	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{14}$	DIN IEC 93
Surface resistance	Ω	$> 10^{14}$	DIN 53482

Table 01: Material properties

–50°C up to +90°C

23MPa

HB

RoHS-II

During the development process of iglidur® D as a bearing material, high performance and low price were the top requirements. In particular, low coefficient of friction was required at high speeds in dry operation. This material containing silicone achieves low coefficient of friction in dry operation and runs with virtually no stick-slip.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® D plain bearings is approximately 0.3% weight. The saturation limit in water is 1.1% weight. This low moisture absorption allows its use in wet environments.

Vacuum

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

Radiation resistance

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

Resistance to weathering

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

Mechanical properties

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

iglidur® D plain bearings were specially developed for low radial loads. Diagram 03 shows the elastic deformation of iglidur® D at radial loads. At the maximum recommended surface pressure of 23MPa the deformation is less than 3%. A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.

Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® D

Permissible surface speeds

iglidur® D plain bearings are suitable for high surface speeds. Speeds of up to 10.0m/s are permitted in linear motions. The maximum values shown in table 03 can only be achieved at low pressures. The specified values show the speed at which due to friction an increase in temperature up to the long-term permitted value can occur.

Surface speed, page 44

Temperature

With increasing temperatures, the compressive strength of iglidur® D plain bearings decreases. Diagram 02 shows this inverse relationship. The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +50°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05). In the Ra range between 0.4 – 0.6μm, the coefficient of friction attains its optimum value.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagrams 06 and 07 show the test results of iglidur® D plain bearings running against various shaft materials. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 52

Installation tolerances

iglidur® D plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.5	1.1	8.0
short-term	m/s	3.0	2.1	10.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.08 – 0.26	0.09	0.04	0.04

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

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

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

iglidur® D plain bearings are manufactured to special order.

Technical data

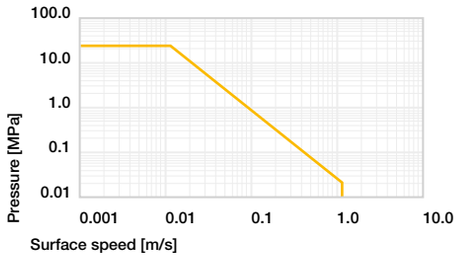

Diagram 01: Permissible pv values for iglidur® D plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

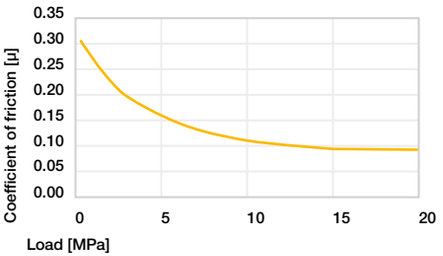

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

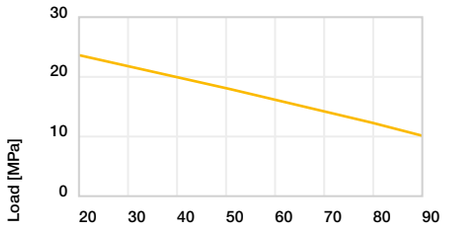

Diagram 02: Maximum recommended surface pressure as a function of temperature (23MPa at +20°C)

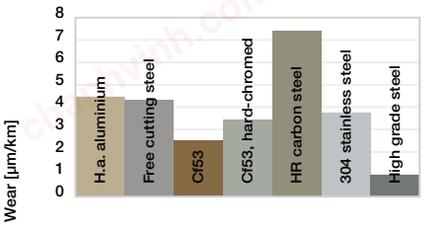

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

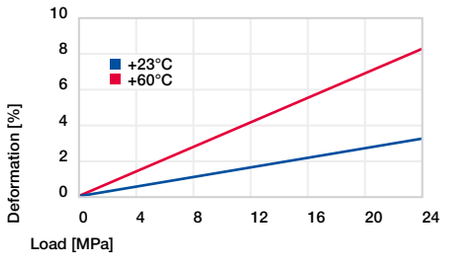

Diagram 03: Deformation under pressure and temperature

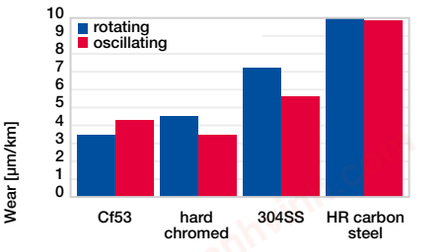

Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

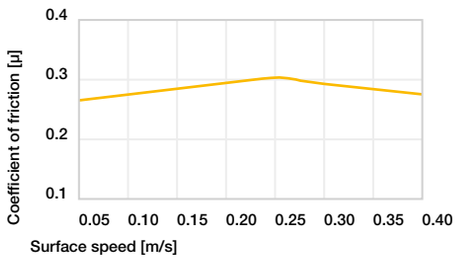

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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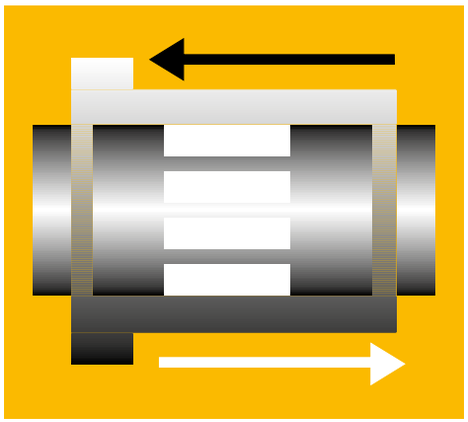

Specialist for linear movement

Low wear with low coefficient of friction

iglidur® J200

When to use it?

- For applications with hard-anodised shafts
- When lowest coefficient of friction is required
- When long service life at low loads is required

When not to use?

- For steel shafts
  iglidur® J, iglidur® W300
- When continuous operating temperatures are higher than +90°C
  iglidur® V400
- When a cost-effective universal plain bearing is required
  iglidur® G, iglidur® P

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Bearing technology | Plain bearing | iglidur® J200

Ø
–



Also available as:

Bar stock, round bar
Page 677

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

Specialist for linear movement
Low wear with low coefficient of friction

The specialist for low coefficient of friction and minimal wear with hard-anodised aluminium shafts.

- Recommended for hard-anodised aluminium shafts
- Low coefficient of friction
- High wear resistance
- For low and medium loads
- Lubrication-free
- Maintenance-free

Typical application areas

- Automation
- Linear technology
- Actuator

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® J200
+90°C
23MPa

Technical data

General properties			Testing method
Density	g/cm³	1.72	
Colour		matt grey	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	0.7	
Coefficient of friction, dynamic, against steel	µ	0.11 – 0.17	
pv value, max. (dry)	MPa · m/s	0.30	
Mechanical properties			
Flexural modulus	MPa	2,800	DIN 53457
Flexural strength at +20°C	MPa	58	DIN 53452
Compressive strength	MPa	43	
Max. recommended surface pressure (+20°C)	MPa	23	
Shore D hardness		70	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+120	
Min. application temperature	°C	–50	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	8	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^8$	DIN IEC 93
Surface resistance	Ω	$> 10^8$	DIN 53482

Table 01: Material properties

–50°C up to +90°C

23MPa

HB

RoHS-II

iglidur® J200 is the result of the development of extremely low friction plain bearing materials. When using plain bearings in linear motion, friction can be critical. Many materials can give low coefficient of friction under high loads, but iglidur® J200 can give excellent friction values even at low loads.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® J200 plain bearings is approximately 0.2% weight. The saturation limit in water is 0.7% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

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

Radiation resistance

Plain bearings made from iglidur® J200 are resistant up to a radiation intensity of $3 \cdot 10^2$Gy.

Resistance to weathering

iglidur® J200 plain bearings are resistant to weathering. The material properties are slightly affected. Discoloration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® J200 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

At the maximum permissible load of 23MPa, the deformation is approximately 3.5% (diagram 03). A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.

Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® J200

Permissible surface speeds

iglidur® J200 attains high surface speeds due to its excellent coefficient of friction. Continuous rotation speeds of 1.0m/s are possible. The permitted speeds are clearly higher yet in linear movements or in short-term operation. Speeds of over 15.0m/s have been successfully tested in linear applications.

Surface speed, page 44

Temperature

The maximum permissible temperature of +120°C should not be exceeded. Therefore the ambient temperature generated by friction has to be added. From +60°C onward, the bearing should be mechanically retained, so as to avoid the bearing moving out of the hole. The wear resistance also decreases exponentially from +70°C upwards.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

Among all the iglidur® materials, iglidur® J200 exhibits the lowest coefficient of friction. The average coefficient of friction of all measurements, even with different shaft materials, is 0.11µ. The use of hard-anodised aluminium as a shaft material is also of importance. The comparison with the rest of the iglidur® materials shows that iglidur® J200 plain bearings are suitable for rather low loads. The influence of surface speed and load on the coefficient of friction is small. The change of the coefficient of friction at high loads is in the normal range (diagrams 04 and 05). Surface finishes (Ra) of the shaft between 0.2 – 0.4µm are ideal. The influence of the shaft material on the wear resistance is significant. Even at low loads, we recommend to have a closer look into the wear database.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

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

Installation tolerances

iglidur® J200 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.0	0.7	10.0
short-term	m/s	1.5	1.1	15.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.11 – 0.17	0.09	0.04	0.04

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

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

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

iglidur® J200 plain bearings are manufactured to special order.

Technical data

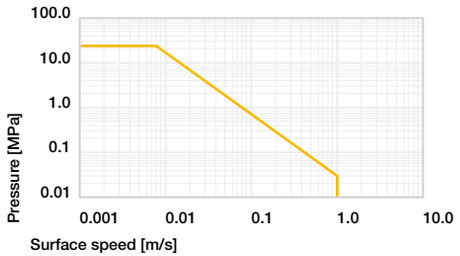

Diagram 01: Permissible pv values for iglidur® J200 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

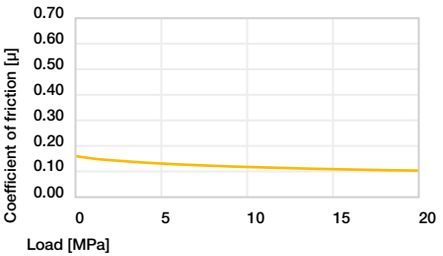

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

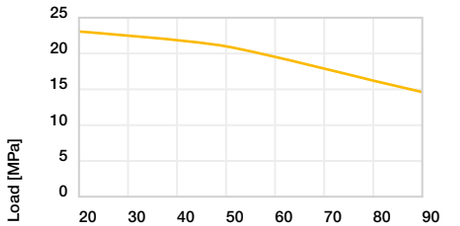

Diagram 02: Maximum recommended surface pressure as a function of temperature (23MPa at +20°C)

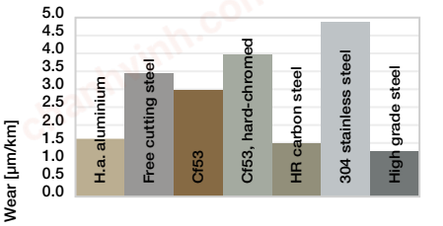

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

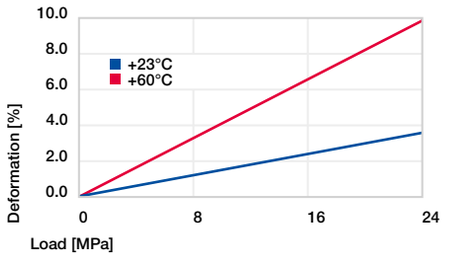

Diagram 03: Deformation under pressure and temperature

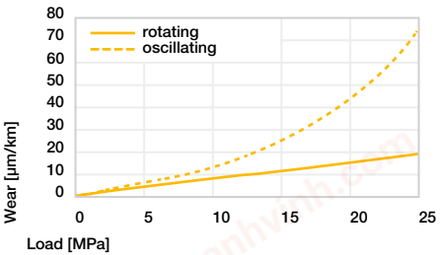

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

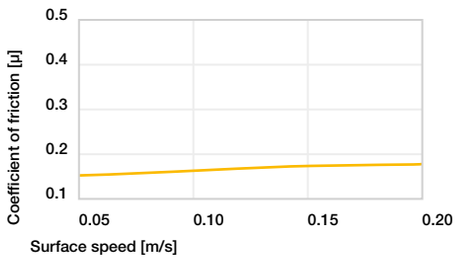

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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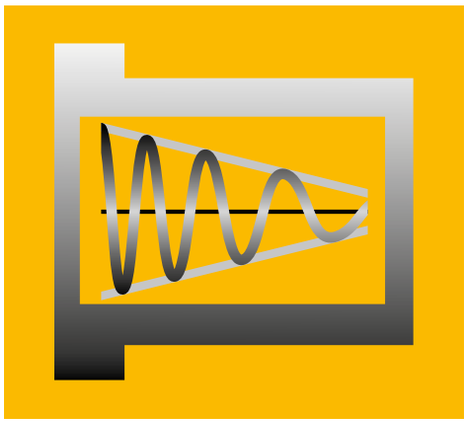

Ideal for pivoting movement

Vibration-dampening with low coefficient of friction for low or medium loads

iglidur® E7

When to use it?

- When good dampening properties and quiet operation are required
- When a low coefficient of friction in a pivoting movement is required
- When a tough material is required

When not to use?

- When high pressures occur
  iglidur® G, iglidur® Z
- When continuous operating temperatures are higher than 70°C
  iglidur® J350
- When universal wear resistance is required
  iglidur® J

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Bearing technology | Plain bearing | iglidur® E7

Ø
6.0 – 20.0mm



Also available as:

Bar stock, round bar
Page 677

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

Ideal for pivoting movement

Vibration-dampening with low coefficient of friction for low or medium loads

For the first time, the material iglidur® E7, well-known from drylin® linear technology, is also available as a plain bearing. Plain bearings made of the material offer excellent coefficient of friction and wear with low to medium loads.

- Noise-dampening
- Very low coefficients of friction
- Lubrication-free
- Corrosion-free

Typical application areas

- Packaging industry
- Textile industry
- Furniture/Industrial design

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® E7
+70°C
18MPa

Technical data

General properties			Testing method
Density	g/cm³	1.05	
Colour		dark grey	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.1	
Coefficient of friction, dynamic, against steel	µ	0.09 – 0.23	
pv value, max. (dry)	MPa · m/s	0.22	
Mechanical properties			
Flexural modulus	MPa	1,477	DIN 53457
Flexural strength at +20°C	MPa	22	DIN 53452
Compressive strength	MPa	18	
Max. recommended surface pressure (+20°C)	MPa	18	
Shore D hardness		61	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+70	
Max. application temperature short-term	°C	+90	
Min. application temperature	°C	–50	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	25	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$>10^9$	DIN IEC 93
Surface resistance	Ω	$>10^9$	DIN 53482

–50°C up to +70°C

18MPa

HB

RoHS-II

ISO 3547-1

Table 01: Material properties

The material E7 offers good vibration-dampening properties. With low coefficient of friction at low and medium loads, the material is a suitable partner for almost all shaft materials.

Moisture absorption
Under standard climatic conditions, the moisture absorption of iglidur® E7 plain bearings is approximately 0.1% weight. The saturation limit in water is 0.1% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum
In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance
Plain bearings made from iglidur® E7 are resistant up to a radiation intensity of $3 \cdot 10^2$Gy.

Resistance to weathering
iglidur® E7 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolorations are only superficial.

Mechanical properties
With increasing temperatures, the compressive strength of iglidur® E7 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this. At the maximum permissible load of 18MPa, the deformation is approximately 6% (diagram 03). A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® E7

Permissible surface speeds

iglidur® E7 attains high surface speeds due to its excellent coefficient of friction. Continuous rotation speeds of 0.5m/s are possible. The permitted speeds are clearly higher yet in linear movements or in short-term operation. Speeds of over 3.0m/s have been successfully tested in linear applications.

Surface speed, page 44

Temperature

The maximum permissible temperature of +90°C should not be exceeded. Therefore the ambient temperature generated by friction has to be added. From +30°C onward, the bearing should be mechanically retained, so as to avoid the bearing moving out of the hole. The wear resistance also decreases exponentially from +90°C upwards.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

Among all the iglidur® materials, iglidur® E7 exhibits the lowest coefficient of friction. The average coefficient of friction of all measurements, even with different shaft materials, is 0.11µ. The use of hard-anodised aluminium as a shaft material is also of importance. The comparison with the rest of the iglidur® materials shows that iglidur® E7 plain bearings are suitable for rather low loads. The influence of surface speed and load on the coefficient of friction is small. The change of the coefficient of friction at high loads is in the normal range (diagrams 04 and 05). Surface finishes (Ra) of the shaft between 0.8µm are ideal. The influence of the shaft material on the wear resistance is significant. Even at low loads, we recommend to have a closer look into the wear database.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

The shaft material has a great impact on the wear resistance. In fact, all shaft materials (smooth or hardened) are suitable for use with iglidur® E7, but the best results are achieved with hard-anodised aluminium. In particular when used in linear motion, this running surface has proven its value.

Shaft materials, page 52

Installation tolerances

iglidur® E7 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.5	0.4	2.0
short-term	m/s	0.8	0.6	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.09 – 0.23	0.09	0.04	0.04

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

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

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

iglidur® E7
+70°C
18MPa

Technical data

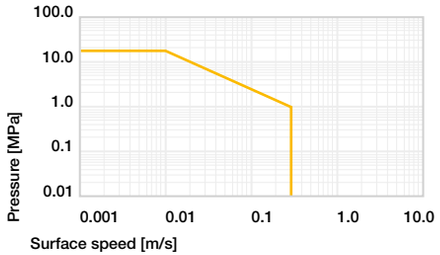

Diagram 01: Permissible pv values for iglidur® E7 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

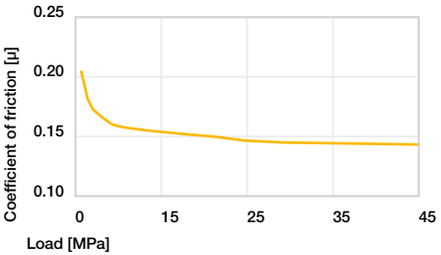

Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

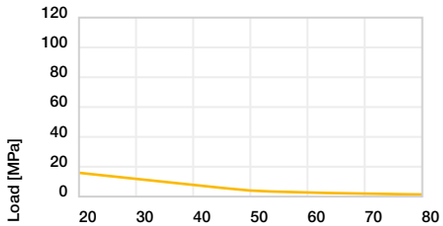

Diagram 02: Maximum recommended surface pressure as a function of temperature (18MPa at +20°C)

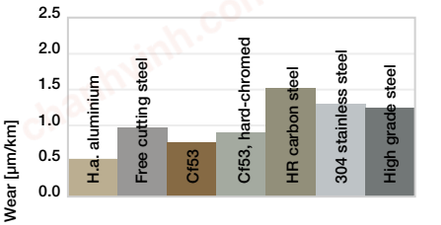

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

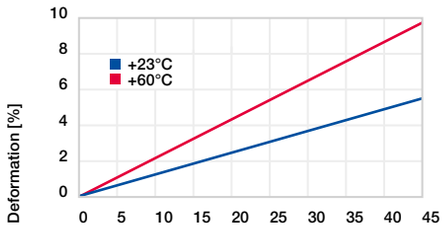

Diagram 03: Deformation under pressure and temperature

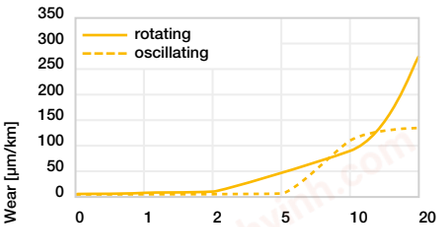

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

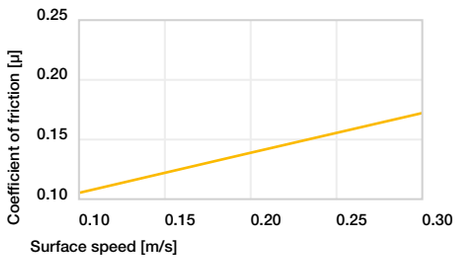

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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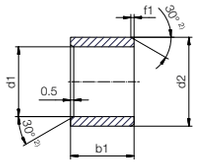
Bearing technology | Plain bearing | iglidur® E7

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: E7SM-0608-06 **– no minimum order quantity.**
E7 iglidur® material S Sleeve bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	6.0	**E7SM-0608-06**
8.0	+0.025 +0.083	10.0	10.0	**E7SM-0810-10**
10.0		12.0	10.0	**E7SM-1012-10**
12.0	+0.032 +0.102	14.0	12.0	**E7SM-1214-12**
16.0		18.0	15.0	**E7SM-1618-15**
20.0	+0.040 +0.124	23.0	20.0	**E7SM-2023-20**

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/E7

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

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

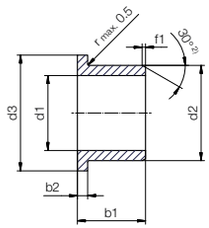
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® E7
+70°C
18MPa

Bearing technology | Plain bearing | iglidur® E7

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: E7FM-0608-06 **– no minimum order quantity.**
E7 iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	**E7FM-0608-06**
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	**E7FM-0810-10**
10.0		12.0	18.0	10.0	1.00	**E7FM-1012-10**
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	**E7FM-1214-12**
16.0		18.0	24.0	17.0	1.00	**E7FM-1618-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	**E7FM-2023-21**

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/E7

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

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

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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Plain bearing materials for high temperatures

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Plain bearing materials for high temperatures

Here you will find high-temperature specialists for continuous operating temperatures up to +250°C (exception: iglidur® V400 with +200°C).
In the meantime, the iglidur® X6 surpasses the standard iglidur® X here in many rotating and pivoting applications. iglidur® Z has also been long established as standard with extremely low wear rates under high loads and/or temperatures. iglidur® V400 is characterised as a problem solver in many special cases, and iglidur® UW500 is the specialist for hot liquids.

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert



iglidur® X
The chemical and temperature specialist

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



iglidur® Z
Long service life under extreme conditions

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



iglidur® X6
The high temperature specialist up to +250°C

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



iglidur® V400
For soft shafts and high temperatures

Temperature [°C] [123]	+200	– +
Surface pressure [MPa] [124]	45	– +
Coefficient of friction [µ] [125]	0.19	– +
Wear [µm/km] [125]	0.30	– +
Price index		– +

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



iglidur® HSD350
All-rounder for steam sterilisation

Temperature [°C] [123]	+180	– +
Surface pressure [MPa] [124]	30	– +
Coefficient of friction [µ] [125]	1.15	– +
Wear [µm/km] [125]	2.00	– +
Price index		– +



iglidur® UW500
For hot liquids

Temperature [°C] [123]	+250	– +
Surface pressure [MPa] [124]	140	– +
Coefficient of friction [µ] [125]	0.33	– +
Wear [µm/km] [125]	2.20	– +
Price index		– +

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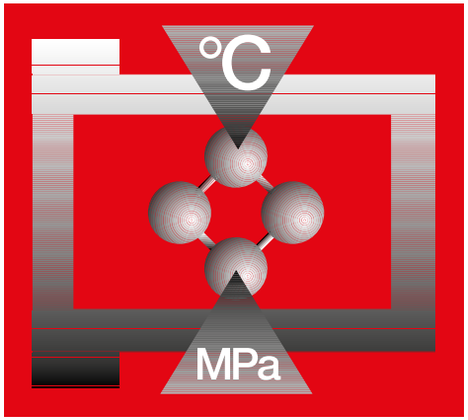

The chemical and temperature specialist

Up to 150MPa

iglidur® X

When to use it?

- For pressure loads up to 150MPa
- For linear movements with stainless steel at high temperatures
- Universal chemical resistance
- For temperature resistance from –100°C to +250°C (short-term up to +315°C)
- For very low moisture absorption
- For high wear resistance over the entire temperature range

When not to use?

- For very low wear at high loads
  iglidur® Q, iglidur® Z
- When a cost-effective plain bearing for underwater use is required
  iglidur® H, iglidur® H370
- For edge loads
  iglidur® Z

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Bearing technology | Plain bearing | iglidur® X



Ø
2.0 –
120.0mm

Also available as:

Bar stock, round bar
Page 678

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 584

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 847

The chemical and temperature specialist
Up to 150MPa

iglidur® X is defined by its combination of very high temperature resistance with high compressive strength, along with high resistance to chemicals. iglidur® X is designed for higher speeds than other iglidur® bearings.

- Continuous operating temperature from –100°C to +250°C
- Extremely high chemical resistance
- High compressive strength
- Very low moisture absorption
- High wear resistance

Typical application areas

- Beverage industry
- Woodworking
- Plastic processing industry
- Aerospace engineering
- Cleanroom

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® X
+250°C
150MPa

Technical data

General properties			Testing method
Density	g/cm³	1.44	
Colour		black	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.5	
Coefficient of friction, dynamic, against steel	µ	0.09 – 0.27	
pv value, max. (dry)	MPa · m/s	1.32	
Mechanical properties			
Flexural modulus	MPa	8,100	DIN 53457
Flexural strength at +20°C	MPa	170	DIN 53452
Compressive strength	MPa	100	
Max. recommended surface pressure (+20°C)	MPa	150	
Shore D hardness		85	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+250	
Max. application temperature short-term	°C	+315	
Min. application temperature	°C	–100	
Thermal conductivity	W/m · K	0.60	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	5	DIN 53752
Electrical properties[5]			
Specific contact resistance	Ωcm	$< 10^5$	DIN IEC 93
Surface resistance	Ω	$< 10^3$	DIN 53482

[5] The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

Table 01: Material properties

–100°C up to +250°C

150MPa

V-0

RoHS-II

ISO 3547-1

iglidur® X has an excellent combination of high temperature resistance, high compressive strength, and excellent resistance to chemicals. The aspect of temperature resistance and pressure susceptibility is also reflected in the pv graph.

Moisture absorption

The moisture absorption of iglidur® X plain bearings is very low. It is approximately 0.1% weight under standard climatic conditions. The maximum moisture absorption is 0.5% weight.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

Plain bearings made from iglidur® X are resistant up to a radiation intensity of $1 \cdot 10^5$Gy.

Resistance to weathering

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

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® X plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® X at radial loads.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® X

Permissible surface speeds

iglidur® X is designed for higher speeds than other iglidur® bearings. This is enabled by its high temperature resistance and excellent thermal conductivity. This is also made clear by the max. pv value of 1.32MPa. However, in this case, only the smallest radial loads may act on the bearings. At the given speeds, friction can cause a temperature increase to maximum permissible levels.

Surface speed, page 44

Temperature

In the case of a permissible long-term application temperature of +250°C, iglidur® X will even withstand +315°C for short periods. As in the case of all thermoplastics, the compression strength of iglidur® X decreases when temperatures rise. For temperatures over +135°C an additional securing is required. At temperatures over +170°C the axial security of the bearing in the housing needs to be tested. Please contact us if you have questions on bearing use.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

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

Coefficient of friction and surfaces, page 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® X a ground surface with an average surface finish Ra = 0.6 – 0.8μm is recommended. Diagrams 06 and 07 show the test results of iglidur® X plain bearings running against various shaft materials. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 52

Installation tolerances

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

Testing methods, page 57

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.5	1.1	5.0
short-term	m/s	3.5	2.5	10.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.09 – 0.27	0.09	0.04	0.04

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

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

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

Technical data

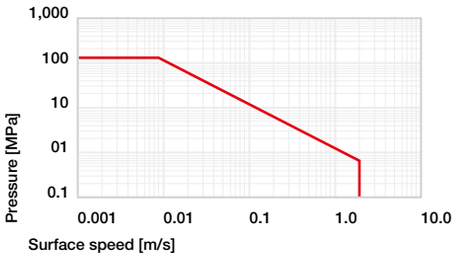

Diagram 01: Permissible pv values for iglidur® X plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

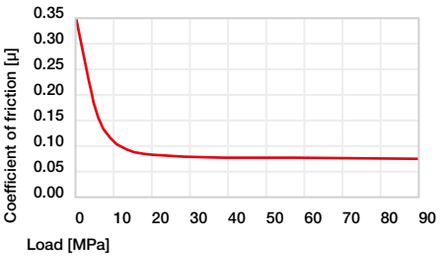

Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

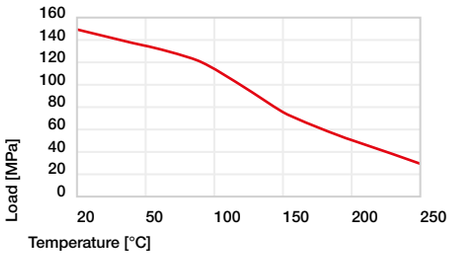

Diagram 02: Maximum recommended surface pressure as a function of temperature (150MPa at +20°C)

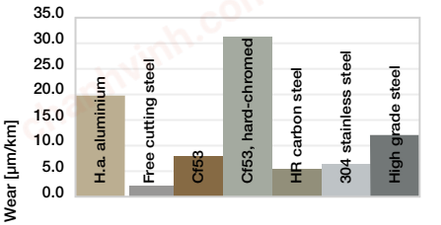

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

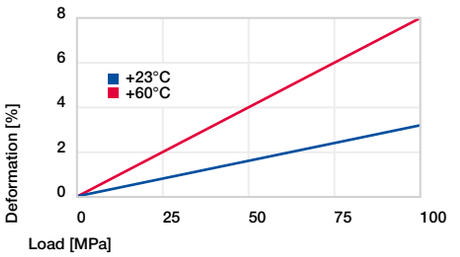

Diagram 03: Deformation under pressure and temperature

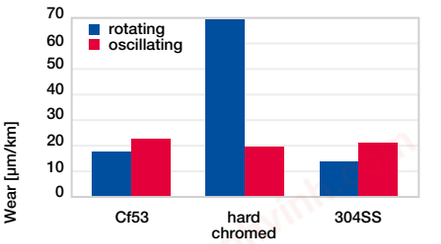

Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

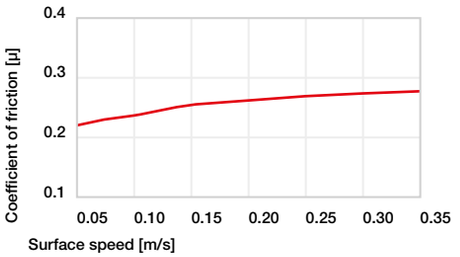

Diagram 04: Coefficient of friction as a function of the surface speed, v = 0.01m/s

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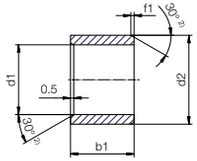
Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: XSM-0203-03 – no minimum order quantity.
X iglidur® material S Sleeve bearing M Metric 02 Inner Ø d1 03 Outer Ø d2 03 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
2.0	+0.006 +0.046	3.5	3.0	XSM-0203-03
3.0		4.5	3.0	XSM-0304-03
3.0		4.5	6.0	XSM-0304-06
4.0		5.5	4.0	XSM-0405-04
4.0		5.5	6.0	XSM-0405-06
4.0		5.5	9.0	XSM-0405-09
4.0		5.5	10.0	XSM-0405-10
5.0		7.0	3.5	XSM-0507-035
5.0	+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		12.0	20.0	XSM-1012-20

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
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		16.0	25.0	XSM-1416-25
15.0	+0.016 +0.086	17.0	7.0	XSM-1517-07
15.0		17.0	10.0	XSM-1517-10
15.0		17.0	15.0	XSM-1517-15
15.0		17.0	20.0	XSM-1517-20
15.0		17.0	25.0	XSM-1517-25
16.0		18.0	10.0	XSM-1618-10
16.0		18.0	12.0	XSM-1618-12
16.0		18.0	15.0	XSM-1618-15
16.0		18.0	20.0	XSM-1618-20
16.0		18.0	25.0	XSM-1618-25
16.0		18.0	35.0	XSM-1618-35
17.0		19.0	20.0	XSM-1719-20
18.0		20.0	15.0	XSM-1820-15
18.0		20.0	20.0	XSM-1820-20
18.0		20.0	25.0	XSM-1820-25

[3] After press-fit. *Testing methods, page 57*

iglidur® X
+250°C
150MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
20.0	+0.016 +0.086	22.0	14.0	XSM-2022-140
20.0		22.0	14.5	XSM-2022-145
20.0		22.0	17.0	XSM-2022-17
20.0		22.0	18.0	XSM-2022-18
20.0		22.0	20.0	XSM-2022-20
20.0		23.0	7.0	XSM-2023-07
20.0		23.0	10.0	XSM-2023-10
20.0		23.0	15.0	XSM-2023-15
20.0		23.0	20.0	XSM-2023-20
20.0		23.0	25.0	XSM-2023-25
20.0		23.0	30.0	XSM-2023-30
22.0		25.0	15.0	XSM-2225-15
22.0		25.0	20.0	XSM-2225-20
22.0		25.0	25.0	XSM-2225-25
22.0		25.0	30.0	XSM-2225-30
24.0		26.0	20.0	XSM-2426-20
24.0		27.0	6.0	XSM-2427-06
24.0		27.0	15.0	XSM-2427-15
24.0		27.0	20.0	XSM-2427-20
24.0	+0.020 +0.104	27.0	25.0	XSM-2427-25
24.0		27.0	30.0	XSM-2427-30
25.0		28.0	7.7	XSM-2528-077
25.0		28.0	9.0	XSM-2528-09
25.0		28.0	12.0	XSM-2528-12
25.0		28.0	13.0	XSM-2528-13
25.0		28.0	15.0	XSM-2528-15
25.0		28.0	20.0	XSM-2528-20
25.0		28.0	25.0	XSM-2528-25
25.0		28.0	30.0	XSM-2528-30
25.0		28.0	35.0	XSM-2528-35
26.0		28.0	10.0	XSM-2628-10
27.0		30.0	5.7	XSM-2730-05
28.0		32.0	20.0	XSM-2832-20
28.0		32.0	25.0	XSM-2832-25
28.0		32.0	30.0	XSM-2832-30
28.0		32.0	69.0	XSM-2832-69
30.0		34.0	10.0	XSM-3034-10
30.0		34.0	15.0	XSM-3034-15

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
30.0		34.0	20.0	XSM-3034-20
30.0	+0.020 +0.104	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
45.0		50.0	50.0	XSM-4550-50
50.0		55.0	20.0	XSM-5055-20
50.0		55.0	30.0	XSM-5055-30
50.0		55.0	40.0	XSM-5055-40
50.0		55.0	50.0	XSM-5055-50
50.0		55.0	60.0	XSM-5055-60
55.0		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*

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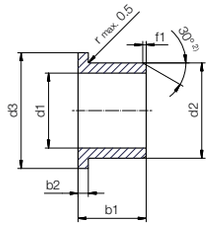
Bearing technology | Plain bearing | iglidur® X

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: XFM-0304-05 – no minimum order quantity.
X iglidur® material F Flange bearing M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
2.0	+0.006	4.0	6.0	3.0	1.00	XFM-020406-03
3.0	+0.046	4.5	7.5	5.0	0.75	XFM-0304-05
4.0		5.5	9.5	4.0	0.75	XFM-0405-04
4.0		5.5	9.5	6.0	0.75	XFM-0405-06
4.0	+0.010	5.5	8.0	6.0	0.75	XFM-040508-06
5.0	+0.058	7.0	11.0	5.0	1.00	XFM-0507-05
6.0		8.0	12.0	4.0	1.00	XFM-0608-04
6.0		8.0	12.0	8.0	1.00	XFM-0608-08
6.0		8.0	12.0	10.0	1.00	XFM-0608-10
8.0		10.0	12.0	4.0	1.00	XFM-081012-04
8.0		10.0	15.0	5.5	1.00	XFM-0810-05
8.0		10.0	15.0	7.5	1.00	XFM-0810-07
8.0		10.0	15.0	8.0	1.00	XFM-0810-08
8.0		10.0	15.0	9.5	1.00	XFM-0810-09
8.0		10.0	14.0	31.5	1.00	XFM-081014-31
9.0		11.0	15.0	18.0	0.50	XFM-0911-18
10.0		12.0	18.0	5.0	1.00	XFM-1012-05
10.0	+0.013	12.0	18.0	6.0	1.00	XFM-1012-06
10.0	+0.071	12.0	18.0	7.0	1.00	XFM-1012-07
10.0		12.0	15.0	8.0	1.00	XFM-1012-08
10.0		12.0	18.0	9.0	1.00	XFM-1012-09
10.0		12.0	18.0	12.0	1.00	XFM-1012-12
10.0		12.0	18.0	15.0	1.00	XFM-1012-15
10.0		12.0	18.0	17.0	1.00	XFM-1012-17
10.0		12.0	18.0	18.0	1.00	XFM-1012-18
10.0		12.0	15.0	22.0	1.00	XFM-1012-22
10.0		12.0	18.0	25.0	1.00	XFM-1012-25

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
12.0		14.0	18.0	3.9	1.00	XFM-121418-039
12.0		14.0	20.0	5.5	1.00	XFM-1214-055
12.0		14.0	18.0	5.9	1.00	XFM-121418-059
12.0		14.0	20.0	9.0	1.00	XFM-1214-09
12.0		14.0	20.0	12.0	1.00	XFM-1214-12
12.0		14.0	20.0	15.0	1.00	XFM-1214-15
12.0		14.0	20.0	17.0	1.00	XFM-1214-17
14.0		16.0	22.0	10.0	1.00	XFM-1416-10
14.0		16.0	22.0	12.0	1.00	XFM-1416-12
14.0	+0.016	16.0	22.0	17.0	1.00	XFM-1416-17
15.0	+0.086	17.0	23.0	6.0	1.00	XFM-1517-06
15.0		17.0	23.0	9.0	1.00	XFM-1517-09
15.0		17.0	23.0	12.0	1.00	XFM-1517-12
15.0		17.0	23.0	17.0	1.00	XFM-1517-17
16.0		18.0	24.0	12.0	1.00	XFM-1618-12
16.0		18.0	24.0	17.0	1.00	XFM-1618-17
18.0		20.0	26.0	12.0	1.00	XFM-1820-12
18.0		20.0	26.0	17.0	1.00	XFM-1820-17
18.0		20.0	26.0	22.0	1.00	XFM-1820-22
20.0		23.0	30.0	6.5	1.50	XFM-2023-065
20.0		23.0	30.0	7.5	1.50	XFM-2023-075
20.0		23.0	30.0	11.5	1.50	XFM-2023-11
20.0	+0.020	23.0	30.0	16.5	1.50	XFM-2023-16
20.0	+0.104	23.0	30.0	21.0	1.50	XFM-2023-21
25.0		28.0	33.0	8.0	1.00	XFM-252833-08
25.0		28.0	35.0	11.5	1.50	XFM-2528-11
25.0		28.0	35.0	13.5	1.50	XFM-2528-13
25.0		28.0	35.0	16.5	1.50	XFM-2528-16

[3] After press-fit. *Testing methods, page 57*

iglidur® X
+250°C
150MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
25.0		28.0	35.0	21.0	1.50	XFM-2528-21
27.0	+0.020	30.0	38.0	20.0	1.50	XFM-2730-20
30.0	+0.104	34.0	42.0	16.0	2.00	XFM-3034-16
30.0		34.0	42.0	26.0	2.00	XFM-3034-26
30.0		34.0	42.0	40.0	2.00	XFM-3034-40
32.0		36.0	45.0	15.0	2.00	XFM-3236-15
32.0	+0.025	36.0	45.0	26.0	2.00	XFM-3236-26
35.0	+0.125	39.0	47.0	16.0	2.00	XFM-3539-16
35.0		39.0	47.0	26.0	2.00	XFM-3539-26
40.0		44.0	52.0	22.0	2.00	XFM-4044-22
40.0	+0.025	44.0	52.0	30.0	2.00	XFM-4044-30
40.0	+0.125	44.0	52.0	40.0	2.00	XFM-4044-40
45.0		50.0	58.0	50.0	2.00	XFM-4550-50
50.0		55.0	63.0	40.0	2.00	XFM-5055-40
60.0	+0.030	65.0	73.0	40.0	2.00	XFM-6065-40
70.0	+0.150	75.0	83.0	40.0	2.00	XFM-7075-40
75.0		80.0	88.0	50.0	2.00	XFM-7580-50

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/X

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

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

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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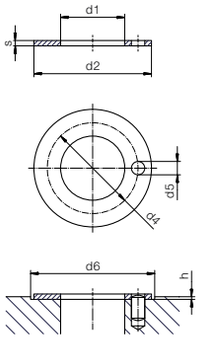
Bearing technology | Plain bearing | iglidur® X

Thrust washer (form T)





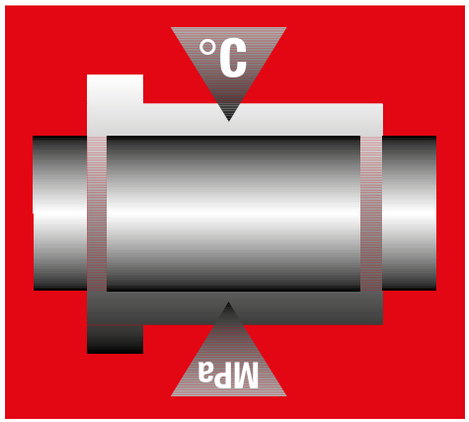
Dimensions according to ISO 3547-1 and special dimensions

Order example: XTM-0620-015 – no minimum order quantity.
X iglidur® material T Thrust washer M Metric 06 Inner Ø d1 20 Outer Ø d2 015 Thickness s

d1 +0.25 [mm]	d2 –0.25 [mm]	d4 –0.12 +0.12 [mm]	d5 +0.375 +0.125 [mm]	h +0.2/–0.2 [mm]	d6 +0.12 [mm]	s –0.05 [mm]	Part No.
6	20	13	1.5	1	20	1.5	**XTM-0620-015**
8	18	13	1.5	1	18	1.5	**XTM-0818-015**
8	29	[4]	[4]	1	29	1.5	**XTM-0829-015**
8	30	[4]	[4]	1	30	1.5	**XTM-0830-015**
10	18	[4]	[4]	0.7	18	1	**XTM-1018-010**
12	24	18	1.5	1	24	1.5	**XTM-1224-015**
14	26	20	2	1	26	1.5	**XTM-1426-015**
15	22	[4]	[4]	0.5	22	0.8	**XTM-1522-008**
15	24	19.5	1.5	1	24	1.5	**XTM-1524-015**
16	30	22	2	1	30	1.5	**XTM-1630-015**
18	32	25	2	1	32	1.5	**XTM-1832-015**
20	36	28	3	1	36	1.5	**XTM-2036-015**
22	38	30	3	1	38	1.5	**XTM-2238-015**
24	42	33	3	1	42	1.5	**XTM-2442-015**
26	44	35	3	1	44	1.5	**XTM-2644-015**
28	48	38	4	1	48	1.5	**XTM-2848-015**
32	54	43	4	1	54	1.5	**XTM-3254-015**
38	62	50	4	1	62	1.5	**XTM-3862-015**
42	66	54	4	1	66	1.5	**XTM-4266-015**
48	74	61	4	1.5	74	2	**XTM-4874-020**
52	78	65	4	1.5	78	2	**XTM-5278-020**
62	90	76	4	1.5	90	2	**XTM-6290-020**

[4] Design without fixing hole





Long service life under extreme conditions

Resistant to wear and impact even at high loads and temperatures

iglidur® Z

When to use it?

- For temperatures up to +250°C long-term or +310°C short-term
- When low wear is required especially under high radial loads
- For high surface speeds
- For edge pressure in connection with high surface pressures

When not to use?

- For low loads and temperatures
  iglidur® P
- When a cost-effective all-round plain bearing is required
  iglidur® G
- When electrically conductive plain bearings are required
  iglidur® F, iglidur® H, iglidur® H370

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Bearing technology | Plain bearing | iglidur® Z

Ø
4.0 –
120.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 584

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

Long service life under extreme conditions
Resistant to wear and impact even at high loads and temperatures

Extremely high compressive strength coupled with high flexibility enables iglidur® Z bearings to attain their prominent properties in association with soft shafts, edge loads and impacts. At the same time the bearings suitable for temperatures up to +250°C.

- Excellent wear resistance especially with high loads
- High temperature resistance
- Suitable for very high loads
- Suitable for high surface speeds
- Suitable for high edge pressures
- Lubrication-free
- Maintenance-free

Typical application areas
- Construction machinery industry
- Mechanical engineering
- Textile industry
- Aerospace engineering
- Glass industry

Descriptive technical specifications	–	+
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® Z
+250°C
150MPa

Technical data

General properties			Testing method
Density	g/cm³	1.40	
Colour		brown	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	1.1	
Coefficient of friction, dynamic, against steel	µ	0.06 – 0.14	
pv value, max. (dry)	MPa · m/s	0.84	
Mechanical properties			
Flexural modulus	MPa	2,400	DIN 53457
Flexural strength at +20°C	MPa	95	DIN 53452
Compressive strength	MPa	65	
Max. recommended surface pressure (+20°C)	MPa	150	
Shore D hardness		81	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+250	
Max. application temperature short-term	°C	+310	
Min. application temperature	°C	–100	
Thermal conductivity	W/m · K	0.62	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	4	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{11}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

–100°C up to +250°C

150MPa

V-0

RoHS-II

ISO 3547-1

Table 01: Material properties

In addition to iglidur® X, iglidur® Z is among the best-selling iglidur® high-temperature materials. Specifically worth noting is the outstanding wear behaviour under extreme conditions (high loads and temperatures).

Moisture absorption
Under standard climatic conditions, the moisture absorption of iglidur® Z plain bearings is approximately 0.3% weight. The saturation limit in water is 1.1% weight.

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

Radiation resistance
Plain bearings made from iglidur® Z are resistant up to a radiation intensity of $1 \cdot 10^5$Gy.

Resistance to weathering
iglidur® Z plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolorations are only superficial.

Mechanical properties
With increasing temperatures, the compressive strength of iglidur® Z plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
iglidur® Z is suitable for both medium and – due to its high heat resistance – high speeds. Diagram 03 shows the elastic deformation of iglidur® Z at radial loads. At the maximum recommended surface pressure of 150MPa the deformation is about 5.5% at room temperature.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® Z

Permissible surface speeds

iglidur® Z is a high temperature bearing material, which is suitable for applications involving very high specific loads. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 44

Temperature

The iglidur® Z plain bearings can be used in short-term temperatures up to +310°C. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. At high temperatures iglidur® Z is also the most wear-resistant material in dry operation. For temperatures over +145°C an additional securing is required.

Application temperatures, page 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).

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagram 06 shows wear rates in the lower load range, which are very similar to those of other wear-resistant iglidur® materials. However, in the upper load range iglidur® Z outperforms all other materials in wear resistance. Provided a Cf53 hardened and ground steel shaft is used, the wear is still only 15µm/km at 45MPa. At low loads iglidur® Z plain bearings wear less in pivoting applications than in rotating applications. 304 stainless steel and hard-chromed shafts are of interest here.

Shaft materials, page 52

Installation tolerances

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

Testing methods, page 57

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.5	1.1	5.0
short-term	m/s	3.5	2.5	6.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.06 – 0.14	0.09	0.04	0.04

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

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

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

Technical data

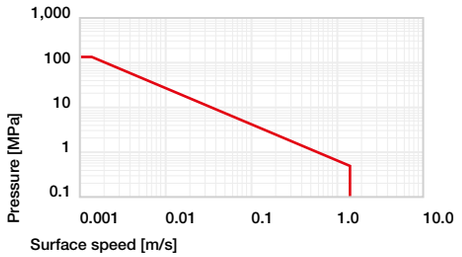

Diagram 01: Permissible pv values for iglidur® Z plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

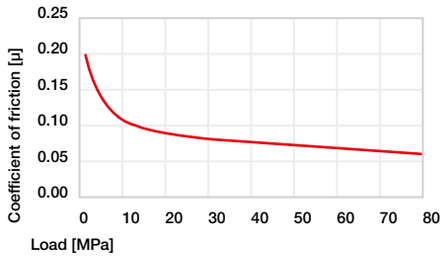

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

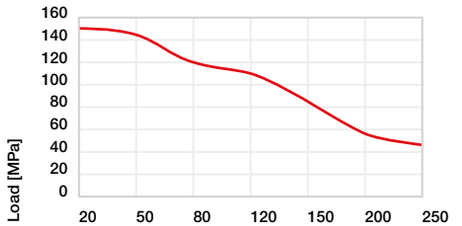

Diagram 02: Maximum recommended surface pressure as a function of temperature (150MPa at +20°C)

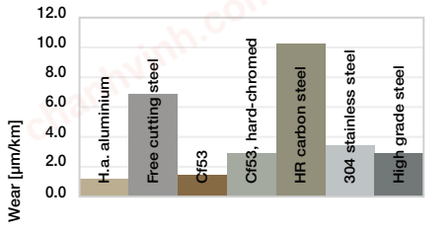

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

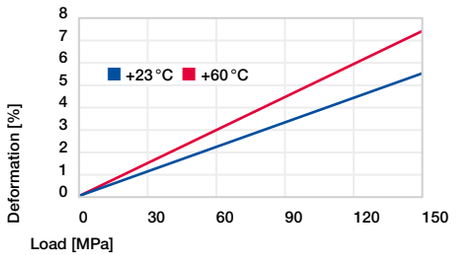

Diagram 03: Deformation under pressure and temperature

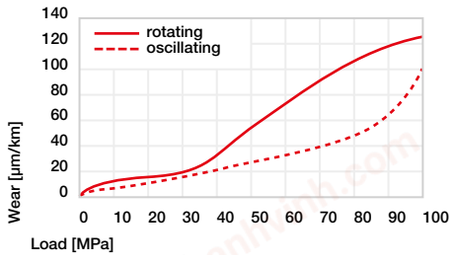

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

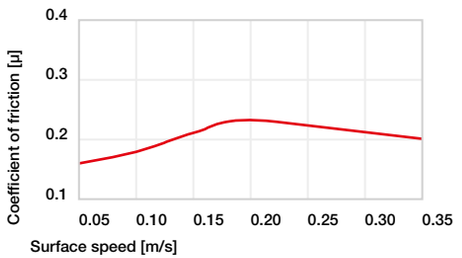

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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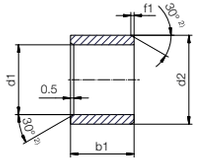
Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: ZSM-0405-04 – no minimum order quantity.
Z iglidur® material S Sleeve bearing M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
4.0		5.5	4.0	ZSM-0405-04
4.0		5.5	6.0	ZSM-0405-06
4.0		5.0	8.0	ZSM-0405-08
5.0		7.0	5.0	ZSM-0507-05
5.0	+0.010	7.0	9.0	ZSM-0507-09
5.0	+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	12.0	8.0	ZSM-1012-08
10.0	+0.071	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		14.0	15.0	ZSM-1214-15
12.0	+0.016	14.0	20.0	ZSM-1214-20
13.0	+0.086	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		24.0	30.0	ZSM-2224-30
22.0	+0.020	25.0	15.0	ZSM-2225-15
22.0	+0.104	25.0	20.0	ZSM-2225-20
22.0		25.0	25.0	ZSM-2225-25
22.0		25.0	30.0	ZSM-2225-30
24.0		27.0	15.0	ZSM-2427-15
24.0		27.0	20.0	ZSM-2427-20
24.0		27.0	25.0	ZSM-2427-25
24.0		27.0	30.0	ZSM-2427-30
25.0		28.0	15.0	ZSM-2528-15

[3] After press-fit. *Testing methods, page 57*

iglidur® Z
+250°C
150MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
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		30.0	34.0	ZSM-2630-34
28.0	+0.020	32.0	20.0	ZSM-2832-20
28.0	+0.104	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		39.0	20.0	ZSM-3539-20
35.0	+0.025	39.0	30.0	ZSM-3539-30
35.0	+0.125	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	50.0	40.0	ZSM-4550-40
45.0	+0.125	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	+0.030	65.0	60.0	ZSM-6065-60
70.0	+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	+0.036	90.0	100.0	ZSM-8590-100
85.0	+0.176	90.0	60.0	ZSM-8590-60
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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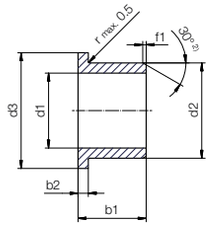
Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: ZFM-0405-04 – no minimum order quantity.
Z iglidur® material F Flange bearing M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
4.0		5.0	9.0	4.0	0.75	ZFM-0405-04
5.0	+0.010	7.0	11.0	5.0	1.00	ZFM-0507-05
6.0	+0.058	8.0	12.0	4.0	1.00	ZFM-0608-04
6.0		8.0	12.0	8.0	1.00	ZFM-0608-08
8.0		10.0	15.0	5.0	1.00	ZFM-0810-05
8.0		10.0	15.0	7.5	1.00	ZFM-0810-07
8.0		10.0	15.0	9.0	1.00	ZFM-0810-09
9.0		11.0	17.0	20.0	0.50	ZFM-091117-20
10.0		12.0	18.0	5.0	1.00	ZFM-1012-05
10.0	+0.013	12.0	18.0	7.0	1.00	ZFM-1012-07
10.0	+0.071	12.0	18.0	9.0	1.00	ZFM-1012-09
10.0		12.0	18.0	12.0	1.00	ZFM-1012-12
10.0		12.0	18.0	15.0	1.00	ZFM-1012-15
10.0		12.0	18.0	17.0	1.00	ZFM-1012-17
10.0		13.0	15.0	5.5	1.50	ZFM-101315-05
12.0		14.0	20.0	7.0	1.00	ZFM-1214-07
12.0		14.0	20.0	9.0	1.00	ZFM-1214-09
12.0		14.0	20.0	12.0	1.00	ZFM-1214-12
12.0		14.0	20.0	17.0	1.00	ZFM-1214-17
12.0		14.0	20.0	20.0	1.00	ZFM-1214-20
14.0	+0.016	16.0	22.0	12.0	1.00	ZFM-1416-12
14.0	+0.086	16.0	22.0	17.0	1.00	ZFM-1416-17
15.0		17.0	23.0	9.0	1.00	ZFM-1517-09
15.0		17.0	23.0	11.0	1.00	ZFM-1517-11
15.0		17.0	23.0	12.0	1.00	ZFM-1517-12
15.0		17.0	23.0	15.0	1.00	ZFM-1517-15
15.0		17.0	23.0	17.0	1.00	ZFM-1517-17
15.0		17.0	23.0	23.0	1.00	ZFM-151723-23

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
16.0		18.0	24.0	12.0	1.00	ZFM-1618-12
16.0		18.0	24.0	17.0	1.00	ZFM-1618-17
18.0	+0.016	20.0	26.0	4.0	1.00	ZFM-1820-04
18.0	+0.086	20.0	26.0	12.0	1.00	ZFM-1820-12
18.0		20.0	26.0	17.0	1.00	ZFM-1820-17
18.0		20.0	26.0	22.0	1.00	ZFM-1820-22
20.0		22.0	30.0	21.0	1.00	ZFM-2022-21
20.0		23.0	30.0	11.5	1.50	ZFM-2023-11
20.0		23.0	30.0	15.5	1.50	ZFM-2023-155
20.0		23.0	30.0	16.5	1.50	ZFM-2023-16
20.0		23.0	30.0	21.5	1.50	ZFM-2023-21
20.0		23.0	30.0	31.5	1.50	ZFM-2023-31
25.0		28.0	35.0	11.5	1.50	ZFM-2528-11
25.0	+0.020	28.0	35.0	16.5	1.50	ZFM-2528-16
25.0	+0.104	28.0	35.0	21.5	1.50	ZFM-2528-21
25.0		28.0	35.0	31.5	1.50	ZFM-2528-31
30.0		34.0	42.0	13.0	2.00	ZFM-3034-13
30.0		34.0	42.0	16.0	2.00	ZFM-3034-16
30.0		34.0	42.0	20.0	2.00	ZFM-3034-20
30.0		34.0	42.0	26.0	2.00	ZFM-3034-26
30.0		34.0	42.0	37.0	2.00	ZFM-3034-37
35.0		39.0	47.0	16.0	2.00	ZFM-3539-16
35.0		39.0	47.0	26.0	2.00	ZFM-3539-26
40.0	+0.025	44.0	52.0	20.0	2.00	ZFM-4044-20
40.0	+0.125	44.0	52.0	30.0	2.00	ZFM-4044-30
40.0		44.0	52.0	40.0	2.00	ZFM-4044-40
45.0		50.0	58.0	50.0	2.00	ZFM-4550-50
50.0		55.0	63.0	20.0	2.00	ZFM-5055-20

[3] After press-fit. *Testing methods, page 57*

iglidur® Z
+250°C
150MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
50.0	+0.025 +0.125	55.0	63.0	50.0	2.00	ZFM-5055-50
60.0	+0.030 +0.150	65.0	73.0	50.0	2.00	ZFM-6065-50
75.0		80.0	88.0	50.0	2.50	ZFM-7580-50
75.0		80.0	94.0	65.0	2.00	ZFM-758094-65

[3] After press-fit. *Testing methods, page 57*

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25 – 49	200 – 499	2,500 – 4,999

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No low-quantity surcharges.
Free shipping within local Regular Service Area.

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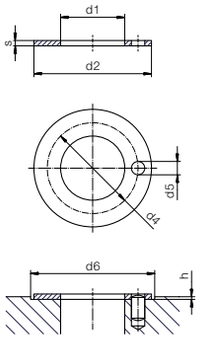
Thrust washer (form T)





Dimensions according to ISO 3547-1 and special dimensions

Order example: ZTM-1430-015 – no minimum order quantity.
Z iglidur® material T Thrust washer M Metric 14 Inner Ø d1 30 Outer Ø d2 015 Thickness s

d1 +0.25 [mm]	d2 –0.25 [mm]	d4 –0.12 +0.12 [mm]	d5 +0.375 +0.125 [mm]	h +0.2/–0.2 [mm]	d6 +0.12 [mm]	s –0.05 [mm]	Part No.
14	30	25	2	1	30	1.5	**ZTM-1430-015**[146)]
15	27	[4)]	[4)]	1	27	1.5	**ZTM-1527-015**
15	35	[4)]	[4)]	1	35	1.5	**ZTM-1535-015**
15	40	[4)]	[4)]	1	35	1.5	**ZTM-1540-015**
16	23	[4)]	[4)]	1	23	1.5	**ZTM-1623-015**
20	36	28	3	1	36	1.5	**ZTM-2036-015**
22	38	30	3	1	38	1.5	**ZTM-2238-015**
22	50	30	3	1	38	0.5	**ZTM-2250-005**
22	50	30	3	1	38	1.5	**ZTM-2250-015**
28	38	[4)]	[4)]	1	38	1.5	**ZTM-2838-015**
32	54	43	4	1	54	1.5	**ZTM-3254-015**
62	90	[4)]	[4)]	1.5	90	2	**ZTM-6290-020**

[4)] Design without fixing hole [146)] d4 +/–0,2, d5 +/–0,1

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Discount scaling		
1 – 9	50 – 99	500 – 999
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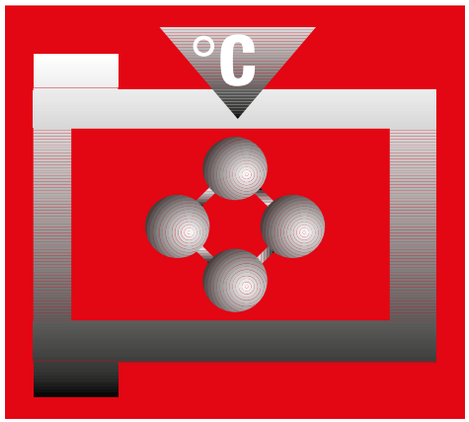

The high temperature specialist up to +250°C

Up to six times more wear-resistant than iglidur® X

iglidur® X6

When to use it?
- When temperatures are higher than +150°C
- When the wear resistance of iglidur® X in pivoting and rotating applications is not sufficient
- When the press-fit should be improved over iglidur® X
- When high media resistance is required
- When a bearing which is free of PTFE is required

When not to use?
- When a cost-effective universal plain bearing is required
  iglidur® G
- When a plain bearing for underwater use is required
  iglidur® UW500, iglidur® H370
- When a wear-resistant high-temperature plain bearing for linear motion is required
  iglidur® Z

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Bearing technology | Plain bearing | iglidur® X6

Ø
3.0 – 50.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

The high temperature specialist up to +250°C

Up to six times more wear-resistant than iglidur® X

Due to nanotechnology, iglidur® X6 shows up to six longer service life than iglidur® X in many pivoting and rotating applications – even at temperatures over +100°C.

- Continuous operating temperatures up to +250°C
- Up to 50% better press-fit than iglidur® X
- High compressive strength
- Extremely high chemical resistance
- PTFE-free
- Lubrication-free
- Maintenance-free

Typical application areas

- Glass industry
- Food industry
- Fluid technology
- Textile industry
- Mechanical engineering

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® X6
+250°C
150MPa

Technical data

General properties			Testing method
Density	g/cm³	1.53	
Colour		dark blue	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.5	
Coefficient of friction, dynamic, against steel	µ	0.09 – 0.25	
pv value, max. (dry)	MPa · m/s	1.35	
Mechanical properties			
Flexural modulus	MPa	16,000	DIN 53457
Flexural strength at +20°C	MPa	290	DIN 53452
Compressive strength	MPa	190	
Max. recommended surface pressure (+20°C)	MPa	150	
Shore D hardness		89	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+250	
Max. application temperature short-term	°C	+315	
Min. application temperature	°C	–100	
Thermal conductivity	W/m · K	0.55	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	1.1	DIN 53752
Electrical properties[5]			
Specific contact resistance	Ωcm	$< 10^5$	DIN IEC 93
Surface resistance	Ω	$< 10^3$	DIN 53482

[5] The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

Table 01: Material properties

–100°C up to +250°C

150MPa

V-0

RoHS-II

ISO 3547-1

With respect to its general mechanical and thermal specifications, iglidur® X6 is directly comparable to our high-temperature classic, iglidur® X, and may even provide advantages, such as its wear behaviour.

Moisture absorption
Under standard climatic conditions, the moisture absorption of iglidur® X6 plain bearings is approximately 0.1% weight. The saturation limit in water is 0.5% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum
In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance
Resistant to radiation up to an intensity of $2 \cdot 10^5$Gy.

Resistance to weathering
iglidur® X6 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolorations are only superficial.

Mechanical properties
With increasing temperatures, the compressive strength of iglidur® X6 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® X6 at radial loads. At the maximum recommended surface pressure of 150MPa the deformation is less than 2%. A possible deformation could be, among others, dependant on the duty cycle of the load.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® X6

Permissible surface speeds

The high temperature resistance and good thermal conductivity values mean that iglidur® X6 is suitable for high-speed applications. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 44

Temperature

The ambient temperatures strongly influence the properties of plain bearings. With regard to temperature resistance, iglidur® X6 is among the highest in the iglidur® range. In many tests it has shown a six times higher wear resistance compared to the established high-temperature specialist iglidur® X. For temperatures over +165°C an additional securing is required.

Application temperatures, page 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 30MPa. A higher speed of the shaft also results in a lower coefficient of friction (diagram 04 and 05).

Coefficient of friction and surfaces, page 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. The best case for iglidur® X6 is a ground surface with an average surface finish Ra = 0.4 – 0.7μm. Diagram 06 shows the test results of iglidur® X6 plain bearings running against various shaft materials. The best performance is achieved with the plain shaft materials free cutting steel and plain steel 1.0037. At higher loads, we recommend harder steel qualities. Non-hardened steel shafts can be worn by the bearing at pressures over 2MPa. The wear database shows that iglidur® X6 is more suitable for rotating than for pivoting applications (diagram 07). If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 52

Installation tolerances

iglidur® X6 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table). In relation to the installation tolerance, the inner diameter changes with the absorption of humidity.

Testing methods, page 57

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+
Strong alkalines	+

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.5	1.1	5.0
short-term	m/s	3.5	2.5	10.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.09 – 0.25	0.09	0.04	0.04

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

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

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

Technical data

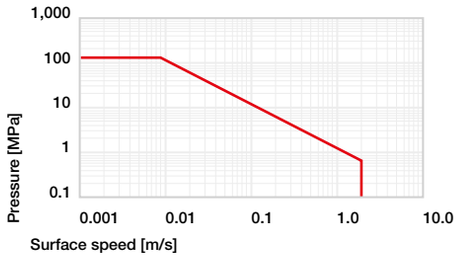

Diagram 01: Permissible pv values for iglidur® X6 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

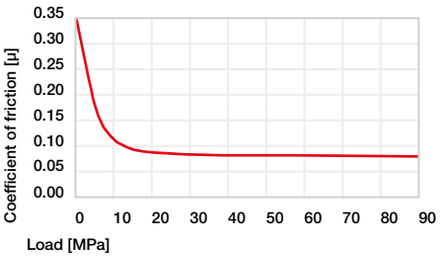

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

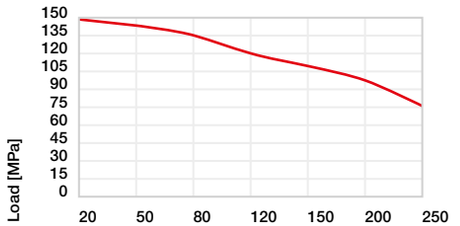

Diagram 02: Maximum recommended surface pressure as a function of temperature (150MPa at +20°C)

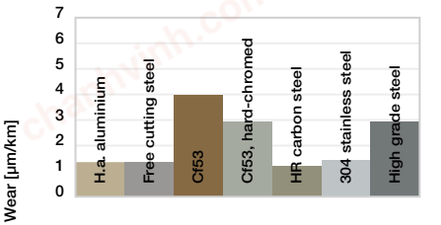

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

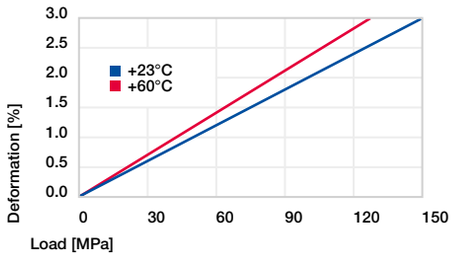

Diagram 03: Deformation under pressure and temperature

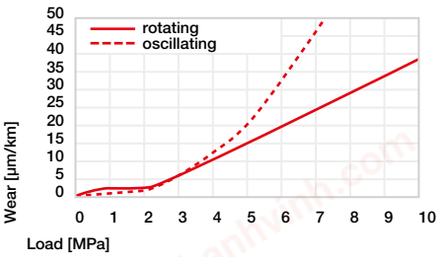

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

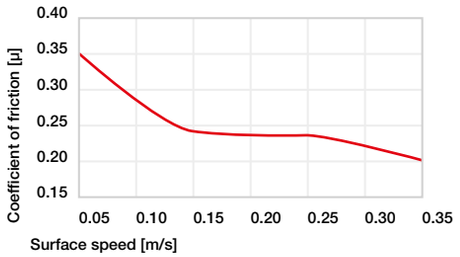

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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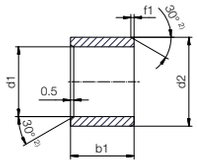
Bearing technology | Plain bearing | iglidur® X6

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: X6SM-0304-03 – no minimum order quantity.
X6 iglidur® material S Sleeve bearing M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
3.0		4.5	3.0	X6SM-0304-03
5.0	+0.010 +0.058	7.0	5.0	X6SM-0507-05
6.0		8.0	6.0	X6SM-0608-06
8.0	+0.013 +0.071	10.0	10.0	X6SM-0810-10
10.0		12.0	10.0	X6SM-1012-10
12.0	+0.016 +0.086	14.0	12.0	X6SM-1214-12
16.0		18.0	15.0	X6SM-1618-15
20.0		23.0	20.0	X6SM-2023-20
25.0	+0.020 +0.104	28.0	30.0	X6SM-2528-30
30.0		34.0	30.0	X6SM-3034-30
35.0		39.0	40.0	X6SM-3539-40
40.0	+0.025 +0.125	44.0	40.0	X6SM-4044-40
50.0		55.0	40.0	X6SM-5055-40

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/X6

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

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

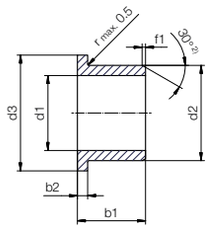
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® X6
+250°C
150MPa

Bearing technology | Plain bearing | iglidur® X6

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: X6FM-0304-05 – no minimum order quantity.
X6 iglidur® material F Flange bearing M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
3.0		4.5	7.5	5.0	0.75	X6FM-0304-05
5.0	+0.010 +0.058	7.0	11.0	5.0	1.00	X6FM-0507-05
6.0		8.0	12.0	6.0	1.00	X6FM-0608-06
8.0		10.0	15.0	10.0	1.00	X6FM-0810-10
10.0	+0.013 +0.071	12.0	18.0	10.0	1.00	X6FM-1012-10
10.0		12.0	18.0	25.0	1.00	X6FM-1012-25
12.0		14.0	20.0	12.0	1.00	X6FM-1214-12
16.0	+0.016 +0.086	18.0	24.0	12.0	1.00	X6FM-1618-12
16.0		18.0	24.0	17.0	1.00	X6FM-1618-17
20.0		23.0	30.0	21.5	1.50	X6FM-2023-21
25.0	+0.020 +0.104	28.0	35.0	21.5	1.50	X6FM-2528-21
30.0		34.0	42.0	40.0	2.00	X6FM-3034-40
35.0	+0.025 +0.125	39.0	47.0	26.0	2.00	X6FM-3539-26
40.0		44.0	52.0	40.0	2.00	X6FM-4044-40

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
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Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/X6

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

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

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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For soft shafts and high temperatures

Wear and media-resistant

iglidur® V400

When to use it?

- When extreme wear resistance is required with soft shafts
- When the highest wear resistance at temperatures above +100°C is required
- When vibrations and edge loads are present
- When the bearing should be resistant to chemicals

When not to use?

- For hardened shafts
  iglidur® W300
- For applications at normal temperatures
  iglidur® G, iglidur® J, iglidur® W300
- When a cost-effective universal plain bearing is required
  iglidur® G

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Bearing technology | Plain bearing | iglidur® V400

Ø
6.0 – 20.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 699

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

For soft shafts and high temperatures
Wear and media-resistant

Highly wear-resistant bearings for soft shafts and temperatures up to +200°C with low moisture absorption and excellent resistance to chemicals.

- Excellent wear resistance with soft shaft materials and for temperatures up to +200°C
- High chemical resistance
- High elasticity
- Lubrication-free
- Maintenance-free

Typical application areas

- Plant construction
- Automotive industry
- Automation
- Aerospace engineering
- Mechatronics

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

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Online service life calculation
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iglidur® V400
+200°C
45MPa

Technical data

General properties			Testing method
Density	g/cm³	1.51	
Colour		cream	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.2	
Coefficient of friction, dynamic, against steel	µ	0.15 – 0.20	
pv value, max. (dry)	MPa · m/s	0.50	
Mechanical properties			
Flexural modulus	MPa	4,500	DIN 53457
Flexural strength at +20°C	MPa	95	DIN 53452
Compressive strength	MPa	47	
Max. recommended surface pressure (+20°C)	MPa	45	
Shore D hardness		74	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+200	
Max. application temperature short-term	°C	+240	
Min. application temperature	°C	–50	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	3	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties

–50°C up to +200°C

45MPa

V-0

RoHS-II

ISO 3547-1

iglidur® V400 plain bearings are not suitable for high pressures or static high loads. However they are characterised by a high wear resistance all the way up to the maximum recommended surface pressure.

Moisture absorption

The moisture absorption of iglidur® V400 plain bearings is only 0.2% weight after saturation in water.

Vacuum

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

Radiation resistance

Plain bearings made from iglidur® V400 are resistant up to a radiation intensity of $2 \cdot 10^4$Gy. Higher radiation affects their mechanical properties.

Resistance to weathering

iglidur® V400 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolorations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® V400 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Moreover the limit of the permitted loads at +100°C is still very high with 20MPa. The high flexibility is shown in diagram 03.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® V400

Permissible surface speeds

iglidur® V400 also permits high surface speeds due to the high temperature resistance. The very favourable coefficient of friction of the bearing enables maximum surface speeds up to 1.3m/s. In linear applications, the permissible speeds are even higher and can be up to 3.0m/s .

Surface speed, page 44

Temperature

The maximum long-term application temperature is +200°C. For temperatures over +100°C an additional securing is required. Then, however, the wear resistance of the bearings is very good and adopts a leading position among all iglidur® materials. With increasing temperatures, the compressive strength of iglidur® V400 plain bearings decreases. Diagram 02 shows this inverse 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 coefficient of friction of iglidur® V400 is very constant. No other iglidur® plain bearing material exhibits a lower variance in the coefficients of friction, even when the shaft material is altered.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

The influence of the shaft material on the wear resistance is bigger than on the friction. Here, even at low loads (0.75MPa), significant differences occur, as shown in diagram 06. With regard to wear, iglidur® V400 plain bearings show better values in rotating applications than in pivoting movements (diagram 07).

Shaft materials, page 52

Installation tolerances

iglidur® V400 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 57

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.9	0.6	2.0
short-term	m/s	1.3	0.9	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.15 – 0.20	0.09	0.04	0.04

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

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

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

Technical data

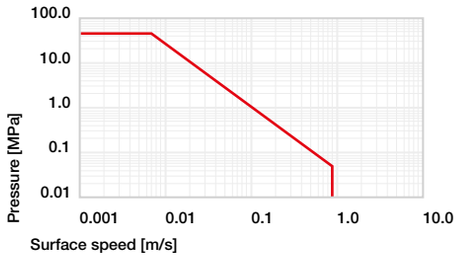

Diagram 01: Permissible pv values for iglidur® V400 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

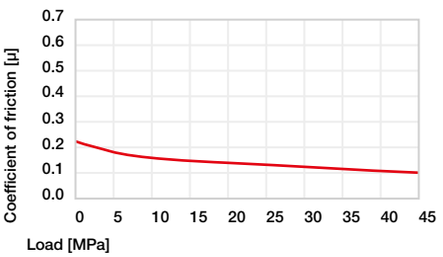

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

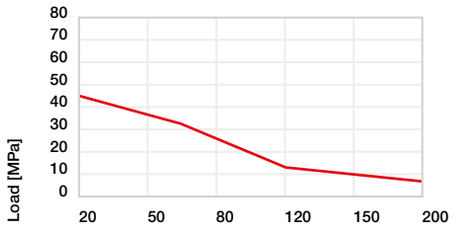

Diagram 02: Maximum recommended surface pressure as a function of temperature (45MPa at +20°C)

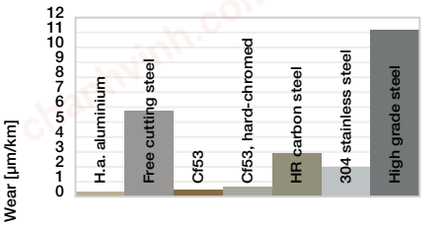

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

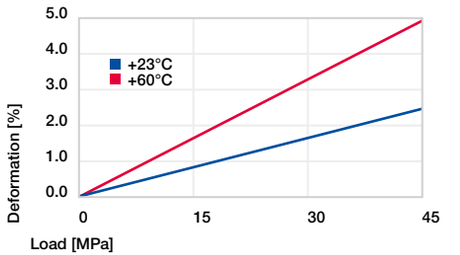

Diagram 03: Deformation under pressure and temperature

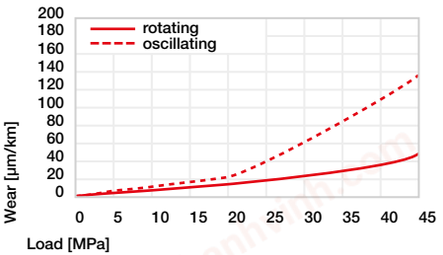

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

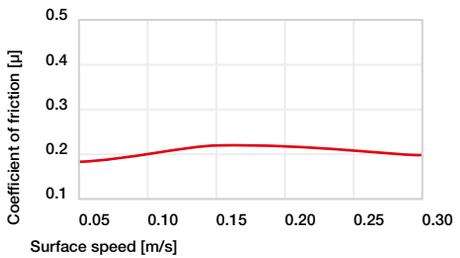

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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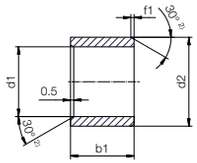
Bearing technology | Plain bearing | iglidur® V400

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: VSM-0608-06 – no minimum order quantity.
V400 iglidur® material S Sleeve bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
6.0	+0.010 +0.058	8.0	6.0	VSM-0608-06
8.0	+0.013 +0.071	10.0	10.0	VSM-0810-10
10.0		12.0	10.0	VSM-1012-10
12.0	+0.016 +0.086	14.0	12.0	VSM-1214-12
16.0		18.0	15.0	VSM-1618-15
20.0	+0.020 +0.104	23.0	20.0	VSM-2023-20

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/V400

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

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

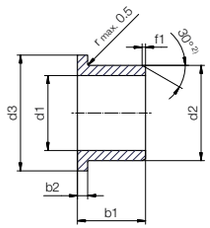
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® V400
+200°C
45MPa

Bearing technology | Plain bearing | iglidur® V400

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: VFM-0608-06 – no minimum order quantity.
V400 iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.010 +0.058	8.0	12.0	6.0	1.00	VFM-0608-06
8.0	+0.013 +0.071	10.0	15.0	10.0	1.00	VFM-0810-10
10.0		12.0	18.0	10.0	1.00	VFM-1012-10
12.0	+0.016 +0.086	14.0	20.0	12.0	1.00	VFM-1214-12
16.0		18.0	24.0	17.0	1.00	VFM-1618-17
18.0	+0.020 +0.104	20.0	26.0	20.0	1.00	VFM-1820-20
20.0		23.0	30.0	21.5	1.50	VFM-2023-21

[3] After press-fit. *Testing methods, page 57*

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Online ordering
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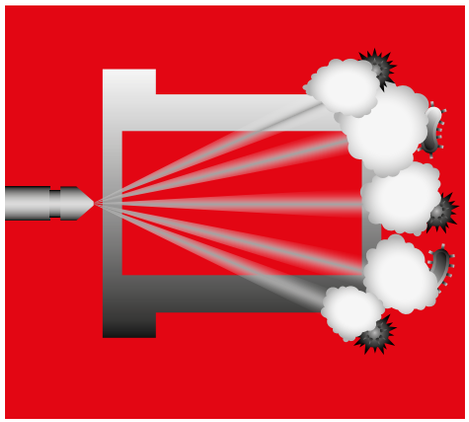

All-rounder for steam sterilisation

Low-cost, media-resistant and hygienic iglidur® HSD350

When to use it?

- If the bearing point is regularly sterilised with hot steam
- When a low-cost material is required at the same time
- When good chemical resistance is required
- Low moisture absorption

When not to use?

- When high pressures occur
  iglidur® G, iglidur® W300
- When continuous operating temperatures are higher than +180°C
  iglidur® G, iglidur® Z
- When a cost-effective bearing for occasional movements is necessary
  iglidur® G

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Bearing technology | Plain bearing | iglidur® HSD350

Ø 6.0 – 20.0mm



Also available as:

Bar stock, round bar Page 679

Bar stock, plate Page 683

tribo-tape liner Page 691

Piston rings Page 581

Two hole flange bearings Page 603

Moulded special parts Page 624

igubal® spherical balls Page 841

All-rounder for steam sterilisation
Low-cost, media-resistant and hygienic

The new material enables continuous operation where hygiene is important, including regular sterilisation, with an outstanding price-performance ratio.

- Temperature-resistant up to +180°C
- Suitable for wet environments
- High media resistance
- Corrosion-free
- Lubrication-free
- Sterilisable
- Maintenance-free

Typical application areas

- Filling technology
- Medical and laboratory technology

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® HSD350 +180°C 30MPa

Technical data

General properties			Testing method
Density	g/cm³	1.39	
Colour		beige	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.6	ISO 175
Max. moisture absorption	% weight	1.2	ISO 62
Coefficient of friction, dynamic, against steel	µ	0.07 – 0.23	
pv value, max. (dry)	MPa · m/s	0.30	
Mechanical properties			
Flexural modulus	MPa	2,150	DIN EN ISO 178
Flexural strength at +20°C	MPa	67	DIN EN ISO 178
Compressive strength	MPa	44	
Max. recommended surface pressure (+20°C)	MPa	30	
Shore D hardness		77	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+180	
Max. application temperature short-term	°C	+210	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	7	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{14}$	DIN 53482

Table 01: Material properties

–40°C up to +180°C

30MPa

V-0

RoHS-II

ISO 3547-1

iglidur® HSD350 was specially developed for use in applications where decontamination by steam (e.g. in autoclaves) is necessary. iglidur® HSD350 offers an excellent price-performance ratio.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® HSD350 plain bearings is approximately 0.6% weight. The saturation limit in water is 1.2% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

In vacuum, the moisture content is released as vapour. Due to its low moisture absorption, use in a vacuum is possible.

Radiation resistance

Plain bearings made from iglidur® HSD350 are resistant up to a radiation intensity of $3 \cdot 10^2$Gy.

Resistance to weathering

iglidur® HSD350 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolorations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® HSD350 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® HSD350 at radial loads. At the maximum recommended surface pressure of 30MPa the deformation is less than 2%. A possible deformation could be, among others, dependant on the duty cycle of the load.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® HSD350

Permissible surface speeds

Due to its rather good thermal conductivity and thermal resistance, iglidur® HSD350 is suitable for speeds in the medium range. The permissible surface speed decreases with increasing surface pressure.

Surface speed, page 44

Temperature

The ambient temperatures strongly influence the properties of plain bearings. According to its field of application as autoclavable material, iglidur® HSD350 offers good thermal resistance. For temperatures over +130°C an axial securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

The coefficient of friction increases constantly and slowly over the speed, but remains below 0.3µ up to a speed of 2.0m/s.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagrams 06 and 07 display a summary of the test results with different shaft materials conducted with plain bearings made from iglidur® HSD350. At 0.3m/s and 1MPa surface pressure, a wide variety of shafts are suitable and provide good wear results. Hard-anodised aluminium, free cutting steel, hard-chromed Cf53, 304 stainless steel and high grade steel exhibit low wear. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 52

Installation tolerances

iglidur® HSD350 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table). In relation to the installation tolerance, the inner diameter changes with the absorption of humidity.

Testing methods, page 57

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.1	0.8	3.0
short-term	m/s	1.2	1.0	3.2

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.07 – 0.23	0.09	0.04	0.04

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

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

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

iglidur® HSD350 +180°C 30MPa

Technical data

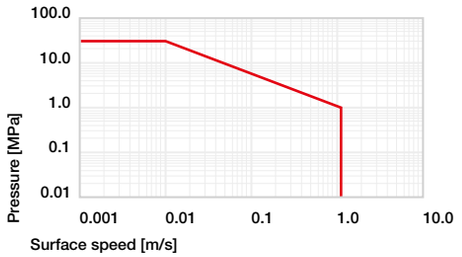

Diagram 01: Permissible pv values for iglidur® HSD350 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

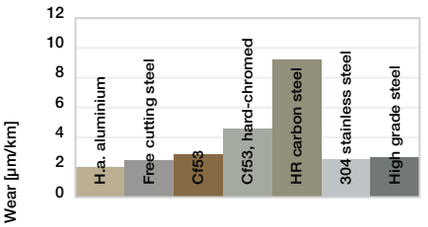

Diagram 05: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

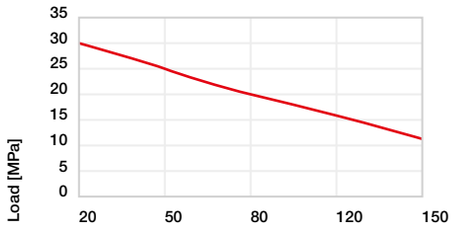

Diagram 02: Maximum recommended surface pressure as a function of temperature (30MPa at +20°C)

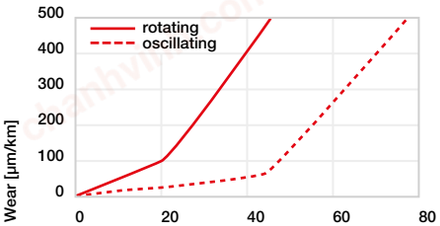

Diagram 06: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

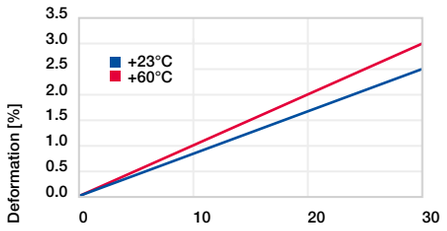

Diagram 03: Deformation under pressure and temperature

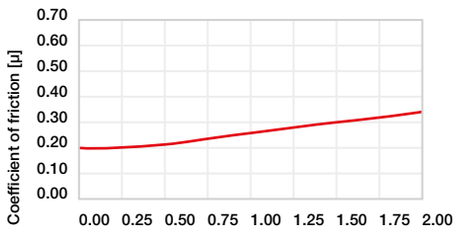

Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

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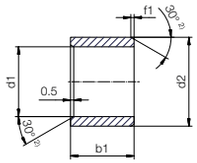
Bearing technology | Plain bearing | iglidur® HSD350

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 6–12	Ø 12–30
f1 [mm]	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: HSD350SM-0608-06 – no minimum order quantity.
HSD350 iglidur® material S Sleeve bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
6.0	+0.010 +0.058	8.0	6.0	HSD350SM-0608-06
8.0	+0.013 +0.071	10.0	10.0	HSD350SM-0810-10
10.0		12.0	10.0	HSD350SM-1012-10
12.0	+0.016 +0.086	14.0	12.0	HSD350SM-1214-12
16.0		18.0	15.0	HSD350SM-1618-15
20.0	+0.020 +0.104	23.0	20.0	HSD350SM-2023-20

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
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Online ordering
Including delivery times, prices, online tools
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Ordering note
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Discount scaling		
1 – 9	50 – 99	500 – 999
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No low-quantity surcharges.
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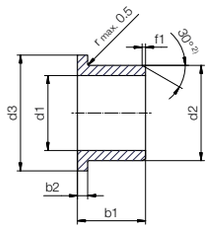
iglidur® HSD350 +180°C 30MPa

Bearing technology | Plain bearing | iglidur® HSD350

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 6–12	Ø 12–30
f1 [mm]	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: HSD350FM-0608-06 – no minimum order quantity.
HSD350 iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.010 +0.058	8.0	12.0	6.0	1.00	HSD350FM-0608-06
8.0	+0.013 +0.071	10.0	15.0	10.0	1.00	HSD350FM-0810-09
10.0		12.0	18.0	9.0	1.00	HSD350FM-1012-09
12.0	+0.016 +0.086	14.0	20.0	12.0	1.00	HSD350FM-1214-12
16.0		18.0	24.0	17.0	1.00	HSD350FM-1618-17
20.0	+0.020 +0.104	23.0	30.0	21.5	1.50	HSD350FM-2023-21

[3] After press-fit. *Testing methods, page 57*

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Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
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www.igus-asean.com/HSD350

Ordering note
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Discount scaling		
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10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

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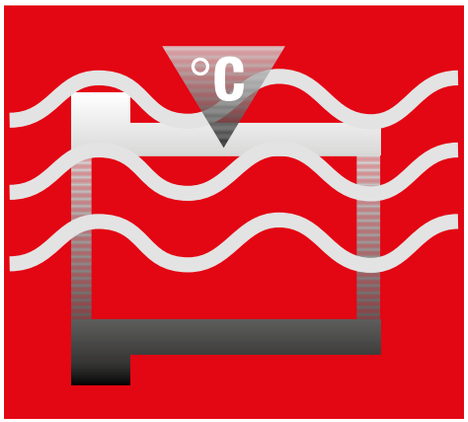

For hot liquids

Continuous wear resistance in liquids

iglidur® UW500

When to use it?

- When plain bearings need to be used in liquids
- For high speeds
- For high temperatures
- When a high chemical resistance is required

When not to use?

- When a cost-effective underwater plain bearing for the standard temperature range is required
  iglidur® UW
- When a cost-effective underwater plain bearing is required for rare operations
  iglidur® H
- When a cost-effective universal plain bearing is required
  iglidur® G

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Bearing technology | Plain bearing | iglidur® UW500

Ø
–



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 603

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

For hot liquids

Continuous wear resistance in liquids

iglidur® UW500 was developed for underwater applications at higher temperatures up to +250°C. In addition, the plain bearings will run in chemicals which would act as a lubricant.

- High temperature resistance
- Suitable for high surface speeds
- Lubrication-free
- Suitable for underwater applications
- Maintenance-free

Typical application areas

- Plant construction
- Pumps
- Chemical industry

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

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www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® UW500 +250°C 140MPa

Technical data

General properties			Testing method
Density	g/cm³	1.49	
Colour		black	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption[6]	% weight	0.5	
Coefficient of friction, dynamic, against steel	µ	0.20 – 0.36	
pv value, max. (dry)	MPa · m/s	0.35	
Mechanical properties			
Flexural modulus	MPa	16,000	DIN 53457
Flexural strength at +20°C	MPa	260	DIN 53452
Compressive strength	MPa	140	
Max. recommended surface pressure (+20°C)	MPa	140	
Shore D hardness		86	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+250	
Max. application temperature short-term	°C	+300	
Min. application temperature	°C	–100	
Thermal conductivity	W/m · K	0.60	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	4	DIN 53752
Electrical properties[5]			
Specific contact resistance	Ωcm	$< 10^9$	DIN IEC 93
Surface resistance	Ω	$< 10^9$	DIN 53482

[5] The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

[6] All results were obtained under laboratory conditions with demineralised water. For application with direct water contact, we recommend tests under real application conditions.

Table 01: Material properties

–100°C up to +250°C

140MPa

V-0

RoHS-II

ISO 3547-1

The plain bearings made from iglidur® UW500 were developed for underwater applications with high temperatures. Examples for this are water pumps in automotive engineering, but also the field of medical engineering and related sectors. Unless the underwater operation is explicitly stated, the information in this chapter describes iglidur® UW500 in dry operation.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® UW500 plain bearings is below 0.1% weight. The maximum moisture absorption is 0.5% weight. iglidur® UW500 plain bearings can be used for underwater applications.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

Plain bearings made from iglidur® UW500 are resistant up to a radiation intensity of $1 \cdot 10^5$Gy. They resist to hard gamma radiation (1,000Mrad) and alpha or beta radiation (10,000Mrad).

Resistance to weathering

iglidur® UW500 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolorations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® UW500 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® UW500 at radial loads.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® UW500

Permissible surface speeds

iglidur® UW500 plain bearings can be used in applications involving dry operation as well as in liquids in a wide variety of applications. Due to hydrodynamic lubrication at high speeds, surface speeds far above 1.5m/s can be achieved.

Surface speed, page 44

Temperature

iglidur® UW500 can be used in applications where there are continuous temperatures of +150°C. If the bearings are mechanically secured, these temperatures can be even higher than +200°C. iglidur® UW500 belongs to the most temperature-resistant iglidur® materials. For temperatures over +150°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

Diagrams 04 and 05 show the coefficient of friction of iglidur® UW500 plain bearings as a function of surface speed and pressure. The friction and wear are also dependent, to a large degree, on the shaft material. Ideal are ground surfaces with an average surface finish of 0.1 – 0.4µm.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® UW500.

Shaft materials, page 52

Installation tolerances

iglidur® UW500 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 57

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+
Strong alkalines	+

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.8	0.6	2.0
short-term	m/s	1.5	1.1	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.20 – 0.36	0.09	0.04	0.04

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

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

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

iglidur® UW500 plain bearings are manufactured to special order.

Technical data

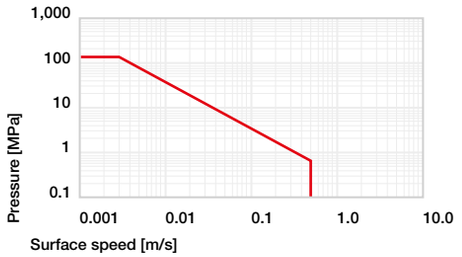

Diagram 01: Permissible pv values for iglidur® UW500 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

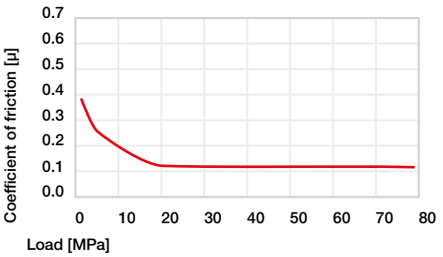

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

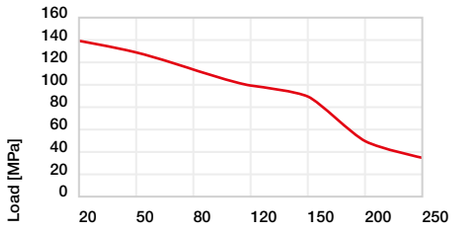

Diagram 02: Maximum recommended surface pressure as a function of temperature (140MPa at +20°C)

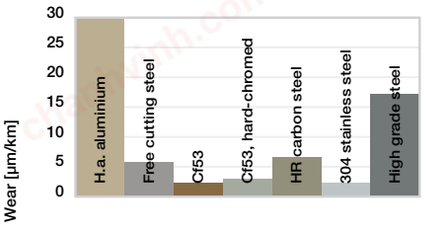

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

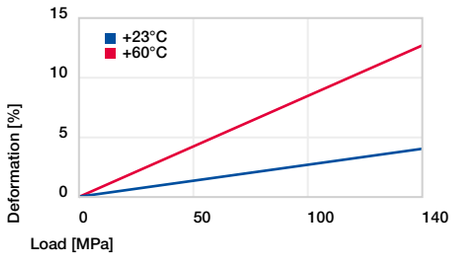

Diagram 03: Deformation under pressure and temperature

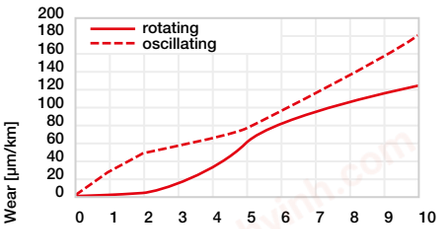

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

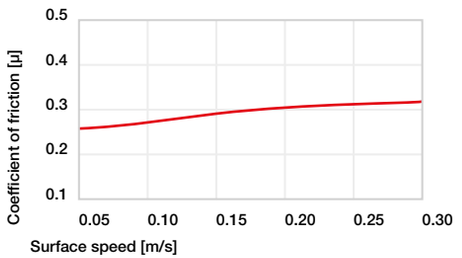

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa



Plain bearing materials with good media resistance

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Plain bearing materials with good media resistance

Almost at the same level as the previous group in terms of temperatures, the "iglidur® H family" is characterised by a high media resistance and a wide range of applications in wet areas.
iglidur® H370 is the specialist for underwater applications, iglidur® H2 is the media-resistant, low-cost bearing solution for high-volume production with low running performance and iglidur® H1, the endurance runner of this group.

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert



iglidur® H1
Endurance runner with high media resistance

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



iglidur® H370
Long service life under water

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



iglidur® H
The classic with high resistance to media and temperature

Temperature [°C] [123]	+200	– +
Surface pressure [MPa] [124]	90	– +
Coefficient of friction [µ] [125]	0.17	– +
Wear [µm/km] [125]	2.10	– +
Price index		– +



iglidur® C500
High temperature endurance runner

Temperature [°C] [123]	+250	– +
Surface pressure [MPa] [124]	80	– +
Coefficient of friction [µ] [125]	0.19	– +
Wear [µm/km] [125]	0.48	– +
Price index		– +

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



iglidur® H2
The low-cost specialist for chemicals and temperatures

Temperature [°C] [123]	+200	– +
Surface pressure [MPa] [124]	110	– +
Coefficient of friction [µ] [125]	0.32	– +
Wear [µm/km] [125]	4.80	– +
Price index		– +

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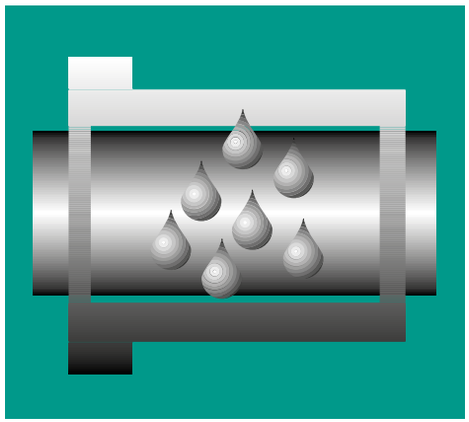

Endurance runner with high media resistance

Excellent coefficient of friction and wear

iglidur® H1

When to use it?

- When extreme service life is required under the influence of temperature and humidity
- When low coefficient of friction at high temperature is important
- When normal aggressive cleaning is required (splashes, steam blasting)
- For under bonnet applications

When not to use?

- When high surface pressures occur
  iglidur® Z
- When the best universal chemical resistance is required
  iglidur® X
- When a cost-effective high-temperature plain bearing is required, not the ideal wear resistance
  iglidur® H2
- When an FDA-compliant plain bearing with high temperature resistance is required
  iglidur® A500

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Bearing technology | Plain bearing | iglidur® H1

Ø
3.0 – 50.0mm



Also available as:

Bar stock, round bar
Page 679

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 584

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

Endurance runner with high media resistance
Excellent coefficient of friction and wear

iglidur® H1 is the first choice when long service life is required in extreme environmental conditions. Extreme wear resistance is coupled with excellent resistance to temperature and media – not only in the packaging and food industries or the automotive industry.

- High wear resistance in extreme ambient conditions
- Very low coefficients of friction
- High temperature resistance
- For underbonnet applications
- Lubrication-free
- High chemical resistance
- Maintenance-free

Typical application areas

- Beverage industry
- Automation
- Packaging
- Textile industry
- Optical industry

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
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Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® H1
+200°C
80MPa

Technical data

General properties			Testing method
Density	g/cm³	1.53	
Colour		cream	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.3	
Coefficient of friction, dynamic, against steel	µ	0.06 – 0.20	
pv value, max. (dry)	MPa · m/s	0.80	
Mechanical properties			
Flexural modulus	MPa	2,800	DIN 53457
Flexural strength at +20°C	MPa	55	DIN 53452
Compressive strength	MPa	78	
Max. recommended surface pressure (+20°C)	MPa	80	
Shore D hardness		77	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+200	
Max. application temperature short-term	°C	+240	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	6	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	> 10^{12}	DIN IEC 93
Surface resistance	Ω	> 10^{11}	DIN 53482

–40°C up to +200°C

80MPa

V-0

RoHS-II

ISO 3547-1

Table 01: Material properties

iglidur® H1 plain bearings have been specially developed for use under extreme environmental conditions. Their strengths are the extremely high wear resistance and the excellent coefficient of friction even in applications in which the bearing is exposed to extreme temperatures and/or aggressive chemicals. iglidur® H1 plain bearings can be used completely free of lubrication; in wet area applications, the surrounding medium acts as additional lubricant.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® H1 plain bearings is approximately 0.1% weight. The saturation limit in water is 0.3% weight. Therefore iglidur® H1 is very well suited for use in wet environments.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

Resistant to radiation up to an intensity of 2 · 10^2Gy.

Resistance to weathering

iglidur® H1 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolorations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H1 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® H1 at radial loads. Among the iglidur® H materials, iglidur® H1 material has the greatest flexibility. This must be considered for applications with high surface pressure or edge loads.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® H1

Permissible surface speeds

Due to their excellent coefficient of friction, rotating surface speeds of up to 2.0m/s are possible with iglidur® H1 plain bearings in dry operation. Linear speeds up to 5.0m/s can be attained. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.

Surface speed, page 44

Temperature

iglidur® H1 is a very temperature-stable material. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. In the case of iglidur® H1 in particular, however, this increase is very low. For 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 similarly to the wear resistance with increasing load and surface speed (diagrams 04 and 05).

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagrams 06 and 07 show the test results of iglidur® H1 plain bearings running against various shaft materials. The iglidur® H1 plain bearings display excellent wear behaviour in combination with a wide variety of shaft materials both in rotating and pivoting applications. On the 304 stainless steel shafts in particular, iglidur® H1 attains very low wear rates both in rotating and pivoting operations. Even on hard-anodised aluminium shafts, iglidur® H1 plain bearings attain high service life in rotating applications with low to medium loads.

Shaft materials, page 52

Installation tolerances

iglidur® H1 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 57

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	2.0	1.0	5.0
short-term	m/s	2.5	1.5	7.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.06 – 0.20	0.09	0.04	0.04

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

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

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

Technical data

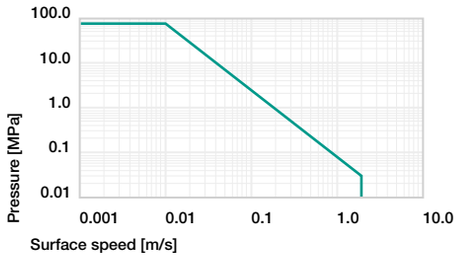

Diagram 01: Permissible pv values for iglidur® H1 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

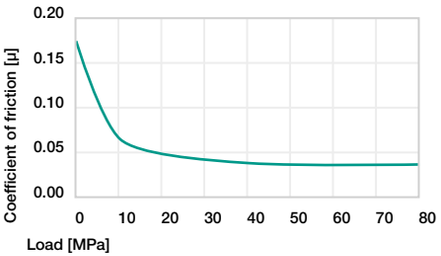

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

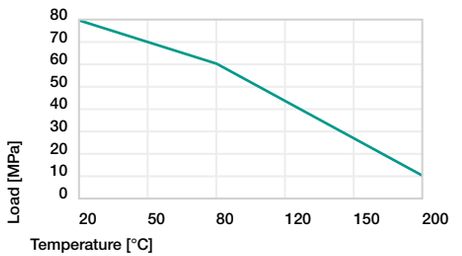

Diagram 02: Maximum recommended surface pressure as a function of temperature (80MPa at +20°C)

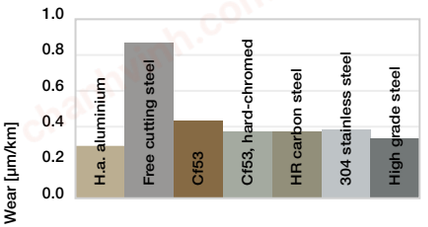

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

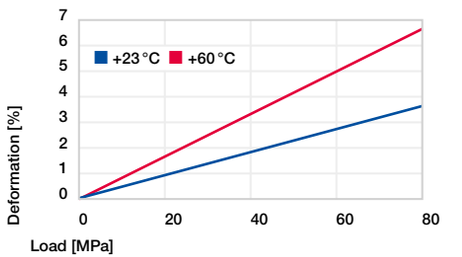

Diagram 03: Deformation under pressure and temperature

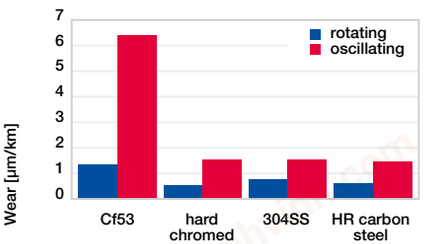

Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

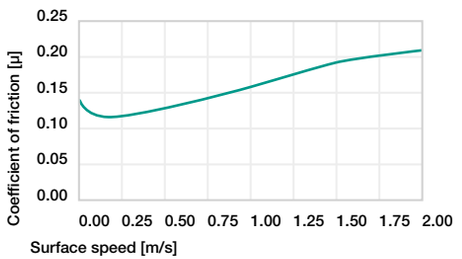

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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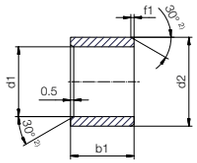
Bearing technology | Plain bearing | iglidur® H1

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: H1SM-0304-05 – no minimum order quantity.
H1 iglidur® material S Sleeve bearing M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
3.0	+0.006 +0.046	4.5	5.0	H1SM-0304-05
4.0		5.5	4.0	H1SM-0405-04
4.0		5.5	6.0	H1SM-0405-06
5.0	+0.010 +0.058	7.0	5.0	H1SM-0507-05
5.0		7.0	10.0	H1SM-0507-10
6.0		8.0	6.0	H1SM-0608-06
6.0		8.0	8.0	H1SM-0608-08
6.0		8.0	10.0	H1SM-0608-10
8.0		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		27.0	15.0	H1SM-2427-15
24.0	+0.020 +0.104	27.0	20.0	H1SM-2427-20
24.0		27.0	25.0	H1SM-2427-25
24.0		27.0	30.0	H1SM-2427-30
25.0		28.0	15.0	H1SM-2528-15
25.0		28.0	20.0	H1SM-2528-20
25.0		28.0	25.0	H1SM-2528-25
25.0		28.0	30.0	H1SM-2528-30
28.0		32.0	20.0	H1SM-2832-20
28.0		32.0	25.0	H1SM-2832-25
28.0		32.0	30.0	H1SM-2832-30
30.0		34.0	30.0	H1SM-3034-30
30.0		34.0	40.0	H1SM-3034-40

[3] After press-fit. *Testing methods, page 57*

iglidur® H1
+200°C
80MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
32.0		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	+0.025	39.0	30.0	H1SM-3539-30
35.0	+0.125	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	+0.025	50.0	50.0	H1SM-4550-50
50.0	+0.125	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*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/H1

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

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

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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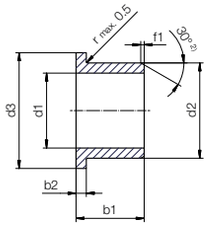
Bearing technology | Plain bearing | iglidur® H1

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

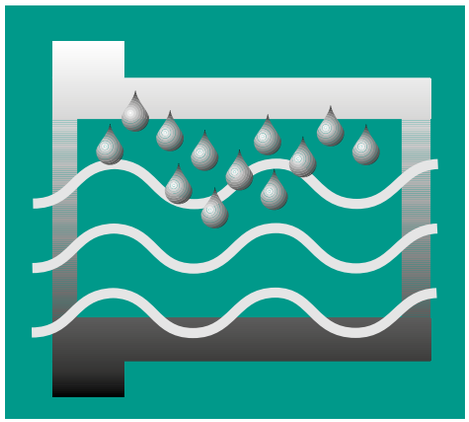
Dimensions according to ISO 3547-1 and special dimensions

Order example: H1FM-0304-05 – no minimum order quantity.
H1 iglidur® material F Flange bearing M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
3.0	+0.006 +0.046	4.5	7.5	5.0	0.75	H1FM-0304-05
5.0	+0.010 +0.058	7.0	11.0	5.0	1.00	H1FM-0507-05
6.0	+0.013 +0.071	8.0	12.0	4.0	1.00	H1FM-0608-04
6.0	+0.010 +0.058	8.0	12.0	6.0	1.00	H1FM-0608-06
6.0		8.0	12.0	8.0	1.00	H1FM-0608-08
6.0		8.0	12.0	10.0	1.00	H1FM-0608-10
8.0	+0.013 +0.071	10.0	15.0	5.5	1.00	H1FM-0810-05
8.0		10.0	15.0	6.5	1.00	H1FM-0810-065
8.0		10.0	15.0	7.5	1.00	H1FM-0810-07
8.0		10.0	15.0	9.5	1.00	H1FM-0810-09
8.0		10.0	15.0	10.0	1.00	H1FM-0810-10
10.0		12.0	18.0	7.0	1.00	H1FM-1012-07
10.0		12.0	18.0	9.0	1.00	H1FM-1012-09
10.0		12.0	18.0	10.0	1.00	H1FM-1012-10
10.0		12.0	18.0	12.0	1.00	H1FM-1012-12
10.0		12.0	18.0	17.0	1.00	H1FM-1012-17
12.0	+0.016 +0.086	14.0	20.0	7.0	1.00	H1FM-1214-07
12.0		14.0	20.0	9.0	1.00	H1FM-1214-09
12.0		14.0	20.0	12.0	1.00	H1FM-1214-12
12.0		14.0	20.0	17.0	1.00	H1FM-1214-17
12.0		14.0	20.0	20.0	1.00	H1FM-1214-20
14.0	+0.016 +0.086	16.0	22.0	12.0	1.00	H1FM-1416-12
14.0		16.0	22.0	17.0	1.00	H1FM-1416-17
15.0		17.0	23.0	9.0	1.00	H1FM-1517-09
15.0		17.0	23.0	12.0	1.00	H1FM-1517-12
15.0		17.0	23.0	17.0	1.00	H1FM-1517-17
16.0		18.0	24.0	12.0	1.00	H1FM-1618-12
16.0		18.0	24.0	17.0	1.00	H1FM-1618-17
16.0		18.0	24.0	25.0	1.00	H1FM-1618-25
18.0		20.0	26.0	12.0	1.00	H1FM-1820-12
18.0		20.0	26.0	17.0	1.00	H1FM-1820-17
18.0		20.0	26.0	22.0	1.00	H1FM-1820-22
20.0	+0.020 +0.104	23.0	30.0	11.5	1.50	H1FM-2023-11
20.0		23.0	30.0	16.5	1.50	H1FM-2023-16
20.0		23.0	30.0	21.5	1.50	H1FM-2023-21
20.0		23.0	30.0	30.0	1.50	H1FM-2023-30
25.0		28.0	35.0	11.5	1.50	H1FM-2528-11
25.0		28.0	35.0	16.5	1.50	H1FM-2528-16
25.0		28.0	35.0	21.5	1.50	H1FM-2528-21
30.0		34.0	42.0	16.0	2.00	H1FM-3034-16
30.0		34.0	42.0	26.0	2.00	H1FM-3034-26
35.0	+0.025 +0.125	39.0	47.0	16.0	2.00	H1FM-3539-16
35.0		39.0	47.0	26.0	2.00	H1FM-3539-26
40.0		44.0	52.0	30.0	2.00	H1FM-4044-30
40.0		44.0	52.0	40.0	2.00	H1FM-4044-40
45.0		50.0	58.0	50.0	2.00	H1FM-4550-50

[3] After press-fit. *Testing methods, page 57*





Long service life under water

High media resistance

iglidur® H370

When to use it?

- For underwater applications
- When high temperature resistance is required
- When high mechanical loading and wear resistance is required
- When good chemical resistance is required

When not to use?

- When mechanical reaming of the bore is necessary
  iglidur® M250
- When high wear resistance in temperatures is required
  iglidur® H1
- For use in dirty surroundings
  iglidur® Z
- When a cost-effective, large-volume solution is required
  iglidur® H2

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Bearing technology | Plain bearing | iglidur® H370

Ø
3.0 – 75.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 584

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

Long service life under water
High media resistance

iglidur® H370 is the right solution for underwater applications. The bearings absorb extremely high loads, are resistant to chemicals and can be used at temperatures up to +200°C.

- Suitable for underwater applications
- Temperature-resistant from –40°C to +200°C
- High chemical resistance
- Lubrication-free
- Maintenance-free

Typical application areas

- Offshore
- Ship building
- Fluid technology
- Packaging
- Plant construction

Descriptive technical specifications			
Wear resistance at +23°C	–	●●	+
Wear resistance at +90°C	–	●●●	+
Wear resistance at +150°C	–	●●●●	+
Low coefficient of friction	–	●●●●	+
Low moisture absorption	–	●●●●●	+
Wear resistance under water	–	●●●●●	+
High media resistance	–	●●●●●	+
Resistant to edge pressures	–	●●●	+
Suitable for shock and impact loads	–	●●	+
Resistant to dirt	–	●●	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® H370
+200°C
75MPa

Technical data

General properties			Testing method
Density	g/cm³	1.66	
Colour		grey	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.1	
Coefficient of friction, dynamic, against steel	µ	0.07 – 0.17	
pv value, max. (dry)	MPa · m/s	0.74	
Mechanical properties			
Flexural modulus	MPa	11,100	DIN 53457
Flexural strength at +20°C	MPa	135	DIN 53452
Compressive strength	MPa	79	
Max. recommended surface pressure (+20°C)	MPa	75	
Shore D hardness		82	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+200	
Max. application temperature short-term	°C	+240	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.50	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	5	DIN 53752
Electrical properties[5]			
Specific contact resistance	Ωcm	$< 10^5$	DIN IEC 93
Surface resistance	Ω	$< 10^5$	DIN 53482

[5] The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

Table 01: Material properties

–40°C up to +200°C

75MPa

V-0

RoHS-II

ISO 3547-1

iglidur® H370 is an advanced development of the iglidur® H series. The material is characterised by particularly low moisture absorption and clearly enhanced wear resistance. With regard to the mechanical and thermal characteristic values, iglidur® H370 shows the same features as iglidur® H.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® H370 plain bearings is below 0.1% weight. The saturation limit in water is also below 0.1% weight. For this reason, iglidur® H370 plain bearings are often used for underwater applications.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

iglidur® H370 withstands neutron and gamma particle radiation. Plain bearings made from iglidur® H370 are resistant up to a radiation intensity of $2 \cdot 10^2$Gy.

Resistance to weathering

iglidur® H370 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolorations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H370 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® H370 at radial loads. At the maximum recommended surface pressure of 75MPa at room temperature the deformation is less than 2.5%.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® H370

Permissible surface speeds

The maximum permitted surface speed is dependent on whether the temperature at the bearing point becomes too high or not. iglidur® H370 is suitable for surface speeds of 1.2m/s (rotating) and 4.0m/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

Temperature

With increasing temperatures, the compressive strength of iglidur® H370 plain bearings decreases. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +100°C an additional securing is required.

Application temperatures, page 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).

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagrams 06 and 07 show the test results of iglidur® H370 plain bearings running against various shaft materials. For loads up to 2MPa in rotating applications, the hard-chromed shaft is the best material for the iglidur® H370 plain bearings. The high coefficient of wear with 304 stainless steel shafts, which due to their extremely ground surfaces are prone to the stick-slip effect, is striking. Despite same values in the lowest range, the HR carbon steel shaft shows already better values than Cf53 with loads of 2MPa. On the other hand, the 304 stainless steel shaft shows a clear advantage in pivoting movements.

Shaft materials, page 52

Installation tolerances

iglidur® H370 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 57

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.2	0.8	4.0
short-term	m/s	1.5	1.1	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.07 – 0.17	0.09	0.04	0.04

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

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

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

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Technical data

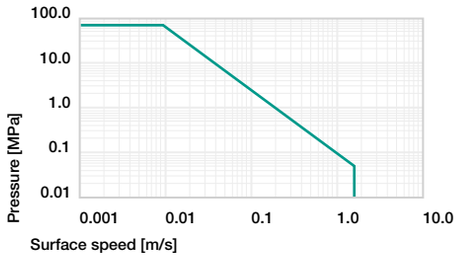

Diagram 01: Permissible pv values for iglidur® H370 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

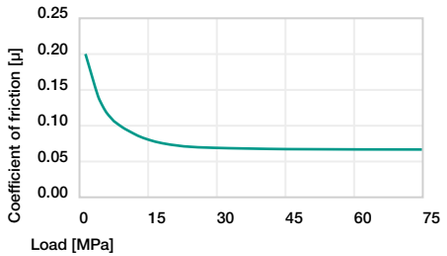

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

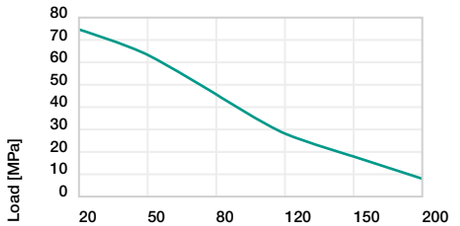

Diagram 02: Maximum recommended surface pressure as a function of temperature (75MPa at +20°C)

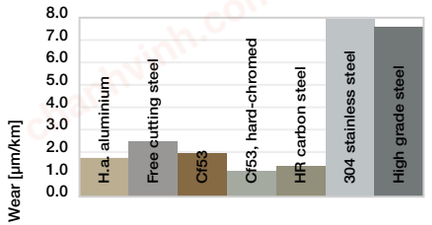

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

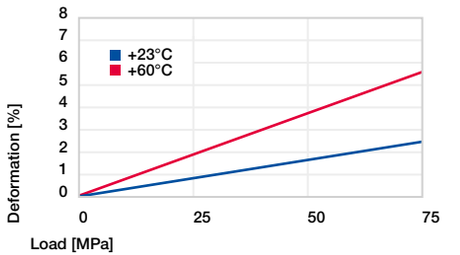

Diagram 03: Deformation under pressure and temperature

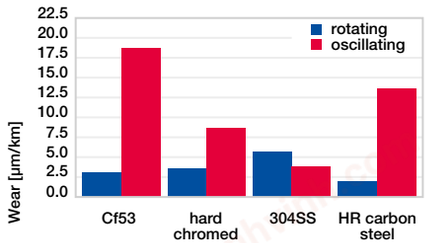

Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

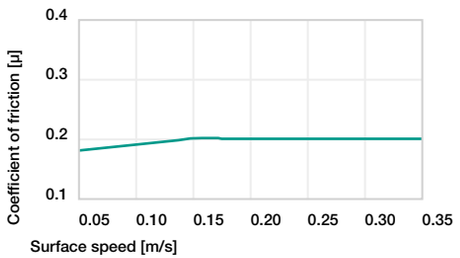

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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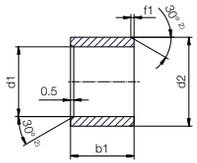
Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: H370SM-0304-03 – no minimum order quantity.
H370 iglidur® material S Sleeve bearing M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
3.0	+0.006 +0.046	4.5	3.0	H370SM-0304-03
4.0		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

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
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
28.0		32.0	30.0	H370SM-2832-30
30.0		34.0	20.0	H370SM-3034-20

[3] After press-fit. *Testing methods, page 57*

iglidur® H370
+200°C
75MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
30.0	+0.020 +0.104	34.0	25.0	H370SM-3034-25
30.0		34.0	30.0	H370SM-3034-30
30.0		34.0	40.0	H370SM-3034-40
32.0		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

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
40.0		44.0	50.0	H370SM-4044-50
45.0		50.0	20.0	H370SM-4550-20
45.0		50.0	30.0	H370SM-4550-30
45.0		50.0	40.0	H370SM-4550-40
45.0	+0.025 +0.125	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		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*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/H370

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

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

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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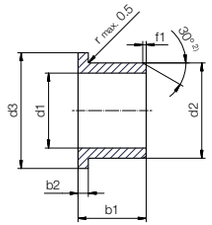
Bearing technology | Plain bearing | iglidur® H370

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: H370FM-0405-04 – no minimum order quantity.
H370 iglidur® material F Flange bearing M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
4.0	+0.010 +0.058	5.5	9.5	4.0	0.75	H370FM-0405-04
5.0		7.0	11.0	5.0	1.00	H370FM-0507-05
6.0		8.0	12.0	4.0	1.00	H370FM-0608-04
6.0		8.0	12.0	6.0	1.00	H370FM-0608-06
6.0		8.0	12.0	8.0	1.00	H370FM-0608-08
8.0	+0.013 +0.071	10.0	15.0	5.5	1.00	H370FM-0810-05
8.0		10.0	15.0	6.0	1.00	H370FM-0810-06
8.0		10.0	15.0	7.5	1.00	H370FM-0810-07
8.0		10.0	15.0	9.5	1.00	H370FM-0810-09
8.0		10.0	15.0	10.0	1.00	H370FM-0810-10
8.0		10.0	15.0	15.0	1.00	H370FM-0810-15
10.0		12.0	18.0	7.0	1.00	H370FM-1012-07
10.0		12.0	18.0	9.0	1.00	H370FM-1012-09
10.0		12.0	18.0	10.0	1.00	H370FM-1012-10
10.0		12.0	18.0	12.0	1.00	H370FM-1012-12
10.0		12.0	18.0	14.5	1.00	H370FM-1012-145
10.0		12.0	18.0	17.0	1.00	H370FM-1012-17
10.0		12.0	18.0	20.0	1.00	H370FM-1012-20
12.0	+0.016 +0.086	14.0	20.0	7.0	1.00	H370FM-1214-07
12.0		14.0	20.0	9.0	1.00	H370FM-1214-09
12.0		14.0	20.0	12.0	1.00	H370FM-1214-12
12.0		14.0	20.0	15.0	1.00	H370FM-1214-15
12.0		14.0	20.0	17.0	1.00	H370FM-1214-17
12.0		14.0	20.0	20.0	1.00	H370FM-1214-20
14.0		16.0	22.0	12.0	1.00	H370FM-1416-12
14.0		16.0	22.0	17.0	1.00	H370FM-1416-17

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
15.0	+0.016 +0.086	17.0	23.0	9.0	1.00	H370FM-1517-09
15.0		17.0	23.0	12.0	1.00	H370FM-1517-12
15.0		17.0	23.0	17.0	1.00	H370FM-1517-17
16.0		18.0	24.0	10.0	1.00	H370FM-1618-10
16.0		18.0	24.0	12.0	1.00	H370FM-1618-12
16.0		18.0	24.0	17.0	1.00	H370FM-1618-17
16.0		18.0	24.0	25.0	1.00	H370FM-1618-25
16.0		18.0	22.0	10.0	1.00	H370FM-161822-10
18.0		20.0	26.0	12.0	1.00	H370FM-1820-12
18.0		20.0	26.0	17.0	1.00	H370FM-1820-17
18.0		20.0	26.0	22.0	1.00	H370FM-1820-22
20.0	+0.020 +0.104	23.0	30.0	11.5	1.50	H370FM-2023-11
20.0		23.0	30.0	16.5	1.50	H370FM-2023-16
20.0		23.0	30.0	21.5	1.50	H370FM-2023-21
20.0		23.0	30.0	30.0	1.50	H370FM-2023-30
22.0		25.0	32.0	21.5	1.50	H370FM-222532-215
25.0		28.0	35.0	11.5	1.50	H370FM-2528-11
25.0		28.0	35.0	16.5	1.50	H370FM-2528-16
25.0		28.0	35.0	21.5	1.50	H370FM-2528-21
25.0		28.0	35.0	30.0	1.50	H370FM-2528-30
30.0		34.0	42.0	16.0	2.00	H370FM-3034-16
30.0		34.0	42.0	26.0	2.00	H370FM-3034-26
30.0		34.0	42.0	40.0	2.00	H370FM-3034-40
35.0	+0.025 +0.125	39.0	47.0	16.0	2.00	H370FM-3539-16
35.0		39.0	47.0	26.0	2.00	H370FM-3539-26
40.0		44.0	52.0	30.0	2.00	H370FM-4044-30

[3] After press-fit. *Testing methods, page 57*

iglidur® H370
+200°C
75MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
40.0	+0.025 +0.125	44.0	52.0	40.0	2.00	H370FM-4044-40
45.0		50.0	58.0	50.0	2.00	H370FM-4550-50
50.0		55.0	63.0	50.0	2.00	H370FM-5055-50

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
60.0	+0.030 +0.150	65.0	73.0	50.0	2.00	H370FM-6065-50
70.0		75.0	83.0	50.0	2.00	H370FM-7075-50

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
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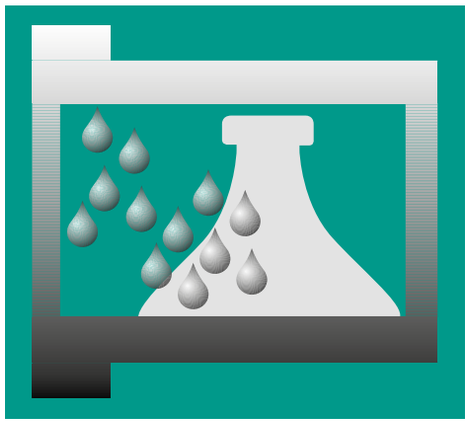

The classic with high resistance to media and temperature

Up to +200°C

iglidur® H

When to use it?

- For underwater applications
- When high temperature resistance is required
- For high mechanical loading
- For applications in contact with chemicals

When not to use?

- When extremely high wear resistance under water is required
  iglidur® H370
- When the best universal resistance to chemicals is required
  iglidur® X
- For the maximum compressive strength at higher temperatures
  iglidur® X, iglidur® Z

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Bearing technology | Plain bearing | iglidur® H

Ø
3.0 – 70.0mm



Also available as:

Bar stock, round bar
Page 657

The classic with high resistance to media and temperature
Up to +200°C

Suitable for temperatures up to +200°C. Very low coefficient of friction when used with hardened shafts.

- Suitable for underwater applications
- High temperature resistance
- Resistant to chemicals
- Lubrication-free
- Maintenance-free

Bar stock, plate
Page 683

Typical application areas

- Offshore
- Ship building
- Beverage industry
- Medical technology
- Mechatronics

tribo-tape liner
Page 691

Piston rings
Page 581

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® H
+200°C
90MPa

Technical data

General properties			Testing method
Density	g/cm³	1.71	
Colour		grey	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.3	
Coefficient of friction, dynamic, against steel	µ	0.07 – 0.20	
pv value, max. (dry)	MPa · m/s	1.37	
Mechanical properties			
Flexural modulus	MPa	12,500	DIN 53457
Flexural strength at +20°C	MPa	175	DIN 53452
Compressive strength	MPa	81	
Max. recommended surface pressure (+20°C)	MPa	90	
Shore D hardness		87	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+200	
Max. application temperature short-term	°C	+240	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.60	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	4	DIN 53752
Electrical properties[5]			
Specific contact resistance	Ωcm	$< 10^5$	DIN IEC 93
Surface resistance	Ω	$< 10^2$	DIN 53482

[5] The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

Table 01: Material properties

–40°C up to +200°C

90MPa

V-0

RoHS-II

ISO 3547-1

iglidur® H is a fibre-reinforced thermoplastic material especially developed for applications in high atmospheric humidity or under water. Plain bearings made from iglidur® H can be used completely free of lubrication; in wet applications, the surrounding media acts as additional lubricant.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® H plain bearings is below 0.1% weight. The saturation limit in water is 0.3% weight. iglidur® H is very well suited for use in wet environments.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

iglidur® H withstands neutron and gamma particle radiation. Plain bearings made from iglidur® H are resistant up to a radiation intensity of $2 \cdot 10^2$Gy.

Resistance to weathering

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

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® H at radial loads. At the maximum recommended surface pressure of 90MPa the deformation is about 2.5% at room temperature.

Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® H

Permissible surface speeds

The maximum permitted surface speed is dependent on whether the temperature at the bearing point becomes too high or not. iglidur® H is suitable for maximum surface speeds of 1.0m/s (rotating) and 3.0m/s (linear) in dry operation. Linear movements enable higher surface speeds, as a large area of the shaft contributes to the cooling.

Surface speed, page 44

Temperature

With increasing temperatures, the compressive strength of iglidur® H plain bearings decreases. Diagram 02 shows this inverse relationship. The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +120°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

Both the wear resistance and the coefficient of friction change depending on the load. Interestingly, the coefficient of friction μ lowers slightly with the increase of surface speed at constant load (see diagrams 04 and 05).

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagrams 06 and 07 show the test results of iglidur® H plain bearings running against various shaft materials. The iglidur® H plain bearings give different results when used in rotating and pivoting applications on different shaft materials. The Cf53 and HR carbon steel shafts give the best wear values in rotating applications, whereas the 304 stainless steel shafts (which are not so good for rotation) give the best results in pivoting applications. Hard-chromed shafts only give an advantage at low pressures when used with iglidur® H bearings.

Shaft materials, page 52

Installation tolerances

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

Testing methods, page 57

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.0	0.7	3.0
short-term	m/s	1.5	1.1	4.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.07 – 0.20	0.09	0.04	0.04

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

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

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

iglidur® H
+200°C
90MPa

Technical data

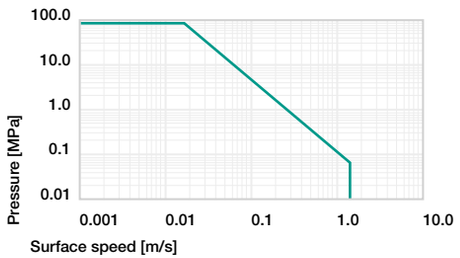

Diagram 01: Permissible pv values for iglidur® H plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

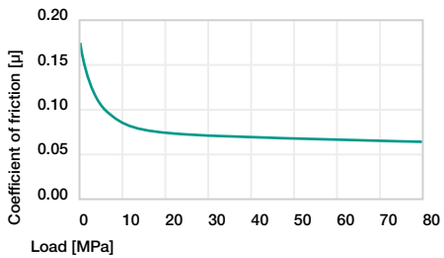

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

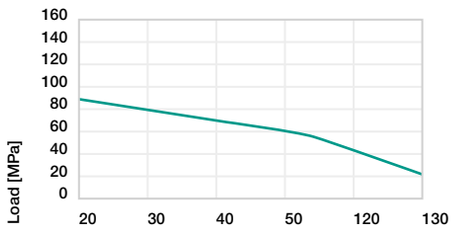

Diagram 02: Maximum recommended surface pressure as a function of temperature (90MPa at +20°C)

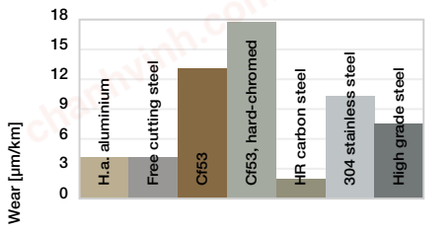

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

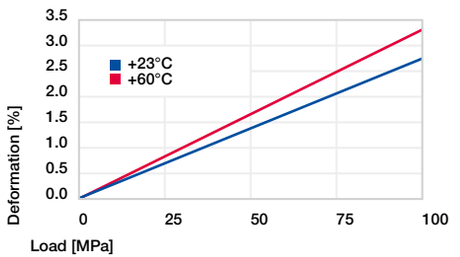

Diagram 03: Deformation under pressure and temperature

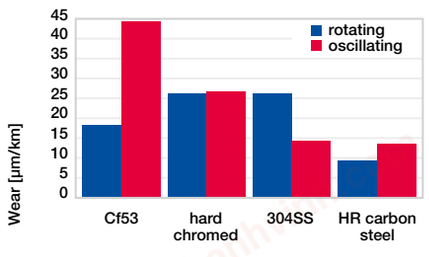

Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

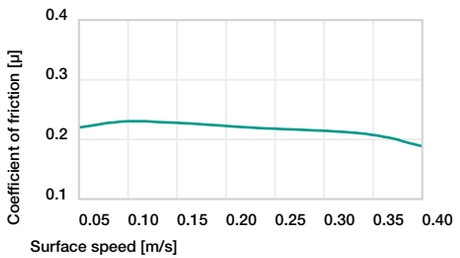

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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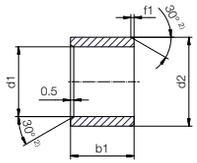
Bearing technology | Plain bearing | iglidur® H

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: HSM-0304-03 – no minimum order quantity.
H iglidur® material S Sleeve bearing M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
3.0	+0.006 +0.046	4.5	3.0	HSM-0304-03
4.0		5.5	4.0	HSM-0405-04
5.0	+0.010	7.0	5.0	HSM-0507-05
6.0	+0.058	8.0	3.0	HSM-0608-03
6.0		8.0	6.0	HSM-0608-06
8.0		10.0	8.0	HSM-0810-08
8.0	+0.013	10.0	10.0	HSM-0810-10
10.0	+0.071	12.0	6.0	HSM-1012-06
10.0		12.0	10.0	HSM-1012-10
12.0		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	+0.016 +0.086	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	20.0	15.0	HSM-1820-15
18.0	+0.086	20.0	25.0	HSM-1820-25
20.0		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	+0.020	28.0	15.0	HSM-2528-15
25.0	+0.104	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		36.0	30.0	HSM-3236-30
35.0		39.0	40.0	HSM-3539-40
40.0	+0.025	44.0	20.0	HSM-4044-20
40.0	+0.125	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	60.0	26.0	HSM-5560-26
60.0	+0.150	65.0	60.0	HSM-6065-60
70.0		75.0	50.0	HSM-7075-50

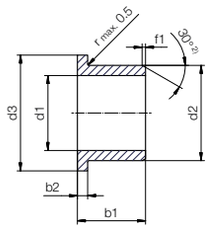
[3] After press-fit. *Testing methods, page 57*

iglidur® H
+200°C
90MPa

Bearing technology | Plain bearing | iglidur® H

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: HFM-0405-04 – no minimum order quantity.
H iglidur® material F Flange bearing M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
4.0		5.5	9.5	4.0	0.75	HFM-0405-04
5.0		7.0	11.0	5.0	1.00	HFM-0507-05
5.0	+0.010	7.0	11.0	8.0	1.00	HFM-0507-08
6.0	+0.058	8.0	12.0	4.0	1.00	HFM-0608-04
6.0		8.0	12.0	6.0	1.00	HFM-0608-06
6.0		8.0	12.0	10.0	1.00	HFM-0608-10
8.0		10.0	15.0	7.0	1.00	HFM-0810-07
8.0		10.0	15.0	10.0	1.00	HFM-0810-10
8.0		10.0	15.0	15.0	1.00	HFM-0810-15
10.0	+0.013 +0.071	12.0	18.0	4.0	1.00	HFM-1012-04
10.0		12.0	18.0	9.0	1.00	HFM-1012-09
10.0		12.0	18.0	15.0	1.00	HFM-1012-15
10.0		12.0	18.0	20.0	1.00	HFM-1012-20
12.0		14.0	20.0	7.0	1.00	HFM-1214-07
12.0	+0.016	14.0	20.0	10.0	1.00	HFM-1214-10
12.0	+0.086	14.0	20.0	15.0	1.00	HFM-1214-15
14.0		16.0	22.0	12.0	1.00	HFM-1416-12
15.0		17.0	23.0	17.0	1.00	HFM-1517-17
16.0	+0.016	18.0	24.0	13.0	1.00	HFM-1618-13
16.0	+0.086	18.0	24.0	17.0	1.00	HFM-1618-17
18.0		20.0	26.0	17.0	1.00	HFM-1820-17
20.0		23.0	30.0	7.0	1.50	HFM-2023-07
20.0		23.0	30.0	16.5	1.50	HFM-2023-16
20.0	+0.020	23.0	30.0	30.0	1.50	HFM-2023-30
25.0	+0.104	28.0	35.0	30.0	1.50	HFM-2528-30
27.0		30.0	38.0	20.0	1.50	HFM-2730-20
30.0		34.0	42.0	40.0	2.00	HFM-3034-40
34.0		38.0	46.0	13.0	2.00	HFM-3438-13
35.0	+0.025	39.0	47.0	26.0	2.00	HFM-3539-26
40.0	+0.125	44.0	52.0	40.0	2.00	HFM-4044-40
45.0		50.0	58.0	50.0	2.00	HFM-4550-50
50.0		55.0	63.0	50.0	2.00	HFM-5055-50
60.0	+0.030	65.0	73.0	50.0	2.00	HFM-6065-50
70.0	+0.150	75.0	83.0	50.0	2.00	HFM-7075-50

[3] After press-fit. *Testing methods, page 57*

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Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/H

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

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

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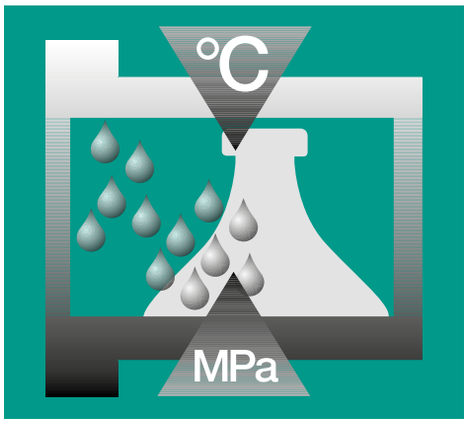

High temperature endurance runner

Extreme wear and media resistance up to +250°C

iglidur® C500

When to use it?

- When an extremely media-resistant plain bearing with high flexibility is required
- When a wear-resistant and media-resistant plain bearing is required

When not to use?

- When an FDA-compliant high-temperature plain bearing is required
  iglidur® A500
- When a media-resistant, high-temperature plain bearing with the largest possible range of dimensions is required
  iglidur® X

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Bearing technology | Plain bearing | iglidur® C500

Ø
6.0 – 40.0mm



Also available as:

Bar stock, round bar
Page 680

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

High temperature endurance runner
Extreme wear and media resistance up to +250°C

iglidur® C500 can be used up to +250°C and is extremely media-resistant (even in cleaning processes using hydrogen peroxide). It is also wear-resistant and has low coefficient of friction. Also suitable for various special designs. The colour represents extreme environmental conditions.

- High temperature resistance
- Resistant to water vapour
- Low coefficient of friction
- Lubrication-free
- High wear resistance
- High media resistance
- Maintenance-free

Typical application areas

- Plant construction
- Valves
- Chemical industry
- Process technology

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® C500
+250°C
80MPa

Technical data

General properties			Testing method
Density	g/cm³	1.37	
Colour		magenta	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	0.5	
Coefficient of friction, dynamic, against steel	µ	0.07 – 0.19	
pv value, max. (dry)	MPa · m/s	0.70	
Mechanical properties			
Flexural modulus	MPa	3,300	DIN 53457
Flexural strength at +20°C	MPa	100	DIN 53452
Compressive strength	MPa	110	
Max. recommended surface pressure (+20°C)	MPa	80	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+250	
Max. application temperature short-term	°C	+300	
Min. application temperature	°C	–100	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	9	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{14}$	DIN IEC 93
Surface resistance	Ω	$> 10^{13}$	DIN 53482

–100°C up to +250°C

80MPa

V-0

RoHS-II

ISO 3547-1

Table 01: Material properties

iglidur® C500 is a member of the family of extremely media and temperature-resistant iglidur® materials X, X6 and A500. This material is characterised by improved wear resistance and increased design freedom.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® C500 plain bearings is below 0.3% weight. The saturation limit in water is also below 0.5% weight.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

iglidur® C500 withstands neutron and gamma particle radiation without detectable losses of its excellent mechanical properties. Plain bearings made from iglidur® C500 are resistant up to a radiation intensity of $3 \cdot 10^2$Gy.

Resistance to weathering

iglidur® C500 plain bearings are resistant to weathering. The material properties are slightly affected. Discoloration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® C500 plain bearings decreases. Diagram 02 shows this inverse relationship. However, at an operation temperature of +200°C the permissible surface pressure is close to 20MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® C500 at radial loads. At the maximum recommended surface pressure of 80MPa the deformation is less than 4.5%.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® C500

Permissible surface speeds

The maximum recommended surface 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

Temperature

iglidur® C500 belongs to the most temperature-resistant iglidur® materials. As in the case of all thermoplastics, the compression strength of iglidur® C500 decreases when temperatures rise. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +130°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

The coefficient of friction and wear in iglidur® C500 are more favourable than in the other high temperature materials iglidur® X and A500. The coefficient of friction increases moderately as the sliding speed increases. The coefficient of friction initially drops rapidly to less than 0.1 under loads of up to approximately 20MPa, and then only marginally increases as loads continue to increase. The friction and wear are also dependent, to a large degree, on the shaft material. Shafts that are too smooth, increase both the coefficient of friction and the wear of the bearing. Ideal are ground surfaces with an average surface finish of 0.6 – 0.8µm.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagram 06 shows the test results of iglidur® C500 plain bearings running against various shaft materials. Using the example of a rotating motion at 1MPa and a speed of 0.3m/s, it becomes apparent that iglidur® C500 has consistent wear characteristics across a variety of shaft types. This wear rate spikes in combination with free cutting steel, and, notably so, reduces in combination with HC aluminium. The wear under rotational loads is higher, specifically with increasing radial loads as compared to pivoting movements (diagram 07).

Shaft materials, page 52

Installation tolerances

iglidur® C500 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances.

Testing methods, page 57

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+
Strong alkalines	+

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.9	0.7	2.4
short-term	m/s	1.1	1.0	2.8

Table 03: Maximum surface speeds

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

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

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

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

Technical data

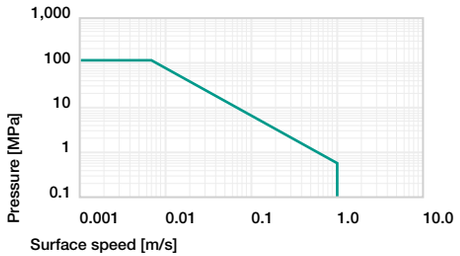

Diagram 01: Permissible pv values for iglidur® C500 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

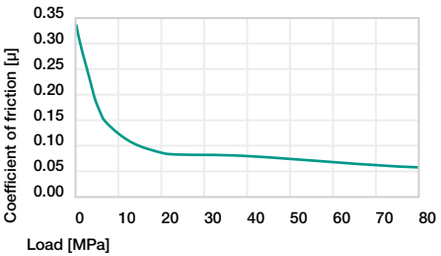

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

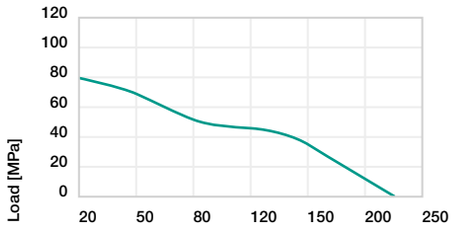

Diagram 02: Maximum recommended surface pressure as a function of temperature (80MPa at +20°C)

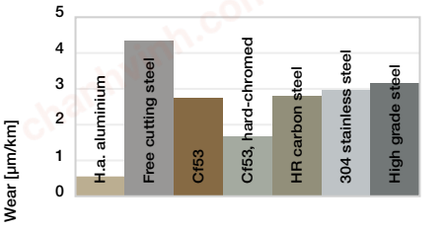

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

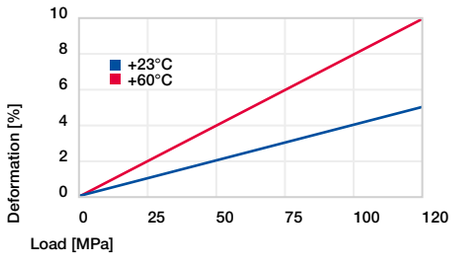

Diagram 03: Deformation under pressure and temperature

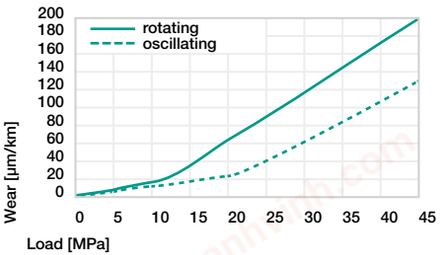

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

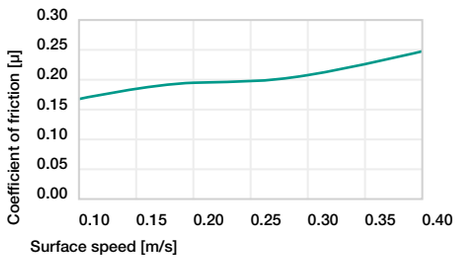

Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

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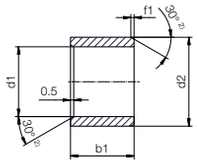
Bearing technology | Plain bearing | iglidur® C500

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: C500SM-0608-06 – no minimum order quantity.
C500 iglidur® material S Sleeve bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
6.0	+0.010 +0.058	8.0	6.0	C500SM-0608-06
8.0	+0.013 +0.071	10.0	10.0	C500SM-0810-10
10.0		12.0	10.0	C500SM-1012-10
12.0	+0.016 +0.086	14.0	12.0	C500SM-1214-12
16.0		18.0	15.0	C500SM-1618-15
20.0	+0.020 +0.104	23.0	20.0	C500SM-2023-20
40.0	+0.025 +0.125	44.0	30.0	C500SM-4044-30

[3] After press-fit. *Testing methods, page 57*

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

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

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® C500
+250°C
80MPa

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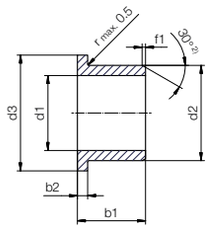
Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 6–12	Ø 12–30
f1 [mm]	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: C500FM-0608-06 – no minimum order quantity.
C500 iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.010 +0.058	8.0	12.0	6.0	1.00	C500FM-0608-06
8.0	+0.013 +0.071	10.0	15.0	10.0	1.00	C500FM-0810-10
10.0		12.0	18.0	10.0	1.00	C500FM-1012-10
12.0	+0.016 +0.086	14.0	20.0	12.0	1.00	C500FM-1214-12
16.0		18.0	24.0	17.0	1.00	C500FM-1618-17
20.0	+0.020 +0.104	23.0	30.0	21.5	1.50	C500FM-2023-21

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/C500

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

Discount scaling		
1 – 9	50 – 99	500 – 999
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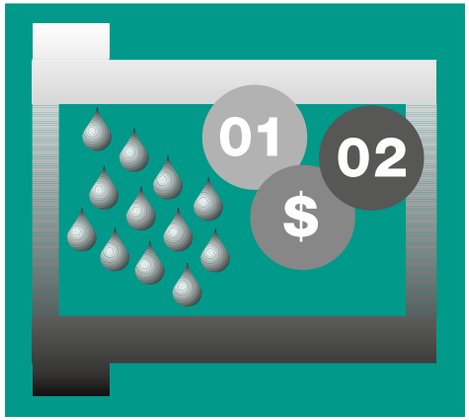

The low-cost specialist for chemicals and temperatures

Up to +200°C, most capable under static load

iglidur® H2

When to use it?

- For underwater applications
- When a cost-effective plain bearing for high temperatures is required
- For applications with fuels, oils, etc.

When not to use?

- When the highest wear resistance is required
  iglidur® H1, iglidur® H4, iglidur® W300
- When vibration dampening is necessary
  iglidur® B, iglidur® M250
- When neither increased temperatures nor media contact occur
  iglidur® GLW

chanhvinh.com

Bearing technology | Plain bearing | iglidur® H2

Ø
–



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

The low-cost specialist for chemicals and temperatures

Up to +200°C, most capable under static load

For applications with high temperature requirements. Can be conditionally used in dry operation; excellent properties with additional lubrication.

- Suitable for underwater applications
- Cost-effective
- Resistant to chemicals
- High temperature resistance
- Lubrication-free
- Maintenance-free

Typical application areas

- Automotive industry
- Actuator
- Bicycle industry

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® H2
+200°C
110MPa

Technical data

General properties			Testing method
Density	g/cm³	1.72	
Colour		brown	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.2	
Coefficient of friction, dynamic, against steel	µ	0.07 – 0.30	
pv value, max. (dry)	MPa · m/s	0.58	
Mechanical properties			
Flexural modulus	MPa	10,300	DIN 53457
Flexural strength at +20°C	MPa	210	DIN 53452
Compressive strength	MPa	109	
Max. recommended surface pressure (+20°C)	MPa	110	
Shore D hardness		88	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+200	
Max. application temperature short-term	°C	+240	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	4	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{15}$	DIN IEC 93
Surface resistance	Ω	$> 10^{14}$	DIN 53482

–40°C up to +200°C

110MPa

V-0

RoHS-II

Table 01: Material properties

In applications with iglidur® H2 plain bearings, economical aspects are in focus. It is the first time that it is possible to offer such a high-performance bearing for high volume applications with these technical advantages at such a low price: temperatures up to +200°C, permitted surface pressure up to 110N/mm², and excellent chemical resistance. The iglidur® H2 plain bearings are self-lubricating and suitable for all motions.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® H2 plain bearings is below 0.1% weight. The saturation limit in water is 0.2% weight. iglidur® H2 is an ideal material for wet environments.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

iglidur® H2 withstands neutron and gamma particle radiation. Plain bearings made from iglidur® H2 are resistant up to a radiation intensity of $2 \cdot 10^2$Gy.

Resistance to weathering

iglidur® H2 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolorations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H2 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® H2 at radial loads. At the maximum recommended surface pressure of 110MPa 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

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Bearing technology | Plain bearing | iglidur® H2

Permissible surface speeds

During the development of iglidur® H2, costs and mechanical stability were the main considerations. The permitted surface speeds of this bearing are rather low, which primarily permits an application with slow movements or in intermittent service.

Surface speed, page 44

Temperature

iglidur® H2 is an extremely temperature-resistant material. The short-term maximum permissible temperature is +240°C and allows the use of iglidur® H2 plain bearings in applications where the bearings are not subjected to any additional load such as a paint drying process. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +110°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

The coefficient of friction of iglidur® H2 plain bearings change with different surface speeds, loads and surface finishes, as indicated in the diagrams 04 and 05.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

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

Installation tolerances

iglidur® H2 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 57

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

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

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.9	0.6	2.5
short-term	m/s	1.0	0.7	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.07 – 0.30	0.09	0.04	0.04

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

	Housing		Plain bearing		Shaft	
Ø d1 [mm]	H7 [mm]		F10 [mm]		h9 [mm]	
0 – 3	+0.000	+0.010	+0.006	+0.046	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.010	+0.058	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.013	+0.071	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.016	+0.086	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.020	+0.104	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.025	+0.125	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.030	+0.150	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.036	+0.176	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

iglidur® H2 plain bearings are manufactured to special order. Please request iglidur® H2 plain bearings as an alternative to iglidur® H and iglidur® H4 bearings in high volume applications.

iglidur® H2
+200°C
110MPa

Technical data

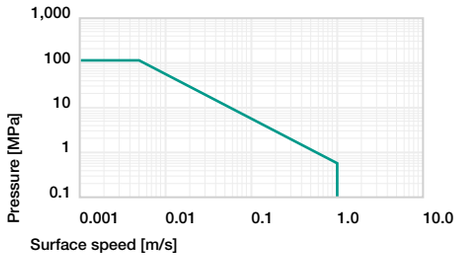

Diagram 01: Permissible pv values for iglidur® H2 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

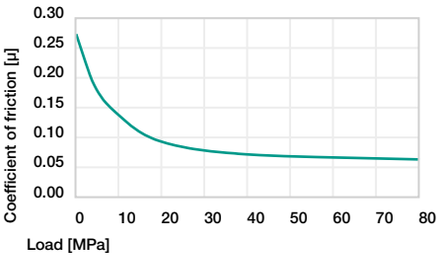

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

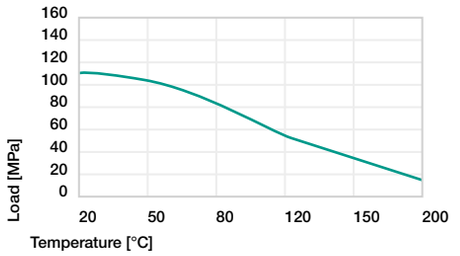

Diagram 02: Maximum recommended surface pressure as a function of temperature (110MPa at +20°C)

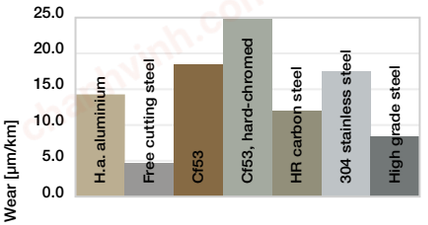

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

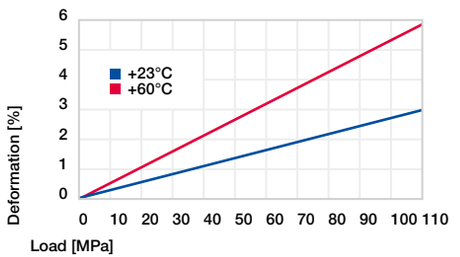

Diagram 03: Deformation under pressure and temperature

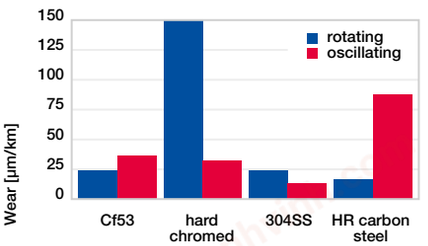

Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

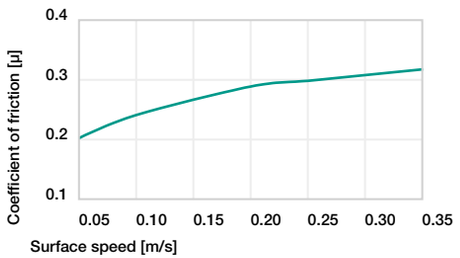

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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Plain bearing materials for contact with food

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Plain bearing materials for contact with food

The iglidur® materials are most at home when they are not lubricated and the highest hygiene is required. Where is this more true than in food handling and processing?
This group comprises FDA-compliant materials for the most varied operating conditions in terms of moisture and temperature, including iglidur® T220, a material suitable even for the tobacco industry.

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert



iglidur® A181
The universal bearing for food contact

Temperature [°C] [123]	+90	– +
Surface pressure [MPa] [124]	31	– +
Coefficient of friction [µ] [125]	0.18	– +
Wear [µm/km] [125]	0.48	– +
Price index		– +



iglidur® A350
The endurance runner at higher temperatures in the food sector

Temperature [°C] [123]	+180	– +
Surface pressure [MPa] [124]	60	– +
Coefficient of friction [µ] [125]	0.17	– +
Wear [µm/km] [125]	1.79	– +
Price index		– +



iglidur® A500
The media and temperature specialist in the food sector

Temperature [°C] [123]	+250	– +
Surface pressure [MPa] [124]	120	– +
Coefficient of friction [µ] [125]	0.36	– +
Wear [µm/km] [125]	4.10	– +
Price index		– +



iglidur® A180
The all-rounder for food

Temperature [°C] [123]	+90	– +
Surface pressure [MPa] [124]	28	– +
Coefficient of friction [µ] [125]	0.17	– +
Wear [µm/km] [125]	0.50	– +
Price index		– +

[123] Max. long-term application temperature [124] Max. recommended surface pressure at +20°C [125] Best combination for p = 1 MPa, v = 0.3 m/s, rotating



iglidur® A200
The "food-classic" for low duty

Temperature [°C] [123]	+80	– +
Surface pressure [MPa] [124]	18	– +
Coefficient of friction [µ] [125]	0.45	– +
Wear [µm/km] [125]	1.62	– +
Price index		– +



iglidur® A160
"Food" bearing with media resistance up to +90°C

Temperature [°C] [123]	+90	– +
Surface pressure [MPa] [124]	15	– +
Coefficient of friction [µ] [125]	0.09	– +
Wear [µm/km] [125]	0.33	– +
Price index		– +



iglidur® UW160
Suitable for contact with drinking water

Temperature [°C] [123]	+90	– +
Surface pressure [MPa] [124]	15	– +
Coefficient of friction [µ] [125]	0.17	– +
Wear [µm/km] [125]	2.00	– +
Price index		– +



iglidur® T220
For the tobacco industry

Temperature [°C] [123]	+100	– +
Surface pressure [MPa] [124]	40	– +
Coefficient of friction [µ] [125]	0.36	– +
Wear [µm/km] [125]	0.80	– +

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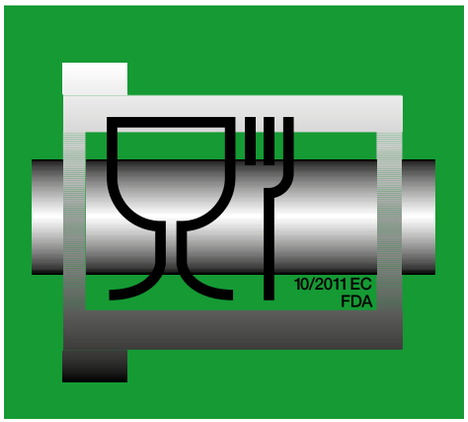

The universal bearing for food contact

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

iglidur® A181

When to use it?

- When FDA compliance is required
- When a material compliant in accordance with Regulation (EU) No. 10/2011 is required
- When an universal material suitable for direct contact with food is required

When not to use?

- When Regulation (EU) No. 10/2011 and FDA compliance are not required
  iglidur® J
- When continuous operating temperatures are higher than +90°C
  iglidur® A350
- When a cost-effective universal plain bearing is required
  iglidur® G, iglidur® P

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Bearing technology | Plain bearing | iglidur® A181

Ø
4.0 – 50.0mm



Also available as:

Bar stock, round bar
Page 680

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 584

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

The universal bearing for food contact

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

The iglidur® A181 material is compliant with Regulation (EU) No. 10/2011 and also with FDA specifications. The blue colour also facilitates the often required "optical detectability" in the food industry.

- Compliant with Regulation (EU) No. 10/2011
- FDA-compliant
- Universal installation
- High media resistance
- Wear-resistant
- Lubrication-free
- Maintenance-free

Typical application areas

- Food industry
- Beverage technology
- Medical technology

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® A181
+90°C
31MPa

Technical data

General properties			Testing method
Density	g/cm³	1.38	
Colour		blue	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	1.3	
Coefficient of friction, dynamic, against steel	µ	0.10 – 0.21	
pv value, max. (dry)	MPa · m/s	0.31	
Mechanical properties			
Flexural modulus	MPa	1,913	DIN 53457
Flexural strength at +20°C	MPa	48	DIN 53452
Compressive strength	MPa	60	
Max. recommended surface pressure (+20°C)	MPa	31	
Shore D hardness		76	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+110	
Min. application temperature	°C	–50	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	11	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	> 10^{12}	DIN IEC 93
Surface resistance	Ω	> 10^{12}	DIN 53482

Table 01: Material properties

–50°C up to +90°C

31MPa

HB

FOOD

RoHS-II

ISO 3547-1

Due to their technical specifications and their conformity with the relevant regulations, iglidur® A181 plain bearings are predestined for applications in food technology. Compared to iglidur® A180 with regard to the mechanical properties, temperature and media resistance, iglidur® A181 is more suitable with respect to the wear resistance in most cases.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® A181 plain bearings is approximately 0.2% weight. The saturation limit in water is 1.3% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® A181 bearings.

Radiation resistance

Plain bearings made from iglidur® A181 are resistant up to a radiation intensity of 2 · 10^2Gy.

Resistance to weathering

iglidur® A181 plain bearings are resistant to weathering. The material properties are slightly affected. Discoloration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® A181 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® A181 at radial loads.

Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® A181

Permissible surface speeds

iglidur® A181 was developed for low surface speeds. Maximum speeds of up to 0.8m/s (rotating) and 3.5m/s (linear), respectively, are permissible during continuous dry operation. The given values in table 03 indicate the limits at which an increase up to the continuous permissible temperature occurs. This increase is a result of friction. In practice, though, this level is rarely reached, due to varying application conditions.

Surface speed, page 44

Temperature

The long-term upper temperature limit of +90°C permits the broad use in applications with direct contact with food. As shown in diagram 02, with increasing temperatures, the compressive strength decreases. When considering temperatures, the additional frictional heat in the bearing system must be taken into account. For temperatures over +60°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05). For iglidur® A181 plain bearings, the alteration of the coefficient of friction μ depends on surface speed and the shaft surface finish.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

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

Installation tolerances

iglidur® A181 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the E10 tolerances.

Testing methods, page 57

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to –
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	+ up to 0

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.8	0.6	3.5
short-term	m/s	1.2	1.0	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.10 – 0.21	0.08	0.03	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

	Housing		Plain bearing		Shaft	
Ø d1 [mm]	H7 [mm]		E10 [mm]		h9 [mm]	
0 – 3	+0.000	+0.010	+0.014	+0.054	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.020	+0.068	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.025	+0.083	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.032	+0.102	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.040	+0.124	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.050	+0.150	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.060	+0.180	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.072	+0.212	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.085	+0.245	–0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

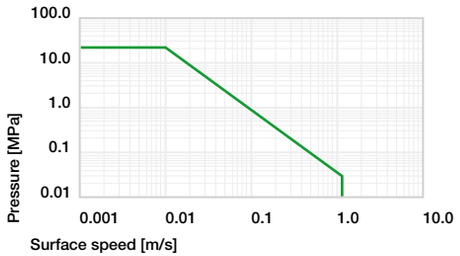

Diagram 01: Permissible pv values for iglidur® A181 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

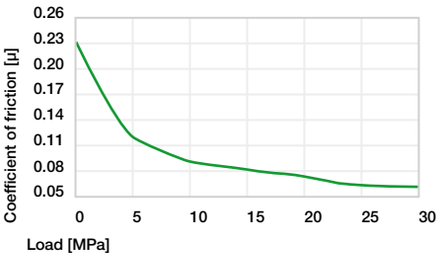

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

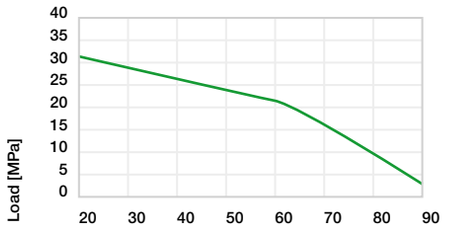

Diagram 02: Maximum recommended surface pressure as a function of temperature (31MPa at +20°C)

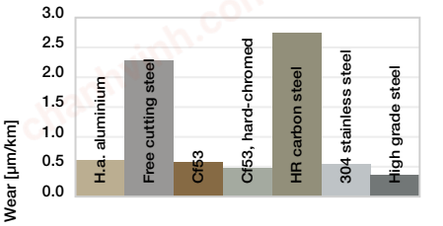

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

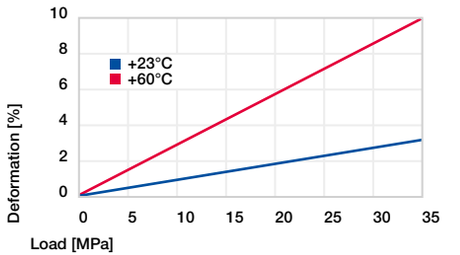

Diagram 03: Deformation under pressure and temperature

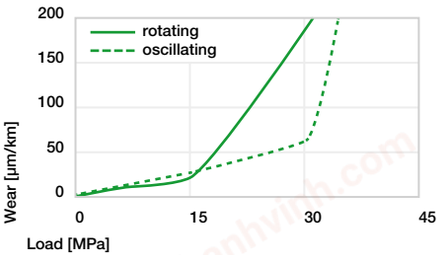

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

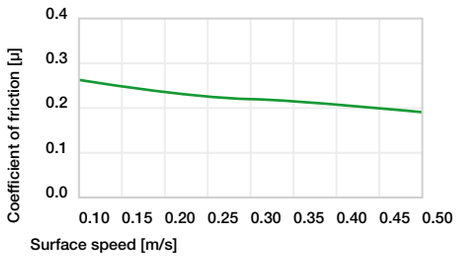

Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

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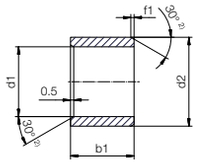
Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: A181SM-0405-04 – no minimum order quantity.
A181 iglidur® material S Sleeve bearing M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
4.0	+0.020 +0.068	5.5	4.0	A181SM-0405-04
4.0		5.5	6.0	A181SM-0405-06
5.0		7.0	5.0	A181SM-0507-05
5.0		7.0	10.0	A181SM-0507-10
6.0		8.0	6.0	A181SM-0608-06
6.0		8.0	8.0	A181SM-0608-08
6.0		8.0	10.0	A181SM-0608-10
8.0	+0.025 +0.083	10.0	8.0	A181SM-0810-08
8.0		10.0	10.0	A181SM-0810-10
8.0		10.0	12.0	A181SM-0810-12
10.0		12.0	8.0	A181SM-1012-08
10.0		12.0	10.0	A181SM-1012-10
10.0		12.0	12.0	A181SM-1012-12
10.0		12.0	15.0	A181SM-1012-15
10.0		12.0	20.0	A181SM-1012-20
12.0	+0.032 +0.102	14.0	12.0	A181SM-1214-12
12.0		14.0	15.0	A181SM-1214-15
12.0		14.0	20.0	A181SM-1214-20
13.0		15.0	10.0	A181SM-1315-10
13.0		15.0	20.0	A181SM-1315-20
14.0		16.0	15.0	A181SM-1416-15
14.0		16.0	20.0	A181SM-1416-20
14.0		16.0	25.0	A181SM-1416-25
15.0		17.0	15.0	A181SM-1517-15
15.0		17.0	20.0	A181SM-1517-20
15.0		17.0	25.0	A181SM-1517-25
16.0		18.0	15.0	A181SM-1618-15
16.0		18.0	20.0	A181SM-1618-20
16.0		18.0	25.0	A181SM-1618-25
18.0	+0.032 +0.102	20.0	15.0	A181SM-1820-15
18.0		20.0	20.0	A181SM-1820-20
18.0		20.0	25.0	A181SM-1820-25
20.0	+0.040 +0.124	23.0	10.0	A181SM-2023-10
20.0		23.0	15.0	A181SM-2023-15
20.0		23.0	20.0	A181SM-2023-20
20.0		23.0	25.0	A181SM-2023-25
20.0		23.0	30.0	A181SM-2023-30
22.0		25.0	15.0	A181SM-2225-15
22.0		25.0	20.0	A181SM-2225-20
22.0		25.0	25.0	A181SM-2225-25
22.0		25.0	30.0	A181SM-2225-30
24.0		27.0	15.0	A181SM-2427-15
24.0		27.0	20.0	A181SM-2427-20
24.0		27.0	25.0	A181SM-2427-25
24.0		27.0	30.0	A181SM-2427-30
25.0		28.0	15.0	A181SM-2528-15
25.0		28.0	20.0	A181SM-2528-20
25.0		28.0	25.0	A181SM-2528-25
25.0		28.0	30.0	A181SM-2528-30
28.0		32.0	20.0	A181SM-2832-20
28.0		32.0	25.0	A181SM-2832-25
28.0		32.0	30.0	A181SM-2832-30
28.0		32.0	20.0	A181SM-3034-20
30.0		34.0	25.0	A181SM-3034-25
30.0		34.0	30.0	A181SM-3034-30
30.0		34.0	40.0	A181SM-3034-40
32.0	+0.050 +0.150	36.0	20.0	A181SM-3236-20
32.0		36.0	30.0	A181SM-3236-30

[3] After press-fit. *Testing methods, page 57*

iglidur® A181
+90°C
31MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
32.0	+0.050 +0.150	36.0	40.0	A181SM-3236-40
35.0		39.0	20.0	A181SM-3539-20
35.0		39.0	30.0	A181SM-3539-30
35.0		39.0	40.0	A181SM-3539-40
35.0		39.0	50.0	A181SM-3539-50
40.0		44.0	20.0	A181SM-4044-20
40.0		44.0	30.0	A181SM-4044-30
40.0		44.0	40.0	A181SM-4044-40
40.0		44.0	50.0	A181SM-4044-50
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*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/A181

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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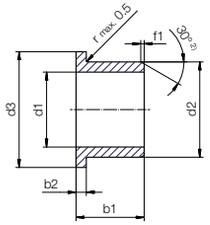
Bearing technology | Plain bearing | iglidur® A181

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 6–12	Ø 12–30	Ø > 30
f1 [mm]	0.5	0.8	1.2

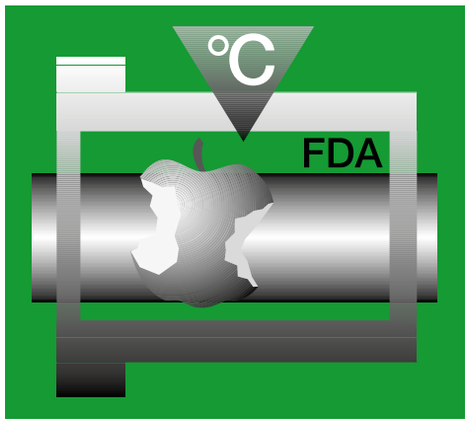
Dimensions according to ISO 3547-1 and special dimensions

Order example: A181FM-0608-04 – no minimum order quantity.
A181 iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	12.0	4.0	1.00	A181FM-0608-04
6.0		8.0	12.0	6.0	1.00	A181FM-0608-06
6.0		8.0	12.0	8.0	1.00	A181FM-0608-08
8.0	+0.025 +0.083	10.0	15.0	5.5	1.00	A181FM-0810-05
8.0		10.0	15.0	7.5	1.00	A181FM-0810-07
8.0		10.0	15.0	9.5	1.00	A181FM-0810-09
8.0		10.0	15.0	10.0	1.00	A181FM-0810-10
10.0		12.0	18.0	7.0	1.00	A181FM-1012-07
10.0		12.0	18.0	9.0	1.00	A181FM-1012-09
10.0		12.0	18.0	10.0	1.00	A181FM-1012-10
10.0		12.0	18.0	12.0	1.00	A181FM-1012-12
10.0		12.0	18.0	17.0	1.00	A181FM-1012-17
12.0	+0.032 +0.102	14.0	20.0	7.0	1.00	A181FM-1214-07
12.0		14.0	20.0	9.0	1.00	A181FM-1214-09
12.0		14.0	20.0	12.0	1.00	A181FM-1214-12
12.0		14.0	20.0	17.0	1.00	A181FM-1214-17
14.0		16.0	22.0	12.0	1.00	A181FM-1416-12
14.0		16.0	22.0	17.0	1.00	A181FM-1416-17
15.0		17.0	23.0	9.0	1.00	A181FM-1517-09
15.0		17.0	23.0	12.0	1.00	A181FM-1517-12
15.0		17.0	23.0	17.0	1.00	A181FM-1517-17
16.0	+0.032 +0.102	18.0	24.0	12.0	1.00	A181FM-1618-12
16.0		18.0	24.0	17.0	1.00	A181FM-1618-17
18.0		20.0	26.0	12.0	1.00	A181FM-1820-12
18.0		20.0	26.0	17.0	1.00	A181FM-1820-17
18.0		20.0	26.0	22.0	1.00	A181FM-1820-22
20.0	+0.040 +0.124	23.0	30.0	11.5	1.50	A181FM-2023-11
20.0		23.0	30.0	16.5	1.50	A181FM-2023-16
20.0		23.0	30.0	21.5	1.50	A181FM-2023-21
25.0		28.0	35.0	11.5	1.50	A181FM-2528-11
25.0		28.0	35.0	16.5	1.50	A181FM-2528-16
25.0		28.0	35.0	21.5	1.50	A181FM-2528-21
30.0		34.0	42.0	16.0	2.00	A181FM-3034-16
30.0		34.0	42.0	26.0	2.00	A181FM-3034-26
35.0		39.0	47.0	16.0	2.00	A181FM-3539-16
35.0		39.0	47.0	26.0	2.00	A181FM-3539-26
40.0		44.0	52.0	30.0	2.00	A181FM-4044-30
40.0		44.0	52.0	40.0	2.00	A181FM-4044-40
45.0		50.0	58.0	50.0	2.50	A181FM-4550-50

[3] After press-fit. *Testing methods, page 57*





The endurance runner at higher temperatures in the food sector

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

iglidur® A350

When to use it?

- When FDA compliance is required
- When wear resistance and FDA-compliance are necessary at high loads
- When the bearing is used in acid environments

When not to use?

- When continuous operating temperatures are higher than +180°C
  iglidur® A500
- When the maximum wear resistance is necessary
  iglidur® J
- When a cost-effective FDA-compliant plain bearing is required
  iglidur® A200, iglidur® A180
- For high speeds
  iglidur® J

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Bearing technology | Plain bearing | iglidur® A350

Ø
4.0 – 50.0mm



Also available as:

Bar stock, round bar
Page 681

Bar stock, plate
Page 685

tribo-tape liner
Page 691

Piston rings
Page 584

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

The endurance runner at higher temperatures in the food sector

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

A universal plain bearing for use in the area of food and pharmaceutical industries. Composition of FDA-compliant materials allows the use in areas where other plain bearings cannot be used due to the contact with food. With good tribological and mechanical properties, iglidur® A350 plain bearings are suitable for all-round use in and around food machinery.

- Compliant with Regulation (EU) No. 10/2011
- FDA-compliant
- Temperature-resistant up to +180°C
- Suitable for medium and high loads
- Suitable for pivoting applications
- Lubrication-free
- Standard range from stock
- Suitable for rotating applications
- Maintenance-free

Typical application areas

- Food industry
- Beverage technology
- Medical technology

Descriptive technical specifications	–	+
Wear resistance at +23°C	■■■□□	
Wear resistance at +90°C	■■■□□	
Wear resistance at +150°C	■■■□□	
Low coefficient of friction	■■■■□	
Low moisture absorption	■■■■□	
Wear resistance under water	■■■■□	
High media resistance	■■■■□	
Resistant to edge pressures	■■■□□	
Suitable for shock and impact loads	■■■□□	
Resistant to dirt	■■■□□	

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® A350
+180°C
60MPa

Technical data

General properties			Testing method
Density	g/cm³	1.42	
Colour		blue	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.6	DIN 53495
Max. moisture absorption	% weight	1.9	
Coefficient of friction, dynamic, against steel	µ	0.10 – 0.20	
pv value, max. (dry)	MPa · m/s	0.40	
Mechanical properties			
Flexural modulus	MPa	2,000	DIN 53457
Flexural strength at +20°C	MPa	110	DIN 53452
Compressive strength	MPa	78	
Max. recommended surface pressure (+20°C)	MPa	60	
Shore D hardness		76	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+180	
Max. application temperature short-term	°C	+210	
Min. application temperature	°C	–100	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	8	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{11}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

Table 01: Material properties

–100°C up to +180°C

60MPa

V-0

FOOD

RoHS-II

ISO 3547-1

iglidur® A350 plain bearings are made for practically all loads in food and packaging machinery. Even high loads, often seen in lifting equipment, are taken easily and the bearings work flawlessly without any external lubrication.

Moisture absorption
The moisture absorption of iglidur® A350 is low and can be ignored when using standard plain bearings. Even when saturated with water, iglidur® A350 does not absorb more than 1.9% weight of water (by weight).

Vacuum
In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® A350 bearings.

Radiation resistance
Plain bearings made from iglidur® A350 are resistant up to a radiation intensity of $2 \cdot 10^2$Gy.

Resistance to weathering
iglidur® A350 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolorations are only superficial.

Mechanical properties
With increasing temperatures, the compressive strength of iglidur® A350 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® A350 at radial loads. At the maximum recommended surface pressure of 60MPa at room temperature the deformation is less than 5%.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® A350

Permissible surface speeds

iglidur® A350 plain bearings are suitable for low and medium speeds in rotating and oscillating applications. iglidur® A350 is also excellent for linear movements. In the case of high surface speeds it should be tested whether iglidur® J or iglidur® L250 can be used, as the wear rate of these bearings is lower.

Surface speed, page 44

Temperature

Its temperature resistance makes iglidur® A350 the ideal material for plain bearing used in the food area. For temperatures over +140°C an additional securing is required. The wear rate of iglidur® A350 plain bearings rises only little with higher temperatures. Tests have shown good wear results at +100°C on all tested shaft materials.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

The coefficient of friction of iglidur® A350 on a steel shaft is in the mid range (diagrams 04 and 05).

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

The corrosion-resistant steels are rather considered a natural choice for use in the food industry. The trials were therefore carried out especially on such materials. It has been shown that there is no clear favourite and 304 stainless steel, high grade steel and hard-chromed steel are all suitable. Hard-anodised aluminium is also well suited for both linear and rotational movements.

Shaft materials, page 52

Installation tolerances

iglidur® A350 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 57

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+ up to 0
Strong acids	+
Strong alkalines	+

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.0	0.8	2.5
short-term	m/s	1.2	0.9	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.10 – 0.20	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing H7 [mm]		Plain bearing F10 [mm]		Shaft h9 [mm]	
0 – 3	+0.000	+0.010	+0.006	+0.046	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.010	+0.058	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.013	+0.071	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.016	+0.086	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.020	+0.104	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.025	+0.125	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.030	+0.150	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.036	+0.176	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

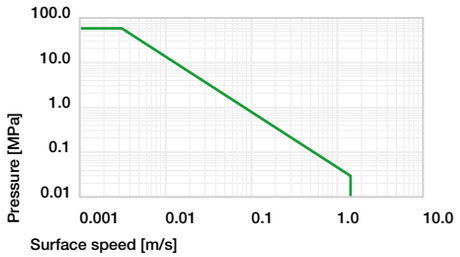

Diagram 01: Permissible pv values for iglidur® A350 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

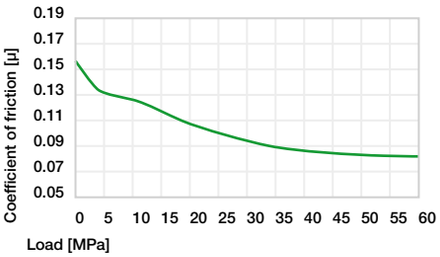

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

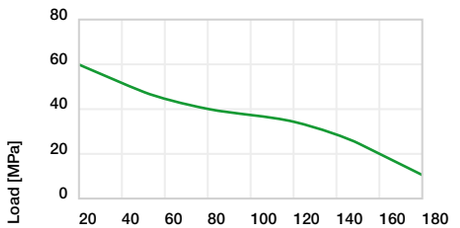

Diagram 02: Maximum recommended surface pressure as a function of temperature (60MPa at +20°C)

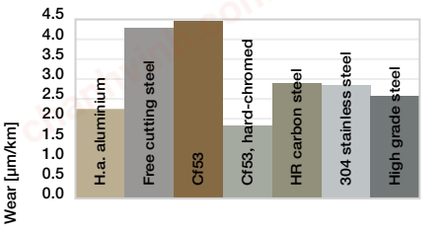

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

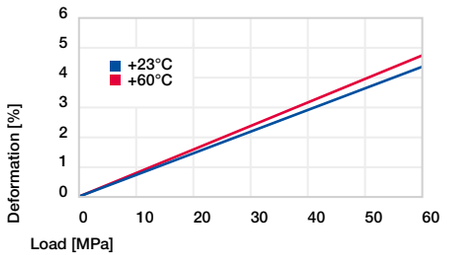

Diagram 03: Deformation under pressure and temperature

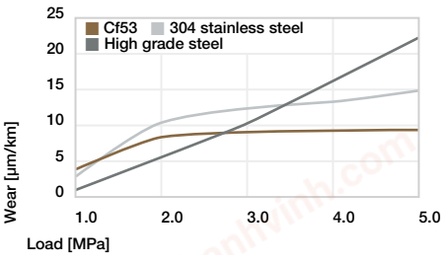

Diagram 07: Wear, rotating with different shaft materials, as a function of the load

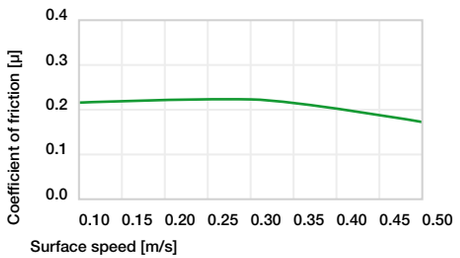

Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

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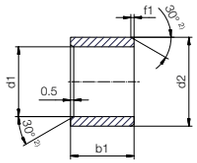
Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: A350SM-0405-04 – no minimum order quantity.
A350 iglidur® material S Sleeve bearing M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
4.0		5.5	4.0	A350SM-0405-04
4.0		5.5	6.0	A350SM-0405-06
5.0	+0.010	7.0	5.0	A350SM-0507-05
5.0	+0.058	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	12.0	8.0	A350SM-1012-08
10.0	+0.071	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		15.0	20.0	A350SM-1315-20
14.0	+0.016	16.0	15.0	A350SM-1416-15
14.0	+0.086	16.0	20.0	A350SM-1416-20
14.0		16.0	25.0	A350SM-1416-25
15.0		17.0	15.0	A350SM-1517-15
15.0		17.0	20.0	A350SM-1517-20
15.0		17.0	25.0	A350SM-1517-25
16.0		18.0	15.0	A350SM-1618-15
16.0		18.0	20.0	A350SM-1618-20

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
16.0		18.0	25.0	A350SM-1618-25
18.0	+0.016	20.0	15.0	A350SM-1820-15
18.0	+0.086	20.0	20.0	A350SM-1820-20
18.0		20.0	25.0	A350SM-1820-25
20.0		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	+0.020	27.0	30.0	A350SM-2427-30
24.0	+0.104	28.0	30.0	A350SM-2428-30
25.0		28.0	15.0	A350SM-2528-15
25.0		28.0	20.0	A350SM-2528-20
25.0		28.0	25.0	A350SM-2528-25
25.0		28.0	30.0	A350SM-2528-30
28.0		32.0	20.0	A350SM-2832-20
28.0		32.0	25.0	A350SM-2832-25
28.0		32.0	30.0	A350SM-2832-30
30.0		34.0	20.0	A350SM-3034-20
30.0		34.0	25.0	A350SM-3034-25
30.0		34.0	30.0	A350SM-3034-30
30.0		34.0	40.0	A350SM-3034-40

[3] After press-fit. *Testing methods, page 57*

iglidur® A350
+180°C
60MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
32.0		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	+0.025	39.0	30.0	A350SM-3539-30
35.0	+0.125	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		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	+0.025	50.0	50.0	A350SM-4550-50
50.0	+0.125	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*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/A350

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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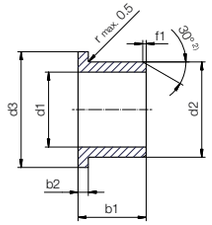
Bearing technology | Plain bearing | iglidur® A350

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

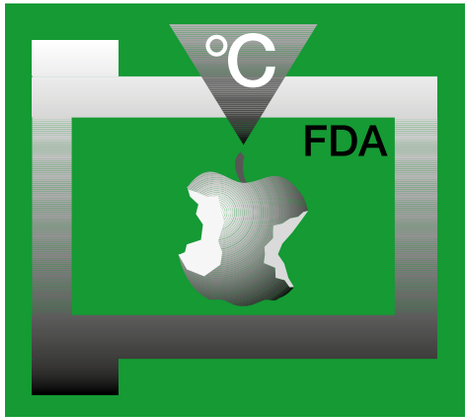
Order example: A350FM-0507-05 – no minimum order quantity.
A350 iglidur® material F Flange bearing M Metric 05 Inner Ø d1 07 Outer Ø d2 05 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
5.0		7.0	11.0	5.0	1.00	**A350FM-0507-05**
6.0	+0.010	8.0	12.0	4.0	1.00	**A350FM-0608-04**
6.0	+0.058	8.0	12.0	6.0	1.00	**A350FM-0608-06**
6.0		8.0	12.0	8.0	1.00	**A350FM-0608-08**
8.0		10.0	15.0	5.5	1.00	**A350FM-0810-05**
8.0		10.0	15.0	7.5	1.00	**A350FM-0810-07**
8.0		10.0	15.0	9.5	1.00	**A350FM-0810-09**
10.0		10.0	15.0	10.0	1.00	**A350FM-0810-10**
10.0	+0.013	12.0	18.0	7.0	1.00	**A350FM-1012-07**
10.0	+0.071	12.0	18.0	9.0	1.00	**A350FM-1012-09**
10.0		12.0	18.0	10.0	1.00	**A350FM-1012-10**
10.0		12.0	18.0	12.0	1.00	**A350FM-1012-12**
10.0		12.0	18.0	17.0	1.00	**A350FM-1012-17**
12.0		14.0	20.0	7.0	1.00	**A350FM-1214-07**
12.0		14.0	20.0	9.0	1.00	**A350FM-1214-09**
12.0	+0.016	14.0	20.0	12.0	1.00	**A350FM-1214-12**
12.0	+0.086	14.0	20.0	17.0	1.00	**A350FM-1214-17**
14.0		16.0	22.0	12.0	1.00	**A350FM-1416-12**
14.0		16.0	22.0	17.0	1.00	**A350FM-1416-17**

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
15.0		17.0	23.0	9.0	1.00	**A350FM-1517-09**
15.0		17.0	23.0	12.0	1.00	**A350FM-1517-12**
15.0	+0.016	17.0	23.0	17.0	1.00	**A350FM-1517-17**
16.0	+0.086	18.0	24.0	12.0	1.00	**A350FM-1618-12**
16.0		18.0	24.0	17.0	1.00	**A350FM-1618-17**
18.0		20.0	26.0	12.0	1.00	**A350FM-1820-12**
18.0		20.0	26.0	17.0	1.00	**A350FM-1820-17**
20.0		23.0	30.0	11.5	1.50	**A350FM-2023-11**
20.0		23.0	30.0	16.5	1.50	**A350FM-2023-16**
20.0		23.0	30.0	21.5	1.50	**A350FM-2023-21**
25.0	+0.020	28.0	35.0	11.5	1.50	**A350FM-2528-11**
25.0	+0.104	28.0	35.0	16.5	1.50	**A350FM-2528-16**
25.0		28.0	35.0	21.5	1.50	**A350FM-2528-21**
30.0		34.0	42.0	16.0	2.00	**A350FM-3034-16**
30.0		34.0	42.0	26.0	2.00	**A350FM-3034-26**
35.0		39.0	47.0	16.0	2.00	**A350FM-3539-16**
35.0	+0.025	39.0	47.0	26.0	2.00	**A350FM-3539-26**
40.0	+0.125	44.0	52.0	30.0	2.00	**A350FM-4044-30**
40.0		44.0	52.0	40.0	2.00	**A350FM-4044-40**
45.0		50.0	58.0	50.0	2.00	**A350FM-4550-50**

[3] After press-fit. *Testing methods, page 57*





The media and temperature specialist in the food sector

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

iglidur® A500

When to use it?

- When FDA compliance is required
- When a high chemical resistance is required
- Abrasion-resistant
- Temperature-resistant from –100°C to +250°C

When not to use?

- When the highest wear resistance is required
  iglidur® X6, iglidur® Z
- When no resistance to temperature or chemicals is required
  iglidur® A180, iglidur® A200
- When a cost-effective universal plain bearing is required
  iglidur® G, iglidur® P

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Ø
4.0 – 50.0mm



Also available as:

Bar stock, round bar
Page 681

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 584

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

The media and temperature specialist in the food sector

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

Plain bearings made from iglidur® A500 can be exposed to extremely high temperatures and are suitable for direct contact with food (FDA-compliant).

- Compliant with Regulation (EU) No. 10/2011
- FDA-compliant
- Temperature-resistant from –100°C to +250°C
- High chemical resistance
- Lubrication-free
- Maintenance-free

Typical application areas

- Food industry
- Beverage technology
- Medical technology

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® A500
+250°C
120MPa

Technical data

General properties			Testing method
Density	g/cm³	1.28	
Colour		brown	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	0.5	
Coefficient of friction, dynamic, against steel	µ	0.26 – 0.41	
pv value, max. (dry)	MPa · m/s	0.28	
Mechanical properties			
Flexural modulus	MPa	3,600	DIN 53457
Flexural strength at +20°C	MPa	140	DIN 53452
Compressive strength	MPa	118	
Max. recommended surface pressure (+20°C)	MPa	120	
Shore D hardness		83	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+250	
Max. application temperature short-term	°C	+300	
Min. application temperature	°C	–100	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	9	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{14}$	DIN IEC 93
Surface resistance	Ω	$> 10^{13}$	DIN 53482

Table 01: Material properties

–100°C up to +250°C

120MPa

V-1

FOOD

RoHS-II

ISO 3547-1

Plain bearings made from iglidur® A500 can be used at high temperatures and are permitted for use in direct contact with food (FDA-compliant). They exhibit an exceptionally good chemical resistance and are suitable for heavy-duty use in and around machinery for the food industry. Though iglidur® A500 is a soft material, it possesses an excellent compressive strength even at high temperatures.

Moisture absorption

The moisture absorption of iglidur® A500 plain bearings is only 0.5% weight after saturation in water.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® A500 are resistant up to a radiation intensity of $2 \cdot 10^5$Gy.

Resistance to weathering

iglidur® A500 plain bearings are not resistant to weathering. The material properties are significantly affected. Discoloration occurs. Practical tests under real application conditions are strongly recommended.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® A500 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 02 shows the maximum recommended surface pressure of the bearing as a function of the temperature. The combination of high stability and high flexibility acts very positively during vibrations and edge loads. As the wear of the plain bearing rapidly escalates from pressures of 10 to 20MPa, we recommend a particularly accurate testing of the application above these limits.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® A500

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 speeds leading to a higher heating up of the bearing. Tests show that plain bearings made from iglidur® A500 are more wear-resistant in pivoting movements, and the permitted pv values are also higher in pivoting applications.

Surface speed, page 44

Temperature

The iglidur® A500 plain bearings can be used in short-term temperatures up to +300°C. With increasing temperatures, the compressive strength of iglidur® A500 plain bearings decreases. Diagram 02 shows this inverse relationship. The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +130°C an additional securing is required.

Application temperatures, page 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).

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® A500. The combination "iglidur® A500/hard-chromed shaft" clearly stands out in rotating application. Up to about 2.0MPa, the wear of this combination remains largely independent of load. In pivoting applications with Cf53 shafts, the wear resistance is better than in rotations under equal load. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 52

Installation tolerances

iglidur® A500 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 57

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+
Strong alkalines	+

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.6	0.4	1.0
short-term	m/s	1.0	0.7	2.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.26 – 0.41	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing H7 [mm]		Plain bearing F10 [mm]		Shaft h9 [mm]	
0 – 3	+0.000	+0.010	+0.006	+0.046	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.010	+0.058	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.013	+0.071	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.016	+0.086	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.020	+0.104	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.025	+0.125	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.030	+0.150	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.036	+0.176	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

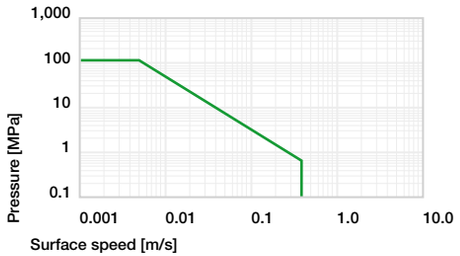

Diagram 01: Permissible pv values for iglidur® A500 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

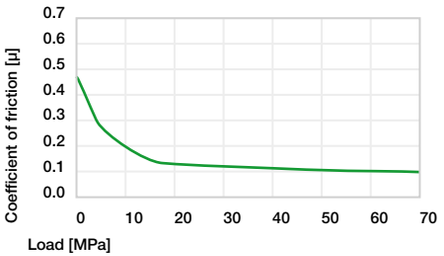

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

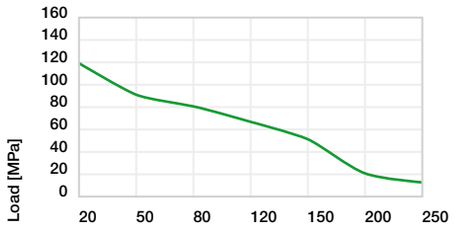

Diagram 02: Maximum recommended surface pressure as a function of temperature (120MPa at +20°C)

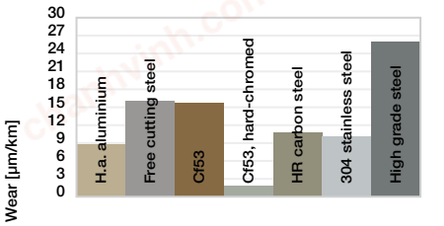

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

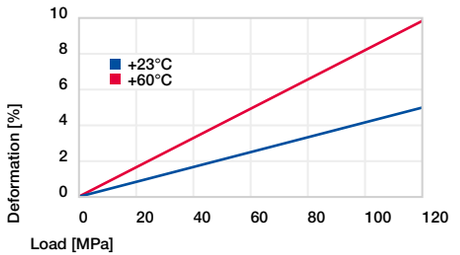

Diagram 03: Deformation under pressure and temperature

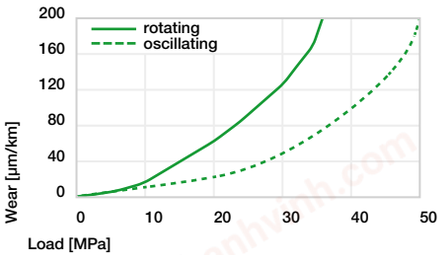

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

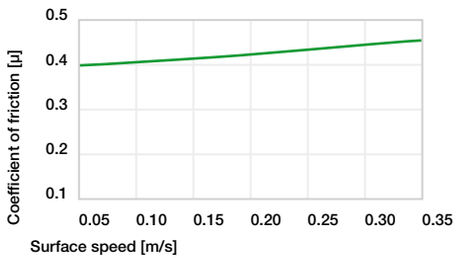

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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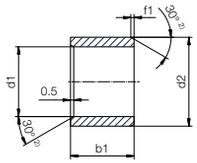
Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: A500SM-0405-04 – no minimum order quantity.
A500 iglidur® material S Sleeve bearing M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
4.0	+0.010 +0.058	5.5	4.0	A500SM-0405-04
4.0		5.5	6.0	A500SM-0405-06
5.0		7.0	5.0	A500SM-0507-05
5.0		7.0	10.0	A500SM-0507-10
6.0		8.0	6.0	A500SM-0608-06
6.0		8.0	8.0	A500SM-0608-08
6.0		8.0	10.0	A500SM-0608-10
8.0	+0.013 +0.071	10.0	6.0	A500SM-0810-06
8.0		10.0	8.0	A500SM-0810-08
8.0		10.0	10.0	A500SM-0810-10
8.0		10.0	12.0	A500SM-0810-12
10.0		12.0	8.0	A500SM-1012-08
10.0		12.0	10.0	A500SM-1012-10
10.0		12.0	12.0	A500SM-1012-12
10.0		12.0	15.0	A500SM-1012-15
10.0		12.0	20.0	A500SM-1012-20
12.0	+0.016 +0.086	14.0	10.0	A500SM-1214-10
12.0		14.0	12.0	A500SM-1214-12
12.0		14.0	15.0	A500SM-1214-15
12.0		14.0	20.0	A500SM-1214-20
12.0		15.0	15.0	A500SM-1215-15
13.0		15.0	10.0	A500SM-1315-10
13.0		15.0	20.0	A500SM-1315-20
14.0		16.0	15.0	A500SM-1416-15
14.0		16.0	16.0	A500SM-1416-16
14.0		16.0	20.0	A500SM-1416-20
14.0		16.0	25.0	A500SM-1416-25
15.0		17.0	15.0	A500SM-1517-15
15.0		17.0	20.0	A500SM-1517-20
15.0	+0.016 +0.086	17.0	25.0	A500SM-1517-25
16.0		18.0	15.0	A500SM-1618-15
16.0		18.0	20.0	A500SM-1618-20
16.0		18.0	25.0	A500SM-1618-25
18.0		20.0	15.0	A500SM-1820-15
18.0		20.0	20.0	A500SM-1820-20
18.0		20.0	25.0	A500SM-1820-25
20.0	+0.020 +0.104	23.0	10.0	A500SM-2023-10
20.0		23.0	15.0	A500SM-2023-15
20.0		23.0	20.0	A500SM-2023-20
20.0		23.0	25.0	A500SM-2023-25
20.0		23.0	30.0	A500SM-2023-30
22.0		25.0	15.0	A500SM-2225-15
22.0		25.0	20.0	A500SM-2225-20
22.0		25.0	25.0	A500SM-2225-25
22.0		25.0	30.0	A500SM-2225-30
24.0		27.0	15.0	A500SM-2427-15
24.0		27.0	20.0	A500SM-2427-20
24.0		27.0	25.0	A500SM-2427-25
24.0		27.0	30.0	A500SM-2427-30
25.0		28.0	15.0	A500SM-2528-15
25.0		28.0	20.0	A500SM-2528-20
25.0		28.0	25.0	A500SM-2528-25
25.0		28.0	30.0	A500SM-2528-30
28.0		32.0	20.0	A500SM-2832-20
28.0		32.0	25.0	A500SM-2832-25
28.0		32.0	30.0	A500SM-2832-30
30.0		34.0	20.0	A500SM-3034-20
30.0		34.0	25.0	A500SM-3034-25

[3] After press-fit. *Testing methods, page 57*

iglidur® A500
+250°C
120MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
30.0	+0.020 +0.104	34.0	30.0	A500SM-3034-30
30.0		34.0	40.0	A500SM-3034-40
32.0	+0.025 +0.125	36.0	20.0	A500SM-3236-20
32.0		36.0	30.0	A500SM-3236-30
32.0		36.0	40.0	A500SM-3236-40
35.0		39.0	20.0	A500SM-3539-20
35.0		39.0	30.0	A500SM-3539-30
35.0		39.0	40.0	A500SM-3539-40
35.0		39.0	50.0	A500SM-3539-50
40.0		44.0	20.0	A500SM-4044-20
40.0		44.0	30.0	A500SM-4044-30
40.0	+0.025 +0.125	44.0	40.0	A500SM-4044-40
40.0		44.0	50.0	A500SM-4044-50
45.0		50.0	20.0	A500SM-4550-20
45.0		50.0	30.0	A500SM-4550-30
45.0		50.0	40.0	A500SM-4550-40
45.0		50.0	50.0	A500SM-4550-50
50.0		55.0	20.0	A500SM-5055-20
50.0		55.0	30.0	A500SM-5055-30
50.0		55.0	40.0	A500SM-5055-40
50.0		55.0	50.0	A500SM-5055-50
50.0		55.0	60.0	A500SM-5055-60

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/A500

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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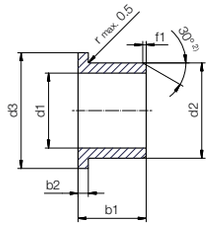
Bearing technology | Plain bearing | iglidur® A500

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

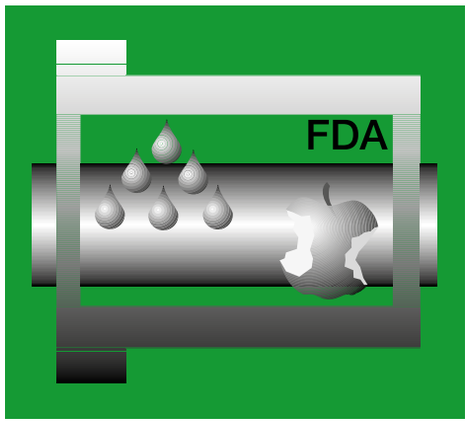
Dimensions according to ISO 3547-1 and special dimensions

Order example: A500FM-0405-04 – no minimum order quantity.
A500 iglidur® material F Flange bearing M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
4.0	+0.010 +0.058	5.5	9.5	4.0	2.00	A500FM-0405-04
4.0		8.0	12.0	6.0	2.00	A500FM-0408-06
6.0		8.0	12.0	4.0	1.00	A500FM-0608-04
6.0		8.0	12.0	6.0	1.00	A500FM-0608-06
6.0		8.0	12.0	8.0	1.00	A500FM-0608-08
8.0	+0.013 +0.071	10.0	15.0	5.5	1.00	A500FM-0810-05
8.0		10.0	15.0	7.5	1.00	A500FM-0810-07
8.0		10.0	15.0	9.5	1.00	A500FM-0810-09
8.0		10.0	15.0	10.0	1.00	A500FM-0810-10
10.0		12.0	18.0	7.0	1.00	A500FM-1012-07
10.0		12.0	18.0	9.0	1.00	A500FM-1012-09
10.0		12.0	18.0	12.0	1.00	A500FM-1012-12
10.0		12.0	18.0	15.0	1.00	A500FM-1012-15
10.0		12.0	18.0	17.0	1.00	A500FM-1012-17
12.0	+0.016 +0.086	14.0	20.0	7.0	1.00	A500FM-1214-07
12.0		14.0	20.0	9.0	1.00	A500FM-1214-09
12.0		14.0	20.0	12.0	1.00	A500FM-1214-12
12.0		14.0	20.0	13.0	1.00	A500FM-1214-13
12.0		14.0	20.0	15.0	1.00	A500FM-1214-15
12.0		14.0	20.0	17.0	1.00	A500FM-1214-17
14.0		16.0	22.0	12.0	1.00	A500FM-1416-12
14.0		16.0	22.0	17.0	1.00	A500FM-1416-17
15.0		17.0	23.0	9.0	1.00	A500FM-1517-09
15.0	+0.016 +0.086	17.0	23.0	12.0	1.00	A500FM-1517-12
15.0		17.0	23.0	17.0	1.00	A500FM-1517-17
16.0		18.0	24.0	12.0	1.00	A500FM-1618-12
16.0		18.0	24.0	17.0	1.00	A500FM-1618-17
18.0		20.0	26.0	12.0	1.00	A500FM-1820-12
18.0		20.0	26.0	17.0	1.00	A500FM-1820-17
18.0		20.0	26.0	22.0	1.00	A500FM-1820-22
20.0	+0.020 +0.104	23.0	30.0	11.5	1.50	A500FM-2023-11
20.0		23.0	30.0	16.5	1.50	A500FM-2023-16
20.0		23.0	30.0	21.5	1.50	A500FM-2023-21
25.0		28.0	35.0	11.5	1.50	A500FM-2528-11
25.0		28.0	35.0	16.5	1.50	A500FM-2528-16
25.0		28.0	35.0	21.5	1.50	A500FM-2528-21
30.0		34.0	42.0	16.0	2.00	A500FM-3034-16
30.0		34.0	42.0	26.0	2.00	A500FM-3034-26
30.0		34.0	42.0	40.0	2.00	A500FM-3034-40
35.0	+0.025 +0.125	39.0	47.0	16.0	2.00	A500FM-3539-16
35.0		39.0	47.0	26.0	2.00	A500FM-3539-26
35.0		39.0	47.0	40.0	2.00	A500FM-3539-40
40.0		44.0	52.0	30.0	2.00	A500FM-4044-30
40.0		44.0	52.0	40.0	2.00	A500FM-4044-40
45.0		50.0	58.0	50.0	2.00	A500FM-4550-50

[3] After press-fit. *Testing methods, page 57*





The all-rounder for food
FDA-compliant
iglidur® A180

When to use it?
- When the bearings have direct contact with food
- When FDA compliance is required
- When a low noise level is required
- When low moisture absorption is fundamental

When not to use?
- When the maximum wear resistance is necessary
  iglidur® J
- When continuous operating temperatures are higher than +80°C
  iglidur® A350, iglidur® A500
- When a cost-effective universal plain bearing is required
  iglidur® G, iglidur® P

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Bearing technology | Plain bearing | iglidur® A180

Ø
6.0 – 30.0mm



Also available as:

Bar stock, round bar
Page 682

Bar stock, plate
Page 685

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

The all-rounder for food
FDA-compliant

FDA-compliant material for applications with low to medium loads in immediate environments of (or contact with) food or drugs, as well as humidity.

- FDA-compliant
- Compliant with Regulation (EU) No. 10/2011
- High media resistance
- Suitable for wet environments
- High wear resistance
- Lubrication-free
- Maintenance-free

Typical application areas

- Food industry
- Beverage technology
- Medical technology

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® A180
+90°C
28MPa

Technical data

General properties			Testing method
Density	g/cm³	1.46	
Colour		white	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	1.3	
Coefficient of friction, dynamic, against steel	µ	0.05 – 0.23	
pv value, max. (dry)	MPa · m/s	0.31	
Mechanical properties			
Flexural modulus	MPa	2,300	DIN 53457
Flexural strength at +20°C	MPa	88	DIN 53452
Compressive strength	MPa	78	
Max. recommended surface pressure (+20°C)	MPa	28	
Shore D hardness		76	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+110	
Min. application temperature	°C	–50	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	11	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	> 10^{12}	DIN IEC 93
Surface resistance	Ω	> 10^{11}	DIN 53482

Table 01: Material properties

–50°C up to +90°C

28MPa

HB

FOOD

RoHS-II

ISO 3547-1

Plain bearings made from iglidur® A180 are suitable for application in direct contact with food. Hence they are the ideal solution for bearing locations 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.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® A180 plain bearings is approximately 0.2% weight. The saturation limit in water is 1.3% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® A180 bearings.

Radiation resistance

Plain bearings made from iglidur® A180 are resistant up to a radiation intensity of $3 \cdot 10^2$Gy.

Resistance to weathering

iglidur® A180 plain bearings are not resistant to weathering. The material properties are significantly affected Severe discoloration occurs. Applications with this material under weathering conditions are not recommended.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® A180 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® A180 at radial loads. At the maximum recommended surface pressure of 28MPa the deformation is less than 2.5%. A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® A180

Permissible surface speeds

iglidur® A180 was developed for low surface speeds. The given values in table 03 indicate the limits at which an increase up to the continuous permissible temperature occurs. This increase is a result of friction. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 44

Temperature

The iglidur® A180 plain bearings can be used in short-term temperatures up to +110°C. With increasing temperatures, the compressive strength of iglidur® A180 plain bearings decreases. Diagram 02 shows this inverse relationship. The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +60°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05). The coefficient of friction decreases with increasing load.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagram 06 shows the test results of iglidur® A180 plain 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

Installation tolerances

iglidur® A180 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to –
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	+ up to 0

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.8	0.6	3.5
short-term	m/s	1.2	1.0	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.05 – 0.23	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

Ø d1 [mm]	Housing H7 [mm]		Plain bearing E10 [mm]		Shaft h9 [mm]	
0 – 3	+0.000	+0.010	+0.014	+0.054	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.020	+0.068	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.025	+0.083	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.032	+0.102	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.040	+0.124	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.050	+0.150	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.060	+0.180	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.072	+0.212	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.085	+0.245	–0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

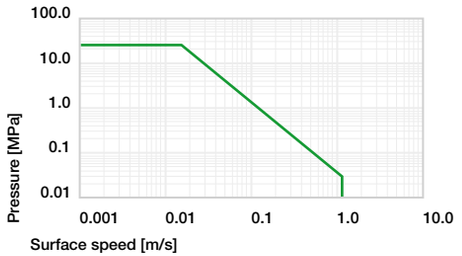

Diagram 01: Permissible pv values for iglidur® A180 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

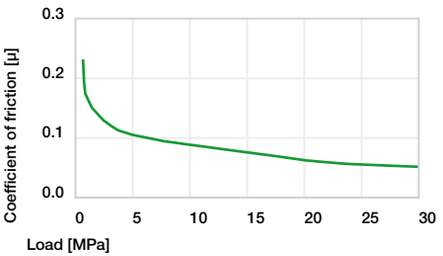

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

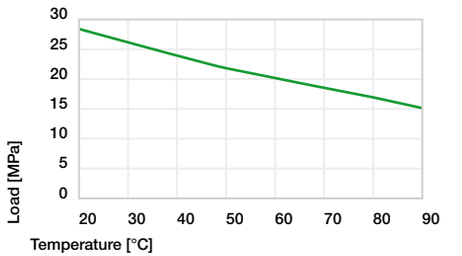

Diagram 02: Maximum recommended surface pressure as a function of temperature (28MPa at +20°C)

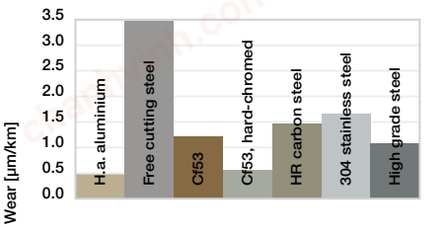

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

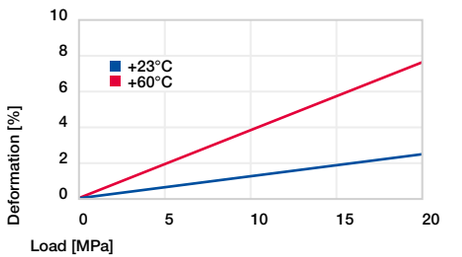

Diagram 03: Deformation under pressure and temperature

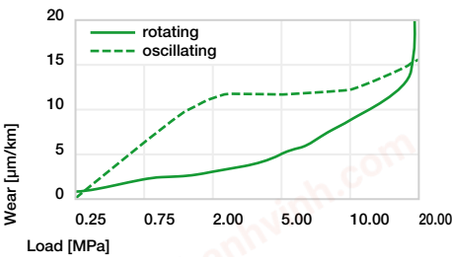

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

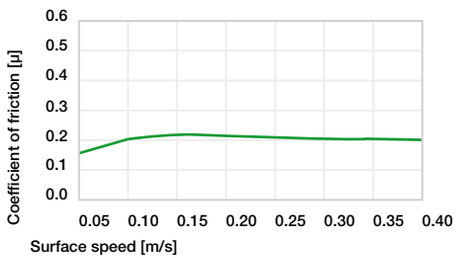

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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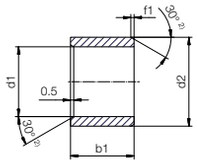
Bearing technology | Plain bearing | iglidur® A180

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 6–12	Ø 12–30
f1 [mm]	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: A180SM-0608-10 – no minimum order quantity.
A180 iglidur® material S Sleeve bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 10 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	10.0	**A180SM-0608-10**
8.0	+0.025 +0.083	10.0	10.0	**A180SM-0810-10**
10.0		12.0	10.0	**A180SM-1012-10**
12.0	+0.032 +0.102	14.0	15.0	**A180SM-1214-15**
16.0		18.0	15.0	**A180SM-1618-15**
20.0	+0.040 +0.124	23.0	20.0	**A180SM-2023-20**
25.0		28.0	30.0	**A180SM-2528-30**
30.0		34.0	20.0	**A180SM-3034-20**

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/A180

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

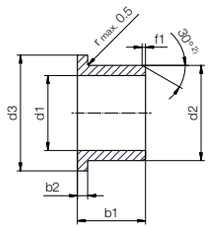
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® A180
+90°C
28MPa

Bearing technology | Plain bearing | iglidur® A180

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30
f1 [mm]	0.3	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: A180FM-0608-06 – no minimum order quantity.
A180 iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	**A180FM-0608-06**
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	**A180FM-0810-10**
10.0		12.0	18.0	10.0	1.00	**A180FM-1012-10**
12.0	+0.032 +0.102	14.0	20.0	15.0	1.00	**A180FM-1214-15**
16.0		18.0	24.0	17.0	1.00	**A180FM-1618-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	**A180FM-2023-21**
25.0		28.0	35.0	21.5	1.50	**A180FM-2528-21**
30.0		34.0	42.0	26.0	2.00	**A180FM-3034-26**

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/A180

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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The "food-classic" for low duty

FDA-compliant

iglidur® A200

When to use it?

- Suitable for contact with food
- When a low noise level is required
- When dirt needs to become embedded
- When FDA compliance is required

When not to use?

- When the maximum wear resistance is necessary
  iglidur® W300
- When continuous operating temperatures are higher than +80°C
  iglidur® A350, iglidur® A500
- When a cost-effective universal plain bearing is required
  iglidur® G
- For operations in wet environments
  iglidur® A180

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Bearing technology | Plain bearing | iglidur® A200

Ø
1.0 – 32.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

The "food-classic" for low duty
FDA-compliant

FDA-compliant material for applications with low to medium loads in immediate environs of (or contact) with food or drugs.

- FDA-compliant
- Suitable for contact with food
- Suitable for low surface speeds
- Lubrication-free
- Standard range from stock
- Maintenance-free
- Thrust washers available only in imperial sizes, from page 1601

Typical application areas

- Food industry

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® A200
+80°C
18MPa

Technical data

General properties			Testing method
Density	g/cm³	1.14	
Colour		white	
Max. moisture absorption at +23°C and 50% r.h.	% weight	1.5	DIN 53495
Max. moisture absorption	% weight	7.6	
Coefficient of friction, dynamic, against steel	µ	0.10 – 0.40	
pv value, max. (dry)	MPa · m/s	0.09	
Mechanical properties			
Flexural modulus	MPa	2,500	DIN 53457
Flexural strength at +20°C	MPa	116	DIN 53452
Compressive strength	MPa	54	
Max. recommended surface pressure (+20°C)	MPa	18	
Shore D hardness		81	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+80	
Max. application temperature short-term	°C	+170	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	10	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	> 10^{13}	DIN IEC 93
Surface resistance	Ω	> 10^{12}	DIN 53482

Table 01: Material properties

–40°C up to +80°C

18MPa

V-2

FOOD

RoHS-II

ISO 2795

Plain bearings made from iglidur® A200 are suitable for application in direct contact with food. Hence they are the ideal solution for bearing requirements in machines for the food industry, medical equipment manufacturing, for small equipment for households, etc. As the incorporation of solid lubricants is dispensed with in favour of food compatibility, the thermoplastic composition of iglidur® A200 is especially adjusted for abrasion resistance. In addition the iglidur® A200 is characterised by its capacity to embed dirt and by its quiet operating behaviour. The good wear properties, dirt resistance and the possibility for dry operation allow to replace elaborately sealed, lubricated bearings for little costs.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® A200 plain bearings is approximately 1.5% weight. The saturation limit in water is 7.6% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® A200 are resistant up to a radiation intensity of $1 \cdot 10^4$Gy.

Resistance to weathering

iglidur® A200 plain bearings are not resistant to weathering. The material properties are significantly affected Severe discoloration occurs. Applications with this material under weathering conditions are not recommended.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® A200 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® A200 at radial loads. At the maximum recommended surface pressure of 18MPa the deformation is less than 2%. A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® A200

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, though, this level is rarely reached due to varying application conditions.

Surface speed, page 44

Temperature

The iglidur® A200 plain bearings can be used in short-term temperatures up to +170°C. The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +50°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagrams 06 and 07 show the test results of iglidur® A200 plain bearings running against various shaft materials. In pivoting applications below a load of 2MPa, the wear of iglidur® A200 plain bearings is higher than in rotating applications with equal load. Here the HR carbon steel shaft is a positive exception.

Shaft materials, page 52

Installation tolerances

iglidur® A200 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to –
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	0

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.8	0.6	2.0
short-term	m/s	1.5	1.1	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.10 – 0.40	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

	Housing		Plain bearing		Shaft	
Ø d1 [mm]	H7 [mm]		D11 [mm]		h9 [mm]	
0 – 3	+0.000	+0.010	+0.020	+0.080	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.030	+0.105	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.040	+0.130	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.050	+0.160	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.065	+0.195	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.080	+0.240	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.100	+0.290	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.120	+0.340	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.145	+0.395	–0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

iglidur® A200
+80°C
18MPa

Technical data

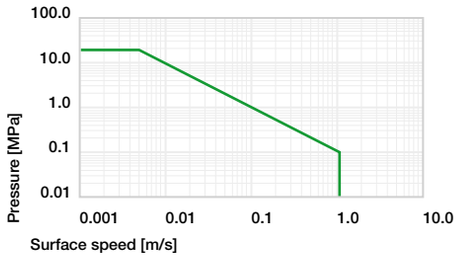

Diagram 01: Permissible pv values for iglidur® A200 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

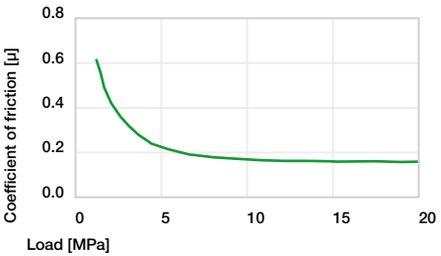

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

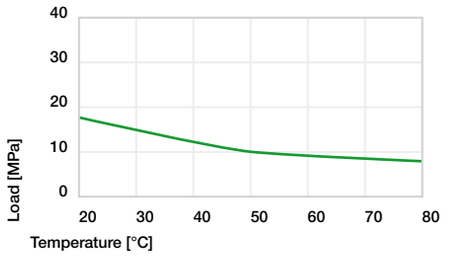

Diagram 02: Maximum recommended surface pressure as a function of temperature (18MPa at +20°C)

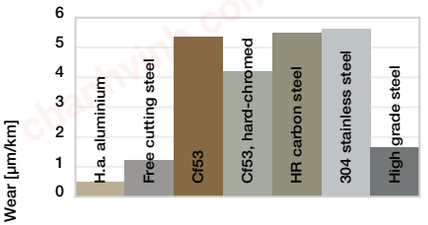

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

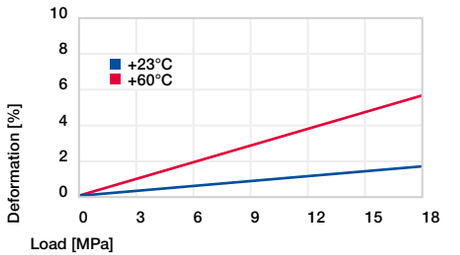

Diagram 03: Deformation under pressure and temperature

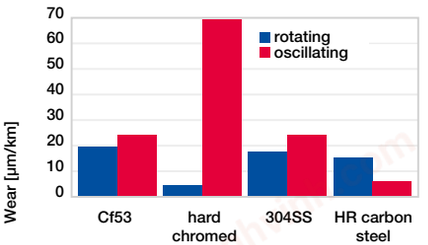

Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

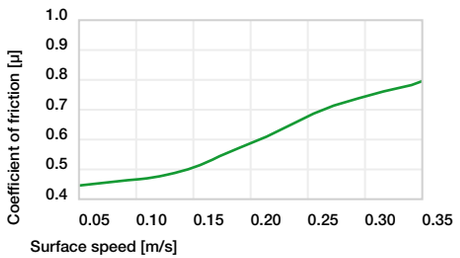

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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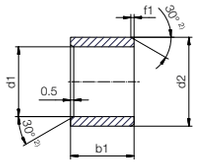
Bearing technology | Plain bearing | iglidur® A200

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 2795 and special dimensions

Order example: ASM-0103-02 – no minimum order quantity.
A200 iglidur® material S Sleeve bearing M Metric 01 Inner Ø d1 03 Outer Ø d2 02 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
1.0		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	9.0	5.0	ASM-0509-05
5.0	+0.105	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	10.0	8.0	ASM-0710-08
8.0	+0.130	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	14.0	10.0	ASM-0814-10
9.0	+0.130	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	18.0	10.0	ASM-1218-10
12.0	+0.160	18.0	15.0	ASM-1218-15
12.0		18.0	20.0	ASM-1218-20
14.0		16.0	10.0	ASM-1416-10
14.0		16.0	15.0	ASM-1416-15
14.0		16.0	20.0	ASM-1416-20
14.0		20.0	10.0	ASM-1420-10

[3] After press-fit. *Testing methods, page 57*

iglidur® A200
+80°C
18MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
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		18.0	20.0	ASM-1618-20
16.0	+0.050 +0.160	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		25.0	20.0	ASM-2025-20
20.0	+0.065	25.0	30.0	ASM-2025-30
20.0	+0.195	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	32.0	30.0	ASM-2532-30
25.0	+0.195	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	40.0	20.0	ASM-3240-20
32.0	+0.240	40.0	30.0	ASM-3240-30
32.0		40.0	40.0	ASM-3240-40

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/A200

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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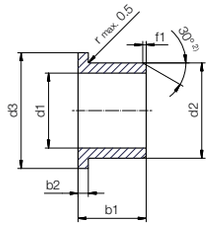
Bearing technology | Plain bearing | iglidur® A200

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 2795 and special dimensions

Order example: AFM-0103-02 – no minimum order quantity.
A200 iglidur® material F Flange bearing M Metric 01 Inner Ø d1 03 Outer Ø d2 02 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
1.0		3.0	5.0	2.0	1.00	**AFM-0103-02**
1.5	+0.020	4.0	6.0	2.0	1.00	**AFM-0104-02**
2.0	+0.080	5.0	8.0	3.0	1.50	**AFM-0205-03**
2.5		6.0	9.0	3.0	1.50	**AFM-0206-03**
3.0		6.0	9.0	4.0	1.50	**AFM-0306-04**
4.0		8.0	12.0	4.0	2.00	**AFM-0408-04**
4.0		8.0	12.0	6.0	2.00	**AFM-0408-06**
5.0		7.0	11.0	5.0	1.00	**AFM-0507-05**
5.0		9.0	13.0	5.0	2.00	**AFM-0509-05**
5.0		9.0	13.0	6.0	2.00	**AFM-0509-06**
5.0	+0.030	9.0	13.0	8.0	2.00	**AFM-0509-08**
6.0	+0.105	10.0	14.0	4.0	2.00	**AFM-0610-04**
6.0		10.0	14.0	6.0	2.00	**AFM-0610-06**
6.0		10.0	14.0	10.0	2.00	**AFM-0610-10**
6.0		12.0	14.0	6.0	3.00	**AFM-0612-06**
6.0		12.0	14.0	10.0	3.00	**AFM-0612-10**
7.0		11.0	15.0	8.0	2.00	**AFM-0711-08**
8.0		11.0	13.0	8.0	2.00	**AFM-0811-08**
8.0		12.0	16.0	6.0	2.00	**AFM-0812-06**
8.0		12.0	16.0	8.0	2.00	**AFM-0812-08**
8.0		12.0	16.0	12.0	2.00	**AFM-0812-12**
8.0	+0.040	12.0	16.0	22.0	2.00	**AFM-0812-22**
8.0	+0.130	14.0	18.0	6.0	3.00	**AFM-0814-06**
8.0		14.0	18.0	10.0	3.00	**AFM-0814-10**
9.0		14.0	19.0	6.0	2.00	**AFM-0914-06**
9.0		14.0	19.0	10.0	2.00	**AFM-0914-10**
9.0		14.0	19.0	14.0	2.00	**AFM-0914-14**
10.0		16.0	22.0	6.0	3.00	**AFM-1016-06**

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
10.0		16.0	22.0	8.0	3.00	**AFM-1016-08**
10.0	+0.040	16.0	22.0	10.0	3.00	**AFM-1016-10**
10.0	+0.130	16.0	22.0	16.0	3.00	**AFM-1016-16**
10.0		16.0	20.0	10.0	3.00	**AFM-101620-10**
12.0		14.0	20.0	12.0	1.00	**AFM-1214-12**
12.0		18.0	24.0	8.0	3.00	**AFM-1218-08**
12.0		18.0	22.0	10.0	3.00	**AFM-1218-10**
12.0		18.0	24.0	12.0	3.00	**AFM-1218-12**
12.0		18.0	22.0	15.0	3.00	**AFM-1218-15**
12.0		18.0	22.0	20.0	3.00	**AFM-1218-20**
14.0		20.0	25.0	10.0	3.00	**AFM-1420-10**
14.0		20.0	25.0	15.0	3.00	**AFM-1420-15**
14.0		20.0	25.0	20.0	3.00	**AFM-1420-20**
15.0	+0.050	21.0	27.0	10.0	3.00	**AFM-1521-10**
15.0	+0.160	21.0	27.0	15.0	3.00	**AFM-1521-15**
15.0		21.0	27.0	20.0	3.00	**AFM-1521-20**
15.0		21.0	27.0	25.0	3.00	**AFM-1521-25**
16.0		22.0	28.0	12.0	3.00	**AFM-1622-12**
16.0		22.0	28.0	15.0	3.00	**AFM-1622-15**
16.0		22.0	28.0	20.0	3.00	**AFM-1622-20**
16.0		22.0	28.0	25.0	3.00	**AFM-1622-25**
18.0		24.0	30.0	12.0	3.00	**AFM-1824-12**
18.0		24.0	30.0	18.0	3.00	**AFM-1824-18**
18.0		24.0	30.0	20.0	3.00	**AFM-1824-20**
18.0		24.0	30.0	30.0	3.00	**AFM-1824-30**
20.0	+0.065	26.0	32.0	15.0	3.00	**AFM-2026-15**
20.0	+0.195	26.0	32.0	20.0	3.00	**AFM-2026-20**
20.0		26.0	32.0	30.0	3.00	**AFM-2026-30**

[3] After press-fit. *Testing methods, page 57*

iglidur® A200
+80°C
18MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
22.0		28.0	34.0	15.0	3.00	**AFM-2228-15**
22.0		28.0	34.0	20.0	3.00	**AFM-2228-20**
22.0		28.0	34.0	30.0	3.00	**AFM-2228-30**
24.0		30.0	36.0	15.0	3.00	**AFM-2430-15**
24.0	+0.065	30.0	36.0	20.0	3.00	**AFM-2430-20**
24.0	+0.195	30.0	36.0	30.0	3.00	**AFM-2430-30**
25.0		32.0	38.0	20.0	4.00	**AFM-2532-20**
25.0		32.0	38.0	30.0	4.00	**AFM-2532-30**
25.0		32.0	38.0	40.0	4.00	**AFM-2532-40**
27.0		34.0	40.0	20.0	4.00	**AFM-2734-20**
27.0		34.0	40.0	30.0	4.00	**AFM-2734-30**

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
27.0		34.0	40.0	40.0	4.00	**AFM-2734-40**
28.0		36.0	42.0	20.0	4.00	**AFM-2836-20**
28.0		36.0	42.0	30.0	4.00	**AFM-2836-30**
28.0	+0.065	36.0	42.0	40.0	4.00	**AFM-2836-40**
30.0	+0.195	38.0	44.0	20.0	4.00	**AFM-3038-20**
30.0		38.0	44.0	30.0	4.00	**AFM-3038-30**
30.0		38.0	44.0	40.0	4.00	**AFM-3038-40**
32.0	+0.080	40.0	46.0	20.0	4.00	**AFM-3240-20**
32.0	+0.240	40.0	46.0	30.0	4.00	**AFM-3240-30**
32.0		40.0	46.0	40.0	4.00	**AFM-3240-40**

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/A200

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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"Food" bearing with media resistance up to +90°C

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

iglidur® A160

When to use it?

- When a plain bearing with maximum media resistance is required
- When a cost-effective plain bearing with high media resistance is required
- When a material compliant in accordance with Regulation (EU) No. 10/2011 is required

When not to use?

- When a universal material for the food industry is required
  iglidur® A180, iglidur® A181
- When a media-resistant plain bearing is required for applications at more than +90°C
  iglidur® A500, iglidur® X
- When a low-cost material with high wear resistance is required for dry operation
  iglidur® R

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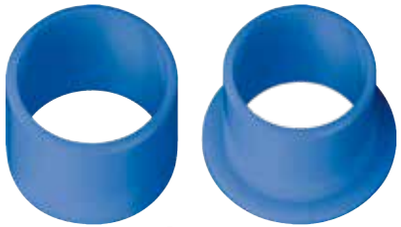
Bearing technology | Plain bearing | iglidur® A160

Ø
6.0 – 20.0mm



Also available as:

Bar stock, round bar
Page 682

Bar stock, plate
Page 685

tribo-tape liner
Page 696

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

"Food" bearing with media resistance up to +90°C

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

iglidur® A160 offers maximum media resistance in the medium temperature range and is therefore a true low-cost iglidur®. The profile of properties is completed by the suitability for applications in the food industry.

- Compliant with Regulation (EU) No. 10/2011
- FDA-compliant
- High media resistance
- Cost-effective
- Lubrication-free
- Maintenance-free

Typical application areas

- Food industry
- Beverage technology
- Medical technology

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® A160
+90°C
15MPa

Technical data

General properties			Testing method
Density	g/cm³	1.00	
Colour		blue	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.1	
Coefficient of friction, dynamic, against steel	µ	0.09 – 0.19	
pv value, max. (dry)	MPa · m/s	0.25	
Mechanical properties			
Flexural modulus	MPa	1,151	DIN 53457
Flexural strength at +20°C	MPa	19	DIN 53452
Compressive strength	MPa	37	
Max. recommended surface pressure (+20°C)	MPa	15	
Shore D hardness		60	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+100	
Min. application temperature	°C	–50	
Thermal conductivity	W/m · K	0.30	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	11	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	> 10^{12}	DIN IEC 93
Surface resistance	Ω	> 10^{12}	DIN 53482

–50°C up to +90°C

15MPa

HB

FOOD

RoHS-II

ISO 3547-1

Table 01: Material properties

iglidur® A160 plain bearings are characterised by extreme media resistance at a low cost. Tribologically optimised, the material can be used in temperatures up to +90°C and also conforms to demands of the food processing sector. The profile of properties is completed by the "optical detectability", i.e. the blue colour, often required in the industry.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® A160 plain bearings is approximately 0.1% weight. The saturation limit submerged in water is also approximately 0.1% weight.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® A160 bearings.

Radiation resistance

Plain bearings made from iglidur® A160 are resistant up to a radiation intensity of $1 \cdot 10^5$Gy.

Resistance to weathering

iglidur® A160 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolorations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® A160 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® A160 at radial loads. Plastic deformation is minimal up to a radial load of 15MPa. However, it is also dependent on the service time.

Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® A160

Permissible surface speeds

iglidur® A160 was developed for low surface speeds. Maximum speeds of up to 0.5m/s (rotating) and 2.0m/s (linear), respectively, are permissible during continuous dry operation. The given values in table 03 indicate the limits at which an increase up to the continuous permissible temperature occurs. This increase is a result of friction. In practice, though, this level is rarely reached, due to varying application conditions.

Surface speed, page 44

Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +60°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

Coefficient of friction and wear resistance are dependent on the application parameters (diagrams 04 and 05). For iglidur® A160 plain bearings, altering the coefficient of friction μ as a function of surface speed has less effect. The coefficient of friction decreases with increasing load. Surface finishes (Ra) of the shaft between 0.6 – 0.7μm are ideal.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® A160. For rotational applications with low loads, the most interesting, media and corrosion-resistant shaft materials 304 stainless steel, high grade steel and hard-chromed steel reveal themselves as particularly good 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

Installation tolerances

iglidur® A160 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the E10 tolerances.

Testing methods, page 57

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+ up to 0
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+
Strong alkalines	+

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.5	0.4	2.0
short-term	m/s	0.7	0.6	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.09 – 0.19	0.08	0.03	0.04

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

Ø d1 [mm]	Housing H7 [mm]		Plain bearing E10 [mm]		Shaft h9 [mm]	
0 – 3	+0.000	+0.010	+0.014	+0.054	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.020	+0.068	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.025	+0.083	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.032	+0.102	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.040	+0.124	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.050	+0.150	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.060	+0.180	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.072	+0.212	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.085	+0.245	–0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

iglidur® A160
+90°C
15MPa

Technical data

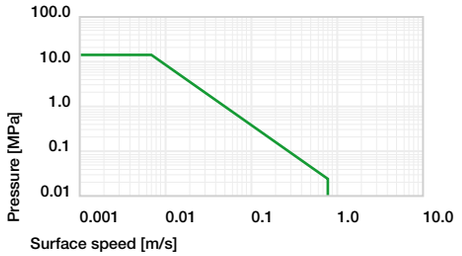

Diagram 01: Permissible pv values for iglidur® A160 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

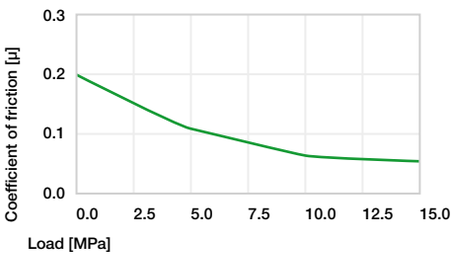

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

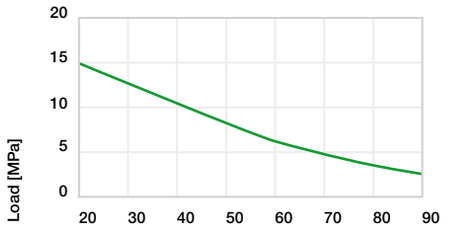

Diagram 02: Maximum recommended surface pressure as a function of temperature (15MPa at +20°C)

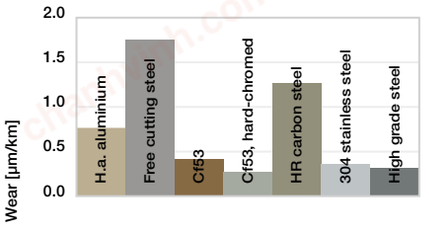

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

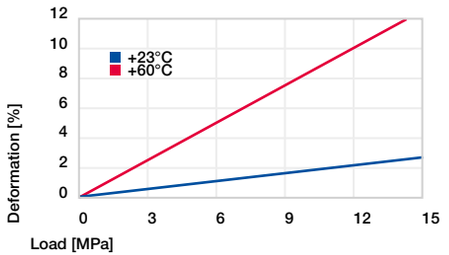

Diagram 03: Deformation under pressure and temperature

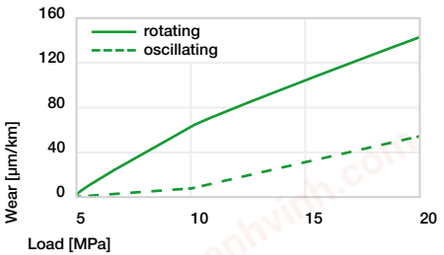

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

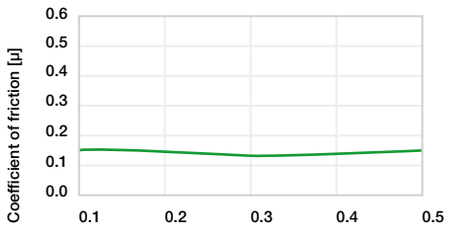

Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

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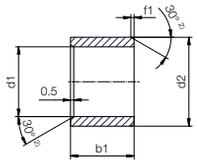
Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 6–12	Ø 12–30
f1 [mm]	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: A160SM-0608-06 – no minimum order quantity.
A160 iglidur® material S Sleeve bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	6.0	**A160SM-0608-06**
8.0	+0.025 +0.083	10.0	10.0	**A160SM-0810-10**
10.0		12.0	10.0	**A160SM-1012-10**
12.0	+0.032 +0.102	14.0	12.0	**A160SM-1214-12**
16.0		18.0	15.0	**A160SM-1618-15**
20.0	+0.040 +0.124	23.0	20.0	**A160SM-2023-20**

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/A160

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

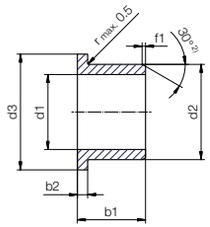
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® A160
+90°C
15MPa

Bearing technology | Plain bearing | iglidur® A160

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 6–12	Ø 12–30
f1 [mm]	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: A160FM-0608-06 – no minimum order quantity.
A160 iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	**A160FM-0608-06**
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	**A160FM-0810-10**
10.0		12.0	18.0	10.0	1.00	**A160FM-1012-10**
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	**A160FM-1214-12**
16.0		18.0	24.0	17.0	1.00	**A160FM-1618-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	**A160FM-2023-21**

[3] After press-fit. *Testing methods, page 57*

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No low-quantity surcharges.
Free shipping within local Regular Service Area.

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Suitable for contact with drinking water

KTW-compliant

iglidur® UW160

When to use it?

- When a KTW-compliant material is required
- When a wear-resistant material for continuous operation in liquid is required

When not to use?

- When a recurring media-resistant plain bearing with intermittent dry operation is required
  iglidur® A160
- When a media and temperature-resistant universal plain bearing is required
  iglidur® X
- When a standard plain bearing is required for use in a moist environment
  iglidur® P

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Bearing technology | Plain bearing | iglidur® UW160

Ø 3.0 – 10.0mm



Also available as:

Bar stock, round bar Page 683

Bar stock, plate Page 683

tribo-tape liner Page 691

Piston rings Page 581

Two hole flange bearings Page 603

Moulded special parts Page 624

igubal® spherical balls Page 841

Suitable for contact with drinking water
KTW-compliant

iglidur® UW160 is tribologically optimised for continuous operation in liquid media. Its superior media resistance not only permits uses with potable water contact.

- Suitable for applications in liquids
- Suitable for contact with drinking water (KTW-compliant)
- High media resistance
- Lubrication-free
- Maintenance-free

Typical application areas

- Fluid technology
- Pumps
- Water meters

Descriptive technical specifications			
Wear resistance at +23°C	–	■■■□□	+
Wear resistance at +90°C	–	■□□□□	+
Wear resistance at +150°C	–	■□□□□	+
Low coefficient of friction	–	■■□□□	+
Low moisture absorption	–	■■■■■	+
Wear resistance under water	–	■■■■■	+
High media resistance	–	■■■■□	+
Resistant to edge pressures	–	■■■□□	+
Suitable for shock and impact loads	–	■■■□□	+
Resistant to dirt	–	■■■□□	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® UW160 +90°C 15MPa

Technical data

General properties			Testing method
Density	g/cm³	1.04	
Colour		grey	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.1	
Coefficient of friction, dynamic, against steel	µ	0.17 – 0.31	
pv value, max. (dry)	MPa · m/s	0.22	
Mechanical properties			
Flexural modulus	MPa	1,349	DIN 53457
Flexural strength at +20°C	MPa	22	DIN 53452
Compressive strength	MPa	32	
Max. recommended surface pressure (+20°C)	MPa	15	
Shore D hardness		60	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+100	
Min. application temperature	°C	–50	
Thermal conductivity	W/m · K	0.50	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	18	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	> 10^{12}	DIN IEC 93
Surface resistance	Ω	> 10^{12}	DIN 53482

Table 01: Material properties

–50°C up to +90°C

15MPa

HB

RoHS-II

ISO 3547-1

iglidur® UW160 was developed quite specifically with regard to maximum wear resistance in media-based continuous operation. In such applications, low radial loads and medium temperatures usually occur. The suitability for contact with drinking water and very good durability complete the profile of properties.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® UW160 plain bearings is approximately 0.1% weight. The saturation limit in water is 0.1% weight.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® UW160 bearings.

Radiation resistance

Plain bearings made from iglidur® UW160 are resistant up to a radiation intensity of 3 · 10^2Gy.

Resistance to weathering

iglidur® UW160 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolorations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® UW160 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® UW160 at radial loads.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® UW160

Permissible surface speeds

The maximum recommended surface 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

Temperature

iglidur® UW160 was developed for use in liquid media in the normal and medium temperature range. As in the case of all thermoplastics, the compression strength of iglidur® UW160 decreases when temperatures rise. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +70°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05). The influence of surface speed and surface finish of the shaft on the friction coefficient is low, but with increasing radial load the coefficient of friction decreases significantly, mainly in the range of up to 7.5MPa.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® UW160. In the example of a rotational movement with radial loads of 1MPa and a speed of 0.3m/s, it becomes clear that iglidur® UW160 achieves good coefficient of wear with the most varied shafts. It is also clear that there are better iglidur® materials for dry operation. As with many other iglidur® materials in dry operation, diagram 07 shows the significantly higher wear in rotation than in pivoting with otherwise identical parameters.

Shaft materials, page 52

Installation tolerances

iglidur® UW160 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the E10 tolerances.

Testing methods, page 57

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+ up to 0
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+
Strong alkalines	+

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.3	0.3	1.0
short-term	m/s	0.5	0.4	2.5

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.17 – 0.31	0.08	0.03	0.03

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing H7 [mm]		Plain bearing E10 [mm]		Shaft h9 [mm]	
0 – 3	+0.000	+0.010	+0.014	+0.054	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.020	+0.068	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.025	+0.083	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.032	+0.102	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.040	+0.124	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.050	+0.150	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.060	+0.180	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.072	+0.212	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.085	+0.245	–0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

iglidur® UW160 +90°C 15MPa

Technical data

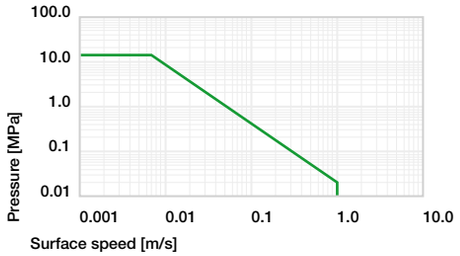

Diagram 01: Permissible pv values for iglidur® UW160 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

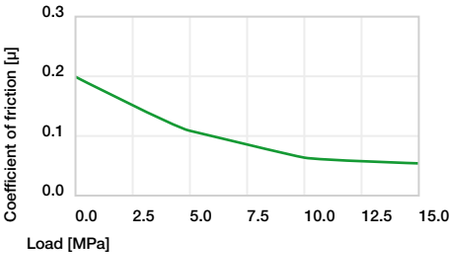

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

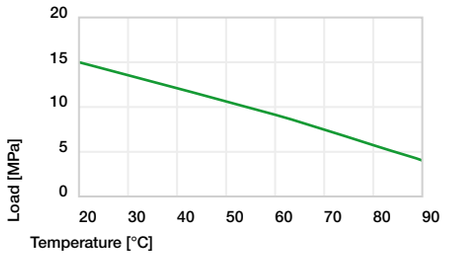

Diagram 02: Maximum recommended surface pressure as a function of temperature (15MPa at +20°C)

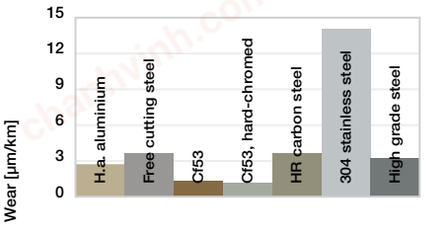

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

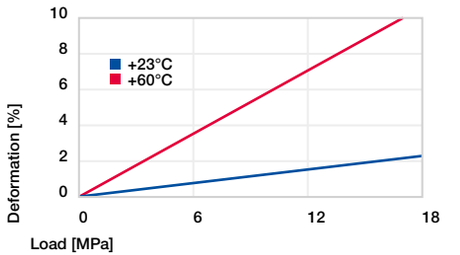

Diagram 03: Deformation under pressure and temperature

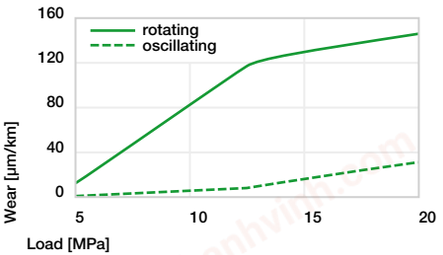

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

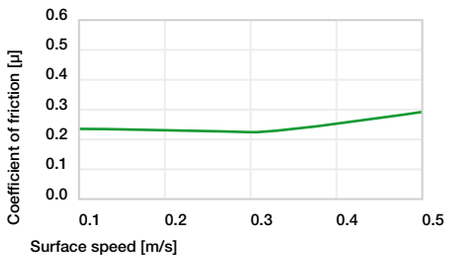

Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

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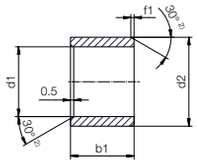
Bearing technology | Plain bearing | iglidur® UW160

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12
f1 [mm]	0.3	0.5

Dimensions according to ISO 3547-1 and special dimensions

Order example: UW160SM-0304-03 – no minimum order quantity.
UW160 iglidur® material S Sleeve bearing M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
3.0	+0.014 +0.054	4.0	3.0	**UW160SM-0304-03**
4.0		5.0	4.0	**UW160SM-0405-04**
5.0	+0.020 +0.068	7.0	5.0	**UW160SM-0507-05**
6.0		8.0	6.0	**UW160SM-0608-06**
8.0	+0.025 +0.083	10.0	10.0	**UW160SM-0810-10**
10.0		12.0	10.0	**UW160SM-1012-10**

[3] After press-fit. *Testing methods, page 57*

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Ordering note
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Discount scaling		
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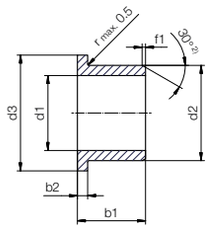
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® UW160 +90°C 15MPa

Bearing technology | Plain bearing | iglidur® UW160

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12
f1 [mm]	0.3	0.5

Dimensions according to ISO 3547-1 and special dimensions

Order example: UW160FM-0304-05 – no minimum order quantity.
UW160 iglidur® material F Flange bearing M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
3.0	+0.014 +0.054	4.5	7.5	5.0	0.75	**UW160FM-0304-05**
4.0		5.5	9.5	6.0	0.75	**UW160FM-0405-06**
5.0	+0.020 +0.068	7.0	11.0	7.0	1.00	**UW160FM-0507-07**
6.0		8.0	12.0	6.0	1.00	**UW160FM-0608-06**
8.0	+0.025 +0.083	10.0	14.0	10.0	1.00	**UW160FM-0810-10**
10.0		12.0	18.0	10.0	1.00	**UW160FM-1012-10**

[3] After press-fit. *Testing methods, page 57*

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Ordering note
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Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

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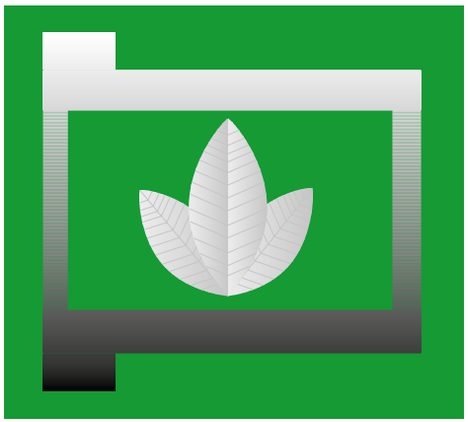

For the tobacco industry

FDA-compliant

iglidur® T220

When to use it?

- When you need a bearing free from non-permitted materials in the tobacco industry
- When FDA compliance is required

When not to use?

- When high surface pressures occur
  iglidur® Z
- When a cost-effective all-round plain bearing is required
  iglidur® G, iglidur® M250
- When the highest wear resistance at low pressures is required
  iglidur® J

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Bearing technology | Plain bearing | iglidur® T220

Ø
–



For the tobacco industry
FDA-compliant

Plain bearings that constitute only materials "recommended" for the tobacco industry. They are free from carcinogenic additives like, for instance, PTFE.

- Free from banned ingredients as requested by main manufacturers of tobacco products
- FDA-compliant
- Lubrication-free
- Maintenance-free

Typical application areas

- Tobacco industry

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

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Also available as:

Bar stock, round bar
Page 679

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

iglidur® T220
+100°C
40MPa

Technical data

General properties			Testing method
Density	g/cm³	1.28	
Colour		white	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	0.5	
Coefficient of friction, dynamic, against steel	µ	0.20 – 0.32	
pv value, max. (dry)	MPa · m/s	0.28	
Mechanical properties			
Flexural modulus	MPa	1,800	DIN 53457
Flexural strength at +20°C	MPa	65	DIN 53452
Compressive strength	MPa	55	
Max. recommended surface pressure (+20°C)	MPa	40	
Shore D hardness		76	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+100	
Max. application temperature short-term	°C	+160	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	11	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{10}$	DIN IEC 93
Surface resistance	Ω	$> 10^{10}$	DIN 53482

Table 01: Material properties

–40°C up to +100°C

40MPa

HB

FOOD

RoHS-II

iglidur® T220 is a special material for applications in the tobacco processing industry. It fulfils the demands of the tobacco industry (engineering database). The material is free of undesirable or banned ingredients, as requested by reputed manufacturers from 2004 onward.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® T220 plain bearings is approximately 0.3% weight. 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.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® T220 bearings.

Radiation resistance

Plain bearings made from iglidur® T220 are resistant up to a radiation intensity of $3 \cdot 10^2$Gy.

Resistance to weathering

iglidur® T220 plain bearings are resistant to weathering. The material properties are slightly affected. Discoloration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® T220 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
iglidur® T220 plain bearings can be stressed up to the permitted limit of 40MPa, the elastic deformation is less than 2% at room temperature. The permitted load is limited by higher temperatures (diagram 03).
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® T220

Permissible surface speeds

The maximum speeds of iglidur® T220 plain bearings when rotating continuously is 0.4m/s. The friction and the associated temperature increase limit the permissible speeds. From this it follows that intermittent service or in linear movements, higher speeds can be attained.

Surface speed, page 44

Temperature

The flexibility of the bearings depends on the temperature. Even temperatures as low as +60°C lead to a considerable increase in flexibility. For temperatures over +50°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

By the observance of the tobacco processing industry specifications, the coefficient of friction and wear of iglidur® T220 plain bearings remain behind those of the best iglidur® plain bearings. The coefficient of friction decreases with the load and increases only slightly with higher speeds.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagram 06 shows the test results of iglidur® T220 plain 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 care should be taken to maintain the loads under 5MPa through adequate dimensioning of the bearing.

Shaft materials, page 52

Installation tolerances

iglidur® T220 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

Chemicals	Resistance
Alcohols	+
Diluted acids	0
Diluted alkalines	–
Fuels	+
Greases, oils without additives	+
Hydrocarbons	–
Strong acids	–
Strong alkalines	–

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.4	0.3	1.0
short-term	m/s	1.0	0.7	2.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.20 – 0.32	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing H7 [mm]		Plain bearing E10 [mm]		Shaft h9 [mm]	
0 – 3	+0.000	+0.010	+0.014	+0.054	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.020	+0.068	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.025	+0.083	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.032	+0.102	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.040	+0.124	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.050	+0.150	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.060	+0.180	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.072	+0.212	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.085	+0.245	–0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

iglidur® T220 plain bearings are manufactured to special order.

iglidur® T220
+100°C
40MPa

Technical data

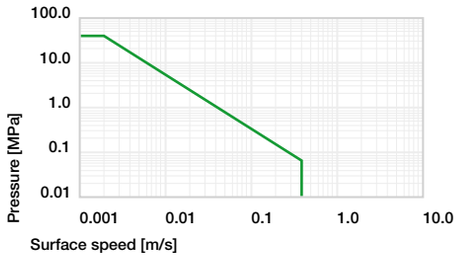

Diagram 01: Permissible pv values for iglidur® T220 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

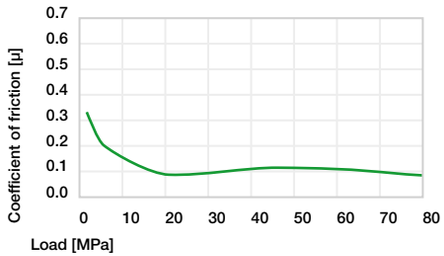

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

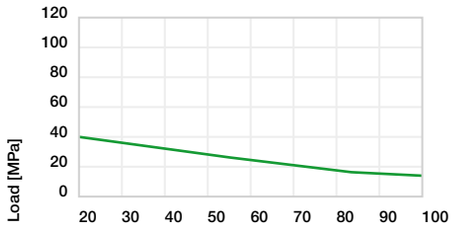

Diagram 02: Maximum recommended surface pressure as a function of temperature (40MPa at +20°C)

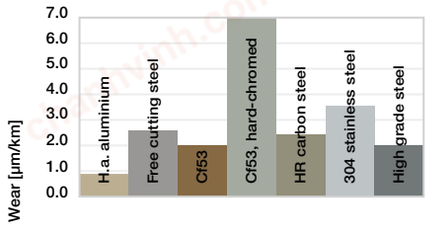

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

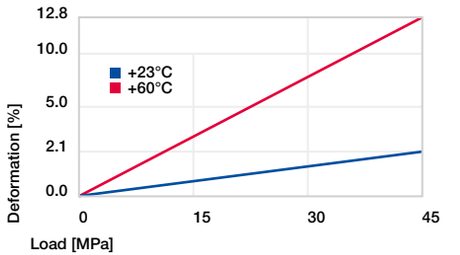

Diagram 03: Deformation under pressure and temperature

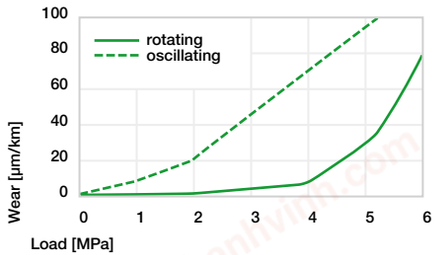

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

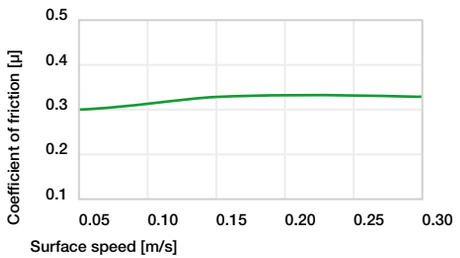

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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Plain bearing materials for heavy-duty applications

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Plain bearing materials for heavy-duty applications

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 30MPa up to more than 100MPa (100MPa means 1,000kg on a 10 x 10mm plain bearing).

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert



iglidur® Q2
The durable heavy-duty bearing

Temperature [°C] [123]	+130	– +
Surface pressure [MPa] [124]	120	– +
Coefficient of friction [µ] [125]	0.17	– +
Wear [µm/km] [125]	1.50	– +
Price index		– +



iglidur® Q2E
Cost-effective heavy-duty bearing

Temperature [°C] [123]	+100	– +
Surface pressure [MPa] [124]	135	– +
Coefficient of friction [µ] [125]	0.17	– +
Wear [µm/km] [125]	1.50	– +
Price index		– +



iglidur® Q
The peak of stability

Temperature [°C] [123]	+135	– +
Surface pressure [MPa] [124]	100	– +
Coefficient of friction [µ] [125]	0.19	– +
Wear [µm/km] [125]	1.90	– +
Price index		– +



iglidur® Q290
Heavy-duty on soft shafts

Temperature [°C] [123]	+140	– +
Surface pressure [MPa] [124]	55	– +
Coefficient of friction [µ] [125]	0.12	– +
Wear [µm/km] [125]	0.48	– +
Price index		– +

[123] Max. long-term application temperature [124] Max. recommended surface pressure at +20°C [125] Best combination for p = 1MPa, v = 0.3m/s, rotating

High loads



iglidur® TX1
The heavy-duty bearing for up to 200MPa static and 140MPa dynamic

Temperature [°C] [123]	+120	– +
Surface pressure [MPa] [124]	200	– +
Coefficient of friction [µ] [125]	0.37	– +
Wear [µm/km] [125]	7.10	– +
Price index		– +

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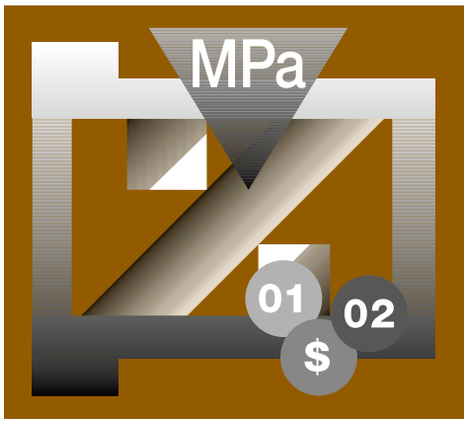

The durable heavy-duty bearing

Combined wear resistance and compressive strength at high loads

iglidur® Q2

When to use it?

- When high dynamic loads occur
- When dirt occurs in addition to high shock and impact loads
- For highly loaded pivoting movements

When not to use?

- When only static loads occur
  iglidur® X, iglidur® H2
- When high pv values occur in conjunction with high speeds
  iglidur® Z
- When a cost-effective all-round plain bearing is required
  iglidur® G
- When soft shafts are in use
  iglidur® W300

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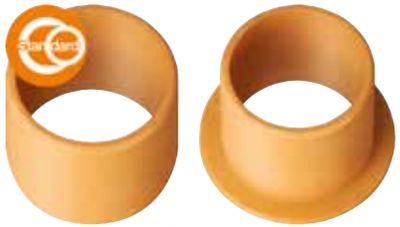
Bearing technology | Plain bearing | iglidur® Q2

Ø
4.0 –
120.0mm



Also available as:

Bar stock, round bar
Page 685

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 584

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

The durable heavy-duty bearing
Combined wear resistance and compressive strength at high loads

Where previous iglidur® bearing solutions are limited within the scope of extreme loads and strong impact forces, the iglidur® Q2 starts. Made for heavy-duty pivoting applications under extreme conditions.

- Wear-resistant
- Good price-performance ratio
- Lubrication-free
- Maintenance-free
- High rigidity
- Suitable for high loads

Typical application areas

- Agricultural engineering
- Utility and construction vehicles
- Mechanical engineering

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® Q2
+130°C
120MPa

Technical data

General properties			Testing method
Density	g/cm³	1.46	
Colour		beige-brown	
Max. moisture absorption at +23°C and 50% r.h.	% weight	1.1	DIN 53495
Max. moisture absorption	% weight	4.6	
Coefficient of friction, dynamic, against steel	µ	0.22 – 0.42	
pv value, max. (dry)	MPa · m/s	0.70	
Mechanical properties			
Flexural modulus	MPa	8,370	DIN 53457
Flexural strength at +20°C	MPa	240	DIN 53452
Compressive strength	MPa	130	
Max. recommended surface pressure (+20°C)	MPa	120	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+130	
Max. application temperature short-term	°C	+200	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	8	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

–40°C up to +130°C

120MPa

HB

RoHS-II

ISO 3547-1

Table 01: Material properties

iglidur® Q2 plain bearings represent high load capacities and good abrasion resistance at high loads. The price-performance ratio is outstanding. Solid lubricants reduce the coefficient of friction and improve the resistance to wear, which was markedly improved as compared to other iglidur® plain bearings, especially for heavily loaded pivoting applications.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® Q2 plain bearings is approximately 1.1% weight. The saturation limit in water is 4.6% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® Q2 are resistant up to a radiation intensity of $3 \cdot 10^2$Gy.

Resistance to weathering

iglidur® Q2 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolorations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® Q2 plain bearings decreases. Diagram 02 shows this inverse relationship. However, at the long-term maximum temperature of +130°C the permissible surface pressure is around 20MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® Q2 at radial loads.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® Q2

Permissible surface speeds

Typical applications for iglidur® Q2 plain bearings are pivoting movements under high loads at comparatively low speeds. However, relatively high speeds are still attainable. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.

Surface speed, page 44

Temperature

iglidur® Q2 is a very temperature-stable material. The long-term upper temperature limit of +130°C permits the broad use in applications typical for the agricultural, utility vehicle or construction equipment sectors. With increasing temperatures, the compressive strength of iglidur® Q2 plain bearings decreases. For temperatures over +70°C an additional securing is required. When considering temperatures, the additional frictional heat in the bearing system must be taken into account.

Application temperatures, page 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 coefficient of friction occur at Ra = 1µm. Surface finishes (Ra) of the shaft between 0.1 – 0.4µm are ideal. Furthermore, the coefficient of friction of iglidur® Q2 plain bearings largely depends on the speed and load. As the surface speed increases, the coefficient of friction will quickly increase as well. However, as the load is reduced, the coefficient of friction initially drops significantly, then moderately.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

In high load applications, we generally recommend the use of hardened shafts. Furthermore, even at low to medium loads, iglidur® Q2 will attain increased service life with "hard" shafts as compared to "soft" shafts. But for low load applications, the results are outstanding with free cutting steel as well. For high loads, the wear in pivoting applications is much lower than for rotation. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 52

Installation tolerances

iglidur® Q2 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to –
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	0

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.0	0.7	4.0
short-term	m/s	2.0	1.4	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.22 – 0.42	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

	Housing		Plain bearing		Shaft	
Ø d1 [mm]	H7 [mm]		E10 [mm]		h9 [mm]	
0 – 3	+0.000	+0.010	+0.014	+0.054	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.020	+0.068	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.025	+0.083	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.032	+0.102	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.040	+0.124	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.050	+0.150	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.060	+0.180	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.072	+0.212	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.085	+0.245	–0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

iglidur® Q2
+130°C
120MPa

Technical data

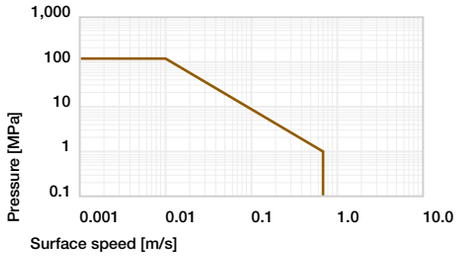

Diagram 01: Permissible pv values for iglidur® Q2 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

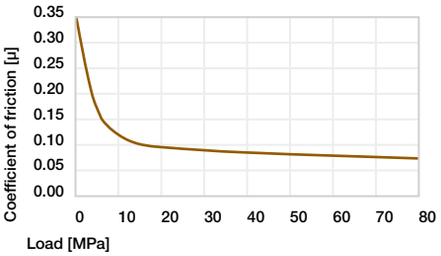

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

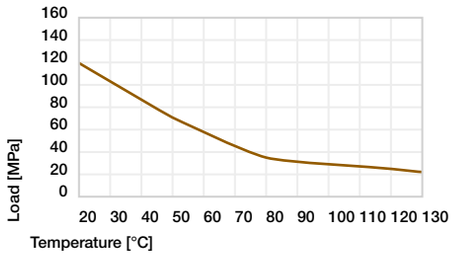

Diagram 02: Maximum recommended surface pressure of as a function of temperature (120MPa at +20°C)

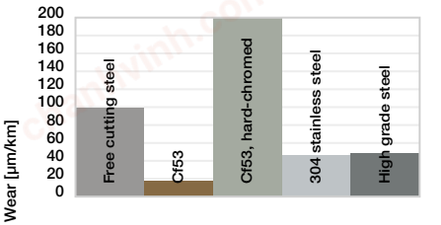

Diagram 06: Wear, pivoting with different shaft materials, pressure p = 45MPa, v = 0.01m/s

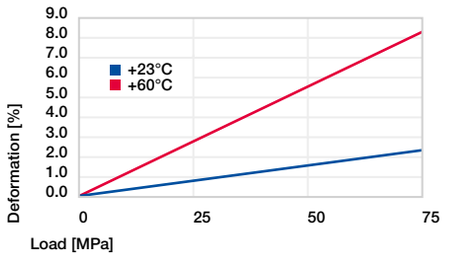

Diagram 03: Deformation under pressure and temperature

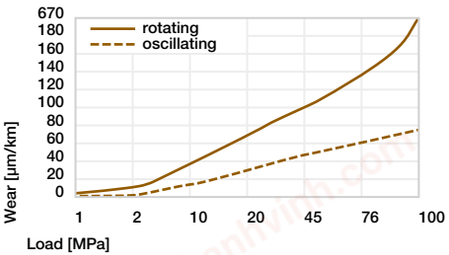

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

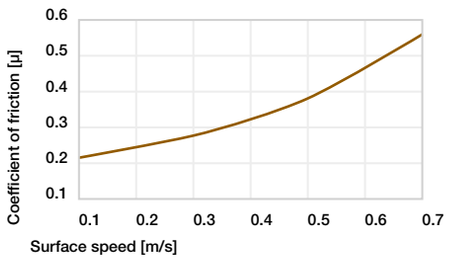

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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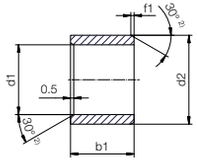
Bearing technology | Plain bearing | iglidur® Q2

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: Q2SM-0405-04 – no minimum order quantity.
Q2 iglidur® material S Sleeve bearing M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
4.0		5.5	4.0	Q2SM-0405-04
4.0		5.5	6.0	Q2SM-0405-06
5.0	+0.020	7.0	5.0	Q2SM-0507-05
5.0	+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	+0.025	12.0	8.0	Q2SM-1012-08
10.0	+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	16.0	15.0	Q2SM-1416-15
14.0	+0.102	16.0	20.0	Q2SM-1416-20
14.0		16.0	25.0	Q2SM-1416-25
15.0		17.0	15.0	Q2SM-1517-15
15.0		17.0	20.0	Q2SM-1517-20
15.0		17.0	25.0	Q2SM-1517-25
16.0		18.0	15.0	Q2SM-1618-15
16.0		18.0	20.0	Q2SM-1618-20

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
16.0		18.0	25.0	Q2SM-1618-25
18.0	+0.032	20.0	15.0	Q2SM-1820-15
18.0	+0.102	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	27.0	25.0	Q2SM-2427-25
24.0	+0.124	27.0	30.0	Q2SM-2427-30
25.0		28.0	15.0	Q2SM-2528-15
25.0		28.0	20.0	Q2SM-2528-20
25.0		28.0	25.0	Q2SM-2528-25
25.0		28.0	30.0	Q2SM-2528-30
28.0		32.0	30.0	Q2SM-2832-30
30.0		34.0	20.0	Q2SM-3034-20
30.0		34.0	25.0	Q2SM-3034-25
30.0		34.0	30.0	Q2SM-3034-30
30.0		34.0	40.0	Q2SM-3034-40
30.0		35.0	40.0	Q2SM-3035-40
32.0	+0.050	36.0	20.0	Q2SM-3236-20
32.0	+0.150	36.0	30.0	Q2SM-3236-30

[3] After press-fit. *Testing methods, page 57*

iglidur® Q2
+130°C
120MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
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		39.0	40.0	Q2SM-3539-40
35.0	+0.050	39.0	50.0	Q2SM-3539-50
40.0	+0.150	44.0	20.0	Q2SM-4044-20
40.0		44.0	30.0	Q2SM-4044-30
40.0		44.0	40.0	Q2SM-4044-40
40.0		44.0	50.0	Q2SM-4044-50
45.0		50.0	20.0	Q2SM-4550-20
45.0		50.0	30.0	Q2SM-4550-30

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
45.0		50.0	40.0	Q2SM-4550-40
45.0		50.0	50.0	Q2SM-4550-50
50.0		55.0	20.0	Q2SM-5055-20
50.0	+0.050	55.0	30.0	Q2SM-5055-30
50.0	+0.150	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	70.0	60.0	Q2SM-6570-60
70.0	+0.180	75.0	60.0	Q2SM-7075-60
75.0		80.0	40.0	Q2SM-7580-40

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/Q2

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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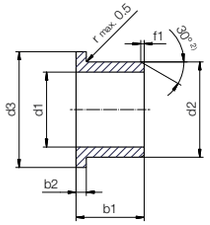
Bearing technology | Plain bearing | iglidur® Q2

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

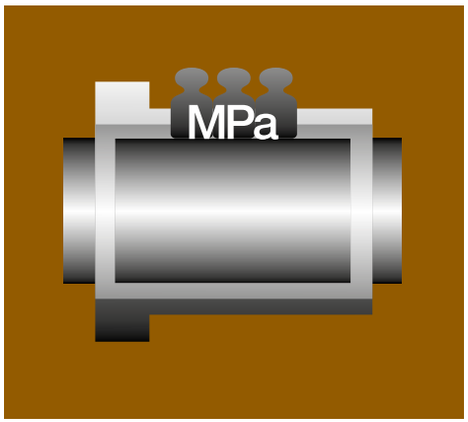
Order example: Q2FM-0507-05 – no minimum order quantity.
Q2 iglidur® material F Flange bearing M Metric 05 Inner Ø d1 07 Outer Ø d2 05 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
5.0		7.0	11.0	5.0	1.00	**Q2FM-0507-05**
6.0	+0.020	8.0	12.0	4.0	1.00	**Q2FM-0608-04**
6.0	+0.068	8.0	12.0	6.0	1.00	**Q2FM-0608-06**
6.0		8.0	12.0	8.0	1.00	**Q2FM-0608-08**
8.0		10.0	15.0	3.0	1.00	**Q2FM-0810-03**
8.0		10.0	15.0	5.5	1.00	**Q2FM-0810-05**
8.0		10.0	15.0	7.5	1.00	**Q2FM-0810-07**
8.0		10.0	15.0	9.5	1.00	**Q2FM-0810-09**
8.0	+0.025	10.0	15.0	10.0	1.00	**Q2FM-0810-10**
10.0	+0.083	12.0	18.0	7.0	1.00	**Q2FM-1012-07**
10.0		12.0	18.0	9.0	1.00	**Q2FM-1012-09**
10.0		12.0	18.0	10.0	1.00	**Q2FM-1012-10**
10.0		12.0	18.0	12.0	1.00	**Q2FM-1012-12**
10.0		12.0	18.0	17.0	1.00	**Q2FM-1012-17**
12.0		14.0	20.0	7.0	1.00	**Q2FM-1214-07**
12.0		14.0	20.0	9.0	1.00	**Q2FM-1214-09**
12.0		14.0	20.0	12.0	1.00	**Q2FM-1214-12**
12.0		14.0	20.0	17.0	1.00	**Q2FM-1214-17**
14.0		16.0	22.0	5.0	1.00	**Q2FM-1416-05**
14.0	+0.032	16.0	22.0	12.0	1.00	**Q2FM-1416-12**
14.0	+0.102	16.0	22.0	17.0	1.00	**Q2FM-1416-17**
15.0		17.0	23.0	9.0	1.00	**Q2FM-1517-09**
15.0		17.0	23.0	12.0	1.00	**Q2FM-1517-12**
15.0		17.0	23.0	17.0	1.00	**Q2FM-1517-17**
16.0		18.0	24.0	12.0	1.00	**Q2FM-1618-12**
16.0		18.0	24.0	17.0	1.00	**Q2FM-1618-17**
18.0		20.0	26.0	12.0	1.00	**Q2FM-1820-12**

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
18.0	+0.032	20.0	26.0	17.0	1.00	**Q2FM-1820-17**
18.0	+0.102	20.0	26.0	22.0	1.00	**Q2FM-1820-22**
20.0		23.0	30.0	11.5	1.50	**Q2FM-2023-11**
20.0		23.0	30.0	12.0	1.50	**Q2FM-2023-12**
20.0		23.0	30.0	16.5	1.50	**Q2FM-2023-16**
20.0		23.0	30.0	21.5	1.50	**Q2FM-2023-21**
25.0	+0.040	28.0	35.0	11.5	1.50	**Q2FM-2528-11**
25.0	+0.124	28.0	35.0	16.5	1.50	**Q2FM-2528-16**
25.0		28.0	35.0	21.5	1.50	**Q2FM-2528-21**
30.0		34.0	42.0	16.0	2.00	**Q2FM-3034-16**
30.0		34.0	42.0	26.0	2.00	**Q2FM-3034-26**
30.0		34.0	42.0	37.0	2.00	**Q2FM-3034-37**
30.0		34.0	42.0	40.0	2.00	**Q2FM-3034-40**
35.0		39.0	47.0	16.0	2.00	**Q2FM-3539-16**
35.0		39.0	47.0	26.0	2.00	**Q2FM-3539-26**
35.0		39.0	47.0	40.0	2.00	**Q2FM-3539-40**
40.0	+0.050	44.0	52.0	30.0	2.00	**Q2FM-4044-30**
40.0	+0.150	44.0	52.0	40.0	2.00	**Q2FM-4044-40**
45.0		50.0	58.0	50.0	2.00	**Q2FM-4550-50**
50.0		55.0	63.0	10.0	2.00	**Q2FM-5055-10**
50.0		55.0	63.0	50.0	2.00	**Q2FM-5055-50**
60.0	+0.060	65.0	73.0	60.0	2.00	**Q2FM-6065-60**
80.0	+0.180	85.0	93.0	100.0	2.50	**Q2FM-8085-100**
100.0	+0.072 +0.212	105.0	125.0	90.0	2.50	**Q2FM-100105125-90**
120.0	+0.085 +0.245	125.0	145.0	90.0	2.50	**Q2FM-120125145-90**

[3] After press-fit. *Testing methods, page 57*





Cost-effective heavy-duty bearing

Robust and dimensionally stable iglidur® Q2E

When to use it?
- When a wear-resistant plain bearing at loads up to 130MPa is required
- When a robust and dirt-resistant plain bearing is required
- When a plain bearing with dimensional stability is required.

When not to use?
- When a plain bearing with the highest possible media resistance is required
  iglidur® X
- With high rotational speeds
  iglidur® J, iglidur® L250
- When a universal standard plain bearing for occasional movements is required
  iglidur® G

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Bearing technology | Plain bearing | iglidur® Q2E

Ø
20.0 –
60.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

Cost-effective heavy-duty bearing
Robust and dimensionally stable

With extreme loads, even high-tech polymers reach their limits. Therefore iglidur® Q2E offers a completely new multi-component design and is able to carry extreme loads. In addition, thanks to optimised injection moulding technology, it is more cost-effective than comparable fibre composites.

- Lubrication-free
- Wear-resistant up to 130MPa dynamic load
- Resistant to dirt
- Corrosion-free

Typical application areas

- Agricultural machinery
- Construction machinery industry
- Utility and construction vehicles
- Hoisting technology

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® Q2E
+100°C
135MPa

Technical data

General properties			Testing method
Density	g/cm³	1.46 – 1.69	
Colour		beige-brown	
Max. moisture absorption at +23°C and 50% r.h.	% weight	1.5	DIN 53495
Max. moisture absorption	% weight	5.0	
Coefficient of friction, dynamic, against steel	µ	0.22 – 0.42	
pv value, max. (dry)	MPa · m/s	0.70	
Mechanical properties			
Flexural modulus	MPa	n.s.	DIN 53457
Flexural strength at +20°C[171)]	MPa	235	DIN 53452
Compressive strength	MPa	n.s.	
Max. recommended surface pressure (+20°C)	MPa	135	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+100	
Max. application temperature short-term	°C	+140	
Min. application temperature	°C	–30	
Thermal conductivity		n.s.	
Coefficient of thermal expansion (at +23°C)		n.s.	
Electrical properties			
Specific contact resistance	Ωcm	> 10^{12}	DIN IEC 93
Surface resistance	Ω	> 10^{12}	DIN 53482

[171)] Valid for the outer shell of the bearing

Table 01: Material properties

–30°C up to +100°C

135MPa

HB

RoHS-II

The iglidur® Q2E plain bearings defy dirt at the heaviest loads due to their robust design.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® Q2E plain bearings is approximately 1.5% weight. The saturation limit in water is 5.0% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® Q2E are resistant up to a radiation intensity of 3 · 10^2Gy.

Resistance to weathering

iglidur® Q2E plain bearings have not yet been tested for their resistance to weathering. Please consult igus® if you're planning to use them outdoors.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® Q2E plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® Q2E at radial loads.
Surface pressure, page 41

Permissible surface speeds

Typical applications for iglidur® Q2E plain bearings are pivoting movements under high loads at comparatively low speeds. However, relatively high speeds are still attainable. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.
Surface speed, page 44

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Bearing technology | Plain bearing | iglidur® Q2E

Temperature

iglidur® Q2E is a very temperature-stable material. The long-term upper temperature limit of +100°C permits the broad use in applications typical for the agricultural, utility vehicle or construction equipment sectors. With increasing temperatures, the compressive strength of iglidur® Q2E plain bearings decreases. For temperatures over +75°C an additional securing is required. When considering temperatures, the additional frictional heat in the bearing system must be taken into account.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

The coefficient of friction alters similarly to the wear resistance with increasing load and surface speed (diagrams 04 and 05).

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

In high load applications, we generally recommend the use of hardened shafts. Furthermore, even at low to medium loads, iglidur® Q2E will attain increased service life with "hard" shafts as compared to "soft" shafts. But for low load applications, the results are outstanding with free cutting steel as well. For high loads, the wear in pivoting applications is much lower than for rotation. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 52

Installation tolerances

iglidur® Q2E plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. The tolerances are based on class E11. After installing in a nominal size housing, the inner diameter of the bearings is adjusted according to the specifications in the product range.

Testing methods, page 57

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to –
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	0

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.0	0.7	4.0
short-term	m/s	2.0	1.4	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.22 – 0.42	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing H7 [mm]		Plain bearing E11 [mm]		Shaft h9 [mm]	
0 – 3	+0.000	+0.010	+0.014	+0.074	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.020	+0.095	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.025	+0.115	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.032	+0.142	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.040	+0.170	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.050	+0.210	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.060	+0.250	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.072	+0.292	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.085	+0.335	–0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

iglidur® Q2E
+100°C
135MPa

Technical data

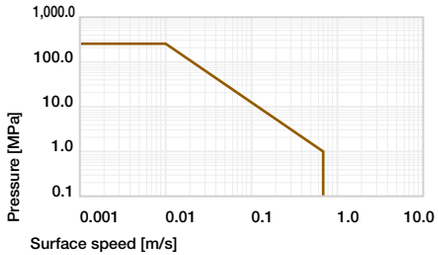

Diagram 01: Permissible pv values for iglidur® Q2E plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

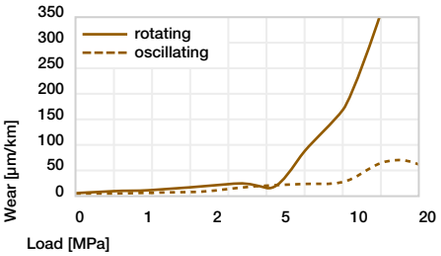

Diagram 05: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

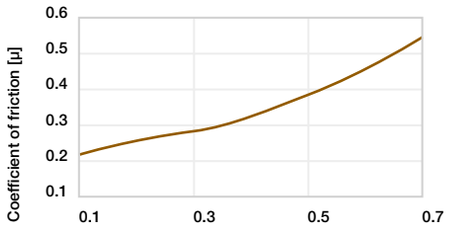

Diagram 02: Coefficient of friction as a function of the surface speed, p = 0.75MPa

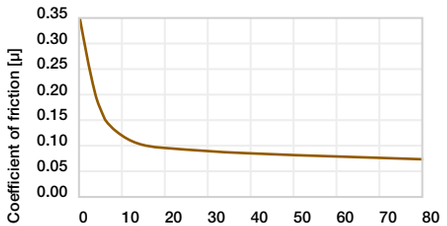

Diagram 03: Coefficient of friction as a function of the pressure, v = 0.01m/s

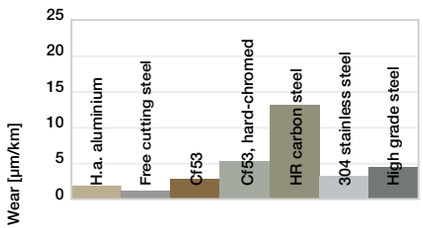

Diagram 04: Wear, pivoting with different shaft materials, pressure p = 1MPa, v = 0.3m/s

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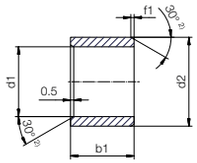
Bearing technology | Plain bearing | iglidur® Q2E

Sleeve bearing (form S)





2) Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 12–30	Ø > 30
f1 [mm]	0.8	1.2

Order example: Q2ESM-2025-20 – no minimum order quantity.
Q2E iglidur® material S Sleeve bearing M Metric 20 Inner Ø d1 25 Outer Ø d2 20 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
20.0	+0.040 +0.164	25.0	20.0	**Q2ESM-2025-20**
25.0		30.0	30.0	**Q2ESM-2530-30**
30.0	+0.050 +0.190	35.0	30.0	**Q2ESM-3035-30**
35.0		40.0	40.0	**Q2ESM-3540-40**
40.0		45.0	40.0	**Q2ESM-4045-40**
45.0		50.0	50.0	**Q2ESM-4550-50**
50.0	+0.060 +0.220	55.0	50.0	**Q2ESM-5055-50**
60.0		65.0	60.0	**Q2ESM-6065-60**

3) After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

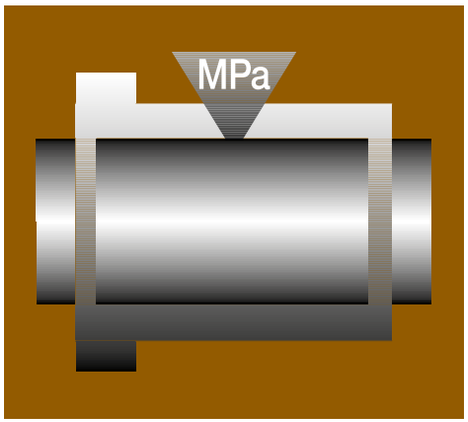
Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/Q2E

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.





The peak of stability

Long service life at medium to high loads

iglidur® Q

When to use it?
- For pivoting applications
- For excellent wear resistance, especially for extreme loads
- For extreme pv values
- When dirt-resistant bearings is required

When not to use?
- For underwater applications
  iglidur® H370
- When continuous operating temperatures are higher than +135°C
  iglidur® H, iglidur® X, iglidur® Z
- In situations involving high edge loads or strong impact loads
  iglidur® Q2

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Bearing technology | Plain bearing | iglidur® Q

Ø
6.0 – 90.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

The peak of stability
Long service life at medium to high loads

iglidur® Q is the cost-effective solution for heavy-duty cycles with extreme loads. Plain bearings made from this material can be used in all types of motion, but is best suited for pivoting applications.

- Very wear-resistant
- Very high pv values
- Low coefficient of friction
- Resistant to dirt
- Lubrication-free
- Standard range from stock
- Maintenance-free

Typical application areas

- Construction machinery industry
- Sheet metal industry
- Agricultural machines
- Railway technology
- Doors and gates

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

Technical data

General properties			Testing method
Density	g/cm³	1.40	
Colour		black	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.9	DIN 53495
Max. moisture absorption	% weight	4.9	
Coefficient of friction, dynamic, against steel	µ	0.05 – 0.15	
pv value, max. (dry)	MPa · m/s	0.55	
Mechanical properties			
Flexural modulus	MPa	4,500	DIN 53457
Flexural strength at +20°C	MPa	120	DIN 53452
Compressive strength	MPa	89	
Max. recommended surface pressure (+20°C)	MPa	100	
Shore D hardness		83	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+135	
Max. application temperature short-term	°C	+155	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.23	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	5	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{15}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

–40°C up to +135°C

100MPa

HB

RoHS-II

ISO 3547-1

Table 01: Material properties

iglidur® Q plain bearings were developed especially for extreme loads. Under high loads, iglidur® Q figures among the iglidur® materials that display the best wear resistance. From a radial pressure of 25MPa, 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.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® Q plain bearings is approximately 0.9% weight. The saturation limit in water is 4.9% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® Q bearings.

Radiation resistance

Plain bearings made from iglidur® Q are resistant up to a radiation intensity of $3 \cdot 10^2$Gy.

Resistance to weathering

iglidur® Q plain bearings are resistant to weathering. The material properties are slightly affected. Discoloration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® Q plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
iglidur® Q is a material used when high pv values are reached with high loads. Diagram 03 shows the elastic deformation of iglidur® Q at radial loads. At the maximum recommended surface pressure of 100MPa the deformation is less than 3%.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® Q

Permissible surface speeds

Under extreme radial loads, the iglidur® Q plain bearings can reach the maximum pv values which are possible during dry operation with plain bearings. Although iglidur® Q plain bearings have the greatest advantages under high loads and at low speeds, high surface speeds are also attainable due to the excellent coefficient of friction of these bearings. The given values in table 03 indicate the limits at which an increase up to the continuous permissible temperature occurs. This increase is a result of friction.

Surface speed, page 44

Temperature

Plain bearings made from iglidur® Q retain their excellent wear resistance even at high temperatures. For temperatures over +50°C an additional securing is required. It should also be noted that the coefficient of friction increases considerably at temperatures above approximately +100°C.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

Many plastic bearings feature decreasing coefficient of friction with increasing pressure in dry operation. iglidur® Q goes further than most, under high pressures the material gives excellent low coefficient of friction (diagrams 04 and 05).

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® Q. The strengths offered by iglidur® heavy-duty materials become clear from 30MPa. iglidur® Q stands out in particular. Other heavy-duty materials such as iglidur® Q2 and TX1 only offer the best performances in terms of wear when subjected to even higher loads. iglidur® Q offers strikingly good wear properties on many different shaft materials.

Shaft materials, page 52

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 particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 57

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to –
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	0

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.0	0.7	5.0
short-term	m/s	2.0	1.4	6.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.05 – 0.15	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

	Housing		Plain bearing		Shaft	
Ø d1 [mm]	H7 [mm]		E10 [mm]		h9 [mm]	
0 – 3	+0.000	+0.010	+0.014	+0.054	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.020	+0.068	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.025	+0.083	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.032	+0.102	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.040	+0.124	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.050	+0.150	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.060	+0.180	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.072	+0.212	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.085	+0.245	–0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

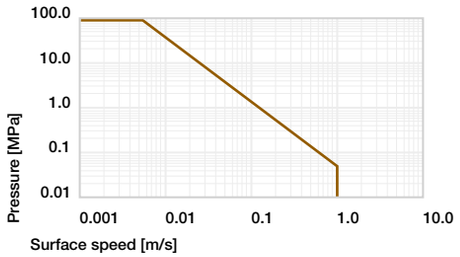

Diagram 01: Permissible pv values for iglidur® Q plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

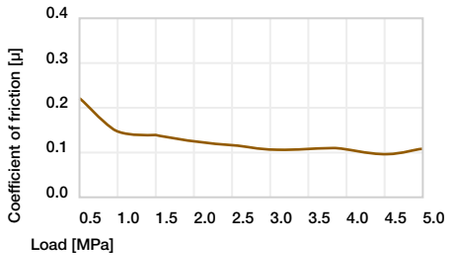

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

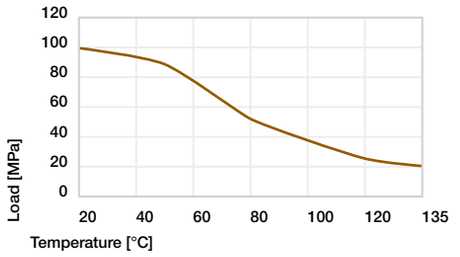

Diagram 02: Maximum recommended surface pressure of as a function of temperature (100MPa at +20°C)

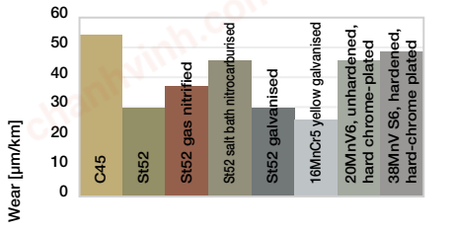

Diagram 06: wear, pivoting with different shaft materials, pressure p = 30MPa, v = 0.01m/s

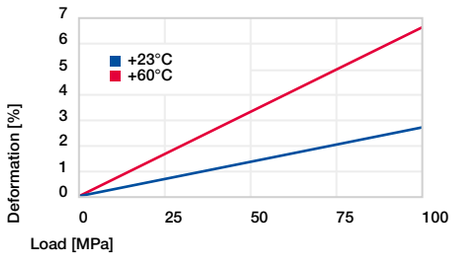

Diagram 03: Deformation under pressure and temperature

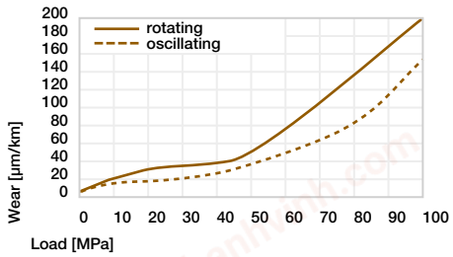

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

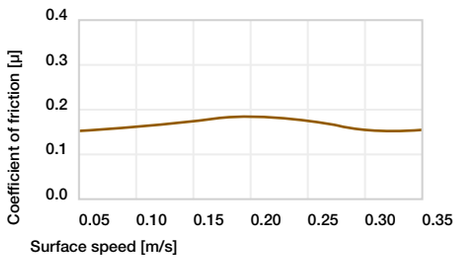

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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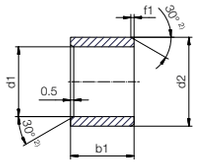
Bearing technology | Plain bearing | iglidur® Q

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: QSM-0608-10 – no minimum order quantity.
Q iglidur® material S Sleeve bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 10 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	10.0	QSM-0608-10
8.0	+0.025	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		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	+0.050	44.0	40.0	QSM-4044-40
40.0	+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

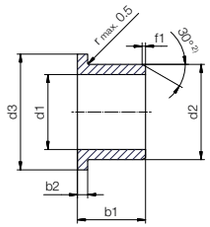
[3] After press-fit. *Testing methods, page 57*

iglidur® Q
+135°C
100MPa

Bearing technology | Plain bearing | iglidur® Q

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: QFM-0608-03 – no minimum order quantity.
Q iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 03 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	12.0	3.0	1.00	QFM-0608-03
6.0		8.0	12.0	4.0	1.00	QFM-0608-04
6.0		8.0	12.0	8.0	1.00	QFM-0608-08
8.0		10.0	15.0	5.5	1.00	QFM-0810-05
8.0		10.0	15.0	6.0	1.00	QFM-0810-06
10.0	+0.025	12.0	15.0	3.5	1.00	QFM-101215-035
10.0	+0.083	12.0	18.0	6.0	1.00	QFM-1012-06
10.0		12.0	15.0	8.0	1.00	QFM-101215-08
10.0		12.0	18.0	10.0	1.00	QFM-1012-10
12.0		14.0	20.0	8.0	1.00	QFM-1214-08
12.0	+0.032	14.0	20.0	12.0	1.00	QFM-1214-12
12.0	+0.102	14.0	20.0	20.0	1.00	QFM-1214-20
14.0		16.0	22.0	12.0	1.00	QFM-1416-12
16.0		18.0	24.0	17.0	1.00	QFM-1618-17
18.0	+0.032	20.0	26.0	5.0	1.00	QFM-182026-051
18.0	+0.102	20.0	26.0	12.0	1.00	QFM-1820-12
20.0		23.0	30.0	21.5	1.50	QFM-2023-21
25.0	+0.040	28.0	35.0	21.5	1.50	QFM-2528-21
26.0	+0.124	29.0	35.0	5.0	1.50	QFM-2629-05
27.0		30.0	38.0	20.0	1.50	QFM-2730-20
30.0		34.0	42.0	37.0	2.00	QFM-3034-37
35.0		39.0	47.0	26.0	2.00	QFM-3539-26
35.0		39.0	50.0	35.0	2.00	QFM-353950-35
40.0	+0.050	44.0	52.0	14.0	2.00	QFM-4044-14
40.0	+0.150	44.0	52.0	40.0	2.00	QFM-4044-40
50.0		55.0	63.0	10.0	2.00	QFM-5055-10
50.0		55.0	63.0	50.0	2.00	QFM-5055-50
60.0	+0.060	65.0	78.0	50.0	2.00	QFM-6065-50
70.0	+0.180	75.0	83.0	50.0	2.00	QFM-7075-50

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/Q

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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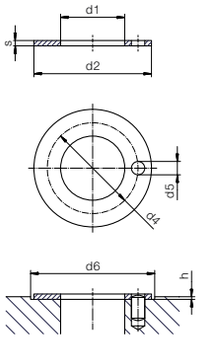
Bearing technology | Plain bearing | iglidur® Q

Thrust washer (form T)





Dimensions according to ISO 3547-1 and special dimensions

Order example: QTM-2842-015 – no minimum order quantity.
Q iglidur® material **T** Thrust washer **M** Metric **28** Inner Ø d1 **42** Outer Ø d2 **015** Thickness s

d1	d2	d4	d5	h	d6	s	Part No.
+0.25	–0.25	–0.12 +0.12	+0.375 +0.125	+0.2/–0.2	+0.12	–0.05	
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
28	42	35	4	1	42	1.5	**QTM-2842-015**
32	54	[4]	4	1	54	1.5	**QTM-3254-015**

[4] Design without fixing hole

Available from stock
Detailed information about delivery time online.
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Online ordering
Including delivery times, prices, online tools
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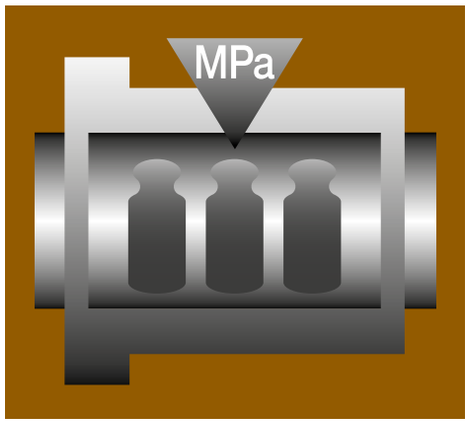
Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.





Heavy-duty on soft shafts

For medium to high loads, especially on soft shafts

iglidur® Q290

When to use it?
- When a long-lasting plain bearing is required for tough operating conditions (agricultural equipment, construction machinery, etc.) with medium to high dynamic loads on "soft" shafts

When not to use?
- When permanent static loads higher than 55MPa occur
  iglidur® G, iglidur® Q, iglidur® Q2
- When an very wear-resistant plain bearing is required on "soft" shafts for minor loads
  iglidur® J, iglidur® J3
- When continuous operating temperatures are higher than +140°C
  iglidur® J350, iglidur® Z

chanhvinh.com

Bearing technology | Plain bearing | iglidur® Q290

Ø
20.0 –
80.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

Heavy-duty on soft shafts

For medium to high loads, especially on soft shafts

iglidur® Q290 shows outstanding service life in tough pivoting applications, as they are frequently found in agricultural machinery, especially on "soft" coated shafts (e.g. galvanised). The wear on the shafts is minimal.

- Recommended for soft shafts
- Suitable for high edge pressures
- Temperature-resistant up to +140°C
- Good price-performance ratio
- Lubrication-free
- Maintenance-free

Typical application areas

- Agricultural engineering
- Utility and construction vehicles

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® Q290
+140°C
55MPa

Technical data

General properties			Testing method
Density	g/cm³	1.27	
Colour		black	
Max. moisture absorption at +23°C and 50% r.h.	% weight	3	DIN 53495
Max. moisture absorption	% weight	9.3	
Coefficient of friction, dynamic, against steel	µ	0.14 – 0.26	
pv value, max. (dry)	MPa · m/s	0.70	
Mechanical properties			
Flexural modulus	MPa	3,074	DIN 53457
Flexural strength at +20°C	MPa	97	DIN 53452
Compressive strength	MPa	68	
Max. recommended surface pressure (+20°C)	MPa	55	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+140	
Max. application temperature short-term	°C	+180	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	7	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	> 10^{12}	DIN IEC 93
Surface resistance	Ω	> 10^{12}	DIN 53482

Table 01: Material properties

–40°C up to +140°C

55MPa

HB

RoHS-II

ISO 3547-1

iglidur® Q290 plain bearings do not have the highest static load capacity within the iglidur® product range, instead the material shows its strengths at medium to high dynamic loads: outstanding service life is achieved for tough pivoting applications, e.g. in agricultural or construction machinery, and especially on "soft" shafts, for both the shafts and bearings!

Moisture absorption
Under standard climatic conditions, the moisture absorption of iglidur® Q290 plain bearings is 3% weight. The saturation limit in water is 9.3% weight.

Vacuum
In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance
Plain bearings made from iglidur® Q290 are resistant up to a radiation intensity of 3 · 10^2Gy.

Resistance to weathering
iglidur® Q290 plain bearings are not resistant to weathering. The material properties are significantly affected Severe discoloration occurs. Applications with this material under weathering conditions are not recommended.

Mechanical properties
With increasing temperatures, the compressive strength of iglidur® Q290 plain bearings decreases. Diagram 02 shows this inverse relationship. At the short-term permitted application temperature of +180°C, the permitted surface pressure is still 10MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® Q290 at radial loads. These high elastic deformation values, even for loads of more than 50MPa, contribute significantly to the long service life under tough environmental conditions such as edge loads, collisions and impacts.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® Q290

Permissible surface speeds

Typical applications for iglidur® Q290 plain bearings include medium 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

Temperature

The long-term upper temperature limit of +140°C permits the broad use in applications typical for the agricultural, utility vehicle or construction equipment sectors. For temperatures over +80°C an additional securing is required.

Application temperatures, page 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.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Generally, the use of hardened shafts is recommended for higher loads starting at approximately 10MPa. This is, however, often not the case in practice, especially in connection with corrosion-resistant coating methods. Thus, the iglidur® Q290 material has a lot of importance in such applications. Diagram 08 shows this very clearly in connection with galvanised shafts. The special suitability for pivoting applications is shown in diagram 07.

Shaft materials, page 52

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 particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 57

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to –
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	+ up to 0

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.8	0.6	1.0
short-term	m/s	2.0	1.4	2.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.14 – 0.26	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing H7 [mm]		Plain bearing E10 [mm]		Shaft h9 [mm]	
0 – 3	+0.000	+0.010	+0.014	+0.054	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.020	+0.068	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.025	+0.083	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.032	+0.102	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.040	+0.124	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.050	+0.150	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.060	+0.180	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.072	+0.212	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.085	+0.245	–0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

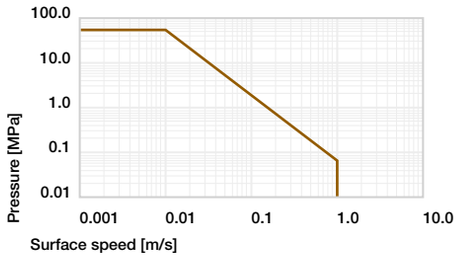

Diagram 01: Permissible pv values for iglidur® Q290 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

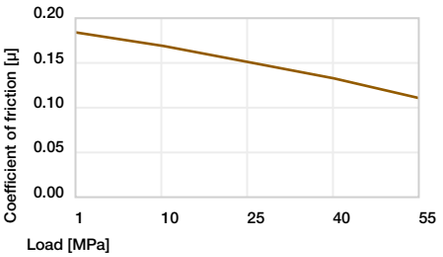

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s against Cf53

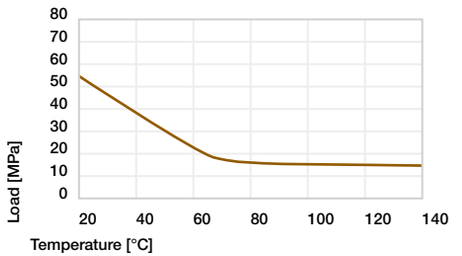

Diagram 02: Maximum recommended surface pressure of as a function of temperature (55MPa at +20°C)

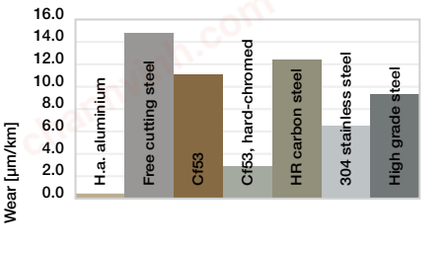

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

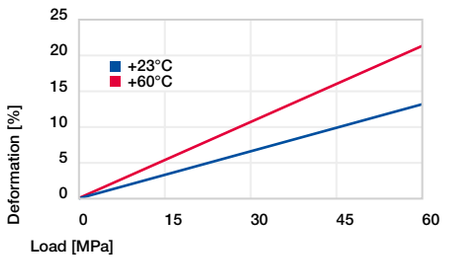

Diagram 03: Deformation under pressure and temperature

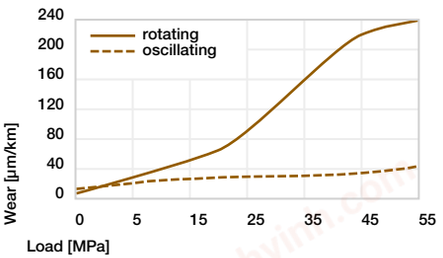

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

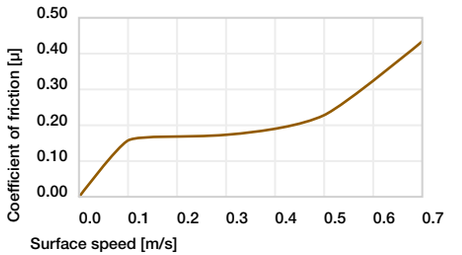

Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

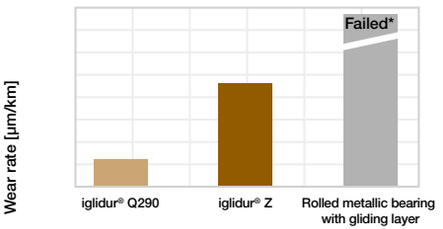

Diagram 08: Wear, pivoting applications on galvanised shafts, p >50MPa, v = 0.01m/s

* Shaft St52 galvanised. Cycle frequency 60,000. Tested with bearing diameter 20mm and 20mm length. The force in the test was 30,400N

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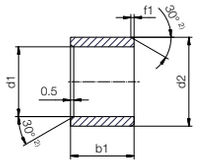
Bearing technology | Plain bearing | iglidur® Q290

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 12–30	Ø > 30
f1 [mm]	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: Q290SM-2023-20 – no minimum order quantity.
Q290 iglidur® material S Sleeve bearing M Metric 20 Inner Ø d1 23 Outer Ø d2 20 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
20.0	+0.040 +0.124	23.0	20.0	Q290SM-2023-20
25.0		28.0	30.0	Q290SM-2528-30
30.0		34.0	30.0	Q290SM-3034-30
30.0		34.0	40.0	Q290SM-3034-40
35.0	+0.050 +0.150	39.0	30.0	Q290SM-3539-30
35.0		39.0	40.0	Q290SM-3539-40
35.0		39.0	50.0	Q290SM-3539-50
40.0		44.0	40.0	Q290SM-4044-40
50.0		55.0	50.0	Q290SM-5055-50
60.0	+0.060 +0.180	65.0	60.0	Q290SM-6065-60
65.0		70.0	60.0	Q290SM-6570-60
70.0		75.0	60.0	Q290SM-7075-60
80.0		85.0	100.0	Q290SM-8085-100

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

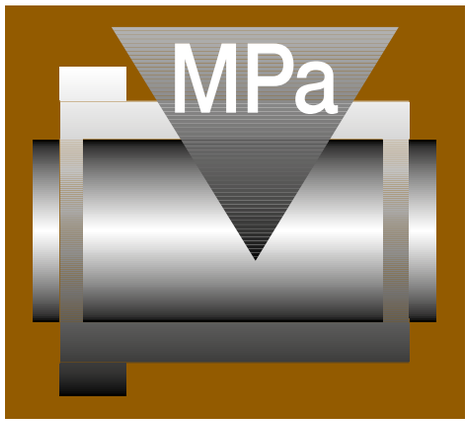
Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/Q290

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.





The heavy-duty bearing for up to 200MPa static and 140MPa dynamic

For pivoting applications under extreme loads

iglidur® TX1

When to use it?
- When very high permanent static loads occur
- For highly loaded pivoting movements
- When not only high loads but also high temperatures and media resistance are required

When not to use?
- When loads of far less than 100MPa occur
  iglidur® G, iglidur® Q2, iglidur® Q
- For rotational movements during continuous operation
  iglidur® W300, iglidur® Z, iglidur® G
- For high-temperature applications with average load levels
  iglidur® X, iglidur® J350, iglidur® H

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Bearing technology | Plain bearing | iglidur® TX1

Ø
20.0 –
80.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

The heavy-duty bearing for up to 200MPa static and 140MPa dynamic

For pivoting applications under extreme loads

Outstanding rigidity and durability especially under high radial loads during pivoting operations characterise the plain bearings in the new iglidur® TX1 series. Thanks to the closed-loop wound structure, excellent dimensional stability is achieved in cases of major jolts and impacts.

- Suitable for static loads up to 200MPa
- Wear-resistant
- High media resistance
- Lubrication-free
- Suitable for dynamic loads up to 140MPa
- Maintenance-free
- High rigidity

Typical application areas

- Agricultural engineering
- Utility and construction vehicles
- Heavy equipments

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® TX1
+120°C
200MPa

Technical data

General properties			Testing method
Density	g/cm³	2.10	
Colour		grey-green	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	0.5	
Coefficient of 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. recommended surface pressure (+20°C)	MPa	200	
Shore D hardness		94	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+120	
Max. application temperature short-term	°C	+170	
Min. application temperature	°C	–60	
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 contact resistance	Ωcm	> 1 x 10^{11}	DIN IEC 93
Surface resistance	Ω	> 1 x 10^{13}	DIN 53482

Table 01: Material properties

–60°C up to +120°C

200MPa

iglidur® TX1 plain 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.

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 vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® TX1 are resistant up to a radiation intensity of 2 · 10^2Gy.

Resistance to weathering

iglidur® TX1 plain bearings have not yet been tested for their resistance to weathering. Please consult igus® if you're planning to use them outdoors.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® TX1 plain bearings decreases. Diagram 02 shows this inverse relationship. At the short-term permitted application temperature of +170°C, the permitted surface pressure is still 100MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® TX1 at radial loads.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® TX1

Permissible surface speeds

Typical applications for iglidur® TX1 plain bearings are pivoting movements under high loads at comparatively low speeds. However, relatively high speeds are still attainable. The speeds shown in table 03 are threshold values for low bearing loads. They do not provide any indication of the wear resistance under these parameters.

Surface speed, page 44

Temperature

iglidur® TX1 is a very temperature-stable 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 plain bearings are very high over the entire temperature range. As a result, additional axial securing is usually not necessary. Although these forces remain very high, a certain decrease can be observed at temperatures above +100°C and, in some cases axial securing is therefore recommended above this temperature. 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. Surface finishes (Ra) of the shaft between 0.4 – 0.7µm are ideal. Furthermore, the coefficient of friction of iglidur® TX1 plain bearings largely depends on the speed and load. As the surface speed increases, the coefficient of friction will quickly increase as well. With increasing load, the coefficient of friction however decreases continuously.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

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 100MPa. The comparison of the wear rate during rotation and pivoting shown in Diagram 07 highlights that the strength of iglidur® TX1 lies in heavy-duty pivoting.

Shaft materials, page 52

Installation tolerances

iglidur® TX1 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. 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

Chemicals	Resistance
Alcohols	0
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	–

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.4	0.2	1.0
short-term	m/s	0.9	0.5	2.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.09 – 0.37	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing H7 [mm]		Plain bearing [mm]		Shaft h9 [mm]	
20 – 40	+0.000	+0.021	+0.020	+0.150	–0.052	+0.000
> 40 – 70	+0.000	+0.025	+0.025	+0.175	–0.062	+0.000
> 70 – 80	+0.000	+0.030	+0.050	+0.200	–0.074	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

iglidur® TX1
+120°C
200MPa

Technical data

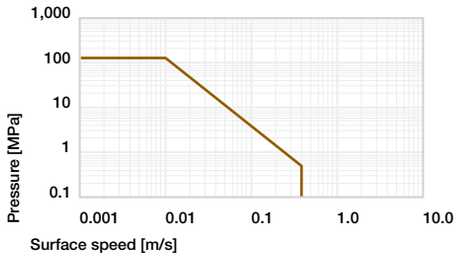

Diagram 01: Permissible pv values for iglidur® TX1 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

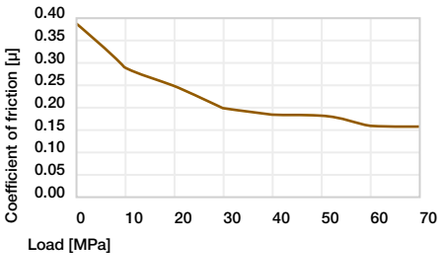

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

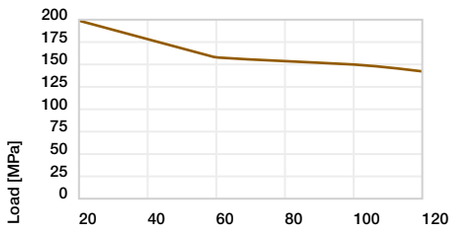

Diagram 02: Maximum recommended surface pressure of as a function of temperature (200MPa at +20°C)

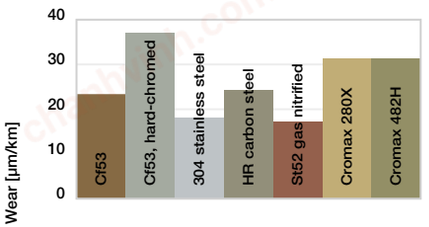

Diagram 06: Wear, rotating with different shaft materials, p = 76MPa, v = 0.01m/s

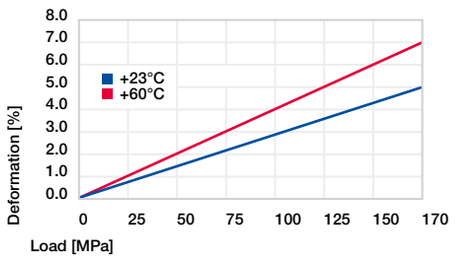

Diagram 03: Deformation under pressure and temperature

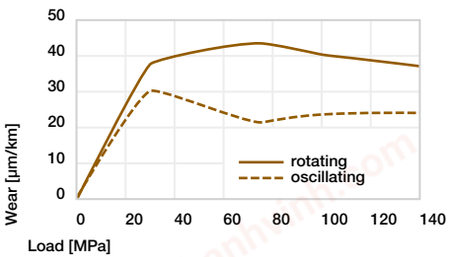

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

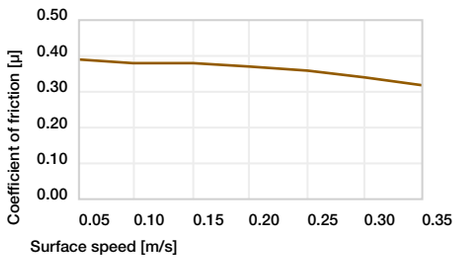

Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

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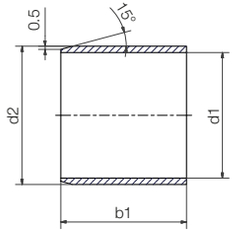
Bearing technology | Plain bearing | iglidur® TX1

Sleeve bearing (form S)





Order example: TX1SM-2025-20 – no minimum order quantity.
TX1 iglidur® material **S** Sleeve bearing **M** Metric **20** Inner Ø d1 **25** Outer Ø d2 **20** Total length b1

d1	d1 Tolerance[38]	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
20.0		25.0	20.0	**TX1SM-2025-20**
20.0		25.0	30.0	**TX1SM-2025-30**
20.0		25.0	40.0	**TX1SM-2025-40**
20.0		30.0	30.0	**TX1SM-2030-30**
25.0		30.0	20.0	**TX1SM-2530-20**
25.0	+0.020 +0.150	30.0	30.0	**TX1SM-2530-30**
25.0		30.0	40.0	**TX1SM-2530-40**
30.0		35.0	30.0	**TX1SM-3035-30**
30.0		35.0	40.0	**TX1SM-3035-40**
30.0		40.0	40.0	**TX1SM-3040-40**
40.0		45.0	40.0	**TX1SM-4045-40**
40.0		50.0	50.0	**TX1SM-4050-50**
50.0		55.0	50.0	**TX1SM-5055-50**
50.0	+0.025 +0.175	60.0	60.0	**TX1SM-5060-60**
60.0		65.0	60.0	**TX1SM-6065-60**
60.0		70.0	80.0	**TX1SM-6070-80**
70.0		75.0	60.0	**TX1SM-7075-60**
70.0		80.0	100.0	**TX1SM-7080-100**
80.0	+0.050 +0.200	85.0	100.0	**TX1SM-8085-100**
80.0		90.0	100.0	**TX1SM-8090-100**

[38] After press-fit of the bearing in a housing with nominal dimension

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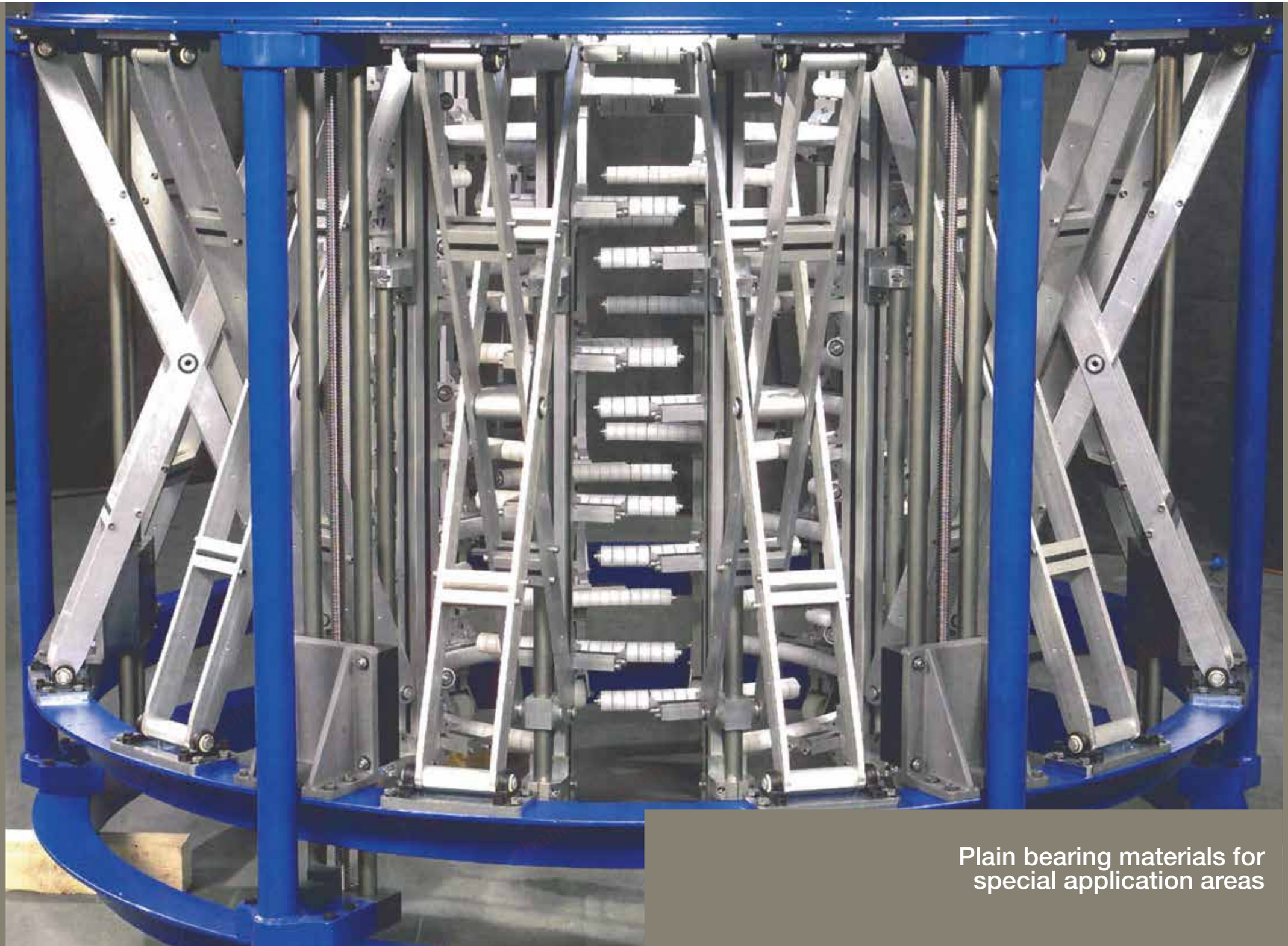

Plain bearing materials for special application areas

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Plain bearing materials for special application areas

This group brings together the iglidur® materials for very special cases. Those who have not yet found a suitable bearing, will find it here.
Electrical conductivity, free from PTFE and silicone or fast rotation under water: one iglidur® material for all requirements.

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert



iglidur® F
Electrically conductive

Temperature [°C] [123]	+140	– +
Surface pressure [MPa] [124]	105	– +
Coefficient of friction [µ] [125]	0.37	– +
Wear [µm/km] [125]	1.00	– +
Price index		– +



iglidur® F2
ESD-compatible all-rounder:

Temperature [°C] [123]	+120	– +
Surface pressure [MPa] [124]	47	– +
Coefficient of friction [µ] [125]	0.16	– +
Wear [µm/km] [125]	1.53	– +
Price index		– +



iglidur® H4
The automotive standard

Temperature [°C] [123]	+200	– +
Surface pressure [MPa] [124]	65	– +
Coefficient of friction [µ] [125]	0.21	– +
Wear [µm/km] [125]	2.10	– +
Price index		– +



iglidur® UW
For fast rotation under water

Temperature [°C] [123]	+90	– +
Surface pressure [MPa] [124]	40	– +
Coefficient of friction [µ] [125]	0.24	– +
Wear [µm/km] [125]	1.80	– +
Price index		– +



iglidur® J UV
For continuous direct sunlight

Temperature [°C] [123]	+90	– +
Surface pressure [MPa] [124]	35	– +
Coefficient of friction [µ] [125]	0.19	– +
Wear [µm/km] [125]	0.13	– +
Price index		– +

[123] Max. long-term application temperature [124] Max. recommended surface pressure at +20°C [125] Best combination for p = 1 MPa, v = 0.3 m/s, rotating



iglidur® N54
The biopolymer

Temperature [°C] [123]	+80	– +
Surface pressure [MPa] [124]	36	– +
Coefficient of friction [µ] [125]	0.14	– +
Wear [µm/km] [125]	0.20	– +
Price index		– +



iglidur® G V0
Low-cost all-rounder for fire protection

Temperature [°C] [123]	+130	– +
Surface pressure [MPa] [124]	75	– +
Coefficient of friction [µ] [125]	0.20	– +
Wear [µm/km] [125]	2.10	– +
Price index		– +



iglidur® J2
Versatile and cost-effective

Temperature [°C] [123]	+90	– +
Surface pressure [MPa] [124]	46	– +
Coefficient of friction [µ] [125]	0.18	– +
Wear [µm/km] [125]	5.00	– +
Price index		– +



iglidur® AB
The first antibacterial iglidur® plain bearing

Temperature [°C] [123]	+70	– +
Surface pressure [MPa] [124]	25	– +
Coefficient of friction [µ] [125]	0.18	– +
Wear [µm/km] [125]	1.00	– +
Price index		– +



iglidur® RW370
For the rail industry, complies with DIN EN 45545 HL3, R22/R23

Temperature [°C] [123]	+170	– +
Surface pressure [MPa] [124]	75	– +
Coefficient of friction [µ] [125]	0.13	– +
Wear [µm/km] [125]	1.15	– +
Price index		– +



iglidur® B
The variable one

Temperature [°C] [123]	+100	– +
Surface pressure [MPa] [124]	40	– +
Coefficient of friction [µ] [125]	0.27	– +
Wear [µm/km] [125]	1.72	– +
Price index		– +



iglidur® C
Free from PTFE and silicone

Temperature [°C] [123]	+90	– +
Surface pressure [MPa] [124]	40	– +
Coefficient of friction [µ] [125]	0.23	– +
Wear [µm/km] [125]	1.73	– +
Price index		– +

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Electrically conductive
Pressure-resistant
iglidur® F

When to use it?

- When the bearing should be electrically conductive
- For high static loads

When not to use?

- When mechanical reaming of the bore is necessary
  iglidur® M250
- When the highest wear resistance is required
  iglidur® W300
- When very low coefficient of friction in dry operation is required
  iglidur® J
- For underwater applications
  iglidur® H370
- When a universal plain bearing is required
  iglidur® G

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Bearing technology | Plain bearing | iglidur® F

Ø
2.0 – 70.0mm



Electrically conductive
Pressure-resistant

Outstanding rigidity and hardness as well as high conductivity: iglidur® F plain bearings can only be used in dry operations to a limited extent, but offer their fully mechanical benefits when lubricated with oil and grease.

- Electrically conductive
- High compressive strength
- High temperature resistance
- High pv values
- High chemical resistance

Typical application areas

- Textile industry
- Automotive industry

Descriptive technical specifications			
Wear resistance at +23°C	–	■■	+
Wear resistance at +90°C	–	■■	+
Wear resistance at +150°C	–	■	+
Low coefficient of friction	–	■■	+
Low moisture absorption	–	■	+
Wear resistance under water	–	■	+
High media resistance	–	■■■	+
Resistant to edge pressures	–	■■■■	+
Suitable for shock and impact loads	–	■■■	+
Resistant to dirt	–	■■■	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

iglidur® F
+140°C
105MPa

Technical data

General properties			Testing method
Density	g/cm³	1.25	
Colour		black	
Max. moisture absorption at +23°C and 50% r.h.	% weight	1.8	DIN 53495
Max. moisture absorption	% weight	8.4	
Coefficient of friction, dynamic, against steel	µ	0.10 – 0.39	
pv value, max. (dry)	MPa · m/s	0.34	
Mechanical properties			
Flexural modulus	MPa	11,600	DIN 53457
Flexural strength at +20°C	MPa	260	DIN 53452
Compressive strength	MPa	98	
Max. recommended surface pressure (+20°C)	MPa	105	
Shore D hardness		84	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+140	
Max. application temperature short-term	°C	+180	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.65	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	12	DIN 53752
Electrical properties[5]			
Specific contact resistance	Ωcm	$< 10^3$	DIN IEC 93
Surface resistance	Ω	$< 10^2$	DIN 53482

[5] The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

Table 01: Material properties

–40°C up to +140°C

105MPa

HB

RoHS-II

ISO 3547-1

When plain bearings need to be electrically conductive, especially in applications that should keep out static, iglidur® F is the right choice. Moreover, the iglidur® F plain bearings are extremely pressure-resistant. At room temperature, they could be statically loaded up to 105MPa.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® F plain bearings is approximately 1.8% weight. The saturation limit in water is 8.4% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® F bearings.

Radiation resistance

Plain bearings made from iglidur® F are resistant up to a radiation intensity of $3 \cdot 10^2$Gy.

Resistance to weathering

iglidur® F plain bearings have limited resistance to weathering. The material properties are affected. Discoloration occurs. Practical tests under real application conditions are recommended.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® F plain bearings decreases. Diagram 02 shows this inverse relationship. However, at the long-term maximum temperature of +140°C the permissible surface pressure is around 50MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this. Diagram 03 shows the elastic deformation of iglidur® F at radial loads. At the maximum recommended surface pressure of 105MPa at room temperature the deformation is less than 3%. A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.

Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® F

Permissible surface speeds

The maximum permitted surface speeds are based on the operation period and the type of motion. A plain bearing is the most stressed in long-term rotating motions. Here the maximum speed for the iglidur® F plain bearing is 0.8m/s. The speeds stated in table 03 are limit values for the lowest bearing loads. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 44

Temperature

The ambient temperatures strongly influence the properties of plain bearings. With increasing temperatures, the compressive strength of iglidur® F plain bearings decreases. The wear also increases. For temperatures over +105°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

In dry operation, the coefficient of friction of iglidur® F plain bearings is not as favourable as those of many other iglidur® materials. However iglidur® plain bearings can be lubricated without any problems, and iglidur® F bearings attain excellent results among the lubricated iglidur® bearings.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagrams 06 and 07 show the test results of iglidur® F plain bearings running against various shaft materials. In the lowest load range, the hard-chromed shafts prove to be the most suitable shaft in rotating applications with iglidur® F bearings.

Shaft materials, page 52

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

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to –
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	+ up to 0

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.8	0.6	3.0
short-term	m/s	1.5	1.1	6.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.10 – 0.39	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

	Housing		Plain bearing		Shaft	
Ø d1 [mm]	H7 [mm]		D11 [mm]		h9 [mm]	
0 – 3	+0.000	+0.010	+0.020	+0.080	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.030	+0.105	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.040	+0.130	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.050	+0.160	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.065	+0.195	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.080	+0.240	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.100	+0.290	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.120	+0.340	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.145	+0.395	–0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

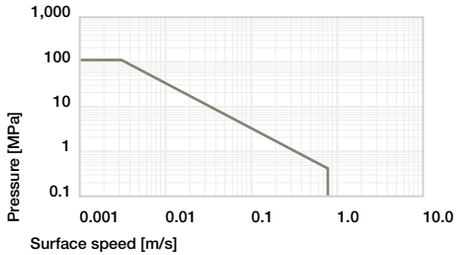

Diagram 01: Permissible pv values for iglidur® F plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

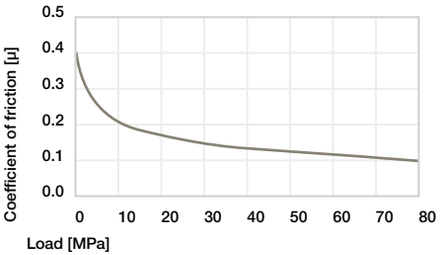

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

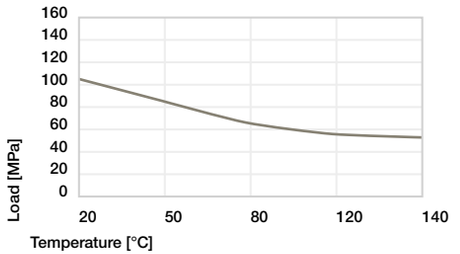

Diagram 02: Maximum recommended surface pressure as a function of temperature (105MPa at +20°C)

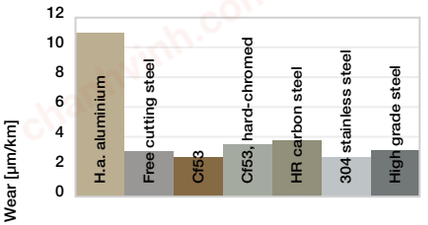

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

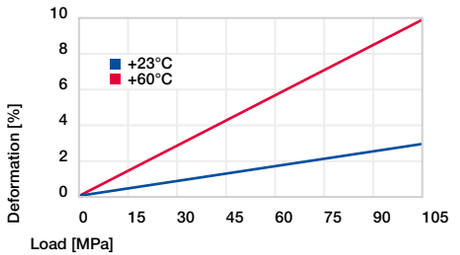

Diagram 03: Deformation under pressure and temperature

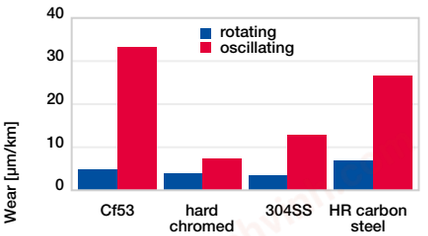

Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

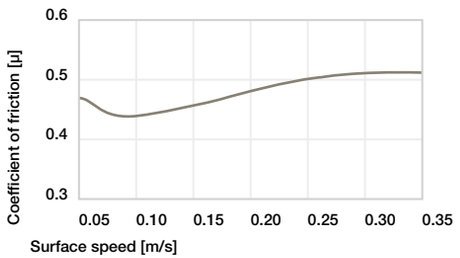

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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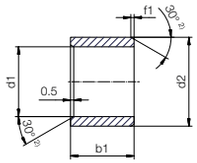
Bearing technology | Plain bearing | iglidur® F

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: FSM-0203-03 – no minimum order quantity.
F iglidur® material S Sleeve bearing M Metric 02 Inner Ø d1 03 Outer Ø d2 03 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
2.0	+0.020 +0.080	3.5	3.0	FSM-0203-03
3.0		4.5	3.0	FSM-0304-03
4.0	+0.030 +0.105	5.5	4.0	FSM-0405-04
5.0		7.0	5.0	FSM-0507-05
5.0		7.0	8.0	FSM-0507-08
6.0		8.0	6.0	FSM-0608-06
6.0		8.0	8.0	FSM-0608-08
6.0		8.0	10.0	FSM-0608-10
6.0		8.0	13.8	FSM-0608-13
7.0	+0.040 +0.130	9.0	10.0	FSM-0709-10
7.0		9.0	12.0	FSM-0709-12
8.0		10.0	8.0	FSM-0810-08
8.0		10.0	10.0	FSM-0810-10
8.0		10.0	15.0	FSM-0810-15
10.0		12.0	6.0	FSM-1012-06
10.0		12.0	9.0	FSM-1012-09
10.0		12.0	10.0	FSM-1012-10
12.0	+0.050 +0.160	14.0	10.0	FSM-1214-10
12.0		14.0	15.0	FSM-1214-15
13.0		15.0	20.0	FSM-1315-20
14.0		16.0	15.0	FSM-1416-15
15.0		17.0	15.0	FSM-1517-15
15.0		17.0	20.0	FSM-1517-20
16.0		18.0	15.0	FSM-1618-15

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
18.0	+0.050 +0.160	20.0	12.0	FSM-1820-12
18.0		20.0	15.0	FSM-1820-15
18.0		20.0	20.0	FSM-1820-20
20.0	+0.065 +0.195	22.0	14.5	FSM-2022-14
20.0		22.0	20.0	FSM-2022-20
20.0		23.0	15.0	FSM-2023-15
20.0		23.0	20.0	FSM-2023-20
22.0		25.0	15.0	FSM-2225-15
25.0		28.0	20.0	FSM-2528-20
28.0		32.0	20.0	FSM-2832-20
28.0		32.0	30.0	FSM-2832-30
30.0		34.0	20.0	FSM-3034-20
30.0		34.0	30.0	FSM-3034-30
30.0		34.0	40.0	FSM-3034-40
32.0	+0.080 +0.240	36.0	30.0	FSM-3236-30
35.0		39.0	30.0	FSM-3539-30
35.0		39.0	40.0	FSM-3539-40
40.0		44.0	30.0	FSM-4044-30
40.0		44.0	50.0	FSM-4044-50
45.0		50.0	50.0	FSM-4550-50
50.0		55.0	40.0	FSM-5055-40
55.0	+0.100	60.0	50.0	FSM-5560-50
60.0	+0.290	65.0	60.0	FSM-6065-60

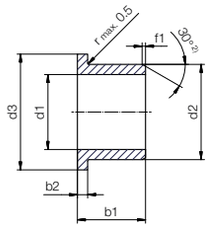
[3] After press-fit. *Testing methods, page 57*

iglidur® F
+140°C
105MPa

Bearing technology | Plain bearing | iglidur® F

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: FFM-0405-04 – no minimum order quantity.
F iglidur® material F Flange bearing M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
4.0	+0.030 +0.105	5.5	9.5	4.0	0.75	FFM-0405-04
4.0		5.5	9.5	6.0	0.75	FFM-0405-06
5.0		7.0	11.0	5.0	1.00	FFM-0507-05
6.0		8.0	12.0	6.0	1.00	FFM-0608-06
6.0		8.0	12.0	8.0	1.00	FFM-0608-08
8.0	+0.040 +0.130	10.0	15.0	6.0	1.00	FFM-0810-06
8.0		10.0	15.0	9.0	1.00	FFM-0810-09
10.0		12.0	18.0	6.0	1.00	FFM-1012-06
10.0		12.0	18.0	8.0	1.00	FFM-1012-08
10.0		12.0	18.0	9.0	1.00	FFM-1012-09
10.0		12.0	18.0	15.0	1.00	FFM-1012-15
10.0		12.0	18.0	18.0	1.00	FFM-1012-18
12.0	+0.050 +0.160	14.0	20.0	9.0	1.00	FFM-1214-09
12.0		14.0	20.0	12.0	1.00	FFM-1214-12
14.0		16.0	22.0	12.0	1.00	FFM-1416-12
14.0		16.0	22.0	17.0	1.00	FFM-1416-17
15.0		17.0	23.0	12.0	1.00	FFM-1517-12

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
15.0	+0.050 +0.160	17.0	23.0	17.0	1.00	FFM-1517-17
16.0		18.0	24.0	17.0	1.00	FFM-1618-17
18.0		20.0	26.0	12.0	1.00	FFM-1820-12
18.0		20.0	26.0	17.0	1.00	FFM-1820-17
20.0	+0.065 +0.195	23.0	30.0	21.0	1.50	FFM-2023-21
25.0		28.0	35.0	21.0	1.50	FFM-2528-21
30.0		34.0	42.0	26.0	2.00	FFM-3034-26
32.0	+0.080 +0.240	36.0	45.0	26.0	2.00	FFM-3236-26
35.0		39.0	47.0	6.0	2.00	FFM-3539-06
35.0		39.0	47.0	16.0	2.00	FFM-3539-16
35.0		39.0	47.0	26.0	2.00	FFM-3539-26
40.0		44.0	52.0	30.0	2.00	FFM-4044-30
40.0		44.0	52.0	40.0	2.00	FFM-4044-40
45.0		50.0	58.0	50.0	2.00	FFM-4550-50
50.0		55.0	63.0	10.0	2.00	FFM-5055-10
50.0		55.0	63.0	40.0	2.00	FFM-5055-40
60.0	+0.100	65.0	73.0	40.0	2.00	FFM-6065-40
70.0	+0.290	75.0	83.0	40.0	2.00	FFM-7075-40

[3] After press-fit. *Testing methods, page 57*

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ESD-compatible all-rounder:
Electrically conductive
iglidur® F2

When to use it?

- When the bearing should be electrically discharging
- When a universal plain bearing is required

When not to use?

- When a universal plain bearing without electrostatic discharge capacity is required
  iglidur® G, iglidur® P
- For underwater use
  iglidur® H370
- When the highest wear resistance is required
  iglidur® J, iglidur® W300

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Bearing technology | Plain bearing | iglidur® F2

Ø
5.0 – 20.0mm



Also available as:

Bar stock, round bar
Page 684

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

ESD-compatible all-rounder:
Electrically conductive

iglidur® F2 helps to prevent the build-up of electrostatic charges. Good resistance to media and temperature, suitable even in wet conditions due to low moisture absorption and good universal coefficient of wear pave the way for a wide range of applications.

- Used to prevent electro-static charges
- Suitable for wet environments
- Lubrication-free
- Maintenance-free

Typical application areas

- Mechanical engineering
- Jig construction
- Industrial handling

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® F2
+120°C
47MPa

Technical data

General properties			Testing method
Density	g/cm³	1.52	
Colour		black	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	0.4	
Coefficient of friction, dynamic, against steel	µ	0.16 – 0.22	
pv value, max. (dry)	MPa · m/s	0.31	
Mechanical properties			
Flexural modulus	MPa	7,418	DIN 53457
Flexural strength at +20°C	MPa	93	DIN 53452
Compressive strength	MPa	61	
Max. recommended surface pressure (+20°C)	MPa	47	
Shore D hardness		72	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+120	
Max. application temperature short-term	°C	+165	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.61	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	5	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$< 10^9$	DIN IEC 93
Surface resistance	Ω	$< 10^9$	DIN 53482

Table 01: Material properties

–40°C up to +120°C

47MPa

HB

RoHS-II

ISO 3547-1

The prevention of electrostatic charge is an important requirement in many application areas. At the same time other technical application parameters such as wear resistance, media and temperature resistance, suitability in a wet environment etc. cannot be neglected. iglidur® F2 with its wide range of properties constitutes another universal bearing for numerous "ESD-suitable" applications.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® F2 plain bearings is approximately 0.2% weight. The saturation limit in water is 0.4% weight.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® F2 bearings.

Radiation resistance

Plain bearings made from iglidur® F2 are resistant up to a radiation intensity of $3 \cdot 10^2$Gy.

Resistance to weathering

iglidur® F2 plain bearings are resistant to weathering. The material properties are slightly affected. Discoloration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® F2 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® F2 at radial loads. A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® F2

Permissible surface speeds

The maximum permitted surface speeds are based on the operation period and the type of motion. A plain bearing is the most stressed in long-term rotating motions. Here the maximum speed for the iglidur® F2 plain bearing is 0.8m/s.In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 44

Temperature

The ambient temperatures strongly influence the properties of plain bearings. With increasing temperatures, the compressive strength of iglidur® F2 plain bearings decreases. Diagram 02 shows this inverse relationship. For temperatures over +70°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

Coefficient of friction and wear resistance are dependent on the application parameters (diagrams 04 and 05).

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagram 06 shows the test results of iglidur® F2 plain bearings running against various shaft materials. In the lower region of the load, free cutting steel and hard-anodised aluminium shafts, as well as HR carbon steel and hard-chromed steel shafts prove to be the most favourable in rotating applications with iglidur® F2 plain bearings with respect to wear. Diagram 07 shows significantly less wear in rotation compared to pivoting movements over the entire load range.

Shaft materials, page 52

Installation tolerances

iglidur® F2 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the E10 tolerances.

Testing methods, page 57

Chemicals	Resistance
Alcohols	+
Diluted acids	0
Diluted alkalines	–
Fuels	+
Greases, oils without additives	+
Hydrocarbons	–
Strong acids	–
Strong alkalines	–

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.8	0.7	3.0
short-term	m/s	1.4	1.1	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.16 – 0.22	0.01	0.05	0.03

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

	Housing		Plain bearing		Shaft	
Ø d1 [mm]	H7 [mm]		E10 [mm]		h9 [mm]	
0 – 3	+0.000	+0.010	+0.014	+0.054	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.020	+0.068	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.025	+0.083	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.032	+0.102	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.040	+0.124	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.050	+0.150	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.060	+0.180	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.072	+0.212	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.085	+0.245	–0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

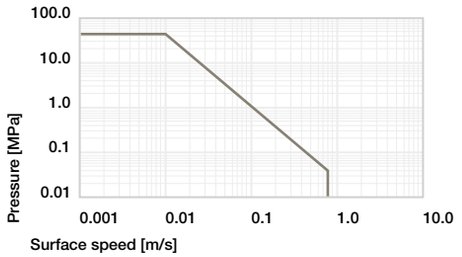

Diagram 01: Permissible pv values for iglidur® F2 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

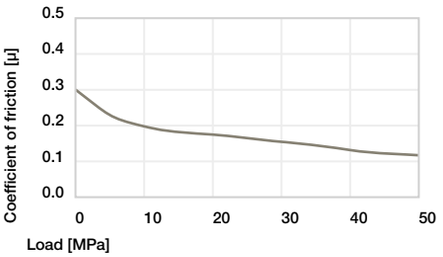

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

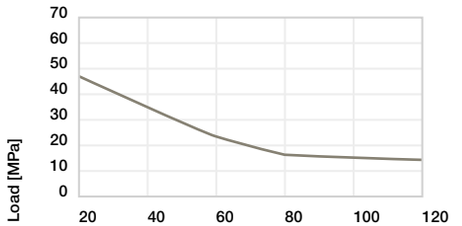

Diagram 02: Maximum recommended surface pressure as a function of temperature (47MPa at +20°C)

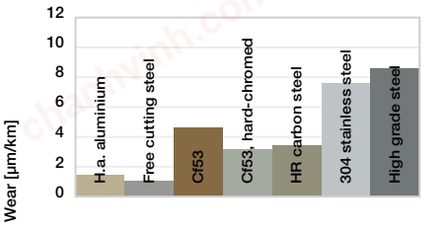

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

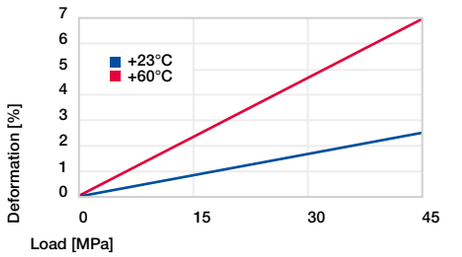

Diagram 03: Deformation under pressure and temperature

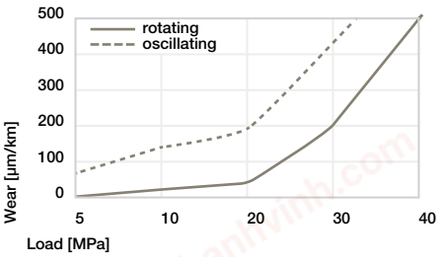

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

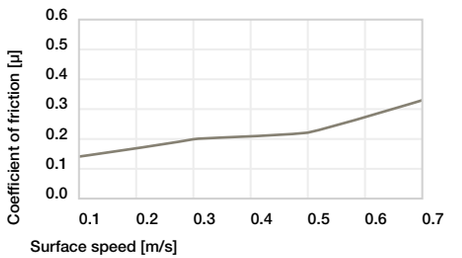

Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

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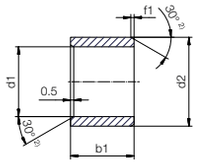
Bearing technology | Plain bearing | iglidur® F2

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30
f1 [mm]	0.3	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: F2SM-0507-10 – no minimum order quantity.
F2 iglidur® material S Sleeve bearing M Metric 05 Inner Ø d1 07 Outer Ø d2 10 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
5.0	+0.020 +0.068	7.0	10.0	F2SM-0507-10
6.0		8.0	6.0	F2SM-0608-06
7.0	+0.025 +0.083	9.0	10.0	F2SM-0709-10
8.0		10.0	10.0	F2SM-0810-10
10.0		12.0	10.0	F2SM-1012-10
10.0		12.0	15.0	F2SM-1012-15
12.0	+0.032 +0.102	14.0	12.0	F2SM-1214-12
16.0		18.0	15.0	F2SM-1618-15
20.0	+0.040 +0.124	23.0	20.0	F2SM-2023-20

[3] After press-fit. *Testing methods, page 57*

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Detailed information about delivery time online.
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Including delivery times, prices, online tools
www.igus-asean.com/F2

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

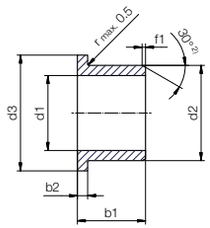
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® F2
+120°C
47MPa

Bearing technology | Plain bearing | iglidur® F2

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30
f1 [mm]	0.3	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: F2FM-0608-06 – no minimum order quantity.
F2 iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	F2FM-0608-06
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	F2FM-0810-10
10.0		12.0	18.0	10.0	1.00	F2FM-1012-10
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	F2FM-1214-12
16.0		18.0	24.0	17.0	1.00	F2FM-1618-17
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	F2FM-2023-21

[3] After press-fit. *Testing methods, page 57*

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Online ordering
Including delivery times, prices, online tools
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Ordering note
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Discount scaling		
1 – 9	50 – 99	500 – 999
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No minimum order value.
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Free shipping within local Regular Service Area.

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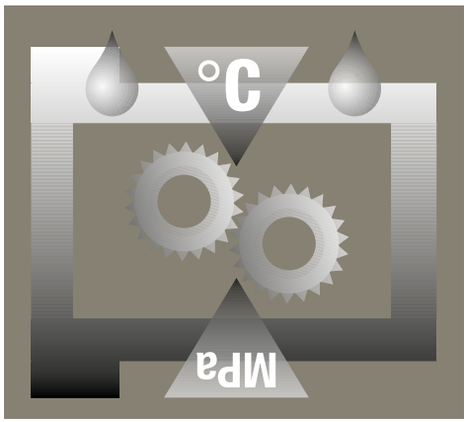

The automotive standard

Up to +200°C, media-resistant **iglidur® H4**

When to use it?

- For application with fuels, oils, etc.
- When high wear resistance is required
- For low coefficient of friction
- For high temperature resistance from –40°C to +200°C
- For high chemical resistance

When not to use?

- For underwater use
  iglidur® H370
- When a cost-effective universal plain bearing is required
  iglidur® G
- When a temperature and media-resistant plain bearing for static applications is required
  iglidur® H2

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Bearing technology | Plain bearing | iglidur® H4

Ø
4.0 – 40.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

The automotive standard
Up to +200°C, media-resistant

Cost-effective high-temperature material with good dry-operation properties and "engine compartment resistance".

- Low coefficient of friction
- High wear resistance
- Temperature-resistant from –40°C to +200°C
- High chemical resistance
- Lubrication-free
- Maintenance-free

Typical application areas

- Automotive industry
- Automation
- Packaging

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

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Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® H4
+200°C
65MPa

Technical data

General properties			Testing method
Density	g/cm³	1.79	
Colour		brown	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.2	
Coefficient of friction, dynamic, against steel	µ	0.08 – 0.25	
pv value, max. (dry)	MPa · m/s	0.70	
Mechanical properties			
Flexural modulus	MPa	7,500	DIN 53457
Flexural strength at +20°C	MPa	120	DIN 53452
Compressive strength	MPa	50	
Max. recommended surface pressure (+20°C)	MPa	65	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+200	
Max. application temperature short-term	°C	+240	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	5	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

–40°C up to +200°C

65MPa

V-0

RoHS-II

ISO 3547-1

Table 01: Material properties

iglidur® H4 plain bearings stand for high carrying capacity, good abrasion resistance and good temperature resistance, besides the obvious economic factors. Temperatures up to +200°C, permitted surface pressure up to 65MPa, and excellent chemical resistance are only some of the essential attributes. Solid lubricants lower the coefficient of friction and support the wear resistance, which was considerably improved compared to the likewise cost-effective iglidur® H2 plain bearings. iglidur® H4 bearings are self-lubricating and suitable for all motions.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® H4 plain bearings is below 0.1% weight. The saturation limit in water is 0.2% weight. iglidur® H4 is therefore an ideal material for wet environments.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

Plain bearings made from iglidur® H4 are resistant up to a radiation intensity of $2 \cdot 10^2$Gy.

Resistance to weathering

iglidur® H4 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolorations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H4 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® H4 at radial loads.

Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® H4

Permissible surface speeds

In contrast to the similarly cost-effective iglidur® H2 plain bearings, iglidur® H4 has an essentially favourable coefficient of friction. This accounts for the higher permitted surface speeds that can be attained with these bearings. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.

Surface speed, page 44

Temperature

iglidur® H4 is a temperature-resistant material. With increasing temperatures, the compressive strength of iglidur® H4 plain bearings decreases. When considering temperatures, the additional frictional heat in the bearing system must be taken into account. For temperatures over +110°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

The coefficient of friction of the iglidur® H4 plain bearings is very low (diagrams 04 and 05). Please note that a sliding surface with a rough surface finish will increase the friction.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

With many of the suitable shaft materials, iglidur® H4 is the economical alternative to many other high-temperature bearings. The important thing is however the selection of the suitable shaft material. It cannot be generally stated that iglidur® H4 is suitable for use with hard or soft shafts. Tests have however shown that pivoting applications yield better wear data. In rotating applications, the wear increases markedly from 10MPa.

Shaft materials, page 52

Installation tolerances

iglidur® H4 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 57

Chemicals	Resistance
Alcohols	+
Diluted acids	+ up to 0
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	0 up to –
Strong alkalines	+

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.0	0.7	1.0
short-term	m/s	1.5	1.1	2.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.08 – 0.25	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing H7 [mm]		Plain bearing F10 [mm]		Shaft h9 [mm]	
0 – 3	+0.000	+0.010	+0.006	+0.046	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.010	+0.058	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.013	+0.071	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.016	+0.086	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.020	+0.104	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.025	+0.125	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.030	+0.150	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.036	+0.176	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

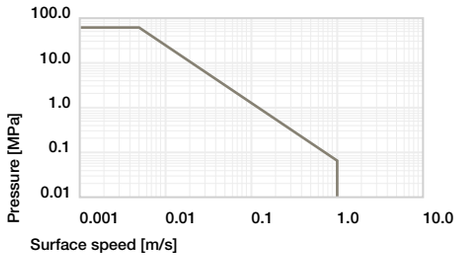

Diagram 01: Permissible pv values for iglidur® H4 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

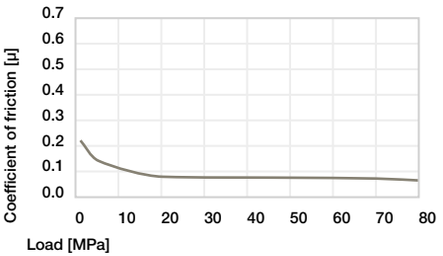

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

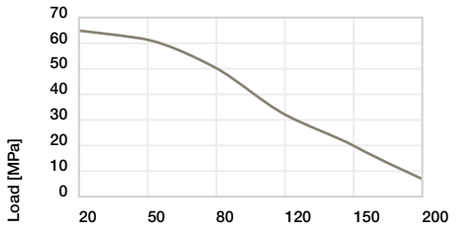

Diagram 02: Maximum recommended surface pressure as a function of temperature (65MPa at +20°C)

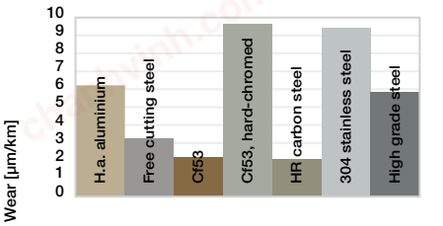

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

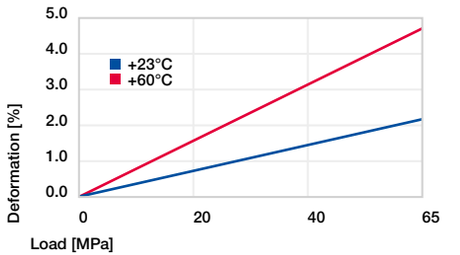

Diagram 03: Deformation under pressure and temperature

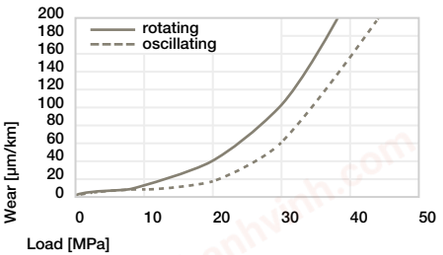

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

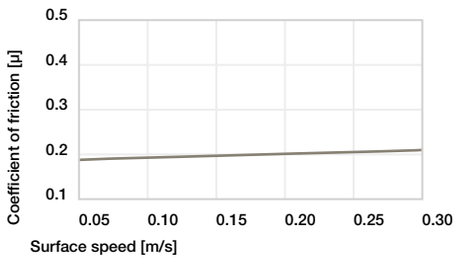

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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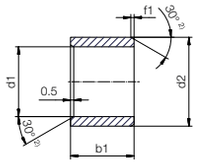
Bearing technology | Plain bearing | iglidur® H4

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: H4SM-0405-04 **– no minimum order quantity.**
H4 iglidur® material S Sleeve bearing M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
4.0	+0.010 +0.058	5.5	4.0	**H4SM-0405-04**
6.0		8.0	8.0	**H4SM-0608-08**
8.0	+0.013 +0.071	10.0	10.0	**H4SM-0810-10**
8.0		10.0	20.0	**H4SM-0810-20**
16.0	+0.016 +0.086	18.0	20.0	**H4SM-1618-20**
18.0		20.0	15.0	**H4SM-1820-15**
20.0	+0.020 +0.104	22.0	15.0	**H4SM-2022-15**
39.0	+0.025 +0.125	43.0	40.0	**H4SM-3943-40**

[3] After press-fit. *Testing methods, page 57*

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Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/H4

Ordering note
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Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

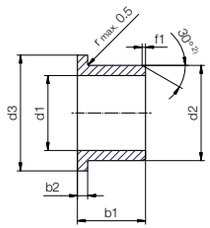
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® H4
+200°C
65MPa

Bearing technology | Plain bearing | iglidur® H4

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: H4FM-0405-04 **– no minimum order quantity.**
H4 iglidur® material F Flange bearing M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
4.0	+0.010 +0.058	5.5	9.5	4.0	0.75	**H4FM-0405-04**
6.0		8.0	12.0	8.0	1.00	**H4FM-0608-08**
6.0		10.0	12.0	20.0	1.00	**H4FM-060810-20**
8.0	+0.013 +0.071	10.0	15.0	10.0	1.00	**H4FM-0810-10**
10.0		12.0	18.0	5.0	1.00	**H4FM-1012-05**
10.0		12.0	18.0	12.0	1.00	**H4FM-1012-12**
10.0		12.0	18.0	25.0	1.00	**H4FM-101218-25**
12.0	+0.016 +0.086	14.0	20.0	12.0	1.00	**H4FM-1214-12**
15.0		17.0	23.0	12.0	1.00	**H4FM-1517-12**
16.0		18.0	24.0	17.0	1.00	**H4FM-1618-17**
18.0		20.0	26.0	17.0	1.00	**H4FM-1820-17**
20.0	+0.020 +0.104	23.0	30.0	21.5	1.50	**H4FM-2023-21**
25.0		28.0	35.0	21.5	1.50	**H4FM-2528-21**
30.0		34.0	40.0	30.0	2.00	**H4FM-3034-30**
40.0	+0.030 +0.150	44.0	52.0	40.0	2.00	**H4FM-4044-40**

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/H4

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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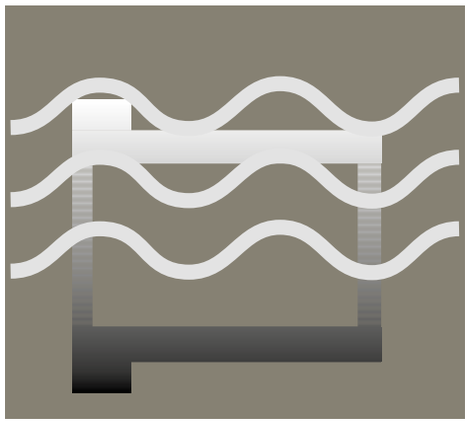

For fast rotation under water

Extreme wear resistance in liquid under continuous operation

iglidur® UW

When to use it?

- For underwater applications and in liquid media
- For low loads
- For high rotational speeds
- For extreme wear resistance in media-lubricated continuous operation

When not to use?

- When continuous operating temperatures are higher than +90°C
  iglidur® UW500
- When high loads occur
  iglidur® H370, iglidur® UW500, iglidur® X
- When only dry operation is feasible
  iglidur® J

chanhvinh.com

Bearing technology | Plain bearing | iglidur® UW

Ø
3.0 – 20.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

For fast rotation under water

Extreme wear resistance in liquid under continuous operation

The best iglidur® plain bearing for underwater applications. Extremely wear-resistant under water, tested and maintenance-free. The first choice for pumping applications.

- Suitable for underwater applications
- For fast and constant rotation
- Long service life
- Lubrication-free
- Maintenance-free

Typical application areas

- Fluid technology
- Pumps

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® UW
+90°C
40MPa

Technical data

General properties			Testing method
Density	g/cm³	1.52	
Colour		black	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption[6]	% weight	0.8	
Coefficient of friction, dynamic, against steel	µ	0.15 – 0.35	
pv value, max. (dry)	MPa · m/s	0.11	
Mechanical properties			
Flexural modulus	MPa	9,600	DIN 53457
Flexural strength at +20°C	MPa	90	DIN 53452
Compressive strength	MPa	70	
Max. recommended surface pressure (+20°C)	MPa	40	
Shore D hardness		78	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+110	
Min. application temperature	°C	–50	
Thermal conductivity	W/m · K	0.60	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	6	DIN 53752
Electrical properties[5]			
Specific contact resistance	Ωcm	$< 10^5$	DIN IEC 93
Surface resistance	Ω	$< 10^5$	DIN 53482

[5] The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

[6] All results were obtained under laboratory conditions with demineralised water. For application with direct water contact, we recommend tests under real application conditions.

Table 01: Material properties

–50°C up to +90°C

40MPa

HB

RoHS-II

ISO 3547-1

iglidur® UW was developed for underwater applications in which the maximum temperatures are lower than +100°C. For application temperatures above this limit, the plain bearings made from iglidur® UW500 are available. Though iglidur® UW was developed for application in liquids, it is also suitable for dry operation. This one is particularly important in applications that call for both dry and wet operations. These applications can be seen often in practice. The features of the bearings made from iglidur® UW described in this section apply to the dry operation. Unless it is expressly mentioned otherwise.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® UW plain bearings is approximately 0.2% weight. 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.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® UW are resistant up to a radiation intensity of $3 \cdot 10^2$Gy.

Resistance to weathering

iglidur® UW plain bearings have limited resistance to weathering. The material properties are affected. Discoloration occurs. Practical tests under real application conditions are recommended.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® UW plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® UW at radial loads. At the maximum recommended surface pressure of 40MPa the deformation is less than 1%.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® UW

Permissible surface speeds

iglidur® UW is very good in both wet and dry operation. Due to hydrodynamic lubrication at high speeds, surface speeds far above 2m/s can be achieved. In dry operation the iglidur® UW plain bearings can be used up to 1.5m/s short-term.

Surface speed, page 44

Temperature

As stated earlier, iglidur® UW plain bearings are required for use in the low temperature range. As the liquid usually dissipates heat in underwater applications the temperature of the liquid is very important. For temperatures over +80°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

The surface finish of the shafts should not be extremely smooth in order to prevent a high adhesion effect and the related increase of the coefficient of friction. Please contact us for the specifications of shaft surface finishes in underwater applications.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagrams 06 and 07 show the test results of iglidur® UW plain bearings running against various shaft materials. For low loads with rotation, the combinations achieve the best coefficient of wear with high grade steel and 304 stainless steel. The conditions shift with increasing loads. It is also important to note that the wear rate increases significantly from loads > 5MPa.

Shaft materials, page 52

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

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to –
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	+ up to 0

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.5	0.4	2.0
short-term	m/s	1.5	1.1	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.15 – 0.35	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing H7 [mm]		Plain bearing E10 [mm]		Shaft h9 [mm]	
0 – 3	+0.000	+0.010	+0.014	+0.054	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.020	+0.068	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.025	+0.083	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.032	+0.102	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.040	+0.124	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.050	+0.150	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.060	+0.180	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.072	+0.212	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.085	+0.245	–0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

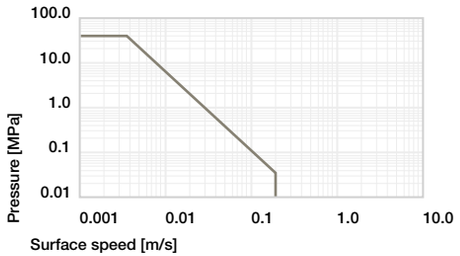

Diagram 01: Permissible pv values for iglidur® UW plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

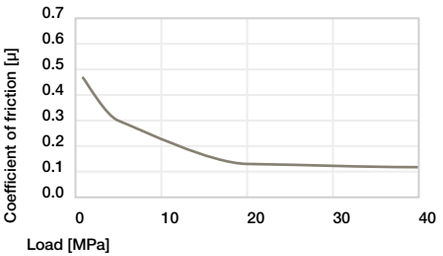

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

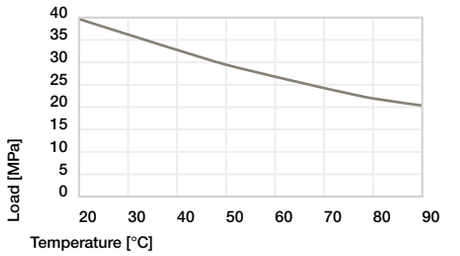

Diagram 02: Maximum recommended surface pressure as a function of temperature (40MPa at +20°C)

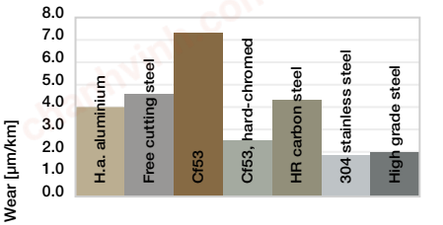

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

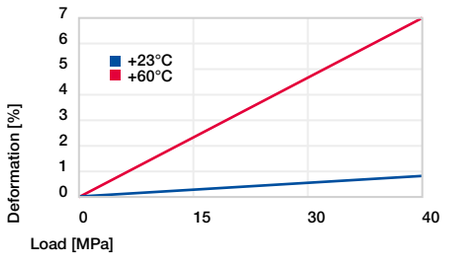

Diagram 03: Deformation under pressure and temperature

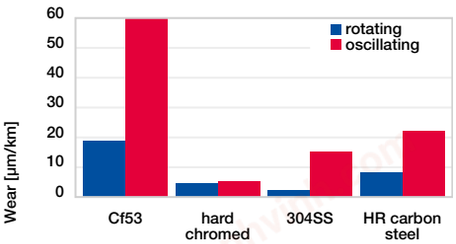

Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

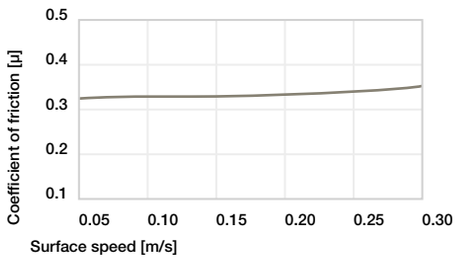

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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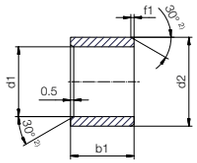
Bearing technology | Plain bearing | iglidur® UW

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30
f1 [mm]	0.3	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: UWSM-0304-05 – no minimum order quantity.
UW iglidur® material S Sleeve bearing M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
3.0	+0.014 +0.054	4.5	5.0	UWSM-0304-05
4.0	+0.020 +0.068	5.5	6.0	UWSM-0405-06
5.0		7.0	8.0	UWSM-0507-08
6.0		8.0	8.0	UWSM-0608-08
8.0	+0.025 +0.083	10.0	10.0	UWSM-0810-10
10.0		12.0	10.0	UWSM-1012-10
12.0	+0.032 +0.102	14.0	12.0	UWSM-1214-12
16.0		18.0	12.0	UWSM-1618-12
18.0		20.0	15.0	UWSM-1820-15

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
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Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

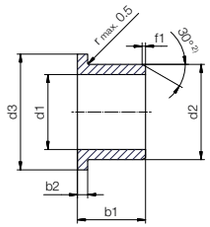
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® UW
+90°C
40MPa

Bearing technology | Plain bearing | iglidur® UW

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30
f1 [mm]	0.3	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: UWFM-0304-05 – no minimum order quantity.
UW iglidur® material F Flange bearing M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
3.0	+0.014 +0.054	4.5	7.5	5.0	0.75	UWFM-0304-05
4.0	+0.020 +0.068	5.5	9.5	6.0	0.75	UWFM-0405-06
5.0		7.0	11.0	5.0	1.00	UWFM-0507-05
6.0		8.0	12.0	6.0	1.00	UWFM-0608-06
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	UWFM-0810-10
10.0		12.0	18.0	10.0	1.00	UWFM-1012-10
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	UWFM-1214-12
16.0		18.0	24.0	17.0	1.00	UWFM-1618-17
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	UWFM-2023-21

[3] After press-fit. *Testing methods, page 57*

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Detailed information about delivery time online.
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Ordering note
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Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
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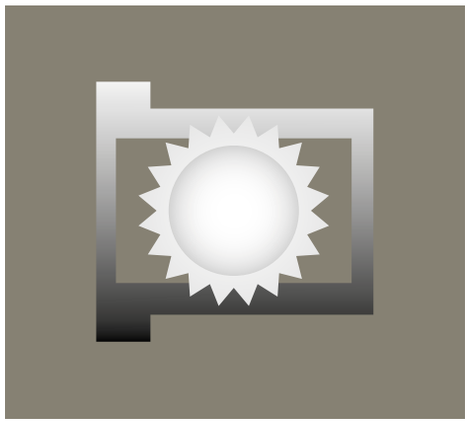

For continuous direct sunlight

Permanently UV-resistant with properties comparable to iglidur® J

iglidur® J UV

When to use it?

- When high UV resistance is required
- When a wear-resistant material is required
- When an optimisation of the long-term mechanical properties is required

When not to use?

- When high pressures occur
  iglidur® G
- When short-term temperatures higher than +120°C occur
  iglidur® G, iglidur® X
- When a cost-effective plain bearing for occasional movements is necessary
  iglidur® G

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Bearing technology | Plain bearing | iglidur® J UV

Ø
6.0 – 20.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

For continuous direct sunlight

Permanently UV-resistant with properties comparable to iglidur® J

Today, plain bearings appear as special shapes for special uses, in some instances of which they are exposed to UV radiation for long periods of time. igus® has therefore developed a new material: iglidur® J UV.

- UV-stabilised
- Long-term mechanical properties improved
- High wear resistance

Typical application areas

- Solar technology
- Outdoor applications

Descriptive technical specifications	–	+
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

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Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® J UV
+90°C
35MPa

Technical data

General properties			Testing method
Density	g/cm³	1.49	
Colour		black	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.3	
Max. moisture absorption	% weight	1.3	
Coefficient of friction, dynamic, against steel	µ	0.08 – 0.19	
pv value, max. (dry)	MPa · m/s	0.30	
Mechanical properties			
Flexural modulus	MPa	2,400	
Flexural strength at +20°C	MPa	72	
Compressive strength	MPa	k. A.	
Max. recommended surface pressure (+20°C)	MPa	35	
Shore D hardness		74	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+120	
Min. application temperature	°C	–50	
Thermal conductivity	W/m · K	0.30	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	10	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{13}$	DIN 53482

Table 01: Material properties

–50°C up to +90°C

35MPa

HB

RoHS-II

ISO 3547-1

One main advantage of iglidur® J UV plain bearings is the low coefficient of friction in dry operation. The material is resistant to UV radiation and retains its sliding properties.

Moisture absorption
Under standard climatic conditions, the moisture absorption of iglidur® J UV plain bearings is approximately 0.3% weight. The saturation limit in water is 1.3% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum
In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® J UV bearings.

Radiation resistance
Plain bearings made from iglidur® J UV are resistant up to a radiation intensity of $3 \cdot 10^2$Gy.

Resistance to weathering
iglidur® J UV plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolorations are only superficial.

Mechanical properties
With increasing temperatures, the compressive strength of iglidur® J UV plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
With a maximum recommended surface pressure of 35MPa, iglidur® J UV plain bearings are not suitable for extreme loads. Diagram 03 shows the elastic deformation of iglidur® J UV at radial loads.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® J UV

Permissible surface speeds

The low coefficient of friction and the very low stick slip tendency of iglidur® J UV plain bearings are particularly important at very low speeds. However, iglidur® J UV can also be used for high speeds of over 1m/s. In both cases the static friction is very low and stick slip does not occur. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 44

Temperature

In the case of a permissible long-term application temperature of +90°C, iglidur® J UV will even withstand +120°C for short periods. The wear rises with increasing temperatures. For temperatures over +60°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

The friction and wear are also dependent, to a large degree, on the shaft material. With increasing shaft surface finish, the coefficient of friction also increases. For iglidur® J UV a ground surface with an average surface finish Ra = 0.8μm is recommended. Diagrams 06 and 07 show the test results of iglidur® J UV plain bearings running against various shaft materials. When compared to most iglidur® materials, iglidur® J UV plain bearings have very low wear results at low loads compared with all shaft materials tested. Also, for increasing loads up to 5MPa, the wear resistance of iglidur® J UV is excellent. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 52

Installation tolerances

iglidur® J UV plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to –
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	+ up to 0

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.5	1.1	8.0
short-term	m/s	2.2	1.7	12.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.08 – 0.19	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

	Housing		Plain bearing		Shaft	
Ø d1 [mm]	H7 [mm]		E10 [mm]		h9 [mm]	
0 – 3	+0.000	+0.010	+0.014	+0.054	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.020	+0.068	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.025	+0.083	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.032	+0.102	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.040	+0.124	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.050	+0.150	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.060	+0.180	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.072	+0.212	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.085	+0.245	–0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

iglidur® J UV
+90°C
35MPa

Technical data

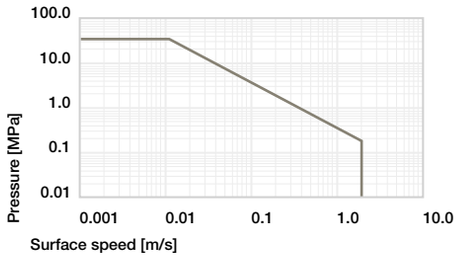

Diagram 01: Permissible pv values for iglidur® J UV plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

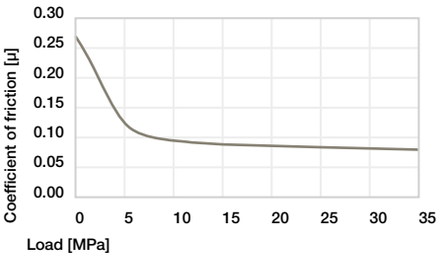

Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

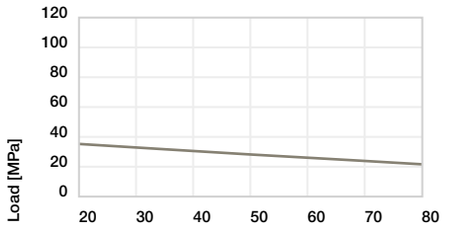

Diagram 02: Maximum recommended surface pressure as a function of temperature (35MPa at +20°C)

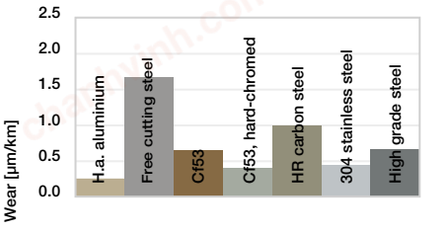

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

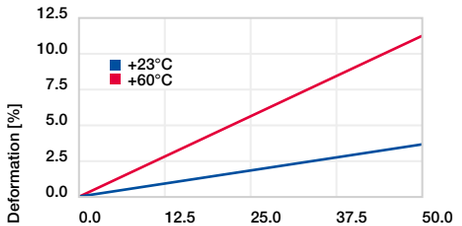

Diagram 03: Deformation under pressure and temperature

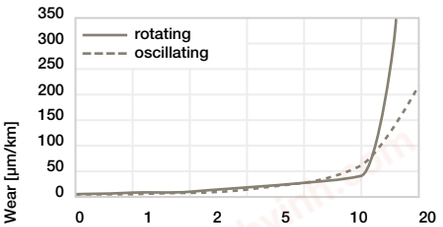

Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

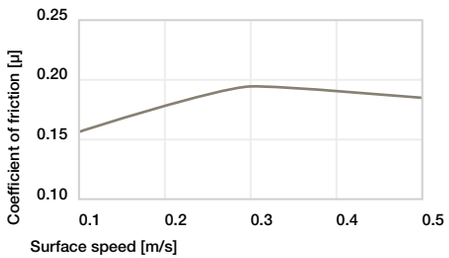

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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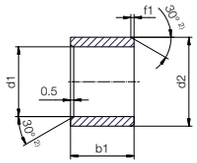
Bearing technology | Plain bearing | iglidur® J UV

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30
f1 [mm]	0.3	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: JUVSM-0608-08 **– no minimum order quantity.**
J UV iglidur® material S Sleeve bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 08 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	8.0	**JUVSM-0608-08**
8.0		10.0	12.0	**JUVSM-0810-12**
10.0	+0.025 +0.083	12.0	12.0	**JUVSM-1012-12**
12.0	+0.030 +0.102	14.0	12.0	**JUVSM-1214-12**
16.0		18.0	15.0	**JUVSM-1618-15**
20.0	+0.040 +0.124	23.0	20.0	**JUVSM-2023-20**

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/JUV

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

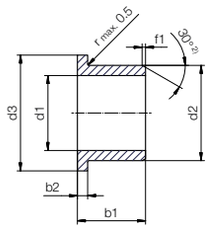
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® J UV
+90°C
35MPa

Bearing technology | Plain bearing | iglidur® J UV

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30
f1 [mm]	0.3	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: JUVFM-0608-08 **– no minimum order quantity.**
J UV iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 08 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	12.0	8.0	1.00	**JUVFM-0608-08**
8.0		10.0	15.0	9.5	1.00	**JUVFM-0810-09**
10.0	+0.025 +0.083	12.0	18.0	12.0	1.00	**JUVFM-1012-12**
12.0	+0.030 +0.102	14.0	20.0	12.0	1.00	**JUVFM-1214-12**
16.0		18.0	24.0	17.0	1.00	**JUVFM-1618-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	**JUVFM-2023-21**

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/JUV

Ordering note
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No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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The biopolymer

Based on renewable resources

iglidur® N54

When to use it?

- For applications with infrequent movement at low to medium loads
- At static loads
- When the environmental impact of a product needs to be optimised

When not to use?

- When a universal standard plain bearing is required
  iglidur® G
- When dealing with high motion frequencies and continuous operation
  iglidur® J
- When dealing with high temperatures
  iglidur® J350

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Bearing technology | Plain bearing | iglidur® N54

Ø
6.0 – 20.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

The biopolymer
Based on renewable resources

Based on 54% renewable resources, this material also meets high technical requirements.

- Based on renewable resources
- Universal installation
- Lubrication-free
- Maintenance-free

Typical application areas

- Consumer products
- General mechanical engineering
- Furniture industry
- Industrial design

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® N54
+80°C
36MPa

Technical data

General properties			Testing method
Density	g/cm³	1.13	
Colour		green	
Max. moisture absorption at +23°C and 50% r.h.	% weight	1.6	DIN 53495
Max. moisture absorption	% weight	3.6	
Coefficient of friction, dynamic, against steel	µ	0.15 – 0.23	
pv value, max. (dry)	MPa · m/s	0.50	
Mechanical properties			
Flexural modulus	MPa	1,800	DIN 53457
Flexural strength at +20°C	MPa	70	DIN 53452
Compressive strength	MPa	30	
Max. recommended surface pressure (+20°C)	MPa	36	
Shore D hardness		74	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+80	
Max. application temperature short-term	°C	+120	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	9	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

Table 01: Material properties

–40°C up to +80°C

36MPa

HB

RoHS-II

ISO 3547-1

iglidur® N54 is the first iglidur® material based largely on biopolymers. In addition to the proven lubrication-free properties of all iglidur® materials, this is one further contribution to positive environmental stewardship. The low coefficient of friction in conjunction with long service life ensure that this material has a permanent place in the iglidur® product range.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® N54 plain bearings is below 1.6% weight. The saturation limit in water is 3.6% weight.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® N54 have limited use under radioactive radiation. They are resistant to radiation up to an intensity of $1 \cdot 10^4$Gy.

Resistance to weathering

iglidur® N54 plain bearings are resistant to weathering. The material properties are slightly affected. Discoloration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® N54 plain bearings decreases. Diagram 02 shows this inverse relationship. However, at the long-term maximum temperature of +80°C the permissible surface pressure is around 10MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® N54 at radial loads.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® N54

Permissible surface speeds

Although the typical applications of iglidur® N54 plain bearings are generally in the area of intermittent operation, the maximum attainable speeds can be quite high, depending on the type of motion. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.

Surface speed, page 44

Temperature

The short-term permissible temperature limit is +120°C, which allows the use of iglidur® N54 plain bearings in all applications involving elevated ambient temperatures. With increasing temperatures, the compressive strength of iglidur® N54 plain bearings decreases. When considering temperatures, the additional frictional heat in the bearing system must be taken into account. For temperatures over +60°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

iglidur® N54 has a low coefficient of friction. Please note that a sliding surface with a rough surface finish will increase the friction. Surface finishes (Ra) of the shaft between 0.1 – 0.4µm are ideal. The coefficient of friction of iglidur® N54 plain bearings is only marginally dependent on the surface speed. The influence of the load is greater; an increase in load lowers the coefficient of friction to as low as 0.8.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

It is important to select a suitable shaft material. As a rule, iglidur® N54 is suitable for use with hard or soft shafts, but "hard" shaft surfaces tend to give better service life. Starting at loads of 1MPa, wear increases measurably and continuously. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 52

Installation tolerances

iglidur® N54 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to +
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	0

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.8	0.6	1.0
short-term	m/s	1.5	1.1	2.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.15 – 0.23	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

	Housing	Plain bearing		Shaft	
Ø d1 [mm]	H7 [mm]	E10 [mm]		h9 [mm]	
0 – 3	+0.000	+0.010	+0.014	+0.054	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.020	+0.068	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.025	+0.083	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.032	+0.102	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.040	+0.124	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.050	+0.150	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.060	+0.180	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.072	+0.212	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.085	+0.245	–0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

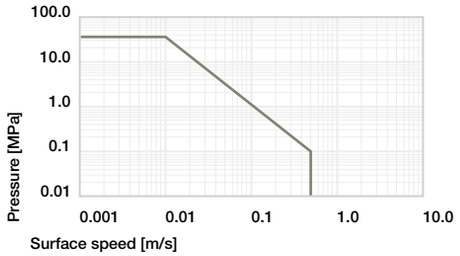

Diagram 01: Permissible pv values for iglidur® N54 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

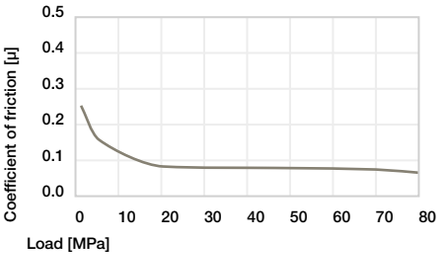

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

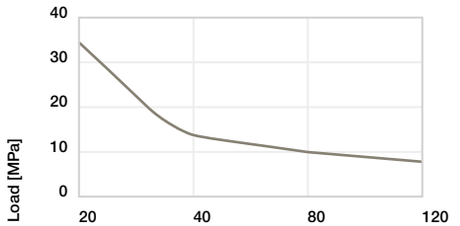

Diagram 02: Maximum recommended surface pressure as a function of temperature (36MPa at +20°C)

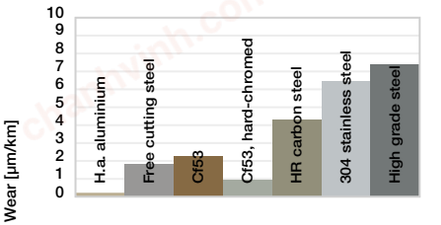

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

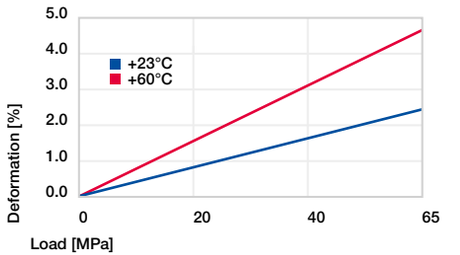

Diagram 03: Deformation under pressure and temperature

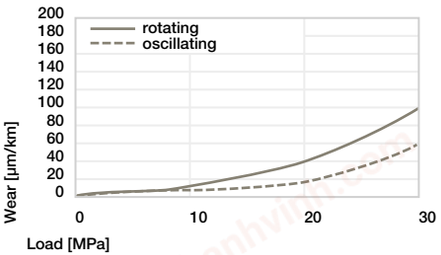

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

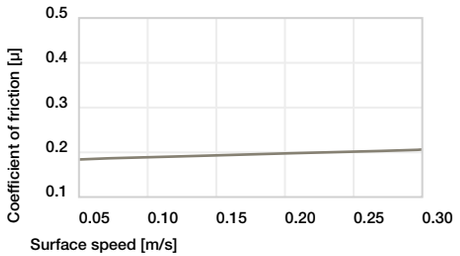

Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

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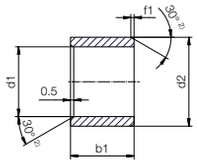
Bearing technology | Plain bearing | iglidur® N54

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 6–12	Ø 12–30
f1 [mm]	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: N54SM-0608-06 – no minimum order quantity.
N54 iglidur® material S Sleeve bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	6.0	N54SM-0608-06
8.0	+0.025 +0.083	10.0	10.0	N54SM-0810-10
10.0		12.0	10.0	N54SM-1012-10
12.0	+0.032 +0.102	14.0	12.0	N54SM-1214-12
16.0		18.0	15.0	N54SM-1618-15
20.0	+0.040 +0.124	23.0	20.0	N54SM-2023-20

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/N54

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

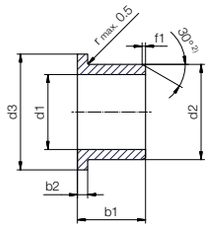
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® N54
+80°C
36MPa

Bearing technology | Plain bearing | iglidur® N54

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 6–12	Ø 12–30
f1 [mm]	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: N54FM-0608-06 – no minimum order quantity.
N54 iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	N54FM-0608-06
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	N54FM-0810-10
10.0		12.0	18.0	10.0	1.00	N54FM-1012-10
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	N54FM-1214-12
16.0		18.0	24.0	17.0	1.00	N54FM-1618-17
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	N54FM-2023-21

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/N54

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

No minimum order value.
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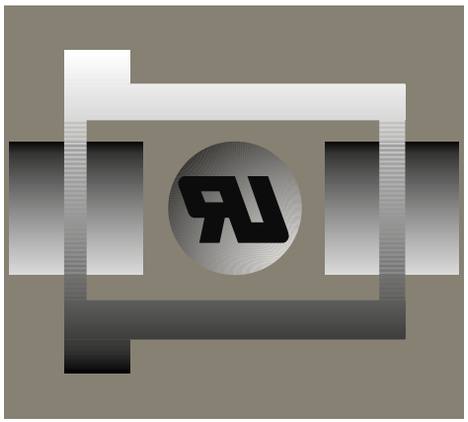

Low-cost all-rounder for fire protection

UL94 V0 rating

iglidur® G V0

When to use it?

- When a UL94 V0 classified plain bearing for normal environmental conditions is required
- When an economic UL94 V0 classified plain bearing is required

When not to use?

- When a UL94 V0 classified plain bearing for high-temperature applications is required
  iglidur® X
- When a standard plain bearing without having to meet special fire codes is required
  iglidur® G

chanhvinh.com

Bearing technology | Plain bearing | iglidur® G V0

Ø
6.0 – 40.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

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 all-rounder material iglidur® G.

- UL94 V0-compliant
- High wear resistance
- Universal installation
- Lubrication-free
- Maintenance-free

Typical application areas

- Passenger seats
- Elevators
- Escalators
- Switch cabinets
- Hinges

Descriptive technical specifications			
Wear resistance at +23°C	–	●●●○○	+
Wear resistance at +90°C	–	●●●○○	+
Wear resistance at +150°C	–	●●○○○	+
Low coefficient of friction	–	●●●○○	+
Low moisture absorption	–	●●○○○	+
Wear resistance under water	–	●○○○○	+
High media resistance	–	●●●○○	+
Resistant to edge pressures	–	●●●○○	+
Suitable for shock and impact loads	–	●●●●○	+
Resistant to dirt	–	●●●○○	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® G V0
+130°C
75MPa

Technical data

General properties			Testing method
Density	g/cm³	1.53	
Colour		black	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.7	DIN 53495
Max. moisture absorption	% weight	4.0	
Coefficient of friction, dynamic, against steel	µ	0.07 – 0.20	
pv value, max. (dry)	MPa · m/s	0.50	
Mechanical properties			
Flexural modulus	MPa	7,900	DIN 53457
Flexural strength at +20°C	MPa	140	DIN 53452
Compressive strength	MPa	100	
Max. recommended surface pressure (+20°C)	MPa	75	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+130	
Max. application temperature short-term	°C	+210	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	9	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

Table 01: Material properties

–40°C up to +130°C

75MPa

V-0

RoHS-II

ISO 3547-1

iglidur® GV0 is the first iglidur® material with a UL94 V0 rating for universal use in the normal temperature range. All other iglidur® materials with V0 rating are part of the high-temperature segment. The general mechanical and thermal properties are largely comparable to the all-rounder, iglidur® G.

Moisture absorption
Under standard climatic conditions, the moisture absorption of iglidur® G V0 plain bearings is approximately 0.7% weight. The saturation limit in water is 4.0% weight. This must be taken into account for these types of applications.

Vacuum
In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® G V0 bearings.

Radiation resistance
Plain bearings made from iglidur® G V0 are resistant up to a radiation intensity of $3 \cdot 10^2$Gy.

Resistance to weathering
iglidur® G V0 plain bearings are resistant to weathering. The material properties are slightly affected. Discoloration occurs.

Mechanical properties
With increasing temperatures, the compressive strength of iglidur® G V0 plain bearings decreases. Diagram 02 shows this inverse relationship. However, at the long-term maximum temperature of +130°C the permissible surface pressure is around 35MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® G V0 at radial loads. The plastic deformation is minimal up to a pressure of approximately 100MPa. However, it is also dependent on the service time.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® G V0

Permissible surface speeds

iglidur® G V0 has been developed for low to medium surface speeds. The maximum values shown in table 03 can only be achieved at low pressures. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 44

Temperature

The ambient temperatures strongly influence the properties of plain bearings. The short-term maximum permissible temperature is +210°C and allows the use of iglidur® G V0 plain bearings in applications where the bearings are not subjected to any additional load such as a paint drying process. The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +120°C. For temperatures over +100°C an additional securing is required.

Application temperatures, page 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 loads, whereas a slight increase in surface speed causes an increase of the coefficient of friction. This relationship explains the excellent results of iglidur® G V0 plain bearings for high loads and low speeds (diagrams 04 and 05).

Coefficient of friction and surfaces, page 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 surface finish Ra = 0.6 – 0.8μm is recommended. Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® G V0. It is important to notice that with increasing loads, the recommended hardness of the shaft increases. The "soft" shafts tend to wear more easily and thus the wear of the overall system increases. If the loads exceed 2MPa it is important to recognise that the wear rate (the gradient of the curves) clearly decreases with the hard shaft materials. The comparison of rotation and pivoting shows that iglidur® G V0 provides advantages in pivoting movements (diagram 07). If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 52

Installation tolerances

iglidur® G V0 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the E10 tolerances.

Testing methods, page 57

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to –
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	0

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.0	0.7	4.0
short-term	m/s	2.0	1.4	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.07 – 0.20	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

	Housing		Plain bearing		Shaft	
Ø d1 [mm]	H7 [mm]		E10 [mm]		h9 [mm]	
0 – 3	+0.000	+0.010	+0.014	+0.054	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.020	+0.068	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.025	+0.083	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.032	+0.102	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.040	+0.124	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.050	+0.150	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.060	+0.180	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.072	+0.212	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.085	+0.245	–0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

iglidur® G V0
+130°C
75MPa

Technical data

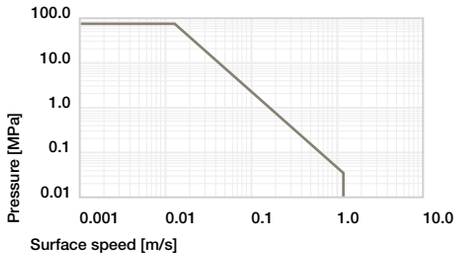

Diagram 01: Permissible pv values for iglidur® G V0 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

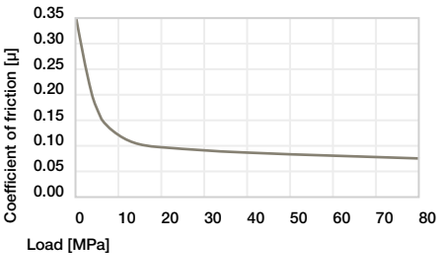

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

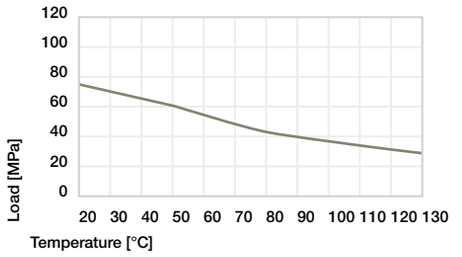

Diagram 02: Maximum recommended surface pressure as a function of temperature (75MPa at +20°C)

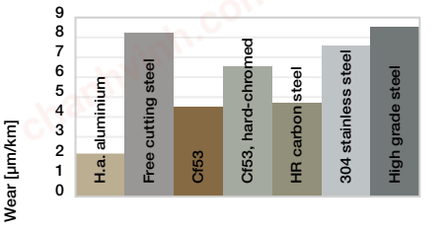

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

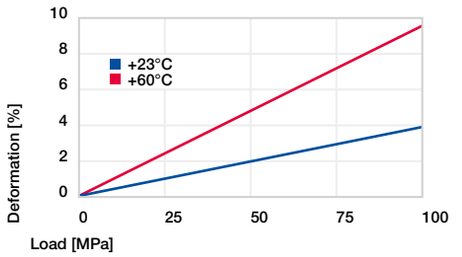

Diagram 03: Deformation under pressure and temperature

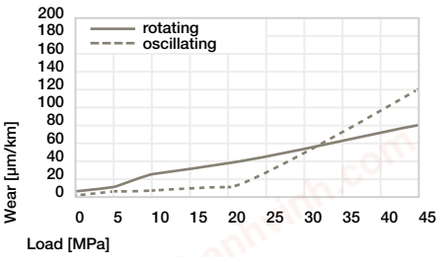

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

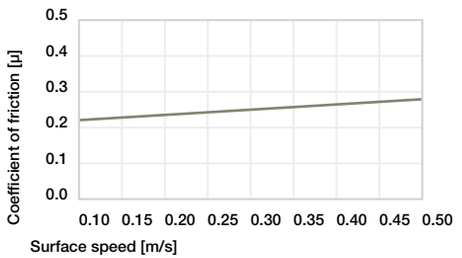

Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

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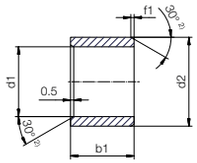
Bearing technology | Plain bearing | iglidur® G V0

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: GV0SM-0608-06 – no minimum order quantity.
G V0 iglidur® material S Sleeve bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	6.0	GV0SM-0608-06
8.0	+0.025 +0.083	10.0	10.0	GV0SM-0810-10
10.0		12.0	8.0	GV0SM-1012-08
10.0		12.0	9.0	GV0SM-1012-09
10.0		12.0	10.0	GV0SM-1012-10
10.0		12.0	15.0	GV0SM-1012-15
10.0		12.0	17.0	GV0SM-1012-17
12.0	+0.032 +0.102	14.0	12.0	GV0SM-1214-12
16.0		18.0	15.0	GV0SM-1618-15
20.0	+0.040 +0.124	23.0	20.0	GV0SM-2023-20
25.0		28.0	20.0	GV0SM-2528-20
30.0		34.0	30.0	GV0SM-3034-30
35.0	+0.050 +0.150	39.0	40.0	GV0SM-3539-40
40.0		44.0	40.0	GV0SM-4044-40

[3] After press-fit. *Testing methods, page 57*

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Ordering note
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Discount scaling		
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25 – 49	200 – 499	2,500 – 4,999

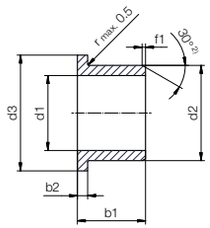
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® G V0
+130°C
75MPa

Bearing technology | Plain bearing | iglidur® G V0

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: GV0FM-0608-06 – no minimum order quantity.
G V0 iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13 [3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	GV0FM-0608-06
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	GV0FM-0810-10
10.0		12.0	18.0	10.0	1.00	GV0FM-1012-10
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	GV0FM-1214-12
16.0		18.0	24.0	17.0	1.00	GV0FM-1618-17
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	GV0FM-2023-21
25.0		28.0	35.0	21.0	1.50	GV0FM-2528-21
30.0		34.0	42.0	37.0	2.00	GV0FM-3034-37
35.0	+0.050 +0.150	39.0	47.0	36.0	2.00	GV0FM-3539-36
40.0		44.0	52.0	40.0	2.00	GV0FM-4044-40

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
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Online ordering
Including delivery times, prices, online tools
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Ordering note
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Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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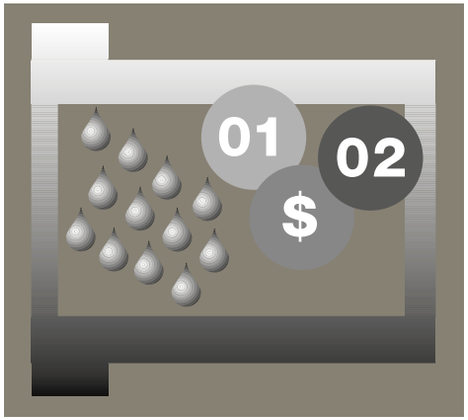

Versatile and cost-effective

For applications with infrequent movement or continuous lubrication

iglidur® J2

When to use it?

- When low moisture absorption and good media resistance is required for static load
- When a cost-effective plain bearing is required for use in a wet environment with low pv values
- When there is basic lubrication of the plain bearing

When not to use?

- When a wear-resistant plain bearing is required for continuous dry operation
  iglidur® J3
- When low moisture absorption and media resistance play a minor role
  iglidur® M250
- When a resistance to high temperatures and chemicals is required
  iglidur® X

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Bearing technology | Plain bearing | iglidur® J2

Ø
6.0 – 25.0mm



Also available as:

Bar stock, round bar
Page 684

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

Versatile and cost-effective
For applications with infrequent movement or continuous lubrication

iglidur® J2 has good universal media resistance, comparable to that of iglidur® J and similar materials. The mechanical specifications in sporadically 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.

- Robust
- Cost-effective
- High media resistance
- Lubrication-free
- Maintenance-free

Typical application areas

- Jig construction
- Industrial handling

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

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Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® J2
+90°C
46MPa

Technical data

General properties			Testing method
Density	g/cm³	1.44	
Colour		light yellow	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	1.3	
Coefficient of friction, dynamic, against steel	µ	0.11 – 0.27	
pv value, max. (dry)	MPa · m/s	0.23	
Mechanical properties			
Flexural modulus	MPa	3,605	DIN 53457
Flexural strength at +20°C	MPa	101	DIN 53452
Compressive strength	MPa	77	
Max. recommended surface pressure (+20°C)	MPa	46	
Shore D hardness		74	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+110	
Min. application temperature	°C	–50	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	7	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties

–50°C up to +90°C

46MPa

HB

RoHS-II

ISO 3547-1

With respect to its general mechanical and thermal specifications, iglidur® J2 is directly comparable to our classic, iglidur® J. Therefore the iglidur® J2 is superior to iglidur® J with respect to the mechanical properties, such as maximum recommended surface pressure. However, wear resistance is reduced in dry operation.

Moisture absorption
Under standard climatic conditions, the moisture absorption of iglidur® J2 plain bearings is approximately 0.2% weight. The saturation limit in water is 1.3% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum
In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® J2 bearings.

Radiation resistance
Plain bearings made from iglidur® J2 are resistant up to a radiation intensity of $3 \cdot 10^2$Gy.

Resistance to weathering
iglidur® J2 plain bearings have limited resistance to weathering. The material properties are affected. Discoloration occurs. Practical tests under real application conditions are recommended.

Mechanical properties
With increasing temperatures, the compressive strength of iglidur® J2 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® J2 at radial loads. A possible deformation could be, among others, dependant on the duty cycle of the load.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® J2

Permissible surface speeds

iglidur® J2 is mainly suitable for low surface speeds in dry operation, but the specified values shown in table 03 can only be achieved at very low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 44

Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +90°C. For temperatures over +60°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

Coefficient of friction and wear resistance are dependent on the application parameters (diagrams 04 and 05).

Coefficient of friction and surfaces, page 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. Diagram 06 shows results of testing different shafts. Diagram 06 shows that iglidur® J2 delivers good coefficient of wear especially with free cutting steel in rotation at 1MPa. In dry operation, the coefficient of wear is sometimes significantly higher on other shafts. Unlike many other iglidur® materials, the wear rate in pivoting is slightly higher compared to the rate in rotation with otherwise identical parameters (diagram 07).

Shaft materials, page 52

Installation tolerances

iglidur® J2 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to –
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	+ up to 0

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.8	0.7	3.0
short-term	m/s	1.9	1.1	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.11 – 0.27	0.08	0.07	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

	Housing		Plain bearing		Shaft	
Ø d1 [mm]	H7 [mm]		E10 [mm]		h9 [mm]	
0 – 3	+0.000	+0.010	+0.014	+0.054	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.020	+0.068	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.025	+0.083	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.032	+0.102	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.040	+0.124	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.050	+0.150	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.060	+0.180	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.072	+0.212	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.085	+0.245	–0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

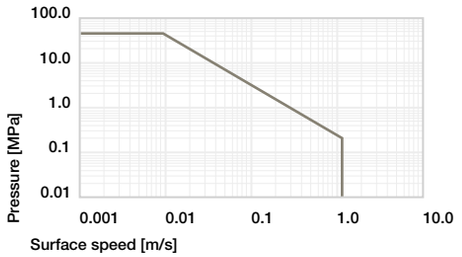

Diagram 01: Permissible pv values for iglidur® J2 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

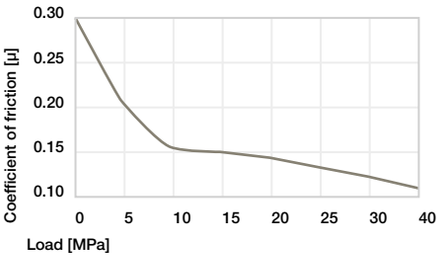

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

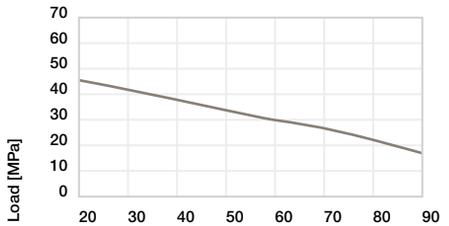

Diagram 02: Maximum recommended surface pressure as a function of temperature (46MPa at +20°C)

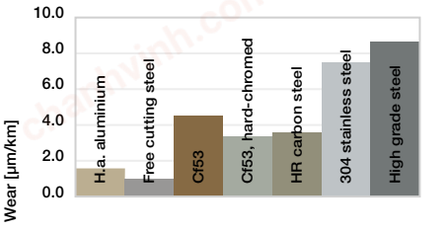

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

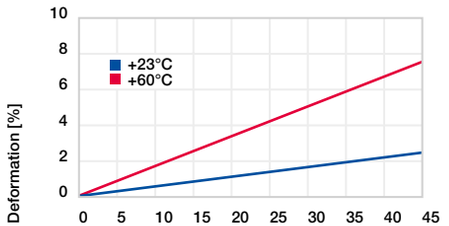

Diagram 03: Deformation under pressure and temperature

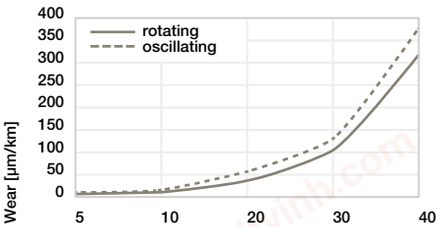

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

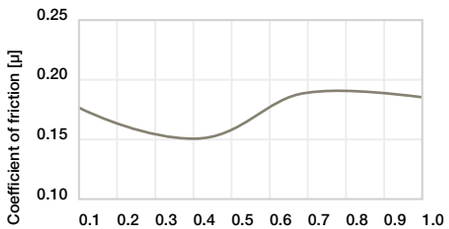

Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

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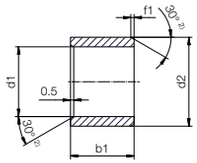
Bearing technology | Plain bearing | iglidur® J2

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 6–12	Ø 12–30
f1 [mm]	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: J2SM-0608-06 – no minimum order quantity.
J2 iglidur® material S Sleeve bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	6.0	**J2SM-0608-06**
8.0	+0.025 +0.083	10.0	10.0	**J2SM-0810-10**
10.0		12.0	10.0	**J2SM-1012-10**
12.0	+0.032 +0.102	14.0	12.0	**J2SM-1214-12**
16.0		18.0	15.0	**J2SM-1618-15**
20.0	+0.040 +0.124	23.0	20.0	**J2SM-2023-20**
25.0		28.0	20.0	**J2SM-2528-20**

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
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Online ordering
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Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

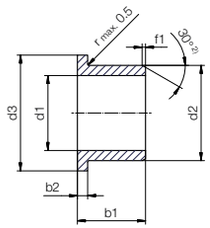
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® J2
+90°C
46MPa

Bearing technology | Plain bearing | iglidur® J2

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 6–12	Ø 12–30
f1 [mm]	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: J2FM-0608-06 – no minimum order quantity.
J2 iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	**J2FM-0608-06**
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	**J2FM-0810-10**
10.0		12.0	18.0	10.0	1.00	**J2FM-1012-10**
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	**J2FM-1214-12**
16.0		18.0	24.0	17.0	1.00	**J2FM-1618-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	**J2FM-2023-21**

[3] After press-fit. *Testing methods, page 57*

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Detailed information about delivery time online.
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Online ordering
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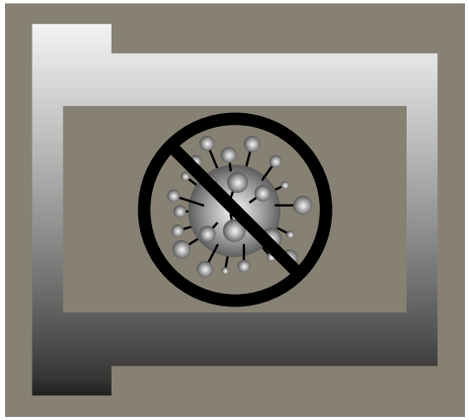

The first antibacterial iglidur® plain bearing

According to ISO 22 196:2011

iglidur® AB

When to use it?

- When bearing points must meet high hygienic standards
- When a universal plain bearing for manual applications is required
- When a plain bearing for low to medium loads is required

When not to use?

- When a wear-resistant plain bearing is required for continuous dry operation
  iglidur® J3
- When a plain bearing that conforms with Regulation (EU) No. 10/2011 and/or the FDA requirements for repeated contact with food is required
  iglidur® A181, iglidur® A350
- When a plain bearing with the highest possible media resistance is required
  iglidur® X

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Bearing technology | Plain bearing | iglidur® AB

Ø
6.0 – 20.0mm



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

The first antibacterial iglidur® plain bearing
According to ISO 22 196:2011

Plain bearings made from iglidur® AB help to reduce the bacteria in bearing points that are difficult to access.

- Antibacterial
- Universal installation
- High media resistance
- Lubrication-free
- Maintenance-free

Typical application areas

- Medical technology
- Laboratory technology
- Ventilation systems
- Sanitary furniture and equipment
- Bearings of patient and care furniture

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® AB
+70°C
25MPa

Technical data

General properties			Testing method
Density	g/cm³	1.11	
Colour		yellow	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.8	ISO 175
Max. moisture absorption	% weight	1.6	ISO 62
Coefficient of friction, dynamic, against steel	µ	0.18 – 0.31	
pv value, max. (dry)	MPa · m/s	0.25	
Mechanical properties			
Flexural modulus	MPa	1,850	DIN EN ISO 178
Flexural strength at +20°C	MPa	50	DIN EN ISO 178
Compressive strength	MPa	40	
Max. recommended surface pressure (+20°C)	MPa	25	
Shore D hardness		70	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+70	
Max. application temperature short-term	°C	+140	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	10	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$>10^{12}$	DIN IEC 93
Surface resistance	Ω	$>10^{12}$	DIN 53482

Table 01: Material properties

–40°C up to +70°C

25MPa

HB

RoHS-II

ISO 3547-1

iglidur® AB was 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.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® AB plain bearings is approximately 0.8% weight. The saturation limit in water is 1.6% weight.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® AB bearings.

Radiation resistance

Plain bearings made from iglidur® AB are resistant up to a radiation intensity of $3 \cdot 10^2$Gy.

Resistance to weathering

iglidur® AB plain bearings have limited resistance to weathering. The material properties are affected. Discoloration occurs. Practical tests under real application conditions are recommended.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® AB plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® AB at radial loads. A possible deformation could be, among others, dependant on the duty cycle of the load.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® AB

Permissible surface speeds

iglidur® AB is mainly suitable for low surface speeds in dry operation, but the specified values shown in table 03 can only be achieved at very low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 44

Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +60°C. For temperatures over +50°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

Coefficient of friction and wear resistance are dependent on the application parameters (diagrams 04 and 05).

Coefficient of friction and surfaces, page 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. Diagram 06 shows results of testing different shafts. When rotating at a load of 1MPa, the wear on all tested shafts is very similar. Only the hard-anodised aluminium shafts cause a noticeable increase in the wear. As illustrated in diagram 07, the wear rate from pivoting and rotational movements at loads in increasing levels is also quite similar if the remaining parameters are identical.

Shaft materials, page 52

Installation tolerances

iglidur® AB plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 57

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to –
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	0

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.7	0.5	1.0
short-term	m/s	1.0	0.7	1.8

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.18 – 0.31	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing H7 [mm]		Plain bearing E10 [mm]		Shaft h9 [mm]	
0 – 3	+0.000	+0.010	+0.014	+0.054	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.020	+0.068	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.025	+0.083	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.032	+0.102	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.040	+0.124	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.050	+0.150	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.060	+0.180	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.072	+0.212	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.085	+0.245	–0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

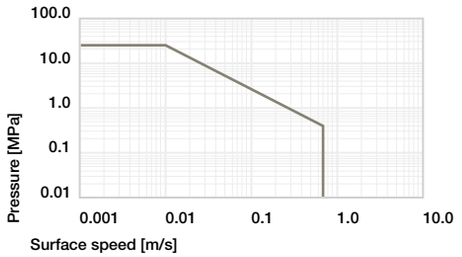

Diagram 01: Permissible pv values for iglidur® AB plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

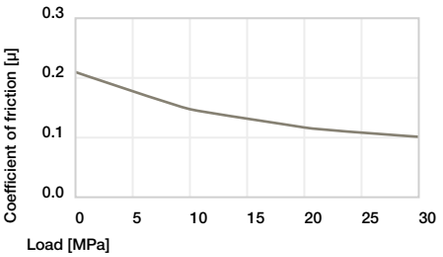

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

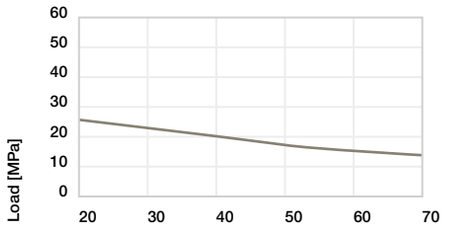

Diagram 02: Maximum recommended surface pressure as a function of temperature (25MPa at +20°C)

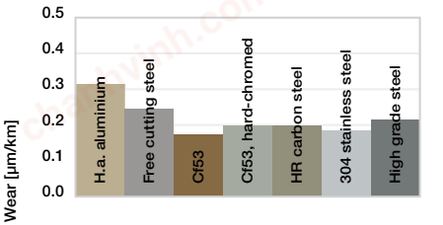

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

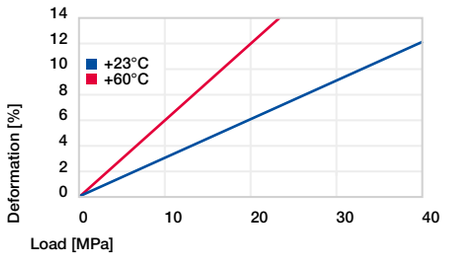

Diagram 03: Deformation under pressure and temperature

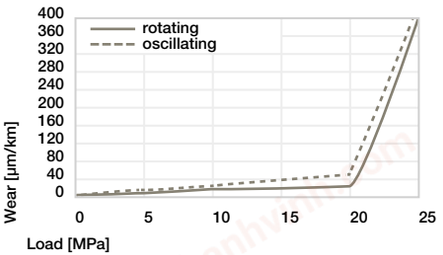

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

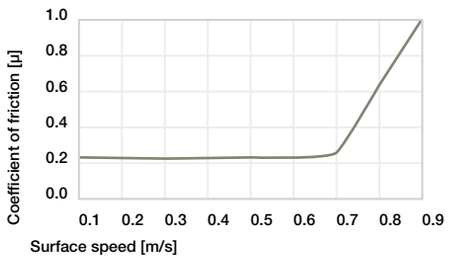

Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

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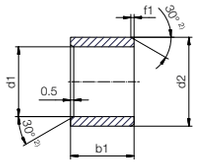
Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30
f1 [mm]	0.3	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: ABSM-0608-06 **– no minimum order quantity.**
AB iglidur® material S Sleeve bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	6.0	**ABSM-0608-06**
8.0	+0.025 +0.083	10.0	10.0	**ABSM-0810-10**
10.0		12.0	10.0	**ABSM-1012-10**
12.0	+0.032 +0.102	14.0	15.0	**ABSM-1214-15**
15.0		17.0	15.0	**ABSM-1517-15**
20.0	+0.040 +0.124	23.0	20.0	**ABSM-2023-20**

[3] After press-fit. *Testing methods, page 57*

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Discount scaling		
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25 – 49	200 – 499	2,500 – 4,999

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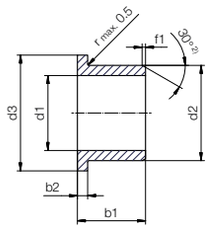
iglidur® AB
+70°C
25MPa

Bearing technology | Plain bearing | iglidur® AB

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30
f1 [mm]	0.3	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: ABFM-0608-08 **– no minimum order quantity.**
AB iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 08 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	12.0	8.0	1.00	**ABFM-0608-08**
8.0	+0.025 +0.083	10.0	15.0	9.5	1.00	**ABFM-0810-09**
10.0		12.0	18.0	12.0	1.00	**ABFM-1012-12**
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	**ABFM-1214-12**
15.0		17.0	23.0	12.0	1.00	**ABFM-1517-12**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	**ABFM-2023-21**

[3] After press-fit. *Testing methods, page 57*

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Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

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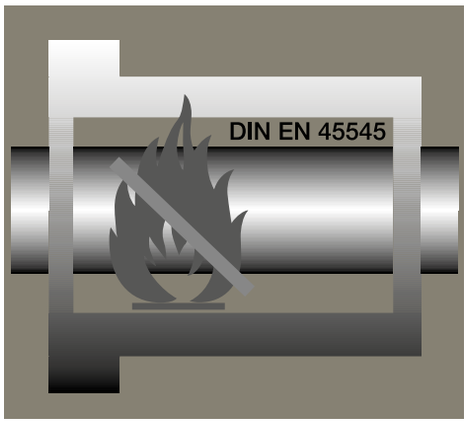

For the rail industry, complies with DIN EN 45545 HL3, R22/R23

Wear-resistant for rail technology

iglidur® RW370

When to use it?

- For applications in rail technology where suitability according to DIN EN 45545 is required
- For high wear resistance at low to medium pressures
- When a low coefficient of friction in dry operation is requested
- Low moisture absorption

When not to use?

- When high pressure loads occur and suitability according to DIN EN 45545 is not required
  iglidur® G, iglidur® W300
- When short-term temperatures higher than +190°C occur
  iglidur® G, iglidur® Z
- When a cost-effective plain bearing for occasional movements is necessary
  iglidur® G

chanhvinh.com

Bearing technology | Plain bearing | iglidur® RW370

Ø 6.0 – 20.0mm



Also available as:

Bar stock, round bar Page 685

Bar stock, plate Page 683

tribo-tape liner Page 691

Piston rings Page 581

Two hole flange bearings Page 603

Moulded special parts Page 624

igubal® spherical balls Page 841

For the rail industry, complies with DIN EN 45545 HL3, R22/R23

Wear-resistant for rail technology

The first iglidur® material that fulfills the European fire safety standard for rail vehicles is suitable for many wear-stressed applications in railway technology due to its very complete property profile.

- Complies with the European fire protection standard DIN EN 45545 HL3 requirement set R22/R23
- Flame-retardant
- High wear resistance
- Low coefficient of friction
- Lubrication and maintenance-free

Typical application areas

- Door guides and hinges
- Rotating joint
- Entrance staircases
- Seat table mechanisms

Descriptive technical specifications	–	+
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® RW370 +170°C 75MPa

Technical data

General properties			Testing method
Density	g/cm³	1.34	
Colour		beige	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.25	ISO 175
Max. moisture absorption	% weight	1.2	ISO 62
Coefficient of friction, dynamic, against steel	µ	0.13 – 0.17	
pv value, max. (dry)	MPa · m/s	1.20	
Mechanical properties			
Flexural modulus	MPa	2,997	DIN EN ISO 178
Flexural strength at +20°C	MPa	100	DIN EN ISO 178
Compressive strength	MPa	129	
Max. recommended surface pressure (+20°C)	MPa	75	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+170	
Max. application temperature short-term	°C	+190	
Min. application temperature	°C	–50	
Thermal conductivity	W/m · K	0.22	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	5	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$>10^{12}$	DIN IEC 93
Surface resistance	Ω	$>10^{12}$	DIN 53482

Table 01: Material properties

–50°C up to +170°C

75MPa

V-0

RoHS-II

ISO 3547-1

iglidur® RW370 was specially developed for the fire protection requirements in railway technology. It fulfils the specification of DIN EN 45545. Plain bearings made of iglidur® RW370 are used primarily in door systems, seat adjustments and joints, as well as hinges.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® RW370 plain bearings is below 0.25% weight. The saturation limit in water is 1.2% weight.

Vacuum

In vacuum, the moisture content is released as vapour. Due to its low moisture absorption, use in a vacuum is possible.

Radiation resistance

Plain bearings made from iglidur® RW370 are resistant up to a radiation intensity of $3 \cdot 10^2$Gy.

Resistance to weathering

iglidur® RW370 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolorations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® RW370 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® RW370 at radial loads. A possible deformation could be, among others, dependant on the duty cycle of the load.

Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® RW370

Permissible surface speeds

Although the typical applications of iglidur® RW370 plain bearings are generally in the area of intermittent operation, the maximum attainable speeds can be quite high, depending on the type of motion. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.

Surface speed, page 44

Temperature

The short-term permissible temperature limit is +190°C, which allows the use of iglidur® RW370 plain bearings in all applications involving elevated ambient temperatures. With increasing temperatures, the compressive strength of iglidur® RW370 plain bearings decreases. When considering temperatures, the additional frictional heat in the bearing system must be taken into account. For temperatures over +120°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

The excellent coefficient of friction level of iglidur® RW370 in dry operation decreases with speed, to a value of 1.1m/s. Diagram 04 shows this with respect to a steel shaft. Above a speed of 1.25m/s the coefficient of friction increases significantly as the load limit of the material is reached.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagrams 06 and 07 display a summary of the results of tests with different shaft materials conducted with plain bearings made from iglidur® RW370. At a surface pressure of 0.3m/s and 1MPa, shafts made of hard-anodised aluminium and hard-chromed Cf53 are the most suitable glide surfaces. Shafts made from 304 stainless steel or high grade steel also show good results. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 52

Installation tolerances

iglidur® RW370 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 57

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	+
Diluted alkalines	+
Fuels	+ up to 0
Greases, oils without additives	+
Hydrocarbons	–
Strong acids	–
Strong alkalines	–

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.9	0.6	2.5
short-term	m/s	1.0	0.8	2.6

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.13 – 0.17	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

	Housing	Plain bearing		Shaft	
Ø d1 [mm]	H7 [mm]	F10 [mm]		h9 [mm]	
0 – 3	+0.000	+0.010	+0.006	+0.046	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.010	+0.058	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.013	+0.071	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.016	+0.086	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.020	+0.104	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.025	+0.125	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.030	+0.150	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.036	+0.176	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

iglidur® RW370 +170°C 75MPa

Technical data

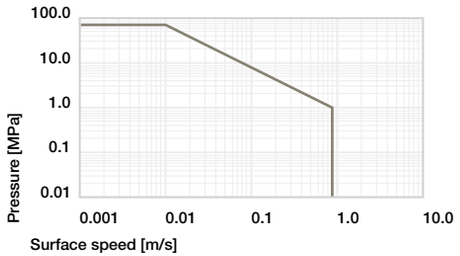

Diagram 01: Permissible pv values for iglidur® RW370 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

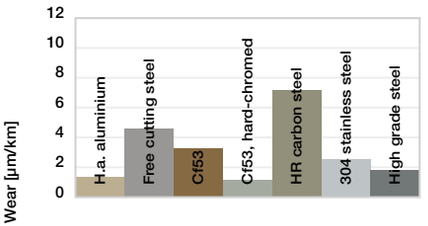

Diagram 05: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

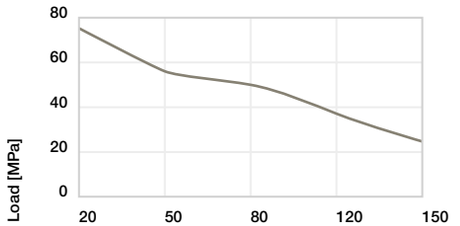

Diagram 02: Maximum recommended surface pressure as a function of temperature (75MPa at +20°C)

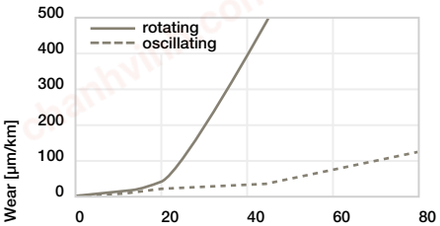

Diagram 06: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

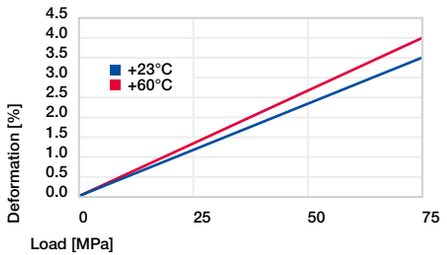

Diagram 03: Deformation under pressure and temperature

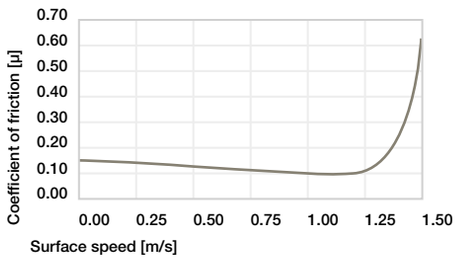

Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

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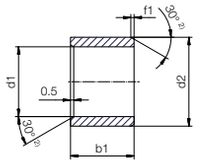
Bearing technology | Plain bearing | iglidur® RW370

Sleeve bearing (form S)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 6–12	Ø 12–30
f1 [mm]	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: RW370SM-0608-06 – no minimum order quantity.
RW370 iglidur® material S Sleeve bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
6.0	+0.010 +0.058	8.0	6.0	**RW370SM-0608-06**
8.0	+0.013 +0.071	10.0	10.0	**RW370SM-0810-10**
10.0		12.0	10.0	**RW370SM-1012-10**
12.0	+0.016 +0.086	14.0	12.0	**RW370SM-1214-12**
16.0		18.0	15.0	**RW370SM-1618-15**
20.0	+0.020 +0.104	23.0	20.0	**RW370SM-2023-20**

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
www.igus-asean.com/24

Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/RW370

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1 – 9	50 – 99	500 – 999
10 – 24	100 – 199	1,000 – 2,499
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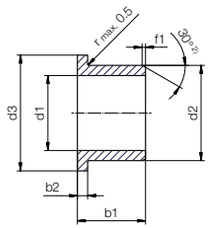
No minimum order value.
No low-quantity surcharges.
Free shipping within local Regular Service Area.

iglidur® RW370 +170°C 75MPa

Bearing technology | Plain bearing | iglidur® RW370

Flange bearing (form F)





[2] Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 6–12	Ø 12–30
f1 [mm]	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: RW370FM-0608-06 – no minimum order quantity.
RW370 iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.010 +0.058	8.0	12.0	6.0	1.00	**RW370FM-0608-06**
8.0	+0.013 +0.071	10.0	15.0	9.5	1.00	**RW370FM-0810-09**
10.0		12.0	18.0	9.0	1.00	**RW370FM-1012-09**
12.0	+0.016 +0.086	14.0	20.0	12.0	1.00	**RW370FM-1214-12**
16.0		18.0	24.0	12.0	1.00	**RW370FM-1517-12**
20.0	+0.020 +0.104	23.0	30.0	21.5	1.50	**RW370FM-2023-20**

[3] After press-fit. *Testing methods, page 57*

Available from stock
Detailed information about delivery time online.
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Online ordering
Including delivery times, prices, online tools
www.igus-asean.com/RW370

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
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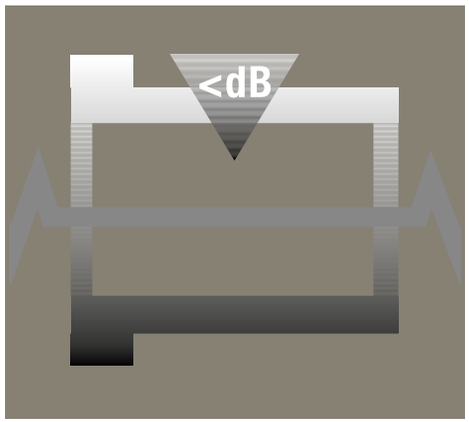

The variable one

For simple bearing applications

iglidur® B

When to use it?

- When maximum vibration dampening is required
- When sealing function has to be integrated
- When high edge loads occur

When not to use?

- In applications with high atmospheric humidity
  iglidur® J
- When a cost-effective universal plain bearing is required
  iglidur® R
- When the highest wear resistance is required
  iglidur® J

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Bearing technology | Plain bearing | iglidur® B

Ø
–



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

The variable one
For simple bearing applications

Vibration dampening is the predominant feature of the iglidur® B material, which are also well-suited for edge loads at low pressure.

- Elimination of noise
- High flexibility
- Sealing function possible
- Lubrication-free
- Maintenance-free

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
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Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® B
+100°C
40MPa

Technical data

General properties			Testing method
Density	g/cm³	1.15	
Colour		grey	
Max. moisture absorption at +23°C and 50% r.h.	% weight	1	DIN 53495
Max. moisture absorption	% weight	6.3	
Coefficient of friction, dynamic, against steel	µ	0.18 – 0.28	
pv value, max. (dry)	MPa · m/s	0.15	
Mechanical properties			
Flexural modulus	MPa	1,800	DIN 53457
Flexural strength at +20°C	MPa	55	DIN 53452
Compressive strength	MPa	20	
Max. recommended surface pressure (+20°C)	MPa	40	
Shore D hardness		69	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+100	
Max. application temperature short-term	°C	+130	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	12	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{10}$	DIN IEC 93
Surface resistance	Ω	$> 10^{9}$	DIN 53482

–40°C up to +100°C

40MPa

HB

RoHS-II

ISO 3547-1

Table 01: Material properties

The compressive strength of the iglidur® B plain bearings is on the one hand low, but on the other, is an important property of the bearing. They are mainly used where vibration dampening and acoustic separation are required.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® B plain bearings is approximately 1% weight. The saturation limit in water is 6.3% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® B bearings.

Radiation resistance

Plain bearings made from iglidur® B are resistant up to a radiation intensity of $3 \cdot 10^2$Gy.

Resistance to weathering

iglidur® B plain bearings have limited resistance to weathering. The material properties are affected. Discoloration occurs. Practical tests under real application conditions are recommended.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® B plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® B at radial loads. At the maximum recommended surface pressure of 40MPa the deformation is about 5.3% at room temperature.
Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® B

Permissible surface speeds

iglidur® B plain bearings can be continuously used up to 0.7m/s in rotating applications. The frictional heat provides the speed limits. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 44

Temperature

The maximum long-term application temperature is +100°C. For temperatures over +50°C an additional securing is required. The wear resistance also decreases exponentially from +70°C upwards.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

The coefficient of friction increases slightly with the speed and decreases with the load. Surface finishes (Ra) of the shaft between 0.4 – 0.6µm are ideal. As far as the bearing load is not too high, the attained coefficient of wear is pretty good. An increase in load results in a disproportionate increase in abrasion.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

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.

Shaft materials, page 52

Installation tolerances

iglidur® B plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to –
Diluted alkalines	–
Fuels	–
Greases, oils without additives	–
Hydrocarbons	–
Strong acids	–
Strong alkalines	–

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.7	0.5	2.0
short-term	m/s	1.0	0.7	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.18 – 0.28	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing H7 [mm]		Plain bearing D11 [mm]		Shaft h9 [mm]	
0 – 3	+0.000	+0.010	+0.020	+0.080	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.030	+0.105	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.040	+0.130	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.050	+0.160	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.065	+0.195	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.080	+0.240	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.100	+0.290	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.120	+0.340	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.145	+0.395	–0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

iglidur® B plain bearings are manufactured to special order.

iglidur® B
+100°C
40MPa

Technical data

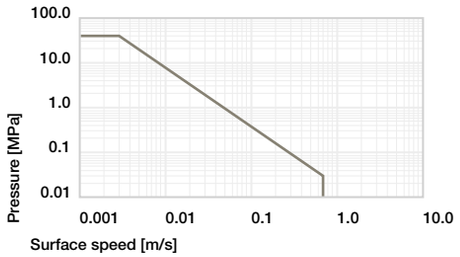

Diagram 01: Permissible pv values for iglidur® B plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

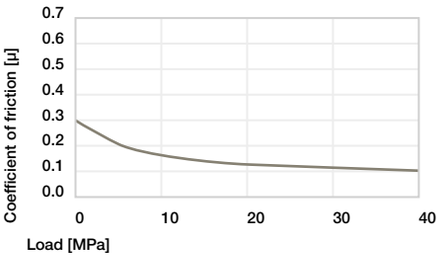

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

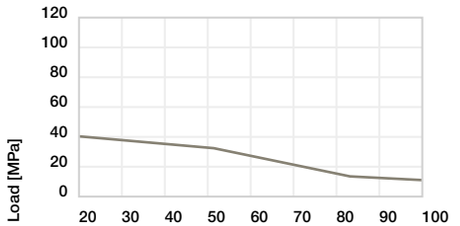

Diagram 02: Maximum recommended surface pressure as a function of temperature (40MPa at +20°C)

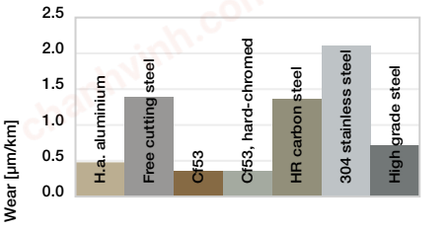

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

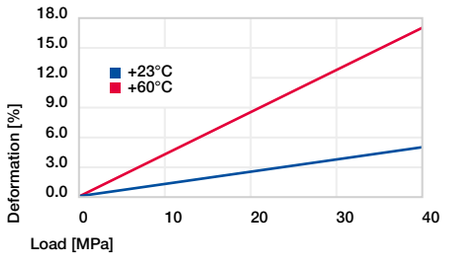

Diagram 03: Deformation under pressure and temperature

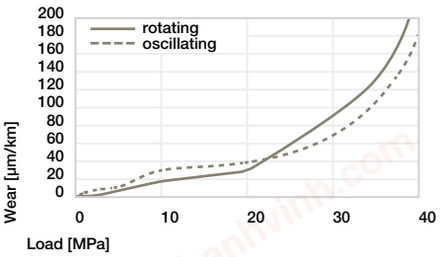

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

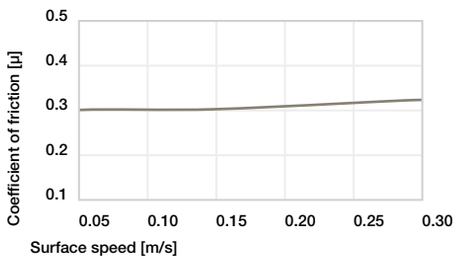

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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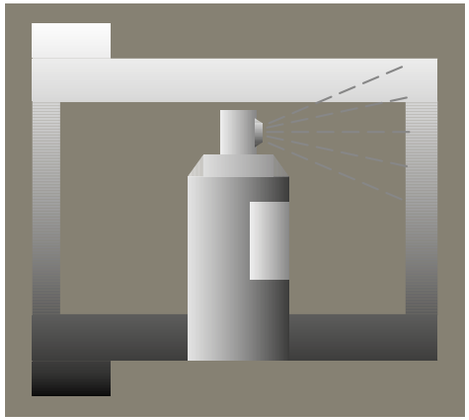

Free from PTFE and silicone

For simple applications

iglidur® C

When to use it?

- When PTFE and silicone are not allowed in your application
- For applications with low speed
- When dirt-resistant bearings is required
- When maintenance-free, self-lubricating bearings is required

When not to use?

- When the highest wear resistance is required
  iglidur® W300
- When lowest coefficient of friction is required
  iglidur® J, iglidur® L250
- When a cost-effective option is requested
  iglidur® M250
- When low moisture absorption is required
  iglidur® R

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Bearing technology | Plain bearing | iglidur® C

Ø
–



Also available as:

Bar stock, round bar
Page 657

Bar stock, plate
Page 683

tribo-tape liner
Page 691

Piston rings
Page 581

Two hole flange bearings
Page 603

Moulded special parts
Page 624

igubal® spherical balls
Page 841

Free from PTFE and silicone
For simple applications

Although iglidur® C dispenses with the use of PTFE and silicone as lubricants, the bearings still have excellent wear resistance under low loads.

- Maintenance-free dry operation
- High wear resistance
- Lubrication-free
- Maintenance-free

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Low coefficient of friction	–	+
Low moisture absorption	–	+
Wear resistance under water	–	+
High media resistance	–	+
Resistant to edge pressures	–	+
Suitable for shock and impact loads	–	+
Resistant to dirt	–	+

Online product finder
www.igus-asean.com/iglidur-finder

Online service life calculation
www.igus-asean.com/iglidur-expert

iglidur® C
+90°C
40MPa

Technical data

General properties			Testing method
Density	g/cm³	1.10	
Colour		off white	
Max. moisture absorption at +23°C and 50% r.h.	% weight	1	DIN 53495
Max. moisture absorption	% weight	6.9	
Coefficient of friction, dynamic, against steel	µ	0.17 – 0.25	
pv value, max. (dry)	MPa · m/s	0.10	
Mechanical properties			
Flexural modulus	MPa	1,900	DIN 53457
Flexural strength at +20°C	MPa	60	DIN 53452
Compressive strength	MPa	30	
Max. recommended surface pressure (+20°C)	MPa	40	
Shore D hardness		72	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+130	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	15	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	$> 10^{10}$	DIN IEC 93
Surface resistance	Ω	$> 10^{9}$	DIN 53482

Table 01: Material properties

–40°C up to +90°C

40MPa

HB

RoHS-II

Plain bearings made from iglidur® C were developed especially for applications where the use of PTFE and silicon is not possible. Such applications can be found in electronics, tobacco and beverages industry and in many painting processes. Keywords like paint compatibility and silicon-free make the further employment of this material reasonable.

Moisture absorption

The moisture absorption of iglidur® C plain bearings is approximately 6.9% weight when saturated in water. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® C are resistant up to a radiation intensity of $2 \cdot 10^4$Gy.

Resistance to weathering

iglidur® C plain bearings have limited resistance to weathering. The material properties are affected. Discoloration occurs. Practical tests under real application conditions are recommended.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® C plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® C at radial loads. The high flexibility makes the bearing suitable for vibrations and edge loads.

Surface pressure, page 41

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Bearing technology | Plain bearing | iglidur® C

Permissible surface speeds

Although important solid lubricants were intentionally avoided in the development of iglidur® C, the plain bearings are very wear-resistant and therefore also suitable for continuous movements at medium surface speeds. Despite it being possible to temporarily attain rotational speeds of up to 1.5m/s, the main applications should nevertheless involve speeds of less than 0.5m/s.

Surface speed, page 44

Temperature

The iglidur® C plain bearings can be used in short-term temperatures up to +130°C. However no real loads are possible at this temperature. It therefore makes sense to limit the temperature to around +80°C to +90°C. For temperatures over +40°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

The coefficient of friction of the iglidur® C plain bearing is dependent to a large degree on the surface finish of the shaft. The wear of the bearing is very good in applications with rotating or pivoting movements with low loads.

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

Shaft materials

Diagram 06 clearly shows how important the most "suitable" shaft can be. Although all shown results of these rotation experiments can be understood as very good, the difference is sometimes significant. This difference increases still further with increasing loads.

Shaft materials, page 52

Installation tolerances

iglidur® C plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to –
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	0

All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	1.0	0.7	2.0
short-term	m/s	1.5	1.1	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.17 – 0.25	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

	Housing		Plain bearing		Shaft	
Ø d1 [mm]	H7 [mm]		D11 [mm]		h9 [mm]	
0 – 3	+0.000	+0.010	+0.020	+0.080	–0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.030	+0.105	–0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.040	+0.130	–0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.050	+0.160	–0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.065	+0.195	–0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.080	+0.240	–0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.100	+0.290	–0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.120	+0.340	–0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.145	+0.395	–0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

iglidur® C plain bearings are manufactured to special order.

Technical data

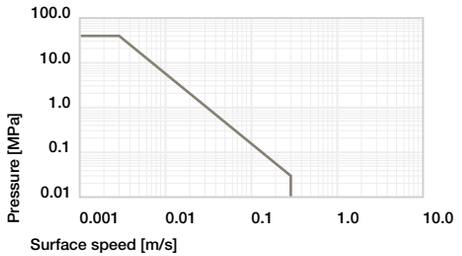

Diagram 01: Permissible pv values for iglidur® C plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

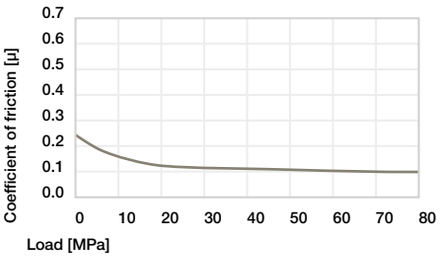

Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

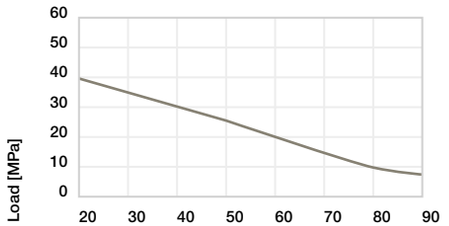

Diagram 02: Maximum recommended surface pressure as a function of temperature (40MPa at +20°C)

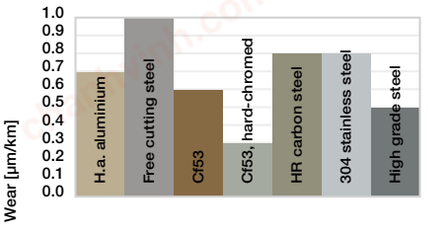

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

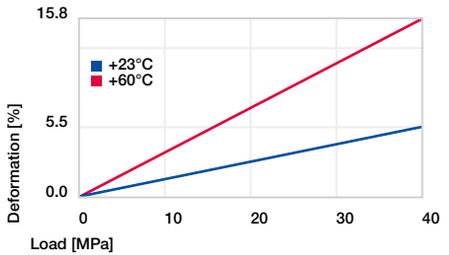

Diagram 03: Deformation under pressure and temperature

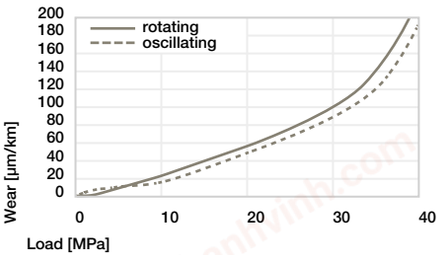

Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

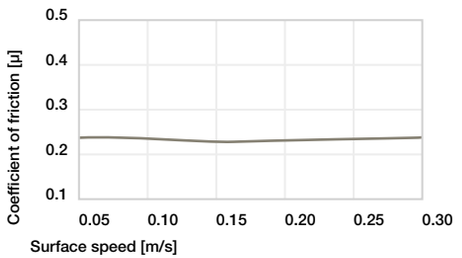

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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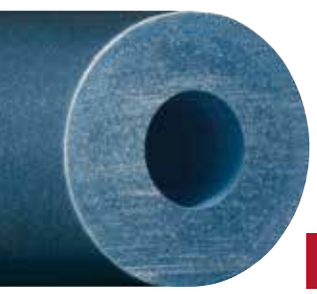
iglidur®

More products















...plastics

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iglidur® – other designs | Product overview

iglidur® piston rings and clip bearings



An alternative to PTFE tape:
Piston rings
▶ Page 581



Easy to install, security with the double flange design:
Clip bearings
▶ Page 585



Easy to install due to split design:
Split bearings
▶ Page 592



With anti-rotation feature
▶ Page 593

iglidur® piston rings and clip bearings



Press in and fold down:
Flanged bearings
▶ Page 594

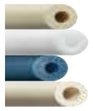


Press and plug:
Double flange bearings
▶ Page 595



Join and snap into place:
Special solution
Clip On
▶ Page 596

iglidur® solutions for special applications



For precise conveying:
iglidur®
knife edge rollers
▶ Page 597



Secured by screws:
iglidur® two hole flange bearings
▶ Page 603



New

Two hole flanged bearing with preload: iglidur® two hole flange bearings
▶ Page 606



Zero clearance:
Clearance-free pre-loaded plain bearings
▶ Page 607

iglidur® solutions for special applications



Cushion and dampen:
Disc springs polysorb
▶ Page 611



For all shaft surfaces and materials:
iglidur® PEP
▶ Page 615



Position and seal:
Lip seal bearings
▶ Page 619

igus® Service



Quick and individual:
Customised special parts – speedimold
▶ Page 623

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iglidur® piston rings

- Easy installation
- Cost-effective
- More wear-resistant than PTFE strips
- High load capacity
- Standard range from stock



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iglidur® piston rings | Advantages

Easy and cost-effective: iglidur® piston rings



Easy installation

Cost-effective

More wear-resistant than PTFE strip

High load capacity

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 ring, for example in cylinders, control valves and fittings. In addition to the standard iglidur® J range, it is also possible to configure your required piston ring from the entire iglidur® bearing range.

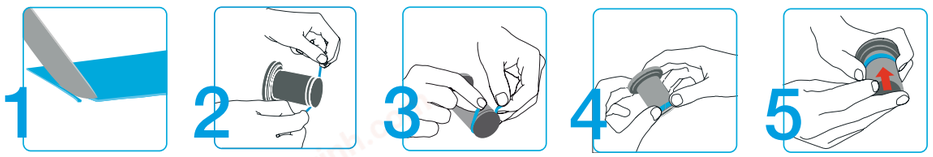
When to use it?

- 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

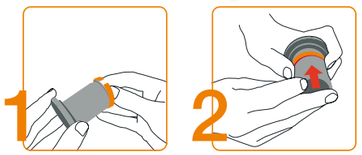
When not to use it?

- When the piston rings should also act as a seal
- When different diameters should be covered by one part

Alternative solutions:



With iglidur®:

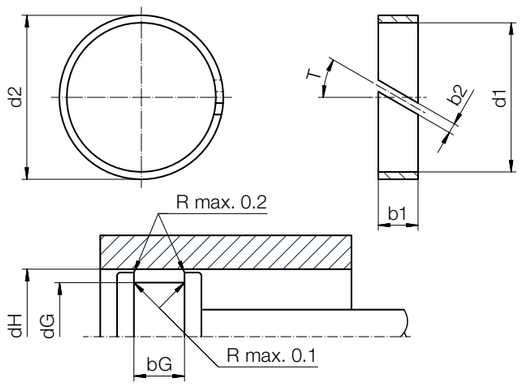


iglidur® piston rings | Product range

iglidur® J piston rings, from stock

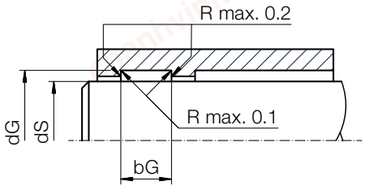
iglidur® J is our all-round material when it comes to an outstanding running performance and low coefficient of friction on the broadest range of shafts. The flexibility of iglidur® J enables the typical assembly expected with piston rings using the push over/clip on method. Good media resistance rounds off the range of properties.





Order key

Type	Dimensions [mm]					
J	PR	M	- 06	08	- 06	
iglidur® material	Piston ring	Metric	Inner Ø	Outer Ø	Length	



Installation recommendation for piston

Dimensions [mm]	dG (h tolerance)	dH (H tolerance)	bG
Nominal size	dG = d1	dH = d2	bG = b1 +0.2

Installation recommendation for housing

Dimensions [mm]	dS (h tolerance)	dG (H tolerance)	bG
Nominal size	dS = d1	dG = d2	bG = b1 +0.2

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**[167]
12	14	5.4	2.5	20	**JPRM-1214-054**
13	15	5.4	2.5	20	**JPRM-1315-054**
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**[167]
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**

d1	d2	b1 h13	b2 ±0.5	T [°]	Part No.
40	44	5.4	2.5	20	**JPRM-4044-054**
45	50	5.4	2.5	20	**JPRM-4550-054**
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**

[167] **Straight slot**

More Information about iglidur® material and technical data
iglidur® J ▶ Page 159

Max. +90°C
Min. –50°C

Ø 6–70mm
More dimensions upon request

Available from stock
Detailed information about delivery time online.

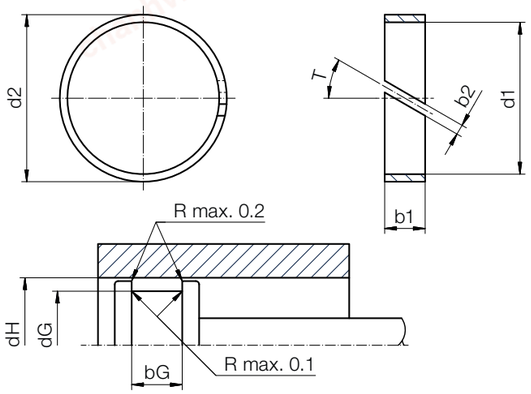
chanhvinh.com

iglidur® piston rings | Product range

Custom-made piston rings

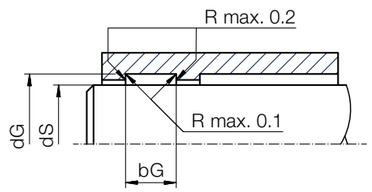
In addition to the stock range of iglidur® J piston rings, you can also select your required piston ring on the basis of the entire iglidur® bearing range.
Use the entire iglidur® plain bearing range and choose the material best suited to your application. Your piston ring will be delivered within 10 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 tolerance)	dH (H tolerance)	bG
Nominal size	dG = d1	dH = d2	bG = b1 +0.2

Installation recommendation for housing

Dimensions [mm]	dS (h tolerance)	dG (H tolerance)	bG
Nominal size	dS = d1	dG = d2	bG = b1 +0.2

Our material recommendations for special requirements:

- **iglidur® A181: FDA-compliant ▶ Page 401**
- **iglidur® J350: >+90°C ▶ Page 199**
- **iglidur® H1: Temperatures up to +200°C ▶ Page 333**

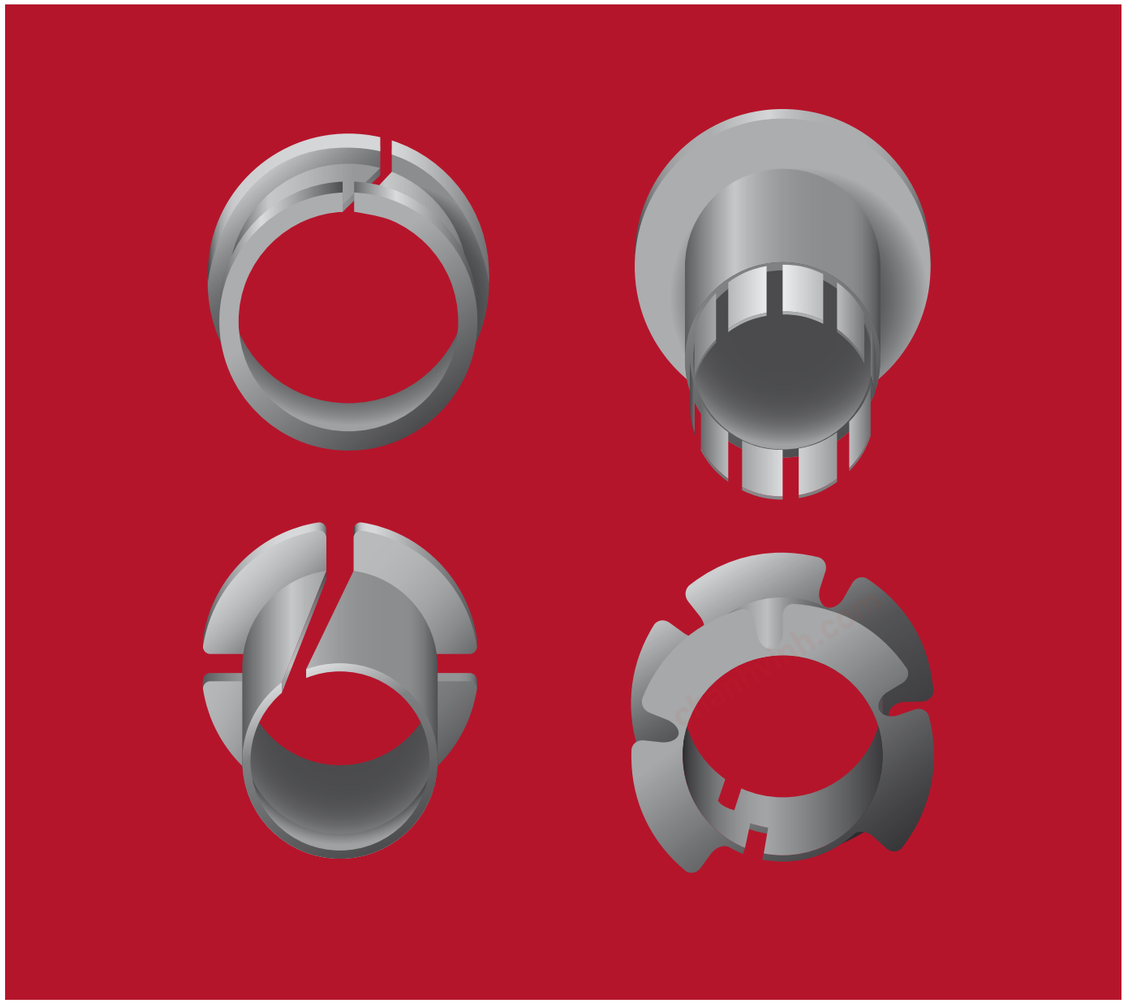
In addition to mechanical processing of existing iglidur® plain bearings to piston rings, we also develop custom-made piston ring solutions for your volume requirements. Talk to us! We will support you with your design and create an appropriate proposal.

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-asean.com/pistonring-finder





iglidur® – clip bearings

- Easy installation
- Abrasion-resistant
- Predictable service life
- Custom versions possible
- Lubrication and maintenance-free
- Standard range from stock



chanhvinh.com

iglidur® clip bearings | Advantages

Solutions for stamped sheet metal



iglidur® clip bearings:
Captive with double flange
▶ **From page 590**



iglidur® split bearings:
Easy assembly due to lateral slot, also with anti-rotation feature
▶ **From page 592**



iglidur® flanged bearings:
Press in and fold down
▶ **From page 594**



iglidur® double flange bearings:
Press and plug
▶ **From page 595**



Special solution
iglidur® Clip On:
Join and snap into place
▶ **From page 596**

iglidur® clip bearings for fitting shafts

iglidur® clip bearings are designed specifically for fitting shafts through sheet metal. For this reason, the bearings have flanges located on both ends. The plain bearings are secured in the sheet metal plate on both sides after fitting.
The clip bearings have an angled slot which allows them to be fitted from one side. After fitting, the bearing expands and forms a lining for the hole in the metal plate. The shaft prevents the clip bearing from falling out the housing. Even during linear movement, the plain bearing cannot slide out.

- Lateral slot for easy installation
- Lubrication and maintenance-free
- Good adaptability to punched holes
- Abrasion-resistant
- Quiet
- For rotating and linear movements

Typical application areas

- Automotive industry
- Mechanical engineering
- Jig construction

Available from stock
Detailed information about delivery time online.

Max. +80°C
Min. –40°C

Material: iglidur® M250
6 types
Ø 3–25mm
More dimensions upon request

Imperial dimensions available
▶ **From page 1603**

iglidur® clip bearings | Product overview



iglidur® clip bearings
- Easy to fit due to clip-on feature
- Increased security with the double flange design
- Abrasion-resistant

▶ **From page 590**



iglidur® split bearings (clips2)
- Easy to fit
- Tolerance compensation with angled slot
- Low bearing clearance, high precision

▶ **From page 592**



iglidur® flanged bearings
- Easy installation
- Press-fit
- Axial load on both sides
- Compensation of tolerances of the sheet metal

▶ **From page 594**



iglidur® double flange bearings
- Easy to fit due to clip-on feature
- Large flange surfaces
- Two identical large flange surfaces

▶ **From page 595**



Special solution **iglidur® Clip On**
- The disc is snapped onto the flanged bearing with undercuts
- Compensation of axial clearance
- Captive pre-assembly possible
- Combination of conductive and non-conductive materials

▶ **From page 596**

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iglidur® clip bearings | Application examples



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® flanged bearings and clip 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® clip bearings, e.g. inner/tilt and seat height adjustment.

iglidur® clip bearings | Technical data

General properties

The clip bearings have an angled slot which allows the bearings to be fitted from one side. After fitting, the bearing expands and forms a lining for the hole in the metal plate. The shaft prevents the clip bearing from falling out the housing. Even during linear movement, the bearing cannot slide out. iglidur® clip bearings are made from wear-resistant material iglidur® M250.
iglidur® M250 is a plain bearing material with strong wear resistance at average loads. The plain bearings are self-lubricating and can be used dry. If required the plain bearings can also be lubricated. The material iglidur® M250 is resistant to all common lubricants.

Mechanical properties

The permissible static surface pressure of iglidur® M250 at room temperature is 20MPa. Due to the possibility of high tolerances in the housing hole, the clip bearing has a high compressive strength even for punched holes.
For bearing surfaces that are very small, the vibration dampening properties and the resistance to edge pressure are especially important.

▶ iglidur® M250, **Page 107**

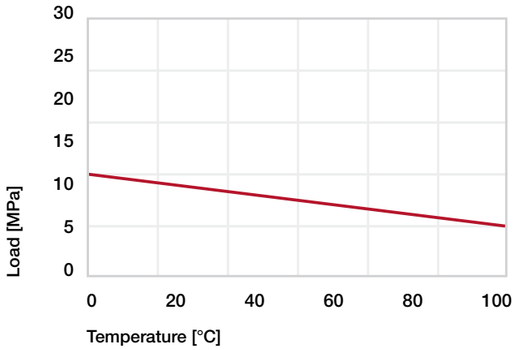

Diagram 01: Maximum recommended surface pressure as a function of temperature (20MPa at +20°C)

Permissible surface speeds

Clip bearings are extremely wear-resistant in slow rotating, oscillating, and linear movements. The maximum surface speeds for the different movements are the same as for the material iglidur® M250 (table 01).
With lubrication the permissible surface speeds can be increased.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Long-term	0.8	0.6	2.5
Short-term	2	1.4	5

Table 01: Maximum surface speeds

Temperatures

For operating temperatures up to +80°C iglidur® clip bearings display high wear resistance. Even in the cold, the plain bearings remain elastic and abrasion-resistant.

▶ Application temperatures, **page 49**

iglidur® M250	Application temperature
Minimum	–40°C
Max. long-term	+80°C
Maximum, short-term	+170°C

Table 02: Temperature limits

Assembly

For installation, the plain bearings are pressed together on the side with the large flange. The angled slot makes the bearing spiral shaped so that it can be placed easily into the metal plate. The slot also compensates for expansions of the circumference. In this way, a tight clearance is possible with the clip bearings. The bearing clearance is dimensioned in such a way that in a housing hole with a nominal diameter, a shaft made with the same nominal diameter turns easily. The clip bearings should be fitted into a housing with a "H" class tolerance, up to H13. The clip bearing can also rotate within the housing hole.

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 press-fit

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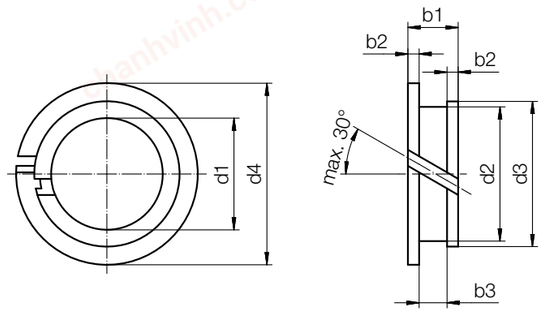
iglidur® clip bearings | Product range

Clip bearings for sheet metals – captive with double flange



Image exemplary



Order key

Type	Dimensions [mm]

M C M - 03 - 02

- M – iglidur® material
- C – Design
- M – Metric
- 03 – Inner Ø d1
- 02 – Metal sheet thickness b3

Material:
iglidur® M250 ▶ Page 107

Imperial dimensions available
▶ From page 1603

Dimensions [mm]

d1 D11[7]	d2	d3	d4	b1 +0.20	b2 –0.10	b3	Part No.
3	4.2	4.8	6.0	3.2	0.6	2.0	**MCM-03-02**
3	4.2	4.8	6.0	4.2	0.6	3.0	**MCM-03-03**
4	5.2	5.9	7.0	3.2	0.6	2.0	**MCM-04-02**
4	5.2	5.9	7.0	4.2	0.6	3.0	**MCM-04-03**
5	6.2	6.8	8.0	3.2	0.6	2.0	**MCM-05-02**
5	6.2	6.8	8.0	4.2	0.6	3.0	**MCM-05-03**
6	7.2	7.8	11.0	2.7	0.6	1.5	**MCM-06-015**
6	7.2	7.8	11.0	3.2	0.6	2.0	**MCM-06-02**
6	7.2	7.8	11.0	4.2	0.6	3.0	**MCM-06-03**
6	7.2	7.8	11.0	5.2	0.6	4.0	**MCM-06-04**
7	9.0	9.8	13.0	4.6	0.8	3.0	**MCM-07-03**
8	9.6	10.4	13.0	3.6	0.8	2.0	**MCM-08-02**
8	9.6	10.4	13.0	4.6	0.8	3.0	**MCM-08-03**
8	9.6	13.0	10.4	5.6	0.8	4.0	**MCM-08-04**
9	10.6	11.4	14.0	3.6	0.8	2.0	**MCM-09-02**
10	11.6	12.4	15.0	3.6	0.8	2.0	**MCM-10-02**
10	11.6	12.4	15.0	4.1	0.8	2.5	**MCM-10-025**
10	11.6	12.4	15.0	4.6	0.8	3.0	**MCM-10-03**

d1 D11[7]	d2	d3	d4	b1 +0.20	b2 –0.10	b3	Part No.
10	11.6	12.4	15	5.6	0.8	4.0	**MCM-10-04**
10	11.6	12.4	15	9.6	0.8	8.0	**MCM-10-08**
12	13.6	14.4	17	3.4	0.8	1.8	**MCM-12-018**
12	13.6	14.4	17	3.6	0.8	2.0	**MCM-12-02**
12	13.6	14.4	17	4.35	0.8	2.75	**MCM-12-025**
12	13.6	14.4	17	4.6	0.8	3.0	**MCM-12-03**
12	13.6	14.4	17	5.1	0.8	3.5	**MCM-12-035**
12	13.6	14.4	17	5.6	0.8	4.0	**MCM-12-04**
12	13.6	14.4	17	6.4	0.8	4.8	**MCM-12-045**
14	15.6	16.4	19	4.6	0.8	3.0	**MCM-14-03**
16	17.6	18.4	21	3.6	0.8	2.0	**MCM-16-02**
16	17.6	18.4	21	4.6	0.8	3.0	**MCM-16-03**
18	20.0	21.0	23	4.0	0.8	2.4	**MCM-18-02**
18	20.0	21.0	23	5.0	1.0	3.0	**MCM-18-03**
20	22.0	23.0	25	5.0	1.0	3.0	**MCM-20-03**
25	27.0	28.0	30	5.0	1.0	3.0	**MCM-25-03**
25	27.0	28.0	30	8.0	1.0	6.0	**MCM-25-06**

[7] d1 value is measured with a plug gauge after fitting into a reference housing d2 (+0.005). Please see D11 tolerances table ▶ Page 589

iglidur® clip bearings | Product range New

Low coefficient of friction and wear



These clip bearings are made of wear-resistant iglidur® high-performance polymers and are designed specifically for fitting shafts through sheet metal. With this specific clip bearing design, a locating spigot is utilised to enable fitting into less precise holes and housings. The new iglidur® K230 material offers a lower moisture absorption and even more flexibility compared to the iglidur® M250 clip bearings.

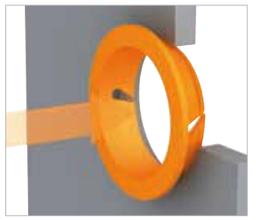
- Lubrication and maintenance-free
- Low moisture absorption
- Temperature resistance
- Chemical resistance
- Corrosion resistance

Material:
iglidur® K230 ▶ Page 1653

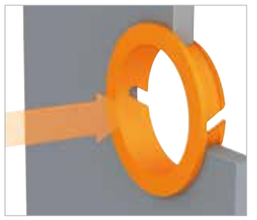
Fitting:



Simple axial press in



Axial safety through the second flange



Easy installation via clip on mechanism

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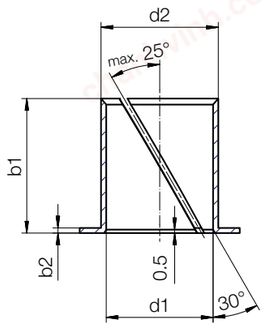
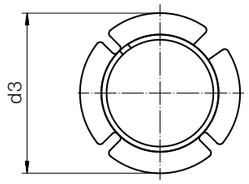
iglidur® clip bearings | Product range

Split bearings (clips2) – easy assembly



Image exemplary





r = max. 0.5mm

Order key

Type	Dimensions [mm]
M Y M-04-04	

iglidur® material | Design | Metric | Inner Ø d1 | Total length b1

Material:
iglidur® M250 ▶ Page 107
With anti-rotation feature ▶ Page 593

Imperial dimensions available
▶ From page 1604

Dimensions [mm]

d1	d1 tolerance[7]	d2[9]	d3 ±0.40	b1 –0.40	b2 –0.13	Part No.
4	+0.025 +0.075	5.2	7.0	4.0	0.6	**MYM-04-04**
5	+0.025 +0.075	6.2	8.0	5.0	0.6	**MYM-05-05**
6	+0.025 +0.075	7.2	9.5	6.0	0.6	**MYM-06-06**
8	+0.025 +0.075	9.6	12.0	8.0	0.8	**MYM-08-08**
10	+0.025 +0.075	11.6	15.0	10.0	0.8	**MYM-10-10**
12	+0.025 +0.075	13.6	18.0	12.0	0.8	**MYM-12-12**
14	+0.025 +0.075	15.6	21.0	14.0	0.8	**MYM-14-14**
16	+0.025 +0.075	17.6	24.0	16.0	0.8	**MYM-16-16**
20	+0.025 +0.075	21.6	30.0	16.0	0.8	**MYM-20-16**
20	+0.025 +0.075	21.6	30.0	20.0	0.8	**MYM-20-20**
25	+0.025 +0.075	27.4	37.5	25.0	1.2	**MYM-25-25**

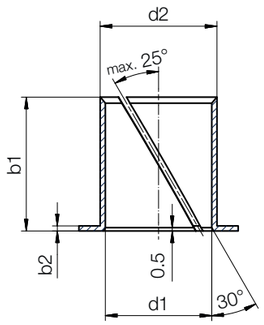
[7] d1 value is measured with a plug gauge after fitting into a reference housing d2 (+0.005)
[9] Recommended housing hole tolerance: H9

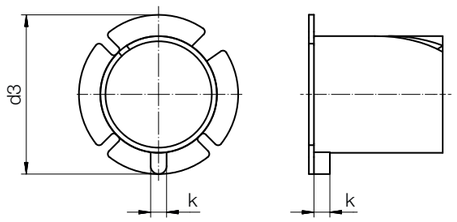
iglidur® clip bearings | Product range

Split bearings with anti-rotation feature



Image exemplary





Order key

Type	Dimensions [mm]	Option
M Y M- 04 - 04		-K

iglidur® material | Design | Metric | Inner Ø d1 | Total length b1 | Anti-rotation feature

Material:
iglidur® M250 ▶ Page 107

Imperial dimensions available
▶ From page 1604

Dimensions [mm]

d1	d1 tolerance[8]	d2[9]	d3 ±0.40	b1 –0.40	b2 –0.13	k	Part No.
4	+0.025 +0.075	5.20	7.00	4.00	0.60	1.0	**MYM-04-04-K**
5	+0.025 +0.075	6.20	8.00	5.00	0.60	1.0	**MYM-05-05-K**
6	+0.025 +0.075	7.20	9.50	6.00	0.60	1.5	**MYM-06-06-K**
10	+0.025 +0.075	11.60	15.00	10.00	0.80	2.0	**MYM-10-10-K**
14	+0.025 +0.075	15.60	21.00	14.00	0.80	3.0	**MYM-14-14-K**

[8] d1 value is measured with a plug gauge after fitting into a reference housing d2 (+0.005)
[9] Recommended housing hole tolerance: H9

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iglidur® clip bearings | Product range

Flanged bearings – press in and fold down



Order key

Type	Dimensions [mm]
M K M-1012-10	

iglidur® material | Design | Metric | Inner Ø d1 | Outer Ø d2 | Metal sheet thickness

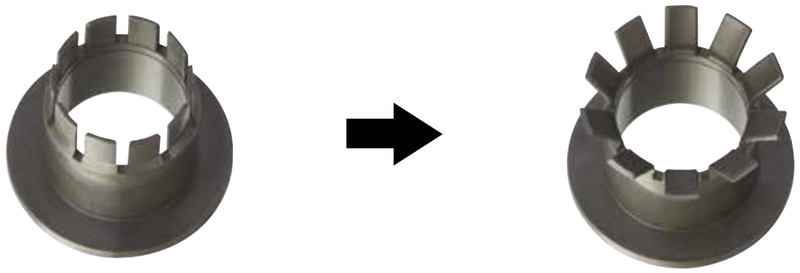
Material:
iglidur® M250 ▶ Page 107

Sample dimension [mm]

d1	d1 tolerance[3]	d2	d3	b1	b2	b3	s	Part No.
	E10		d13	h13	h13	+0.1/+0.7	±0.1	
10	+0.025 +0.083	12	18	14	1	10	0.4	**MKM-1012-10**

[3] After press-fit. Testing methods ▶ Page 57

Fitting:



Press in, fold down, ready: captive, axial load on both sides

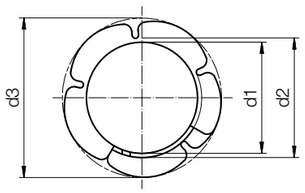


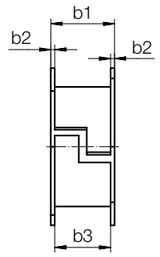
Please contact us if you need a custom-made double flange bearing for your application. We will help you with your design and create an appropriate proposal, drawing on the experience that we have with a large number of custom bearing solutions.

iglidur® clip bearings | Product range

Double flange bearings – press and plug







Order key

Type	Dimensions [mm]
M D M-1213-06	

iglidur® material | Design | Metric | Inner Ø d1 | Outer Ø d2 | Metal sheet thickness

Material:
iglidur® M250 ▶ Page 107

Sample dimension [mm]

d1	d1 tolerance[8]	d2	d3	b1	b2	b3	Part No.
12	+0.050 +0.160	13	16.5	7	0.5	6.0	**MDM-1213-06**

[8] d1 value is measured with a plug gauge after fitting into a reference housing d2 (+0.005)

Fitting:



Please contact us if you need a custom-made double flange bearing for your application. We will help you with your design and create an appropriate proposal, drawing on the experience that we have with a large number of custom bearing solutions.

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iglidur® special solutions | Product range

iglidur® Clip On: Join and snap into place



The solution for all applications in stamped sheet metal retainers

iglidur® Clip On are frequently used in seat and convertible top systems and multi-joint hinges. iglidur® Clip On bearings facilitate captive assembly even in punched sheet metal/ steering arms with limited fine blanking content.

Material:
iglidur® M250 ▶ Page 107
iglidur® RN89 ▶ Page 1657

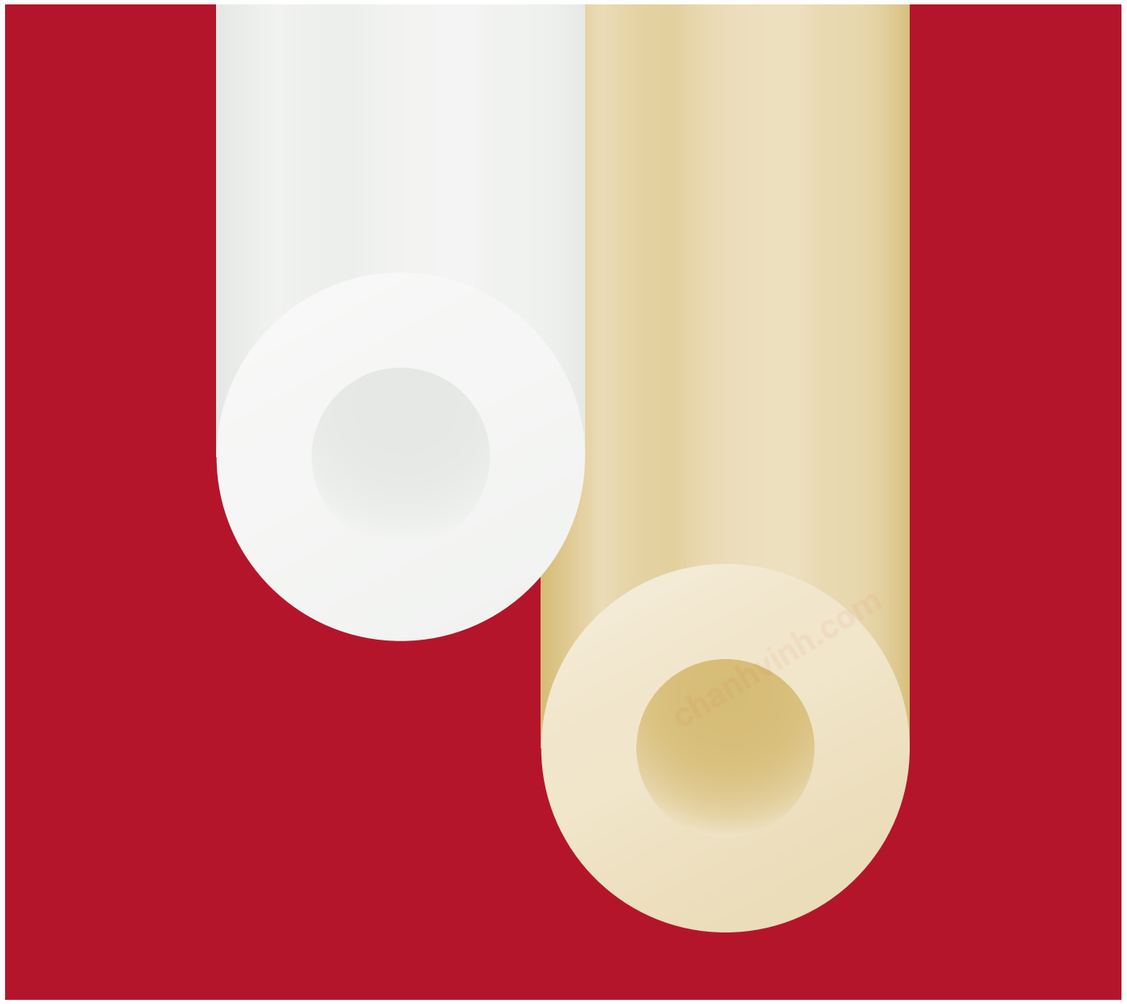
- Compensation of axial clearance
- Captive pre-assembly possible
- Electrically conductive materials are available
- Pressure-resistant materials up to 80MPa

The Clip On bearings can also be produced from electrically conductive iglidur® RN89, thus permitting e-coating.

Fitting:
The disc is clipped onto the flange bushing with undercuts.

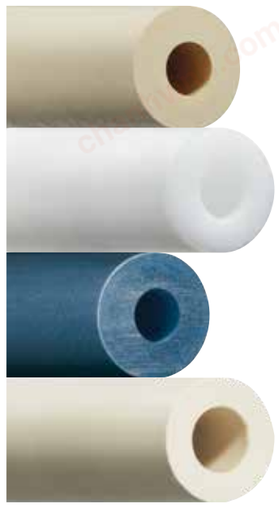


Please contact us if you need this special solution for your application. We will help you with your design and create an appropriate proposal, drawing on the experience that we have with a large number of custom bearing solutions.



iglidur® knife edge rollers

100% lubrication-free
Low drive power
Tight deflection radii
Long service life of the belt
Cost-effective
Long service life
Standard range from stock



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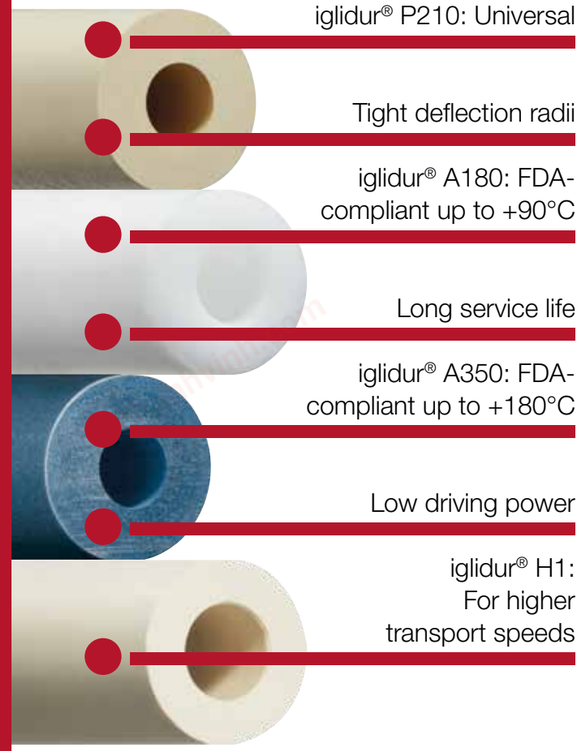
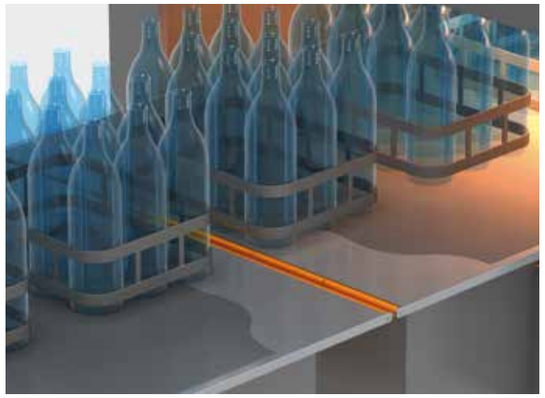
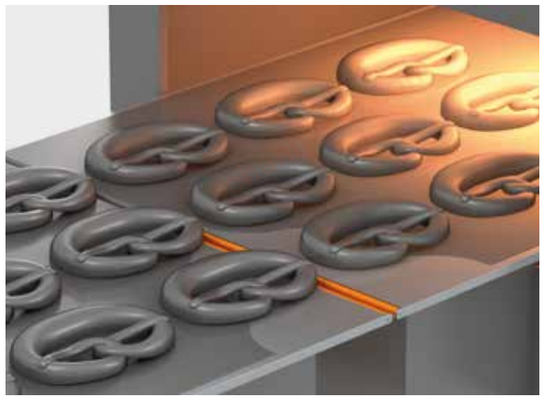
iglidur® knife edge rollers | Advantages

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 lubrication-free conveyor belt is required
- When a precise guiding is required
- When a cost-effective and lightweight 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
iglidur® H1: –40°C up to +200°C

4 materials
Ø 9–20mm

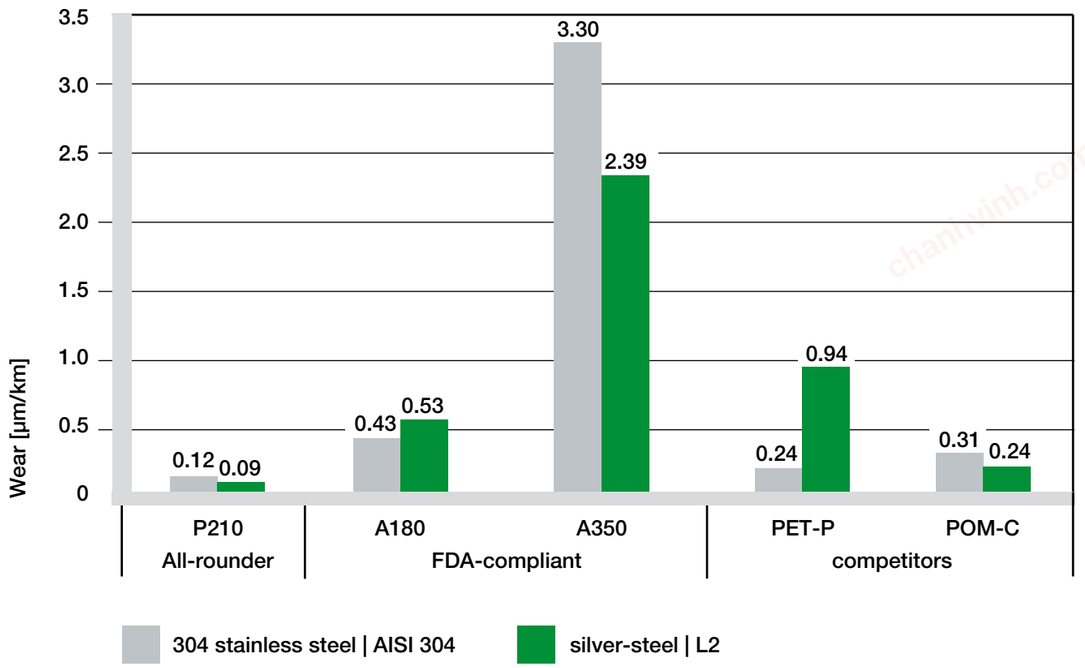
More dimensions upon request

iglidur® knife edge rollers | Technical data

Material properties

General properties	Unit	iglidur® P210	iglidur® A180	iglidur® A350	iglidur® H1	Testing method
Density	g/cm³	1.40	1.46	1.42	1.53	
Colour		yellow	white	blue	cream	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.3	0.2	0.6	0.1	DIN 53495
Max. total moisture absorption	% weight	0.5	1.3	1.9	0.3	
Coefficient of sliding friction, dynamic, against steel	µ	0.07 – 0.19	0.05 – 0.23	0.1 – 0.2	0.06 – 0.20	
pv value, max. (dry)	MPa · m/s	0.4	0.31	0.4	0.8	
Mechanical properties						
Flexural modulus	MPa	2,500	2,300	2,000	2,800	DIN 53457
Flexural strength at +20°C	MPa	70	88	110	55	DIN 53452
Compressive strength	MPa	50	78	78	78	
Max. recommended surface pressure (+20°C)	MPa	50	28	60	80	
Shore D hardness		75	76	76	77	DIN 53505
Physical and thermal properties						
Max. continuous application temperature	°C	+100	+90	+180	+200	
Max. short-term application temperature	°C	+160	+110	+210	+240	
Min. continuous application temperature	°C	–40	–50	–100	–40	
Thermal conductivity	W/m · K	0.25	0.25	0.24	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	8	11	8	6	DIN 53752
Electrical properties						
Specific contact resistance	Ωcm	$> 10^{12}$	$> 10^{12}$	$> 10^{11}$	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	$> 10^{11}$	$> 10^{11}$	$> 10^{11}$	DIN 53482

Table 01: Material properties table



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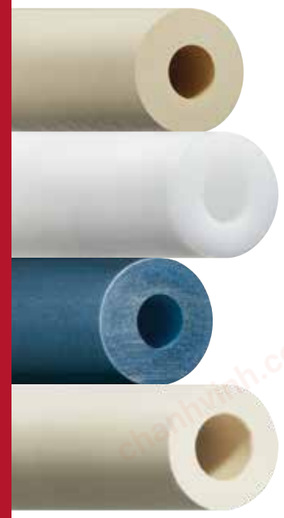
iglidur® knife edge rollers | Product range

iglidur® knife edge rollers



Order key

Type			Dimensions [mm]		
P210	RL	M	-03	09	-50
iglidur® material	Roller	Metric	Inner Ø d1	Outer Ø d2	Total length b1

Options:
iglidur® material
P210: iglidur® P210
A180: iglidur® A180
A350: iglidur® A350
H1: iglidur® H1

Knife edge rollers made from iglidur® P210 – universal, up to +100°C

d1 +0.1 [mm]	d2[147] ±0.1 [mm]	b1 –0.3 [mm]	Part No.
3.1	9.0	50.0	**P210RLM-0309-50**
4.1	9.0	50.0	**P210RLM-0409-50**
5.1	11.0	70.0	**P210RLM-0511-70**
5.1	14.0	70.0	**P210RLM-0514-70**
6.1	12.0	70.0	**P210RLM-0612-70**
6.1	14.0	70.0	**P210RLM-0614-70**
8.1	12.0	70.0	**P210RLM-0812-70**
8.1	14.0	70.0	**P210RLM-0814-70**
8.1	16.0	77.0	**P210RLM-0816-77**
8.1	18.0	70.0	**P210RLM-0818-70**
10.1	20.0	70.0	**P210RLM-1020-70**

Knife edge rollers made from iglidur® A180 – FDA-compliant, up to +90°C

d1 +0.1 [mm]	d2[147] ±0.1 [mm]	b1 –0.3 [mm]	Part No.
3.1	9.0	50.0	**A180RLM-0309-50**
4.1	9.0	50.0	**A180RLM-0409-50**
5.1	11.0	70.0	**A180RLM-0511-70**
5.1	14.0	70.0	**A180RLM-0514-70**
6.1	12.0	70.0	**A180RLM-0612-70**
6.1	14.0	70.0	**A180RLM-0614-70**
8.1	12.0	70.0	**A180RLM-0812-70**
8.1	14.0	70.0	**A180RLM-0814-70**
8.1	18.0	70.0	**A180RLM-0818-70**
10.1	20.0	70.0	**A180RLM-1020-70**

[147] Measured with gauge

Knife edge rollers made from iglidur® A350 – FDA-compliant, up to +180°C

d1 +0.1 [mm]	d2[147] ±0.1 [mm]	b1 –0.3 [mm]	Part No.
3.1	9.0	50.0	**A350RLM-0309-50**
6.1	12.0	70.0	**A350RLM-0612-70**
6.1	14.0	70.0	**A350RLM-0614-70**
8.1	18.0	70.0	**A350RLM-0818-70**

Knife edge rollers made from iglidur® H1 for higher transport speeds, up to +200°C

d1 +0.1 [mm]	d2[147] ±0.1 [mm]	b1 –0.3 [mm]	Part No.
3.1	9.0	50.0	**H1RLM-0309-50**
4.1	9.0	50.0	**H1RLM-0409-50**
5.1	11.0	70.0	**H1RLM-0511-70**
6.1	12.0	70.0	**H1RLM-0612-70**
6.1	14.0	70.0	**H1RLM-0614-70**
8.1	12.0	70.0	**H1RLM-0812-70**
8.1	14.0	70.0	**H1RLM-0814-70**

[147] Measured with gauge

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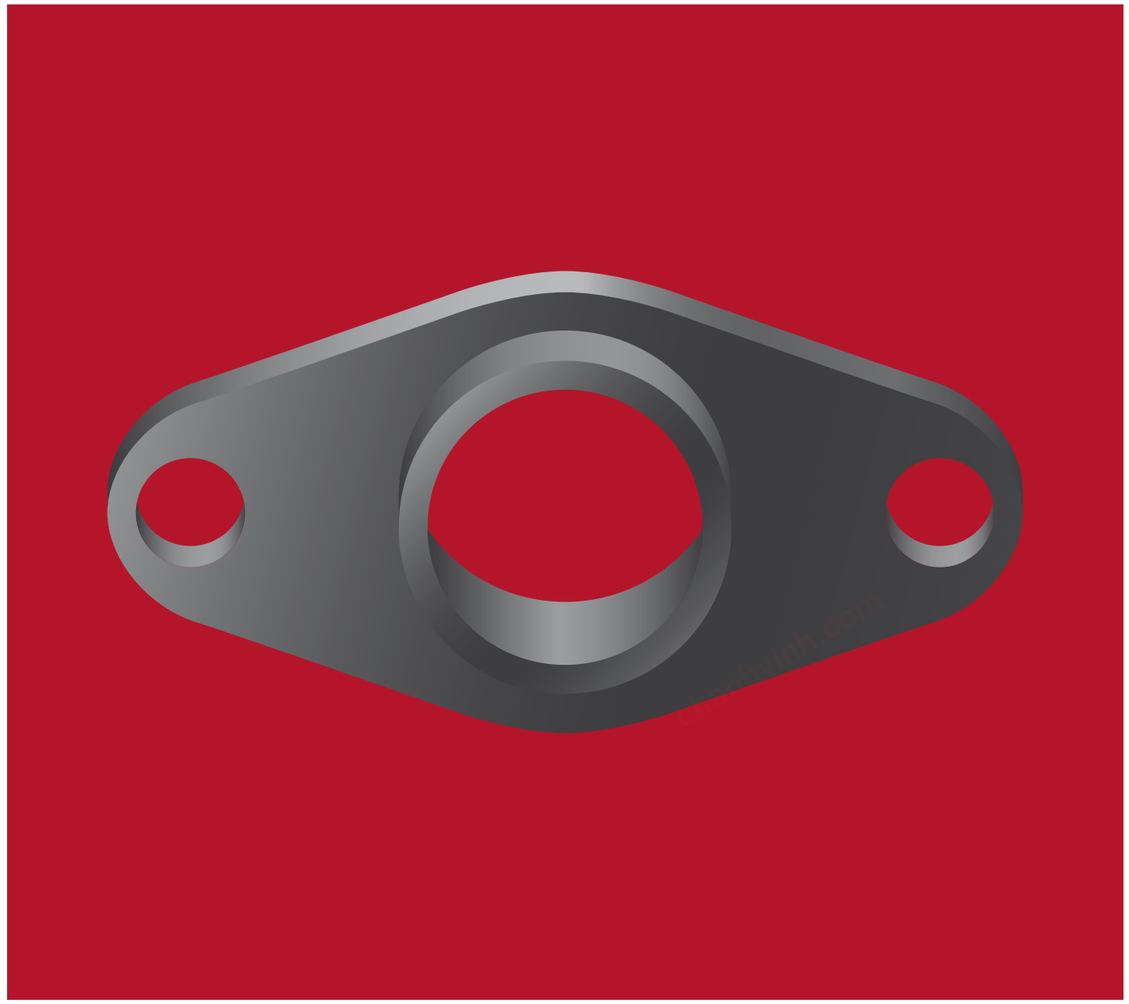
My sketches



iglidur® two hole flange bearings

- Very good wear resistance
- Maintenance-free dry operation
- Lightweight
- Standard range from stock



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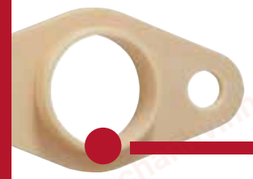
iglidur® two hole flange bearings | Advantages

Maintenance-free dry operation



iglidur® G:
Standard material for all-round applications



iglidur® J:
Material for low wear



iglidur® X:
Material for high temperature applications



iglidur® A180:
Material for use in the food sector



iglidur® J:
Two hole flanged bearing with preload

iglidur® – maintenance-free two hole flange bearings

With this design it is possible to use iglidur® high performance plain bearings in locations where recommended housing hole tolerances are not possible. Due to the design of the bearing, high loads are possible although there is a minimal precision requirement of the housing.

- Very good wear resistance
- Lightweight
- Lubrication-free

Assembly

For low radial loads, it is sufficient to mount iglidur® two hole flange bearings on one surface simply with two bolts. For higher radial loads, it advisable to support the iglidur® two hole flange bearing in a housing or boss. For this hole, large tolerances are permitted, since it serves only as additional support for the iglidur® two hole flange bearing. In order to achieve higher radial loads in the bearings, the iglidur® two hole flange bearing can be press-fit into a recommended housing hole with H7 tolerances. The additional bolts ensure the fit of the bearing in the housing.

Available from stock
Detailed information about delivery time online.

Depending on material:

iglidur® G:	–40°C up to +130°C
iglidur® J:	–50°C up to +90°C
iglidur® X:	–100°C up to +250°C
iglidur® A180:	–50°C up to +90°C

Material properties:

iglidur® G	▶ Page 81
iglidur® J	▶ Page 159
iglidur® X	▶ Page 279
iglidur® A180	▶ Page 401

Ø 10–35mm
More dimensions upon request

iglidur® two hole flange bearings | Product range

Two hole flange bearings



Order key

Type	Size [mm]
G FL	-10

iglidur® material | Two hole flange bearings | Inner Ø

Options:
iglidur® material
G: iglidur® G
J: iglidur® J
X: iglidur® X
A180: iglidur® A180

Dimensions [mm]

d1	d1 tolerance[3]	d2[13]	d3	d4	d5	d6	d7	b1	b2	b3	R (±0.2)	Part No.
10	+0.025 +0.083	12	30	14	15	4.5	22	6	2	1	4	**GFL-10**
12	+0.032 +0.102	14	36	16	18	4.5	26	6	2	1	4.5	**GFL-12**
14	+0.032 +0.102	16	42	18	21	5.5	30	6	2	1	5	**GFL-14**
16	+0.032 +0.102	18	48	20	24	5.5	34	6	2	1	5.5	**GFL-16**
18	+0.032 +0.102	20	54	22	27	6.5	39	6	2	1	7	**GFL-18**
20	+0.040 +0.124	23	60	26	30	6.5	44	10	3	2	7	**GFL-20**
25	+0.040 +0.124	28	75	30	35	6.5	55	10	3	2	8.5	**GFL-25**
30	+0.040 +0.124	34	90	36	40	8.5	66	10	3	2	10	**GFL-30**
35	+0.050 +0.150	39	95	41	55	8.5	77	10	3	2	12	**GFL-35**
10	+0.025 +0.083	12	30	14	15	4.5	22	6	2	1	4	**JFL-10**
12	+0.032 +0.102	14	36	16	18	4.5	26	6	2	1	4.5	**JFL-12**
14	+0.032 +0.102	16	42	18	21	5.5	30	6	2	1	5	**JFL-14**
16	+0.032 +0.102	18	48	20	24	5.5	34	6	2	1	5.5	**JFL-16**
20	+0.040 +0.124	23	60	26	30	6.5	44	10	3	2	7	**JFL-20**
25	+0.040 +0.124	28	75	30	35	6.5	55	10	3	2	8.5	**JFL-25**
30	+0.040 +0.124	34	90	36	40	8.5	66	10	3	2	10	**JFL-30**
35	+0.050 +0.150	39	95	41	55	8.5	77	10	3	2	12	**JFL-35**
10	+0.013 +0.071	12	30	14	15	4.5	22	6	2	1	4	**XFL-10**
12	+0.016 +0.086	14	36	16	18	4.5	26	6	2	1	4.5	**XFL-12**
14	+0.016 +0.086	16	42	18	21	5.5	30	6	2	1	5	**XFL-14**
16	+0.016 +0.086	18	48	20	24	5.5	34	6	2	1	5.5	**XFL-16**
20	+0.020 +0.104	23	60	26	30	6.5	44	10	3	2	7	**XFL-20**
25	+0.020 +0.104	28	75	30	35	6.5	55	10	3	2	8.5	**XFL-25**
30	+0.020 +0.104	34	90	36	40	8.5	66	10	3	2	10	**XFL-30**
35	+0.025 +0.125	39	95	41	55	8.5	77	10	3	2	12	**XFL-35**
10	+0.025 +0.083	12	30	14	15	4.5	22	6	2	1	4	**A180FL-10**
12	+0.032 +0.102	14	36	16	18	4.5	26	6	2	1	4.5	**A180FL-12**
16	+0.032 +0.102	18	48	20	24	5.5	34	6	2	1	5.5	**A180FL-16**
20	+0.040 +0.124	23	60	26	30	6.5	44	10	3	2	7	**A180FL-20**
25	+0.040 +0.124	28	75	30	35	6.5	55	10	3	2	8.5	**A180FL-25**
30	+0.040 +0.124	34	90	36	40	8.5	66	10	3	2	10	**A180FL-30**
35	+0.050 +0.150	39	95	41	55	8.5	77	10	3	2	12	**A180FL-35**

[3] After press-fit. Testing methods ▶ Page 57 [13] Press-fit in H7 tolerance housing hole

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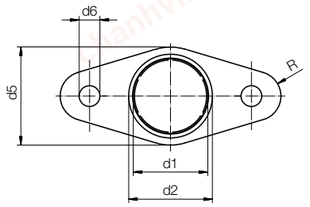
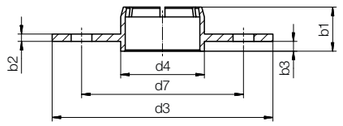
iglidur® two hole flange bearings | Advantages New

Two hole flanged bearing with preload



- Corrosion resistance
- Self-lubricating due to incorporated solid lubricants
- Long service life thanks to high-performance polymers





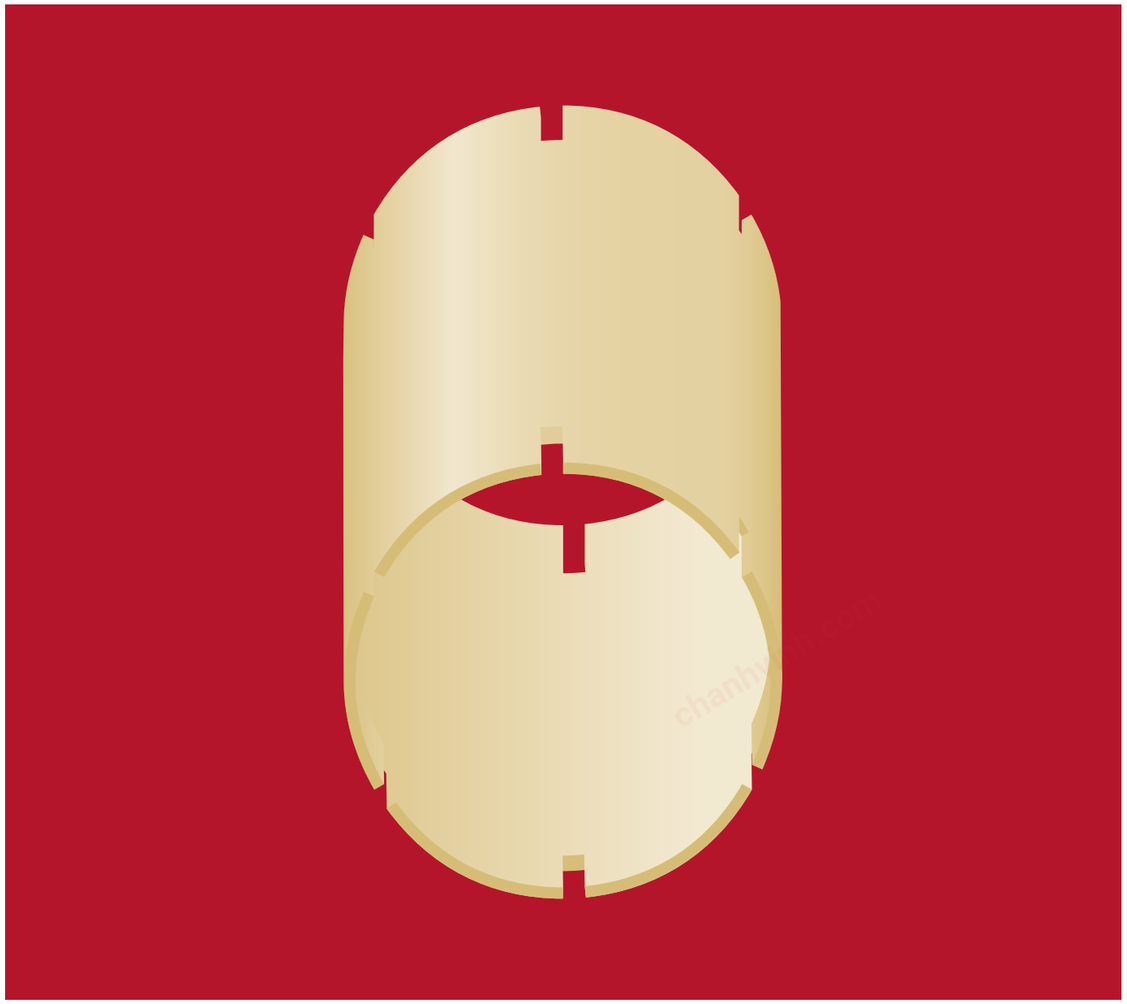
Order key

Type				Size [mm]
J	V	FL	-	10
iglidur® material	Pre-loaded	Two hole flange bearings		Inner Ø

iglidur® material
iglidur® J

Dimensions [mm]

d1	d1 tolerance	d2	d3	d4	d5	d6	d7	b1	b2	b3	R (±0.2)	Part No.
10	+0.025 +0.083	12	30	14	15	4.5	22	6	2	1	4.0	**JVFL-10**
12	+0.032 +0.102	14	36	16	18	4.5	26	6	2	1	4.5	**JVFL-12**
16	+0.032 +0.102	18	48	20	24	5.5	34	6	2	1	5.5	**JVFL-16**
20	+0.040 +0.124	23	60	26	30	6.5	44	10	3	2	7.0	**JVFL-20**



iglidur® clearance-free pre-loaded plain bearings

Radial and axial pre-load

Clearance-free in unloaded condition

Material: iglidur® J

Maintenance-free and predictable service life



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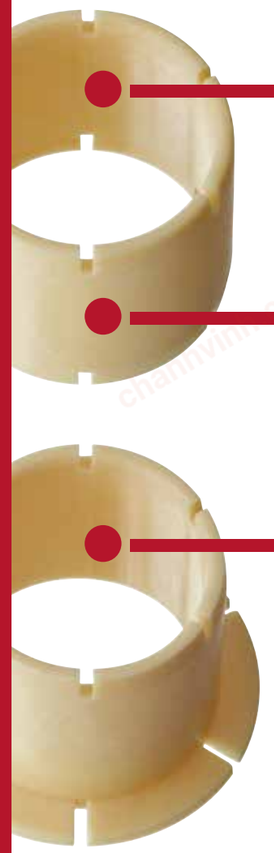
iglidur® JVSM/JVFM | Advantages

Zero-clearance and rattle-free – pre-loaded iglidur® J plain bearing



Clearance-free and pre-loaded bearings

Clearance-free in unloaded condition

Maintenance-free and predictable service life

iglidur® clearance-free pre-loaded plain bearings

iglidur® JVSM and JVFM plain bearings are clearance-free in unloaded condition due to the axial and/or radial pre-load. The iglidur® J material possesses extremely low coefficient of friction in dry operation and a very low stick-slip effect. Ideal for "antivibration mounting" of pedal box bearings, etc.

When to use it?

- When a radial and/or axial pre-load of plain bearings is required
- When a rattle-free bearing in the unloaded state is required
- When you need a clearance-free feel

When not to use it?

- When a plain bearing solution with reduced clearance is needed
  ▶ Please contact us
- When the pre-load has to withstand high radial forces
- When total zero clearance feature is required at high loads

Available from stock
Detailed information about delivery time online.

Material:
iglidur® J ▶ Page 159

Max. +90°C
Min. –50°C

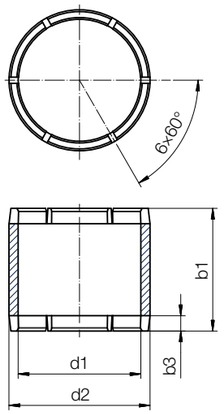
2 types
Ø 6–20mm
More dimensions upon request

Imperial dimensions available
▶ From page 1605

iglidur® JVSM/JVFM | Product range

Clearance-free, pre-loaded sleeve plain bearings





Order key

Type				Dimensions			
J	V	S	M	-06	08	-	06
iglidur® material	Pre-loaded	Form S	Metric	Inner Ø d1 [mm]	Outer Ø d2 [mm]		Length b1 [mm]

Options:
Form:
S: sleeve
F: with flange

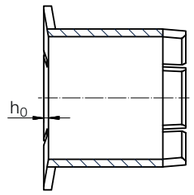
Dimensions [mm]

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**

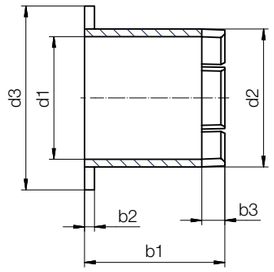
[14] **d1 measured after press-fit in housing hole. d2 H7 within the measurement plane**

Clearance-free, pre-loaded flanged bearings





r = max. 0.5mm

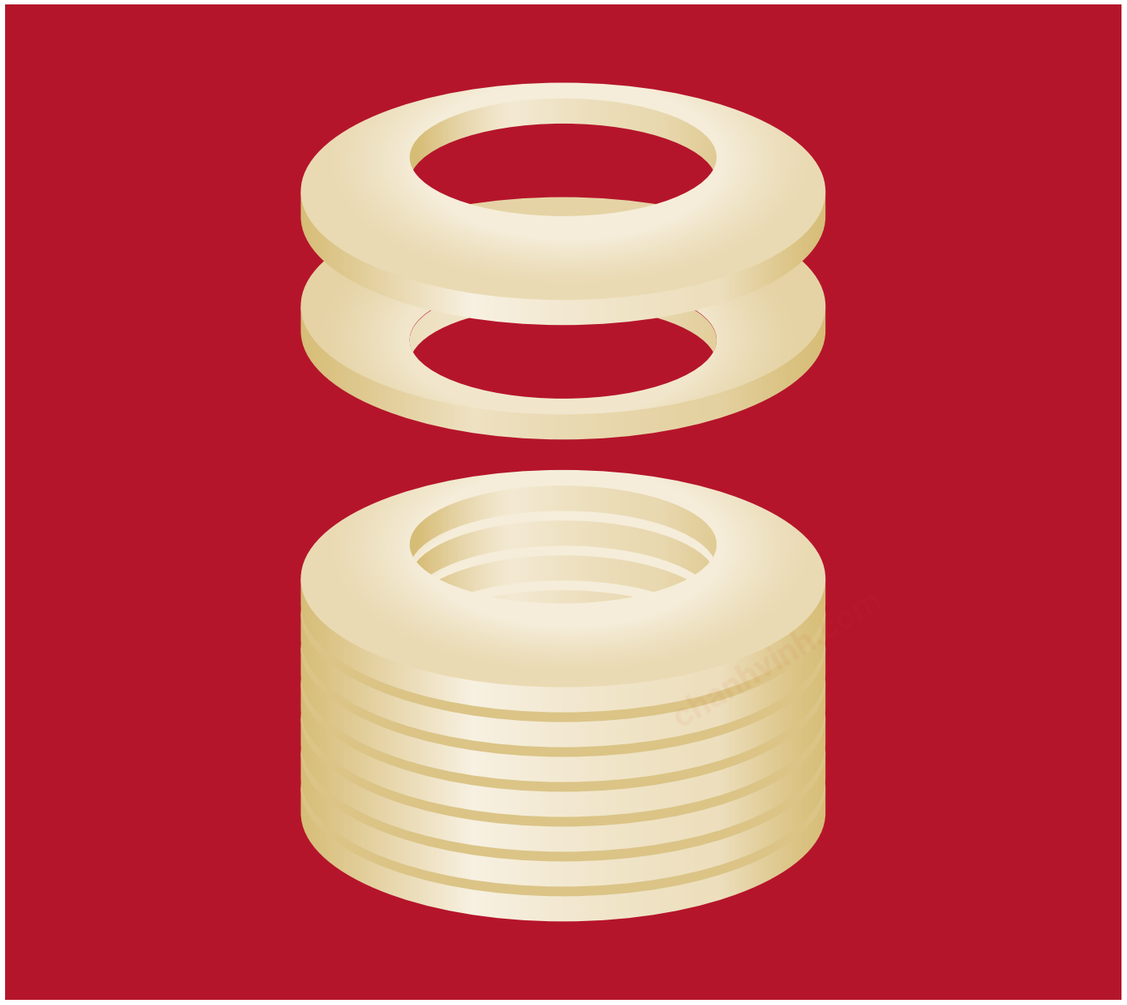


Dimensions [mm]

d1	d1 tolerance[14] E10	d2	d3	b1 h13	b2	b3	h_0 ±0.1	Part No.
8	+0.025 +0.083	10	15	10	1.0	2.0	0.44	**JVFM-0810-10**
10	+0.025 +0.083	12	18	10	1.0	2.0	0.53	**JVFM-1012-10**
12	+0.032 +0.102	14	20	12	1.0	2.0	0.53	**JVFM-1214-12**
14	+0.032 +0.102	16	22	12	1.0	2.0	0.53	**JVFM-1416-12**
15	+0.032 +0.102	17	23	15	1.0	2.5	0.53	**JVFM-1517-15**
18	+0.032 +0.102	20	26	11	1.0	2.5	0.53	**JVFM-1820-11**
18	+0.032 +0.102	20	26	18	1.0	2.5	0.53	**JVFM-1820-18**
20	+0.040 +0.124	23	30	20	1.5	2.5	0.62	**JVFM-2023-20**

[14] **d1 measured after press-fit in housing hole. d2 H7 within the measurement plane**

My sketches



polysorb
disc springs

- Compensation for axial clearances and manufacturing tolerances
- Vibration dampening
- Noise dampening
- Corrosion-free
- Lightweight
- Electrical and thermal insulation
- Standard range from stock



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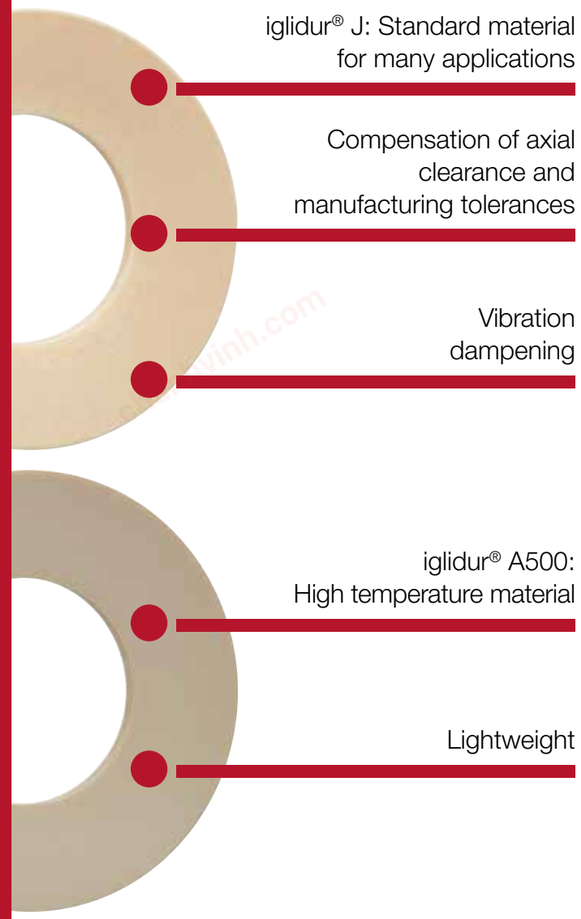
polysorb | Advantages

Cushion and dampen: plastic disc springs



polysorb disc springs

Disc springs are discs that can be axially loaded, which are concave in the axial direction. Disc springs require less space than other spring types and are especially suitable for designs that do not require a high spring length.

When to use it?

- When an application requires disc spring characteristics which are only possible in metal at a considerable expense (slot design)
- For compensation of axial clearances and manufacturing tolerances
- For vibration dampening
- For noise reduction
- When a non-magnetic material is required
- For electrical and thermal insulation

When not to use it?

- When constant spring forces are necessary over a wide temperature range
- When high spring forces are required

Available upon request
Detailed information about delivery time online.

Material properties:
iglidur® J **▶ Page 159**
iglidur® A500 **▶ Page 393**

Depending on material:
iglidur® J: –50°C up to +90°C
iglidur® A500: –100°C up to +250°C

1 type, 2 materials
Ø 5–20mm
More dimensions upon request

polysorb | Technical data

General properties

The spring deflection of the disc spring is relatively small. Therefore a number of disc springs are combined in practice. Disc springs that are alternately stacked increase the spring length proportionally to the amount of springs. In order to increase the force, the disc springs can be parallel stacked to form a spring packet.

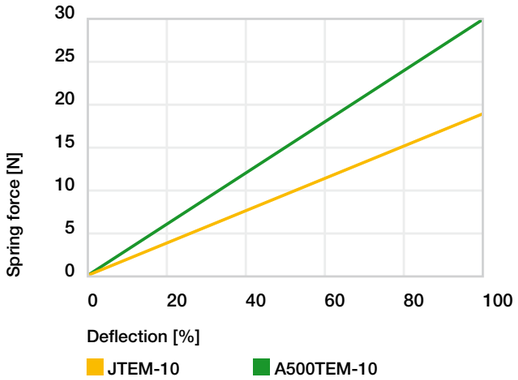


Diagram 01: Spring force [N] as a function of percental deflection measured with size 10

The force deformation curves of polysorb disc springs are approximately linear.

Additional properties

Chemical resistance

polysorb disc springs are resistant to a variety of chemicals. iglidur® A500 has a higher resistance than iglidur® J.

Chemicals	Resistance	
	iglidur® J	iglidur® A500
Alcohols	+	+
Hydrocarbons	+	+
Greases, oils without additives	+	+
Fuels	+	+
Diluted acids	0 to –	+
Strong acids	–	+
Diluted alkalines	+	+
Strong alkalines	+ up 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 8N at the maximum permissible temperature of +90°C. The spring force against ambient temperature is shown in diagram 02.

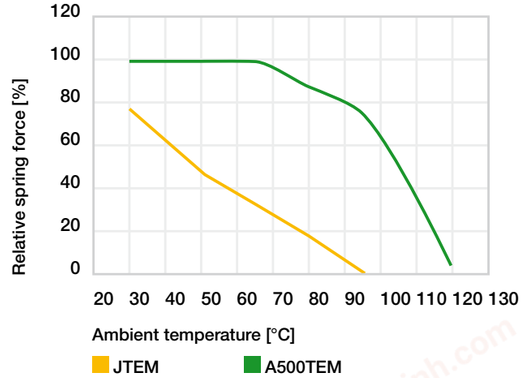


Diagram 02: Effect of ambient temperature on the spring force

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polysorb | Product range

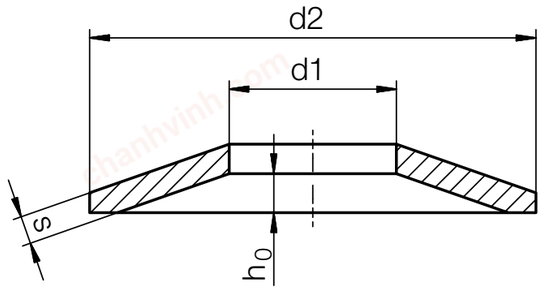
Plastic disc springs



iglidur® J



iglidur® A500



Dimensions based on DIN 2093

Order key

Type				Dimensions [mm]
☐ T	E	M	-05	
iglidur® material	Thrust washer style	"Elastic spring"	Metric	Inner Ø d1

Options:
iglidur® J
for low wear
iglidur® A500
for high temperature applications requiring FDA-compliance

Material:
iglidur® J ▶ Page 159
iglidur® A500 ▶ Page 393

Dimensions [mm]

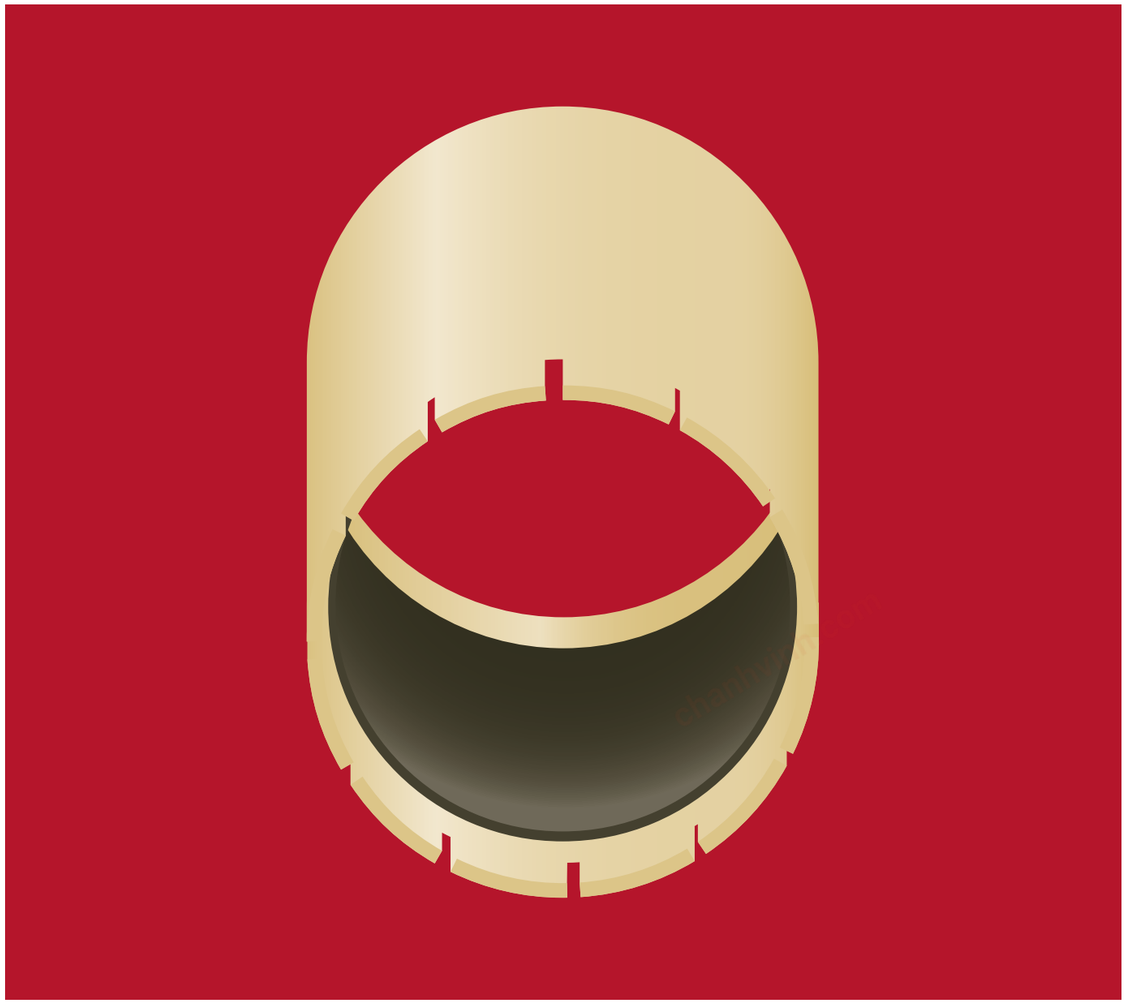
d1	d2	s	h_0	Standard values: Spring lengths and forces $F_{1.0}$ iglidur® J [N]	$F_{1.0}$ iglidur® A500 [N]	Weight [g]	Part No.[15)]
5.2	10.0	0.5	0.25	5	8	0.04	☐ TEM-05
6.2	12.5	0.7	0.30	10	15	0.11	☐ TEM-06
8.2	16.0	0.9	0.35	16	24	0.20	☐ TEM-08
10.2	20.0	1.1	0.45	24	35	0.33	☐ TEM-10
12.2	25.0	1.5	0.55	45	70	0.85	☐ TEM-12
16.3	31.5	1.75	0.70	65	85	1.44	☐ TEM-16
20.4	40.0	2.25	0.90	130	150	3.10	☐ TEM-20

The standard values for the spring lengths and forces are rounded mean values.

[15)] Material: iglidur® J: JTEM, standard
iglidur® A500: A500TEM, high temperature and chemical resistance

Symbols and units:

F	=	Force [N]
h_0	=	Maximum spring displacement [mm]
$F_{1.0}$	=	Spring force 100% displacement [N]



iglidur® PEP multi-component bearings

- Can be used with any shaft material
- Cost-effective
- Easy installation
- Low coefficient of friction
- Standard range from stock



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iglidur® PEP | Advantages

For all shaft surfaces and materials



Can be used with any shaft material

Cost-effective

Easy installation

Low coefficient of friction

iglidur® PEP multi-component bearings

In standard plain bearing solutions, the shaft has a critical part to play, as important as the bearing itself. With the iglidur® PEP bearings, igus® is forging new trail with this enclosed and maintenance-free plain bearing design.

When to use it?

- When a cost-effective plastic plain bearing system is required
- When independence from the shaft material and shaft surface is required
- For the protection of expensive and sensitive shafts

When not to use it?

- For high surface speeds
  - ▶ iglidur® J, page 159
- At high loads
  - ▶ iglidur® G, page 81
  - ▶ iglidur® Q, page 459
- At high temperatures
  - ▶ iglidur® V400, page 307
  - ▶ iglidur® X, page 279
  - ▶ iglidur® Z, page 289
- When low clearance bearings are required
  - ▶ iglidur® P, page 131
  - ▶ iglidur® X, page279

Available from stock
Detailed information about delivery time online.

Material:
iglidur® J ▶ Page 159

Max. +90°C
Min. –50°C

1 type
Ø 6–20mm
More dimensions upon request

Imperial dimensions available
▶ From page 1605

iglidur® PEP | Technical data

General properties

Maintenance-free plain bearings are generally described as being able to slide on the shaft without any additional coating and/or lubrication. It is evident that shaft materials are as important as the plain bearing itself. igus® is forging a new path with a plain bearing that is self-contained and maintenance-free.

iglidur® PEP is an innovative design for lubrication-free plastic plain bearing systems with an inner and outer ring. The special feature; the sliding surface is the inner ring, and for the first, time shaft materials and shaft surfaces are not a concern. Even threads, rust and scratches do not affect the performance or reliability. With the control over the sliding surface and through considerable testing, the long-term behaviour of the bearing system can be predicted precisely. Similar to ball bearings, the inner ring turns with the shaft in the plastic PEP plain bearing. Relative movements of the shaft with respect to the bearing are eliminated. This protects the shaft surface from wear and saves costs. An additional benefit; even the most sensitive or unusual materials can be used as the rotating shaft with this polymer plain bearing. Due to the bearing materials used, the PEP plastic bearing is totally corrosion-free.

Wear resistance

For loads up to 5N/mm² the wear test results are compelling. Here PEP plastic bearings obtain values that are comparable to most wear-resistant metal-backed bearing systems. This is a very positive result, when you consider the reduced costs compared with the required shaft surface finish which is demanded by traditional bearings. The consistently low coefficient of friction is also an advantage to the user. Since the running surfaces are fixed, the tribological data can be calculated. The coefficient of friction of the lubrication-free PEP bearings is no longer based on the shaft materials or surface properties. If necessary, the coefficient of friction can be reduced further with a small amount of lubricant.

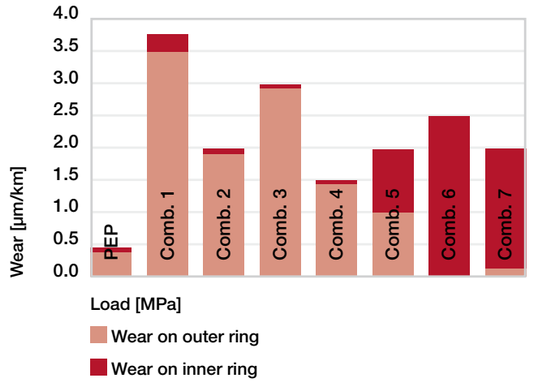

Diagram 01: Wear experiments of different material combinations, p = 0.75MPa, v = 0.3m/s

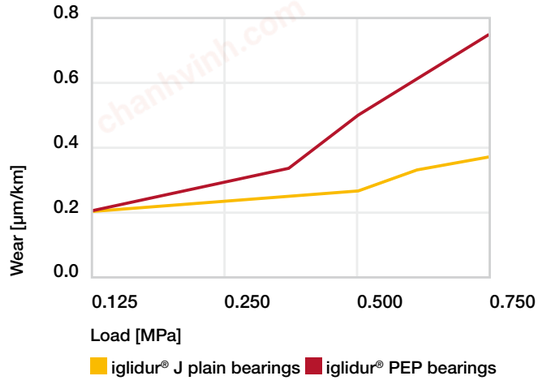

Diagram 02: Wear of iglidur® PEP bearings as a function of the load, v = 0.3m/s

Assembly

The installation of the PEP plain bearing could not be easier or faster. The bearings are manufactured to be press-fitted into a recommended housing hole of H7 tolerance. Then, the shaft is inserted and fits tightly onto the inner ring. The inner bearing is clipped into the outer ring. This design makes it possible to pull the shaft out without removing the inner ring.

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iglidur® PEP | Product range

Sleeve bearings (form S)



Order key

Type	Dimensions [mm]

PEP S M-0610-10

iglidur® type	Form S	Metric	Inner Ø d1	Outer Ø d2	Total length b1

Material:
iglidur® J ▶ Page 159

Imperial dimensions available
▶ From page 1605

Dimensions [mm]

d1	d2	b1	Part No.
6	10	10	PEPSM-0610-10
8	12	12	PEPSM-0812-12
10	14	12	PEPSM-1014-12
12	16	15	PEPSM-1216-15
16	20	20	PEPSM-1620-20
20	23	20	PEPSM-2023-20



iglidur® lip seal bearings

- Polymer bearing with integrated radial shaft seal
- Seals against the shaft
- Reduced space requirement and easy, fast installation
- Can be manufactured with different types of seal
- High temperature option available (VDSM)



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iglidur® lip seal bearings | Advantages

Position and seal: plastic bearing with clip-on shaft seal



Seals against the rotating shaft

Reduced space requirement

Easy and fast installation

Can be manufactured with different types of seal

High temperature option available (made of iglidur® V400)

iglidur® lip seal bearings

Easy and quick to fit polymer plain bearing made of iglidur® J (JDSM) or iglidur® V400 (VDSM) with an integrated rotary lip seal, which protects against dust, dirt, and all depressurised liquids.

When to use it?

- When the 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 upon request
Detailed information about delivery time online.

Material properties:
iglidur® J ▶ Page 159
iglidur® V400 ▶ Page 307

Depending on material:
iglidur® J: –50°C up to +90°C
iglidur® V400: –50°C up to +200°C

1 type, 2 materials
Ø 10mm
More dimensions upon request

iglidur® lip seal bearings | Product range

Lip seal sleeve bearings (form S)



JDSM



VDSM

Order key

Type				Dimensions [mm]		
□	D	S	M	-1015	-14	
iglidur® material	Seal	Form S	Metric	Inner Ø d1	Outer Ø d2	Total length b1

Material:
iglidur® J ▶ Page 159
iglidur® V400 ▶ Page 307

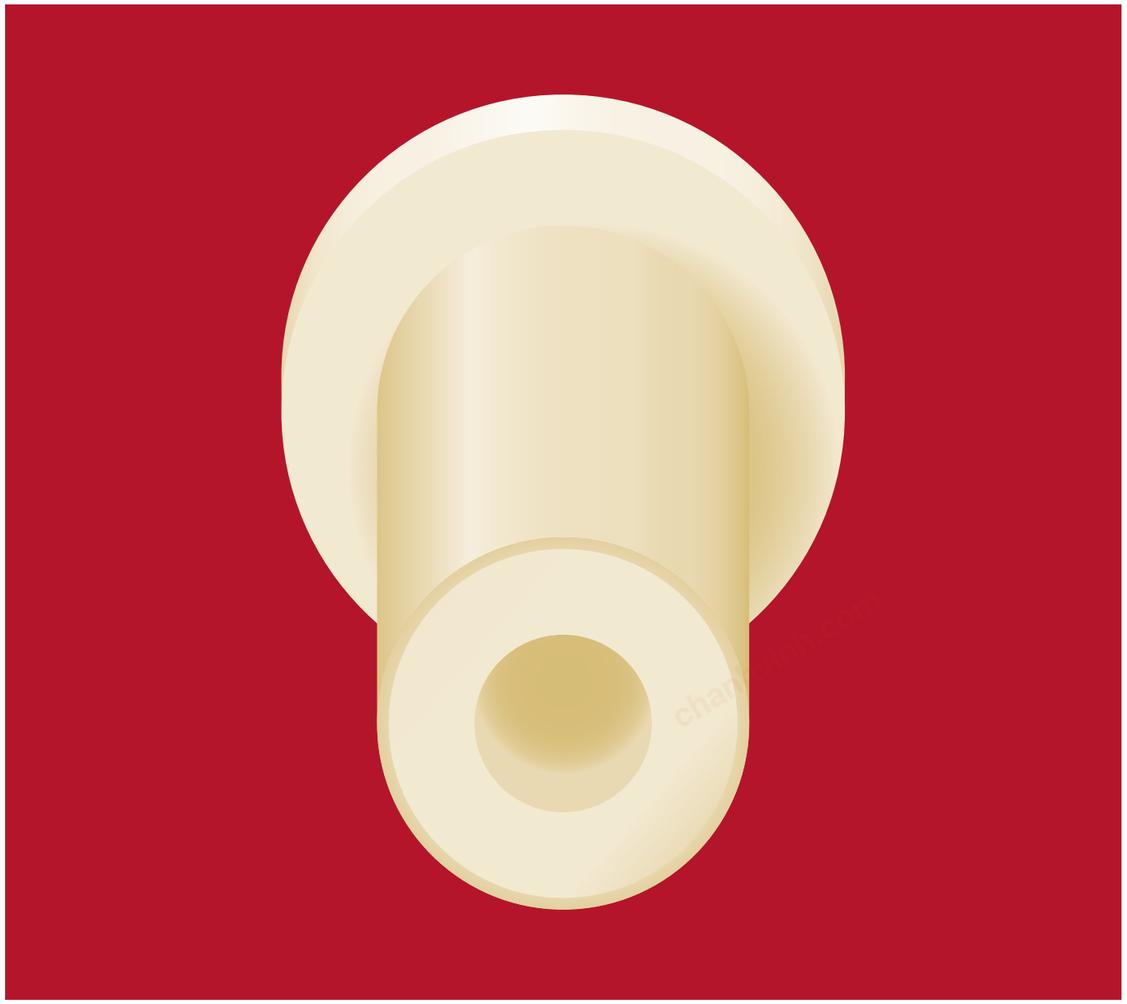
Dimensions [mm]

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® plain bearing.
We will support you with the design, will check the integration and create an appropriate proposal.

My sketches



speedimold – custom-made parts manufactured by injection moulding

- Cost-effective prototypes and series production
- Original iglidur® tribo materials
- Tailored to your application
- Delivery time from 3 days
- For quantities ranging from a few hundred to several million



chanhvinh.com

Customised & cost-effective: Your plastic plain bearing in the required design, material and quantity



"Show me the plastic part that gives you a problem. I'll provide you with a solution!"

With this idea, Günter Blase founded igus® over 50 years ago, and it still holds true today: hence, customer-specific series solutions are part of our daily work just like catalogue parts.

Your igus® plastic plain bearings:

- Lubrication and maintenance-free
- Cost-effective
- Customised parts from 3 days delivery time
- Service life predictable in advance
- From 1 piece to several million pieces: Always the appropriate manufacturing process
- All iglidur® materials possible
- New development of specific materials possible
- Joint dimensioning and design coordination

▶ **www.igus-asean.com/specialbearings**

Custom manufactured

With speedimold, there are two different methods: first, custom-made plastic parts can be produced with 3D-printed injection moulds and second, with the aid of machined aluminium tools.

In the 3D printing process, users can choose their custom-made part from over 50 different iglidur® tribological materials optimised for friction and wear. The material of the 3D-printed mould is tailored to withstand the high temperatures and pressure prevailing in injection moulding.

You can produce from just one piece up to 500 parts, prototypes or small batches from a 3D-printed injection mould.

For batches between 200 and 2,000 pieces, the injection moulded part can also be produced with an aluminium tool. This lean manufacturing method also saves the user time and money here: aluminium tools are also lower cost and faster to produce than steel moulds, as no lengthy hardening is required.

In 3 steps to your individual plain bearing

1. Submit an enquiry
Fill in the form with some basic information: quantity and requirement, such as food contact, dirt resistance, low wear etc. and upload the CAD files, for example.

After one of our specialists has contacted you for a consultation, you will receive a quotation.

2. We produce your required component
Upon order, igus® starts with the production process.

3. Your receive your product
Your required component is ready to ship and delivered quickly.

Submit an enquiry:
▶ **www.igus-asean.com/specialbearings-enquiry**





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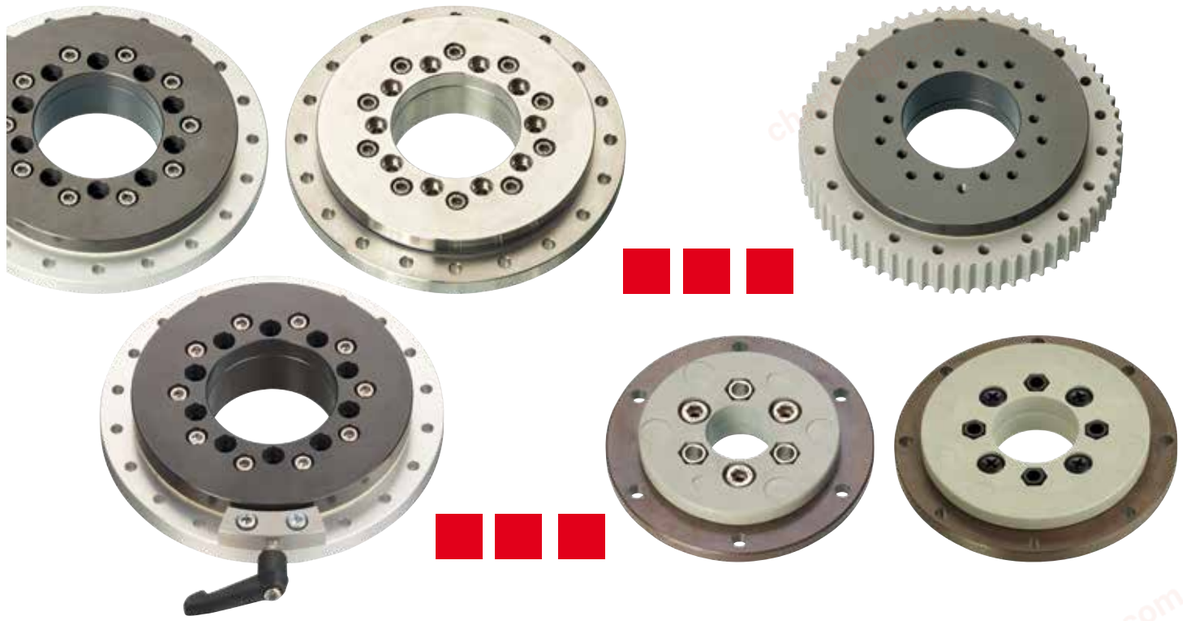
iglidur®

Slewing rings



...plastics

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iglidur® PRT | Product overview

iglidur® PRT – polymer slewing rings



High torsional stability:
Type 01
▶ Page 638



With outer drive ring:
Type 01
▶ Page 639



Lightweight:
Type 02
▶ Page 640



Low-cost:
Type 03
▶ Page 641

iglidur® PRT – polymer slewing rings

New



Compact, lightweight and cost-effective:
Type 04
▶ Page 642

New



Installation solutions:
Type 04
▶ Page 643

New



With assembled drive pin:
Type 04
▶ Page 644

New



Slewing rings with gear teeth:
Type 04
▶ Page 645

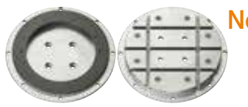
iglidur® PRT – polymer slewing rings

New

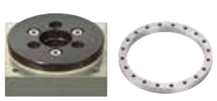


Stainless steel slewing rings:
Type 04
▶ Page 646

New



Slot nut profile:
Type 04
▶ Page 647



Special geometries and accessories
▶ Page 648

Universal sliding elements
▶ Page 654

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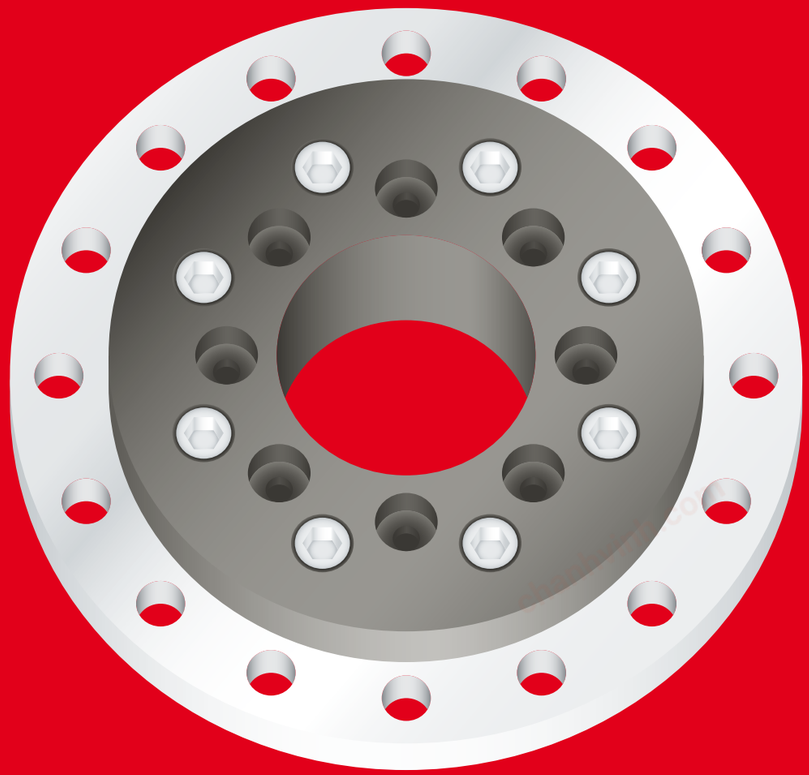

iglidur® PRT – polymer slewing rings

- Completely maintenance-free
- Easy to install and replaceable sliding elements
- High wear resistance
- For high loads and high rigidity
- Stainless steel versions available
- Extensive accessories
- Standard range from stock



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iglidur® PRT | Advantages

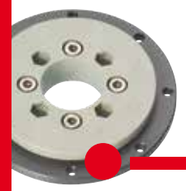
Maintenance-free slewing rings



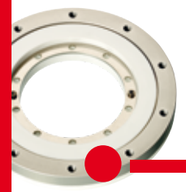
Type 01:
High torsional rigidity
▶ **From page 638**



Type 01 with gear teeth:
With outer drive ring
▶ **From page 639**



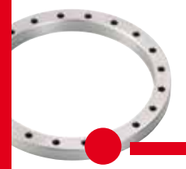
Type 02:
Lightweight
▶ **From page 640**



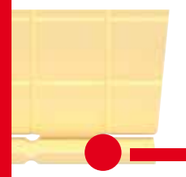
Type 03:
Cost-effective
▶ **From page 641**



Type 04:
Compact, lightweight
and cost-effective
▶ **From page 642**



Extensive accessories:
Special geometries
and accessories
▶ **From page 648**



Universal sliding elements:
Customise your own
slewing ring systems
▶ **From page 654**

Polymer slewing ring bearings

iglidur® PRT slewing rings are ready-to-install rotary joints for lubrication-free dry operation. The design is not based on metallic rollers or balls, but on maintenance-free sliding elements made of the proven tribologically optimised iglidur® materials in combination with rings made of lightweight anodised aluminium or stainless steel. These iglidur® materials are universally applicable. They can be used in applications with high temperatures, moisture or chemical contact, for example.

- Completely maintenance-free
- Easy to install and replaceable sliding elements
- High wear resistance
- For high loads and high rigidity
- Stainless steel versions available
- Extensive accessories

Typical application areas

- Conveyors and automation
- Stage and lighting technology
- Assembly stations

Available from stock
Stainless steel version upon request
Detailed information about delivery time online.

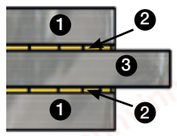
Price breaks online
No minimum order value. No minimum order quantity

Max. +180°C
Min. –50°C

4 types
Ø 20–300mm

Service life calculation
▶ **www.igus-asean.com/prt-expert**

Design slewing ring



❶ **Type 01 and 04:** Hard anodised aluminium, or 316 stainless steel
Type 02: iglidur® J4 or A180
❷ **Type 01** and 04: iglidur® J or H1
❸ **Type 01, 02 and 04:** Anodised aluminium or 316 stainless steel

iglidur® PRT | Application examples



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 good example of the light weight and lubrication-free slewing ring being used in a-rotating light, for discos.



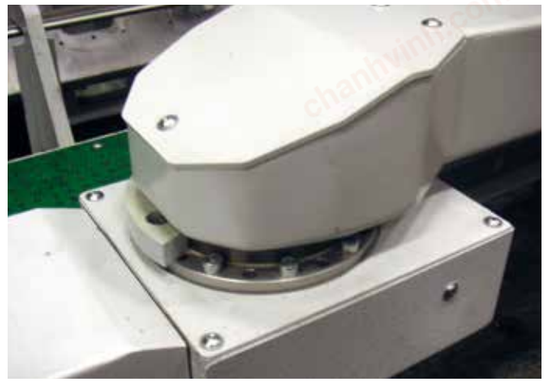
In this machine tool control panel, an iglidur® polymer slewing ring bearing is used due to its freedom from lubrication and maintenance.



The iglidur® PRT-01-100 slewing ring 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 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 for moving the control panel. The low coefficient of friction ensures low actuating force during pivoting.

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iglidur® PRT | Technical data

Slewing ring general properties

Type 01

Properties	Unit	-20	-30	-50	-60	-100	-150	-200	-300
Weight	kg	0.2	0.4	1.0	1.1	1.3	2.2	3.2	7.6
Axial load, static	N	15,000	27,000	40,000	50,000	55,000	80,000	100,000	150,000
Axial load, dynamic	N	4,000	7,000	10,000	15,000	16,000	25,000	30,000	90,000
Radial load, static	N	2,300	5,000	8,000	10,000	16,000	25,000	35,000	45,000
Radial load, dynamic	N	600	1,500	2,500	3,000	5,000	8,000	10,000	27,000
Rotating speed, dry operation	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
Rotating speed, dry operation	rpm	250	250	250	200	180	180	120	120	120	120
Max. permissible tilting moment	Nm	60	40	40	100	50	50	120	100	100	200

Type 03

Properties	Unit	-80
Weight	kg	0.47
Axial load, static (compressive force direction)	N	45,000
Axial load, static (tensile force direction) [154)]	N	5,000
Axial load, dynamic (compressive force direction)	N	12,000
Axial load, dynamic (tensile force direction) [154)]	N	1,200
Radial load, static	N	4,000
Radial load, dynamic	N	1,000
Rotating speed, dry operation	rpm	120
Max. permissible tilting moment [154)]	Nm	120

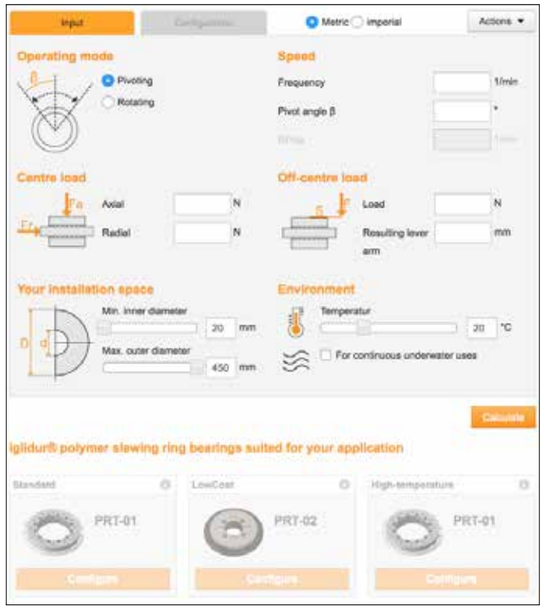
Axial clearance 0.7mm, radial clearance 0.9mm

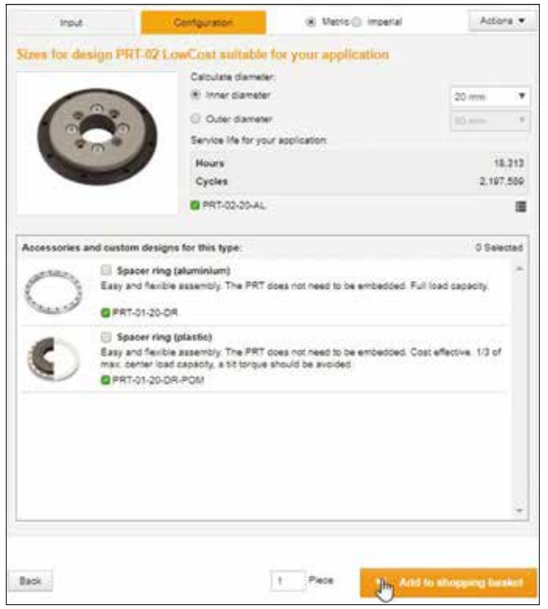
[154)] Only when the PRT is fitted onto a flat, stable surface

Type 04

Properties	Unit	-50	-60	-100	-150	-200	-300
Weight	g	225	250	370	530	680	990
Axial load, static	N	12,000	14,000	20,000	27,000	35,000	48,000
Axial load, dynamic	N	3,000	4,000	5,000	7,500	9,000	12,000
Radial load, static	N	2,500	3,000	5,500	6,500	8,000	10,000
Radial load, dynamic	N	750	900	1,500	1,900	2,500	3,500
Rotating speed, dry operation	rpm	200	190	135	100	80	50
Max. perm. tilting moment	Nm	200	250	450	650	875	1,200

iglidur® PRT | Technical data





Configurator for slewing rings

The most common criteria for selecting an iglidur® PRT slewing ring bearing are firstly the loads and torques to be supported and secondly the installation space available and the minimum central implementation distance required. The suitable sizes and types are selected on the basis of this data and the speed and their service life is calculated.

▶ **www.igus-asean.com/prt-expert**

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iglidur® PRT | Technical data

Type 01

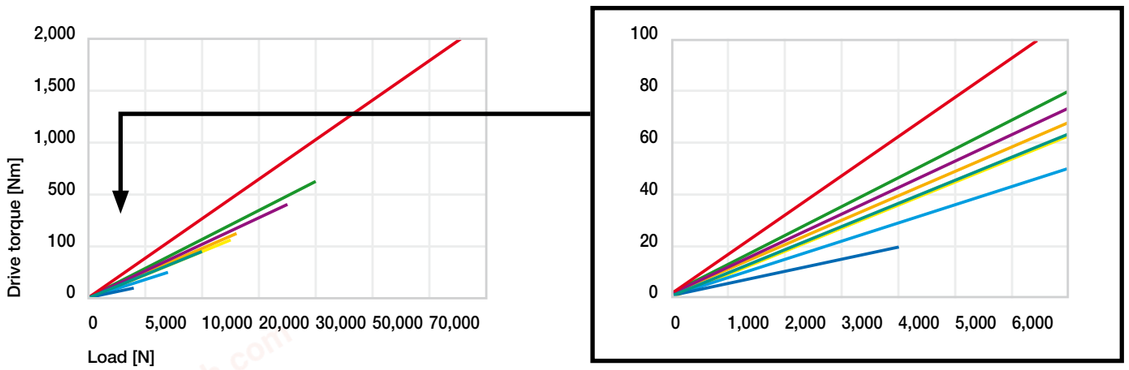

Diagram 01: Required drive torque versus applied load

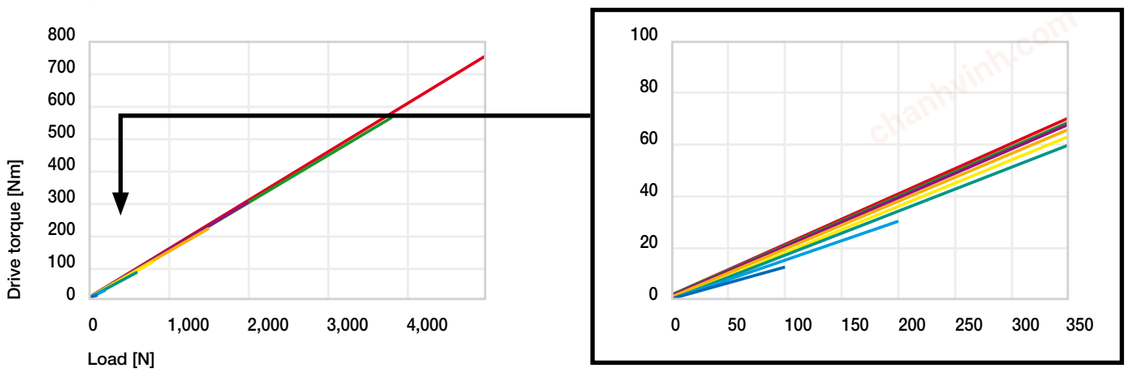

Diagram 02: Required drive torque versus applied moment

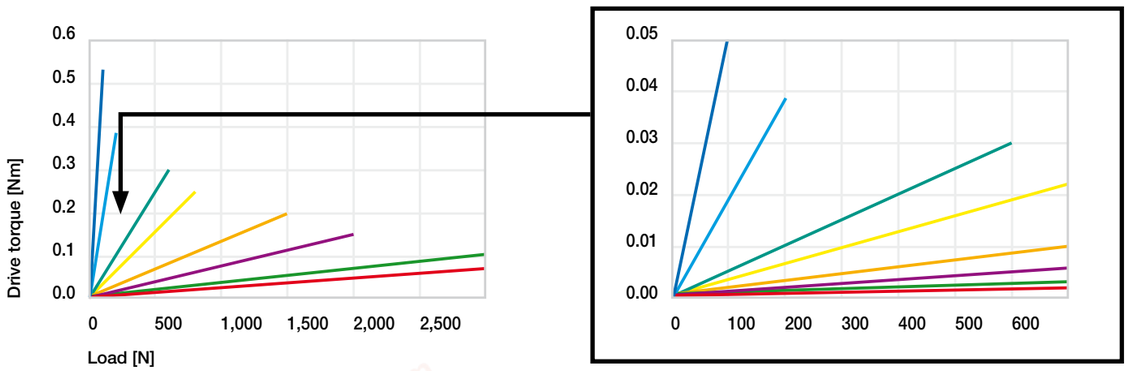

Diagram 03: Deflection versus applied tilting moment

PRT-01-20 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 cap head screws (strength class 8.8) on the outer PCD of the collar clamp. For the assembly (using strength class 8.8 screws) of the PRT, the screws have to be inserted to a minimum thread depth of 2xd in every hole location in the outer ring. All data can be used for both lateral and horizontal assembly (including overhead installation).

iglidur® PRT | Technical data

Type 04

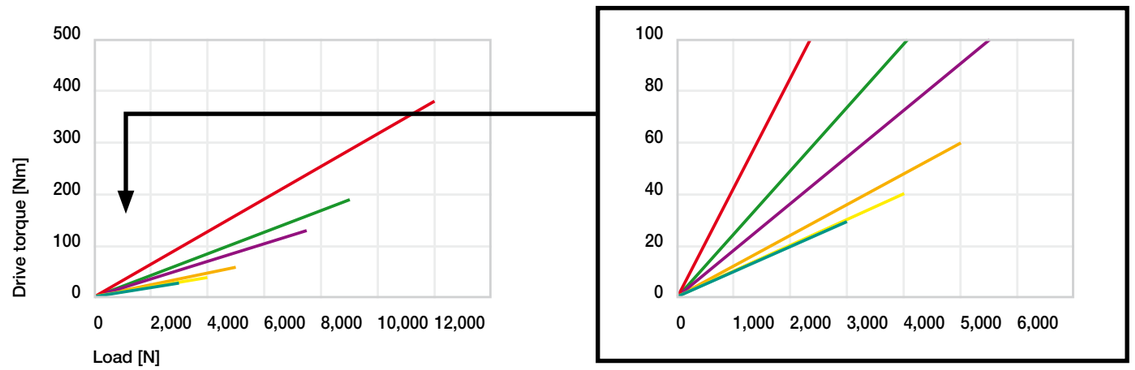

Diagram 01: Required drive torque versus applied load

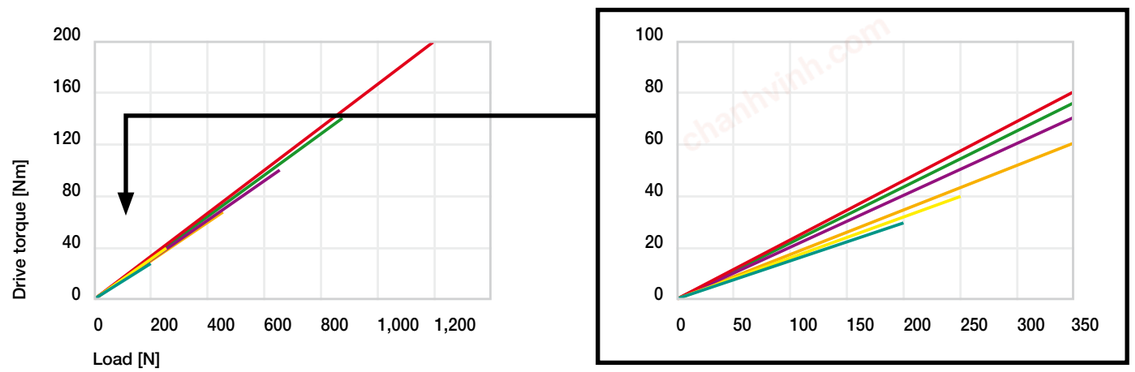

Diagram 02: Required drive torque versus applied moment

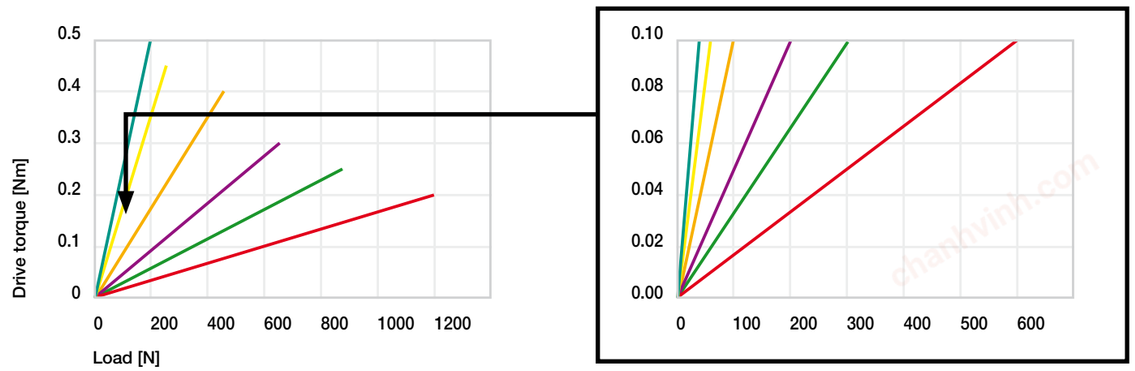

Diagram 03: Deflection versus applied tilting moment

PRT-04-50 M6, min. 12 screws
PRT-04-60 M5, min. 10 screws
PRT-04-100 M5, min. 12 screws
PRT-04-150 M5, min. 12 screws
PRT-04-200 M6, min. 12 screws
PRT-04-300 M8, min. 12 screws

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iglidur® PRT | Product range

Slewing rings, high rigidity – type 01



Standard



High temperature up to +180°C



Stainless steel version



ESD-compliant

- Aluminium or stainless steel body (upon request)
- Replaceable maintenance-free sliding elements made of iglidur® J (Standard) ▶ **Page 159**, iglidur® H1 (for temperatures up to +180°C) ▶ **Page 333**, iglidur® F2 (ESD-compliant) ▶ **Page 493** or iglidur® A180 (FDA-compliant) ▶ **Page 401**

Order key

Type	Size [mm]	Options
PRT-01-	30	-ES-H1
Slewing ring	Inner Ø	Body material, Sliding elements
Design		

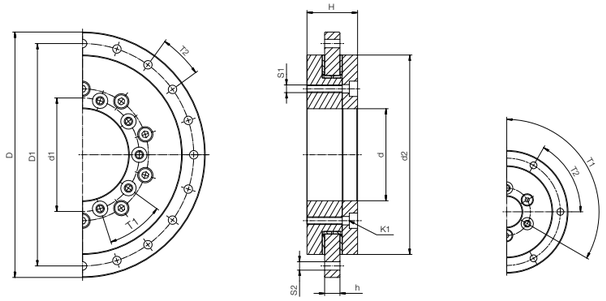
Options:

Body material
Blank: Aluminium
ES: 316 stainless steel

Sliding elements
Blank: iglidur® J
H1: iglidur® H1, high temperature
F2: iglidur® F2, ESD-compliant (only in conjunction with stainless steel)
A180: iglidur® A180, FDA-compliant

Accessories

▶ From page 652



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	3 x 120°	6 x 60°	M4	4.5	DIN 7984 M4	30	20	3.5	**PRT-01-20-...**
100	91	42.5	30	82	29	10	4 x 90°	8 x 45°	M4	4.5	DIN 7984 M4	41	29	4.5	**PRT-01-30-...**
150	135	65	50	120	33	10	8 x 45°	16 x 22.5°	M6	6.6	ISO 4762 M6	60	46.5	4.5	**PRT-01-50-...**
160	145	74	60	130	33	10	10 x 36°	20 x 18°	M5	5.5	ISO 4762 M5	65	51.5	4.5	**PRT-01-60-...**
185	170	112	100	160	34	12	12 x 30°	16 x 22.5°	M5	5.5	ISO 4762 M5	80	69	5.5	**PRT-01-100-...**
250	235	165	150	220	35	12	12 x 30°	16 x 22.5°	M5	5.5	ISO 4762 M5	110	96.5	5.5	**PRT-01-150-...**
300	285	215	200	274	38	15	12 x 30°	16 x 22.5°	M6	6.6	ISO 4762 M6	137	124	7.0	**PRT-01-200-...**
450	430	320	300	410	42	15	12 x 30°	16 x 22.5°	M8	9.0	DIN 7984 M8	205	186.6	7.0	**PRT-01-300-...**

[10] Tolerance according to DIN ISO 2768 mK

All stainless steel versions upon request

iglidur® PRT | Product range

Slewing rings with gear teeth



Standard

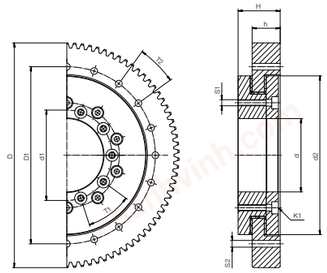


Stainless steel version

- 4 standards for outer 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

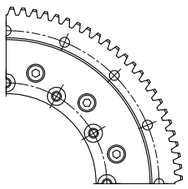
Type	Size [mm]	Options
PRT-01-	30	- TO - ... - ES
Slewing ring	Inner Ø	Outer drive ring, Tooth profile type, Stainless steel version
Design		



Dimensions [mm]

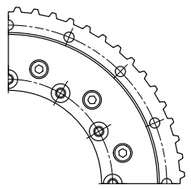
D1	d1	d	d2	h	T1	T2	S1	S2	K1 for screw	R1	R2	B	H	Part No.
70	31.0	20	60	18	6x60°	6x60°	M4	4.5	DIN 7984 M4	30	20.0	3.5	(26.0)	**PRT-01-20-TO-...**
91	42.5	30	82	21	8x45°	8x45°	M4	4.5	DIN 7984 M4	41	29.0	4.5	(30.5)	**PRT-01-30-TO-...**
135	65.0	50	120	10	8x45°	16x22.5°	M6	6.6	ISO 4762 M6	60	46.5	4.5	(33.0)	**PRT-01-50-TO-...**
145	74.0	60	130	23	10x36°	20x18°	M5	5.5	ISO 4762 M5	65	51.5	4.5	(34.5)	**PRT-01-60-TO-...**
170	112.0	100	160	25	12x30°	16x22.5°	M5	5.5	ISO 4762 M5	80	69.0	5.5	(36.0)	**PRT-01-100-TO-...**
235	165.0	150	220	25	12x30°	16x22.5°	M5	5.5	ISO 4762 M5	110	96.5	5.5	(36.5)	**PRT-01-150-TO-...**
285	215.0	200	274	30	12x30°	16x22.5°	M6	7.0	ISO 4762 M6	137	124.0	7.0	(41.5)	**PRT-01-200-TO-...**
430	320.0	300	410	30	12x30°	16x22.5°	M8	9.0	DIN 7984 M8	205	186.5	8.5	(43.5)	**PRT-01-300-TO-...**

Spur gearing DIN3967



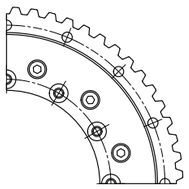
D	m	z	Part No. add-on
(88)	–	42	**...-ST**
(112)	2	54	**...-ST**
(160)	2	78	**...-ST**
(184)	2	90	**...-ST**
(196)	2	96	**...-ST**
(256)	2	126	**...-ST**
(308)	2	152	**...-ST**
(462)	3	152	**...-ST**

Toothed belt profile AT10



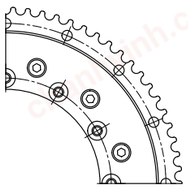
D	z	Part No. add-on
(87.25)	28	**...-AT10**
(106.4)	34	**...-AT10**
(157.3)	50	**...-AT10**
(163.8)	52	**...-AT10**
(189.2)	60	**...-AT10**
(252.9)	80	**...-AT10**
(303.9)	96	**...-AT10**
(456.7)	144	**...-AT10**

Toothed belt profile T10



D	z	Part No. add-on
(87.25)	28	**...-T10**
(106.4)	34	**...-T10**
(157.3)	50	**...-T10**
(163.8)	52	**...-T10**
(189.2)	60	**...-T10**
(252.9)	80	**...-T10**
(303.9)	96	**...-T10**
(456.7)	144	**...-T10**

Toothed belt profile HTD5M (-20)/HTD8M



D	z	Part No. add-on
(81.25)	52	**...-HTD5M**
(110.7)	44	**...-HTD8M**
(161.6)	64	**...-HTD8M**
(166.7)	66	**...-HTD8M**
(187.1)	74	**...-HTD8M**
(253.3)	100	**...-HTD8M**
(304.3)	120	**...-HTD8M**
(457.1)	180	**...-HTD8M**

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iglidur® PRT | Product range

Slewing rings, lightweight – type 02



Standard



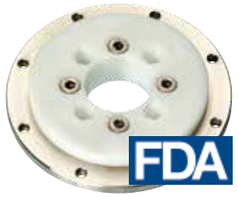
Stainless steel version



Low-cost version



All plastic version



FDA-compliant

- Slewing rings with extremely light weight
- Outer ring made from anodised aluminium, 316 stainless steel (upon request) or iguton G
- Collar clamps made from iglidur® J4 or FDA-compliant iglidur® A180
- 30% lighter with plastic screws

Order key

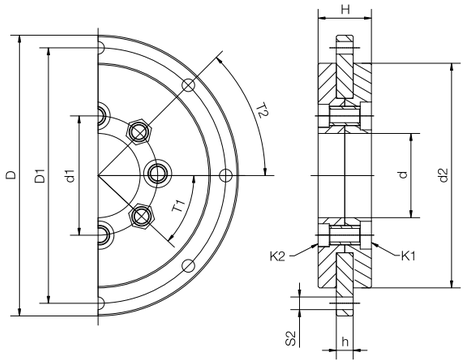
Type	Size [mm]	Options
PRT-02-	20	-AL-A180

Slewing ring | Design | Inner Ø | Body material | Collar clamps

Options:

Body material
AL: Aluminium
ES: 316 stainless steel
LC: Low-cost
P: Solid plastic

Collar clamps
Blank: iglidur® J4
A180: iglidur® A180, FDA-compliant



Dimensions [mm]

D	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	3 x 120°	6 x 60°	4.5	DIN 6912 M5	ISO 4035 M5	PRT-02-20-	
100	91	42.5	30	80	19	6	4 x 90°	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 6.5mm		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)

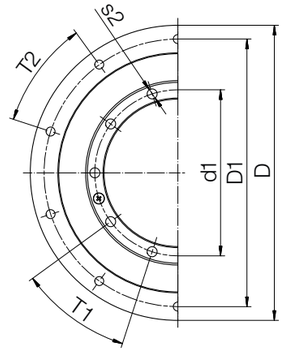
116) Only available with body made from aluminium and stainless steel
Please add suffix "-A180" for FDA-compliant version

All stainless steel versions upon request

iglidur® PRT | Product range

Slewing rings, low-cost – type 03





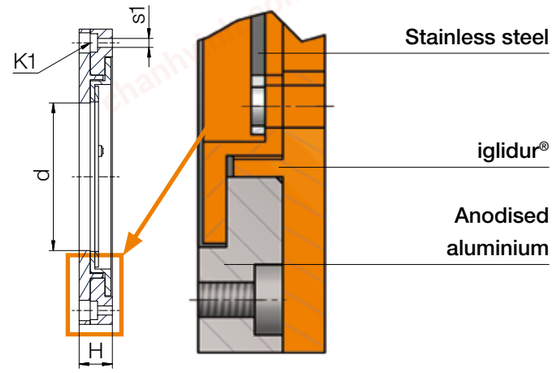
Order key

Type	Size [mm]
PRT-03-	80

Slewing ring | Design | Inner Ø

iglidur® PRT slewing rings in a low-cost design. Through consistent downsizing, an additional design has been created that relies even more on plastic.

- Maintenance and lubrication-free
- Cost-effective and lightweight
- Reduced space requirement
- Ready-to-fit
- For temperatures from 0 to +60°C



Dimension [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 M6	PRT-03-80

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iglidur® PRT | Product range New

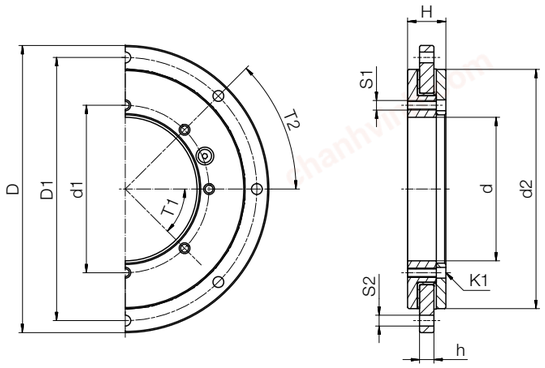
Slewing rings, compact, lightweight and cost-effective – type 04



Order key

Type	Size [mm]
PRT - 04 - 50	
Slewing ring	
Design	
Inner Ø	

- Available with diameters from 50mm to 300mm
- 60% lighter and 50% more compact compared to PRT-01
- 20% more cost-effective compared to PRT-01
- Wear-resistant, lubrication-free and maintenance-free iglidur® sliding elements



Dimension [mm]

D	D1	d1	d	d2	H	h	T1	T2	S1	S2	K1 for screw	Part No.
110	100	60	50	90	16	6	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	**PRT-04-50**
120	110	70	60	100	16	6	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	**PRT-04-60**
160	150	110	100	140	16	6	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	**PRT-04-100**
210	200	160	150	190	16	6	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	**PRT-04-150**
260	250	210	200	240	16	6	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	**PRT-04-200**
360	350	310	300	340	16	6	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	**PRT-04-300**

iglidur® PRT

iglidur® PRT | Product range New

Installation solutions – type 04



With outer spacing ring

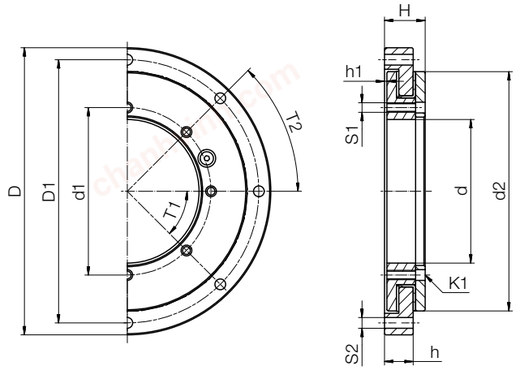


With large outer support ring

Order key

Type	Size [mm]	Options
PRT - 04 -	50	- M4
Slewing ring		
Design		
Inner Ø		
Thread		

- Available for PRT-01 and PRT-04
- Maintenance-free and wear-resistant
- Easy to fit
- Replaceable sliding elements



Dimension [mm]

D	D1	d1	d	d2	H	h1	h	T1	T2	S1	S2	K1 for screw	Part No.
With M4 thread in outer ring													
110	100	60	50	90	16	–	6	8 × 45°	8 × 45°	M4	M4	Ø 4.5	**PRT-04-50-M4**
120	110	70	60	100	16	–	6	8 × 45°	8 × 45°	M4	M4	Ø 4.5	**PRT-04-60-M4**
160	150	110	100	140	16	–	6	8 × 45°	8 × 45°	M4	M4	Ø 4.5	**PRT-04-100-M4**
210	200	160	150	190	16	–	6	16 × 22.5°	16 × 22.5°	M4	M4	Ø 4.5	**PRT-04-150-M4**
260	250	210	200	240	16	–	6	16 × 22.5°	16 × 22.5°	M4	M4	Ø 4.5	**PRT-04-200-M4**
360	350	310	300	340	16	–	6	16 × 22.5°	16 × 22.5°	M4	M4	Ø 4.5	**PRT-04-300-M4**
With enlarged outer ring													
150	135	60	50	90	16	–	6	8 × 45°	16 × 22.5°	M4	Ø 6.6	Ø 4.5	**PRT-04-50-G**
160	160	70	60	100	16	–	6	8 × 45°	20 × 18°	M4	Ø 5.5	Ø 4.5	**PRT-04-60-G**
185	185	110	100	140	16	–	6	8 × 45°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	**PRT-04-100-G**
250	250	160	150	190	16	–	6	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	**PRT-04-150-G**
300	300	210	200	240	16	–	6	16 × 22.5°	16 × 22.5°	M4	Ø 5.5	Ø 4.5	**PRT-04-200-G**
450	450	310	300	340	16	–	6	16 × 22.5°	16 × 22.5°	M4	Ø 9.0	Ø 4.5	**PRT-04-300-G**
With outer spacing ring													
110	100	60	50	90	17	1	12	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	**PRT-04-50-DRI**
120	110	70	60	100	17	1	12	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	**PRT-04-60-DRI**
160	150	110	100	140	17	1	12	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	**PRT-04-100-DRI**
210	200	160	150	190	17	1	12	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	**PRT-04-150-DRI**
260	250	210	200	240	17	1	12	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	**PRT-04-200-DRI**
360	350	310	300	340	17	1	12	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	**PRT-04-300-DRI**

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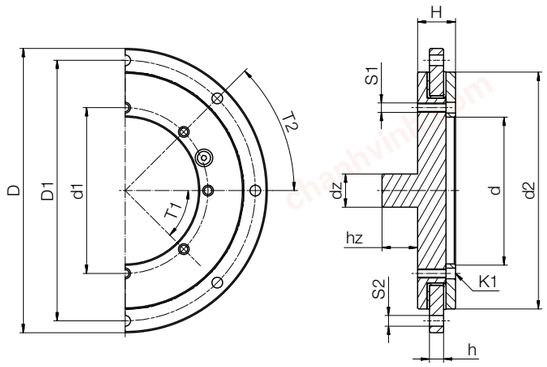
PRT with assembled drive pin – type 04



Order key

Type	Size [mm]	Options
PRT - 04 -	50	- DP
Slewing ring	Design	Inner Ø	Drive pin

- Easy replacement and extension: modular construction kit design
- Easy drive pin for couplings
- Adjustable with manual clamps



Dimension [mm]

D	D1	d1	d	d2	dz	hz	H	h	T1	T2	S1	S2	K1 for screw	Part No.
With DrivePin														
110	100	60	52	90	14 h6	15	16	6	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	**PRT-04-50-DP**
120	110	70	62	100	14 h6	15	16	6	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	**PRT-04-60-DP**
160	150	110	102	140	14 h6	15	16	6	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	**PRT-04-100-DP**
210	200	160	152	190	14 h6	15	16	6	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	**PRT-04-150-DP**
260	250	210	202	240	14 h6	15	16	6	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	**PRT-04-200-DP**
360	350	310	302	340	14 h6	15	16	6	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	**PRT-04-300-DP**

iglidur® PRT | Product range New

Slewing rings with gear teeth – type 04



AT10



T10

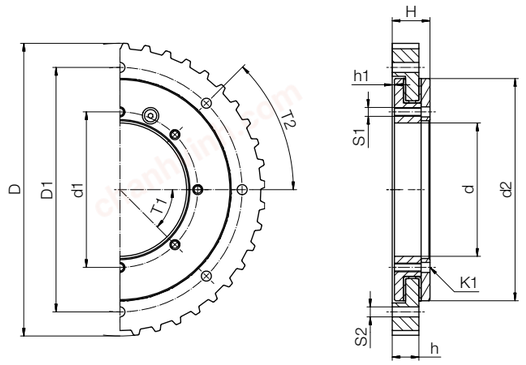


HTD5M

Order key

Type	Size [mm]	Options
PRT - 04 -	50	- TO - ...
Slewing ring	Design	Inner Ø	Outer drive ring	Tooth profile type

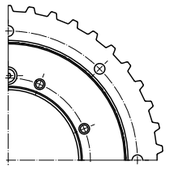
- Easy replacement and extension: modular construction kit design
- Driving the easy way with gear profiles
- Adjustable with manual clamps



Dimension [mm]

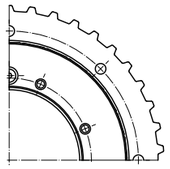
D1	d1	d	d2	H	h1	h	T1	T2	S1	S2	K1 for screw	Part No.
With gear profile												
100	60	50	90	17	1	12	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	**PRT-04-50-TO-...**
110	70	60	100	17	1	12	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	**PRT-04-60-TO-...**
150	110	100	140	17	1	12	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	**PRT-04-100-TO-...**
200	160	150	190	17	1	12	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	**PRT-04-150-TO-...**
250	210	200	240	17	1	12	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	**PRT-04-200-TO-...**
350	310	300	340	17	1	12	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	**PRT-04-300-TO-...**

Toothed belt profile AT10



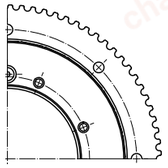
D	z	Part No. add-on
118.9	38	**...-AT10**
131.7	42	**...-AT10**
169.9	54	**...-AT10**
220.8	70	**...-AT10**
271.7	86	**...-AT10**
370.4	117	**...-AT10**

Toothed belt profile T10



D	z	Part No. add-on
118.9	38	**...-T10**
131.7	42	**...-T10**
169.9	54	**...-T10**
220.8	70	**...-T10**
271.7	86	**...-T10**
370.4	117	**...-T10**

Toothed belt profile HTD5M



D	z	Part No. add-on
120	76	**...-HTD5M**
131	83	**...-HTD5M**
170.9	108	**...-HTD5M**
221.8	140	**...-HTD5M**
271.2	171	**...-HTD5M**
371.4	234	**...-HTD5M**

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iglidur® PRT | Product range New

Stainless steel slewing rings – type 04



- High wear resistance
- Replaceable sliding elements
- For high loads and high rigidity

Order key

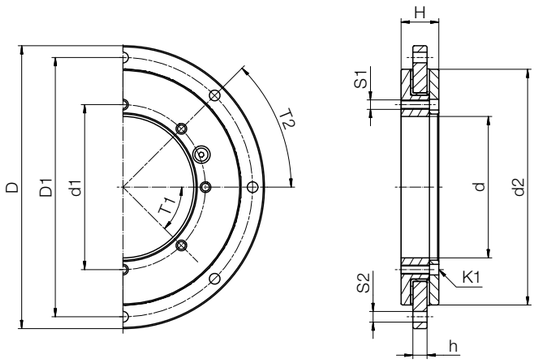
Type	Size [mm]	Options
PRT-04-	50	-ES-H1

Slewing ring | Design | Inner Ø | Body material | Sliding elements

Options:

Body material
Blank: Aluminium
ES: 316 stainless steel

Sliding elements
Blank: iglidur® J
H1: iglidur® H1, high temperature
F2: iglidur® F2, ESD-compliant (only in conjunction with stainless steel)
A180: iglidur® A180, FDA-compliant



Dimension [mm]

D	D1	d1	d	d2	H	h	T1	T2	S1	S2	K1 for screw	Part No.
110	100	60	50	90	16	6	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	**PRT-04-50-ES**
120	110	70	60	100	16	6	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	**PRT-04-60-ES**
160	150	110	100	140	16	6	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	**PRT-04-100-ES**
210	200	160	150	190	16	6	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	**PRT-04-150-ES**
260	250	210	200	240	16	6	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	**PRT-04-200-ES**
360	350	310	300	340	16	6	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	**PRT-04-300-ES**

iglidur® PRT

iglidur® PRT | Product range New

Slot nut profile – type 04

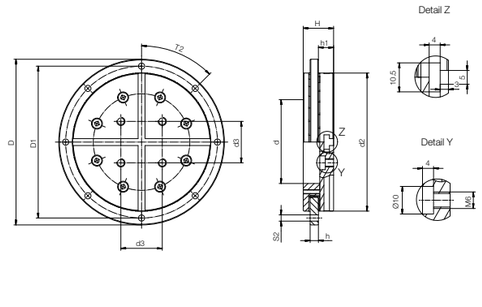


- Available for PRT-01 and PRT-04
- Fast assembly
- Easy positioning with no additional holes

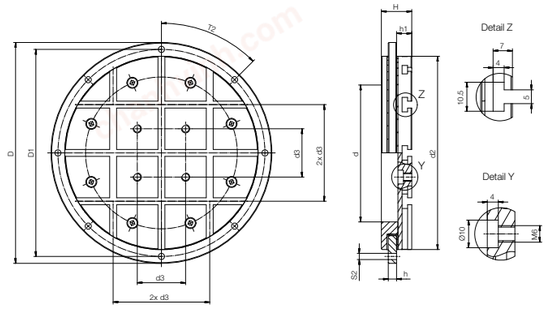
Order key

Type	Size [mm]	Options
PRT-04-	50	- T

Slewing ring | Design | Inner Ø | Slot nuts



Slot nut profile up to size 60



Slot nut profile from size 100

Dimension [mm]

D	D1	d1	d	d2	H	h	h1	T2	S2	Part No.
110	100	60	50	90	22	6	11	8 × 45°	Ø 4.5	**PRT-04-50-T**
120	110	70	60	100	22	6	11	8 × 45°	Ø 4.5	**PRT-04-60-T**
160	150	110	100	140	22	6	11	8 × 45°	Ø 4.5	**PRT-04-100-T**
210	200	160	150	190	22	6	11	16 × 22.5°	Ø 4.5	**PRT-04-150-T**
260	250	210	200	240	22	6	11	16 × 22.5°	Ø 4.5	**PRT-04-200-T**
360	350	310	300	340	22	6	11	16 × 22.5°	Ø 4.5	**PRT-04-300-T**

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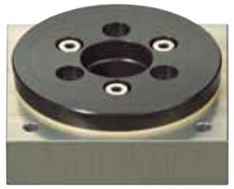
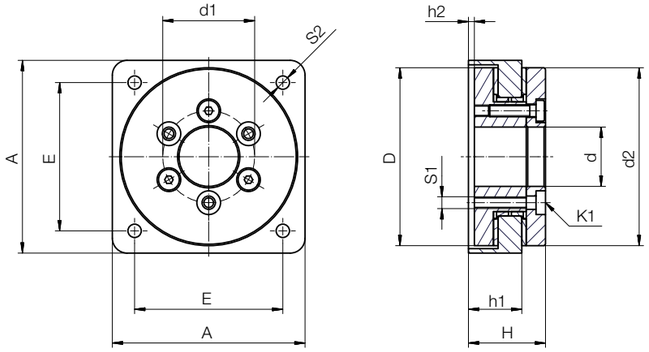
iglidur® PRT | Product range | Special geometries

Type 01

Slewing rings with square flange for direct mounting on flat surfaces





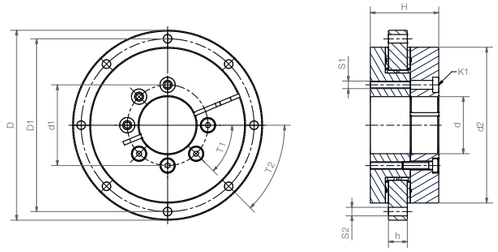
- No through-hole necessary
- No separate spacing ring
- Fix with only 4 screws

Dimensions [mm]

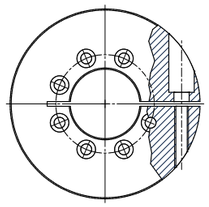
d	d1	d2	D	A	E	H	h1	h2	T1	S1	S2	K1 for screw	Part No.
20	31.0	60	62	65	50	26.0	18	2.0	6 x 60°	M4	4.5	DIN 7984 M4	**PRT-01-20-SQ**
30	42.5	82	84	85	65	30.5	21	1.5	8 x 45°	M4	4.5	DIN 7984 M4	**PRT-01-30-SQ**
50	65.0	120	122	125	100	34.5	23	1.5	8 x 45°	M6	6.6	ISO 4762 M6	**PRT-01-50-SQ**

Slewing rings with collar clamp





Slewing ring with PRT-01-30-C collar clamp



Collar clamp for PRT-01-30-C

Slewing ring PRT-01-30 with collar clamp for 30h7 tolerance shafts.

- For simple handling designs
- Quick and easy assembly
- Max. tightening torque: 5Nm

Dimensions [mm]

D	D1	d1	d	d2	H	h	T1	T2	S1	S2	K1 for screw	Part No.
80	70	31	20	60	33	8	4 x 60°	6 x 60°	M4	4.5	DIN 7984 M4	**PRT-01-20-C** New
100	91	42.5	30	82	36	10	6 x 45°	8 x 45°	M4	4.5	DIN 7984 M4	**PRT-01-30-C**

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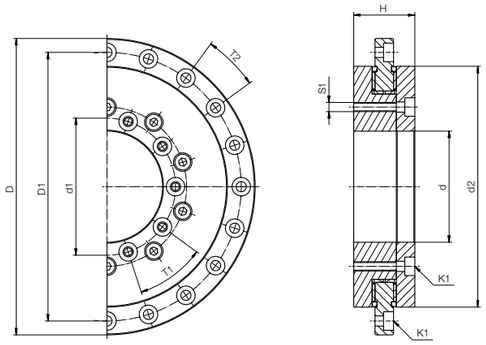
Type 01

Slewing rings with seal (-D: one-sided, -DD: both-sided)



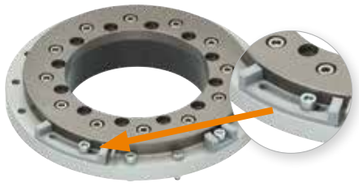


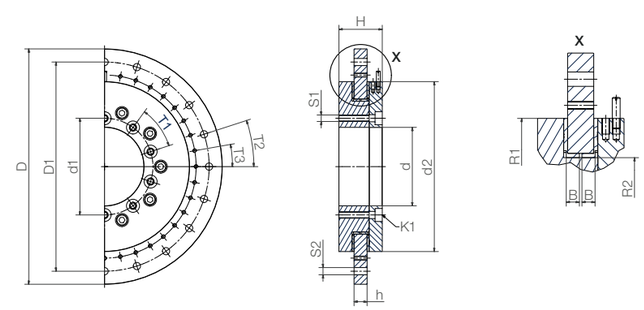
Dimensions [mm]

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 rings with angle stop – easily adjustable





- Quick adjustment of the stop
- Load ratings identical to standard type 01

Dimensions [mm]

D[10]	D1	d1	d	d2 ±0.2	H	h	T1	T2	S1	S2	K1 for screw	R1	R2	B	Part No.
80	70	31.0	20	60	24	8	6 x 60°	6 x 60°	M4	4.5	DIN 7984 M4	30	20	3.5	**PRT-01-20-AA**
100	91	42.5	30	82	29	10	8 x 45°	8 x 45°	M4	4.5	DIN 7984 M4	41	29	4.5	**PRT-01-30-AA**
150	135	65.0	50	120	33	10	8 x 45°	16 x 22.5°	M6	6.6	ISO 4762 M6	60	46.5	4.5	**PRT-01-50-AA**
160	145	74.0	60	130	33	10	10 x 36°	20 x 18°	M5	5.5	ISO 4762 M5	65	51.5	4.5	**PRT-01-60-AA**
185	170	112.0	100	160	34	12	12 x 30°	16 x 22.5°	M5	5.5	ISO 4762 M5	80	69	5.5	**PRT-01-100-AA**
250	235	165.0	150	220	35	12	12 x 30°	16 x 22.5°	M5	5.5	ISO 4762 M5	110	96.5	5.5	**PRT-01-150-AA**
300	285	215.0	200	274	38	15	12 x 30°	16 x 22.5°	M6	6.6	ISO 4762 M6	137	124	7.0	**PRT-01-200-AA**
450	430	320.0	300	410	42	15	12 x 30°	16 x 22.5°	M8	9.0	DIN 7984 M8	205	186.6	7.0	**PRT-01-300-AA**

[10] Tolerance according to DIN ISO 2768 mK

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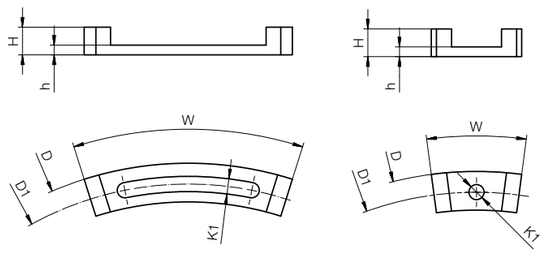
Angle limit kit





AA-A AA-B

- Quick adjustment of the stop
- A kit of PRT-01-□-AA-A and PRT-01-□-AA-B

Dimensions [mm]

D Ø	D1 Ø	H	h	K1 Ø	W [°]	Part No.	Part No. kit
80	70	6.5	2.8	4.5	90.0	**PRT-01-20-AA-A**	**PRT-01-20-AA-KIT**
80	70	6.5	2.8	4.5	30.0	**PRT-01-20-AA-B**	
100	91	8.0	2.8	4.5	70.0	**PRT-01-30-AA-A**	**PRT-01-30-AA-KIT**
100	91	8.0	2.8	4.5	25.0	**PRT-01-30-AA-B**	
150	135	10.0	4.0	6.6	45.0	**PRT-01-50-AA-A**	**PRT-01-50-AA-KIT**
150	135	10.0	4.0	6.6	25.0	**PRT-01-50-AA-B**	
160	145	10.0	3.5	5.5	35.0	**PRT-01-60-AA-A**	**PRT-01-60-AA-KIT**
160	145	10.0	3.5	5.5	20.0	**PRT-01-60-AA-B**	
185	170	9.5	3.5	5.5	37.5	**PRT-01-100-AA-A**	**PRT-01-100-AA-KIT**
185	170	9.5	3.5	5.5	15.0	**PRT-01-100-AA-B**	
250	235	10.0	3.5	5.5	35.0	**PRT-01-150-AA-A**	**PRT-01-150-AA-KIT**
250	235	10.0	3.5	5.5	15.0	**PRT-01-150-AA-B**	
300	285	10.0	4.0	6.6	35.0	**PRT-01-200-AA-A**	**PRT-01-200-AA-KIT**
300	285	10.0	4.0	6.6	15.0	**PRT-01-200-AA-B**	
450	430	12.0	5.0	6.6	35.0	**PRT-01-300-AA-A**	**PRT-01-300-AA-KIT**
450	430	12.0	5.0	6.6	15.0	**PRT-01-300-AA-B**	

Slewing rings for manual adjustment New



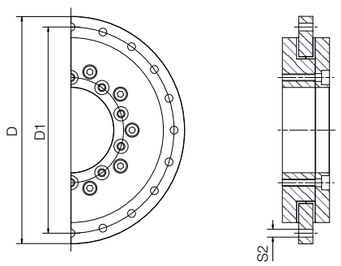
- With hand wheel for easy adjustment
- Optional manual clamp and position indicator available
- Ideal for fast and secure positioning

Dimensions [mm]

ØT	ØS	ØP	ØF	L1	L2	B1	B2	B3	H1	S1	S2	G1	G2	Part No.
30	10	82	42.5	100.5	12	45	19.5	6	110.5	55	20	M4	8 x M4	**PRT-01-50 HK-PA-HR**

Slewing rings with enlarged outer ring





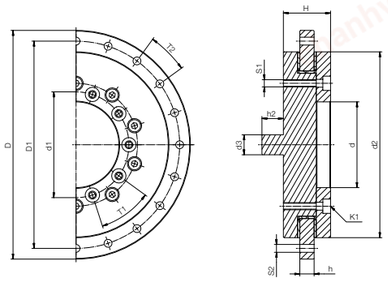
Dimensions [mm] – other dimensions similar to standard type PRT-01 ▶ Page 638

D	D1	S2	Part No.[11)]
205	185	5.5	**PRT-01-100-M-ARG**
205	185	M6	**PRT-01-100-M-ARGG**
205	185	5.5	**PRT-01-100-M-ARGS**
320	300	7.0	**PRT-01-200-M-ARG**
320	300	M8	**PRT-01-200-M-ARGG**
320	300	7.0	**PRT-01-200-M-ARGS**

[11)] Ending: -G standard hole, -GG threaded hole or -GS counterbore

PRT with assembled drive pin





Dimensions [mm]

D	D1	d1	d	d2	d2- tolerance	H	h	T1	T2	S1	S2	K1	R1	R2	B	h2	Part No.
160	145	74	60	130	±0,2	33	10	10 x 36°	20 x 18°	M5	5,5	M5	65	51,5	4,5	15	**PRT-01-60-DP**

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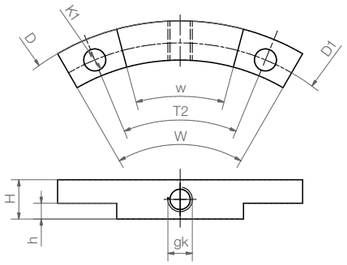
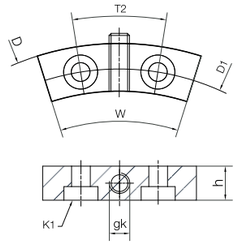
For type 01

Manual clamp





PRT-HK-30



PRT-HK-50/60/100/200



PRT with fitted manual clamp

- With 1Nm screw torque, a holding torque up to 10Nm 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**
150	135	22.5°	ISO 4762 M6	–	10	M6	40°	**PRT-HK-50**
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

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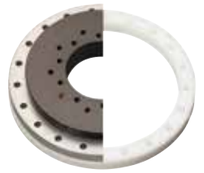
For type 01

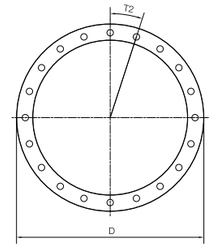
Spacing rings made from anodised aluminium or polymer (POM)

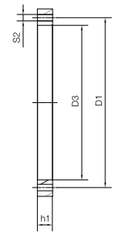


Aluminium



Plastic







PRT with mounted spacing ring

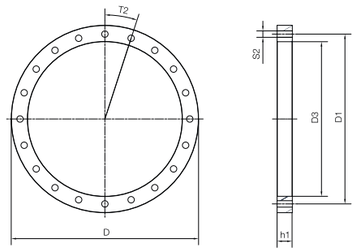
Dimensions [mm]

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**
150	135	16 x 22.5°	6.6	122	13	**PRT-01-50-DR**
160	145	20 x 18°	5.5	132	13	**PRT-01-60-DR**
185	170	16 x 22.5°	5.5	162	13	**PRT-01-100-DR**
250	235	16 x 22.5°	5.5	222	13	**PRT-01-150-DR**
300	285	16 x 22.5°	7.0	276	13	**PRT-01-200-DR**
450	430	16 x 22.5°	9.0	412	15	**PRT-01-300-DR**

[39)] Please add suffix "-POM" for plastic version (not available for sizes 150 and 300)

Spacing ring for heavy duty applications New





- Steel version to avoid distortion during installation
- Dimensional range of 20mm to 300mm inner diameters
- iglidur® PRT modular system: can be combined with all sizes
- High corrosion resistance
- Lubrication and maintenance-free

Dimensions [mm]

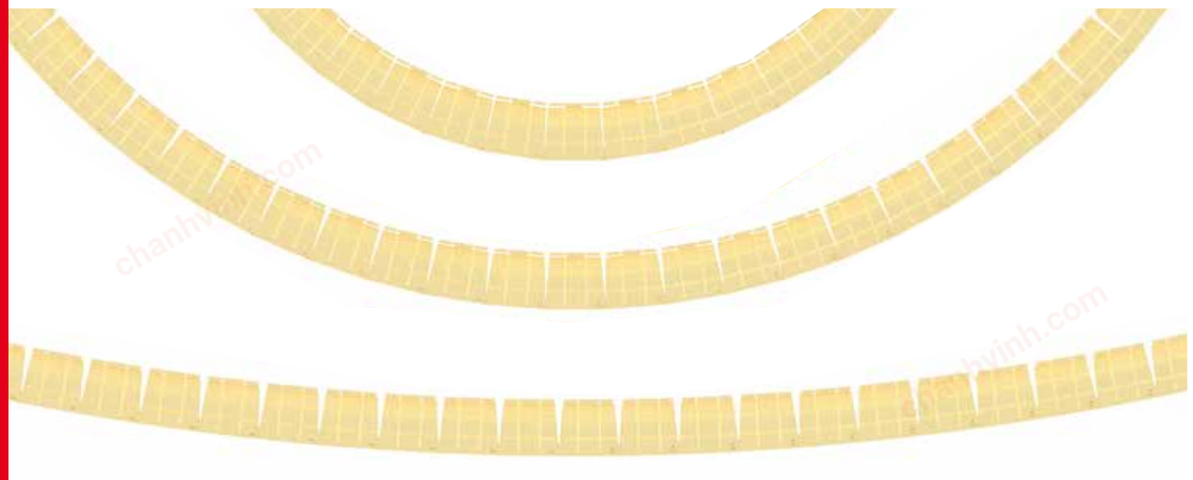
D	D1	T2	S2	D3 ±0.2	h1	Part No.
80	70	6 × 60°	4.5	62	20	**PRT-01-20-DR-HD**
100	91	8 × 45°	4.5	84	22	**PRT-01-30-DR-HD**
150	135	16 x 22.5°	6.6	122	26	**PRT-01-50-DR-HD**
160	145	20 × 18°	5.5	132	26	**PRT-01-60-DR-HD**
185	170	16 × 22.5°	5.5	162	26	**PRT-01-100-DR-HD**
250	235	16 × 22.5°	5.5	222	26	**PRT-01-150-DR-HD**
300	285	16 × 22.5°	7.0	276	26	**PRT-01-200-DR-HD**
450	430	16 × 22.5°	9.0	412	30	**PRT-01-300-DR-HD**

iglidur® PRT | Product range | Accessories

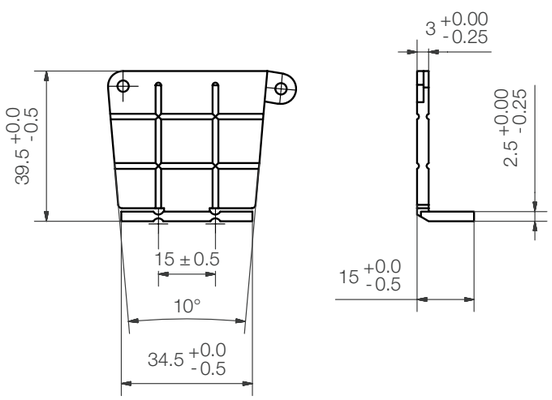
Universal sliding elements

Customise your own slewing ring systems

Using the versatile iglidur® PRT universal sliding elements, large slewing ring systems can be tailored to the type 01. Depending on the number of elements, slewing ring systems are possible with inner diameters from 0.5 to 5m. We will happily support you with the design and detailed layout.

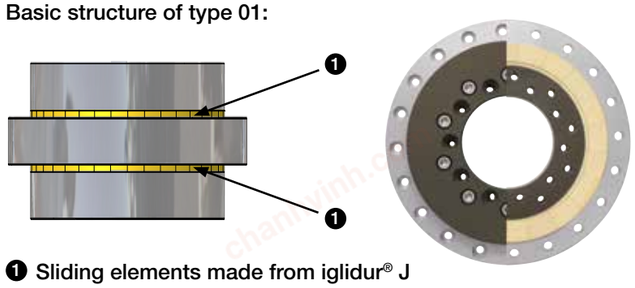






- Made from the proven iglidur® J ▶ **Page 159**
- Slewing ring systems possible from 0.5 up to 5m
- Low wear
- Robust, resistant to dirt
- Corrosion-free and resistant to liquids
- Lubrication and maintenance-free

Basic structure of type 01:



❶ Sliding elements made from iglidur® J

Part No.
JRS-500S/45S

My sketches

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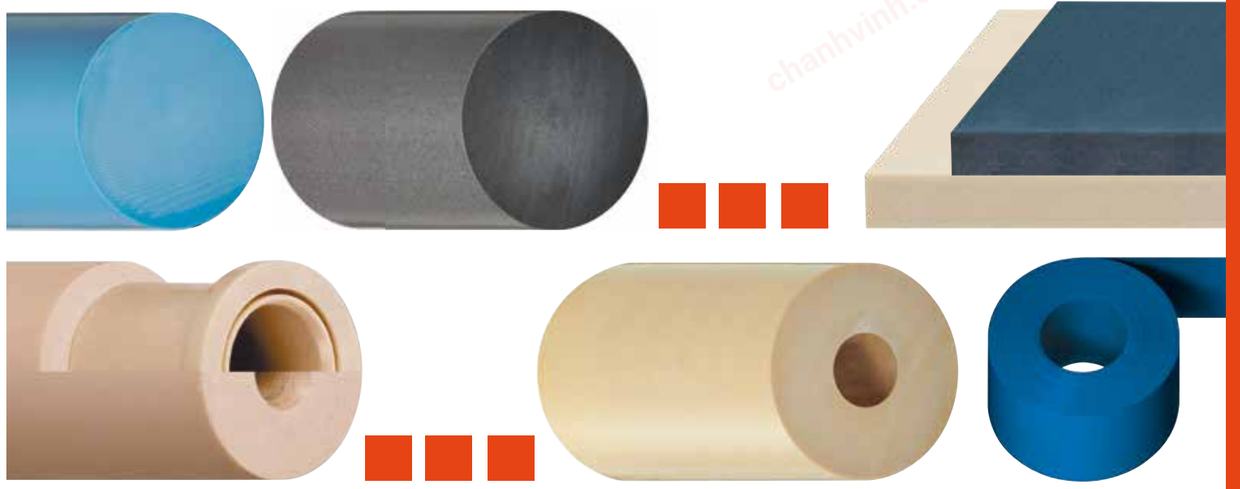
iglidur®

Round bars, tubes, plates and liners



...plastics

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iglidur® bar stock | Product overview

iglidur® round bars – all-rounder



iglidur® M250:
Excellent vibration dampening
▶ Page 668



iglidur® P210: Good coefficient of friction and wear: on almost every shaft
▶ Page 668



iglidur® J4:
Cost-effective and wear-resistant
▶ Page 669



iglidur® GLW:
Low-cost material for high volumes
▶ Page 669

Endurance runner



iglidur® J:
The versatile endurance runner
▶ Page 670



iglidur® W300:
The classic endurance runner up to 30MPa
▶ Page 670



iglidur® J3:
Specialist for pivoting and pulsating loads
▶ Page 671



iglidur® J350: Endurance runner with high dimensional stability at high temperature
▶ Page 671

Endurance runner



iglidur® J260:
ideal for plastic shafts
▶ Page 672



iglidur® R:
Low-cost material
▶ page 672



iglidur® J200:
Specially for aluminium shafts
▶ Page 673



iglidur® E7:
Ideal for pivoting movement
▶ Page 673



iglidur® JB:
Extremely wear-resistant in black
▶ Page 674

High temperatures



iglidur® X:
The chemical and temperature specialist
▶ Page 674



iglidur® HSD350:
All-rounder for steam sterilisation
▶ Page 675

High media resistance



iglidur® H1:
Endurance runner with high media resistance
▶ Page 675



iglidur® C500:
For extreme ambient conditions
▶ Page 676

Contact with food



iglidur® A181: The all-rounder for food, FDA and EU 10/2011-compliant
▶ Page 676



iglidur® A350: The FDA-compliant endurance runner at high temperatures
▶ Page 677



iglidur® A500:
The media and temperature specialist in the food sector
▶ Page 677



iglidur® A180:
The all-rounder for food
▶ Page 678



iglidur® A160: "Food" material with high media resistance up to +90°C
▶ Page 678



iglidur® UW160:
For contact with drinking water
▶ Page 679

Special application areas



iglidur® T220:
For the tobacco industry
▶ Page 679



iglidur® F2:
Used to prevent electro-static charges
▶ Page 680



iglidur® J2:
Versatile and cost-effective
▶ Page 680



iglidur® RW370: For the rail industry, flame-retardant, complies with DIN EN 45545 HL3, R22/R23
▶ Page 681

iglidur® tubes



iglidur® Q2:
For long service life under extreme loads
▶ Page 681



iglidur® J:
The versatile endurance runner
▶ Page 682

Mechanical processing



speedicut:
Special parts fast, machined to drawing
▶ Page 689

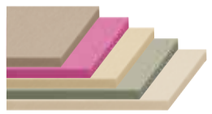
iglidur® plates



iglidur® J and JB (in black)
from 2 to 40mm
▶ Page 684



iglidur® A350/A160/A180:
For applications with food contact; 10–30mm
▶ Page 685



iglidur® plate strips in 15mm, 30mm, 50mm
▶ Page 683

iglidur® tribo-tape



Material iglidur® A160:
FDA-compliant
▶ Page 696



Material iglidur® B160:
For use in visible areas
▶ Page 697



Material iglidur® W160:
Lubrication-free tribo-tape in white – hardly any wear
▶ Page 698



Material iglidur® V400:
Extremely high wear resistance
▶ Page 699

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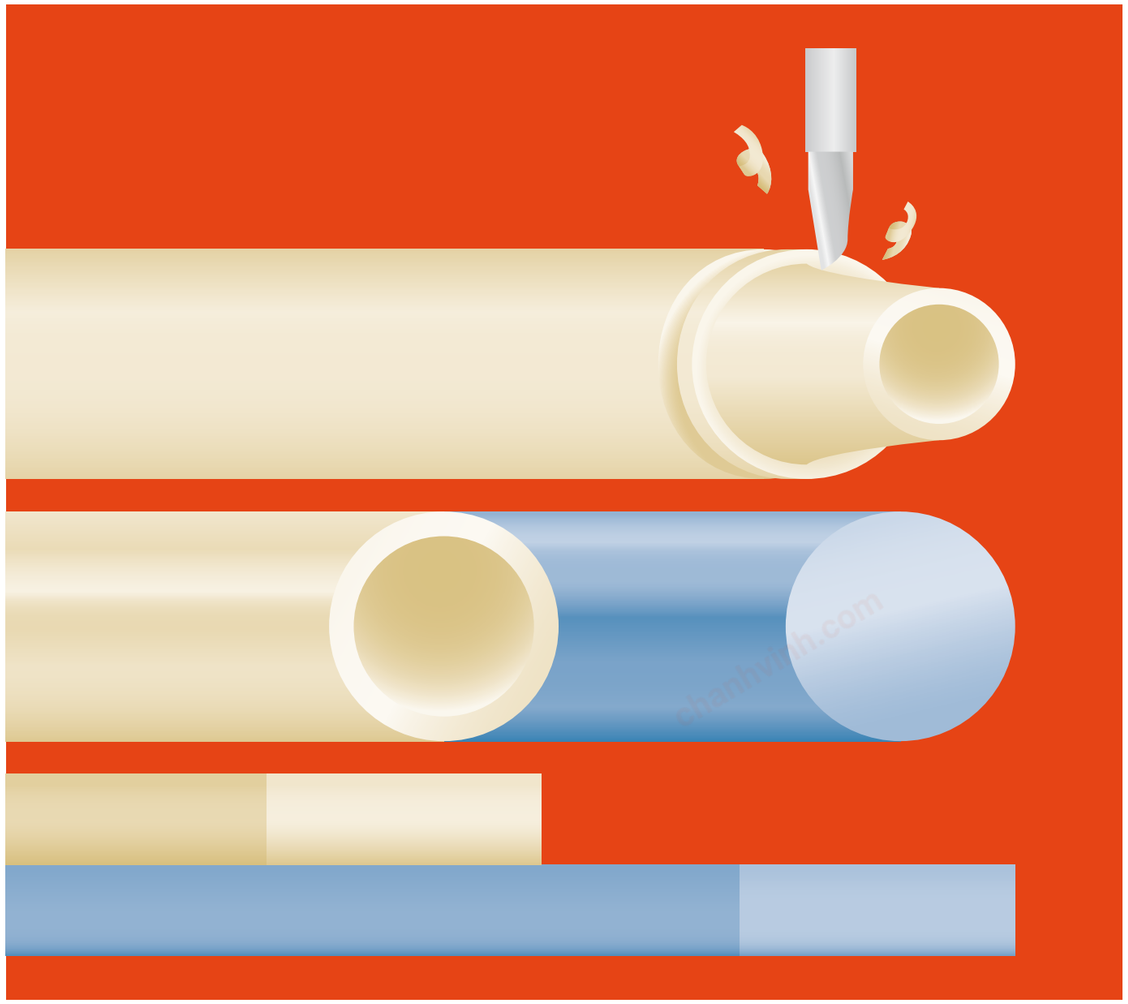


iglidur® bar stock

iglidur® materials as round bars, tubes and plates

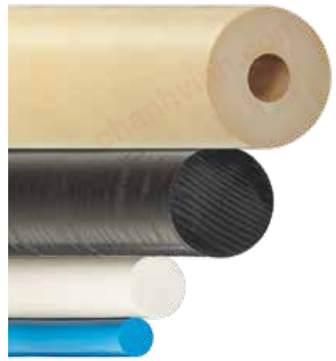
Fast and cost-effective

Cut to required size

Machining with no minimum order quantity

Maintenance-free and predictable

Standard range from stock



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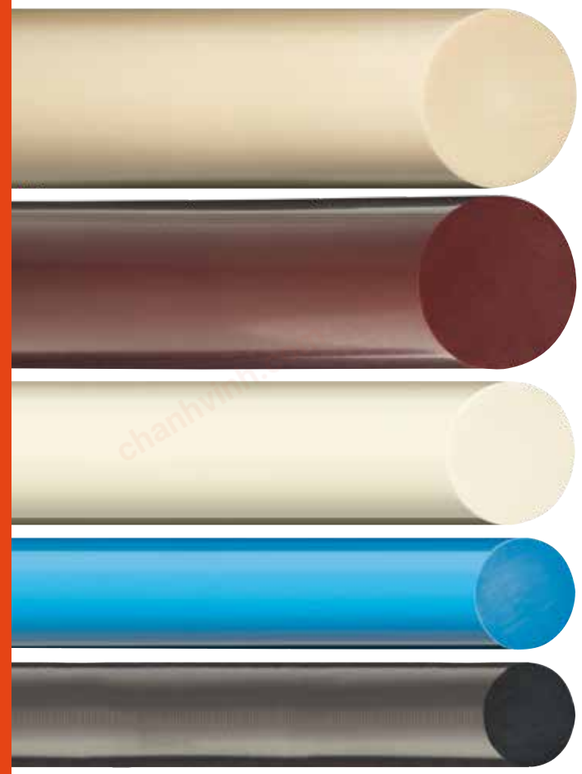
Round bars and plates for free design



Bar stock made from technical plastic: iglidur® in one piece

iglidur® plastic bar stock enables the cost-effective production of components for moving applications and are ideal for the production of prototypes and small to medium-volume production requirements. Plates, round and hollow bars made of a wider range of different iglidur® high-performance polymers are available from stock. Due to its properties, every material becomes suitable for a specific application. For example, there is suitable iglidur® bar stock for almost every application from high-temperature to seawater, from food to automotive. All iglidur® materials have been specially developed for dynamic applications, and have low coefficient of friction and wear.

- iglidur® plastic bar stock from stock or ready-machined components and special sizes in 3 to 5 days
- Lubrication and maintenance-free
- Easy to machine – ask for tips
- Tribologically optimised plastic bar stock as round bars, tubes and plates
- Service life can now also be calculated for machined plain bearings made from iglidur® plastic bar stock
- No minimum order value
- No minimum order quantity

Available from stock
Detailed information about delivery time online. Further materials and dimensions upon request.

Operation temperatures:
–50°C up to +90°C (standard iglidur® J)
–100°C up to +250°C (depending on material)

30 materials
Round bars: Ø 10–100mm
Plate thickness: ↕ 2–50mm
Tubes: up to 150mm outer Ø

igus® constantly expands its range of available materials and dimensions. Check the current stock online ▶ **www.igus-asean.com/barstock**

In addition to bar stock, we will also gladly offer you mechanical processing in line with a drawing.

Service life calculation
▶ **www.igus-asean.com/barstock-expert**

Round bars and plates for free design



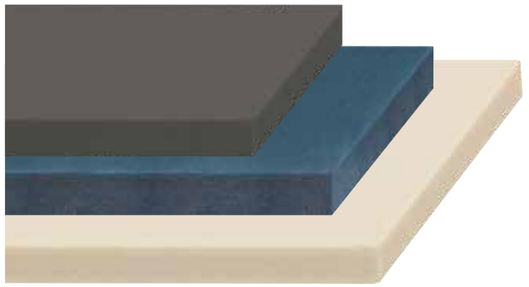
iglidur® round bars
- Currently 28 iglidur® materials to choose from
- Outer diameter 10–100mm
- Excellent wear rates and coefficient of friction

▶ **From page 668**



iglidur® tubes
- Large outer diameters 110–150mm
- Low wear against different shaft materials

▶ **From page 682**



iglidur® plates
- Versatile application options
- Plate thickness 2–40mm

▶ **From page 683**



speedicut: Machined parts and cutting
- Special parts according to customer request
- Prototypes available in a matter of days

▶ **From page 689**

Find & compare bar stock
This material finder helps you find the right iglidur® material for your project with a few clicks!
▶ **www.igus-asean.com/barstock-finder**



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iglidur® materials | Technical properties – quick selection

iglidur®	M250	P210	J4	GLW	J	W300	J3	J350	J260	R	J200	JB	E7
Technical specifications													
Wear resistance at +23°C	■□□	■■□	■■□	■□□	■■■	■■■	■■■	■■■	■■□	■■□	■■□	■■■	■■■
Wear resistance at +90°C	■■□	■■□	■□□	■□□	■■■	■■■	■■■	■■■	■■□	■□□	■■□	■■■	■■■
Wear resistance at +150°C	■□□	■■□	■□□	■□□	■□□	■□□	■□□	■■□	■■□	■□□	■■□	■□□	■□□
Low coefficient of friction	■□□	■■■	■■■	■□□	■■■	■■■	■■■	■■■	■■■	■■□	■■■	■■■	■■■
Low moisture absorption	■□□	■■□	■■■	■□□	■■□	■□□	■■□	■■■	■■■	■■□	■■□	■■□	■■□
Wear resistance under water	■□□	■■□	■■□	■□□	■■□	■□□	■■□	■■■	■■□	■□□	■■□	■■□	■■□
High media resistance	■■□	■■□	■■■	■■□	■■■	■□□	■■■	■■■	■■■	■■■	■■■	■■■	■■■
Resistant to edge loads	■■■	■■■	■■■	■■□	■■■	■■■	■■■	■■■	■■■	■■■	■■■	■■■	■■■
Suitable for shock and impact loads	■■■	■■■	■■■	■■□	■■■	■■■	■■■	■■■	■■■	■■■	■■■	■■■	■■■
Resistant to dirt	■■■	■■■	■■□	■■□	■■■	■■■	■■■	■■■	■■■	■■■	■■■	■■■	■■■
Price index[141)]	■□□	■□□	■□□	■□□	■□□	■□□	■□□	■□□	■□□	■□□	■□□	■□□	■□□
For high loads (>60MPa)				●				●					
Electrically conductive													
Approvals and standards													
FDA-compliant													
EU 10/2011-compliant													
Fire class in accordance with UL-94	V-2	HB	F	HB	HB	HB	HB	V-0	V-2	HB	HB	HB	HB
Mould test DIN EN ISO 846				●				●					
Fogging DIN 75201-B	●			●									
Availabilities / variants													
Bar stock, round bar	●	●	●	●	●	●	●	●	●	●	●	●	●
Bar stock, tube					●								
Bar stock, plate					●							●	●
tribo-tape liner													

iglidur®	X	HSD350	H1	C500	A181	A350	A500	A180	A160	UW160	T220	Q2	F2	J2	RW370
Technical specifications															
Wear resistance at +23°C	■□□	■■□	■■■	■■■	■■■	■■□	■□□	■■□	■■□	■■□	■□□	■■□	■■□	■□□	■■□
Wear resistance at +90°C	■■□	■■□	■■■	■■■	■□□	■■□	■□□	■□□	■□□	■□□	■□□	■■□	■■□	■□□	■■□
Wear resistance at +150°C	■■■	■■□	■■■	■■■	■□□	■■□	■■□	■□□	■□□	■□□	■□□	■■□	■□□	■□□	■■□
Low coefficient of friction	■□□	■■■	■■□	■■■	■■□	■■■	■■□	■■■	■■■	■□□	■■□	■■□	■■□	■■□	■■■
Low moisture absorption	■■■	■□□	■■■	■■■	■■■	■■■	■■■	■■■	■■■	■■■	■■■	■■□	■■□	■■■	■■■
Wear resistance under water	■■■	■■□	■■□	■■□	■■□	■■■	■■■	■■□	■■□	■■■	■■□	■□□	■□□	■■□	■■□
High media resistance	■■■	■■■	■■■	■■■	■■■	■■■	■■■	■■■	■■■	■■■	■■■	■■□	■■□	■■■	■■□
Resistant to edge loads	■□□	■■□	■□□	■□□	■■■	■■■	■■■	■■■	■■■	■■□	■■■	■■■	■■□	■■□	■■■
Suitable for shock and impact loads	■■□	■■□	■□□	■□□	■■■	■■■	■■■	■■■	■■■	■■■	■■■	■■■	■■□	■■□	■■■
Resistant to dirt	■□□	■■□	■□□	■□□	■■■	■■■	■■■	■■■	■■■	■■■	■■■	■■■	■■□	■■□	■■□
Price index[141)]	■■■	■■□	■■□	■■■	■■□	■■■	■■■	■■□	■□□	■□□	■■□	■■■	■■□	■□□	■□□
For high loads (>60MPa)	●		●	●		●	●					●	●		●
Electrically conductive	●												●		
Approvals and standards															
FDA-compliant					●	●	●	●	●		●				
EU 10/2011-compliant					●	●	●	●	●						
Fire class in accordance with UL-94	V-0	V-0	V-0	V-0	HB	V-0	V-1	HB	HB	HB	HB	HB	HB	HB	V-0
Mould test DIN EN ISO 846	●		●												
Fogging DIN 75201-B															
Availabilities / variants															
Bar stock, round bar	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Bar stock, tube															
Bar stock, plate						●									
tribo-tape liner									●						

[141)] **Price index** ■□□ low price category ■■□ medium price category ■■■ highest price category

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iglidur® bar stock | Material properties

iglidur®	Unit	M250	P210	J4	GLW	J	W300	J3	J350	J260	R	J200
General properties												
Density	[g/cm³]	1.14	1.40	1.48	1.36	1.49	1.24	1.42	1.44	1.35	1.39	1.72
Colour												
Max. moisture absorption at +23°C/50% r.h.	[% weight]	1.4	0.3	0.3	1.3	0.3	1.3	0.3	0.3	0.2	0.2	0.2
Max. total moisture absorption	[% weight]	7.6	0.5	1.3	5.5	1.3	6.5	1.3	1.6	0.4	1.1	0.7
Coefficient of sliding friction, dynamic against steel	[µ]	0.18–0.40	0.07–0.19	0.06–0.20	0.10–0.24	0.06–0.18	0.08–0.23	0.06–0.20	0.10–0.20	0.06–0.20	0.09–0.25	0.11–0.17
pv value, max. (dry)	[MPa·m/s]	0.12	0.4	0.30	0.30	0.34	0.23	0.5	0.45	0.35	0.27	0.3
Mechanical properties												
Flexural modulus	[MPa]	2,700	2,500	2,350	7,700	2,400	3,500	2,700	2,000	2,200	1,950	2,800
Flexural strength at +20°C	[MPa]	112	70	70	235	73	125	70	55	60	70	58
Compressive strength	[MPa]	52	50	55	74	60	61	60	60	50	68	43
Max. permissible surface pressure at +20°C	[MPa]	20	50	35	80	35	60	45	60	40	23	23
Shore D hardness		79	75	74	78	74	77	73	80	77	77	70
Physical and thermal properties												
Max. continuous operating temperature	[°C]	+80	+100	+90	+100	+90	+90	+90	+180	+120	+90	+90
Max. short-term operating temperature	[°C]	+170	+160	+120	+160	+120	+180	+120	+220	+140	+110	+120
Min. continuous operating temperature	[°C]	–40	–40	–50	–40	–50	–40	–50	–100	–100	–50	–50
Thermal conductivity	[W/m · K]	0.24	0.25	0.25	0.24	0.25	0.24	0.25	0.24	0.24	0.25	0.24
Coefficient of thermal expansion at +23°C	[K⁻¹ · 10⁻⁵]	10	8	10	17	10	9	13	7	13	11	8
Electrical properties												
Specific contact resistance	[Ωcm]	> 10^{13}	> 10^{12}	> 10^{13}	> 10^{11}	> 10^{13}	> 10^{13}	> 10^{12}	> 10^{13}	> 10^{12}	> 10^{12}	> 10^{8}
Surface resistance	[Ω]	> 10^{11}	> 10^{11}	> 10^{13}	> 10^{11}	> 10^{12}	> 10^{12}	> 10^{12}	> 10^{10}	> 10^{10}	> 10^{12}	> 10^{8}
Page		668	668	669	669	670	670	671	671	672	672	673

iglidur®	Unit	E7	JB	X	HSD 350	H1	C500	A181	A350	A500	A180	A160	UW 160	T220	Q2	F2	J2	RW 370
General properties																		
Density	[g/cm³]	1.05	1.49	1.44	1.39	1.53	1.37	1.38	1.42	1.28	1.46	1.00	1.04	1.28	1.46	1.52	1.44	1.34
Colour																		
Max. moisture absorption at +23°C/50% r.h.	[% weight]	0.1	0.3	0.1	0.6	0.1	0.3	0.2	0.6	0.3	0.2	0.1	0.1	0.3	1.1	0.2	0.2	0.25
Max. total moisture absorption	[% weight]	0.1	1.3	0.5	1.2	0.3	0.5	1.3	1.9	0.5	1.3	0.1	0.1	0.5	1.1	0.4	1.3	1.2
Coefficient of sliding friction, dynamic against steel	[µ]	0.08–0.17	0.06–0.18	0.09–0.27	0.07–0.23	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	0.22–0.42	0.16–0.22	0.11–0.27	0.13–0.17
pv value, max. (dry)	[MPa·m/s]	0.22	0.34	1.32	0.3	0.80	0.7	0.31	0.40	0.28	0.31	0.25	0.22	0.28	0.7	0.31	0.23	1.2
Mechanical properties																		
Flexural modulus	[MPa]	1,477	2,400	8,100	2,150	2,800	3,000	1,913	2,000	3,600	2,300	1,151	1,349	1,800	8,370	7,418	3,605	2,997
Flexural strength at +20°C	[MPa]	22	73	170	67	55	100	48	110	140	88	19	22	65	240	93	101	100
Compressive strength	[MPa]	18	60	100	44	78	110	60	78	118	78	37	32	55	130	61	77	129
Max. permissible surface pressure at +20°C	[MPa]	18	35	150	30	80	110	31	60	120	28	15	15	40	120	47	46	75
Shore D hardness		61	74	85	77	77	81	76	76	83	76	60	60	76	80	72	n.s.	80
Physical and thermal properties																		
Max. continuous operating temperature	[°C]	+70	+90	+250	+180	+200	+250	+90	+180	+250	+90	+90	+90	+100	+130	+120	+90	+170
Max. short-term operating temperature	[°C]	+90	+120	+315	+210	+240	+300	+110	+210	+300	+110	+100	+100	+160	+200	+165	+110	+190
Min. continuous operating temperature	[°C]	–50	–50	–100	–40	–40	–100	–50	–100	–100	–50	–50	–50	–40	–40	–40	–50	–50
Thermal conductivity	[W/m · K]	0.24	0.25	0.60	0.24	0.24	0.24	0.25	0.24	0.24	0.25	0.30	0.50	0.24	0.24	0.61	0.25	0.22
Coefficient of thermal expansion at +23°C	[K⁻¹ · 10⁻⁵]	25	10	5	7	6	9	11	8	9	11	11	18	11	8	5	7	5
Electrical properties																		
Specific contact resistance	[Ωcm]	> 10^{9}	> 10^{13}	< 10^{5}	> 10^{13}	> 10^{12}	> 10^{14}	> 10^{12}	> 10^{11}	> 10^{14}	> 10^{12}	> 10^{12}	> 10^{12}	> 10^{10}	> 10^{13}	< 10^{9}	> 10^{13}	> 10^{12}
Surface resistance	[Ω]	> 10^{9}	> 10^{12}	< 10^{3}	> 10^{14}	> 10^{11}	> 10^{13}	> 10^{12}	> 10^{11}	> 10^{13}	> 10^{11}	> 10^{12}	> 10^{12}	> 10^{10}	> 10^{11}	< 10^{9}	> 10^{12}	> 10^{12}
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iglidur® round bars | Product range

Excellent vibration dampening – iglidur® M250



Order key for round bars

Type	Dimensions [mm]				
SF R M250	- 30	00	- ☐		
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50–1,000	SFRM250-1000-☐
15	50–1,000	SFRM250-1500-☐
20	50–1,000	SFRM250-2000-☐
25	50–1,000	SFRM250-2500-☐
30	50–1,000	SFRM250-3000-☐
35	50–1,000	SFRM250-3500-☐
40	50–1,000	SFRM250-4000-☐
45	50–1,000	SFRM250-4500-☐
50	50–1,000	SFRM250-5000-☐
55	50–1,000	SFRM250-5500-☐
60	50–1,000	SFRM250-6000-☐
65	50–1,000	SFRM250-6500-☐
70	50–1,000	SFRM250-7000-☐
80	50–1,000	SFRM250-8000-☐
90	50–1,000	SFRM250-9000-☐
100	50–1,000	SFRM250-10000-☐

Good coefficient of friction and wear on almost every shaft – iglidur® P210



Order key for round bars

Type	Dimensions [mm]				
SF R P210	- 30	00	- ☐		
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50–1,000	SFRP210-1000-☐
15	50–1,000	SFRP210-1500-☐
20	50–1,000	SFRP210-2000-☐
25	50–1,000	SFRP210-2500-☐
30	50–1,000	SFRP210-3000-☐
35	50–1,000	SFRP210-3500-☐
40	50–1,000	SFRP210-4000-☐
45	50–1,000	SFRP210-4500-☐
50	50–1,000	SFRP210-5000-☐
55	50–1,000	SFRP210-5500-☐
60	50–1,000	SFRP210-6000-☐
65	50–1,000	SFRP210-6500-☐
70	50–1,000	SFRP210-7000-☐
80	50–1,000	SFRP210-8000-☐
90	50–1,000	SFRP210-9000-☐
100	50–1,000	SFRP210-10000-☐

Available from stock

Upon request/check availability

iglidur® round bars | Product range

Cost-effective and wear-resistant – iglidur® J4



Order key for round bars

Type	Dimensions [mm]				
SF R J4	- 30	00	- ☐		
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50–1,000	SFRJ4-1000-☐
15	50–1,000	SFRJ4-1500-☐
20	50–1,000	SFRJ4-2000-☐
25	50–1,000	SFRJ4-2500-☐
30	50–1,000	SFRJ4-3000-☐
35	50–1,000	SFRJ4-3500-☐
40	50–1,000	SFRJ4-4000-☐
45	50–1,000	SFRJ4-4500-☐
50	50–1,000	SFRJ4-5000-☐
55	50–1,000	SFRJ4-5500-☐
60	50–1,000	SFRJ4-6000-☐
65	50–1,000	SFRJ4-6500-☐
70	50–1,000	SFRJ4-7000-☐
80	50–1,000	SFRJ4-8000-☐
90	50–1,000	SFRJ4-9000-☐
100	50–1,000	SFRJ4-10000-☐

Low-cost material for high volumes – iglidur® GLW



Order key for round bars

Type	Dimensions [mm]				
SF R GLW	- 30	00	- ☐		
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50–1,000	SFRGLW-1000-☐
15	50–1,000	SFRGLW-1500-☐
20	50–1,000	SFRGLW-2000-☐
25	50–1,000	SFRGLW-2500-☐
30	50–1,000	SFRGLW-3000-☐
35	50–1,000	SFRGLW-3500-☐
40	50–1,000	SFRGLW-4000-☐
45	50–1,000	SFRGLW-4500-☐
50	50–1,000	SFRGLW-5000-☐
55	50–1,000	SFRGLW-5500-☐
60	50–1,000	SFRGLW-6000-☐
65	50–1,000	SFRGLW-6500-☐
70	50–1,000	SFRGLW-7000-☐
80	50–1,000	SFRGLW-8000-☐
90	50–1,000	SFRGLW-9000-☐
100	50–1,000	SFRGLW-10000-☐

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iglidur® round bars | Product range

The versatile endurance runner – iglidur® J



Order key for round bars

Type	Dimensions [mm]					
SF R	J	- 30	00	-	☐	
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length	

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50 – 1,000	SFRJ-1000-☐
15	50 – 1,000	SFRJ-1500-☐
20	50 – 1,000	SFRJ-2000-☐
25	50 – 1,000	SFRJ-2500-☐
30	50 – 1,000	SFRJ-3000-☐
35	50 – 1,000	SFRJ-3500-☐
40	50 – 1,000	SFRJ-4000-☐
45	50 – 1,000	SFRJ-4500-☐

Ø	Lengths	Part No.
50	50 – 1,000	SFRJ-5000-☐
55	50 – 1,000	SFRJ-5500-☐
60	50 – 1,000	SFRJ-6000-☐
65	50 – 1,000	SFRJ-6500-☐
70	50 – 1,000	SFRJ-7000-☐
80	50 – 1,000	SFRJ-8000-☐
90	50 – 1,000	SFRJ-9000-☐
100	50 – 1,000	SFRJ-10000-☐

The classic endurance runner up to 30MPa – iglidur® W300



Order key for round bars

Type	Dimensions [mm]					
SF R	W300	- 30	00	-	☐	
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length	

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50 – 1,000	SFRW-1000-☐
15	50 – 1,000	SFRW-1500-☐
20	50 – 1,000	SFRW-2000-☐
25	50 – 1,000	SFRW-2500-☐
30	50 – 1,000	SFRW-3000-☐
35	50 – 1,000	SFRW-3500-☐
40	50 – 1,000	SFRW-4000-☐
45	50 – 1,000	SFRW-4500-☐

Ø	Lengths	Part No.
50	50 – 1,000	SFRW-5000-☐
55	50 – 1,000	SFRW-5500-☐
60	50 – 1,000	SFRW-6000-☐
65	50 – 1,000	SFRW-6500-☐
70	50 – 1,000	SFRW-7000-☐
80	50 – 1,000	SFRW-8000-☐
90	50 – 1,000	SFRW-9000-☐
100	50 – 1,000	SFRW-10000-☐

Available from stock

Upon request/check availability

iglidur® bar stock

iglidur® round bars | Product range

Specialist for pivoting and pulsating loads – iglidur® J3



Order key for round bars

Type	Dimensions [mm]					
SF R	J3	- 30	00	-	☐	
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length	

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50 – 1,000	SFRJ3-1000-☐
15	50 – 1,000	SFRJ3-1500-☐
20	50 – 1,000	SFRJ3-2000-☐
25	50 – 1,000	SFRJ3-2500-☐
30	50 – 1,000	SFRJ3-3000-☐
35	50 – 1,000	SFRJ3-3500-☐
40	50 – 1,000	SFRJ3-4000-☐
45	50 – 1,000	SFRJ3-4500-☐

Ø	Lengths	Part No.
50	50 – 1,000	SFRJ3-5000-☐
55	50 – 1,000	SFRJ3-5500-☐
60	50 – 1,000	SFRJ3-6000-☐
65	50 – 1,000	SFRJ3-6500-☐
70	50 – 1,000	SFRJ3-7000-☐
80	50 – 1,000	SFRJ3-8000-☐
90	50 – 1,000	SFRJ3-9000-☐
100	50 – 1,000	SFRJ3-10000-☐

Endurance runner with high dimensional stability at high temperature – iglidur® J350



Order key for round bars

Type	Dimensions [mm]					
SF R	J350	- 30	00	-	☐	
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length	

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50 – 1,000	SFRJ350-1000-☐
15	50 – 1,000	SFRJ350-1500-☐
20	50 – 1,000	SFRJ350-2000-☐
25	50 – 1,000	SFRJ350-2500-☐
30	50 – 1,000	SFRJ350-3000-☐
35	50 – 1,000	SFRJ350-3500-☐
40	50 – 1,000	SFRJ350-4000-☐
45	50 – 1,000	SFRJ350-4500-☐

Ø	Lengths	Part No.
50	50 – 1,000	SFRJ350-5000-☐
55	50 – 1,000	SFRJ350-5500-☐
60	50 – 1,000	SFRJ350-6000-☐
65	50 – 1,000	SFRJ350-6500-☐
70	50 – 1,000	SFRJ350-7000-☐
80	50 – 1,000	SFRJ350-8000-☐
90	50 – 1,000	SFRJ350-9000-☐
100	50 – 1,000	SFRJ350-10000-☐

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Ideal for plastic shafts – iglidur® J260



Order key for round bars

Type	Dimensions [mm]					
SF R	J260	-	30	00	-	☐
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length	

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50–1,000	SFRJ260-1000-☐
15	50–1,000	SFRJ260-1500-☐
20	50–1,000	SFRJ260-2000-☐
25	50–1,000	SFRJ260-2500-☐
30	50–1,000	SFRJ260-3000-☐
35	50–1,000	SFRJ260-3500-☐
40	50–1,000	SFRJ260-4000-☐
45	50–1,000	SFRJ260-4500-☐
50	50–1,000	SFRJ260-5000-☐
55	50–1,000	SFRJ260-5500-☐
60	50–1,000	SFRJ260-6000-☐
65	50–1,000	SFRJ260-6500-☐
70	50–1,000	SFRJ260-7000-☐
80	50–1,000	SFRJ260-8000-☐
90	50–1,000	SFRJ260-9000-☐
100	50–1,000	SFRJ260-10000-☐

Low-cost – iglidur® R



Order key for round bars

Type	Dimensions [mm]					
SF R	R	-	30	00	-	☐
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length	

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50–1,000	SFRR-1000-☐
15	50–1,000	SFRR-1500-☐
20	50–1,000	SFRR-2000-☐
25	50–1,000	SFRR-2500-☐
30	50–1,000	SFRR-3000-☐
35	50–1,000	SFRR-3500-☐
40	50–1,000	SFRR-4000-☐
45	50–1,000	SFRR-4500-☐
50	50–1,000	SFRR-5000-☐
55	50–1,000	SFRR-5500-☐
60	50–1,000	SFRR-6000-☐
65	50–1,000	SFRR-6500-☐
70	50–1,000	SFRR-7000-☐
80	50–1,000	SFRR-8000-☐
90	50–1,000	SFRR-9000-☐
100	50–1,000	SFRR-10000-☐

Available from stock

Upon request/check availability

iglidur® round bars | Product range

Specially for aluminium shafts – iglidur® J200



Order key for round bars

Type	Dimensions [mm]					
SF R	J200	-	30	00	-	☐
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length	

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50–1,000	SFRJ200-1000-☐
15	50–1,000	SFRJ200-1500-☐
20	50–1,000	SFRJ200-2000-☐
25	50–1,000	SFRJ200-2500-☐
30	50–1,000	SFRJ200-3000-☐
35	50–1,000	SFRJ200-3500-☐
40	50–1,000	SFRJ200-4000-☐
45	50–1,000	SFRJ200-4500-☐
50	50–1,000	SFRJ200-5000-☐
55	50–1,000	SFRJ200-5500-☐
60	50–1,000	SFRJ200-6000-☐
65	50–1,000	SFRJ200-6500-☐
70	50–1,000	SFRJ200-7000-☐
80	50–1,000	SFRJ200-8000-☐
90	50–1,000	SFRJ200-9000-☐
100	50–1,000	SFRJ200-10000-☐

Ideal for pivoting movement – iglidur® E7



Order key for round bars

Type	Dimensions [mm]					
SF R	E7	-	30	00	-	☐
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length	

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50–1,000	SFRE7-1000-☐
15	50–1,000	SFRE7-1500-☐
20	50–1,000	SFRE7-2000-☐
25	50–1,000	SFRE7-2500-☐
30	50–1,000	SFRE7-3000-☐
35	50–1,000	SFRE7-3500-☐
40	50–1,000	SFRE7-4000-☐
45	50–1,000	SFRE7-4500-☐
50	50–1,000	SFRE7-5000-☐
55	50–1,000	SFRE7-5500-☐
60	50–1,000	SFRE7-6000-☐
65	50–1,000	SFRE7-6500-☐
70	50–1,000	SFRE7-7000-☐
80	50–1,000	SFRE7-8000-☐
90	50–1,000	SFRE7-9000-☐
100	50–1,000	SFRE7-10000-☐

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iglidur® round bars | Product range

Extremely wear-resistant in black – iglidur® JB



Order key for round bars

Type	Dimensions [mm]				
SF R JB - 30	00 - ☐				
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50 – 1,000	SFRJB-1000-☐
15	50 – 1,000	SFRJB-1500-☐
20	50 – 1,000	SFRJB-2000-☐
25	50 – 1,000	SFRJB-2500-☐
30	50 – 1,000	SFRJB-3000-☐
35	50 – 1,000	SFRJB-3500-☐
40	50 – 1,000	SFRJB-4000-☐
45	50 – 1,000	SFRJB-4500-☐
50	50 – 1,000	SFRJB-5000-☐
55	50 – 1,000	SFRJB-5500-☐
60	50 – 1,000	SFRJB-6000-☐
65	50 – 1,000	SFRJB-6500-☐
70	50 – 1,000	SFRJB-7000-☐
80	50 – 1,000	SFRJB-8000-☐
90	50 – 1,000	SFRJB-9000-☐
100	50 – 1,000	SFRJB-10000-☐

The chemical and temperature specialist – iglidur® X



Order key for round bars

Type	Dimensions [mm]				
SF R X - 30	00 - ☐				
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50 – 1,000	SFRX-1000-☐
15	50 – 1,000	SFRX-1500-☐
20	50 – 1,000	SFRX-2000-☐
25	50 – 1,000	SFRX-2500-☐
30	50 – 1,000	SFRX-3000-☐
35	50 – 1,000	SFRX-3500-☐
40	50 – 1,000	SFRX-4000-☐
45	50 – 1,000	SFRX-4500-☐
50	50 – 1,000	SFRX-5000-☐
55	50 – 1,000	SFRX-5500-☐
60	50 – 1,000	SFRX-6000-☐
65	50 – 1,000	SFRX-6500-☐
70	50 – 1,000	SFRX-7000-☐
80	50 – 1,000	SFRX-8000-☐
90	50 – 1,000	SFRX-9000-☐
100	50 – 1,000	SFRX-10000-☐

Available from stock

Upon request/check availability

iglidur® round bars | Product range

All-rounder for steam sterilisation – iglidur® HSD350



Order key for round bars

Type	Dimensions [mm]				
SF R HSD350 - 30	00 - ☐				
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50 – 1,000	SFRHSD350-1000-☐
15	50 – 1,000	SFRHSD350-1500-☐
20	50 – 1,000	SFRHSD350-2000-☐
25	50 – 1,000	SFRHSD350-2500-☐
30	50 – 1,000	SFRHSD350-3000-☐
35	50 – 1,000	SFRHSD350-3500-☐
40	50 – 1,000	SFRHSD350-4000-☐
45	50 – 1,000	SFRHSD350-4500-☐
50	50 – 1,000	SFRHSD350-5000-☐
55	50 – 1,000	SFRHSD350-5500-☐
60	50 – 1,000	SFRHSD350-6000-☐
65	50 – 1,000	SFRHSD350-6500-☐
70	50 – 1,000	SFRHSD350-7000-☐
80	50 – 1,000	SFRHSD350-8000-☐
90	50 – 1,000	SFRHSD350-9000-☐
100	50 – 1,000	SFRHSD350-10000-☐

Endurance runner with high media resistance – iglidur® H1



Order key for round bars

Type	Dimensions [mm]				
SF R H1 - 30	00 - ☐				
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50 – 1,000	SFRH1-1000-☐
15	50 – 1,000	SFRH1-1500-☐
20	50 – 1,000	SFRH1-2000-☐
25	50 – 1,000	SFRH1-2500-☐
30	50 – 1,000	SFRH1-3000-☐
35	50 – 1,000	SFRH1-3500-☐
40	50 – 1,000	SFRH1-4000-☐
45	50 – 1,000	SFRH1-4500-☐
50	50 – 1,000	SFRH1-5000-☐
55	50 – 1,000	SFRH1-5500-☐
60	50 – 1,000	SFRH1-6000-☐
65	50 – 1,000	SFRH1-6500-☐
70	50 – 1,000	SFRH1-7000-☐
80	50 – 1,000	SFRH1-8000-☐
90	50 – 1,000	SFRH1-9000-☐
100	50 – 1,000	SFRH1-10000-☐

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iglidur® round bars | Product range

For extreme ambient conditions – iglidur® C500



Order key for round bars

Type			Dimensions [mm]		
SF R	C500	-	30	00	- ☐
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50–1,000	SFRC500-1000-☐
15	50–1,000	SFRC500-1500-☐
20	50–1,000	SFRC500-2000-☐
25	50–1,000	SFRC500-2500-☐
30	50–1,000	SFRC500-3000-☐
35	50–1,000	SFRC500-3500-☐
40	50–1,000	SFRC500-4000-☐
45	50–1,000	SFRC500-4500-☐

Ø	Lengths	Part No.
50	50–1,000	SFRC500-5000-☐
55	50–1,000	SFRC500-5500-☐
60	50–1,000	SFRC500-6000-☐
65	50–1,000	SFRC500-6500-☐
70	50–1,000	SFRC500-7000-☐
80	50–1,000	SFRC500-8000-☐
90	50–1,000	SFRC500-9000-☐
100	50–1,000	SFRC500-10000-☐

The all-rounder for food, FDA and EU 10/2011-compliant – iglidur® A181



Order key for round bars

Type			Dimensions [mm]		
SF R	A181	-	30	00	- ☐
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50–1,000	SFRA181-1000-☐
15	50–1,000	SFRA181-1500-☐
20	50–1,000	SFRA181-2000-☐
25	50–1,000	SFRA181-2500-☐
30	50–1,000	SFRA181-3000-☐
35	50–1,000	SFRA181-3500-☐
40	50–1,000	SFRA181-4000-☐
45	50–1,000	SFRA181-4500-☐

Ø	Lengths	Part No.
50	50–1,000	SFRA181-5000-☐
55	50–1,000	SFRA181-5500-☐
60	50–1,000	SFRA181-6000-☐
65	50–1,000	SFRA181-6500-☐
70	50–1,000	SFRA181-7000-☐
80	50–1,000	SFRA181-8000-☐
90	50–1,000	SFRA181-9000-☐
100	50–1,000	SFRA181-10000-☐

Available from stock

Upon request/check availability

iglidur® round bars | Product range

The FDA-compliant endurance runner at higher temperatures – iglidur® A350



Order key for round bars

Type			Dimensions [mm]		
SF R	A350	-	30	00	- ☐
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50–1,000	SFRA350-1000-☐
15	50–1,000	SFRA350-1500-☐
20	50–1,000	SFRA350-2000-☐
25	50–1,000	SFRA350-2500-☐
30	50–1,000	SFRA350-3000-☐
35	50–1,000	SFRA350-3500-☐
40	50–1,000	SFRA350-4000-☐
45	50–1,000	SFRA350-4500-☐

Ø	Lengths	Part No.
50	50–1,000	SFRA350-5000-☐
55	50–1,000	SFRA350-5500-☐
60	50–1,000	SFRA350-6000-☐
65	50–1,000	SFRA350-6500-☐
70	50–1,000	SFRA350-7000-☐
80	50–1,000	SFRA350-8000-☐
90	50–1,000	SFRA350-9000-☐
100	50–1,000	SFRA350-10000-☐

The media and temperature specialist in the food sector – iglidur® A500



Order key for round bars

Type			Dimensions [mm]		
SF R	A500	-	30	00	- ☐
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50–1,000	SFRA500-1000-☐
15	50–1,000	SFRA500-1500-☐
20	50–1,000	SFRA500-2000-☐
25	50–1,000	SFRA500-2500-☐
30	50–1,000	SFRA500-3000-☐
35	50–1,000	SFRA500-3500-☐
40	50–1,000	SFRA500-4000-☐
45	50–1,000	SFRA500-4500-☐

Ø	Lengths	Part No.
50	50–1,000	SFRA500-5000-☐
55	50–1,000	SFRA500-5500-☐
60	50–1,000	SFRA500-6000-☐
65	50–1,000	SFRA500-6500-☐
70	50–1,000	SFRA500-7000-☐
80	50–1,000	SFRA500-8000-☐
90	50–1,000	SFRA500-9000-☐
100	50–1,000	SFRA500-10000-☐

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The all-rounder for food – iglidur® A180



Order key for round bars

Type	Dimensions [mm]				
SF R A180	- 30	00	- ☐		
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50 – 1,000	SFRA180-1000-☐
15	50 – 1,000	SFRA180-1500-☐
20	50 – 1,000	SFRA180-2000-☐
25	50 – 1,000	SFRA180-2500-☐
30	50 – 1,000	SFRA180-3000-☐
35	50 – 1,000	SFRA180-3500-☐
40	50 – 1,000	SFRA180-4000-☐
45	50 – 1,000	SFRA180-4500-☐

Ø	Lengths	Part No.
50	50 – 1,000	SFRA180-5000-☐
55	50 – 1,000	SFRA180-5500-☐
60	50 – 1,000	SFRA180-6000-☐
65	50 – 1,000	SFRA180-6500-☐
70	50 – 1,000	SFRA180-7000-☐
80	50 – 1,000	SFRA180-8000-☐
90	50 – 1,000	SFRA180-9000-☐
100	50 – 1,000	SFRA180-10000-☐

"Food" material with high media resistance up to +90°C – iglidur® A160



Order key for round bars

Type	Dimensions [mm]				
SF R A160	- 30	00	- ☐		
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50 – 1,000	SFRA160-1000-☐
15	50 – 1,000	SFRA160-1500-☐
20	50 – 1,000	SFRA160-2000-☐
25	50 – 1,000	SFRA160-2500-☐
30	50 – 1,000	SFRA160-3000-☐
35	50 – 1,000	SFRA160-3500-☐
40	50 – 1,000	SFRA160-4000-☐
45	50 – 1,000	SFRA160-4500-☐

Ø	Lengths	Part No.
50	50 – 1,000	SFRA160-5000-☐
55	50 – 1,000	SFRA160-5500-☐
60	50 – 1,000	SFRA160-6000-☐
65	50 – 1,000	SFRA160-6500-☐
70	50 – 1,000	SFRA160-7000-☐
80	50 – 1,000	SFRA160-8000-☐
90	50 – 1,000	SFRA160-9000-☐
100	50 – 1,000	SFRA160-10000-☐

Available from stock

Upon request/check availability

iglidur® round bars | Product range

For contact with drinking water – iglidur® UW160



Order key for round bars

Type	Dimensions [mm]				
SF R UW160	-30	00	- ☐		
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50 – 1,000	SFRUW160-1000-☐
15	50 – 1,000	SFRUW160-1500-☐
20	50 – 1,000	SFRUW160-2000-☐
25	50 – 1,000	SFRUW160-2500-☐
30	50 – 1,000	SFRUW160-3000-☐
35	50 – 1,000	SFRUW160-3500-☐
40	50 – 1,000	SFRUW160-4000-☐
45	50 – 1,000	SFRUW160-4500-☐

Ø	Lengths	Part No.
50	50 – 1,000	SFRUW160-5000-☐
55	50 – 1,000	SFRUW160-5500-☐
60	50 – 1,000	SFRUW160-6000-☐
65	50 – 1,000	SFRUW160-6500-☐
70	50 – 1,000	SFRUW160-7000-☐
80	50 – 1,000	SFRUW160-8000-☐
90	50 – 1,000	SFRUW160-9000-☐
100	50 – 1,000	SFRUW160-10000-☐

For the tobacco industry – iglidur® T220



Order key for round bars

Type	Dimensions [mm]				
SF R T220	- 30	00	- ☐		
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50 – 1,000	SFRT220-1000-☐
15	50 – 1,000	SFRT220-1500-☐
20	50 – 1,000	SFRT220-2000-☐
25	50 – 1,000	SFRT220-2500-☐
30	50 – 1,000	SFRT220-3000-☐
35	50 – 1,000	SFRT220-3500-☐
40	50 – 1,000	SFRT220-4000-☐
45	50 – 1,000	SFRT220-4500-☐

Ø	Lengths	Part No.
50	50 – 1,000	SFRT220-5000-☐
55	50 – 1,000	SFRT220-5500-☐
60	50 – 1,000	SFRT220-6000-☐
65	50 – 1,000	SFRT220-6500-☐
70	50 – 1,000	SFRT220-7000-☐
80	50 – 1,000	SFRT220-8000-☐
90	50 – 1,000	SFRT220-9000-☐
100	50 – 1,000	SFRT220-10000-☐

igus® constantly expands its range of available materials and dimensions. Please contact us in case the required diameter is not available.

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iglidur® round bars | Product range

Used to prevent electro-static charges – iglidur® F2



Order key for round bars

Type	Dimensions [mm]					
SF R F2	- 30	00	- □			
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length	

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50–1,000	SFRF2-1000-□
15	50–1,000	SFRF2-1500-□
20	50–1,000	SFRF2-2000-□
25	50–1,000	SFRF2-2500-□
30	50–1,000	**SFRF2-3000-□**
35	50–1,000	**SFRF2-3500-□**
40	50–1,000	SFRF2-4000-□
45	50–1,000	SFRF2-4500-□

Ø	Lengths	Part No.
50	50–1,000	SFRF2-5000-□
55	50–1,000	SFRF2-5500-□
60	50–1,000	SFRF2-6000-□
65	50–1,000	SFRF2-6500-□
70	50–1,000	SFRF2-7000-□
80	50–1,000	SFRF2-8000-□
90	50–1,000	SFRF2-9000-□
100	50–1,000	SFRF2-10000-□

Versatile and cost-effective – iglidur® J2



Order key for round bars

Type	Dimensions [mm]					
SF R J2	- 30	00	- □			
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length	

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50–1,000	SFRJ2-1000-□
15	50–1,000	SFRJ2-1500-□
20	50–1,000	SFRJ2-2000-□
25	50–1,000	SFRJ2-2500-□
30	50–1,000	**SFRJ2-3000-□**
35	50–1,000	SFRJ2-3500-□
40	50–1,000	SFRJ2-4000-□
45	50–1,000	SFRJ2-4500-□

Ø	Lengths	Part No.
50	50–1,000	SFRJ2-5000-□
55	50–1,000	SFRJ2-5500-□
60	50–1,000	SFRJ2-6000-□
65	50–1,000	SFRJ2-6500-□
70	50–1,000	SFRJ2-7000-□
80	50–1,000	SFRJ2-8000-□
90	50–1,000	SFRJ2-9000-□
100	50–1,000	SFRJ2-10000-□

Available from stock

Upon request/check availability

iglidur® round bars | Product range

For the rail industry, flame-retardant, complies with DIN EN 45545 HL3, R22/R23 – iglidur® RW370



Order key for round bars

Type	Dimensions [mm]					
SF R RW370	- 30	00	- □			
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length	

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50–1,000	SFRRW370-1000-□
15	50–1,000	SFRRW370-1500-□
20	50–1,000	SFRRW370-2000-□
25	50–1,000	SFRRW370-2500-□
30	50–1,000	**SFRRW370-3000-□**
35	50–1,000	SFRRW370-3500-□
40	50–1,000	SFRRW370-4000-□
45	50–1,000	**SFRRW370-4500-□**

Ø	Lengths	Part No.
50	50–1,000	SFRRW370-5000-□
55	50–1,000	SFRRW370-5500-□
60	50–1,000	SFRRW370-6000-□
65	50–1,000	SFRRW370-6500-□
70	50–1,000	SFRRW370-7000-□
80	50–1,000	**SFRRW370-8000-□**
90	50–1,000	SFRRW370-9000-□
100	50–1,000	SFRRW370-10000-□

For long service life under extreme loads – iglidur® Q2



Order key for round bars

Type	Dimensions [mm]					
SF R Q2	- 30	00	- □			
Bar stock	Round bar	iglidur® material	Outer Ø	Inner Ø	Length	

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	50–1,000	SFRQ2-1000-□
15	50–1,000	SFRQ2-1500-□
20	50–1,000	SFRQ2-2000-□
25	50–1,000	**SFRQ2-2500-□**
30	50–1,000	**SFRQ2-3000-□**
35	50–1,000	SFRQ2-3500-□
40	50–1,000	SFRQ2-4000-□
45	50–1,000	SFRQ2-4500-□

Ø	Lengths	Part No.
50	50–1,000	SFRQ2-5000-□
55	50–1,000	SFRQ2-5500-□
60	50–1,000	SFRQ2-6000-□
65	50–1,000	SFRQ2-6500-□
70	50–1,000	SFRQ2-7000-□
80	50–1,000	SFRQ2-8000-□
90	50–1,000	SFRQ2-9000-□
100	50–1,000	SFRQ2-10000-□

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iglidur® tubes | Product range

The versatile endurance runner – iglidur® J



Order key for tubes

Type	Dimensions [mm]				
SF T J	-110	70	- ☐		
Bar stock	Tube	iglidur® material	Outer Ø	Inner Ø	Length

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

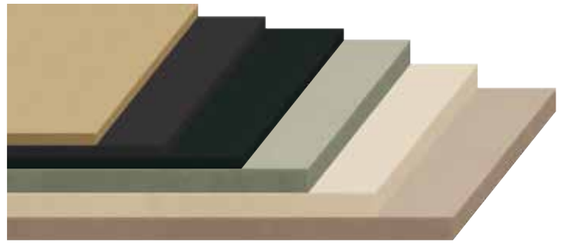
Inner Ø	Inner diameter tolerance	Outer Ø	Outer diameter tolerance	Length	Part No.
70	–2.0 / –6.5	110	+1.5 / +4.5	50 – 1,000	**SFTJ-11070**
70	–2.0 / –6.5	125	+1.5 / +4.5	50 – 1,000	**SFTJ-12570**
100	–2.0 / –6.5	150	+1.5 / +4.5	50 – 1,000	**SFTJ-150100**

Available from stock

Upon request/check availability

iglidur® plates | Product range

Solve wear problems quickly with iglidur® plate strips



Order key for plate strips

Type	Dimensions [mm]				
SF P ☐	-15	-160	- ☐		
Bar stock	Plate	iglidur® material	Material thickness	Width	Length

In your required length, freely selectable between 50 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

iglidur® material	Material thickness s	Material thickness Tolerance	Width	Part No.
A500	15	+0.300 +1.500	160	**SFPA500-15-160-☐**
A500	30	+0.500 +2.500	160	**SFPA500-30-160-☐**
A500	50	+0.500 +3.500	160	**SFPA500-50-160-☐**
C500	15	+0.300 +1.500	160	**SFPC500-15-160-☐**
E7	30	+0.500 +2.500	160	**SFPE7-30-160-☐**
HSD350	50	+0.500 +3.500	160	**SFPHSD350-50-160-☐**
J350	15	+0.300 +1.500	160	**SFPJ350-15-160-☐**
J4	15	+0.300 +1.500	160	**SFPJ4-15-160-☐**
J4	30	+0.500 +2.500	160	**SFPJ4-30-160-☐**
J4	50	+0.500 +3.500	160	**SFPJ4-50-160-☐**
K230	15	+0.300 +1.500	160	**SFPK230-15-160-☐**
RW370	15	+0.300 +1.500	160	**SFPRW370-15-160-☐**
W300	15	+0.300 +1.500	160	**SFPW300-15-160-☐**
X	15	+0.300 +1.500	160	**SFPX-15-160-☐**

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iglidur® plates | Product range

The versatile endurance runner – iglidur® J

Plastic plates made from iglidur® can be supplied cut to size, with thickness ranging from 2mm to 40mm and available in up to 7 standard sizes.



Order key for plates

Type				Dimensions [mm]	
SF	P	J	- □	- 500	- 240
Bar stock	Plate	iglidur® material	Material thickness	Length	Width

Dimensions (L x B)	Material thickness s	Part No.
500x240	2 / 3 / 4 / 5 / 6	**SFPJ-□-500-240**
500x300	10 / 15 / 20 / 25 / 30 / 40	**SFPJ-□-500-300**
500x500	2 / 3 / 4 / 5 / 6	**SFPJ-□-500-500**
500x610	10 / 15 / 20 / 25 / 30 / 40	**SFPJ-□-500-610**
1,000x500	2 / 3 / 4 / 5 / 6	**SFPJ-□-1000-500**
1,000x610	10 / 15 / 20 / 25 / 30 / 40	**SFPJ-□-1000-610**
1,000x1,000	2 / 3 / 4 / 5 / 6	**SFPJ-□-1000-1000**

Tolerances	
Material thickness	Tolerance
2	+0.000 +0.200
3	+0.000 +0.200
4	+0.000 +0.250
5	+0.000 +0.250
6	+0.000 +0.300
10	+0.200 +0.900
15	+0.300 +1.500
20	+0.300 +1.500
25	+0.300 +1.500
30	+0.500 +2.500
40	+0.500 +2.500

Extremely wear-resistant in black – iglidur® JB



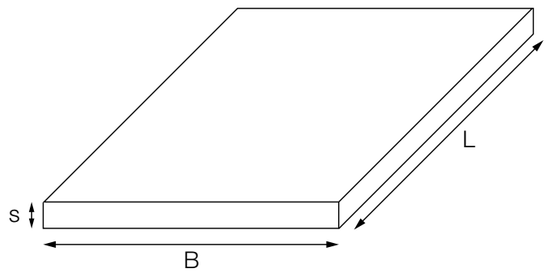
Dimensions (L x B)	Material thickness s	Part No.
500x300	10 / 25	**SFPJB-□-500-300**
500x610	10 / 25	**SFPJB-□-500-610**
1,000x610	10 / 25	**SFPJB-□-1000-610**

Tolerances	
Material thickness	Tolerance
10	+0.200 +0.900
25	+0.300 +1.500

iglidur® plates | Product range

The FDA-compliant endurance runner at higher temperatures – iglidur® A350





Dimensions (L x B)	Material thickness s	Part No.
500x300	15 / 20 / 25 / 30	**SFPA350-□-500-300**
500x610	15 / 20 / 25 / 30	**SFPA350-□-500-610**
1,000x610	15 / 20 / 25 / 30	**SFPA350-□-1000-610**

Tolerances	
Material thickness	Tolerance
15	+0.300 +1.500
20	+0.300 +1.500
25	+0.300 +1.500
30	+0.500 +2.500

FDA and EU 10/2011-compliant – iglidur® A160



Dimensions (L x B)	Material thickness s	Part No.
500x300	10 / 20	**SFPA160-□-500-300**
500x610	10 / 20	**SFPA160-□-500-610**
1,000x610	10 / 20	**SFPA160-□-1000-610**

Tolerances	
Material thickness	Tolerance
10	+0.200 +0.900
20	+0.300 +1.500

FDA-compliant – iglidur® A180



Dimensions (L x B)	Material thickness s	Part No.
500x300	10 / 20	**SFPA180-□-500-300**
500x610	10 / 20	**SFPA180-□-500-610**
1,000x610	10 / 20	**SFPA180-□-1000-610**

Tolerances	
Material thickness	Tolerance
10	+0.200 +0.900
20	+0.300 +1.500

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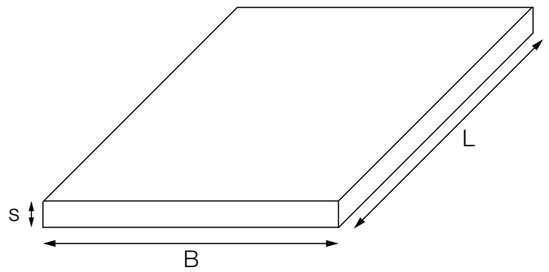
iglidur® plates | Product range

Impact-resistant, strong and media-resistant – RN326





Dimensions (L x B)	Material thickness s	Part No.
500x300	15	**SFPRN326-☐-500-300**
500x610	15	**SFPRN326-☐-500-610**
1,000x610	15	**SFPRN326-☐-1000-610**

Tolerances	
Material thickness	Tolerance
15	+0.300 +1.500

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	2–14mm	–	–	–
Setting angle	–	45–60°	–	–
Tip angle	–	–	–	90–130°
Cutting speed	max. 300m/min.	100–500m/min.	80–500m/min.	20–200m/min.
Feed rate	–	0.05–0.5mm/rpm	0.02–0.3mm/rpm	

Table: General processing information

Machining guidelines

	Unit	iglidur® material							
		A160, B160, W160, E7, RN326, K230	J, J2, J4, JB, A180, A181, J200, R	J260	W300 M250 GLW	P210 F2 T220	A350 J350	H1 H2 H4	X A500 C500
Turning									
Clearance angle	[°]	6–10	6–8	5–10	6–10	5–10	6	6	6
Rake angle	[°]	0–5	0–5	6–8	0–5	0–5	0	0–5	0–5
Setting angle	[°]	45–60	45–60	45–60	45–60	45–60	45–60	45–60	45–60
Cutting speed	[m/min]	250–500	300–600	300	250–500	300–400	350–400	250–500	250–500
Feed rate	[mm/rpm]	0.1–0.5	0.1–0.4	0.1–0.5	0.1–0.5	0.2–0.4	0.1–0.3	0.1–0.5	0.1–0.5
Milling									
Number of teeth		Z1–Z2	Z1–Z2	Z1–Z2	Z1–Z2	Z1–Z2	Z1–Z2	Z1–Z2	Z1–Z2
Cutting speed	[m/min]	250–500	300	300	250–500	300	250–500	250–500	250–500
Feed rate	[mm/rpm]	0.1–0.45	0.15–0.5	0.15–0.4	0.1–0.45	0.15–0.5	0.1–0.45	0.1–0.45	0.1–0.45
Drilling									
Number of teeth		Z2	Z2	Z2	Z2	Z2	Z2	Z2	Z2
Angle of twist	[°]	25	25	25	25	25	25	25	25
Acute angle	[°]	90	90	90	90	90	90	90	90
Cutting speed	[m/min]	50–150	50–150	50–100	50–150	50–100	20–80	50–200	50–200
Feed rate	[mm/rpm]	0.1–0.3	0.1–0.3	0.2–0.3	0.1–0.3	0.2–0.3	0.1–0.3	0.1–0.3	0.1–0.3

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iglidur® bar stock | Processing information

Processing information for iglidur® bar stock

igus® subjects its bar stock to a material-specific tempering process so that they remain dimensionally stable during and after machining. All bar stock from 25mm thickness are tempered, regardless of the respective iglidur® material. For materials that are suitable for use at high temperatures such as iglidur® X, C500 or A500, all bar stock are basically tempered.

What is tempering and how does it work?

During tempering, a material is subjected to a heat treatment for a prolonged period, during which the melting temperature is not exceeded. The selected temperature and the duration of the treatment vary depending on the material, material thickness and shape. It is crucial that the material is completely heated up and cooled slowly and evenly to room temperature after the holding time of the temperature. Tempering is particularly effective only with a slow cooling.

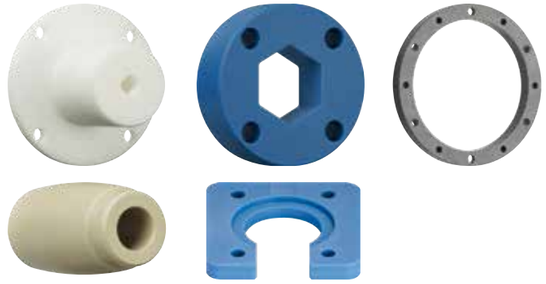
Tempering specifications for iglidur® materials

	iglidur® material					
	E7, RN326, K230, A160, B160	**J, J2, J3, J4, J200, JB, A180, A181, B180**	**J260**	**W300, M250, GLW, P210, F2, T220**	**A350, J350, H1, H2, H4**	**X A500 C500**
Heat up	1 hour per cm diameter to					
	+80°C	+120°C	+130°C	+180°C	+200°C	+220°C
Maximum temperature/ holding time	1 hour per cm diameter at					
	+80°C	+120°C	+130°C	+180°C	+200°C	+220°C
Cooling down	Cool down to maximum +20°C per hour until room temperature					

iglidur® bar stock | Small quantities and prototypes

Individual manufacture





Free igus® online services

- Online tools, e.g., for service life prediction
- Order or request bar stock quickly and easily
- Get special parts made from bar stock
- Order sample box
- Application examples

igus® manufactures your component in the desired form, desired quantity and required material

If you do not want to machine yourself, we will manufacture precise special parts for you quickly and cost-effectively according to drawings. This service has been made very easy for you: send a PDF drawing or a 3D model online along with your material requirements and the quantity. Then you will receive a non-binding offer. Your components are manufactured and shipped within a few days, and within ten days at the latest for up to 100 parts.

1. Submit an enquiry

Complete the online form with some basic information.

2. We machine your component according to your specifications

Upon order, igus® starts the production process.

3. You receive your product

Your required component is ready to ship and delivered quickly.

Submit an enquiry:

▶ **www.igus-asean.com/individual-component-barstock**





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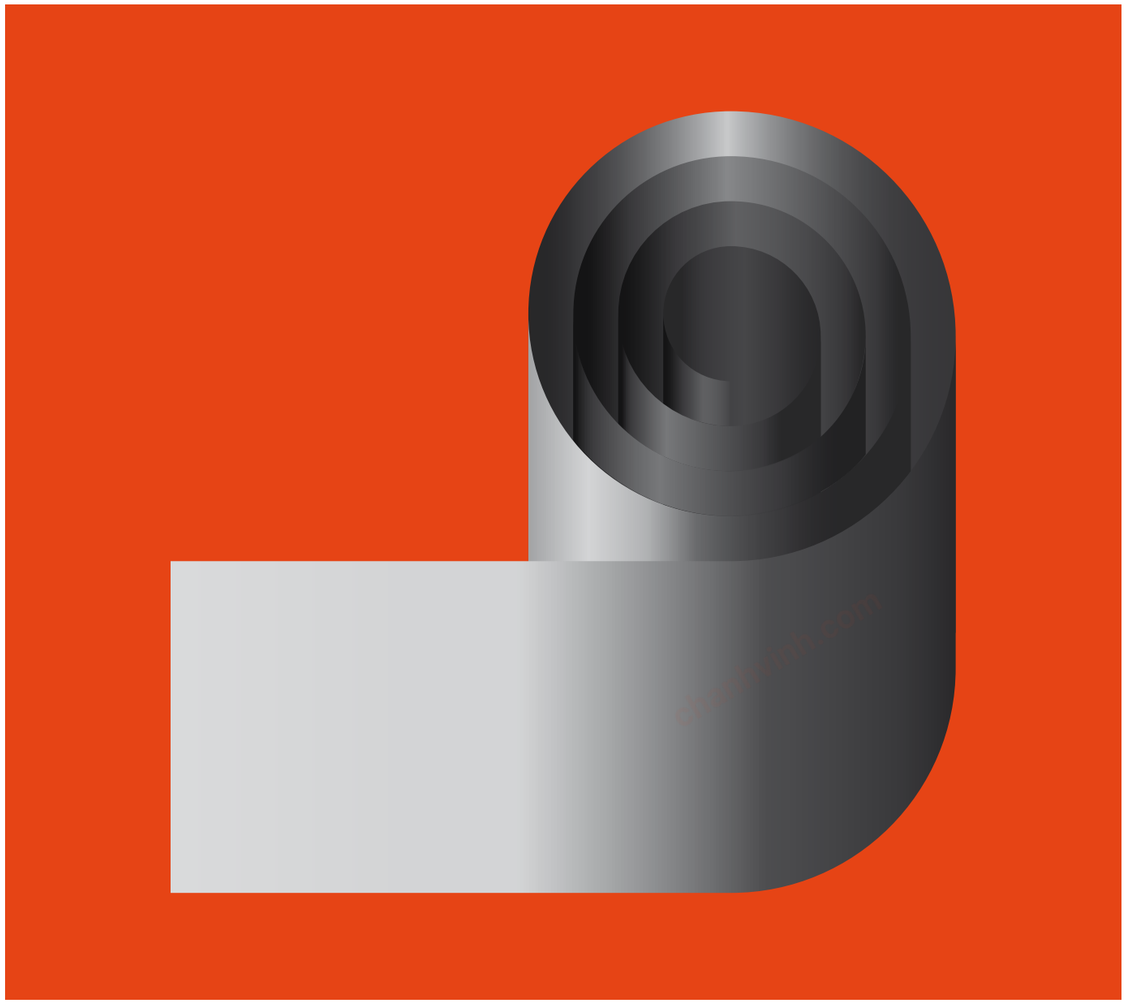
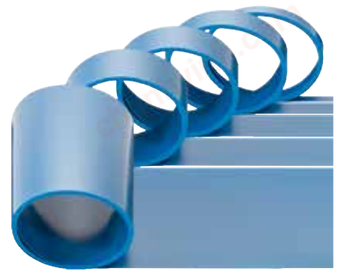
My sketches



iglidur® low-friction tribo-tape

- Choice of 4 materials
- Lubrication and maintenance-free
- Wear-resistant
- Easy to cut
- Available with/without adhesive surface
- Standard widths from stock



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iglidur® tribo-tape | Advantages

Versatile: iglidur® tribo-tape



Material: iglidur® A160

- Low coefficient of friction
- Wear resistance: ++
- Up to +90°C

▶ Page 696



Material: iglidur® B160

- For use in visible areas
- Wear resistance: ++++
- Up to +90°C

▶ Page 697



Material: iglidur® W160

- White and UV-stabilised
- Wear resistance: +++
- Up to +90°C

▶ Page 698



Material: iglidur® V400

- High media resistance
- Wear resistance: +++++
- Up to +200°C (with adhesive back, see product page)

▶ Page 699

Easy-to-fit protection for all surfaces: iglidur® tribo-tape

igus® tribo-tape is designed for lining areas of wear and where frequent maintenance is required, an example is for machine beds etc. At just 0.5mm thick (0.71mm including the adhesive back), the space requirement is extremely low. The ease of use (the tape can simply be cut using scissors) and optional self-adhesive back open up almost endless possibilities for the product's use.

- Lubrication and maintenance-free
- Easy to cut
- For compact areas
- With or without self-adhesive back
- Standard widths from stock
- Individual required widths in continuous range from 10–500mm

Available from stock

Detailed information about delivery time online.

Operation temperatures:

iglidur® A160: –50°C up to +90°C
iglidur® B160: –50°C up to +90°C
iglidur® W160: –50°C up to +90°C
iglidur® V400: –50°C up to +200°C

Differing temperatures with adhesive back (see product page)

Product film

▶ www.igus-asean.com/tape-film

Cutting service

Whether as a specially tailored by-the-metre product or freely designed pre-cut parts: We produce your required product in required width from our iglidur® tribo-tape. Please contact us!

▶ www.igus-asean.com/tape-cut-to-size

iglidur® tribo-tape | Technical data

Material properties

General properties	Unit	iglidur® A160	iglidur® B160	iglidur® W160	iglidur® V400	Testing method
Density	g/cm³	1.00	1.00	0.95	1.51	
Colour		blue	black	white	cream-white	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	0.1	0.1	0.1	DIN 53495
Max. total moisture absorption	% weight	0.1	0.1	0.1	0.2	
Coefficient of sliding friction, dynamic, against steel	µ	0.09–0.19	0.13–0.20	0.12–0.20	0.15–0.20	
Mechanical properties						
Flexural modulus	MPa	1,151	852	799	4,500	DIN 53457
Flexural strength at +20°C	MPa	19	14	14	95	DIN 53452
Shore D hardness		60	59	58	74	DIN 53505
Physical and thermal properties						
Max. long-term application temperature	°C	+90	+90	+90	+200	
Max. short-term application temperature	°C	+100	+100	+100	+240	
Min. continuous 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)	$K^{-1} \cdot 10^{-5}$	111	111	111	3	DIN 53752
Electrical properties						
Specific contact 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
Alcohols	+	+	+	+
Hydrocarbons	+	+	+	+
Greases, oils without additives	+	+	+	+
Fuels	+ up to 0	+ up to 0	+ up to 0	+
Diluted acids	+	+	+	+
Strong acids	+	+	+	+
Diluted alkalines	+	+	+	+
Strong alkalines	+	+	+	–
Radiation Resistance [Gy] up to	$1 \cdot 10^5$	$1 \cdot 10^5$	$1 \cdot 10^5$	$2 \cdot 10^4$

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20°C]

Unknown factors, temperatures, wet weather and many other ambient conditions impair the adhesion. It is therefore essential that the use of iglidur® tribo-tape be tested under realistic conditions. We are happy to provide you with samples for tests. All recommendations, as well as suggestions regarding use that are made, are based on experience gained in practice and tests where the basic conditions cannot be applied to other conditions of use. They are therefore not binding and do not release the buyer from the obligation to carry out his/her own tests. We always recommend application-specific tests under real conditions of use.

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iglidur® liners | Selection according to main criteria

iglidur®	A160	B160	W160	V400
Technical specifications				
Wear resistance at +23°C	●●●○○	●●●●○	●●●○○	●●●○○
Wear resistance at +90°C	●○○○○	●●○○○	●○○○○	●●●●○
Wear resistance at +150°C	●○○○○	●○○○○	●○○○○	●●●●●
Low coefficient of friction	●●●●○	●●●●●	●●●●○	●●●○○
Low moisture absorption	●●●●●	●●●●●	●●●●●	●●●●●
Wear resistance under water	●●●○○	●●●●○	●●●○○	●●●●○
High media resistance	●●●●○	●●●●○	●●●●○	●●●●●
Resistant to edge loads	●●●○○	●●●○○	●●●○○	●●●○○
Suitable for shock and impact loads	●●●●○	●●●●○	●●●●○	●●●○○
Resistant to dirt	●●●●○	●●●●○	●●●●○	●○○○○
Price index[141)]	●○○○○	●○○○○	●○○○○	●●●●●
For high loads (> 60MPa)				
Electrically conductive				
Approvals and standards				
FDA-compliant	●			
EU 10/2011-compliant	●			
Fire class in accordance with UL-94	HB	HB	HB	V-0
Mould test DIN EN ISO 846				
Fogging DIN 75201-B				
Availabilities / variants				
Bar stock, round material	●			
Bar stock, tube				
Bar stock, plate				
Machined made from bar stock	●			
tribo-tape liner	●	●	●	●

[141)] **Price index** ●○○○○ **low price category** ●●●○○ **medium price category** ●●●●● **highest price category**

iglidur® liners | Material properties table

iglidur®	Unit	A160	B160	W160	V400
General properties					
Density	**[g/cm³]**	1.00	1.00	0.95	1.51
Colour					
Max. moisture absorption at +23°C/50% r.h.	**[% weight]**	0.1	0.1	0.1	0.1
Max. total moisture absorption	**[% weight]**	0.1	0.1	0.1	0.2
Coefficient of sliding friction, dynamic, against steel	**[µ]**	0.09 – 0.19	0.13 – 0.20	0.12 – 0.20	0.15 – 0.20
Mechanical properties					
Flexural modulus	**[MPa]**	1,151	852	799	4,500
Flexural strength at +20°C	**[MPa]**	19	14	14	95
Compressive strength	**[MPa]**	37	37	37	47
Max. permissible surface pressure at +20°C	**[MPa]**	15	11	11	45
Shore D hardness		60	59	58	74
Physical and thermal properties					
Max. continuous operating temperature	**[°C]**	+90	+90	+90	+200
Max. short-term operating temperature	**[°C]**	+100	+100	+100	+240
Min. continuous operating temperature	**[°C]**	–50	–50	–50	–50
Thermal conductivity	**[W/m · K]**	0.30	0.32	0.30	0.24
Coefficient of thermal expansion at +23°C	**[$K^{-1} \cdot 10^{-5}$]**	111	111	111	3
Electrical properties					
Specific contact resistance	**[Ωcm]**	> 10^{12}	> 10^{12}	> 10^{12}	> 10^{12}
Surface resistance	**[Ω]**	> 10^{12}	> 10^{12}	> 10^{12}	> 10^{12}
Page		**696**	**697**	**698**	**699**

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iglidur® tribo-tape | Product range

FDA-compliant – iglidur® A160



Order key

Type	Dimensions [mm]	Options
A160 - T - 005 - 0020 - G		

- A160 – iglidur® material
- T – Tape
- 005 – Thickness
- 0020 – Width
- G – Adhesive back

G = Optional self-adhesive back

The low-cost iglidur® A160 tribo-tape has high wear resistance compared to similar, thin plastic products.

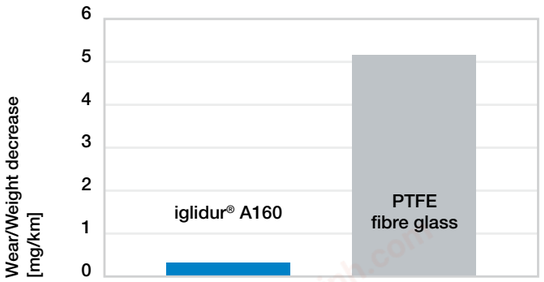
tribo-tape from iglidur® A160 with adhesive back
Temperature –40°C up to +90°C

Dimensions [mm]

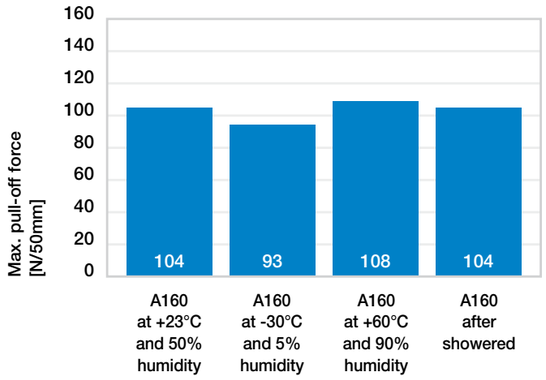
Material thickness without adhesive back ±0.1	Material thickness with adhesive back ±0.121	Width ±1.0	Part No. without adhesive back	Part No. with adhesive back
0.5	0.71	20	A160-T-005-0020	A160-T-005-0020-G
0.5	0.71	50	A160-T-005-0050	A160-T-005-0050-G
0.5	0.71	100	A160-T-005-0100	A160-T-005-0100-G
0.5	0.71	500	A160-T-005-0500	A160-T-005-0500-G
1.0	1.21	500	A160-T-010-0500	A160-T-010-0500-G

Individual widths upon request
Continuously from 10–500mm

Cutting service
Design tribo-tape flexibly
▶ **www.igus-asean.com/tape-cut-to-size**



Linear wear against stainless steel pin (AISI 303)
F = 10N, v = 9,600mm/min



180° pull-off test after various exposure conditions

This material complies with EU directive 10/2011 and also with FDA (Food and Drug Administration) specifications for repeated contact with food.

iglidur® tribo-tape | Product range

For use in visible areas – iglidur® B160



Order key

Type	Dimensions [mm]	Options
B160 - T - 005 - 0020 - G		

- B160 – iglidur® material
- T – Tape
- 005 – Thickness
- 0020 – Width
- G – Adhesive back

G = Optional self-adhesive back

Especially where the iglidur® tribo-tape is a visible part, the new black option now offers even more creative freedom. In addition the wear resistance has been improved once again compared to iglidur® A160.

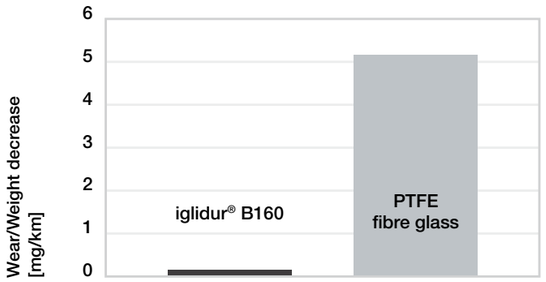
tribo-tape from iglidur® B160 with adhesive back
Temperature –40°C up to +90°C

Dimensions [mm]

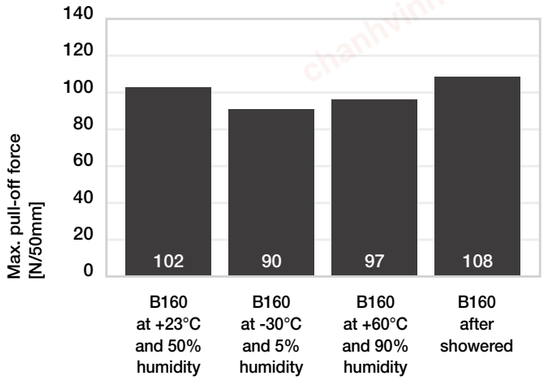
Material thickness without adhesive back ±0.1	Material thickness with adhesive back ±0.121	Width ±1.0	Part No. without adhesive back	Part No. with adhesive back
0.5	0.71	20	B160-T-005-0020	B160-T-005-0020-G
0.5	0.71	50	B160-T-005-0050	B160-T-005-0050-G
0.5	0.71	100	B160-T-005-0100	B160-T-005-0100-G
0.5	0.71	500	B160-T-005-0500	B160-T-005-0500-G
1.0	1.21	500	B160-T-010-0500	B160-T-010-0500-G

Individual widths upon request
Continuously from 10–500mm

Cutting service
Design tribo-tape flexibly
▶ **www.igus-asean.com/tape-cut-to-size**



Linear wear against stainless steel pin (AISI 303)
F = 10N, v = 9,600mm/min



180° pull-off test after various exposure conditions

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iglidur® tribo-tape | Product range

White and UV-stabilised – iglidur® W160



Order key

Type	Dimensions [mm]	Options
W160 - T - 005 - 0020 - G		

- iglidur® material
- Tape
- Thickness
- Width
- Adhesive back

G = Optional self-adhesive back

With its white colour and UV-stabilised additives, iglidur® W160 tribo-tape offers even more design freedom.[148)]

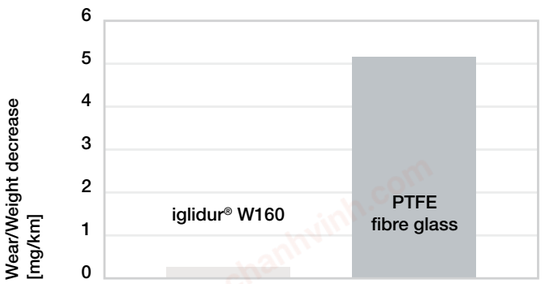
tribo-tape from iglidur® W160 with adhesive back
Temperature –40°C up to +90°C

Dimensions [mm]

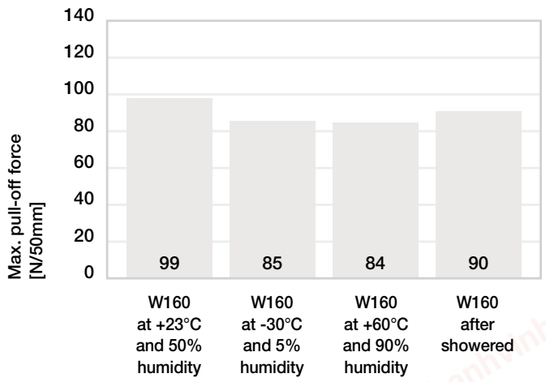
Material thickness without adhesive back ±0.1	Material thickness with adhesive back ±0.121	Width ±1.0	Part No. without adhesive back	Part No. with adhesive back
0.5	0.71	20	W160-T-005-0020	W160-T-005-0020-G
0.5	0.71	50	W160-T-005-0050	W160-T-005-0050-G
0.5	0.71	100	W160-T-005-0100	W160-T-005-0100-G
0.5	0.71	500	W160-T-005-0500	W160-T-005-0500-G
1.0	1.21	500	W160-T-010-0500	W160-T-010-0500-G

Individual widths upon request
Continuously from 10 – 500mm

Cutting service
Design tribo-tape flexibly
▶ www.igus-asean.com/tape-cut-to-size



Linear wear against stainless steel pin (AISI 303)
F = 10N, v = 9600mm/min



180° pull-off test after various exposure conditions

[148)] The original antibacterial version of the iglidur® W160 material is no longer available due to a change in the Biocides Regulation. A new antibacterial version is being developed.

iglidur® tribo-tape | Product range

High media resistance – iglidur® V400



Order key

Type	Dimensions [mm]	Options
V400 - T - 005 - 0120 - G		

- iglidur® material
- Tape
- Thickness
- Width
- Adhesive back

G = Optional self-adhesive back

iglidur® V400 tribo-tape is not only extremely wear-resistant but also extremely media and temperature-resistant. In fact, it has been proven in tests to be up to 10 times more wear-resistant than special products for machine beds.

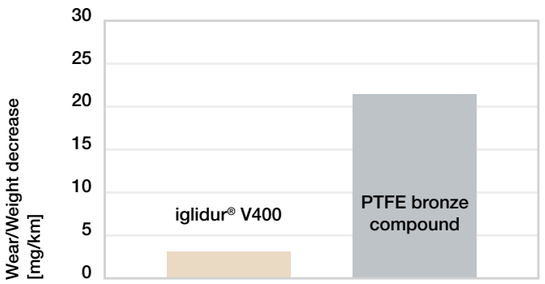
tribo-tape from iglidur® V400 with adhesive back
Temperature –40°C up to +160°C

Dimensions [mm]

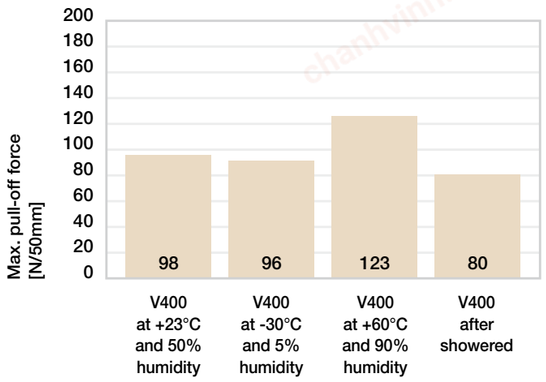
Material thickness without adhesive back ±0.1	Material thickness with adhesive back ±0.121	Width ±1.0	Part No. without adhesive back	Part No. with adhesive back
0.5	0.71	120	V400-T-005-0120	V400-T-005-0120-G

Individual widths upon request

Cutting service
Design tribo-tape flexibly
▶ www.igus-asean.com/tape-cut-to-size



Linear wear against stainless steel pin (AISI 303)
F = 35N, v = 0.5m/min



180° pull-off test after various exposure conditions

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iglidur®

Tribo 3D printing



...plastics

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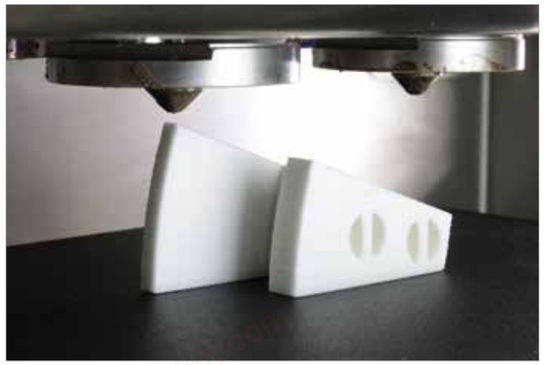
iglidur® tribo 3D printing | Advantages

Parts as required – everything a question of quantity

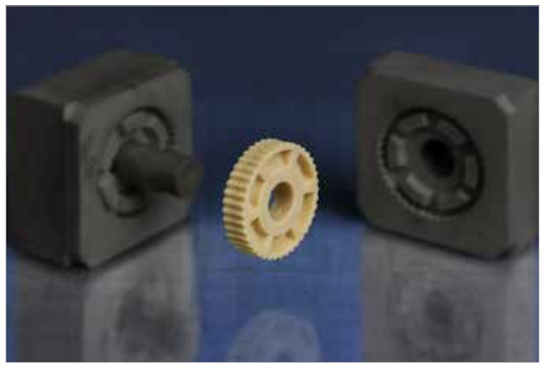


3D printing/SLS

For prototypes or small quantities made from tribo-filaments with the laser sintering method

Wear-resistant materials for 3D printing and the laser sintering method – print parts yourself or have igus® print them for you.

- Up to 50-times more abrasion-resistant than normal 3D printing materials
- Various iglidur® materials available for FDM/FFF (filament) and SLS (powder)
- No tool costs; cost-effective, no minimum order quantity



Printed tools

For small quantities made from iglidur® granules

3D printed mould tools to produce Wear-resistant injection-moulded parts made in all available iglidur® materials.

- Customised parts delivered from 4 business days
- Up to 80% more cost-effective than conventional injection mould tools
- For prototypes and small volumes
- Check price and manufacturability online
  ▶ **www.igus-asean.com/idd**

Lubrication-free printing

Extremely abrasion and wear-resistant tribo-plastics for additive manufacturing via selective laser sintering (SLS) or with filament (FDM/FFF) allow you to use the printed component or to test the function of the part reliably and completely from the prototype or production batch onward.

- Abrasion-resistant
- Lubrication and maintenance-free
- No tooling costs
- Design freedom
- 3D printing of parts on site
- Can be processed by commercially available 3D printers
- Predictable service life
- Surfaces smoothed or coloured in one of 12 standard colours
- 3D printing service 24–72hrs

Typical application areas

- Special wear-resistant parts
- Jig construction
- Single pieces and small volumes

Available from stock
Detailed information about delivery time online.

More information about 3D printing
▶ **www.igus-asean.com/3d**

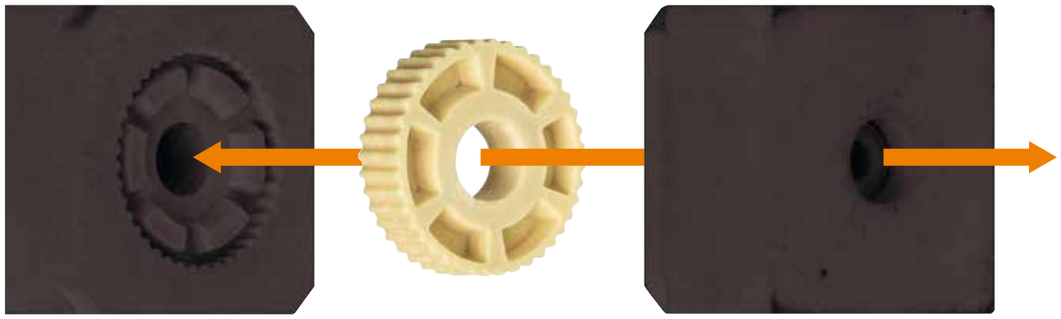
Calculate service life of 3D printed plain bearings online
▶ **www.igus-asean.com/iglidur-expert**

Calculate service life for 3D printed gears online
▶ **www.igus-asean.com/gear-expert**

Create a 3D model of the gear, roller, and much more within one minute
▶ **www.igus-asean.com/cad-configurators**

iglidur® | Injection moulding tools

Making tools quickly and at low cost



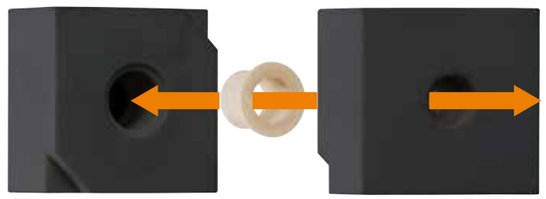
Tools for injection moulding from the 3D printers

Due to 3D printing, igus® is able to make customised injection moulds in a short time with up to 80% lower costs. Maintenance-free plastic plain bearings in the required shape can be made quickly and, above all, cost-effectively from all iglidur® materials.

- High variety of materials: all iglidur® plain bearing materials can be requested as samples
- Cost-efficient and delivered quickly
- No minimum order quantity
- For simple geometries
- For large quantities and recurring projects, metal 3D-printed moulds can also be provided.
- **Prices online ▶ www.igus-asean.com/idd**

The manufacture of maintenance-free plastic plain bearings from 3D printed injection moulds is worthwhile compared to direct 3D printing of the iglidur® materials especially if:

- Special material characteristics are needed, such as conductivity, high temperature, underwater use, KTW compliance
- Small volumes in the same iglidur® material are to be sampled as is a later high volume from a classic injection moulding tool





Delivery time
from 5 business days

▶ **www.igus-asean.com/3d-tools**

Information
▶ **www.igus-asean.com/print2mold**

Prices
▶ **www.igus-asean.com/idd**

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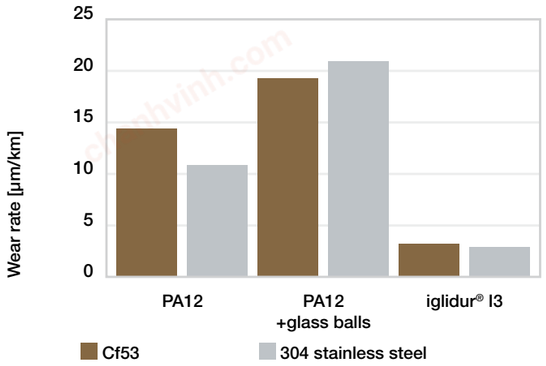
iglidur® SLS | Laser sintering

iglidur® I3 for 3D printing via SLS





Rotating wear: p = 1MPa; v = 0.3m/s

Delivery time
72hrs

At least 3 times more wear-resistant: iglidur® I3 for 3D printing via SLS

The material iglidur® I3, specially developed for laser sintering, proved to have an abrasion resistance 3 to 30 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. iglidur® I3 is also suitable for regular gears such as spur gears, bevel gears, and planetary gears.

- Lubrication and maintenance-free
- Wear-resistant
- Good mechanical properties
- Detail accuracy with exact surfaces
- Can be processed using the standard parameter set
- Refresh rate: 75%
- Automotive-compliant according to FMV SS 302
- Gear service life calculation
  ▶ **www.igus-asean.com/gear-expert**
- igus® 3D printing service
  ▶ **www.igus-asean.com/idd**
- Most-popular igus® 3D-printing material (more than 100,000 parts per year)

Material properties

General properties	Unit	iglidur® I3	Testing method
Density	g/cm³	1.05	
Colour		Yellow	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.8	DIN 53495
Max. total moisture absorption	% weight	1.9	
Mechanical properties			
Flexural modulus	MPa	1,400	DIN 53457
Flexural strength at +20°C	MPa	68/61[130)]	DIN 53452
Shore D hardness		70	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+80	
Max. short-term application temperature	°C	+140	
Min. continuous application temperature	°C	–40	
Electrical properties			
Specific contact resistance	Ωcm	> 10^{12}	DIN IEC 93
Surface resistance	Ω	> 10^{11}	DIN 53482

[130)] **Printed flat/upright**

▶ Chemical table, **page 1636**

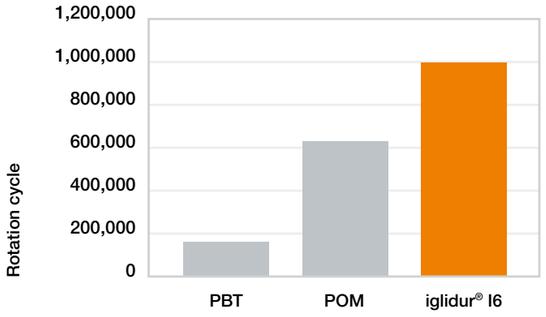
Part No. raw material (10kg)
I3-PL-10000

Part No. component
I3-PS-02

iglidur® SLS | Laser sintering

iglidur® I6 for 3D printing via SLS





Service life test worm wheel. 12rpm; 4.9Nm

Delivery time
72hrs

Durable worm wheels made of iglidur® I6 via laser sintering

The material iglidur® I6 was specifically developed for laser sintering and is expecially suited for worm wheels. The tests in the igus® test laboratory showed a longer service life than conventional machined POM worm wheels. This greatly increases the flexibility in the design of gears, since no tools are necessary due to the laser sintering process and worm wheels can be produced efficiently without minimum order quantity.

- Abrasion-resistant
- Extremely long operating times
- Lubrication and maintenance-free
- Cost-efficient from batch size 1
- No tooling costs
- Delivery time 24–72hrs
- Detail accuracy with exact surfaces
- igus® 3D printing service
  ▶ **www.igus-asean.com/idd**
- Also suitable for medium-sized series, e.g. 5,000 pieces
  ▶ **www.igus-asean.com/gear**

Material properties

General properties	Unit	iglidur® I6	Testing method
Density	g/cm³	1.06	
Colour		white	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.8	DIN 53495
Max. total moisture absorption	% weight	1.9	
Mechanical properties			
Flexural modulus	MPa	1,100	DIN 53457
Flexural strength at +20°C	MPa	49/38[130)]	DIN 53452
Shore D hardness		67	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+80	
Max. short-term application temperature	°C	+140	
Min. continuous application temperature	°C	–40	
Electrical properties			
Specific contact resistance	Ωcm	> 10^{12}	DIN IEC 93
Surface resistance	Ω	> 10^{11}	DIN 53482

[130)] **Printed flat/upright**

▶ Chemical table, **page 1636**

Part No. raw material (10kg)
I6-PL-10000

Part No. component
I6-PS-02

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iglidur® tribo 3D printing | 3D printing service

Individual wear-resistant parts in 3 days – order online

Wear-resistant parts from the 3D printing service

Online and extremely fast

Printed parts extremely wear-resistant- as prototype or in small series. Simply upload your required part, determine the price and order online (or ask for a quotation). Thanks to the iglidur® 3D printing service, from now on 2 quick and easy steps will complete your customised component made of lubrication-free and abrasion-resistant iglidur® plastics. The service life of the 3D printed components is comparable to igus® injection moulded parts. In the online 3D printing calculation, you can not only receive 3D printing, but also analyse feasibility and prices of injection-moulded parts made with 3D-printed moulds (print2mold).

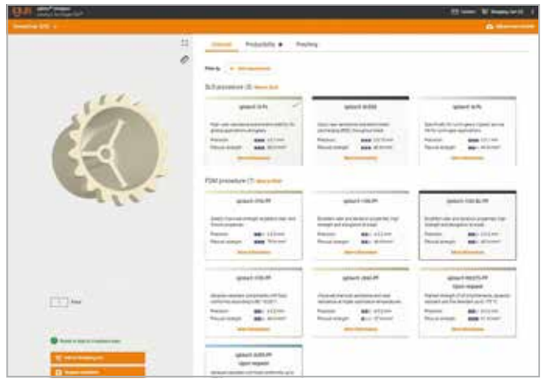
❶ Go to **www.igus-asean.com/idd** and upload the 3D model in the STEP format. The manufacturability (wall thickness and component size) is analysed automatically

❷ Select material and quantity and order the component or ask for a quotation.

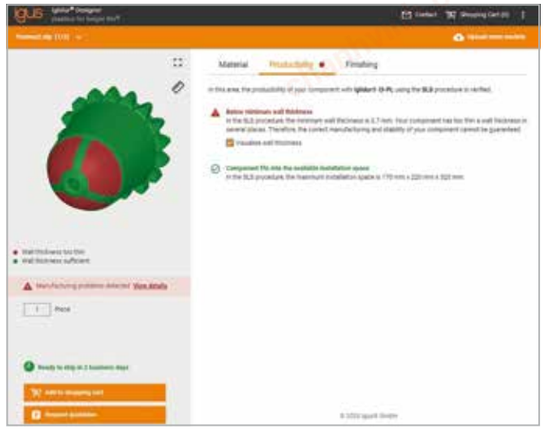
▶ **Your individual wear-resistant part will be shipped in 24–72 hours**

Delivery time
24–72hrs

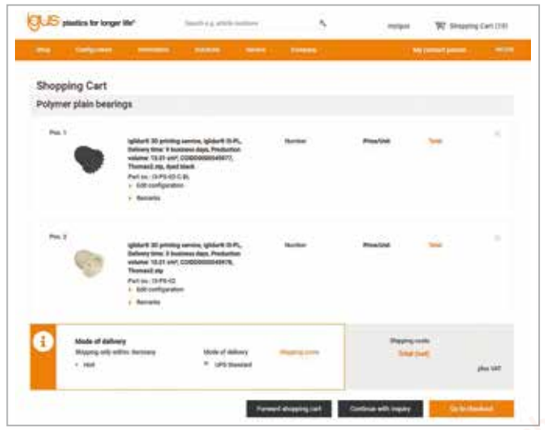
Try it out now:
▶ www.igus-asean.com/idd



Material selection



Wall thickness analyses



Shopping cart

SLS can also be used to make wear-resistant parts

The 3D printing service is being extended with the materials iglidur® I3 and iglidur® I6. Laser sintering (SLS) is used to make parts of these materials. With this method even more plain bearing applications are therefore possible with 3D-printed parts, strength and precision are considerably greater and the price per component is lower.

New: additional laser sintering services

In the 3D printing service, more services for laser sintering materials can now be selected and their prices easily defined.

- Black colouring for visible parts
- Polish surfaces using vibratory finishing or chemical polishing

Two-component 3D printing (FDM/FFF)

Two-component parts made of proven tribo-filaments and fibre-reinforced plastics for stability and rigidity, can be ordered upon request.

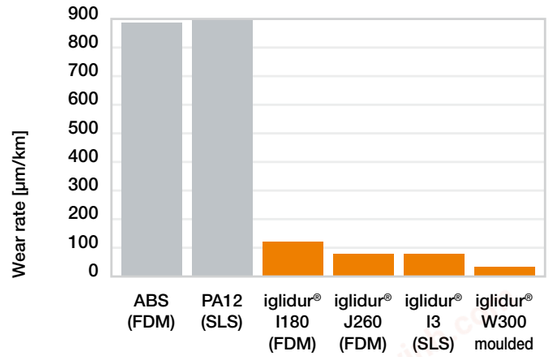


Dimensional stability and size of installation space

The precision of the printed parts in the case of the iglidur® tribo-filaments is ±0.2mm (up to an edge length of 50mm, above this ±0.4%). In the case of parts made using the laser sintering process the precision is ±0.1mm (up to an edge length of 50mm, above this ±0.2%).
The space used for processing the iglidur® tribo-filaments measures 135x145x200mm. In the case of laser sintering the space used measures 170x220x300mm. The following applies to both processes: larger parts may have to be made of several pieces.

In order to ensure that the 3D-printed components function correctly, the following should be included in the 3D model:

- The 3D model should be at the centre of tolerance; e.g. for a tolerance of 16 –0.2mm, the 3D model should correspond to 15.9mm
- In the case of clearance fits, a play of approx. 0.1mm should be planned
- Minimum wall thickness: SLS 0.7mm, FDM/FFF 1mm



Wear, rotating p = 20MPa; v = 0.01m/s, 304 stainless steel

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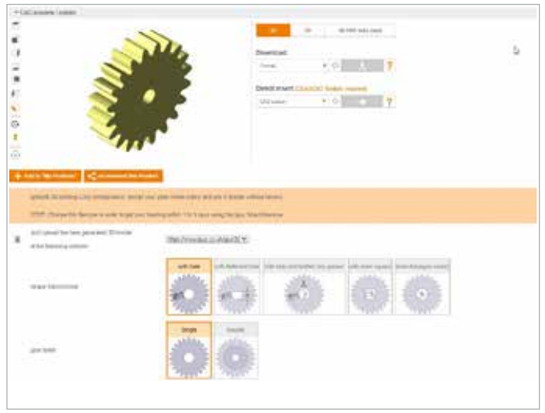
iglidur® tribo 3D printing | Gear configurator

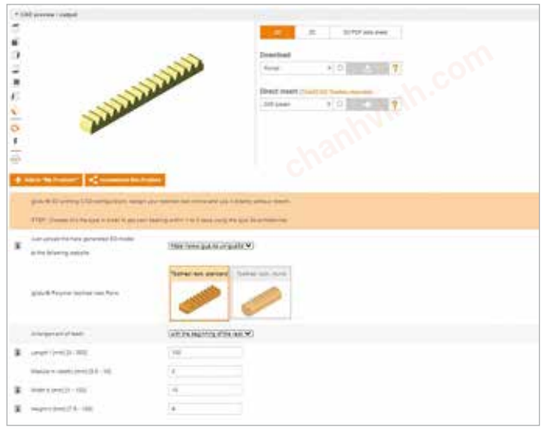
Wear-resistant gears in 60 seconds using the new igus® gear configurator

Configure individual gears and racks in 60 seconds and they will be ready for shipment within 3 days

In order to facilitate the work of designers, igus® has now developed simple and practical configurators for gears and racks. This allows each customer to configure their own component even in special dimensions. In a few steps, the user only needs to enter the specifications of the required gear; such as the tooth module, number of teeth, width and inner diameter, or select a suitable rack profile. This automatically displays a 3D model that can be exported as a STEP file. If the file is uploaded in the framework of the igus® 3D printing service ▶ **www.igus-asean.com/3dprintservice**, the configured gear made of the new durable SLS material iglidur® I3 for gears can be ordered immediately from igus®. With one click, the user can order his/her wear-resistant gear with no minimum order quantity or request a quotation. Within 3 days the custom-made gear is ready for shipment. iglidur® I3 is well suited for straight and helical spur gears, racks, and bevel gears.

Gear service life calculator
▶ **www.igus-asean.com/gear-expert**





iglidur® I6 for worm gears: double the service life

In the test, iglidur® I6 showed itself to be considerably better than machined worm wheels.
Worm wheels made of POM had total wear after 621,000 cycles, whereas worm wheels made of iglidur® I6 continued to be functional after more than 1 million cycles.







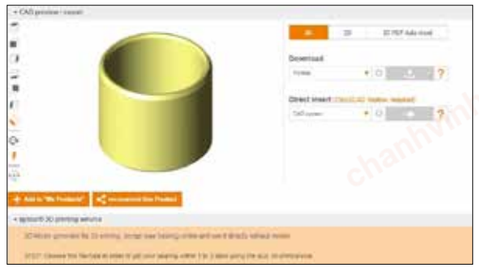
POM	POM	iglidur® I6
321,000 cycles	621,000 cycles	1 million cycles
High wear	Failed	Low wear

Delivery time
24 – 72hrs

Online CAD configurator for gears
▶ **www.igus-asean.com/gear-configurator**



Online CAD configurator for plain bearings
▶ **www.igus-asean.com/3d-model**



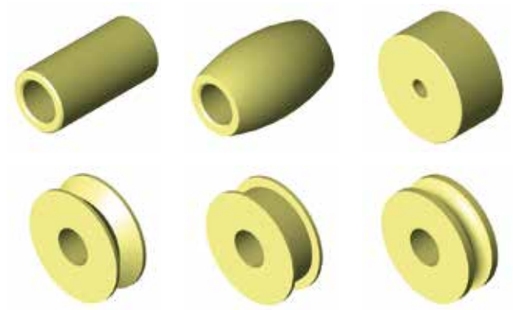
iglidur® tribo 3D printing | Configurators

Individual rollers, lead screw nuts, and sliding plates

Configure rollers in the required shape online, delivered after a minimum of only 24hrs

Create and download your individual 3D model with the roller configurator. Then order it from the 3D printing service (shipped in one to three days). Rollers with different shapes and with any dimensions between 1 and 170mm are possible. The rollers can be used immediately without any further machining.



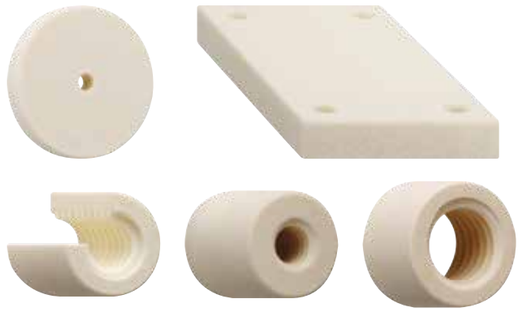


Delivery time
24 – 72hrs

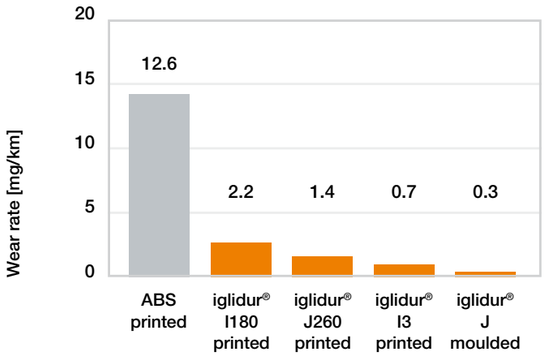
Configure rollers
▶ **www.igus-asean.com/roller-configurator**

Configure custom lead screw nuts, plain bearings and sliding plates in 60 seconds and they will be ready for shipment within 3 days

In addition to individually configurable sliding plates and plain bearings, lead screw nuts with trapezoidal threads can be manufactured from a 3D model. Eliminates costly, time-consuming design and rework. Lead screw nuts, plain bearing, and sliding plates are manufactured from iglidur® I3 (laser sintering).



Lead screw nut wear test



F = 129N; l = 370mm; n = 290rpm



Delivery time
24 – 72hrs

All configurators
▶ **www.igus-asean.com/cad-configurators**

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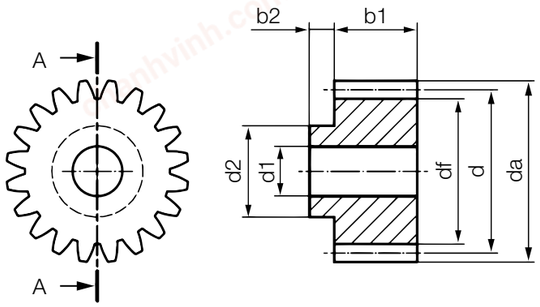
iglidur® tribo 3D printing | Gears

Configure gear with and without keyway



Image exemplary



Configuration key

Part type	Options
OC-GEAR-	01-1.00-18-10.0-6.1-20.0-8.0

Configurator | Gear type | Tooth module | Number of teeth | Width b1 | Inner diameter d1 | Diameter outlet b2 | Width outlet b2

Configuration limits:

Gear type 01:	gear with hole, keyway optional
Tooth module:	0.50 to 10.0mm
Number of teeth:	17 to 100
Width:	1.0 to 200mm

Dimensions [mm] – example gear configuration with and without keyway

Part No.	Configuration number	Tooth module	Number of teeth	Width b1	Inner Ø d1	Keyway Ø b2	Width outlet b2
I3-PS-02	OC-GEAR-01-1.00-☐-10-6-15	1.00	17 – 100	10	6	15	8
I3-PS-02	OC-GEAR-01-1.50-☐-10-10-25	1.50	17 – 100	10	10	25	10
I3-PS-02	OC-GEAR-01-2.00-☐-12-10	2.00	17 – 100	12	10	–	–
I3-PS-02	OC-GEAR-01-2.50-☐-14-12	2.50	17 – 100	14	12	–	–



Many other gear types, including double gears, can be configured online: download the STEP model and determine the price online ▶ www.igus-asean.com/gear-configurator

Delivery time
72hrs

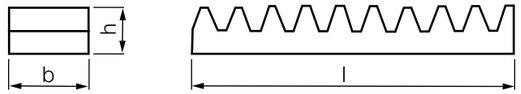
iglidur® tribo 3D printing | Racks

Configure round and flat racks

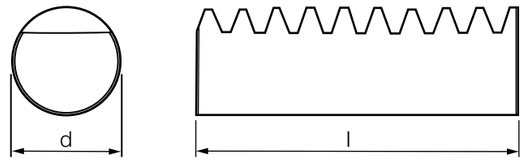
Rack, flat



Image exemplary



Rack, round



Configuration key rack, flat

Part type	Options
OC-GEAR-RACK-	01-1.00-10.0-4.5-60.0- S

Configurator | Rack type | Tooth module | Width b | Height h | Length l | Arrangement

Configuration limits:

Rack type 01:	flat rack
Tooth module:	0.50 to 10.0mm
Width:	1.0 to 100mm
Height:	up to 100mm
Length:	3 to 300mm[173]
Arrangement S:	Symmetrical end separation

Configuration key rack, round

Part type	Options
OC-GEAR-RACK-	02-1.00-10.0-60.0- S

Configurator | Rack type | Tooth module | Diameter d | Length l | Arrangement

Configuration limits:

Rack type 02:	round rack
Tooth module:	0.50 to 10.0mm
Diameters:	3.0mm up to 100mm
Length:	3 to 300mm[173]
Arrangement S:	Symmetrical end separation

Dimensions [mm] – example configuration of flat rack

Part No.	Configuration number	Tooth module	Width b	Height h	Length l	Arrangement
I3-PS-02	OC-GEAR-RACK-01-1.00-10.0-10.0-☐-S	1.00	10.0	10.0	3 – 300	S
I3-PS-02	OC-GEAR-RACK-01-1.50-15.0-15.0-☐-S	1.50	15.0	15.0	3 – 300	S
I3-PS-02	OC-GEAR-RACK-01-2.00-20.0-20.0-☐-S	2.00	20.0	20.0	3 – 300	S
I3-PS-02	OC-GEAR-RACK-01-2.50-20.0-20.0-☐-S	2.50	20.0	20.0	3 – 300	S

[173] Also has multiple parts

Configure an individual rack, download the STEP model, and determine the price online ▶ www.igus-asean.com/rack-configurator

Delivery time
72hrs

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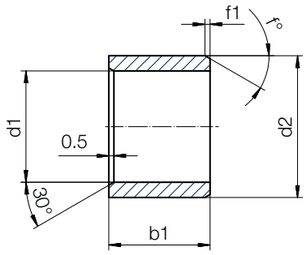
iglidur® tribo 3D printing | Plain bearings

Configure plain bearings with and without flange

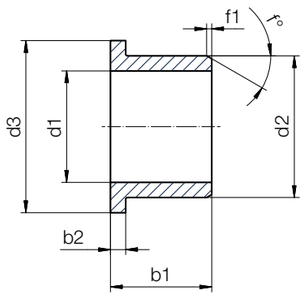
Sleeve bearing





Flanged bearings





Configuration key Sleeve bearing

Part type	Options
OC-BRG- S	-10.0-12.0-10.0

Configurator	Plain bearing type	Inner Ø d1	Outer Ø d2	Total length b1

Configuration limits:

Plain bearing type S:	sleeve bearing
Inner diameter:	up to 195mm
Outer diameter:	up to 200mm
Bearing length:	up to 300mm

Configuration key Flanged bearings

Part type	Options
OC-BRG- F	-10.0-12.0-10.0-16.0-1.0

Configurator	Plain bearing type	Inner Ø d1	Outer Ø d2	Total length b1	Flange Ø	Flange thickness

Configuration limits:

Plain bearing type F:	flanged bearing
Inner diameter:	up to 195mm
Outer diameter:	up to 200mm
Bearing length:	up to 300mm
Flange diameter:	up to 200mm
Flange thickness:	up to 20mm

Dimensions [mm] – example plain bearing configuration with and without flange

Part No.	Configuration number	Inner Ø d1	Outer Ø d2	Total length b1	Flange Ø d3	Flange thickness b2
I3-PS-02	OC-BRG-S-50.0-60.0-30.0	50.0	60.0	30.0	–	–
I3-PS-02	OC-BRG-S-18.0-20.0-16.0	18.0	20.0	16.0	–	–
I3-PS-02	OC-BRG-F-18.0-22.0-18.0-30.0-1.0	18.0	22.0	18.0	30.0	1.0
I3-PS-02	OC-BRG-F-50.0-60.0-31.0-66.0-1.0	50.0	60.0	31.0	66.0	1.0



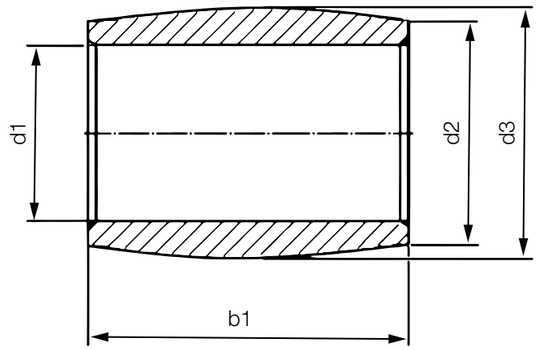
Configure an individual plain bearing, download the STEP model, and determine the price online, including special shapes with slot ▶ www.igus-asean.com/3d-model

Delivery time
72hrs

iglidur® tribo 3D printing | Rollers

Configure convex rollers





Configuration key

Part type	Options
OC-ROLLER- 02	-10.0-15.0-30.0-20.0

Configurator	Roller type	Inner Ø d1	Outer Ø d2	Spherical outer Ø d3	Roller length

Configuration limits:

Roller type 02:	convex roller
Inner diameter:	1 up to 190mm
Outer diameter:	up to 195mm
Roller length:	up to 300mm

Dimensions [mm] – example configuration of convex rollers

Part No.	Configuration number	Inner Ø d1	Outer Ø d2	Spherical Outer Ø d3	Max. Roller length b1
I3-PS-02	OC-ROLLER-02-4.0-8.0-8.2-☐	4.0	8.0	8.2	300
I3-PS-02	OC-ROLLER-02-10.0-15.0-20-☐	10.0	15.0	20	300
I3-PS-02	OC-ROLLER-02-10.0-50.0-55.0-☐	10.0	50.0	55.0	300
I3-PS-02	OC-ROLLER-02-14.0-60.0-61.0-☐	14.0	60.0	61.0	300
I3-PS-02	OC-ROLLER-02-20.0-100.0-120.0-☐	20.0	100.0	120.0	300



Many other roller types can be configured online: download the STEP model and determine the price online ▶ www.igus-asean.com/roller-configurator

Delivery time
72hrs

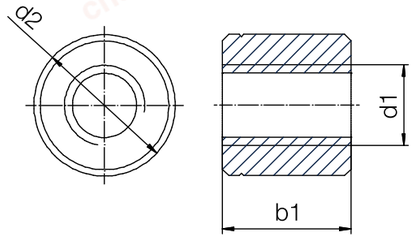
chanhvinh.com

iglidur® tribo 3D printing | Lead screw nuts

Configure lead screw nuts



Image exemplary



Configuration key

Part type	Options
OC-NUT-	S -18.0-12.0-TR10X2- R

Configurator	Lead screw nut type	Outer Ø d2	Width b1	Thread	Thread direction

Configuration limits:

Lead screw nut type S:	cylindrical
Outer diameter:	up to 150mm
Width:	3 to 200mm
Thread:	32 types to select from
Thread direction:	R = Right hand L = Left

Dimensions [mm] – example configuration of cylindrical lead screw nut

Part No.	Configuration number	Outer Ø d2	Width b1	Thread	Thread direction right	Thread direction left
I3-PS-02	OC-NUT-S-15.0-☐-TR8X1.5-R	15.0	3–200	TR8X1.5	●	–
I3-PS-02	OC-NUT-S-16.0-☐-TR10X2-L	16.0	3–200	TR10X2	–	●
I3-PS-02	OC-NUT-S-18.0-☐-TR11X5-R	18.0	3–200	TR11X5	●	–
I3-PS-02	OC-NUT-S-22.0-☐-TR16X2-R	22.0	3–200	TR16X2	●	–
I3-PS-02	OC-NUT-S-26.0-☐-TR20X2-L	26.0	3–200	TR20X2	–	●
I3-PS-02	OC-NUT-S-50,0-☐-TR30X3-R	50.0	3–200	TR30X3	●	–



Configure individual trapezoidal lead screw nuts, download the STEP model and determine the price online ▶ www.igus-asean.com/lead-screw-nut-configurator

Delivery time
72hrs

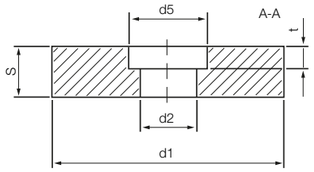
iglidur® tribo 3D printing | Sliding elements

Configure sliding elements

Round sliding element with central hole



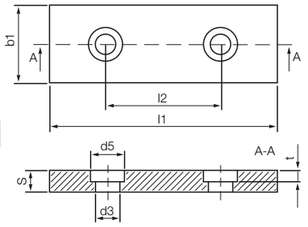
Image exemplary



Rectangular sliding element with 2 holes



Image exemplary



Configuration key
Round sliding element with central hole

Part type	Options
OC-SLIDER-	01 -6.4 -30.0 -10.0 -13.0 -5.0

Configurator	Glider type	Inner Ø d1	Outer Ø d2	Thickness s	Flat sink d5	Flat sink depth t

Configuration limits:

Glider Type 01:	Round with central hole
Inner diameter:	up to 195mm
Outer diameter:	up to 200mm
Height 2:	up to 100mm
Flat sink:	optional

Configuration key
Rectangular sliding element with 2 holes

Part type	Options
OC-SLIDER-	04 -20.0-40.0-20.0-10.0-6.4-13.0-5.0

Configurator	Glider type	Width b1	Length l1	Pitch l2	Thickness s	Hole d3	Flat sink d5	Flat sink depth t

Configuration limits:

Glider Type 04:	Rectangle with two holes
Width:	10 to 200mm
Length:	10 to 200mm
Flat sink:	optional

Glider type:

- 01 Round with central hole
- 02 Round with 4 holes
- 03 Round with 5 holes
- 04 Rectangle with 2 holes
- 05 Rectangle with 4 holes

Dimensions [mm] – example plain bearing configuration with and without flange

Part No.	Configuration number	Width b1	Length l1	Pitch l2	Height s	Hole d3	Flat sink d5	Flat sink depth t
I3-PS-02	OC-SLIDER-04-20.0-40.0-20.0-10.0-6.4-13.0-5.0	20.0	40.0	20.0	10.0	6.4	13.0	5.0
I3-PS-02	OC-SLIDER-04-30.0-60.0-40.0-8.0-4.3-9.0-4.4	30.0	60.0	40.0	8.0	4.3	9.0	4.4
I3-PS-02	OC-SLIDER-04-50.0-100.0-60.0-11.0-8.2	50.0	100.0	60.0	11.0	8.2	–	–

Many other glider types can be configured online: download the STEP model and determine the price online ▶ www.igus-asean.com/glider-configurator

Delivery time
72hrs

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iglidur® tribo-filament | Advantages



3D printing with tribo-filaments

50 times more abrasion-resistant than standard materials for maximum service life
Components made of igus® tribo-filament are up to 50 times more wear-resistant than standard materials for 3D printing and therefore have an extremely long service life. Due to their excellent tribological properties, they are suited for 3D printing of replacement and wear-resistant parts for e.g. plain bearings, drive nuts, gears and other wear-resistant parts.
The igus® tribo-filaments can be processed on 3D printers that are based on the fused-deposition-modelling method (FDM/FFF) and that allow the nozzle temperature to be set as required.

Find and order the appropriate tribo-filament online
▶ www.igus-asean.com/tribofilament

"How do I assess myself and my 3D printer?"

Ambient temperature of application	Beginner "Nothing can go wrong"	Advanced "Everything is usually ok"	Expert "I know what I am doing"
–30°C to +65°C	iglidur® I150	iglidur® I150 iglidur® I180	iglidur® I180 / iglidur® J260 iglidur® I170
–40°C to +80°C	iglidur® I180	iglidur® I180	iglidur® I180 / iglidur® J260 iglidur® I170
–30°C to +100°C			iglidur® J260 iglidur® C210
–100°C to +120°C			iglidur® J260
–100°C to +180°C			iglidur® A350 / iglidur® J350 iglidur® RW370[172)]

[172)] **–50°C to +170°C for iglidur® RW370**

iglidur® tribo-filament | Product overview



Material: iglidur® I150

Wear-resistant parts printed the easy way
- High abrasion resistance at low speeds
- Good mechanical properties
- The easiest to process tribo-filament (even without a heated print bed)
- Food-compatible according to EU10/2011 regulation
- Nozzle temperature: +240°C up to +250°C

▶ **Page 720**



Material: iglidur® I180

Best combination of ability to be processed and service life
- Abrasion-resistant
- Good mechanical properties
- Nozzle temperature: +250°C up to +260°C
- Also in black (iglidur® I180-BL)

▶ **Page 721**



Material: iglidur® J260

Extremely long service life and excellent coefficient of friction
- Outstanding abrasion resistance of tribo-filaments
- Application temperature from –100°C to +120°C
- High-quality processing
- Nozzle temperature: +260°C up to +270°C

▶ **Page 722**



Material: iglidur® J350

For high temperature applications
- Excellent coefficient of friction against steel
- Application temperature from –100°C to +180°C
- High temperature necessary of at least +160°C installation space temperature
- Nozzle temperature: +360°C up to +370°C

▶ **Page 723**



Material: iglidur® I170

Longer service life
- Improved abrasion resistance
- High-quality processing
- Nozzle temperature: +240°C up to +260°C

▶ **Page 724**



Material: iglidur® C210

Resistant to chemicals and highly abrasion-resistant during printing
- High chemical resistance
- Abrasion-resistant
- High-quality processing
- Nozzle temperature: +260°C up to +270°C

▶ **Page 725**



Material: iglidur® RW370

Ideal for rail technology
- Flame-retardant and high strength
- Application temperature from –50°C to +170°C
- High temperature printer necessary
- Nozzle temperature: +350°C up to +360°C

▶ **Page 726**



Material: iglidur® A350

For the food industry
- Compliant with Regulation (EU) No. 10/2011 and FDA guidelines
- Application temperature from –100°C to +180°C
- High temperature printer necessary
- Nozzle temperature: +360°C up to +370°C

▶ **Page 727**

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iglidur® tribo 3D printing

iglidur® tribo-filament | Tested

Printed as good as injection-moulded

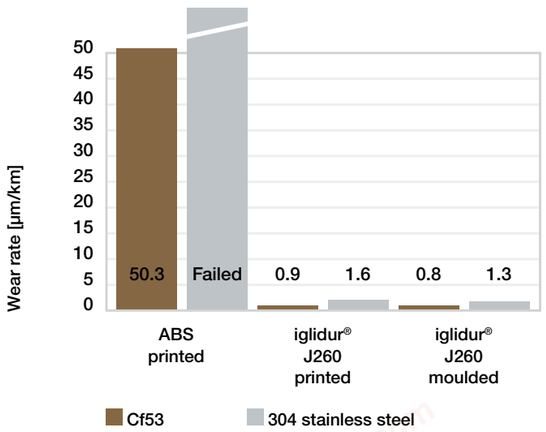


3D print filament impresses during tests with injection moulding quality

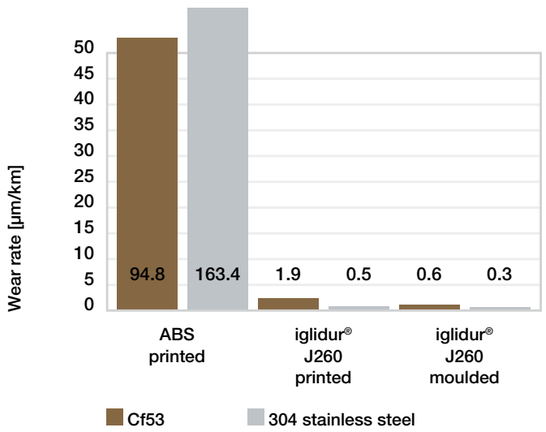
Our iglidur® J260 tribo-filament is more wear-resistant than standard 3D printing materials. A series of igus® tests show: 3D printed plain bearings made from the filament iglidur® J260 are equally as wear-resistant as our injection-moulded parts from the same material. The tests have also proven that iglidur® 3D print filaments and SLS materials have a considerably lower coefficient of friction and are up to 50 times more abrasion-resistant than conventional 3D printing materials.

This makes iglidur® tribo-filaments and SLS materials the only 3D printing materials to also offer impressive performance in moving applications. You can therefore directly install printed parts such as plain bearings, drive nuts or worm gears and use them as wear-resistant parts – from the prototype phase to series production.

- Outstanding abrasion resistance of tribo-filaments
- Application temperature from –100°C to +120°C
- High-quality processing
- Available as filament, bar stock or injection-moulded part – **from prototype to series production**



Rotating wear: p = 1MPa; v = 0.3m/s

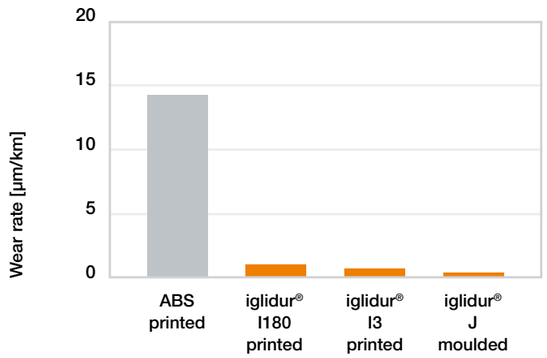


Linear wear: p = 1MPa; v = 0.3m/s; l = 5mm

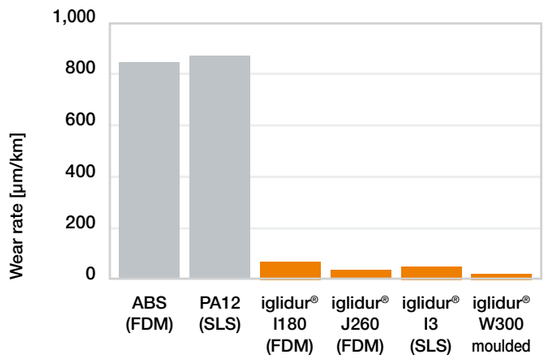
iglidur® tribo 3D printing

iglidur® tribo-filament | Test results

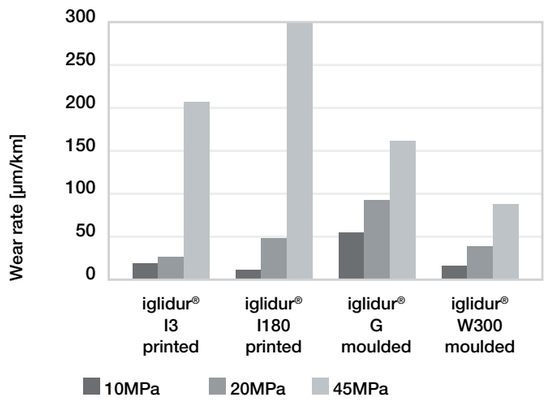
Wear-resistant parts made of iglidur® tribo-filament with the 3D printing method or parts made of iglidur® I3 with the SLS method are much more wear-resistant than standard 3D printing materials.



Linear wear: p = 0.11MPa; v = 0.34m/s; l = 370mm



Wear, rotating p = 20MPa; v = 0.01m/s, 304 stainless steel



Wear, pivoting shaft: 304 stainless steel, v = 0.01m/s; ß = 60°

The following tests also show "printed as good as injection-moulded": the 3D-printed iglidur® plain bearings are comparable to conventionally made plain bearings with respect to wear resistance.



ABS printed



iglidur® I180 printed



ABS



PA12



iglidur® I3



iglidur® I180



iglidur® I3



iglidur® I180



iglidur® G



iglidur® W300

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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

- High abrasion resistance at low speeds
- Good mechanical properties
- The tribo-filament that is easiest to process
- Compliant with food requirements according to (EU) No 10/2011
- Recommended printing surface: igus® adhesive film or glue-stick on glass
- Also to be processed without a heated print bed (prerequisite: igus® adhesive film ▶ **Page 728**)

Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	205	55	55	250	**I150-PF-0175-0250**
1.75	205	55	67	750	**I150-PF-0175-0750**
3.00	205	55	55	250	**I150-PF-0300-0250**
3.00	205	55	67	750	**I150-PF-0300-0750**

Material properties

General properties	Unit	iglidur® I150	iglidur® I180	iglidur® I180-BL
Density	g/cm³	1.30	1.21	1.21
Colour		white	white	black
Max. moisture absorption at +23°C/50% r.h.	% weight	0.3	0.3	0.3
Max. total moisture absorption	% weight	0.7	0.9	0.9
Mechanical properties				
Flexural modulus	MPa	1,700	1,700	1,700
Flexural strength at +20°C	MPa	54/37[130)]	46/33[130)]	46/33[130)]
Shore D hardness		62	66	66
Physical and thermal properties				
Max. long-term application temperature	°C	+65	+80	+80
Max. short-term application temperature	°C	+75	+90	+90
Min. continuous application temperature	°C	–30	–40	–40
Electrical properties				
Specific contact resistance	Ωcm	> 10^{13}	> 10^{12}	> 10^{12}
Surface resistance	Ω	> 10^{12}	> 10^{11}	> 10^{11}

Table 01: Material properties table

[130)] Printed flat/upright

iglidur® tribo 3D printing

iglidur® tribo-filament | Product range



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]

iglidur® I180 – flexible

- High degree of abrasion resistance, even in the case of dynamic applications
- Good mechanical properties
- Max. application temperature: +80°C
- Recommended printing surface: igus® adhesive film ▶ **Page 728**

iglidur® I180-BL – for visible parts

- In black for visible parts
- Same mechanical and tribological properties as iglidur® I180 in white

Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	205	55	55	250	**I180-PF-0175-0250**
1.75	205	55	67	750	**I180-PF-0175-0750**
3.00	205	55	55	250	**I180-PF-0300-0250**
3.00	205	55	67	750	**I180-PF-0300-0750**
1.75	205	55	55	250	**I180-BL-PF-0175-0250**
1.75	205	55	67	750	**I180-BL-PF-0175-0750**
3.00	205	55	55	250	**I180-BL-PF-0300-0250**
3.00	205	55	67	750	**I180-BL-PF-0300-0750**

Processing and accessories
▶ **Page 728**

Part No. adhesive film for print bed
PF-01-0203-0203 (203 x 203mm)
PF-01-0254-0228 (254 x 228mm)

Complete processing instructions online (in the download area of the respective material)
▶ **www.igus-asean.com/tribofilament**

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iglidur® tribo-filament | Product range



iglidur® J260



Order key

tribo-filament	Diameter	Weight
J260	-PF- 0175	-0250
iglidur® material	tribo-filament	Ø [mm · 100]	Spool weight [g]

iglidur® J260 – extremely long service life

- Outstanding abrasion resistance of tribo-filaments
- Application temperature from –100°C to +120°C
- For experts: high-quality processing
- Recommended printing surface: igus® adhesive film ▶ Page 728

Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	205	55	55	250	**J260-PF-0175-0250**
1.75	205	55	67	750	**J260-PF-0175-0750**
3.00	205	55	55	250	**J260-PF-0300-0250**
3.00	205	55	67	750	**J260-PF-0300-0750**

Material properties

General properties	Unit	iglidur® J260	iglidur® J350
Density	g/cm³	1.35	1.44
Colour		Yellow	Yellow
Max. moisture absorption at +23°C/50% r.h.	% weight	0.2	0.3
Max. total moisture absorption	% weight	0.4	1.6
Mechanical properties			
Flexural modulus	MPa	1,000	1,400
Flexural strength at +20°C	MPa	41/13[130)]	45/–
Shore D hardness		66	80
Physical and thermal properties			
Max. long-term application temperature	°C	+120	+180
Max. short-term application temperature	°C	+140	+220
Min. continuous application temperature	°C	–100	–100
Electrical properties			
Specific contact resistance	Ωcm	> 10^{12}	> 10^{13}
Surface resistance	Ω	> 10^{10}	> 10^{10}

Table 01: Material properties table

[130)] Printed flat/upright

iglidur® tribo 3D printing

iglidur® tribo-filament | Product range



iglidur® J350



Order key

tribo-filament	Diameter	Weight
J350	-PF- 0175	-0250
iglidur® material	tribo-filament	Ø [mm · 100]	Spool weight [g]

iglidur® J350 – for high temperature applications

- Max application temperature: +180°C
- Can be processed with high-temperature 3D printer
- Nozzle temperature: +360°C up to +370°C
- Installation area temperature: from +160°C to +200°C
- Recommended printing surface: PET film

Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	205	55	55	250	**J350-PF-0175-0250**

Processing and accessories ▶ Page 728

Part No. adhesive film for print bed
PF-01-0203-0203 (203 x 203mm)
PF-01-0254-0228 (254 x 228mm)

Complete processing instructions online (in the download area of the respective material)
▶ www.igus-asean.com/tribofilament

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iglidur® tribo-filament | Product range



iglidur® I170



Order key

tribo-filament	Diameter	Weight
I170-PF-	0175	-0250
iglidur® material	tribo-filament	Ø [mm · 100]	Spool weight [g]

iglidur® I170 – optimised service life

- Improved abrasion resistance
- Application temperature: +80°C
- For experts: high-quality processing
- Recommended printing surface: igus® adhesive film ▶ **Page 728**

Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	205	55	55	250	**I170-PF-0175-0250**
1.75	205	55	67	750	**I170-PF-0175-0750**
3.00	205	55	55	250	**I170-PF-0300-0250**
3.00	205	55	67	750	**I170-PF-0300-0750**

Material properties

General properties	Unit	iglidur® I170	iglidur® C210
Density	g/cm³	1.21	1.40
Colour		Yellow	white
Max. moisture absorption at +23°C/50% r.h.	% weight	0.5	0.3
Max. total moisture absorption	% weight	1.6	0.7
Mechanical properties			
Flexural modulus	MPa	1,000	1,600
Flexural strength at +20°C	MPa	33/17[130)]	38/30[130)]
Shore D hardness		64	70
Physical and thermal properties			
Max. long-term application temperature	°C	+75	+100
Max. short-term application temperature	°C	+85	+180
Min. continuous application temperature	°C	–40	–30
Electrical properties			
Specific contact resistance	Ωcm	> 10^{12}	> 10^{13}
Surface resistance	Ω	> 10^{11}	> 10^{12}

Table 01: Material properties table

[130)] **Printed flat/upright**

iglidur® tribo 3D printing

iglidur® tribo-filament | Product range



iglidur® C210



Order key

tribo-filament	Diameter	Weight
C210-PF-	0175	-0250
iglidur® material	tribo-filament	Ø [mm · 100]	Spool weight [g]

iglidur® C210 – chemicals and high abrasions resistance

- Resistance to many acids, solvents and hydrogen
- Abrasion-resistant
- Max application temperature: +100°C
- For experts: high-quality processing
- Recommended printing surface: igus® adhesive film ▶ **Page 728**

Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	205	55	55	250	**C210-PF-0175-0250**
3.00	205	55	55	250	**C210-PF-0300-0250**

Processing and accessories
▶ **Page 728**

Part No. adhesive film for print bed
PF-01-0203-0203 (203 x 203mm)
PF-01-0254-0228 (254 x 228mm)

Complete processing instructions online (in the download area of the respective material)
▶ **www.igus-asean.com/tribofilament**

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iglidur® tribo-filament | Product range



iglidur® RW370



Order key

tribo-filament	Diameter	Weight
RW370-PF-	0175	-0750
iglidur® material	tribo-filament	Ø [mm · 100]	Spool weight [g]

iglidur® RW370 – ideal for the rail industry

- Flame-retardant, according to UL94-V0 and DIN EN 45545
- Flexural strength 91MPa
- High wear resistance
- Can be processed with high-temperature 3D printer
- Max application temperature: +170°C
- Available for 3D printing (Ø 1.75mm), as bar stock and as injection-moulding material
- Lubrication and maintenance-free
- Recommended printing surface: PET film

Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	215	38	82	1,055	**RW370-PF-0175-0750**

Material properties

General properties	Unit	iglidur® RW370	iglidur® A350
Density	g/cm³	1.34	1.42
Colour		beige	blue
Max. moisture absorption at +23°C/50% r.h.	% weight	0.25	0.6
Max. total moisture absorption	% weight	1.2	1.9
Mechanical properties			
Flexural modulus	MPa	2,100	1,250/1,390[130)]
Flexural strength at +20°C	MPa	91/30[130)]	50/46[130)]
Shore D hardness		80	76
Physical and thermal properties			
Max. long-term application temperature	°C	+170	+180
Max. short-term application temperature	°C	+190	+210
Min. continuous application temperature	°C	–50	–100
Electrical properties			
Specific contact resistance	Ωcm	> 10^{12}	> 10^{11}
Surface resistance	Ω	> 10^{12}	> 10^{11}

Table 01: Material properties table

[130)] Printed flat/upright

iglidur® tribo 3D printing

iglidur® tribo-filament | Product range



iglidur® A350



Order key

tribo-filament	Diameter	Weight
A350-PF-	0175	-0750
iglidur® material	tribo-filament	Ø [mm · 100]	Spool weight [g]

iglidur® A350 – for the food industry

- Compliant with Regulation (EU) No. 10/2011 and FDA guidelines
- Available as 3D printing filament, bar stock and for injection moulding
- In industry standard blue
- Max. application temperature: +180°C
- Complies with the fire prevention requirements of the Federal Aviation Administration of the USA (FAA) for aircraft interiors
- Suitable for autoclave
- Recommended bonding surface: PET film

Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	215	38	82	1,055	**A350-PF-0175-0750**

Processing and accessories ▶ Page 728

Complete processing instructions online (in the download area of the respective material) ▶ www.igus-asean.com/tribofilament

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iglidur® tribo-filament | Processing and accessories

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.

- Good ventilation should be provided during processing
- When heated above +300°C, hazardous fumes are produced
- For iglidur® J350, iglidur® A350, and iglidur® RW370, a high-temperature printer is necessary

Example: Part No. tribo-filaments
I150-PF-0175-0250
for 250g spool with a diameter of 1.75mm made of the iglidur® material I150

Complete processing instructions online (in the download area of the respective material)
▶ **www.igus-asean.com/tribofilament**

igus® print bed film for your print bed

Thanks to the film available from igus® for the print bed, there is very good adhesion between the iglidur® tribo-filament and the print bed.

- Useable up to approximately 20 times
- "Set" the degree of adhesion by means of print bed temperature
- 3D printer without heating bed? The combination of iglidur® I150 with this print bed film also makes it possible to make wear-resistant parts oneself with such 3D printers

Part No. adhesive film for print bed
PF-01-0203-0203 (203 x 203mm)
PF-01-0254-0228 (254 x 228mm)



Spool

iglidur® tribo-filaments weighing 250g or 750g are wound onto a spool. Larger dimensions available upon request.

Filament thickness

The iglidur® tribo-filaments are available with 1.75mm and 3mm thickness. The 3mm filaments can be used without problems in 3D printers that need a 2.85mm filament.

Test kits
for 25g of filament, loose with 1.75mm diameter made of the iglidur® material I150



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igubal®

Polymer spherical bearings



...plastics

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igubal® bearing elements | Application examples

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 practice show the proven employment from igubal® spherical bearings in a wide variety of applications.

Stadium panelling

igubal® spherical bearings of dimensional K series are used in the main bearing assembly of every individual slat due to their freedom from maintenance, corrosion resistance and atmospheric resistance. Since these slats can be swivelled, this allows the air flow inside the stadium to be regulated. (LIMELIGHT BV, the Netherlands)





Astrophysics

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, Germany)



Special-purpose vehicle

Resistant to dirt and maintenance-free: the robust rod ends and spherical bearings never give in on the special-purpose municipal vehicles.
(Multicar Spezialfahrzeuge GmbH, Germany)



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, Germany)



Caravan step

Tough, resistant to dirt and vibration-dampening igubal® rod ends withstand the loads even in worst case conditions. (Hymer AG, Germany)



Textile industry

Concentricity errors and jolts are compensated by means of igubal® spherical rod end bearings in the support of the thread guide unit more efficiently than the alternative metal product. (Sahm GmbH & Co. KG, Germany)



Chocolate decoration system

Decorations without lubricants by using the maintenance-free igubal® rod ends make any sweet most relishable.
(Wolf Spezialmaschinen GmbH, Germany)

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igubal® bearing elements | Product overview

igubal® rod end bearings with female thread



Classic design

KBRM/KBLM

▶ Page 746



Integrated lock nut for easy assembly:

KBRM-CL/KBLM-CL

▶ Page 748



Selectable spherical ball material

KCRM/KCLM

▶ Page 750



Space-saving, selectable spherical ball material

EBRM/EBLM

▶ Page 756

igubal® rod end bearings with female thread



For temperatures up to +200°C

EBRM-HT/EBLM-HT

▶ Page 760

New



Suitable for food contact

EBRM-FC/KCRM-FC

▶ Page 762

igubal® rod end bearings with male thread



Classic design

KARM/KALM

▶ Page 752



Higher forces

KARM-CL/KALM-CL

▶ Page 754

igubal® rod end bearings with male thread



Space-saving, selectable spherical ball material

EARM/EALM

▶ Page 758



For temperatures up to +200°C

EARM-HT/EALM-HT

▶ Page 761

igubal® angled and in-line ball ...



Angled ball and socket joints

WGRM/WGLM

▶ Page 764



Angled ball and socket joints, low-cost

WGRM-LC/WGLM-LC

▶ Page 765

... and socket joints



Easy assembly and disassembly:

WGRM-DE/WGLM-DE

▶ Page 766



In-line ball and socket joint

AGRM/AGLM

▶ Page 767



In-line ball and socket joints, low-cost

AGRM-LC/AGLM-LC

▶ Page 768

igubal® clevis joint combinations



Clevis joints with clevis pin and circlip

GERMK/GELMK

▶ Page 778



Clevis joints with spring-loaded fixing clip

GERMF/GELMF

▶ Page 779

igubal® clevis joints combinations ...



Clevis joint combination

GERMKE/GELMKE

▶ Page 780



Clevis joints with spring-loaded fixing clip

GERMFE/GELMFE

▶ Page 781

... and single components



Clevis joints, high rigidity

GERM/GELM

▶ Page 774



Spring-loaded fixing clips

GEFM

▶ Page 782



Clevis pins and circlips

GBM/GSR

▶ Page 783

New



Clevis joints with spring-loaded fixing pin, detectable, FDA and EU10/2011-compliant

GERMF-FC ▶ Page 784

igubal® pillow block bearings – standard design



Compensation of misalignments errors

KSTM

▶ Page 792

igubal® pillow block bearings ...



Easy to disassemble, split housing and ball

KSTM-GT

▶ Page 794



Easy to fit

ESTM

▶ Page 795

... for high radial loads



For quick assembly and low total moisture absorption

ESTM-GT-GT

▶ Page 796



Split housings with parallel hole

ESTM-GT

▶ Page 797



Extremely light, compact design

ESTM-SL

▶ Page 798

New



Split pillow block bearings for square profiles

ESQM

▶ Page 799

igubal® pillow block bearings – low-cost design

New



Pillow block bearings with cost-effective metallic housing

PP-JEM-SP

▶ Page 800

igubal® fixed flange bearings ...



Easy to fit

EFOM

▶ Page 806



For high radial loads

EFSM

▶ Page 808

... for supporting the centre or ends of shafts



Universal and quick assembly, female thread

GFSM-IG

▶ Page 810



Universal and quick assembly, male thread

GFSM-AG

▶ Page 811



High static load, split housing

KFSM-GT

▶ Page 812



For temperatures up to +200°C

EFSM-HT

▶ Page 813

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igubal® bearing elements | Product overview

igubal® fixed flange bearings for supporting the centre or ends of shafts



For temperatures up to +200°C
EFOM-HT
▶ Page 814

New



Suitable for food contact
EFOM-FC
▶ Page 815

New



With cost-effective metallic housing
PFL-JEM-SP
▶ Page 815

igubal® spherical bearings



Standard, easy to fit
KGLM
▶ Page 822

inch



Easy to fit, cost-effective
KGLM-LC
▶ Page 823



For extremely narrow installation space
KGLM-SL
▶ Page 824



Space-saving
EGLM
▶ Page 825

igubal® spherical bearings



Cost-effective, selectable spherical ball material
EGLM-LC
▶ Page 826

igubal® clip bearings



Simply snap into sheet metal
ECLM
▶ Page 827



For high axial and radial loads
ECLM-HD
▶ Page 828



Tolerance compensation, selectable spherical ball material
EGFM-T
▶ Page 829



Clip into sheet metal, can be assembled on both sides
ZCLM
▶ Page 830

igubal® double joints – ...



Robust plastic
EGZM
▶ Page 831



Selectable materials, individual dimensions
WDGM
▶ Page 833

igubal® double joints and coupling joints



Removable, selectable materials
WDGM-DE
▶ Page 834



Selectable materials, individual dimensions
KDGM
▶ Page 832

New



Crimped coupling joints with clevis joints
GDGM-05-V
▶ Page 835

igubal® spherical thrust bearings



Resistant to edge loads
SAM
▶ Page 840

igubal® spherical balls – ...



Standard, low coefficient of friction
WKM/WEM
▶ Page 845

inch



Cost-effective, good wear resistance
RKM/REM
▶ Page 846

igubal® spherical balls – different material options



For temperatures up to +250°C
XKM/XEM
▶ Page 847



Low moisture absorption
JKM/JEM
▶ Page 848



Cost-effective and low total moisture absorption
J4KM/J4EM
▶ Page 851



For underwater applications
UWEM
▶ Page 852

igubal® spherical balls – different material options



Clearance-free, pre-loaded
J4VEM
▶ Page 853



Detectable
RN248KM/RN248EM
▶ Page 854



Interchangeable spherical balls for metallic bearing housings
JEM/A180EM/A350EM
▶ Page 855



Cost-effective alternative to machined options
JEM-SP
▶ Page 856

igubal® accessories

New



Fixing collars with threaded pin
SRM
▶ Page 858



Ball studs, female thread
GZRM-IG
▶ JEM-SP 859



Ball studs, male thread
GZRM-AG
▶ Page 860



Adapter screws with circlip
PKRM/PKLM
▶ Page 861

igubal® detectable



Adapter for pillow block bearings, dimensional E series
AD-01-ESTM
▶ Page 862



Rod end bearings
KBRM-CL-DT/EBRM-DT
▶ Page 866



Clevis joints and spring-loaded fixing clip
GERM-DT/GEFM-DT
▶ Page 868



Spherical balls
RN248KM/RN248EM
▶ Page 854

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Self-aligning maintenance-free spherical bearings made from high-performance polymers

igubal® is a system of self-aligning bearing elements completely made from plastic. igubal® puts a complete system of self-aligning bearings – rod end bearings, clevis joints, fixed flange bearings, spherical bearings and pillow block bearings – at the developer's fingertips.

Self-aligning bearings are easy to fit, adapt to all angular deviations and replace special housings in many cases.

With igubal®, the user can take advantage of all the benefits of high performance polymers. They can be used in dry operation and have excellent vibration dampening properties. They are resistant to dirt, can operate in liquids and even in chemicals and are completely resistant to corrosion.

The weight of the igubal® parts is approximately 80% lighter than comparable steel parts. Additional savings are cost-savings at the time of purchasing and during operation. igubal® bearings are also extremely cost-effective due to the elimination of maintenance and installation costs.

The installation space can also be reduced due to their small dimensions. igubal® self-aligning spherical bearings are made from a polymer housing for high strengths and a spherical ball made from maintenance-free self-lubricating high-performance polymers allowing low wear and long service life.

The benefits of igubal®

- Extremely cost-effective
- Maintenance-free
- Lubrication-free
- Resistant to dust and dirt
- Corrosion-free
- Can be used in liquid media
- Vibration-dampening
- Spherical ball set in housings with very low clearance
- No ingress of dirt
- Lightweight
- Temperature resistance up to +200°C, depending on the material



Picture 01: igus® test lab: More than 13,000 tribological tests (friction and wear) each year in 300 test rigs in the industry's largest laboratory (3,800m²). View inside igubal® test rigs.

igubal® spherical bearings | Advantages

igubal® spherical balls

In standard spherical bearings, the spherical ball is made of iglidur® W300 material, which is known for its low coefficient of friction in dry operation and extremely low tendency to stickslip. This is especially important for low loads and very slow movements.

▶ More information about iglidur® W300, **page 171**

Taking advantage of its long experience in polymers and based on several tests, igus® decided in the last years to respond more precisely to the different applications and customer requests by developing spherical balls in other materials.

Further to the standard material iglidur® W300, spherical balls are now available in seven other materials presenting particular advantages:

- iglidur® X for high temperatures
- iglidur® J for low moisture absorption
- iglidur® J4 for low moisture absorption at lower costs
- iglidur® R as a low-cost alternative
- iglidur® UW for underwater applications
- iglidur® RN248 as detectable material
- iglidur® J4V as pre-loaded spherical ball

▶ Spherical balls, **page 841**

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 properties:

- Standard housings made from igumid G, an extremely shock-resistant, long-fibre reinforced polymer. Temperatures from –30°C to +80°C
- High temperature housings are made from iguton G. This material has a high chemical resistance and is suitable for temperatures from –40°C to +200°C.
- Detectable housings made from RN246 material. Temperatures from –30°C to +80°C
- Housings made from igumid FC material suitable for food contact. This material is FDA and EU10/2011-compliant and suitable for temperatures from –30°C to +100°C

▶ Material properties, **page 1654**

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 from 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 bearings, **from page 863**
▶ Material properties, **page 1657**

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Loads

The load capacity of the maintenance-free igubal® bearing element parts is very high at normal ambient temperatures. igubal® bearings absorb high forces and weigh only one fifth of traditional, metal bearing housings. The excellent dampening properties are based on the fact that the polymer material of the two part bearing can absorb vibrations differently than steel.

However, plastic specific properties, such as dependence on temperature and behaviour under long-term stress, must be taken into consideration when using igubal® bearings. The load capacity of the rod end should therefore be checked in a practical test, particularly if it will be used under continuous high loads and at elevated temperatures.

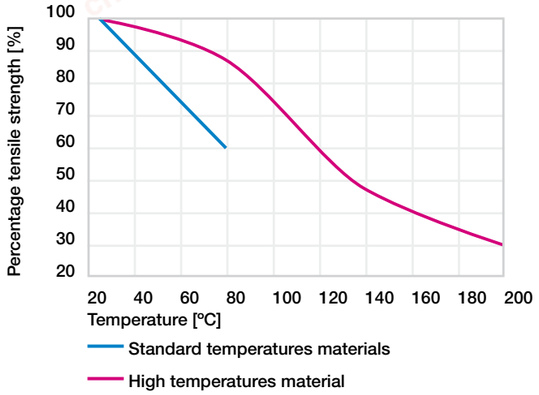


Diagram 01: Trends indicate the effect of temperature on the max. tensile strength of igubal® rod end bearings.

Coefficient of sliding friction and speed

One important advantage of igubal® spherical bearings is that rapid, rotary movements of a mounted shaft take place directly in the spherical portion, made of iglidur® W300. The advantage therefore lies in the plastic vs. steel relationship which permits high speeds, even in dry operation. Taking the radial loads into account, maximum surface speeds up to 0.5m/s rotating can be attained.

By contrast, rotations of the shaft are supported directly in the inner diameter of the spherical portion. The maintenance-free igubal® bearing elements also permit linear movements of the shaft.

Application temperatures

igubal® standard bearing elements can be used in temperatures from –30°C to +80°C. The high temperatures versions can be used at continuous temperatures up to +200°C. Diagram 01 trends indicate the effect of temperature on the maximum tensile strength of igubal® rod end bearings.

igubal®	Application temperature	
	Standard	HT version
Minimum	–30°C	–40°C
Max. long-term	+80°C	+200°C
Maximum, short-term	+120°C	+240°C

Table 01: Temperature limits of igubal® bearing elements

Thread type	Pitch [mm]
M2	0.40
M3	0.50
M4	0.70
M5	0.80
M6	1.00
M8	1.25
M10	1.50
M10 F	1.25
M12	1.75
M12 F	1.25
M14	2.00
M16	2.00
M16 F	1.50
M18	1.50
M20	1.50
M20 M20	2.50
M22	1.50
M24	2.00
M27	2.00
M30	2.00

Table 02: Thread pitches of igubal® rod ends and clevis joints

Chemical resistance of igubal® bearing elements

The spherical balls made from iglidur® W300 and the housing made from igumid G are resistant to weak 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® spherical bearings is approximately 1.3% weight in standard climatic conditions. 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 1636**

igubal® bearing elements | Technical data

Medium	Resistance	
	Standard	HT version
Alcohols	+ up to 0	+
Hydrocarbons	+	+
Greases, oils without additives	+	+
Fuels	+	+
Diluted acids	0 to –	+ up to 0
Strong acids	–	+ to –
Diluted alkalines	+	+
Strong alkalines	0	+

Table 03: Chemical resistance of igubal® bearing elements
+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20°C]

Radiation resistance

Self-aligning igubal® bearings are resistant to radiation up to an intensity of $3 \cdot 10^2$ Gy.

UV resistance

The corrosion resistance of igubal® bearings gives them special value for outside applications.

igubal® bearings are permanently resistant to UV radiation. A small change in colour (dark 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 bearing clearance in the standard product, which enables a secure operation even under high peripheral speeds. The hole of the spherical ball 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	
	Plug gauge falls	Plug gauge sticks
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



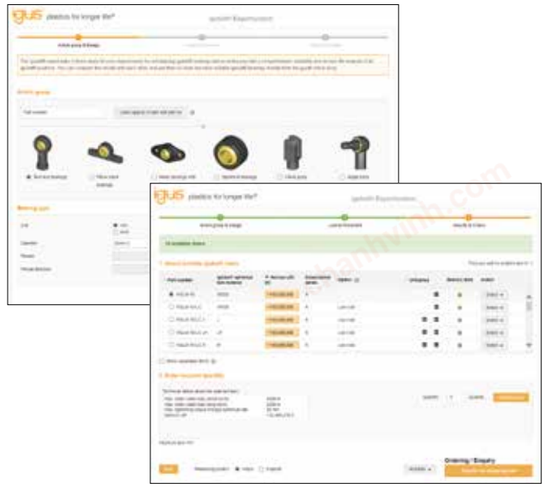
Tolerance test with plug gauge

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-asean.com/igubal-expert

igubal® product finder
▶ www.igus-asean.com/igubal-finder

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My sketches



igubal® rod end bearings

- Maintenance-free dry operation
- Robust
- Durable
- Compensation of misalignment errors
- Resistant to edge loads
- Lightweight



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igubal® rod ends

igubal® rod ends can also be used in rough environments. They are corrosion-resistant in humid environments and resistant to weak acids and media. Depending on the version (HT) the operation temperature is from –40°C to +200°C. Rod ends are also resistant to dirt and dust, they are also available as detectable version.



Maintenance-free dry operation

Robust

Durable



Compensation of misalignment errors

Resistant to 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 resistance is required
- In combination with pneumatic cylinders and gas struts
- If chemical resistance is required
- If high rigidity is required
- If they should be detectable

When not to use it?

- When temperatures are higher than +80°C
  ▶ HT version, page 760–761
- When rotation speeds higher than 0.5m/s are required
- When really high tensile and axial forces occur
- With a hydraulic cylinder
- When dimensions above 30mm are required

Max. + 200°C
Min. –40°C
(depending on material: standard from –30°C to +80°C; HT from –40°C to +200°C)

18 types
Ø 2–30mm

Imperial dimensions available
▶ From page 1606

Online product finder
▶ www.igus-asean.com/igubal-finder

Available from stock
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity

igubal® rod ends | Application examples

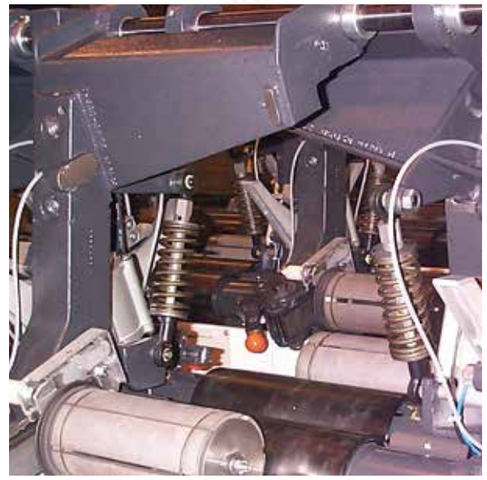


Typical sectors of industry and application areas
● Bicycle manufacturing ● Plant design
● Packaging ● Offshore etc.

Improve technology and reduce costs – 110 exciting examples online
▶ www.igus-asean.com/igubal-applications



▶ www.igus-asean.com/special-bikes



▶ www.igus-asean.com/textile



▶ www.igus-asean.com/packaging



▶ www.igus-asean.com/offshore

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igubal® rod ends | Technical data

Advantages

- Maintenance-free dry operation
- Robust
- Durable in varying loads
- Compensation of misalignment errors
- Resistant to edge loads
- Resistant to dirt, dust and lint
- Resistant to corrosion and chemicals
- Vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional K and E series, according to standard DIN ISO 12240
- Available with stainless steel sleeve for higher tightening torque

Product range

igubal® rod ends are available in the dimensional K and E series for shaft diameters of 2 to 30mm according to standard DIN ISO 12240

- Form A – with male thread and
- Form B – with female thread

Stainless steel sleeve

The dimensional K and partially E series are available in imperial dimensions, as well as a special version containing a stainless steel sleeve in the spherical ball. This allows a significantly higher tightening torque than for the standard polymer race. Please ask us for more dimensions.

Loads

igubal® rod ends handle high loads at ambient temperatures, have excellent dampening properties and weigh only a fifth of traditional metallic bearing housings. In applications with high continuous loads and high temperatures, the load capacity of igubal® rod ends should be tested in an experiment that simulates the application.

► www.igus-asean.com/igubal-finder

Coefficient of sliding friction and speed

Rotary movements of a mounted shaft take place directly in the spherical portion, made from iglidur® W300. The advantage therefore lies in the polymer vs. steel relationship. Polymer produces lower friction and permits high speeds, even in dry operation. Taking the radial loads into account, maximum surface speeds up to 0.5m/s rotating can be attained.

The maintenance-free igubal® rod end bearings permit linear and oscillating movements of the shaft.

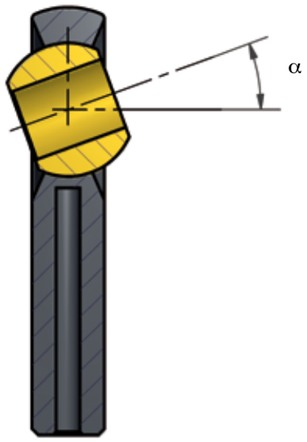
Temperatures

The igubal® rod ends can be used in temperatures from –30°C up to +80°C. The igubal® rod ends made from HT material are suitable for temperatures up to +200°C (E series, female and male threads).

Tolerances

igubal® rod ends can be used 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 hole of the spherical ball is produced to a standard tolerance range E10. Shafts should also meet recommended tolerances h6 and h9. All values and tolerances according to ISO 2768-m. Please contact us in case you require lower or other bearing tolerances.

Pivot angle



igubal® rod ends | Product overview

igubal® rod end bearings with female thread



Classic design
K series
► From page 746



Easy assembly
K series
► Page 748



Selectable spherical ball material
K series
► Page 750



Space-saving
E series
► Page 756



For temperatures up to +200°C
E series
► Page 760

New



Suitable for food contact
E series
► Page 762

igubal® rod end bearings with male thread



Classic design, imperial dimensions
K series
► Page1608



Space-saving, imperial dimensions
E series
► Page 1606



Classic design
K series
► From page 752



Higher forces
K series
► Page 754



Space-saving
E series
► From page 758



For temperatures up to +200°C
E series
► Page 761



Classic design, imperial dimensions
K series
► From page 1607

igubal® angled and in-line ball and socket joints



Angled ball and socket joints
► Page 764



Angled ball and socket joints, low-cost
► Page 765



Easy assembly and disassembly
► Page 766



In-line ball and socket joints
► Page 767



In-line ball and socket joints, low-cost
► Page 768

igubal® accessories for rod ends



Clevis joints with clevis pin and circlip
E series
► Page 778



Clevis joints with spring-loaded fixing clip
E series
► Page 779



Detectable rod ends and clevis joints
► From page 863

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igubal® rod ends | Product range

Rod ends with female thread: KBRM and KBLM



Standard design



Stainless steel sleeve version (MH)

- Maintenance-free dry operation
- Robust
- Durable in varying loads
- Compensation of misalignment errors
- Resistant to edge loads
- Resistant to dirt, dust and lint
- Resistant to corrosion and chemicals
- Vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional K series according to DIN ISO 12240
- Available with stainless steel sleeve for higher tightening torque
- Adapter screw with circlip available

▶ Accessories, **page 861**

Service life calculation online
▶ www.igus-asean.com/igubal-expert

Technical data

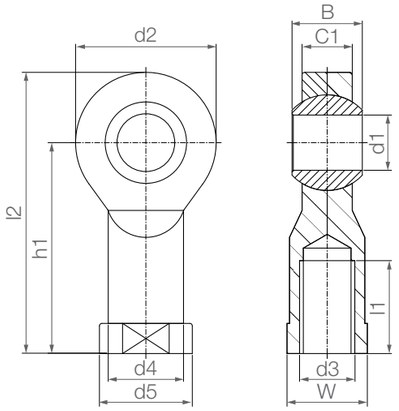
Part No.	Max. static tensile strain		Max. static axial load		Min. thread depth	Max. tightening torque	Max. tightening torque through ball		Weight
	Short-term	Long-term	Short-term	Long-term	Thread	Female thread	without stainless steel sleeve	with stainless steel sleeve	
	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[Nm]	[g]
KB□M-02	200	100	50	25	4	0.30	1	–	0.4
KB□M-03	800	400	100	50	5	0.50	2	4	2.7
KB□M-05 M4	1,000	500	250	125	7	0.75	5	12	3.5
KB□M-05	1,000	500	250	125	7	1.00	5	12	3.4
KB□M-06	1,400	700	400	200	8	1.50	10	15	4.7
KB□M-08	2,100	1,050	700	350	11	5.00	12	40	8.6
KB□M-10	3,100	1,550	800	400	13	15.00	20	50	14.6
KB□M-10 F	3,100	1,550	800	400	13	6.00	20	50	14.6
KB□M-12[129)]	3,600	1,800	900	450	15	20.00	30	70	22.0
KB□M-12 F	3,600	1,800	900	450	15	15.00	30	70	22.0
KB□M-14	4,000	2,000	1,000	500	17	25.00	35	75	30.9
KB□M-16	4,200	2,100	1,300	650	19	30.00	40	110	39.6
KB□M-16 F	4,200	2,100	1,300	650	19	27.50	40	110	39.6
KB□M-18	4,600	2,300	1,600	800	21	45.00	45	150	55.0
KB□M-20	5,400	2,700	2,100	1,050	22	60.00	55	200	73.5
KB□M-20 M20	5,400	2,700	2,100	1,050	22	60.00	55	200	73.5
KB□M-22	7,000	3,500	2,200	1,100	25	75.00	60	–	94.8
KB□M-25	8,500	4,250	2,300	1,150	28	120.00	60	–	119.8
KB□M-30	10,500	5,250	2,500	1,250	34	135.00	60	–	177.0
KB□M-30 M27x2	10,500	5,250	2,500	1,250	34	135.00	60	–	189.6

[129)] **Integrated lock nut. Drawing as for KCRM, page 751**

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	MH
K series	Housing (female thread)	Thread	Metric	Inner Ø	

Thread
L = Left-hand thread
R = Right-hand thread

Add-on:
MH = With stainless steel sleeve

Material:
Housing: **igumid G ▶ Page 1654**
Spherical ball: **iglidur® W300 ▶ Page 171**

Imperial dimensions available
▶ Page 1608

Dimensions [mm]

Part No.	d1	d2	d3	d4	d5	C1	B		h1	l1	l2	W	Max. pivot angle
	E10						without stainless steel sleeve	with stainless steel sleeve +0.2					
KB□M-02	2	9	M2	4.0	4.6	3.0	4	–	12.5	6	17	SW4	30°
KB□M-03	3	13	M3	6.5	8.0	4.5	6	6.2	18.5	8	25	SW6	30°
KB□M-05 M4	5	18	M4	9.0	12.0	6.0	8	8.2	27	10	36	SW9	30°
KB□M-05	5	18	M5	9.0	12.0	6.0	8	8.2	27	10	36	SW9	30°
KB□M-06	6	20	M6	10.0	13.0	7.0	9	9.2	30	12	40	SW11	29°
KB□M-08	8	24	M8	13.0	16.0	9.0	12	12.2	36	16	48	SW14	25°
KB□M-10	10	30	M10	15.0	19.0	10.5	14	14.2	43	20	58	SW17	25°
KB□M-10 F	10	30	M10 x 1.25	15.0	19.0	10.5	14	14.2	43	20	58	SW17	25°
KB□M-12	12	34	M12	–	–	12.0	16	16.2	50	25	67	SW17	25°
KB□M-12 F	12	34	M12 x 1.25	18.0	22.0	12.0	16	16.2	50	22	67	SW19	25°
KB□M-14	14	38	M14	20.0	25.0	13.5	19	19.2	57	25	76	SW22	25°
KB□M-16	16	42	M16	22.0	27.0	15.0	21	21.2	64	28	85	SW22	23°
KB□M-16 F	16	42	M16 x 1.5	22.0	27.0	15.0	21	21.2	64	28	85	SW22	23°
KB□M-18	18	46	M18 x 1.5	25.0	31.0	16.5	23	23.2	71	32	94	SW27	23°
KB□M-20	20	50	M20 x 1.5	28.0	34.0	18.0	25	25.2	77	33	102	SW30	23°
KB□M-20 M20	20	50	M20 x 2.5	28.0	34.0	18.0	25	25.2	77	33	102	SW30	23°
KB□M-22	22	56	M22 x 1.5	30.0	37.0	20.0	28	–	84	37	112	SW32	22°
KB□M-25	25	60	M24 x 2.0	32.0	41.0	22.0	31	–	94	42	124	SW36	22°
KB□M-30	30	70	M30 x 2.0	37.0	50.0	25.0	37	–	110	50	145	SW41	22°
KB□M-30 M27x2	30	70	M27 x 2.0	37.0	50.0	25.0	37	–	110	50	145	SW41	22°

Rod ends can be ordered in metric dimensions with stainless steel sleeve with the addition of MH after the part numbers listed here. Example: KRBM-10 **MH (Inner Ø: 10mm).**

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Rod ends, female thread; 2nd generation: KBRM CL and KBLM CL



- Available with stainless steel sleeve for higher tightening torque
- Dimensional K series according to DIN ISO 12240
- Adapter screw with circlip available

▶ Accessories, **page 861**



Simple assembly due to the hexagonal body and the integrated lock nut

Service life calculation online
▶ **www.igus-asean.com/igubal-expert**

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread	Max. tightening torque	Max. tightening torque through ball		Weight
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	depth Thread [mm]	Female thread [Nm]	without stainless steel sleeve [Nm]	with stainless steel sleeve [Nm]	[g]
KB□M-06 CL	1,400	700	300	150	8	0.75	10	15	4.5
KB□M-08 CL	2,100	1,050	500	250	11	2	12	40	8.6
KB□M-10 CL	3,100	1,550	800	400	13	3	20	50	14.1

Alternative spherical ball materials ▶ Page 841



RKM: Low-cost



JKM: Low moisture absorption



WKM-MH: Standard spherical ball with stainless steel sleeve

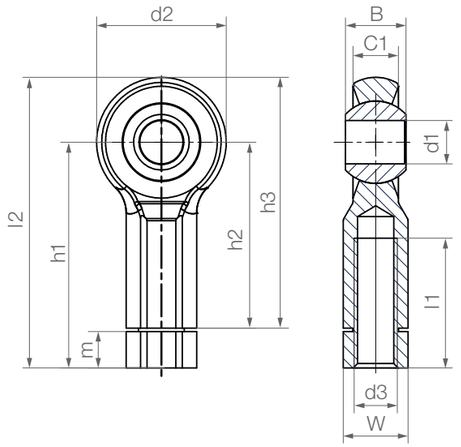


J4KM: Low-cost and low moisture absorption

igubal® rod ends

igubal® rod ends | Product range

Rod ends, female thread; 2nd generation: KBRM CL and KBLM CL



Order key

Type					Size [mm]	Version	
K	B	□	M	-	06	CL	MH
K series	Housing (female thread)	Thread	Metric		Inner Ø	2nd generation	

Options:
Thread
L = Left-hand thread
R = Right-hand thread

Add-on:
MH =
With stainless steel sleeve

Material:
Housing: **igumid G** ▶ **Page 1654**
Spherical ball: **iglidur® W300** ▶ **Page 171**
Other spherical ball materials upon request
▶ **Page 841**

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 +0.2								
KB□M-06 CL	6	20	M6	SW10	9	9.2	7	40	36.5	30	20	46.5	5.7	40°
KB□M-08 CL	8	24	M8	SW13	12	12.2	9	48	44.3	36	25	56.3	7.5	35°
KB□M-10 CL	10	30	M10	SW15	14	14.2	10.5	58	52.2	43	30	67.2	8.4	35°

Rod ends can be ordered in metric dimensions with stainless steel sleeve with the addition of **MH** after the part numbers listed here. Example: KBRM-10 CL **MH (Inner Ø: 10mm).**
For another spherical bearing material than iglidur® W300, please add "**J**" to the part number, for example. Example: KBRM-10 CL **J**.

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igubal® rod ends | Product range

Rod ends with female thread: KCRM and KCLM



- Smooth design no dirt traps
- Spherical ball is clipped in
- Choice of iglidur® spherical ball materials
- Compensation of misalignment errors
- Lightweight
- Absolute corrosion resistance
- Available with stainless steel sleeve for higher tightening torque
- Dimensional K series according to DIN ISO 12240
- Adapter screw with circlip available

▶ Accessories, **page 861**

Service life calculation online
▶ **www.igus-asean.com/igubal-expert**

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball		Weight
	Short-term	Long-term	Short-term	Long-term	Thread	Female thread	without stainless steel sleeve	with stainless steel sleeve	
	[N]	[N]	[N]	[N]	[Nm]	[Nm]	[Nm]	[Nm]	[g]
KC□M-05	1,200	600	180	90	7	1.00	5	12	4.0
KC□M-06	1,400	700	300	150	8	0.75	10	15	4.2
KC□M-08	2,100	1,050	500	250	11	2.00	12	40	7.6
KC□M-10	3,100	1,550	800	400	13	3.00	20	50	12.8
KC□M-10-F	3,100	1,550	800	400	13	3.00	20	50	12.8
KC□M-12	3,560	1,780	750	375	15	15.0	30	70	19.0
KC□M-12-F	3,560	1,780	750	375	15	15.0	30	70	19.0
KC□M-16	3,800	1,900	800	400	19	15.0	40	110	34.0
KC□M-16-F	3,800	1,900	800	400	19	15.0	40	110	34.0
KC□M-20	4,550	2,275	400	200	22	20.0	55	200	55.0
KC□M-20-M20	4,550	2,275	400	200	22	20.0	55	200	55.0

Alternative spherical ball materials ▶ Page 841



RKM: Low-cost



JKM: Low moisture absorption



WKM-MH: Standard spherical ball with stainless steel sleeve

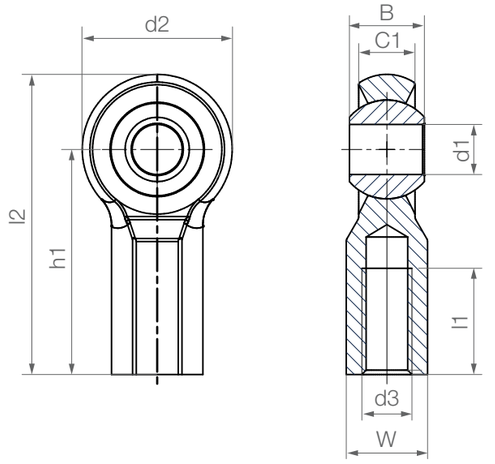


J4KM: Low-cost and low moisture absorption

igubal® rod ends

igubal® rod ends | Product range

Rod ends with female thread: KCRM and KCLM



Order key

Type				Size [mm]	Options
K	C	□	M-	06	MH
K series	Housing (female thread)	Thread	Metric	Inner Ø	

Thread
L = Left-hand thread
R = Right-hand thread

Add-on:
MH = With stainless steel sleeve

Material:
Housing: **igumid G** ▶ **Page 1654**
Spherical ball: **iglidur® W300** ▶ **Page 171**
Other spherical ball materials upon request
▶ **Page 841**

Dimensions [mm]

Part No.	d1	d2	d3	W	B		C1	h1	l1	l2	Max. pivot angle
	E10				without stainless steel sleeve	with stainless steel sleeve +0.2					
KC□M-05	5	18	M5	SW9	8	8.2	6.0	27	12.0	36	43°
KC□M-06	6	20	M6	SW10	9	9.2	7.0	30	13.5	40	40°
KC□M-08	8	24	M8	SW13	12	12.2	9.0	36	17.0	48	35°
KC□M-10	10	30	M10	SW15	14	14.2	10.5	43	22.0	58	35°
KC□M-10-F	10	30	M10 x 1.25	SW15	14	14.2	10.5	43	22.0	58	35°
KC□M-12	12	34	M12	SW17	16	16.2	12.0	50	25.0	67	35°
KC□M-12-F	12	34	M12 x 1.25	SW17	16	16.2	12.0	50	25.0	67	35°
KC□M-16	16	42	M16	SW20	21	21.2	15.0	64	30.0	85	35°
KC□M-16-F	16	42	M16 x 1.5	SW20	21	21.2	15.0	64	30.0	85	35°
KC□M-20	20	50	M20 x 1.5	SW24	25	25.2	18.0	77	35.0	102	35°
KC□M-20-M20	20	50	M20 x 2.5	SW24	25	25.2	18.0	77	35.0	102	35°

Rod ends can be ordered in metric dimensions **with stainless steel** sleeve with the addition of **MH** after the part numbers listed here. Example: KCRM-10 **MH (Inner Ø: 10mm).**
For another spherical bearing material than iglidur® W300, please add "**J**" to the part number, for example. Example: KCRM-05 **J**.

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Rod ends with male thread: KARM and KALM



Standard design



Stainless steel sleeve version (MH)

- Maintenance-free dry operation
- Robust
- Durable in varying loads
- Compensation of misalignment errors
- Resistant to edge loads
- Resistant to dirt, dust and lint
- Resistant to corrosion and chemicals
- Vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional K series according to DIN ISO 12240
- Available with stainless steel sleeve for higher tightening torque
- Adapter screw with circlip available

▶ Accessories, **page 861**

Service life calculation online
▶ **www.igus-asean.com/igubal-expert**

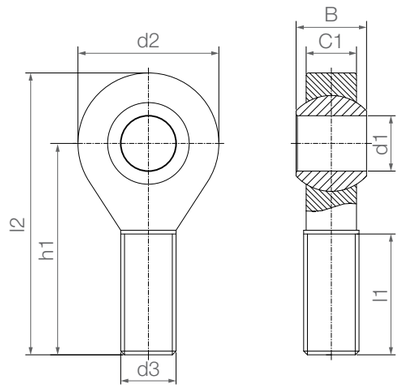
Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth	Max. tighening torque	Max. tightening torque through ball		Weight
	Short-term	Long-term	Short-term	Long-term	Thread	Male thread	Without stainless steel sleeve	With stainless steel sleeve	
	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[Nm]	[g]
KA□M-05	800	400	80	40	13	0.4	5	12	2.7
KA□M-06	1,000	500	100	50	15	0.5	10	15	3.9
KA□M-08	1,700	850	200	100	18	2.0	12	40	7.1
KA□M-10	2,500	1,250	300	150	20	5.0	20	50	12.5
KA□M-10 F	2,500	1,250	300	150	20	3.0	20	50	12.5
KA□M-12	2,700	1,350	400	200	22	6.0	30	70	18.0
KA□M-12 F	2,700	1,350	400	200	22	6.0	30	70	18.0
KA□M-14	3,400	1,700	700	350	25	12.0	35	75	25.0
KA□M-16	3,900	1,950	800	400	26	17.0	40	110	34.0
KA□M-16 F	3,900	1,950	800	400	26	17.0	40	110	34.0
KA□M-18	4,200	2,100	1,000	500	29	20.0	45	150	45.9
KA□M-20	6,000	3,000	1,300	650	32	25.0	55	200	58.0
KA□M-20 M20	6,000	3,000	1,300	650	32	25.0	55	200	58.0
KA□M-22	7,200	3,600	1,500	750	34	25.0	60	–	86.2
KA□M-25	7,500	3,750	1,900	950	39	45.0	65	–	99.1
KA□M-30	8,800	4,400	2,300	1,150	46	85.0	70	–	160.4

igubal® rod ends

igubal® rod ends | Product range

Rod ends with male thread: KARM and KALM



Order key

Type				Size [mm]	Options
K	A	□	M-	05	MH
K series	Housing (male thread)	Thread	Metric	Inner Ø	

Thread
L = Left-hand thread
R = Right-hand thread

Add-on:
MH = With stainless steel sleeve

Material:
Housing: **igumid G** ▶ **Page 1654**
Spherical ball: **iglidur® W300** ▶ **Page 171**

Imperial dimensions available
▶ **Page 1607**

Dimensions [mm]

Part No.	d1	d2	d3	C1	B		h1	l1	l2	Max. pivot angle
	E10				without stainless steel sleeve	with stainless steel sleeve +0.2				
KA□M-05	5	18	M5	6.0	8	8.2	33	19	42	30°
KA□M-06	6	20	M6	7.0	9	9.2	36	21	46	29°
KA□M-08	8	24	M8	9.0	12	12.2	42	25	55	25°
KA□M-10	10	30	M10	10.5	14	14.2	48	28	63	25°
KA□M-10 F	10	30	M10 x 1.25	10.5	14	14.2	48	28	63	25°
KA□M-12	12	34	M12	12.0	16	16.2	54	32	71	25°
KA□M-12 F	12	34	M12 x 1.25	12.0	16	16.2	54	32	71	25°
KA□M-14	14	38	M14	13.5	19	19.2	61	36	79	25°
KA□M-16	16	42	M16	15.0	21	21.2	66	37	88	23°
KA□M-16 F	16	42	M16 x 1.5	15.0	21	21.2	66	37	88	23°
KA□M-18	18	46	M18 x 1.5	16.5	23	23.2	72	41	96	23°
KA□M-20	20	50	M20 x 1.5	18.0	25	25.2	78	45	104	23°
KA□M-20 M20	20	50	M20 x 2.5	18.0	25	25.2	78	45	104	23°
KA□M-22	22	56	M22 x 1.5	20.0	28	–	84	48	112	22°
KA□M-25	25	61	M24 x 2.0	22.0	31	–	95	55	126	22°
KA□M-30	30	71	M30 x 2.0	25.0	37	–	112	66	147	22°

Rod ends can be ordered in metric dimensions **with stainless steel** sleeve with the addition of **MH** after the part numbers listed here. Example: KARM-10 **MH (Inner Ø: 10mm).**

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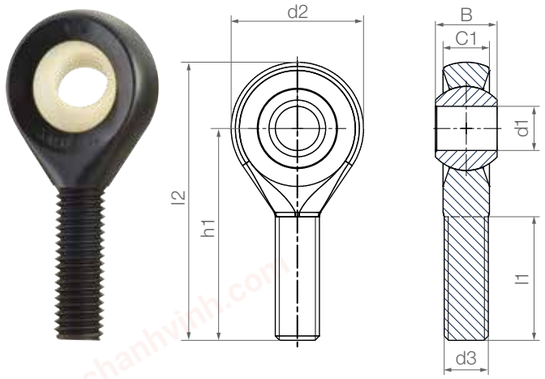
igubal® rod ends | Product range

Rod ends, male thread; 2nd generation: KARM CL



- Smooth design no dirt traps
- Compensation of misalignment errors
- Lightweight
- Absolute corrosion resistance
- Available with stainless steel sleeve for higher tightening torque
- Dimensional K series according to DIN ISO 12240
- Adapter screw with circlip available

▶ Accessories, **page 861**

Order key

Type				Size [mm]	Version	
K	A	□	M-	06	CL	MH
K series	Housing (male thread)	Thread	Metric	Inner Ø	2nd generation	

Thread
L =
Left-hand thread
R =
Right-hand thread

Add-on:
MH =
With stainless steel sleeve

Material:
Housing: **igumid G** ▶ **Page 1654**
Spherical ball: **iglidur® W300** ▶ **Page 171**
Other spherical ball materials upon request
▶ **Page 841**

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball		Weight
	Short-term	Long-term	Short-term	Long-term	Thread	Male thread	without stainless steel sleeve	with stainless steel sleeve	
	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[Nm]	[g]
KA□M-06 CL	1,000	500	100	50	15	0.5	10	15	3.5
KA□M-08 CL	1,700	850	200	100	18	2.0	12	40	6.2
KA□M-10 CL	2,500	1,250	300	150	20	5.0	20	50	11.2
KA□M-12 CL	2,700	1,350	400	200	22	6.0	30	70	15.6

Dimensions [mm]

Part No.	d1 E10	d2	d3	C1	B without stainless steel sleeve	B with stainless steel sleeve +0.2	h1	l1	l2	Max. pivot angle
KA□M-06 CL	6	20	M6	7.0	9	9.2	36	21	46	40°
KA□M-08 CL	8	24	M8	9.0	12	12.2	42	25	55	35°
KA□M-10 CL	10	30	M10	10.5	14	14.2	48	28	63	35°
KA□M-12 CL	12	34	M12	12.0	16	16.2	54	32	71	35°

Rod ends can be ordered in metric dimensions with stainless steel sleeve with the addition of **MH** after the part numbers listed here. Example: KARM-10 CL **MH (Inner Ø: 10mm).**
For another spherical bearing material than iglidur® W300, please add "**J**" to the part number, for example. Example: KARM-10 CL **J**.

My sketches

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igubal® rod ends | Product range

Rod ends with female thread: EBRM and EBLM



- Maintenance-free dry operation
- Robust
- Durable in varying loads
- Compensation of misalignment errors
- Resistant to edge loads
- Resistant to dirt, dust and lint
- Resistant to corrosion and chemicals
- Vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional E series according to DIN ISO 12240
- For temperatures up to +200°C we recommend EBRM-HT and EBLM-HT ▶ **Page 760**
- Detectable version ▶ **Page 867**

Service life calculation online
▶ **www.igus-asean.com/igubal-expert**

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight
	Short-term	Long-term	Short-term	Long-term	Thread	Female thread		
	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[g]
EB□M-04	800	400	100	50	7	0.4	2.0	1.8
EB□M-05	1,300	650	150	75	8	0.5	2.0	3.2
EB□M-06	1,500	750	200	100	8	1.5	2.5	4.0
EB□M-08	2,000	1,000	450	225	11	5.0	7.0	6.9
EB□M-10	2,300	1,150	500	250	13	15.0	14.0	11.2
EB□M-10 F	2,300	1,150	500	250	13	6.0	14.0	11.2
EB□M-12	3,300	1,650	550	275	14	20.0	25.0	17.1
EB□M-12 F	3,300	1,650	550	275	14	15.0	25.0	17.1
EB□M-15	4,800	2,400	800	400	18	25.0	30.0	28.9
EB□M-16	5,000	2,500	850	425	18	20.0	32.0	32.6
EB□M-16 F	5,000	2,500	850	425	18	15.0	32.0	32.6
EB□M-17	5,300	2,650	1,100	550	19	30.0	35.0	42.4
EB□M-17 F	5,300	2,650	1,100	550	19	27.5	35.0	42.4
EB□M-20	7,200	3,600	1,800	900	22	60.0	40.0	65.8
EB□M-20 M20	7,200	3,600	1,800	900	22	60.0	40.0	65.8
EB□M-25	10,000	5,000	2,600	1,300	27	115.0	55.0	125.9
EB□M-30	10,500	5,250	3,000	1,500	33	130.0	70.0	184.1

Alternative spherical ball materials ▶ Page 841



J4VEM: Clearance-free, pre-loaded



JEM: Low moisture absorption



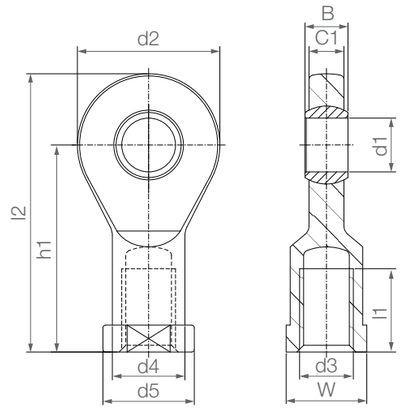
REM: Low-cost



J4EM: Low-cost and low moisture absorption

igubal® rod ends | Product range

Rod ends with female thread: EBRM and EBLM



Order key

Type				Size [mm]	Options
E	B	□	M	- 04	
E series	Housing (female thread)	Thread	Metric	Inner Ø	Thread L = Left-hand thread R = Right-hand thread

Material:
Housing: **igumid G** ▶ **Page 1654**
Spherical ball: **iglidur® W300** ▶ **Page 171**
Other spherical ball materials upon request
▶ **Page 841**

Dimensions [mm]

Part No.	d1	d2	d3	d4	d5	C1	B	h1	l1	l2	W	Max. pivot angle
	E10											
EB□M-04[17]	4	15	M4	–	–	3.5	5	22.5	9.5	30.0	SW8	33°
EB□M-05	5	19	M5	9.0	11	4.4	6	30	12.0	39.5	SW9	33°
EB□M-06	6	21	M6	11.0	13	4.4	6	30	12.0	40.5	SW11	27°
EB□M-08	8	24	M8	13.0	16	6.0	8	36	14.0	48.0	SW14	24°
EB□M-10	10	29	M10	15.0	19	7.0	9	43	18.0	57.5	SW17	24°
EB□M-10 F	10	29	M10 x 1.25	15.0	19	7.0	9	43	18.0	57.5	SW17	24°
EB□M-12	12	34	M12	18.0	22	8.0	10	50	20.0	67.0	SW19	21°
EB□M-12 F	12	34	M12 x 1.25	18.0	22	8.0	10	50	20.0	67.0	SW19	21°
EB□M-15	15	40	M14	21.0	26	10.0	12	61	26.0	81.0	SW22	21°
EB□M-16[17]	16	43	M16	–	–	10.5	13	64.5	26.5	86.0	SW22	21°
EB□M-16 F[17]	16	43	M16 x 1.5	–	–	10.5	13	64.5	26.5	86.0	SW22	21°
EB□M-17	17	46	M16	24.0	30	11.0	14	67	27.0	90.0	SW27	18°
EB□M-17 F	17	46	M16 x 1.5	24.0	30	11.0	14	67	27.0	90.0	SW27	18°
EB□M-20	20	53	M20 x 1.5	27.0	34	13.0	16	77	31.0	103.5	SW30	16°
EB□M-20 M20	20	53	M20 x 2.5	27.0	34	13.0	16	77	31.0	103.5	SW30	16°
EB□M-25	25	64	M24 x 2.0	34.0	41	17.0	20	94	38.0	126.5	SW36	16°
EB□M-30	30	73	M30 x 2.0	41.0	48	19.0	22	110	47.0	146.5	SW41	13°

[17] Special design with hexagonal foot
For another spherical bearing material than iglidur® W300, please add "**J**" to the part number, for example. Example: EBRM-05 **J**.

Imperial dimensions available
▶ **Page 1606**

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igubal® rod ends | Product range

Rod ends with male thread: EARM and EALM



- Maintenance-free dry operation
- Robust
- Durable in varying loads
- Compensation of misalignment errors
- Resistant to edge loads
- Resistant to dirt, dust and lint
- Resistant to corrosion and chemicals
- Vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional E series according to DIN ISO 12240
- For temperatures up to +200°C we recommend EARM-HT and EALM-HT ▶ **Page 761**

Service life calculation online
▶ **www.igus-asean.com/igubal-expert**

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight
	Short-term	Long-term	Short-term	Long-term	Thread	Male thread		
	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[g]
EA□M-05	550	275	50	25	14	0.4	2.0	2.2
EA□M-06	850	425	80	40	14	0.5	2.5	2.7
EA□M-08	1,600	800	160	80	17	2.0	7.0	5.1
EA□M-10	2,600	1,300	250	125	19	5.0	14.0	8.4
EA□M-10 F	2,600	1,300	250	125	19	3.0	14.0	8.4
EA□M-12	3,100	1,550	300	150	20	6.0	25.0	14.3
EA□M-12 F	3,100	1,550	300	150	20	6.0	25.0	14.3
EA□M-15	3,400	1,700	600	300	24	12.5	30.0	21.1
EA□M-17	3,600	1,800	900	450	26	17.5	35.0	30.2
EA□M-17 F	3,600	1,800	900	450	26	21.0	35.0	30.2
EA□M-20	6,800	3,400	1,700	850	30	25.0	40.0	57.3
EA□M-20 M20	6,800	3,400	1,700	850	30	25.0	40.0	57.3
EA□M-25	7,000	3,500	1,000	500	37	45.0	55.0	94.8
EA□M-30	7,000	3,500	2,000	1,000	46	85.0	70.0	156.4

Alternative spherical ball materials ▶ Page 841



J4VEM: Clearance-free, pre-loaded



JEM: Low moisture absorption



REM: Low-cost

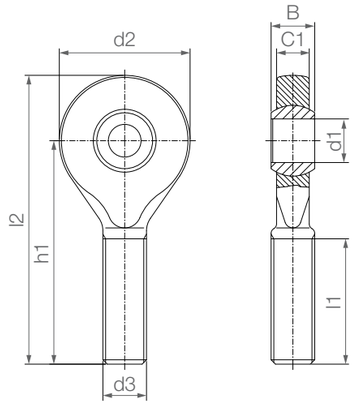


J4EM: Low-cost and low moisture absorption

igubal® rod ends

igubal® rod ends | Product range

Rod ends with male thread: EARM and EALM



Order key

Type				Size [mm]	Options
E	A	□	M-	05	
E series	Housing (male thread)	Thread	Metric	Inner Ø	

Thread
L = Left-hand thread
R = Right-hand thread

Material:
Housing: **igumid G** ▶ **Page 1654**
Spherical ball: **iglidur® W300** ▶ **Page 171**
Other spherical ball materials upon request
▶ **Page 841**

Dimensions [mm]

Part No.	d1 E10	d2	d3	C1	B	h1	l1	l2	Max. pivot angle
EA□M-05	5	19	M5	4.4	6	36.0	20	45.5	33°
EA□M-06	6	21	M6	4.4	6	36.0	20	46.5	27°
EA□M-08	8	24	M8	6.0	8	41.0	24	53.0	24°
EA□M-10	10	29	M10	7.0	9	47.5	27	62.0	24°
EA□M-10 F	10	29	M10 x 1.25	7.0	9	47.5	27	62.0	24°
EA□M-12	12	34	M12	8.0	10	54.0	29	71.0	21°
EA□M-12 F	12	34	M12 x 1.25	8.0	10	54.0	29	71.0	21°
EA□M-15	15	40	M14	10.0	12	63.0	34	83.0	21°
EA□M-17	17	46	M16	11.0	14	69.0	37	92.0	18°
EA□M-17 F	17	46	M16 x 1.5	11.0	14	69.0	37	92.0	18°
EA□M-20	20	53	M20 x 1.5	13.0	16	80.0	43	106.5	16°
EA□M-20 M20	20	53	M20 x 2.5	13.0	16	80.0	43	106.5	16°
EA□M-25	25	64	M24 x 2.0	17.0	20	97.0	53	129.0	16°
EA□M-30	30	73	M30 x 2.0	19.0	22	113.0	65	149.5	13°

For another spherical bearing material than iglidur® W300, please add "**J**" to the part number, for example. Example: EARM-05 **J**.

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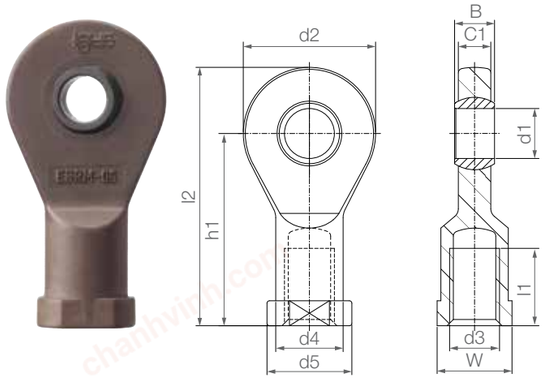
igubal® rod ends | Product range

High temperature rod ends with female thread: EBRM-HT and EBLM-HT



Order key

Type				Size [mm]	Version
E	B	□	M-	05	HT
E series	Housing (female thread)	Thread	Metric	Inner Ø	High temperature

- Applicable up to +200°C
- Robust
- Durable in varying loads
- Compensation of misalignment and edge loads
- Resistant to corrosion and chemicals (chemical table ▶ **Page 1636**)
- For underwater applications
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional E series according to DIN ISO 12240

Options:

Thread

L = Left-hand thread

R = Right-hand thread

Material:

Housing: **iguton G** ▶ **Page 1655**

Spherical ball: **iglidur® X** ▶ **Page 279**

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight
	Short-term	Long-term	Short-term	Long-term	Thread	Female thread		
	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[g]
EB□M-05-HT	625	313	140	70	14	0.4	2.0	3.8
EB□M-06-HT	832	416	172	86	14	0.5	2.5	5.0
EB□M-08-HT	1,317	658	175	88	17	2.0	7.0	8.5
EB□M-10-HT	1,470	735	253	126	19	5.0	14.0	13.7
EB□M-12-HT	1,600	800	279	139	20	6.0	25.0	21.4

Dimensions [mm]

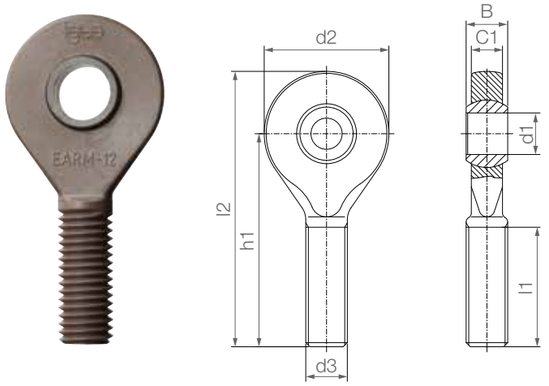
Part No.	d1 E10	d2	d3	d4	d5	C1	B	h1	l1	l2	W	Max. pivot angle
EB□M-05-HT	5	19	M5	9.0	11	4.4	6	30	12	39.5	SW9	33°
EB□M-06-HT	6	21	M6	11.0	13	4.4	6	30	12	40.5	SW11	27°
EB□M-08-HT	8	24	M8	13.0	16	6.0	8	36	16	48.0	SW14	24°
EB□M-10-HT	10	29	M10	15.0	19	7.0	9	43	18	57.5	SW17	24°
EB□M-12-HT	12	34	M12	18.0	22	8.0	10	50	20	67.0	SW19	21°

Other dimensions available upon request

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
E	A	□	M-	05	HT
E series	Housing (male thread)	Thread	Metric	Inner Ø	High temperature

- Applicable up to +200°C
- Robust
- Durable in varying loads
- Compensation of misalignment and edge loads
- Resistant to corrosion and chemicals (chemical table ▶ **Page 1636**)
- For underwater applications
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional E series according to DIN ISO 12240

Options:

Thread

L = Left-hand thread

R = Right-hand thread

Material:

Housing: **iguton G** ▶ **Page 1655**

Spherical ball: **iglidur® X** ▶ **Page 279**

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight
	Short-term	Long-term	Short-term	Long-term	Thread	Male thread		
	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[g]
EA□M-05-HT	380	190	20	10	14	0.4	2.0	2.8
EA□M-06-HT	600	300	30	15	14	0.5	2.5	3.4
EA□M-08-HT	931	465	48	24	17	2.0	7.0	6.1
EA□M-10-HT	1,125	563	57	28	19	5.0	14.0	10.2
EA□M-12-HT	1,200	600	65	33	20	6.0	25.0	15.7

Dimensions [mm]

Part No.	d1 E10	d2	d3	C1	B	h1	l1	l2	Max. pivot angle
EA□M-05-HT	5	19	M5	4.4	6	36.0	20	45.5	33°
EA□M-06-HT	6	21	M6	4.4	6	36.0	20	46.5	27°
EA□M-08-HT	8	24	M8	6.0	8	41.0	24	53.0	24°
EA□M-10-HT	10	29	M10	7.0	9	47.5	27	62.0	24°
EA□M-12-HT	12	34	M12	8.0	10	54.0	29	71.0	21°

Other dimensions available upon request

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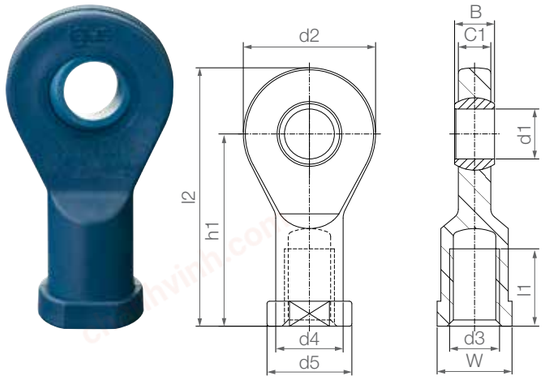
igubal® rod ends | Product range New

Rod ends with female thread, suitable for food contact: EBRM-FC



Order key

Type				Size [mm]	Version
E	B	R	M	- 06	FC
E series	Housing (female thread)	Thread	Metric	Inner Ø	Suitable for food contact

- Made from FDA and EU10/2011-compliant materials
- Lubrication and maintenance-free
- Optically and magnetically detectable
- In industry standard blue
- Corrosion and media-resistant
- Vibration-dampening
- Cost-effective

Material:
Housing: **igumid FC** ▶ **Page1655**
Spherical ball: **iglidur® FC180** ▶ **Page 1652**

Technical data

Part No.		Max. static tensile strain		Max. static axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight
		Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Thread [mm]	Female thread [Nm]	[Nm]	[g]
EBRM-06-FC	New	1,300	650	300	150	8.0	1.5	2.0	4.0
EBRM-08-FC	New	1,900	950	500	250	11.0	5.0	4.0	7.0
EBRM-10-FC	New	2,220	1,100	500	250	13.0	10.0	6.0	11.4
EBRM-10-FC-F	New	2,220	1,100	500	250	13.0	10.0	6.0	11.4
EBRM-12-FC	New	3,000	1,500	800	400	14.0	15.0	6.0	17.4

Dimensions [mm]

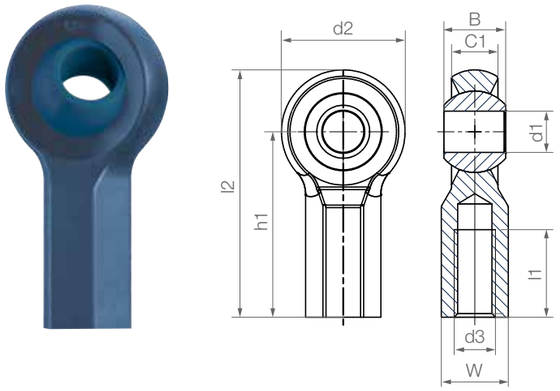
Part No.		d1 E10	d2	d3	d4	d5	C1	B	h1	l1	l2	W	Max. pivot angle
EBRM-06-FC	New	6	21	M6	11.0	13	4.4	6	30	12	40.5	SW11	27°
EBRM-08-FC	New	8	24	M8	13.0	16	6.0	8	36	14	48.0	SW14	24°
EBRM-10-FC	New	10	29	M10	15.0	19	7.0	9	43	18	57.5	SW17	24°
EBRM-10-FC-F	New	10	29	M10 x 1.25	15.0	19	7.0	9	43	18	57.5	SW17	24°
EBRM-12-FC	New	12	34	M12	18.0	22	8.0	10	50	20	67.0	SW19	21°

Left-hand thread and other dimensions available upon request

igubal® rod ends

igubal® rod ends | Product range New

Rod ends with female thread, suitable for food contact: KCRM-FC



Order key

Type				Size [mm]	Version
K	C	R	M	- 06	FC
K series	Housing (female thread)	Thread	Metric	Inner Ø	Suitable for food contact

- Made from FDA and EU10/2011-compliant materials
- Lubrication and maintenance-free
- Optically and magnetically detectable
- In industry standard blue
- Corrosion and media-resistant
- Vibration-dampening
- Cost-effective

Material:
Housing: **igumid FC** ▶ **Page1655**
Spherical ball: **iglidur® FC180** ▶ **Page 1652**

Technical data

Part No.		Max. static tensile strain		Max. static axial force	Min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight
		Short-term [N]	Long-term [N]	Short-term [N]	Thread [mm]	Male thread [Nm]	[Nm]	[g]
KCRM-06-FC	New	1,300	650	400	8.0	1.0	2.0	4.3

Dimensions [mm]

Part No.		d1 E10	d2	d3	C1	B Without stainless steel sleeve	h1	l1	l2	W	Max. pivot angle
KCRM-06-FC	New	6	20	M6	7.0	9.0	30	13.5	40.0	SW10	40°

Left-hand thread and other dimensions available upon request

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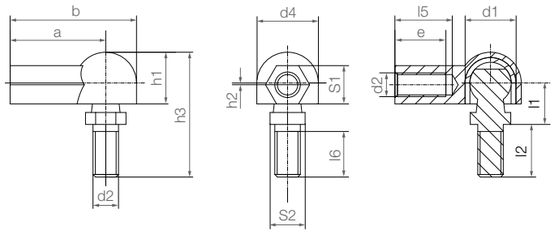
Angled ball and socket joints: WGRM and WGLM



- Connection for rotating and pivoting movements
- Lightweight
- Easy and quick assembly
- Vibration-dampening
- Resistance to dust and dirt
- Ball studs made of plastic, galvanised steel and stainless steel[19)]

▶ Accessories, **page 857**



Order key

Type			Size [mm]
WG □	M	-	05 MS
Angled ball and socket joint	Thread (housing)	Metric	Thread size M...

Options:

Thread (housing)
L = Left-hand thread
R = Right-hand thread

Ball stud[19)]
Blank = Made of plastic
MS = Made of galvanised steel
ES = Made of stainless steel[28)]

Service life calculation online
▶ www.igus-asean.com/igubal-expert

Material:
Housing: **igumid G** ▶ **Page 1654**
Spherical cap: **iglidur® W300** ▶ **Page 171**

Technical data

Part No.	Max. static tensile force (Ball stud axis)		Max. static compressive strength (Ball stud axis)		Max. axial tensile force (Housing axis)		Max. axial tensile force steel stud (Housing axis)		Weight
	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[g]
WG□M-05	30	15	200	100	100	50	600	300	2.6
WG□M-06	35	17.5	300	150	140	70	800	400	3.8
WG□M-08	250	125	500	250	200	100	1,500	750	8.0
WG□M-10	250	125	900	450	400	200	1,900	950	13.7

Dimensions [mm]

Part No.	d1 ±0.1	d2	d4 ±0.5	l1 ±0.2	l2 ±0.3	l5	l6 Min.	h1 ±0.4	h2 ±0.5	h3 ±0.5	a ±0.3	b ±0.5	e ±1.0	S1	S2	Max. pivot angle
WG□M-05	8	M5	12.8	9	10.2	14	8.2	10.8	0.65	25.6	22	28.4	11	SW8	SW7	25°
WG□M-06	10	M6	14.8	11	12.5	16	10.5	12.3	0.70	30.9	25	32.4	13	SW9	SW8	25°
WG□M-08	13	M8	19.3	13	16.5	18	13.5	16.2	1.15	38.8	30	39.7	16	SW12	SW11	25°
WG□M-10	16	M10	24.0	16	20.0	20	16.0	20.0	1.15	47.0	35	47.0	18	SW14	SW13	25°

[19)] Ball stud with right-hand thread; left-hand thread upon request
[28)] Stainless steel ball stud upon request

igubal® angled ball and socket joints | Product range

Angled ball and socket joint (low-cost): WGRM LC and WGLM LC



- Housing with ball stud
- Lightweight
- Maintenance-free
- Ball studs made of plastic, galvanised steel and stainless steel[19)]

▶ Accessories, **page 857**

Order key

Type			Size [mm]	Version
WG □	M	-	05	LC MS
Angled ball and socket joint	Thread (housing)	Metric	Thread size M...	Low-cost

Options:

Thread (housing)
L = Left-hand thread
R = Right-hand thread

Ball stud[19)]
Blank = Made of plastic
MS = Made of galvanised steel
ES = Made of stainless steel[28)]

Service life calculation online
▶ www.igus-asean.com/igubal-expert

Material:
Housing: **igumid G** ▶ **Page 1654**

Technical data

Part No.	Max. static tensile force (Ball stud axis)		Max. static compressive strength (Ball stud axis)		Max. axial tensile force (Housing axis)		Max. axial tensile force steel stud (Housing axis)		Weight
	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[g]
WG□M-04 LC-MS[20)]	100	50	150	75	–	–	500	250	2.4
WG□M-05 LC	30	15	200	100	100	50	600	300	2.6
WG□M-06 LC	35	17.5	300	150	140	70	800	400	4.0
WG□M-08 LC	250	125	500	250	200	100	1,500	750	8.2
WG□M-10 LC	250	125	900	450	400	200	1,900	950	13.8

Dimensions [mm] – technical drawing ▶ Page 764

Part No.	d1 ±0.1	d2	d4 ±0.5	l1 ±0.2	l2 ±0.3	l5	l6 Min.	h1 ±0.4	h2 ±0.5	h3 ±0.5	a ±0.3	b ±0.5	e ±1.0	S1	S2	Max. pivot angle
WG□M-04 LC-MS[20)]	6	M4	10.6	8.5	8.0	12.5	6.8	9.0	0.20	21.8	18	23.3	10.5	SW7	SW7	20°
WG□M-05 LC	8	M5	12.8	9.0	10.2	14.0	8.2	10.8	0.65	25.6	22	28.4	11.0	SW8	SW7	25°
WG□M-06 LC	10	M6	14.8	11.0	12.5	16.0	10.5	12.3	0.70	30.9	25	32.4	13.0	SW9	SW8	25°
WG□M-08 LC	13	M8	19.3	13.0	16.5	18.0	13.5	16.2	1.15	38.8	30	39.7	16.0	SW12	SW11	25°
WG□M-10 LC	16	M10	24.0	16.0	20.0	20.0	16.0	20.0	1.15	47.0	35	47.0	18.0	SW14	SW13	25°

[19)] Ball stud with right-hand thread; left-hand thread upon request
[20)] Only available with galvanised steel stud
[28)] Stainless steel ball stud upon request

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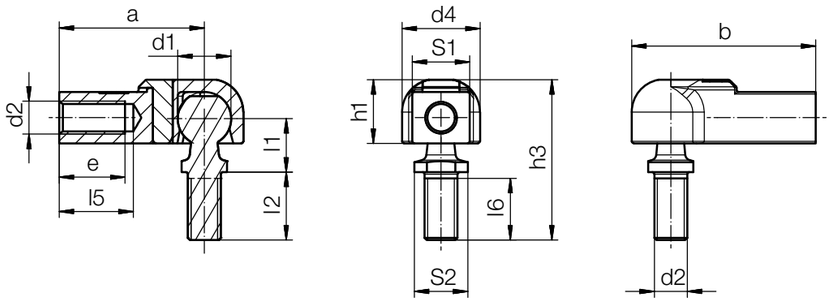
igubal® angled ball and socket joints | Product range

Ball joint, removable: WGRM-DE and WGLM-DE



- Cost-effective ball joint
- Lightweight
- Absolute corrosion resistance
- Easy assembly and disassembly
- High holding strength when assembled (260N)
- Ball studs made of plastic, galvanised steel and stainless steel[19] ▶ Accessories, **page 857**

Material:
Housing: **igumid G ▶ Page 1654**



Order key

Type	Size [mm]	Version
WG ☐ M -	05	DE MS
Angled ball and socket joint / Thread (housing) / Metric	Thread size M...	Disassembly

Options:

Thread (housing)
L = Left-hand thread
R = Right-hand thread

Ball stud[19]
Blank = Made of plastic
MS = Made of galvanised steel
ES = Made of stainless steel[28]

Technical data and dimensions [mm]

Part No.	Assembly force	Disassembly force	d1	d2	d4	l1	l2	l5	Weight
	[N]	[N]	±0.1		±0.5	±0.2	±0.5	Min.	[g]
WG☐M-05-DE	35	200	8.0	M5	12.8	9	10.2	13.0	3.4
WG☐M-06-DE	50	275	10.0	M6	16.0	11	12.5	14.5	5.5

Dimensions [mm]

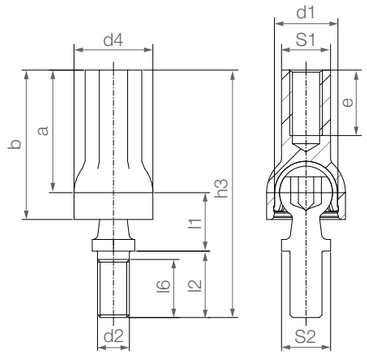
Part No.	l6	h1	h3	S1	S2	a	b	e	Pivot angle	
	Min.	±0.4	±0.5			±0.3	±0.5	±1.0	Recom.	Max.
WG☐M-05-DE	8.2	10.8	25.6	SW9	SW7	25.0	31.4	11	18°	25°
WG☐M-06-DE	10.5	13.0	32.0	SW11	SW8	30.0	38.0	12	18°	25°

[19] Ball stud with right-hand thread; left-hand thread upon request
[28] Stainless steel ball stud upon request

igubal® in-line ball and socket joints | Product range

In-line ball and socket joints: AGRM and AGLM





Order key

Type	Size [mm]
AG ☐ M -	08 MS
In-line ball and socket joint / Thread (housing) / Metric	Thread size M...

Options:

Thread (housing)
L = Left-hand thread
R = Right-hand thread

Ball stud[19]
Blank = Made of plastic
MS = Made of galvanised steel
ES = Made of stainless steel[28]

Material:
Housing: **igumid G ▶ Page 1654**
Spherical cap: **iglidur® W300 ▶ Page 171**

- For all mechanical combinations
- Very easy to assemble
- Maintenance-free, predictable service life
- Resistant to corrosion and chemicals
- Vibration-dampening
- Ball studs made of plastic, galvanised steel and stainless steel[19] ▶ Accessories, **page 857**

Technical data

Part No.	Max. static axial tensile force		Max. static axial compressive strength		Max. assembly force	Weight
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]	[N]	[g]
AG☐M-08	250	125	1,000	500	110	7.8

Dimensions [mm]

Part No.	d1	d2	d4	l1	l2	l6	h3	S1	S2	a	b	e	Pivot angle	
	±0.1		±0.5	±0.2	±0.3	Min.	±0.5			±0.3	±0.5	Min.	Recom.	Max.
AG☐M-08	13.0	M8	19.3	13	16.5	13.5	59	SW12	SW11	29.5	36.5	16	18°	25°

[19] Ball stud with right-hand thread; left-hand thread upon request
[28] Stainless steel ball stud upon request

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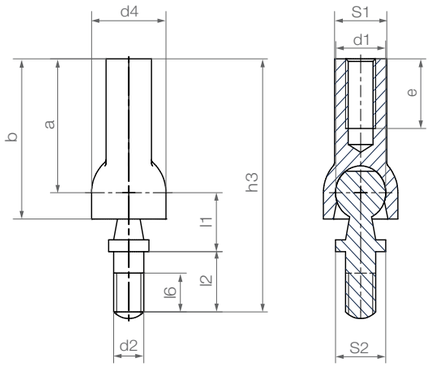
igubal® in-line ball and socket joints | Product range

In-line ball and socket joints (low-cost): AGRM LC and AGLM LC







Order key

Type	Size [mm]	Version
AG □ M -	06	LC MS

- AG: In-line ball and socket joint
- □: Thread (housing)
- M: Metric
- 06: Inner Ø
- LC: Low-cost

Options:

Thread (housing)
- L = Left-hand thread
- R = Right-hand thread

Ball stud[19)]
- Blank = Made of plastic
- MS = Made of galvanised steel
- ES = Made of stainless steel[28)]

Material:
Housing: **igumid G** ▶ **Page 1654**

- Housing with ball stud
- Lightweight
- Maintenance-free
- Ball studs made of plastic, galvanised steel and stainless steel[19)] ▶ Accessories, **page 857**

Technical data

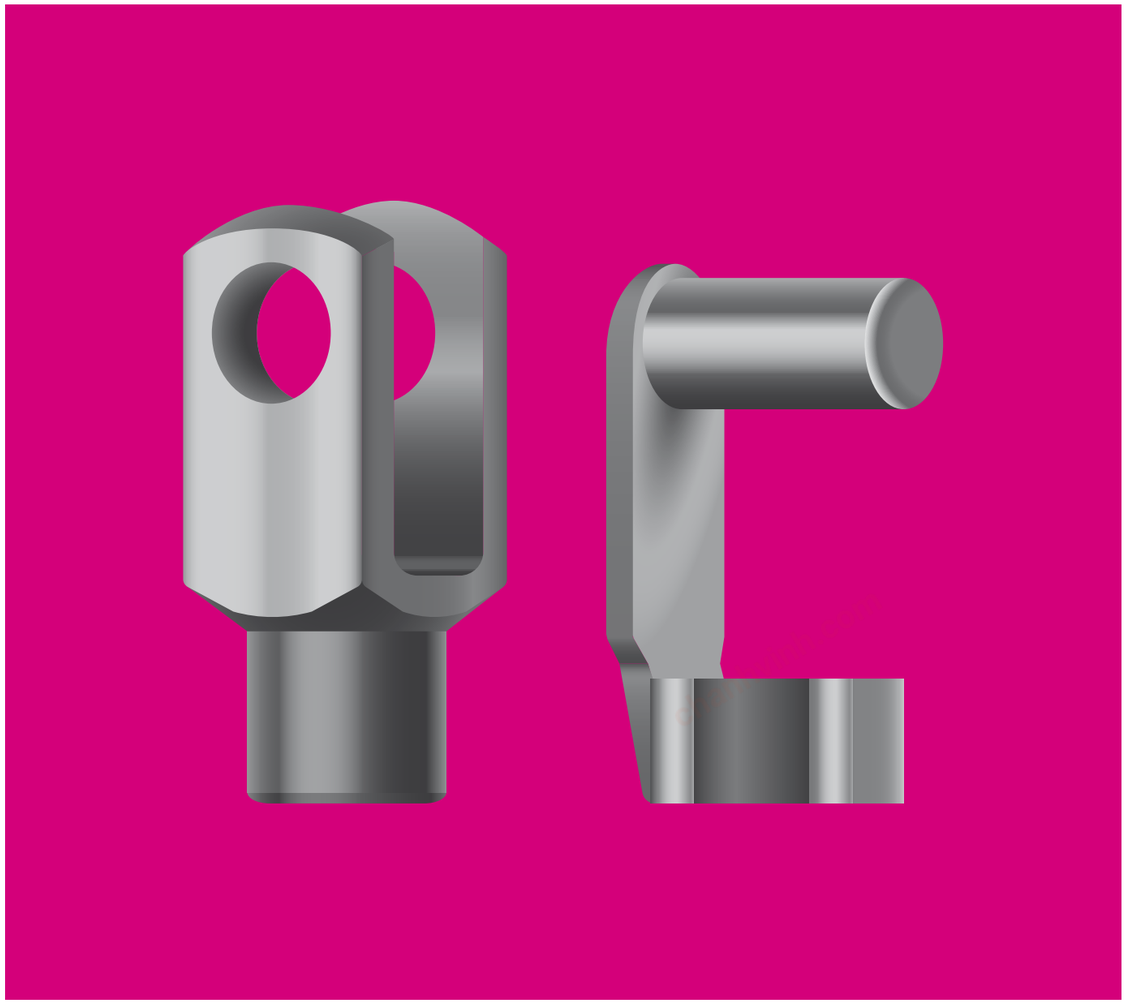
Part No.	Max. static tensile strain		Max. static compressive force (with steel stud)		Max. static compressive force (with plastic stud)		Max. assembly force	Weight
	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[g]
AG□M-06-LC	100	50	2,000	1,000	800	400	320	10.8
AG□M-08-LC New	150	75	2,800	1,400	1,400	700	430	23.1

Dimensions [mm]

Part No.	d1	d2	d4	l1	l2	l6	h3	S1	S2	a	b	e	Max. pivot angle	
	±0.1		±0.5	±0.2	±0.3	Min.	±0.5			±0.3	±0.5	Min.	Recom.	Max.
AG□M-06-LC	10	M6	14.8	11	11.25	7.25	47.25	SW9	SW10	25	29.9	13	18°	25°
AG□M-08-LC New	13	M8	19.3	13	16.5	13.5	57.5	SW12	SW11	29.5	35.0	16	18°	25°

[19)] Ball stud with right-hand thread; left-hand thread upon request

[28)] Stainless steel ball stud upon request



igubal® clevis joints

- High tensile force
- Vibration-dampening
- Noise-dampening
- Can be combined with E series rod end
- Lightweight



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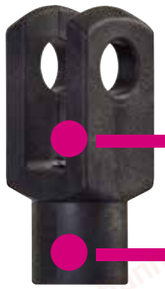
igubal® clevis joints

igubal® clevis joints are all made from solid plastic igumid G to DIN 71752, which can be combined with E series rod ends. Available components are clevis joint, clevis pin and circlip or as an alternative, spring-loaded fixing clip. Detectable version available.



High tensile force

Vibration-dampening



Noise-dampening

Can be combined with E series rod end



Lightweight



When to use it?
- If high rigidity is required
- If corrosion resistance is required
- If no lubrication is to be used
- If you want to save weight
- If maintenance-free, dry operation is required
- If simple assembly is required
- In combination with pneumatic cylinders and gas struts

When not to use it?
- When temperatures are higher than +200°C
- When diameters above 20mm are required

Available from stock
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity

Max. +80°C
Min. –30°C

4 types
Ø 4 – 20mm

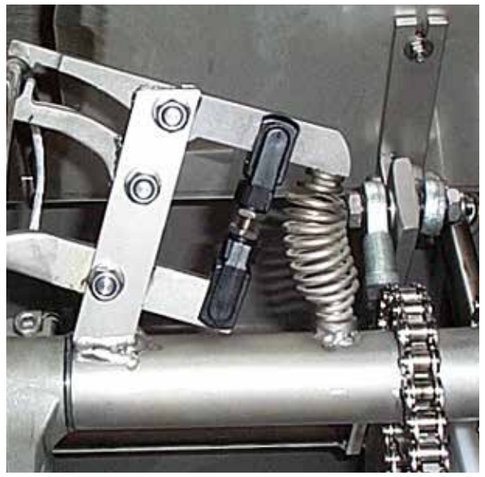
Online product finder
▶ www.igus-asean.com/igubal-finder

igubal® clevis joints | Application examples

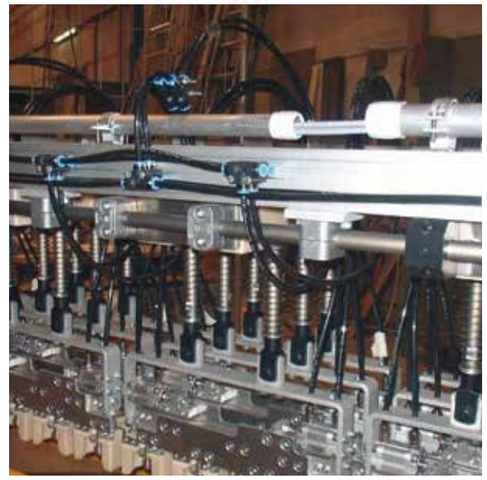


Typical sectors of industry and application areas
- Food industry
- Packaging
- Heavy Duty
- Automotive
- Renewable energy
- Automation etc.

Improve technology and reduce costs – 110 exciting examples online
▶ www.igus-asean.com/igubal-applications



▶ www.igus-asean.com/food



▶ www.igus-asean.com/packaging



▶ www.igus-asean.com/traffic



Pneumatic cylinder

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igubal® clevis joints | Product overview

igubal® – Clevis joint combinations



Clevis joints with clevis pin and circlip
E series
▶ Page 778



Clevis joints with spring-loaded fixing clip
E series
▶ Page 779



Combination, easy to fit
E series
▶ Page 780



Combination, easy to fit
E series
▶ Page 781

igubal® component parts



Clevis joint, high rigidity:
E series
▶ From page 774

New



Clevis joint with male thread
E series
▶ From page 776



Clevis joint combination
▶ Page 777



Spring-loaded fixing clip
▶ Page 782



Clevis pin and circlip
GBM – Clevis pin
GSR – Circlip
▶ Page 783

New



Clevis joints, detectable, FDA and EU10/2011-compliant
E series
▶ Page 784

New



Spring-loaded pin, detectable, FDA and REU10/2011-compliant
E series
▶Page 785

New



Clevis joints with spring-loaded pin, detectable; FDA and EU10/2011-compliant
E series
▶ Page 786



Detectable clevis joints and rod end bearings
▶ From page 863

My sketches

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igubal® clevis joints | Product range

Clevis joints: GERM and GELM



- Lightweight
- Robust
- Absolute corrosion resistance
- High tensile force
- Can be combined with E series rod end
- Vibration-dampening
- Noise-dampening
- Available with left- (GELM) and right-hand-thread (GERM)

Service life calculation online
▶ www.igus-asean.com/igubal-expert

Technical data

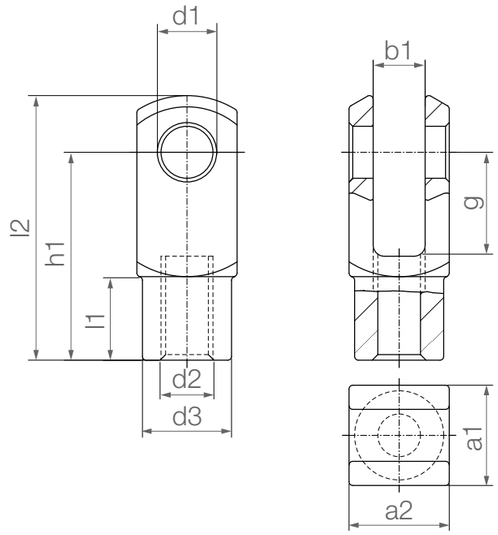
Part No.	Max. static tensile strain		Max. static axial force		Max. tightening torque	Weight
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]	[Nm]	[g]
GE□M-04 M3.5	650	325	250	125	0.4	0.9
GE□M-04	650	325	250	125	0.4	0.9
GE□M-05 DIN M4	1,000	500	250	125	0.4	1.5
GE□M-05 DIN M5	1,000	500	250	125	0.5	1.5
GE□M-05	1,200	600	250	125	0.5	2.7
GE□M-05 DIN M5 LS[22)]	1,000	500	130	65	0.5	2.3
GE□M-06	1,400	700	300	150	1.5	2.5
GE□M-06 LS[22)]	1,400	700	130	65	1.5	3.6
GE□M-08	2,700	1,350	650	325	5.0	6.3
GE□M-10	4,700	2,350	800	400	15.0	13.2
GE□M-10 F	4,700	2,350	800	400	6.0	13.2
GE□M-12	5,700	2,850	900	450	20.0	20.2
GE□M-12 F	5,700	2,850	900	450	15.0	20.2
GE□M-14	6,600	3,300	1,000	500	25.0	29.9
GE□M-14 F	6,600	3,300	1,000	500	20.0	29.9
GE□M-15	3,200	1,600	1,000	500	25.0	30.0
GE□M-16	7,500	3,750	1,200	600	30.0	49.9
GE□M-16 F	7,500	3,750	1,200	600	27.5	49.9
GE□M-17	3,600	1,800	1,200	600	30.0	50.0
GE□M-17 F	3,600	1,800	1,200	600	27.5	50.0
GE□M-20	9,500	4,750	3,000	1,500	60.0	105.0
GE□M-20 M20	9,500	4,750	3,000	1,500	80.0	105.0

[22)] LS = longer shank

igubal® clevis joints

igubal® clevis joints | Product range

Clevis joints: GERM and GELM



Order key

Type				Size [mm]	Options
G	E	□	M-	04	LS
Clevis joint	E series	Thread	Metric	Inner Ø	

Thread
L = Left-hand thread
R = Right-hand thread

Add-on:
LS = Longer shank

Material:
igumid G ▶ Page 1654

Dimensions [mm]

Part No.	d1	g	a1	a2	b1	d2	d3	l2	h1	l1
	+0.1	h11	+0.3 −0.16	+0.3 −0.16	B13		±0.3	±0.5	±0.3	±0.2
GE□M-04 M3.5	4	8	8	8	4	M3.5	8	21.0	16	6.0
GE□M-04	4	8	8	8	4	M4	8	21.0	16	6.0
GE□M-05 DIN M4	5	10	10	10	5	M4	9	24.5	20	7.5
GE□M-05 DIN M5	5	10	10	10	5	M5	9	24.5	20	7.5
GE□M-05	5	12	12	12	6	M5	10	31.0	24	9.0
GE□M-05 DIN M5 LS[22)]	5	20	10	10	5	M5	9	36.0	30	7.5
GE□M-06	6	12	12	12	6	M6	10	31.0	24	9.0
GE□M-06 LS[22)]	6	24	12	12	6	M6	10	43.0	36	9.0
GE□M-08	8	16	16	16	8	M8	14	42.0	32	12.0
GE□M-10	10	20	20	20	10	M10	18	52.0	40	15.0
GE□M-10 F	10	20	20	20	10	M10 x 1.25	18	51.3	40	15.0
GE□M-12	12	24	24	24	12	M12	20	61.3	48	18.0
GE□M-12 F	12	24	24	24	12	M12 x 1.25	20	61.3	48	18.0
GE□M-14	14	28	27	27	14	M14	24	71.3	56	22.5
GE□M-14 F	14	28	27	27	14	M14 x 1.5	24	71.3	56	22.5
GE□M-15	15	28	27	27	14	M14	24	71.3	56	22.5
GE□M-16	16	32	32	32	16	M16	26	81.9	64	24.0
GE□M-16 F	16	32	32	32	16	M16 x 1.5	26	81.9	64	24.0
GE□M-17	17	32	32	32	16	M16	26	83.0	64	24.0
GE□M-17 F	17	32	32	32	16	M16 x 1.5	26	83.0	64	24.0
GE□M-20	20	40	40	40	20	M20 x 1.5	34	105.0	80	30.0
GE□M-20 M20	20	40	40	40	20	M20 x 2.5	34	105.0	80	30.0

[22)] LS = longer shank

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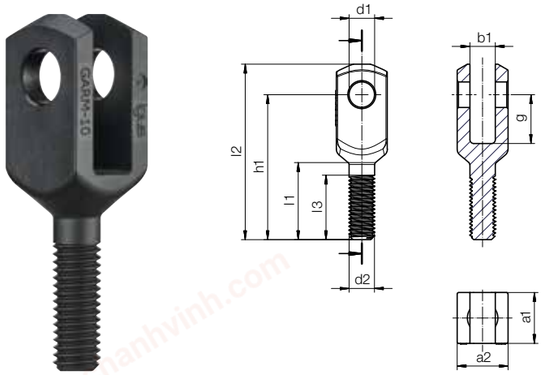
igubal® clevis joints | Product range New

Clevis joints with male thread: GARM-10



- Available from stock in thread size M10 (M8 and M12 in preparation)
- For direct connection to, for example, igubal® rod end bearings
- Lightweight
- Lubrication and maintenance-free
- Absolute corrosion resistance
- Available for right-hand thread (left-hand thread upon request)

Order key

Type				Size [mm]
G	A	R	M	-10
Clevis joint	Male thread	Thread	Metric	Inner Ø

Material:
igumid G ▶ Page 1654

Service life calculation online
▶ www.igus-asean.com/igubal-expert

Technical data

Part No.		Max. static tensile strain		Max. static axial force		Max. tightening torque	Weight
		Short-term	Long-term	Short-term	Long-term		
		[N]	[N]	[N]	[N]	[Nm]	[g]
GARM-10	New	3,000	1,500	200	100	5.0	12.5

Dimensions [mm]

Part No.		d1	g	a1	a2	b1	d2	l2	l3	h1	l1
		+0.1	h11	+0.3 –0.16	+0.3 –0.16	B13		±0.5	±0.3	±0.3	±0.2
GARM-10	New	10	19	20	20	10	M10	69	25	57	30.3

igubal® clevis joints

igubal® clevis joints | Product range New

Clevis joint combination: GARMK-10



Can be combined with:
- Safety bolt GBM-10 and circlip GSR-10 – part number GARMK-10
- As clevis joint combination with rod end bearing EARM-10 – part number GARMKE-10
- All igubal® parts with female thread M10

Order key

Type					Size [mm]
G	A	R	M	K	-10
Clevis joint	Male thread	Thread	Metric	With clevis pin and circlip	Inner Ø

Material:
igumid G ▶ Page 1654

Service life calculation online
▶ www.igus-asean.com/igubal-expert

Technical data

Part No.		Max. static tensile strain		Max. static axial force		Weight
		Short-term	Long-term	Short-term	Long-term	
		[N]	[N]	[N]	[N]	[g]
GARMK-10	New	3,000	1,500	200	100	10.2

Clevis joints with spring-loaded fixing clip in combination with E series rod ends, EARM ▶ Page 758

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igubal® clevis joints | Product range

Clevis joints with clevis pin and circlip: GERMK and GELMK



- Lightweight
- Absolute corrosion resistance
- High tensile force
- Can be combined with E series rod end

Order key

Type						Size [mm]	Options
G	E	□	M	K	-	04	LS
Clevis joint	E series	Thread	Metric	Clevis pin and circlip		Inner Ø	

Thread
L = Left-hand thread
R = Right-hand thread

Add-on:
LS = Longer shank

Material:
igumid G ▶ Page 1654

Service life calculation online
▶ www.igus-asean.com/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
GE□MK-04 M3.5	500	250	250	125	1.3
GE□MK-04	500	250	250	125	1.3
GE□MK-05 DIN M4	800	400	250	125	2.1
GE□MK-05 DIN M5	800	400	250	125	2.1
GE□MK-05	900	450	250	125	3.3
GE□MK-05 DIN M5 LS[22)]	800	400	130	65	2.9
GE□MK-06	1,300	650	300	150	3.3
GE□MK-06 LS[22)]	1,300	650	130	65	4.4
GE□MK-08	2,100	1,050	650	325	7.9
GE□MK-10	3,000	1,500	800	400	16.4
GE□MK-10 F	3,000	1,500	800	400	16.4
GE□MK-12	3,500	1,750	900	450	25.3
GE□MK-12 F	3,500	1,750	900	450	25.3
GE□MK-14	6,100	3,050	1,000	500	31.2
GE□MK-15	2,800	1,400	1,000	500	38.9
GE□MK-16	7,000	3,500	1,200	600	60.8
GE□MK-16 F	7,000	3,500	1,200	600	60.8
GE□MK-17	3,600	1,800	1,200	600	62.3
GE□MK-17 F	3,600	1,800	1,200	600	62.3
GE□MK-20	9,000	4,500	3,000	1,500	125.2
GE□MK-20 M20	9,000	4,500	3,000	1,500	125.2

[22)] LS = longer shank



Single components: clevis pin GBM and circlip GSR
▶ Page 783

igubal® clevis joints

igubal® clevis joints | Product range

Clevis joints with spring-loaded fixing clip: GERMF and GELMF



- One-piece design
- Easy assembly/disassembly
- Easy assembly also for use in hard to reach locations
- Can be combined with E series rod end
- Corrosion-resistant and lightweight

Order key

Type						Size [mm]	Options
G	E	□	M	F	-	04	LS
Clevis joint	E series	Thread	Metric	Spring-loaded fixing clip		Inner Ø	

Thread
L = Left-hand thread
R = Right-hand thread

Add-on:
LS = Longer shank

Material:
igumid G ▶ Page 1654

Service life calculation online
▶ www.igus-asean.com/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
GE□MF-04 M3.5	500	250	250	125	1.3
GE□MF-04	500	250	250	125	1.3
GE□MF-05 DIN M4	800	400	250	125	2.3
GE□MF-05 DIN M5	800	400	250	125	2.3
GE□MF-05 DIN M5 LS[22)]	800	400	130	65	2.3
GE□MF-05	900	450	250	125	3.8
GE□MF-06	1,300	650	300	150	3.9
GE□MF-06 LS[22)]	1,300	650	130	65	3.9
GE□MF-08	2,100	1,050	650	325	9.1
GE□MF-10	3,000	1,500	800	400	18.2
GE□MF-10 F	3,000	1,500	800	400	18.2
GE□MF-12	3,500	1,750	900	450	28.6
GE□MF-12 F	3,500	1,750	900	450	28.6
GE□MF-16	7,000	3,500	1,200	600	61.8
GE□MF-16 F	7,000	3,500	1,200	600	61.8

[22)] LS = longer shank



Single components: Spring-loaded fixing clip GEFM
▶ Page 782

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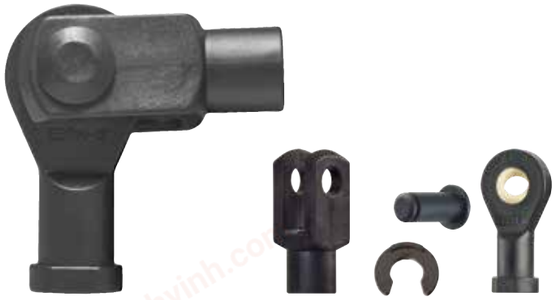
igubal® clevis joints | Product range

Clevis joint combination: GERMKE and GELMKE



- Lightweight
- Absolute corrosion resistance
- High tensile force
- Can be combined with E series rod end

Order key

Type						Size [mm]	Options
G	E	□	M	KE	-	05	

Clevis joint | E series | Thread | Metric | With clevis pin, circlip and rod end | Inner Ø

Thread
L = Left-hand thread
R = Right-hand thread

Material:
igumid G ▶ Page 1654

Service life calculation online
▶ www.igus-asean.com/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
GE□MKE-05	900	450	150	75	6.4
GE□MKE-06	1,300	650	200	100	7.3
GE□MKE-08	2,000	1,000	450	225	14.6
GE□MKE-10	2,300	1,150	500	250	27.1
GE□MKE-10 F	2,300	1,150	500	250	27.1
GE□MKE-12	3,300	1,650	550	275	42.7
GE□MKE-12 F	3,300	1,650	550	275	42.7
GE□MKE-15	2,800	1,400	800	400	68.4
GE□MKE-16	5,000	2,500	850	425	86.9
GE□MKE-16 F	5,000	2,500	850	425	86.9
GE□MKE-17	3,600	1,800	1,100	550	98.3
GE□MKE-17 F	3,600	1,800	1,100	550	98.3
GE□MKE-20	7,200	3,600	1,800	900	175.2
GE□MKE-20 M20	7,200	3,600	1,800	900	175.2

Clevis joints with spring-loaded fixing clip in combination with E series rod ends, EBRM and EARM ▶ Page 756–759

igubal® clevis joints

igubal® clevis joints | Product range

Clevis joint combination: GERMFE and GELMFE



Order key

Type						Size [mm]	Options
G	E	□	M	FE	-	05	

Clevis joint | E series | 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 1654

Service life calculation online
▶ www.igus-asean.com/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
GE□MFE-05	900	450	150	75	7.0
GE□MFE-06	1,300	650	200	100	7.9
GE□MFE-08	2,000	1,000	450	225	15.9
GE□MFE-10	2,300	1,150	500	250	29.2
GE□MFE-10 F	2,300	1,150	500	250	29.2
GE□MFE-12	3,300	1,650	550	275	46.0
GE□MFE-12 F	3,300	1,650	550	275	46.0
GE□MFE-16	5,000	2,500	850	425	94.4
GE□MFE-16 F	5,000	2,500	850	425	94.4

Clevis joints with spring-loaded fixing clip in combination with E series rod ends, EBRM and EARM ▶ Page 756–759

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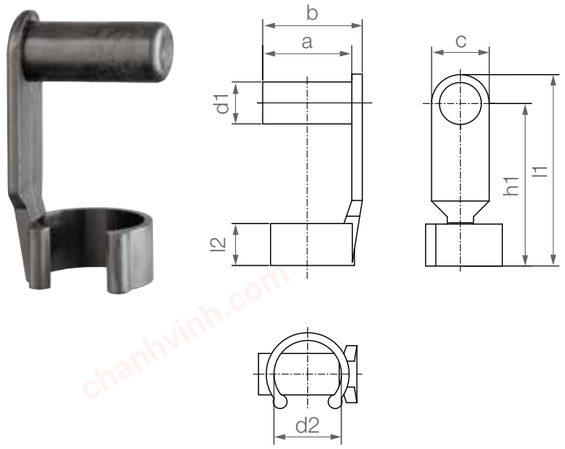
igubal® clevis joints | Product range

Spring-loaded fixing clips: GEFM



Material:
igumid G ▶ Page 1654

Dimensions [mm]

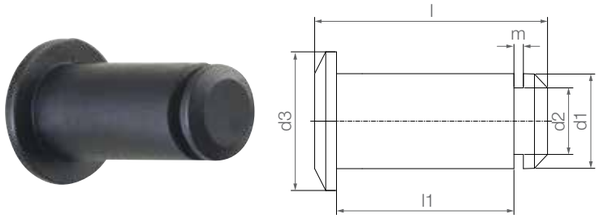
Part No.	d1	d2	a	b	C	l1 ±0.5	h1	l2	Weight [g]
GEFM-04	4	8	9.5	10.5	8	19.0	15	4.5	0.5
GEFM-05 DIN	5	9	12.0	13.5	8	23.0	19	5.5	0.8
GEFM-05 DIN M5 LS[22)]	5	9	12.0	13.5	8	33.0	29	5.5	1.0
GEFM-05	5	10	14.0	15.5	8	27.0	23	6.5	1.1
GEFM-06 LS[22)]	6	10	14.0	15.5	8	39.0	35	6.5	1.0
GEFM-06	6	10	14.0	15.5	8	27.0	23	6.5	1.2
GEFM-08	8	14	19.0	21.0	11	35.5	30	8.0	2.8
GEFM-10	10	18	23.0	25.5	14	45.0	38	10.0	5.0
GEFM-12	12	20	28.0	31.0	16	53.0	45	12.0	8.3
GEFM-16	16	26	36.0	40.0	22	73.0	62	16.0	18.3

[22)] LS = longer shank

igubal® clevis joints

igubal® clevis joints | Product range

Clevis pins: GBM

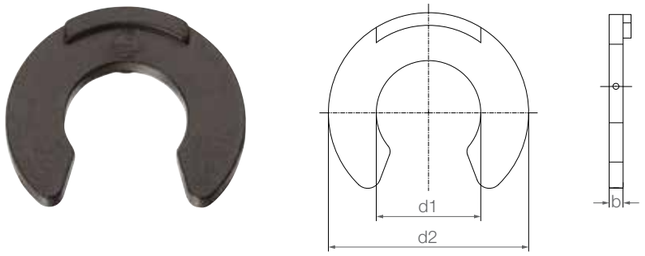


Material:
igumid G ▶ Page 1654

Dimensions [mm]

Part No.	d1	d2	d3	l	l1	m	Clip	Weight [g]
GBM-04	4	3.2	7	12.5	8	1.05	GSR-04	0.3
GBM-05	5	4.0	8	16.5	12	1.15	GSR-06	0.5
GBM-05 DIN	5	4.0	8	14.5	10	1.15	GSR-06	0.5
GBM-06	6	4.0	9	16.5	12	1.15	GSR-06	0.7
GBM-08	8	5.0	12	21.5	16	1.15	GSR-08	1.5
GBM-10	10	7.0	15	27.0	20	1.35	GSR-10	3.0
GBM-12	12	9.0	18	31.5	24	1.50	GSR-12	4.8
GBM-14	14	12.0	22	36.0	27	1.70	GSR-16	5.7
GBM-15	15	12.0	23	36.0	27	1.70	GSR-16	8.3
GBM-16	16	12.0	24	42.0	32	1.70	GSR-16	10.4
GBM-17	17	12.0	25	42.0	32	1.70	GSR-16	12.3
GBM-20	20	15.0	30	51.0	40	2.00	GSR-20	19.2

Circlips: GSR



Material:
POM ▶ Page 1656

Dimensions [mm]

Part No.	d1	d2	b	Weight [g]
GSR-04	3.2	7.0	1.0	0.05
GSR-06	4.0	9.0	1.1	0.06
GSR-08	5.0	11.0	1.1	0.12
GSR-10	7.0	14.0	1.3	0.16
GSR-12	9.0	18.5	1.4	0.31
GSR-16	12.0	23.0	1.6	0.58
GSR-20	15.0	28.0	1.9	0.96

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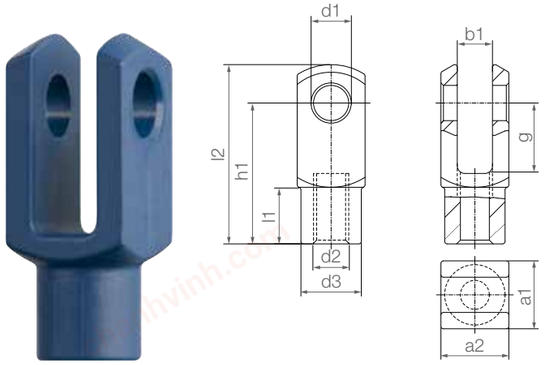
igubal® clevis joints | Product range New

Clevis joints, detectable, FDA and EU10/2011-compliant: GERM-FC



Order key

Type	Size [mm]	Version
G E R M -	04	- FC
Clevis joint / E series / Thread / Metric	Inner Ø	Suitable for food contact

- Lubrication and maintenance-free
- Optically and magnetically detectable
- Compliant with Regulation (EU) No. 10/2011 and FDA guidelines
- Corrosion and media-resistant
- Vibration-dampening
- Cost-effective

Material:
igumid FC ▶ Page1655

Technical data

Part No.		Max. static tensile strain		Max. static axial force		Max. tightening torque	Weight
		Short-term	Long-term	Short-term	Long-term		
		[N]	[N]	[N]	[N]	[Nm]	[g]
GERM-04-FC	New	600	300	200	100	1.0	0.8
GERM-05-DIN-M5-FC	New	800	400	250	125	1.5	1.5
GERM-06-FC	New	1,400	700	250	125	1.5	2.5
GERM-08-FC	New	2,300	1,150	650	325	5.0	6.4
GERM-10-FC	New	4,000	2,000	800	400	10.0	13.2
GERM-10-FC-F	New	4,000	2,000	800	400	10.0	13.2
GERM-12-FC	New	5,000	2,500	900	450	15.0	20.7
GERM-12-FC-F	New	5,000	2,500	900	450	15.0	20.7

Dimensions [mm]

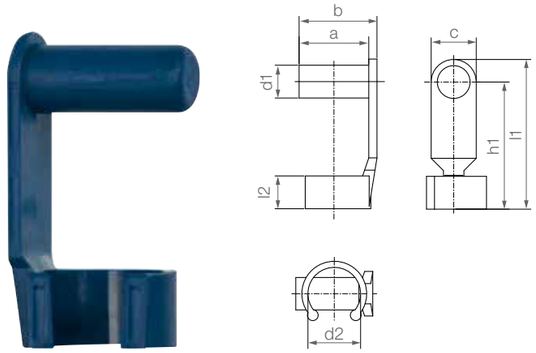
Part No.		d1	g	a1 +0.3 –0.16	a2 +0.3 –0.16	b1	d2	d3 ±0.3	l2 ±0.5	h1 ±0.3	l1 ±0.2
GERM-04-FC	New	4	8.0	8.0	8.0	4.1	M4	8	21.0	16.0	6.0
GERM-05-DIN-M5-FC	New	5	10.0	9.9	9.9	5.3	M5	9	24.5	20.0	7.5
GERM-06-FC	New	6	12.0	12.0	12.0	6.2	M6	10	31.0	24.0	9.0
GERM-08-FC	New	8	15.9	15.8	15.8	8.2	M8	14	42.0	32.0	12.0
GERM-10-FC	New	10	19.5	19.9	19.9	9.5	M10	18	51.3	39.5	14.8
GERM-10-FC-F	New	10	19.5	19.9	19.9	9.5	M10 x 1.25	18	51.3	39.5	14.8
GERM-12-FC	New	12	24.0	23.7	23.7	12.2	M12	20	61.3	48.0	18.0
GERM-12-FC-F	New	12	23.5	23.7	23.7	12.2	M12 x 1.25	20	61.3	48.0	18.0

Left-hand thread and other dimensions available upon request

igubal® clevis joints

igubal® clevis joints | Product range New

Spring-loaded fixing clips, detectable, FDA and EU10/2011-compliant: GEFM-FC



Order key

Type	Size [mm]	Version
G E F M -	04	- FC
Clevis joint / E series / Spring-loaded fixing clip / Metric	Inner Ø	Suitable for food contact

- Lubrication and maintenance-free
- Optically and magnetically detectable
- Compliant with Regulation (EU) No. 10/2011 and FDA guidelines
- Corrosion and media-resistant
- Vibration-dampening
- Cost-effective

Material:
igumid FC ▶ Page1655

Dimensions [mm]

Part No.		d1	d2	a	b	C	l1 ±0.5	h1	l2	Weight [g]
GEFM-04-FC	New	4	8.0	9.5	10.5	8	19	15	4.5	0.5
GEFM-05-DIN-M5-FC	New	5	9.0	12.0	13.5	8	23	19	5.5	0.8
GEFM-06-FC	New	6	9.8	14.0	15.5	8	27	23	6.5	1.2
GEFM-08-FC	New	8	14.0	19.0	21.0	11	36	30	8.0	2.7
GEFM-10-FC	New	10	17.5	23.0	25.5	14	45	38	10.5	5.1
GEFM-12-FC	New	12	20.2	27.5	30.5	16	53	45	12.0	8.3

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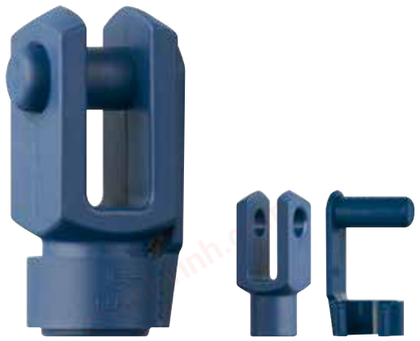
igubal® clevis joints | Product range New

Clevis joints with spring-loaded fixing clips, detectable, FDA and EU10/2011-compliant: GERMF-FC



- Lubrication and maintenance-free
- Optically and magnetically detectable
- Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

Order key

Type					Size [mm]	Version
G	E	R	M	F	- 04	- FC
Clevis joint	E series	Thread	Metric	Spring-loaded fixing clip	Inner Ø	Suitable for food contact

- Corrosion and media-resistant
- Vibration-dampening
- Cost-effective

Material:
igumid FC ▶ Page1655

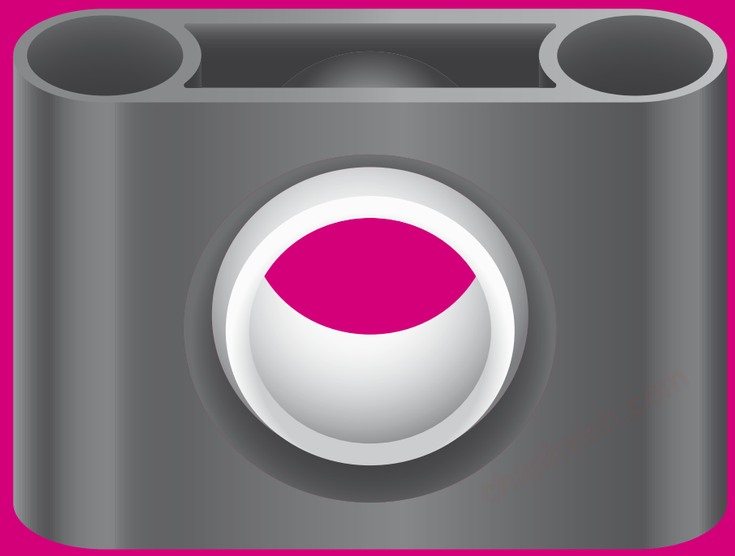
Technical data

Part No.		Max. static tensile strain		Max. static axial force		Weight
		Short-term	Long-term	Short-term	Long-term	
		[N]	[N]	[N]	[N]	[g]
GERMF-04-FC	New	400	200	200	100	1.3
GERMF-05-DIN-M5-FC	New	700	350	250	125	2.3
GERMF-06-FC	New	1,200	600	250	125	3.7
GERMF-08-FC	New	2,000	1,000	650	325	9.1
GERMF-10-FC	New	3,000	1,500	800	400	18.3
GERMF-10-FC-F	New	3,000	1,500	800	400	18.3
GERMF-12-FC	New	3,000	1,500	900	450	29.0
GERMF-12-FC-F	New	3,000	1,500	900	450	29.0

Dimensions [mm]

Part No.		d1	g	a1 +0.3 –0.16	a2 +0.3 –0.16	b1	d2	d3 ±0.3	l2 ±0.5	h1 ±0.3	l1 ±0.2
GERMF-04-FC	New	4	8.0	8.0	8.0	4.1	M4	8	21.0	16.0	6.0
GERMF-05-DIN-M5-FC	New	5	10.0	9.9	9.9	5.3	M5	9	24.5	20.0	7.5
GERMF-06-FC	New	6	12.0	12.0	12.0	6.2	M6	10	31.0	24.0	9.0
GERMF-08-FC	New	8	15.9	15.8	15.8	8.2	M8	14	42.0	32.0	12.0
GERMF-10-FC	New	10	19.5	19.9	19.9	9.5	M10	18	51.3	39.5	14.8
GERMF-10-FC-F	New	10	19.5	19.9	19.9	9.5	M10 x 1.25	18	51.3	39.5	14.8
GERMF-12-FC	New	12	24.0	23.7	23.7	12.2	M12	20	61.3	48.0	18.0
GERMF-12-FC-F	New	12	23.5	23.7	23.7	12.2	M12 x 1.25	20	61.3	48.0	18.0

Left-hand thread upon request



igubal® pillow block bearings

- Maintenance-free dry operation
- Robust
- Durable
- Media-resistant
- High radial loads



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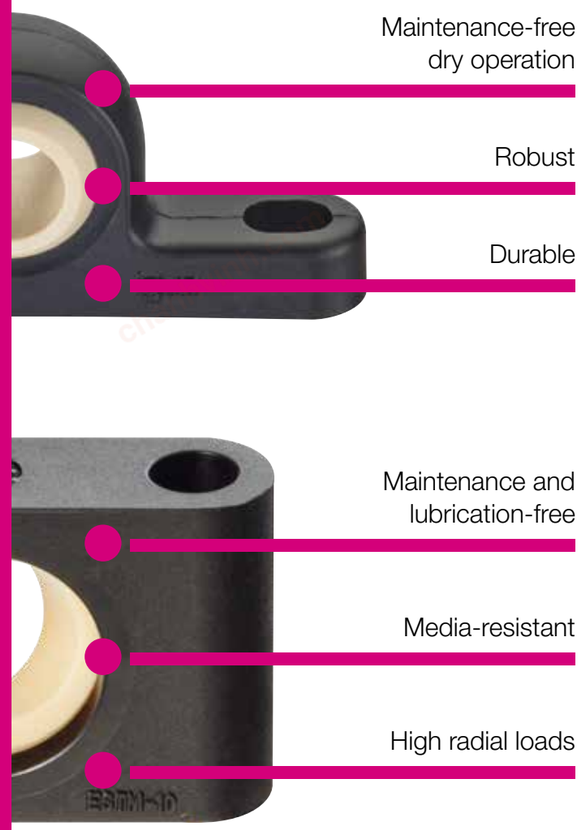
igubal® pillow block bearings

igubal® pillow block bearings are bearing units especially easy to install and which are able to compensate alignment errors and prevent edge pressure.



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?
- When temperatures are higher than +80°C
- When an integrated fixing collar is required
- When diameters above 50mm are required
- When rotation speeds higher than 0.5m/s are required

Available from stock
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity

Max. +80°C
Min. –30°C

6 types
Ø 5–150mm

Imperial dimensions available
▶ Page 1609

Online product finder
▶ www.igus-asean.com/igubal-finder



Typical sectors of industry and application areas
- Plant design
- Machine building
- Packaging etc.

Improve technology and reduce costs – 110 exciting examples online
▶ www.igus-asean.com/igubal-applications



Stone processing



▶ www.igus-asean.com/solar



Paper industry



▶ www.igus-asean.com/packaging

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igubal® pillow block bearings | Technical data

Advantages

- Maintenance-free dry operation
- Robust
- Durable in varying loads
- Compensation of misalignment errors
- Resistant to edge loads
- Corrosion-free
- Chemical resistance
- Vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- High radial loads
- Media-resistant
- Space-saving
- Easy to fit
- Predictable service life
- Maintenance and lubrication-free

Product range

igubal® pillow block bearings are available in the dimensional K and E series for shaft diameters from 5 to 150mm. The dimensional K series is available in imperial dimensions. Please ask us for other dimensions.

Application areas

igubal® pillow block bearings ideally compensate for shaft misalignments, tilts and bends through their spherical adjustability. Applications in which these effects cannot be prevented are suitable for igubal® pillow block bearings.

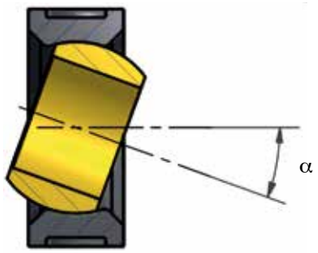
Tolerances

Maintenance-free igubal® pillow block bearings are designed with an inner diameter tolerance of E10. The shaft tolerance should be included between h6 and h9. These recommended tolerances allow for changes in the bearing due to temperature. All values and tolerances according to ISO 2768-m.

Assembly

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 bearings | Product overview

igubal® pillow block bearings – standard design



Compensation of misalignment errors
K series
▶ Page 792



Compensation of misalignment errors, imperial dimensions
K series
▶ Page 1515

igubal® pillow block bearings – space-saving



Easy to disassemble, split housing and ball
K series
▶ Page 794



Easy to fit
E series
▶ Page 795



For quick assembly and low total moisture absorption
E series
▶ Page 796



Split housing with parallel hole
E series
▶ Page 797



Extremely light, compact design
E series
▶ Page 798

New



Split pillow block bearings for square profiles
E series
▶ Page 799

New



Pillow block with cost-effective metallic housing
▶ Page 800

igubal® combination with xiros® ball bearings



Low coefficient of friction, fixed version
E series
▶ Page 934



Low coefficient of friction, pivoting version
E series
▶ Page 935

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Pillow block bearings: KSTM



- Maintenance-free dry operation
- Robust
- Durable in varying loads
- Compensation of misalignment and edge loads
- Resistant to corrosion and chemicals
- Vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight

Imperial dimensions available
▶ Page 1609

Service life calculation online
▶ www.igus-asean.com/igubal-expert

Technical data

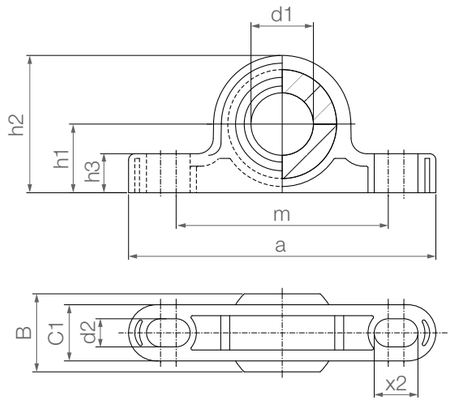
Part No.	Max. static tensile strain		Max. axial static compressive force	Max. tightening torque for longitudinal holes[144]	Weight
	Short-term	Long-term			
	[N]	[N]	[N]	[Nm]	[g]
KSTM-05	700	350	300	0.6	1.7
KSTM-06	1,100	550	300	1.3	2.9
KSTM-08	1,300	650	400	1.3	4.6
KSTM-10	1,500	750	500	2.5	8.6
KSTM-12	2,200	1,100	600	2.5	11.8
KSTM-14	2,400	1,200	600	4.5	18.4
KSTM-16	3,000	1,500	1,800	4.5	23.7
KSTM-18	3,500	1,750	1,200	10.5	32.2
KSTM-20	4,700	2,350	1,300	10.5	40.0
KSTM-22	6,100	3,050	1,400	10.5	54.0
KSTM-25	6,600	3,300	1,600	10.5	75.3
KSTM-30	8,100	4,050	2,100	21.5	116.8

[144] To achieve the max. tightening torque, we recommend the use of washers.

igubal® pillow block bearings

igubal® pillow block bearings | Product range

Pillow block bearings: KSTM



Order key

Type				Size [mm]
K	ST	M	-	05
K series	Pillow block bearing	Metric		Inner Ø

Material:
Housing: **igumid G** ▶ Page 1654
Spherical ball: **iglidur® W300** ▶ Page 171

Dimensions [mm]

Part No.	d1	B	C1	h1	h2	m	a	h3	d2	x2	Max. pivot angle
	E10										
KSTM-05	5	8	6.0	7	14	25	34	4.0	3.3	4.6	30°
KSTM-06	6	9	7.0	10	18	33	43	5.5	4.5	6.0	29°
KSTM-08	8	12	9.0	10	20	33	47	6.0	4.5	7.0	25°
KSTM-10	10	14	10.5	14	26	46	62	7.5	5.5	8.0	25°
KSTM-12	12	16	12.0	14	28	46	65	8.5	5.5	9.0	25°
KSTM-14	14	19	13.5	18	34	60	82	9.5	6.6	11.0	23°
KSTM-16	16	21	15.0	18	36	60	86	10.5	6.6	12.0	23°
KSTM-18	18	23	16.5	22	42	68	93	11.5	9.0	13.0	23°
KSTM-20	20	25	18.0	22	44	68	98	13.0	9.0	14.0	23°
KSTM-22	22	28	20.0	24	48	74	108	14.0	9.0	16.0	22°
KSTM-25	25	31	22.0	27	54	86	124	16.0	9.0	17.0	22°
KSTM-30	30	37	25.0	32	64	96	139	17.0	11.0	20.0	22°

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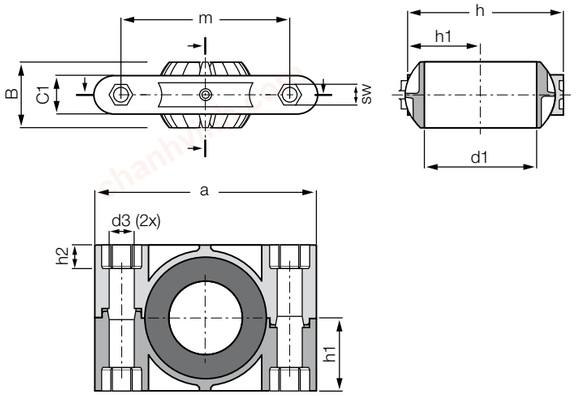
igubal® pillow block bearings | Product range

Pillow block bearings with split housing: KSTM-GT





- Fitting is easy and does not require shaft removal
- Maintenance-free, dry operation
- For high static loads
- Mounting: M12

Order key

Type	Size [mm]	Version
K ST M - GT	40	- GT

K series | Pillow block bearing | Metric | Split housing | Inner Ø | Split ball

Material:
Housing: **RN33** ▶ **Page 1657**
Spherical ball: **iglidur® J** ▶ **Page 159**

Service life calculation online
▶ **www.igus-asean.com/igubal-expert**

- Low installation space and lightweight
- High stiffness and durability
- Predictable service life
- Dimensional K series according to DIN ISO 12240

Technical data

Part No.	Max. radial tensile/ compressive strength		Max. axial tensile/ compressive strength		Max. tightening torque through ball	Max. tightening torque fixing holes	Weight
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	[Nm]	[Nm]	[g]
KSTM-GT35[23]	11,000	5,500	2,500	1,250	5	15	250.3
KSTM-GT40	11,000	5,500	2,500	1,250	5	15	235.0
KSTM-GT40-GT[24]	11,000	5,500	2,500	1,250	5	15	235.0
KSTM-GT45[23]	15,000	7,500	3,000	1,500	5	20	405.2
KSTM-GT50	15,000	7,500	3,000	1,500	5	20	389.2
KSTM-GT50-GT[24]	15,000	7,500	3,000	1,500	5	20	389.2

Dimensions [mm]

Part No.	d1 E10	d3	h	h1	h2	SW	a	m	C1	B	Max. pivot angle
KSTM-GT35[23]	35.0	13.5	79.0	39.5	12.6	19.0	120.5	91.0	29.5	48.5	24°
KSTM-GT40	40.0	13.5	79.0	39.5	12.6	19.0	120.5	91.0	29.5	48.5	24°
KSTM-GT40-GT[24]	40.0	13.5	79.0	39.5	12.6	19.0	120.5	91.0	29.5	48.5	24°
KSTM-GT45[23]	45.0	13.5	100.0	50.0	12.6	19.0	149.0	114.0	35.0	60.0	24°
KSTM-GT50	50.0	13.5	100.0	50.0	12.6	19.0	149.0	114.0	35.0	60.0	24°
KSTM-GT50-GT[24]	50.0	13.5	100.0	50.0	12.6	19.0	149.0	114.0	35.0	60.0	24°

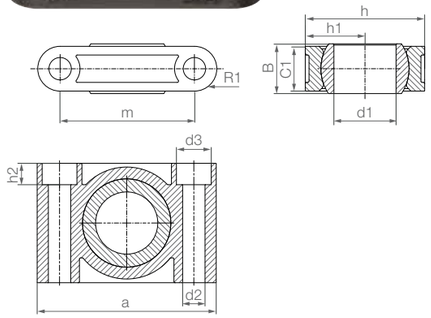
[23] Diameter reduced by plain bearing; [24] Split housing and split ball

igubal® pillow block bearings

igubal® pillow block bearings | Product range

Pillow block bearings: ESTM





- High radial loads
- Media-resistant
- Space-saving design, easy to fit
- Predictable service life
- Maintenance and lubrication-free

Order key

Type	Size [mm]
E ST M -	08

E series | Pillow block bearing | Metric | Inner Ø

Material:
Housing: **igumid G** ▶ **Page 1654**
Spherical ball: **iglidur® W300** ▶ **Page 171**
Combination with xiros® ball bearings
▶ **From page 934**

- Dimensional E series according to DIN ISO 12240
- Adapter available ▶ Accessories, **page 862**

Technical data

Part No.	Max. radial tensile force		Max. radial compressive strength		Max. axial strength		Max. tightening torque fixing holes	Weight
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	[Nm]	[g]
ESTM-08	2,500	1,250	4,300	2,150	600	300	1.3	5.0
ESTM-10	3,400	1,700	5,300	2,650	700	350	2.5	7.1
ESTM-12	4,500	2,250	6,500	3,250	750	375	2.5	9.0
ESTM-16	6,700	3,350	8,500	4,250	1,100	550	4.5	17.5
ESTM-20	8,500	4,250	11,000	5,750	1,400	700	4.5	27.4
ESTM-25	13,500	6,750	18,500	9,250	2,300	1,150	10.5	50.8
ESTM-30[25]	10,000	5,000	16,500	8,250	2,500	1,250	10.5	79.7

[25] Lower values loads due to different manufacturing method

Dimensions [mm]

Part No.	d1, E10	d2	d3	h	h1	h2	a	m	C1	B	R1	Max. pivot angle
ESTM-08	8	4.5	–	19	9.5	–	31	22	9	8	4.5	22°
ESTM-10	10	5.5	–	22	11.0	–	36	26	10	9	5.0	22°
ESTM-12	12	5.5	–	26	13.0	–	38	28	10	10	5.0	22°
ESTM-16	16	6.6	10.6	34	17.0	6.4	50	37	13	13	6.5	22°
ESTM-20	20	9.0	14.0	40	20.0	8.6	62	46	16	16	8.0	22°
ESTM-25	25	9.0	14.0	48	24.0	8.6	72	54	18	20	9.0	20°
ESTM-30	30	11.0	17.0	56	28.0	10.6	86	64	22	22	11.0	20°

Alternative spherical ball materials ▶ Page 841



J4VEM: Clearance-free, pre-loaded



JEM: Low moisture absorption



REM: Low-cost



J4EM: Low-cost and low moisture absorption

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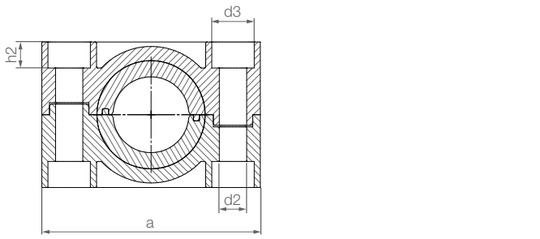
igubal® pillow block bearings | Product range

Pillow block bearings with split housing and split ball: ESTM-GT...-GT





Order key

Type	Size [mm]	Version
E ST M - GT	16	- GT

E series	Pillow block bearing	Metric	Split housing	Inner Ø	Split ball

Material:
Housing: **RN33** ▶ **Page 1657**
Spherical ball: **iglidur® J** ▶ **Page 159**

- Save time during assembly and disassembly
- Low installation space and lightweight
- High stiffness and durability
- Spherical ball material iglidur® J for low moisture absorption
- Ideal for outdoor use
- Dimensional E series according to DIN ISO 12240
- Adapter available ▶ Accessories, **page 862**

Technical data

Part No.	Max. static radial tensile strain		Max. static radial compressive force		Max. tightening torque fixing holes	Weight
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]		[g]
ESTM-GT16-GT	2,500	1,250	8,500	4,250	4.5	18
ESTM-GT20-GT	5,000	2,500	11,000	5,750	4.5	28
ESTM-GT25-GT	5,000	2,500	18,500	9,250	10.5	52
ESTM-GT30-GT	5,000	2,500	16,500	8,250	10.5	84

Dimensions [mm]

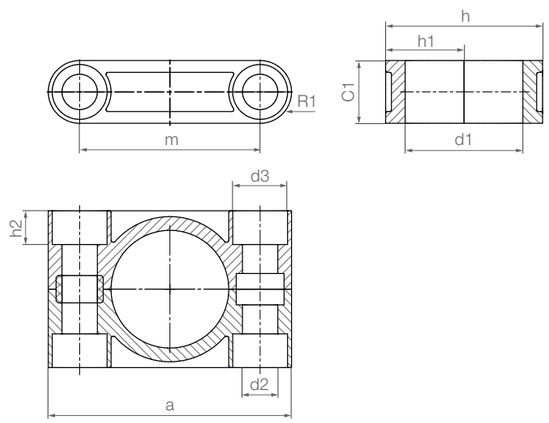
Part No.	d1	d2	d3	h	h1	h2	a	m	C1	B	R1	Max. pivot angle
	E10											
ESTM-GT16-GT	16	6.6	10.6	34	17	6.4	50	37	13	13	6.5	22°
ESTM-GT20-GT	20	9.0	14.0	40	20	8.6	62	46	16	16	8.0	22°
ESTM-GT25-GT	25	9.0	14.0	48	24	8.6	72	54	18	20	9.0	22°
ESTM-GT30-GT	30	11.0	17.0	56	28	10.6	86	64	22	22	11.0	22°

igubal® pillow block bearings

igubal® pillow block bearings | Product range

Split housings with parallel holes: ESTM-GT





Order key

Type	Size	Version [mm]
E ST M - GT	16	-25

E series	Pillow block bearing	Metric	Split housing	Dimension	Inner Ø

Material:
igumid G ▶ **Page 1654**

- Easy to assemble and disassemble
- Ideal for outside applications
- High loads
- Dimensional E series according to DIN ISO 12240
- Adapter available ▶ Accessories, **page 862**

Technical data

Part No.	Max. static radial tensile strain		Max. static radial compressive force		Max. tightening torque fixing holes	Weight
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]		[g]
ESTM-GT16-25	3,600	1,800	7,000	3,500	4.5	12.6
ESTM-GT20-30	4,800	2,400	9,000	4,500	4.5	21.1
ESTM-GT25-35	8,500	4,250	15,000	7,500	10.5	39.9
ESTM-GT30-40	9,500	4,750	18,500	9,250	10.5	66.5

Dimensions [mm]

Part No.	d1	d2	d3	h	h1	h2	a	m	C1	R1
	E10									
ESTM-GT16-25	25	6.6	10.6	34	14	6.4	50	37	13	6.5
ESTM-GT20-30	30	9.0	14.0	40	20	8.6	62	46	16	8.0
ESTM-GT25-35	35	9.0	14.0	48	24	8.6	72	54	18	9.0
ESTM-GT30-40	40	11.0	17.0	56	28	10.6	86	64	22	11.0

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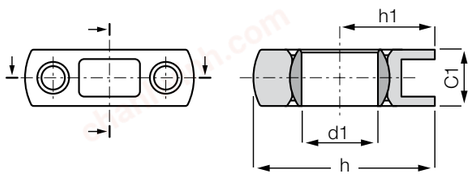
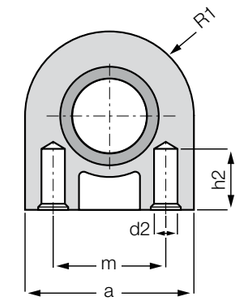
Pillow block bearings Slim Line: ESTM SL







Service life calculation online
▶ **www.igus-asean.com/igubal-expert**

Order key

Type	Size [mm]	Version
E ST M -	05	- SL - M3
E series	Inner Ø	Slim Line
Pillow block bearing		
Metric		

Material:
Housing: **igumid G** ▶ **Page 1654**
Spherical ball: **iglidur® J** ▶ **Page 159**

- Extremely light
- Extremely space-saving
- Cost-effective
- Predictable service life
- Maintenance and lubrication-free
- With M3 thread, e. g. ESTM-10-SL-M3
- For self tapping screw with outer diameter 3.5mm
- Dimensional E series according to DIN ISO 12240

Technical data

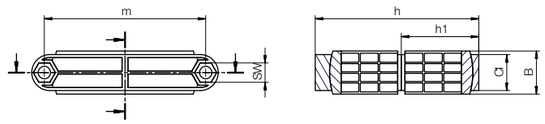
Part No.	Max. radial tensile force		Max. radial compressive strength		Max. lateral strength		Max. axial strength		Weight
	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[g]
ESTM-05-SL-M3	1,500	750	1,400	700	900	450	150	75	1.6
ESTM-06-SL-M3	1,500	750	1,400	700	900	450	150	75	1.7
ESTM-08-SL-M3	1,600	800	1,400	700	950	475	100	50	1.7
ESTM-10-SL-M3	1,600	800	1,400	700	1,000	500	100	50	1.9

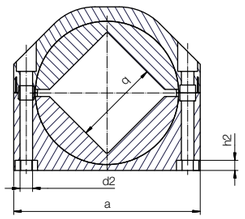
Dimensions [mm]

Part No.	d1 E10	d2	h	h1	h2	a	m	C1	R1	Max. pivot angle
ESTM-05-SL-M3	5	2.5	18	10	6.5	16	10	6	8	17°
ESTM-06-SL-M3	6	2.5	18	10	6.5	16	10	6	8	17°
ESTM-08-SL-M3	8	2.5	19	10	6.5	18	12	6	9	17°
ESTM-10-SL-M3	10	2.5	20	10	6.5	20	14	6	10	17°

Split pillow block bearings for square profiles: ESQM







Order key

Type	Size [mm]
E SQ M -	110
E series	Edge length
Pillow block bearing for square profiles	
Metric	

Material:
Housing: **igumid G** ▶ **Page 1654**
Spherical ball: **iglidur® J4** ▶ **Page 1652**

- Profile 100 x 100mm, 110 x 110mm or 120 x 120mm
- Split version of housing and spherical balls
- Easy assembly and disassembly
- High loads
- Lightweight
- Compensation of misalignment errors
- Mounting: M16 screw
- Recommended tightening torque: 50Nm

Dimensions [mm]

Part No.		q +1	SW	d2	h	h1	h2	a	m	B	C1	Weight [g]
ESQM-100	New	100.5	24	17.5	228	108	13.6	260	225	60	50	1,295
ESQM-110		110.5	24	17.5	228	108	13.6	260	225	60	50	1,255
ESQM-120		120.0	24	17.5	228	108	13.6	260	225	60	50	1,210

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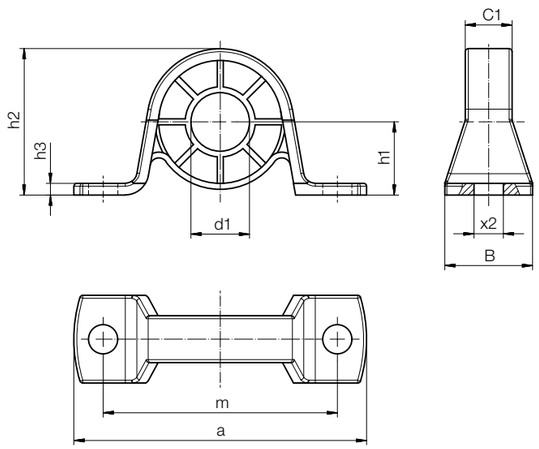
igubal® pillow block bearings | Product range New

Pillow block bearings with cost-effective metallic housing: PP-JEM-SP



- Lubrication and maintenance-free
- Cost-effective
- Resistant to dirt
- Cost-effective spherical ball material iglidur® J4 available (order example: PP204-J4EM-20-14-SP)





Order key

Type	Size [mm]	Version

PP204 - J E M - 20 - 14 - SP

Pillow block bearing	Spherical ball material	Dimensional series	Metric	Spherical ball inner Ø	Spherical ball width	Injection moulding

Material:
Housing: Galvanised steel (stainless steel upon request)
Spherical ball: iglidur® J (alternative iglidur® J4)

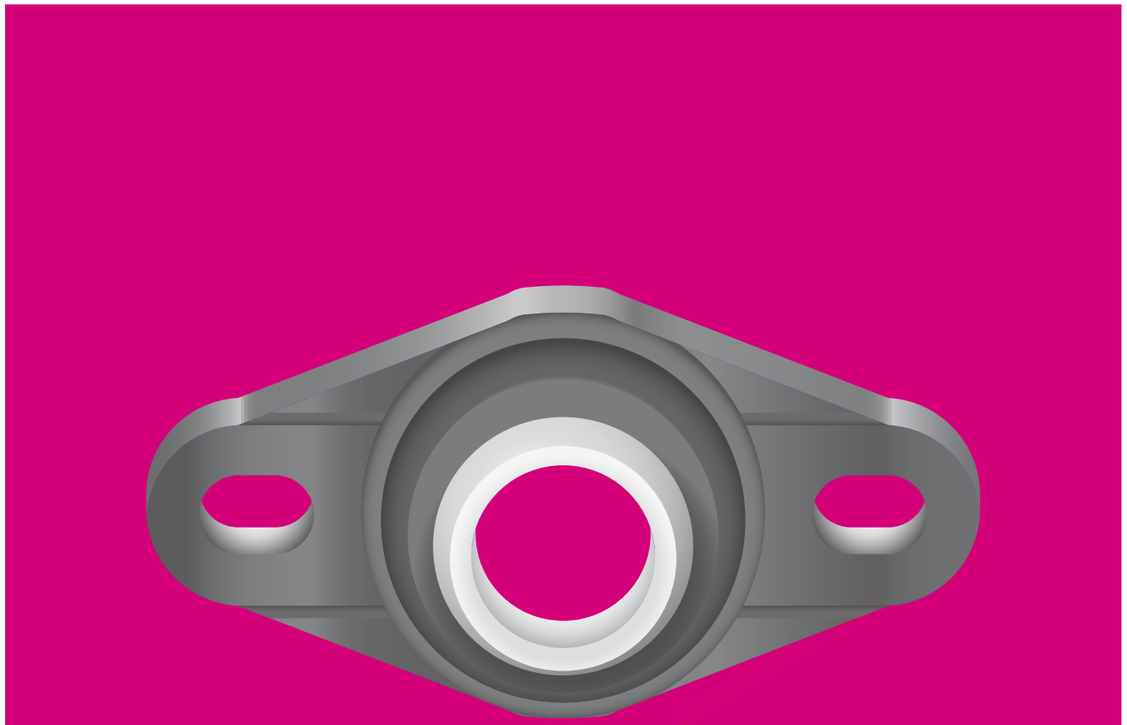
Technical data

Part No.		Max. static radial tensile strain		Max. static axial compressive force		Weight
		Short-term	Long-term	Short-term	Long-term	
		[N]	[N]	[N]	[N]	[g]
PP204-JEM-20-14-SP	New	3,000	1,500	1,000	500	121.0
PP205-JEM-25-15-SP	New	5,000	2,500	1,800	900	154.0
PP206-JEM-30-16-SP	New	6,000	3,000	1,800	900	206.0

Dimensions [mm]

Part No.		d1	h1	h2	h3	a	m	C1	B	x2
		E10								
PP204-JEM-20-14-SP	New	20	25.4	50.5	3	98	76	22.0	32	9.5
PP205-JEM-25-15-SP	New	25	28.6	56.6	4	108	86	24.0	32	11.5
PP206-JEM-30-16-SP	New	30	33.3	66.3	4	117	95	26.5	38	11.5

Can be combined with SRM fixing collars, page 858



igubal® fixed flange bearings

- Maintenance-free dry operation
- Robust
- Durable
- Compensation of misalignment errors
- Resistant to edge loads
- Lightweight



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igubal® fixed flange bearings

igubal® fixed flange bearings have been developed for supporting the centre or ends of shafts. Like all standard igubal® products, these bearings consist of an igumid G housing and an iglidur® W300 spherical ball. For temperatures up to +200°C please select the HT version (High Temperature). igubal® fixed flange bearings are made to the dimensional E series and are offered with two or four mounting holes.



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?
- When temperatures are higher than +200°C
  ► HT version, page 814–813
- When an integrated fixing collar is required
- When dimensions above 50mm are required
- When rotation speeds higher than 0.5m/s are required

Available from stock
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity

Max. + 200°C
Min. –40°C
(depending on material: standard from –30°C to +80°C; HT from –40°C to +200°C)

5 types
Ø 4–50mm

Online product finder
► www.igus-asean.com/igubal-finder

igubal® fixed 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-asean.com/igubal-applications


Material handling


► www.igus-asean.com/agriculture


► www.igus-asean.com/rotary-sorter


► www.igus-asean.com/food

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igubal® fixed flange bearings | Technical data

Application areas

Since igubal® fixed flange bearings are made for maintenance-free dry operation, they are especially suitable for applications in which access to the bearing is limited, in wet environments or cleanroom environments. igubal® fixed flange bearings are also found in electric brushes, awnings, conveyor technology, and bakery machines.

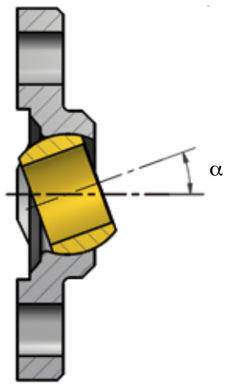
Tolerances

Maintenance-free igubal® fixed flange bearings are designed with an E10 tolerance of the inner diameter. The shaft tolerance should be included between h6 and h9. These recommended tolerances allow for changes in the bearing due to temperature. All values and tolerances according to ISO 2768-m. Please contact us in case you require lower or other bearing tolerances.

Assembly

igubal® fixed flange bearings are designed for mounting with two or four bolts, depending on the design. The 2-hole types are provided with elongated holes, which allow easy and flexible installation. An exact positioning of the bearing housing is not necessary, since the fixed flange bearing compensates for alignment errors. Special adjusting rings can be used to fix the shaft.

Pivot angle



igubal® fixed flange bearings | Product overview

igubal® fixed flange bearings – for temperatures up to +80°C



Easy to fit

E series

▶ From page 806



For higher radial load

E series

▶ From page 808



Universal and quick assembly

Female thread

▶ Page 810



Universal and quick assembly

Male thread

▶ Page 811



High static load, split housing

K series

▶ Page 812

igubal® fixed flange bearings – for temperatures up to +200°C



For higher radial load

E series

▶ Page 813



Easy to fit

E series

▶ Page 814

igubal® fixed flange bearings for food contact

New



Dimensional E series

▶ Page 814

igubal® fixed flange bearings with cost-effective metallic housing

New



Easy replacement of the spherical ball

▶ Page 814

igubal® combination with xiros® ball bearings



Low coefficient of friction, pivoting version

E series

▶ Page 936



Low coefficient of friction, pivoting version

E series

▶ Page 937

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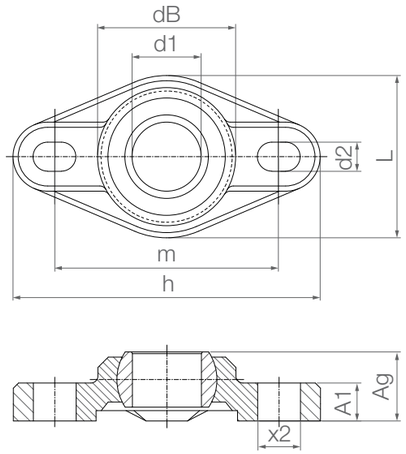
Fixed flange bearings with 2 mounting holes: EFOM



- iglidur® W300 extremely wear-resistant spherical ball
- Easy to fit
- Compensation of misalignment errors
- Absolute corrosion resistance
- Lightweight
- Maintenance-free dry operation

Service life calculation online
▶ www.igus-asean.com/igubal-expert



Order key

Type					Size [mm]
E	F	O	M	-	04
E series	Fixed flange bearing	2 holes	Metric		Inner Ø

Material:
Housing: **igumid G ▶ Page 1654**
Spherical ball: **iglidur® W300 ▶ Page 171**
Combination with xiros® ball bearings ▶ **Page 937**

Technical data

Part No.	Max. permissible axial load		Max. permissible radial load		Max. tightening torque	Weight
	Short-term	Long-term	Short-term	Long-term	Holes	
	[N]	[N]	[N]	[N]	[Nm]	[g]
EFOM-04	400	200	750	375	0.6	1.9
EFOM-05	400	200	750	375	0.6	2.3
EFOM-06	500	250	800	400	0.6	1.8
EFOM-08	700	350	1,100	550	1.3	4.1
EFOM-10	850	425	2,000	1,000	2.5	6.8
EFOM-12	1,100	550	2,200	1,100	2.5	8.9
EFOM-15	1,300	650	2,400	1,200	4.5	15.0
EFOM-16	1,400	700	2,800	1,400	4.5	17.7
EFOM-17	1,800	900	3,200	1,600	4.5	24.9
EFOM-20	1,800	900	5,500	2,750	10.5	32.8
EFOM-25	3,000	1,500	6,000	3,000	10.5	58.5
EFOM-30	3,500	1,750	6,500	3,250	21.5	78.9

Dimensions [mm]

Part No.	d1	dB	h	L	m	A1	Ag	d2	x2	Max. pivot angle
	E10		Length	Width	Hole pitch	Height of plate	Total height	Elongated hole		
					±0.1	+1.0				
EFOM-04	4	14.0	33.8	16.0	24.0	4.5	8.0	3.2	5.0	28°
EFOM-05	5	14.0	33.8	16.0	24.0	4.5	8.5	3.2	5.0	29°
EFOM-06	6	14.0	33.8	16.0	24.0	4.5	8.5	3.2	5.0	25°
EFOM-08	8	18.0	44.2	22.0	31.0	5.5	10.5	4.3	6.5	25°
EFOM-10	10	22.2	52.0	26.0	36.0	6.5	12.0	5.3	8.0	25°
EFOM-12	12	25.0	56.7	31.0	41.0	7.0	13.0	5.3	8.0	21°
EFOM-15	15	29.8	68.6	36.0	50.0	8.5	15.5	6.4	10.0	20°
EFOM-16	16	32.0	72.6	38.0	53.0	10.0	17.5	6.4	10.1	27°
EFOM-17	17	34.8	74.6	41.0	55.0	10.0	18.0	6.4	10.2	21°
EFOM-20	20	40.0	89.0	47.0	65.0	11.0	20.0	8.4	12.5	19°
EFOM-25	25	48.5	101.0	58.5	75.0	14.0	25.0	8.4	12.6	15°
EFOM-30	30	55.0	118.0	65.0	87.5	15.0	26.0	10.5	16.0	14°

Standard tolerances:
from 0.5 to 6mm: ±0.1mm
from 6 to 30mm: ±0.2mm
from 30 to 120mm: ±0.3mm

Alternative spherical ball materials ▶ Page 841


J4VEM: Clearance-free, pre-loaded


JEM: low moisture absorption


REM: Low-cost


J4EM: Low-cost and low moisture absorption

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igubal® fixed flange bearings | Product range

igubal® fixed flange bearings | Product range

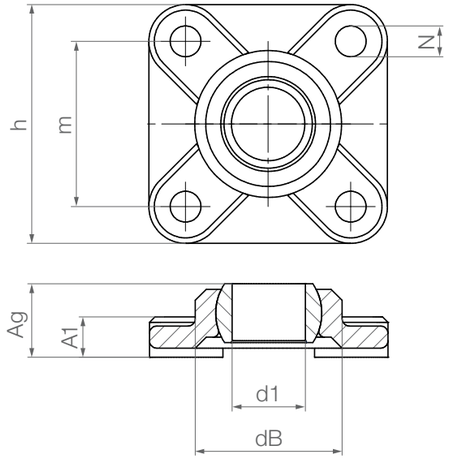
igubal® fixed flange bearings

Fixed flange bearings with 4 mounting holes: EFSM



- iglidur® W300 extremely wear-resistant spherical ball
- Easy to fit
- Compensation of misalignment errors
- Absolute corrosion resistance
- Lightweight
- Maintenance-free dry operation

Service life calculation online
▶ www.igus-asean.com/igubal-expert



Order key

Type					Size [mm]
E	F	S	M	-	04
E series	Fixed flange bearing	4 holes	Metric		Inner Ø

Material:
Housing: **igumid G ▶ Page 1654**
Spherical ball: **iglidur® W300 ▶ Page 171**
Combination with xiros® ball bearings **▶ Page 936**

Technical data

Part No.	Max. permissible axial load		Max. permissible radial load		Max. tightening torque	Weight
	Short-term	Long-term	Short-term	Long-term	Holes	
	[N]	[N]	[N]	[N]	[Nm]	[g]
EFSM-04	200	100	1,000	500	0.6	2.6
EFSM-05	300	150	1,000	500	0.6	2.7
EFSM-06	300	150	1,000	500	0.6	2.8
EFSM-08	450	225	1,400	700	1.3	5.9
EFSM-10	700	350	2,000	1,000	2.5	9.1
EFSM-12	850	425	2,500	1,250	2.5	11.0
EFSM-15	1,100	550	3,000	1,500	4.5	20.2
EFSM-16	1,350	675	3,200	1,600	4.5	23.3
EFSM-17	1,600	800	3,400	1,700	4.5	27.9
EFSM-20	2,000	1,000	4,000	2,000	10.5	45.0
EFSM-25	2,400	1,200	5,600	2,800	10.5	76.0
EFSM-30	2,800	1,400	6,000	3,000	21.5	100.7

Dimensions [mm]

Part No.	d1	dB	h	m	A1	Ag	N	Max. pivot angle
	E10		Width	Hole pitch	Height of plate	Total height	Hole Ø	
				±0.1				
EFSM-04	4	14.0	25	17	4.5	8.5	3.2	28°
EFSM-05	5	14.0	25	17	4.5	8.5	3.2	29°
EFSM-06	6	14.0	25	17	4.5	8.5	3.2	25°
EFSM-08	8	18.0	33	22	5.5	10.5	4.3	25°
EFSM-10	10	21.9	38	26	6.5	12.0	5.3	25°
EFSM-12	12	25.0	40	28	7.0	13.0	5.3	21°
EFSM-15	15	30.0	49	34	8.5	15.5	6.4	20°
EFSM-16	16	32.0	52	36	9.0	16.5	6.4	27°
EFSM-17	17	35.0	54	38	10.0	18.0	6.4	21°
EFSM-20	20	40.0	65	45	11.0	20.0	8.4	19°
EFSM-25	25	48.5	74	52	14.0	25.0	8.4	15°
EFSM-30	30	54.5	85	60	15.0	26.0	10.5	14°

Standard tolerances:
from 0.5 to 6mm: ±0.1mm
from 6 to 30mm: ±0.2mm
from 30 to 120mm: ±0.3mm

Alternative spherical ball materials ▶ Page 841


J4VEM: Clearance-free, pre-loaded


JEM: low moisture absorption


REM: Low-cost


J4EM: Low-cost and low moisture absorption

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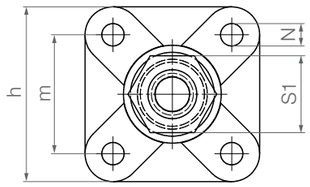
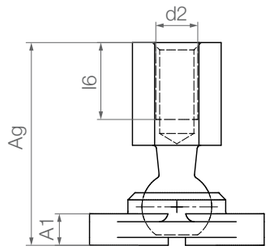
igubal® fixed flange bearings | Product range

Complete housing with ball stud, female thread: GFSM-...-IG



- Maintenance and corrosion-free
- Easy connection – easy assembly
- Compensation of misalignment errors





Order key

Type	Size [mm]	Version
GF S M -	06	- IG ES
Flange mounted / 4 holes / Metric	Inner Ø	Female thread

Options:

Ball stud

Blank = Made of galvanised steel

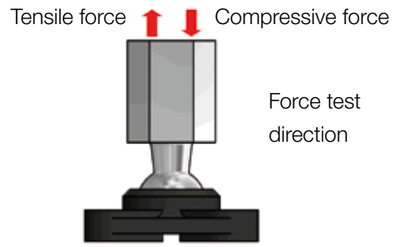
ES = Made of stainless steel[28)]

Material:

Housing: **igumid G** ▶ **Page 1654**

Ball stud: galvanised and stainless steel[28)]

▶ Accessories, **page 859**



Technical data

Part No.	Max. static tensile strain		Max. static compressive force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
GFSM-06-IG	150	75	350	175	16.4
GFSM-08-IG	250	125	750	375	34.0
GFSM-10-IG	140	70	1,200	600	61.1

Dimensions [mm]

Part No.	d2	m	h	Ag	A1	l6	N	S1	Max. pivot angle
GFSM-06-IG	M6	17	25	29.0	4.5	11	3.2	SW11	32°
GFSM-08-IG	M8	22	33	36.0	5.5	12	4.3	SW14	40°
GFSM-10-IG	M10	26	38	43.5	6.5	16	5.3	SW17	34°

[28)] Stainless steel ball stud upon request

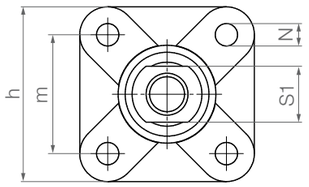
igubal® fixed flange bearings

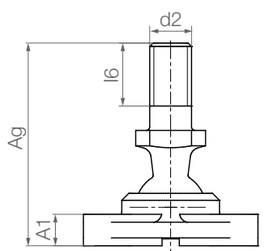
igubal® fixed flange bearings | Product range

Complete housing with ball stud, male thread: GFSM-...-AG



- Maintenance and corrosion-free
- Easy connection – easy assembly
- Compensation of misalignment errors





Order key

Type	Size [mm]	Version
GF S M -	06	- AG ES
Flange mounted / 4 holes / Metric	Inner Ø	Male thread

Options:

Ball stud[19)]

Blank = Made of galvanised steel

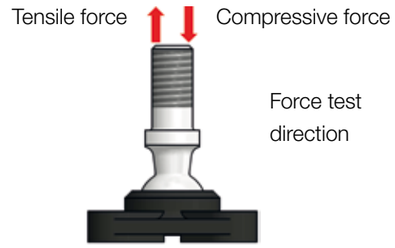
PZ = Made of plastic

ES = Made of stainless steel[28)]

Material:

Housing: **igumid G** ▶ **Page 1654**

Ball studs: plastic, galvanised steel and stainless steel[28)] ▶ Accessories, **page 860**



Technical data

Part No.	Max. static tensile strain		Max. static compressive force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
GFSM-06-AG	150	75	350	175	10.6
GFSM-08-AG	250	125	750	375	23.1
GFSM-10-AG	140	70	1,200	600	41.2

Dimensions [mm]

Part No.	d2	m	h	Ag	A1	l6	N	S1	Max. pivot angle
GFSM-06-AG	M6	17	25	29.0	4.5	10.5	3.2	SW8	32°
GFSM-08-AG	M8	22	33	36.0	5.5	13.5	4.3	SW11	34°
GFSM-10-AG	M10	26	38	43.5	6.5	16.0	5.3	SW13	34°

[19)] Ball stud with right-hand thread; left-hand thread upon request

[28)] Stainless steel ball stud upon request

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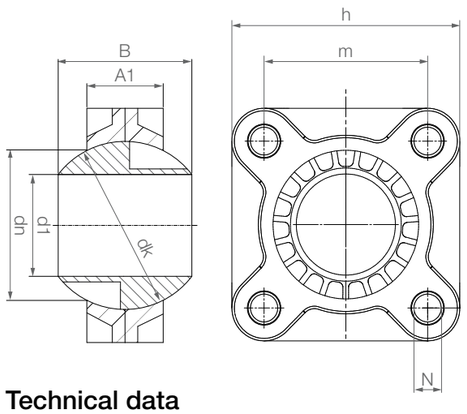
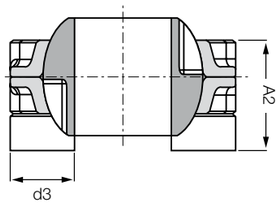
igubal® fixed flange bearings | Product range

Fixed flange bearings with 4 mounting holes and split housing: KFSM GT



- Pre-assembled
- Option with push-in feet
- Resistant to dirt
- Lightweight
- Low installation space
- For high static loads
- High stiffness and durability
- Predictable service life
- Maintenance-free dry operation
- Mounting: with push-in feet M10, without push-in feet M12





Example: KFSM-GT-40-A

Order key

Type						Size [mm]	Options
K	F	S	M	-	GT	35	- A
K series	Fixed flange bearing	4 holes	Metric		Split housing	Inner Ø	With push-in feet

Material:
Housing: **RN33** ▶ **Page 1657**
Spherical ball: **iglidur® J** ▶ **Page 159**

Technical data

Part No.	Max. static radial load		Max. static axial load		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
KFSM-GT35-A[23)]	5,000	2,500	4,500	2,250	183.5
KFSM-GT40-A	5,000	2,500	4,500	2,250	161.6
KFSM-GT45-A[23)]	6,000	3,000	5,000	2,500	294.6
KFSM-GT50-A	6,000	3,000	5,000	2,500	260.1

Max. tightening torque for fixing: 30Nm

Dimensions [mm]

Part No.	d1	dn	d3	dk	A1	A2	B	m	h	N	Max. pivot angle
	E10										
KFSM-GT35-A[23)]	35.0	59.0	26.0	66.0	30.0	45.0	48.5	66.0	92.0	13.5	24°
KFSM-GT40-A	40.0	59.0	26.0	66.0	30.0	45.0	48.5	66.0	92.0	13.5	24°
KFSM-GT45-A[23)]	45.0	72.0	26.0	82.0	40.0	60.0	60.0	78.0	104.0	13.5	24°
KFSM-GT50-A	50.0	72.0	26.0	82.0	40.0	60.0	60.0	78.0	104.0	13.5	24°

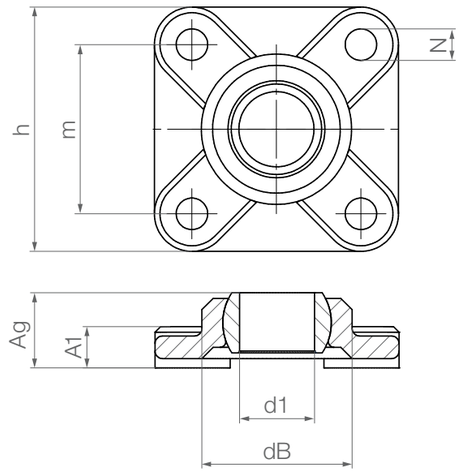
For KFSM with distance pieces, please add an "A" to the Part No. Example: KFSM-GT-50-A

[23)] Diameter given by iglidur® J bore reducer

igubal® fixed flange bearings | Product range

High-temperature fixed flange bearings with 4 mounting holes: EFSM-HT





Order key

Type					Size [mm]	Version
E	F	S	M	-	05	- HT
E series	Fixed flange bearing	4 holes	Metric		Inner Ø	High temperature

Material:
Housing: **iguton G** ▶ **Page 1655**
Spherical ball: **iglidur® X** ▶ **Page 279**

- Applicable up to +200°C
- Easy to fit
- Compensation of misalignment errors
- Absolute corrosion resistance
- Lightweight
- Chemical-resistant (chemical table ▶ **Page 1636**)
- For underwater applications

Technical data

Part No.	Max. permissible axial load		Max. permissible radial load		Max. tightening torque	Weight
	Short-term	Long-term	Short-term	Long-term	Holes	
	[N]	[N]	[N]	[N]	[Nm]	[g]
EFSM-05-HT	275	138	440	220	0.6	3.5
EFSM-06-HT	339	170	523	262	0.6	3.3
EFSM-08-HT	412	206	713	356	1.3	7.1
EFSM-10-HT	864	432	1,202	601	2.5	11.2
EFSM-12-HT	1,024	512	1,347	674	2.5	13.3

Dimensions [mm]

Part No.	d1	dB	h	m	A1	Ag	N	Max. pivot angle
	E10		Width	Hole pitch ±0.1	Height of plate	Total height	Hole d	
EFSM-05-HT	5	14	25	17	4.5	8.5	3.2	29°
EFSM-06-HT	6	14	25	17	4.5	8.5	3.2	25°
EFSM-08-HT	8	18	33	22	5.5	10.5	4.3	25°
EFSM-10-HT	10	22	38	26	6.5	12.0	5.3	25°
EFSM-12-HT	12	25	40	28	7.0	13.0	5.3	21°

Other dimensions available upon request

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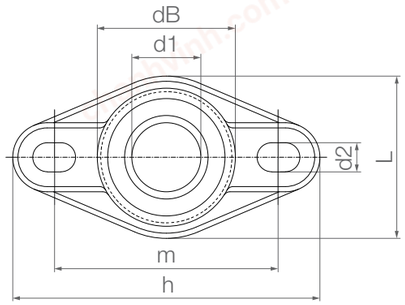
igubal® fixed flange bearings | Product range

High-temperature fixed flange bearings with 2 mounting holes: EFOM-HT





Order key

Type	Size [mm]	Version
E F O M -	06	- HT

E series | Fixed flange bearing | 2 holes | Metric | Inner Ø [mm] | High temperature

Material:
Housing: **iguton G** ▶ **Page 1655**
Spherical ball: **iglidur® X** ▶ **Page 279**

- Applicable up to +200°C
- Easy to fit
- Compensation of misalignment errors
- Absolute corrosion resistance
- Lightweight
- Chemical-resistant (chemical table ▶ **Page 1636**)
- For underwater applications

Technical data

Part No.	Max. permissible axial load		Max. permissible radial load		Max. tightening torque	Weight
	Short-term	Long-term	Short-term	Long-term	Holes	
	[N]	[N]	[N]	[N]	[Nm]	[g]
EFOM-05-HT	275	138	460	230	0.6	2.5
EFOM-06-HT	300	150	611	305	0.6	2.3
EFOM-08-HT	644	322	934	467	1.3	5.0
EFOM-10-HT	764	382	1,000	500	2.5	8.3
EFOM-12-HT	874	437	1,290	645	2.5	10.7

Dimensions [mm]

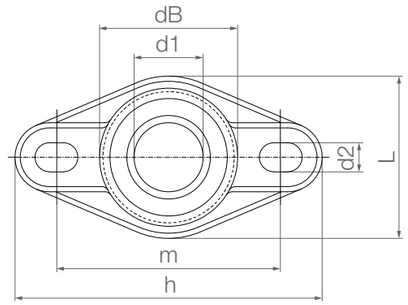
Part No.	d1	dB	h	L	m	A1	Ag	d2	x2	Max. pivot angle
	E10		Length	Width	Hole pitch ±0.1	Height of plate	Total height	Elongated hole		
EFOM-05-HT	5	14	33.8	16	24	4.5	8.5	3.2	5.0	29°
EFOM-06-HT	6	14	33.8	16	24	4.5	8.5	3.2	5.5	27°
EFOM-08-HT	8	18	44.2	22	31	5.5	10.5	4.3	6.5	24°
EFOM-10-HT	10	22	52.0	26	36	6.5	12.0	5.3	8.0	24°
EFOM-12-HT	12	25	56.7	31	41	7.0	13.0	5.3	8.0	21°

Other dimensions available upon request

igubal® fixed flange bearings | Product range New

Fixed flange bearings for contact with food: EFOM-FC





Order key

Type	Size [mm]	Version
E F O M -	20	- FC

E series | Fixed flange bearings | 2 holes | Metric | Inner Ø [mm] | Suitable for food contact

Material:
Housing: **igumid FC** ▶ **Page1655**
Spherical ball: **iglidur® FC180** ▶ **Page 1652**

- Made from FDA and EU10/2011-compliant materials
- Lubrication and maintenance-free
- Optically and magnetically detectable
- In industry standard blue
- Corrosion and media-resistant
- Vibration-dampening
- Cost-effective

Technical data

Part No.		Max. permissible axial load		Max. permissible radial load	Max. tightening torque	Weight
		Short-term	Long-term	Short-term	Holes	
		[N]	[N]	[N]	[Nm]	[g]
EFOM-20-FC	New	1,500	750	5,500	10.0	35.5

Dimensions [mm]

Part No.		d1	dB	h	L	m	A1	Ag	d2	x2	Max. pivot angle
		E10		Length	Width	Hole pitch ±0.1	Height of plate	Total height	Elongated hole		
EFOM-20-FC	New	20	40	89	47	65	11	20	8.4	12.5	19°

Other dimensions available upon request

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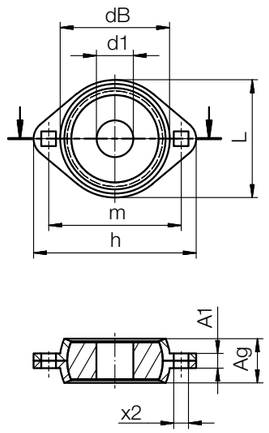
igubal® fixed flange bearings | Product range New

Fixed flange bearings with cost-effective metallic housing: PFL-JEM-SP



- Cost-effective spherical ball material iglidur® J4 available (order example: PFL204-J4EM-20-14-SP)
- Lubrication and maintenance-free
- Cost-effective
- Resistant to dirt



Order key

Type	Size [mm]	Version
PFL204 - J E M - 20 - 14 - SP		

Fixed flange bearing	Spherical ball material	Series	Metric	Spherical ball inner Ø	Spherical ball width	Injection moulding
PFL204	J	E	M	20	14	SP

Material:
Housing: Galvanised steel
(stainless steel upon request)
Spherical ball: iglidur® J
(alternative iglidur® J4)



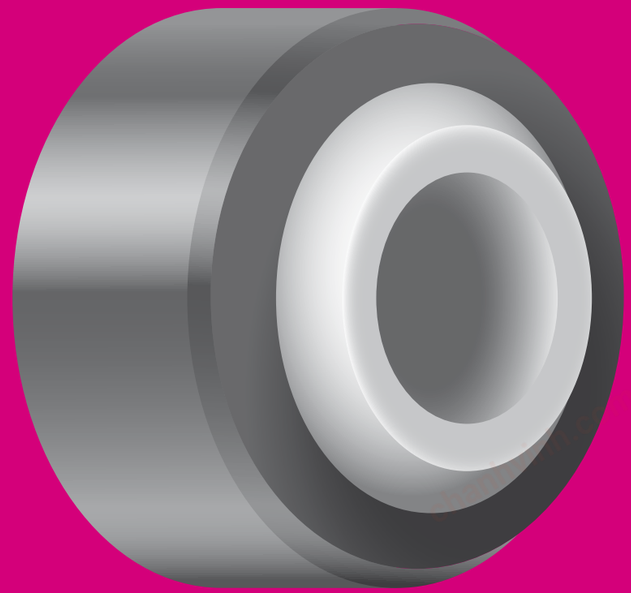
Technical data

Part No.		Max. permissible axial load		Max. permissible radial load		Weight
		Short-term	Long-term	Short-term	Long-term	
		[N]	[N]	[N]	[N]	[g]
PFL204-JEM-20-14-SP	New	2,000	1,000	4,000	2,000	121.0
PFL205-JEM-25-15-SP	New	2,000	1,000	5,000	2,500	144.0
PFL206-JEM-30-16-SP	New	2,000	1,000	7,000	3,500	216.0

Dimensions [mm]

Part No.		d1	h	L	m	a1	Ag	x2
		E10				+0.1		
PFL204-JEM-20-14-SP	New	20	90	67	71.5	M6	16	9
PFL205-JEM-25-15-SP	New	25	95	71	76.0	M8	18	9
PFL206-JEM-30-16-SP	New	30	113	82	90.5	M8	19	11

Can be combined with SRM fixing collars, page 858



igubal® spherical bearings

- Easy to fit
- Cost-effective
- Resistance to chemicals
- Lightweight
- Robust



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igubal® spherical bearings

The use of spherical bearings is usually associated with heavy materials, difficult installation, and high costs. Most of the time, maintenance is still necessary long-term, and the bearings are only corrosion-resistant in special designs. igubal® spherical bearings put an end to all of these disadvantages: they are easy to fit, cost-effective, lightweight and robust.



When to use it?
- For high axial and radial loads
- When an easy installation is required
- In case of reduced installation space
- 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?
- When temperatures are higher than +80°C
- For dimensions above 30mm
- When rotation speeds higher than 0.5m/s are required

Available from stock
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity

Max. +80°C
Min. –30°C

13 types
Ø 2–40mm

Imperial dimensions available
▶ From page 1610

Online product finder
▶ www.igus-asean.com/igubal-finder

igubal® 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-asean.com/igubal-applications



▶ www.igus-asean.com/food



▶ www.igus-asean.com/traffic



▶ www.igus-asean.com/automotive



▶ www.igus-asean.com/hose-skiving

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igubal® spherical bearings | Technical data

The use of spherical bearings is usually associated with heavy materials, difficult installation, and high costs. Most of the time, maintenance is still necessary long-term, and the bearings are only corrosion-resistant in special designs. 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
- Extremely cost-effective
- Lightweight
- Robust

Application areas

Ease of installation makes many applications possible for igubal® spherical bearings. They can be used anywhere. The self-aligning feature offers design advantages and helps to simplify assembly.

Tolerances

Maintenance-free igubal® spherical bearings are designed with an inner diameter tolerance of E10. The shaft tolerance should be included between h6 and h9. These recommended tolerances allow for changes in the bearing due to temperature.

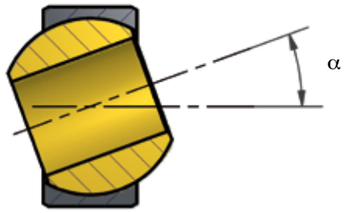
Assembly

igubal® spherical bearings are press-fitted into a recommended H7 housing bore and axially secured. An exact orientation of the bearing housing is not necessary, since the spherical bearing compensates for alignment errors.

Dimensions

igubal® spherical bearings are manufactured according to DIN ISO 12240 for dimensional K and E series. The product range provides standard dimensions from 2 to 40mm. The dimensional K series is available in imperial dimensions. Please contact us if you need other dimensions.

Pivot angle



igubal® spherical bearings | Product overview

igubal® spherical bearings



Easy to fit, cost-effective, selectable spherical ball material

K series

▶ Page 823



Standard, easy to fit

K series

▶ Page 822



For extremely narrow installation space

K series

▶ Page 824



Standard, easy to fit, imperial dimensions

K series

▶ Page 1610

igubal® self-aligning clip bearings



Space-saving

E series

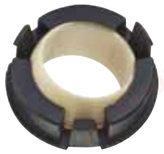
▶ Page 825



Cost-effective, selectable spherical ball material

Dimensional E series

▶ Page 826



Simply snap into sheet metal

Dimensional E series

▶ Page 827



For high axial and radial loads, selectable spherical ball material

Dimensional E series

▶ Page 828

igubal® double joints and coupling joints



For tolerance compensation, selectable spherical ball material

Dimensional E series

▶ Page 829



Clip into sheet metal, can be assembled on both sides

▶ Page 830



Robust plastic, selectable spherical ball material

Dimensional E series

▶ Page 831



Selectable materials, individual dimensions and alignment

▶ Page 833

igubal® double joints and coupling joints



Removable, selectable materials, individual dimensions and alignment

▶ Page 834



Selectable materials, individual dimensions and alignment

▶ Page 832

New



Crimped coupling joints with clevis joints

▶ Page 835

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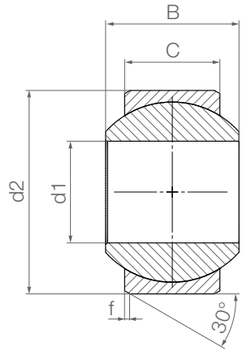
Spherical bearings: KGLM





- Compensation of misalignment and edge loads
- Corrosion-free
- Vibration-dampening
- Excellent vibration dampening
- Suitable for rotating, oscillating and axial movements

Order key

Type	Size [mm]
K GL M	-02
K series	Spherical bearing / Metric / Inner Ø

Material:
Housing: **igumid G** ▶ **Page 1654**
Spherical ball: **iglidur® W300** ▶ **Page 171**

Imperial dimensions available
▶ **Page 1610**

Service life calculation online
▶ **www.igus-asean.com/igubal-expert**

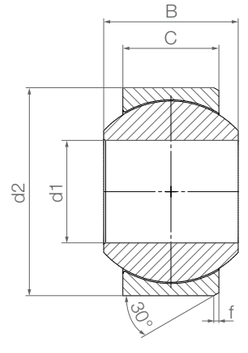
Technical data and dimensions [mm]

Part No.	Max. static load on the housing radial [N]	Max. static load on the housing axial[29] [N]	Max. tightening torque through ball [Nm]	d1 E10	d2	B	C	f	Weight [g]	Max. pivot angle
KGLM-02	300	60	1	2	8	4	3.0	0.8	0.1	32°
KGLM-03	550	200	2	3	10	6	4.5	0.8	0.5	32°
KGLM-05	1,300	500	5	5	13	8	6.0	0.8	1.0	30°
KGLM-06	1,800	650	10	6	16	9	6.5	0.8	1.6	29°
KGLM-08	2,700	1,200	12	8	19	12	9.0	0.8	2.9	25°
KGLM-10	4,000	1,400	20	10	22	14	10.5	0.8	4.4	25°
KGLM-12	5,400	1,500	30	12	26	16	12.0	0.8	7.0	25°
KGLM-14	6,000	2,500	35	14	28	19	13.5	0.8	9.1	23°
KGLM-16	8,000	3,000	40	16	32	21	15.0	0.8	12.8	23°
KGLM-18	9,000	4,000	45	18	35	23	16.5	0.8	16.6	23°
KGLM-20	10,000	5,000	55	20	40	25	18.0	0.8	24.4	23°
KGLM-22	11,700	6,500	60	22	42	28	20.0	0.8	28.5	22°
KGLM-25	13,600	7,500	65	25	47	31	22.0	0.8	39.3	22°
KGLM-30	20,000	9,000	70	30	55	37	25.0	1.0	62.6	22°

[29] The maximum static axial load is determined when fitted into a blind housing

Spherical bearings: KGLM low-cost





- Variety of ball materials
- Easy to fit
- Cost-effective
- Split housing

Order key

Type	Size [mm]	Version
K GL M -	05	- LC
K series	Spherical bearing / Metric	Inner Ø	Low-cost

Material:
Housing: **igumid G** ▶ **Page 1654**
Spherical ball: **iglidur® W300** ▶ **Page 171**
Other spherical ball materials upon request
▶ **Page 841**

Technical data

Part No.	Max. static load on the housing radial [N]	Max. static load on the housing axial[29] [N]	Max. tightening torque through ball [Nm]	Weight [g]
KGLM-05 LC	1,300	500	5	1.0
KGLM-08 LC	2,700	1,200	12	2.9
KGLM-10 LC	4,000	1,400	20	4.3
KGLM-12 LC	5,400	1,500	30	6.9
KGLM-14 LC	6,000	2,500	35	9.0
KGLM-16 LC	8,000	3,000	40	12.7
KGLM-18 LC	9,000	4,000	45	16.6
KGLM-20 LC	10,000	5,000	55	23.6
KGLM-25 LC	13,600	7,500	65	38.9
KGLM-30 LC	20,000	9,000	70	61.0

[29] The maximum static axial load is determined when fitted into a blind housing

Dimensions [mm]

Part No.	d1 E10	d2[30]	B	C	f	Max. pivot angle
KGLM-05 LC	5	13	8	6.0	0.8	30°
KGLM-08 LC	8	19	12	9.0	0.8	29°
KGLM-10 LC	10	22	14	10.5	0.8	25°
KGLM-12 LC	12	26	16	12.0	0.8	25°
KGLM-14 LC	14	28	19	13.5	0.8	23°
KGLM-16 LC	16	32	21	15.0	0.8	23°
KGLM-18 LC	18	35	23	16.5	0.8	23°
KGLM-20 LC	20	40	25	18.0	0.8	23°
KGLM-25 LC	25	47	31	22.0	0.8	22°
KGLM-30 LC	30	55	37	25.0	1.0	22°

[30] In press-fitted condition

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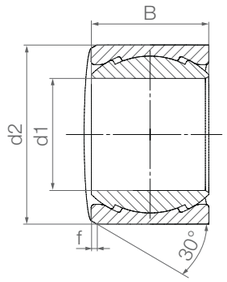
igubal® spherical bearings | Product range

Spherical bearings: KGLM Slim Line





Order key

Type			Size [mm]	Version
K	GL	M -	08	SL
K series	Spherical bearing	Metric	Inner Ø	Slim Line

- Very small installation space
- Wall thickness 50% thinner than KGLM
- Angular compensation up to 5°
- Lightweight
- Dimensions according to DIN 1850

Material:
Housing: **igumid G ▶ Page1654**
Spherical ball: **iglidur® W300 ▶ Page 171**

Service life calculation online
▶ www.igus-asean.com/igubal-expert

Technical data and dimensions [mm]

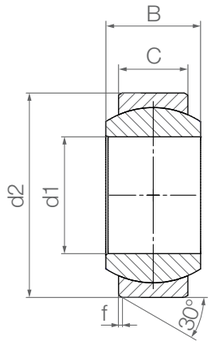
Part No.	Max. static load (short-term)		Max. static load (long-term)		d1 E10	d2	B	f	Weight	Max. pivot angle
	radial [N]	axial [N]	radial [N]	axial [N]					[g]	
KGLM-08 SL	2,700	450	1,350	225	8	14	9.0	0.5	1.1	5°
KGLM-10 SL	4,000	750	2,000	375	10	16	10.5	0.5	1.5	5°
KGLM-12 SL	4,500	750	2,250	375	12	18	12.0	0.5	2.0	5°
KGLM-16 SL	6,500	500	3,250	250	16	22	15.0	0.5	3.1	5°

igubal® spherical bearings

igubal® spherical bearings | Product range

Spherical bearings: EGLM





Order key

Type			Size [mm]
E	GL	M -	04
Dimensional E series	Spherical bearing	Metric	Inner Ø

- Compensation of misalignment and edge loads
- Corrosion-free
- Vibration-dampening
- Excellent vibration dampening
- Suitable for rotating, oscillating and linear movements

Material:
Housing: **igumid G ▶ Page 1654**
Spherical ball:
Spherical balls with 04 – 30mm diameters made of **iglidur® W300 ▶ Page 171**
Spherical balls with 40mm and 80mm diameter made of **iglidur® J ▶ Page 159**
Other spherical ball materials upon request (Ø 04 – 12mm and 40mm)

Service life calculation online
▶ www.igus-asean.com/igubal-expert

Technical data and dimensions [mm]

Part No.	Max. static load on the housing		Max. tightening torque through ball	d1 E10	d2	B	C	f	Weight	Max. pivot angle
	radial [N]	axial[29] [N]	[Nm]						[g]	
EGLM-04	600	50	1.0	4	12	5	3.0	0.5	0.4	37°
EGLM-05	1,000	130	2.0	5	14	6	4.0	0.5	0.8	33°
EGLM-06	1,200	150	2.5	6	14	6	4.0	0.5	0.9	27°
EGLM-08	1,800	175	7.0	8	16	8	5.0	0.5	1.2	24°
EGLM-10	2,500	400	14.0	10	19	9	6.0	0.5	1.9	24°
EGLM-12	3,800	650	25.0	12	22	10	7.0	0.5	2.8	21°
EGLM-15	5,500	1,000	30.0	15	26	12	9.0	0.5	6.9	21°
EGLM-16	6,000	1,150	32.0	16	28	13	9.5	0.5	9.0	21°
EGLM-17	6,300	1,200	35.0	17	30	14	10.0	1.0	10.6	21°
EGLM-20	9,000	1,400	40.0	20	35	16	12.0	1.0	16.3	18°
EGLM-25	14,000	2,900	55.0	25	42	20	16.0	1.0	29.0	16°
EGLM-30	17,000	4,000	70.0	30	47	22	18.0	1.0	37.4	13°
EGLM-40-J	22,500	2,500	80.0	40	62	28	22.0	1.0	57.0	15°
EGLM-80-J New	50,000	11,300	–	80	120	55	45	2.0	400.0	18°

[29] The maximum static axial load is determined when fitted into a blind housing

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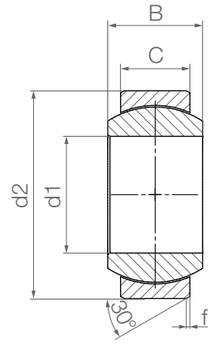
igubal® spherical bearings | Product range

Spherical bearings: EGLM Low-cost





- Easy to fit
- Cost-effective
- Chemical- and corrosion-resistant
- Robust
- Compensation of misalignment errors

Order key

Type	Size [mm]	Version
E GL M -	15	- LC

- Dimensional E series
- Spherical bearing
- Metric
- Inner Ø
- Low-cost

Material:
Housing: **igumid G** ▶ **Page 1654**
Spherical ball: **iglidur® W300** ▶ **Page 171**
Other spherical ball materials upon request
▶ **Page 841**

Online service life calculation
▶ **www.igus-asean.com/igubal-expert**

Technical data and dimensions [mm]

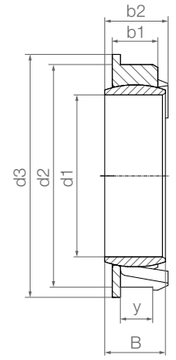
Part No.	Max. static load on the housing radial [N]	Max. static load on the housing axial[29] [N]	Max. tightening torque through ball [Nm]	d1 E10	d2	B	C	f	Weight [g]	Max. pivot angle
EGLM-15-LC	5,500	1,000	30	15	26	12	9.0	0.5	4.5	21°
EGLM-16-LC	6,000	1,150	32	16	28	13	9.5	0.5	6.0	21°
EGLM-20-LC	9,000	1,400	40	20	35	16	12.0	1.0	11.0	18°
EGLM-25-LC	14,000	2,900	55	25	42	20	16.0	1.0	20.0	16°
EGLM-30-LC	17,000	4,000	70	30	47	22	18.0	1.0	26.0	13°

[29] The maximum static axial load is determined when fitted into a blind housing

igubal® clip bearings | Product range

Clip bearings: ECLM





- Very easy installation by clipping into sheet metal
- No additional locating spigot necessary
- Extremely small installation space: space-saving, thin-walled design

Order key

Type	Size [mm]
E CL M -	05-02

- Dimensional E series
- Clip bearing
- Metric
- Inner Ø
- Metal sheet thickness

Material:
Housing: **igumid G** ▶ **Page 1654**
Spherical ball: **iglidur® J** ▶ **Page 159**

Online service life calculation
▶ **www.igus-asean.com/igubal-expert**

Technical data

Part No.	Max. static compressive force (short-term) radial [N]	Max. static compressive force (short-term) axial [N]	Max. static compressive force (long-term) radial [N]	Max. static compressive force (long-term) axial [N]	Weight [g]
ECLM-05-02	700	25	350	12.5	0.5
ECLM-06-02	700	25	350	12.5	0.5
ECLM-08-02	1,000	25	500	12.5	0.5
ECLM-10-03	1,400	30	700	15.0	0.8
ECLM-12-03	1,800	35	900	17.5	0.8
ECLM-16-03	2,800	40	1,400	20.0	1.1

Dimensions [mm]

Part No.	d1 E10	B	d2 ±0.2	d3	y Sheet metal thickness	b1 ±0.1	b2	Max. pivot angle
ECLM-05-02	5	6	12	13	2	3.9	6.0	25°
ECLM-06-02	6	6	12	13	2	3.9	6.0	18°
ECLM-08-02	8	6	14	15	2	3.9	6.0	16°
ECLM-10-03	10	6	16	17	3	4.5	6.7	12°
ECLM-12-03	12	6	18	19	3	4.5	6.7	12°
ECLM-16-03	16	6	22	24	3	4.5	6.7	12°

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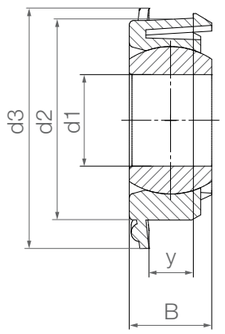
igubal® clip bearings | Product range

Clip bearings: ECLM-HD





Order key

Type			Size [mm]		Version
E	CL	M	08	04	HD
E series	Clip bearing	metric	Inner Ø d1	Metal sheet thickness	Heavy duty

- High axial and radial loads
- Adjustment of axial and radial clearance by pre-loading
- Very easy installation by clipping into sheet metal
- No additional locating spigot necessary
- For plate thickness 4 – 8mm

Material:
Housing: **igumid G** ▶ **Page 1654**
Spherical ball: **iglidur® W300** ▶ **Page 171**
Other spherical ball materials upon request
▶ **Page 841**

Technical data

Part No.	Max. static compressive force (short-term)		Max. static compressive force (long-term)		Weight
	radial	axial	radial	axial	
	[N]	[N]	[N]	[N]	[g]
ECLM-08-04-HD	1,750	125	875	60	2.0
ECLM-10-05-HD	2,500	150	1,250	75	3.1
ECLM-12-06-HD	3,500	175	1,750	85	3.8
ECLM-16-08-HD	4,500	250	2,250	125	7.0
ECLM-20-08-HD	6,000	330	3,000	165	12.0

Dimensions [mm]

Part No.	d1	B	d2	d3	y	Max. pivot angle
	E10		±0.15		±0.1	
ECLM-08-04-HD	8	8	18	25	4	28°
ECLM-10-05-HD	10	9	22	28	5	24°
ECLM-12-06-HD	12	10	24	32	6	24°
ECLM-16-08-HD	16	13	30	38	8	22°
ECLM-20-08-HD	20	16	36	44	8	21°

Alternative spherical ball materials ▶ Page 841



REM:
Low-cost



JEM:
low moisture absorption



J4EM:
low-cost and low moisture absorption

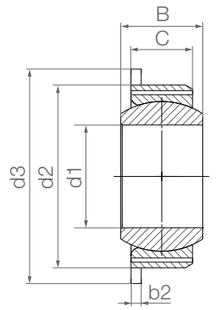


J4VEM:
clearance-free pre-loaded spherical ball

igubal® clip bearings | Product range

Clip bearings: EGFM-...T





Order key

Type			Size [mm]	Version
E	GF	M	08	T
E series	Clip bearing with flange	metric	Inner Ø d1	Tolerance compensation

- Maintenance-free dry operation
- Easy to fit
- Max. tolerance compensation ±0.2mm

Material:
Housing: **igumid G** ▶ **Page 1654**
Spherical ball: **iglidur® W300** ▶ **Page 171**
Other spherical ball materials upon request
▶ **Page 841**

Technical data

Part No.	Max. stat. compressive force (short-term)		Max. stat. compressive force (long-term)		Weight
	radial	axial	radial	axial	
	[N]	[N]	[N]	[N]	[g]
EGFM-08 T SL[31]	1,100	150	550	75	0.9
EGFM-10 T	1,900	220	950	110	2.4
EGFM-12 T	2,500	270	1,250	135	3.0
EGFM-16 T	6,000	600	3,000	300	6.6
EGFM-20 T	9,000	800	4,500	400	11.1
EGFM-25 T	14,000	2,800	7,000	1,400	19.0
EGFM-30 T	17,000	3,000	8,500	1,500	24.0

Dimensions [mm]

Part No.	d1	d2		d3	C	B	b2	Housing		Max. pivot angle
	E10	Min.	Max.					Min.	Max.	
EGFM-08 T SL[31]	8	15.8	16.5	18	5.0	6	1.1	15.8	16.2	11°
EGFM-10 T	10	20.8	21.6	26	6.0	9	1.0	20.8	21.2	24°
EGFM-12 T	12	22.8	23.6	28	7.0	10	1.0	22.8	23.2	21°
EGFM-16 T	16	29.8	30.6	35	9.5	13	1.5	29.8	30.2	21°
EGFM-20 T	20	34.8	35.6	42	12.0	16	2.0	34.8	35.2	18°
EGFM-25 T	25	41.8	42.6	50	16.0	20	2.0	41.8	42.2	16°
EGFM-30 T	30	46.8	47.6	55	18.0	22	2.0	46.8	47.2	13°

[31] Spherical ball made of iglidur® J, H10 tolerance

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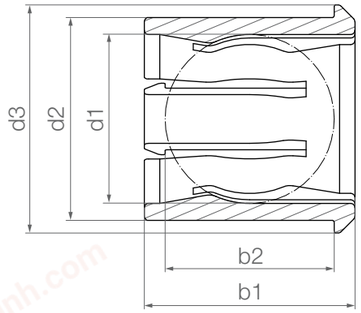
igubal® clip bearings | Product range

Ball stud clip bearings: ZCLM





- Connection for rotating and pivoting movements
- Easy and quick assembly
- Absolute corrosion resistance
- Lubrication and maintenance-free
- Lightweight
- Resistance to chemicals
- Ball studs made from galvanised steel and stainless steel[28)]

▶ Accessories, **page 859**

Order key

Type	Size [mm]	Options
Z CL M	06	10 -MS

- Can be assembled on both sides
- Clip bearings
- metric
- Ball stud M6
- Metal sheet thickness

Ball stud[19)]
MS =
Made of galvanised steel
ES =
Made of stainless steel[28)]
Blank =
without ball stud

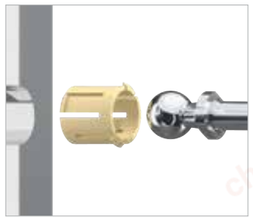
Material:
Clip bearing: **iglidur® J ▶ Page 159**

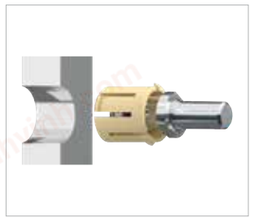
Dimensions [mm]

Part No.	d1	d2	d3	b1	b2	Weight [g]
ZCLM-06-10-MS	10	12	13.5	12.5	10	0.6

[19)] Ball stud with right-hand thread; left-hand thread upon request
[28)] Stainless steel ball stud upon request
More dimensions upon request

Assembly:





Assembly film

▶ www.igus-asean.com/zclm-film



Can be combined with accessories ▶ Page 859

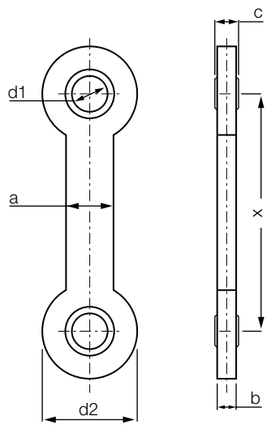


GZRM-IG

igubal® double joints | Product range

Double joints: EGZM





- Maintenance-free dry operation
- Mechanical joining link between two components
- Compensation of misalignment errors
- Corrosion-resistant
- Double joint turned 90° available upon request

Order key

Type	Size [mm]
E GZ M	04 - 25

- E series
- Double joints
- metric
- Inner Ø d1
- Pitch X

Material:
Housing: **igumid G ▶ Page1654**
Spherical ball: **iglidur® W300 ▶ Page 171**
Other spherical ball materials upon request
▶ Page 841

Technical data and dimensions [mm]

Part No.	Max. static load (short-term) Tensile force [N]	Max. static load (short-term) Compressive force [N]	Max. static load (long-term) Tensile force [N]	Max. static load (long-term) Compressive force [N]	d1 E10	d2	X	b	a	c	Weight [g]	Max. pivot angle
EGZM-04-25	1,100	1,300	550	650	4	20	25	4	10	5	3.5	32°
EGZM-04-50	1,100	750	550	375	4	20	50	4	10	5	4.8	32°
EGZM-04-75	1,100	500	550	250	4	20	75	4	10	5	6.1	32°
EGZM-05-25	1,100	1,300	550	650	5	20	25	4	10	6	2.2	37°
EGZM-05-50	1,100	750	550	375	5	20	50	4	10	6	4.9	37°
EGZM-05-75	1,100	500	550	250	5	20	75	4	10	6	6.3	37°
EGZM-06-25	1,100	1,300	550	650	6	20	25	4	10	6	3.4	30°
EGZM-06-50	1,100	750	550	375	6	20	50	4	10	6	4.8	30°
EGZM-06-75	1,100	500	550	250	6	20	75	4	10	6	6.0	30°
EGZM-08-60	3,000	3,500	1,500	1,750	8	30	60	7	15	8	15.2	20°
EGZM-08-100	3,000	1,900	1,500	950	8	30	100	7	15	8	19.5	20°
EGZM-10-60	2,500	3,500	1,250	1,750	10	30	60	7	15	9	15.3	25°
EGZM-10-85	2,500	2,300	1,250	1,150	10	30	85	7	15	9	18.1	25°
EGZM-10-100	2,500	1,900	1,250	950	10	30	100	7	15	9	19.4	25°
EGZM-12-60	2,000	3,500	1,000	1,750	12	30	60	7	15	10	14.7	25°
EGZM-12-100	2,500	1,900	1,000	950	12	30	100	7	15	10	18.8	25°

Alternative spherical ball materials ▶ Page 841



REM:
Low-cost



JEM:
low moisture absorption



J4EM:
low-cost and low moisture absorption



J4VEM:
clearance-free pre-loaded spherical ball

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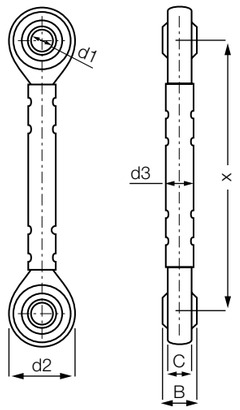
igubal® double joints | Product range

Variable double joints: KDGM



Version A Version B



Order key

Type	Size [mm]	Options
K DG M -	06	- A - SR - J

K series | 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 (AISI 303)

Spherical ball material
- Blank = iglidur® W300
- J = iglidur® J
- J4 = iglidur® J4
- R = iglidur® R
- EK = Stainless steel (AISI 303)

Material:
Housing: **igumid G ▶ Page 1654**
Ball: **variable ▶ Page 841**
Tube: **Galvanised or stainless steel**

- Ball diameters 5, 6, 8, 10 and 12mm
- Individual centre distance
- Individual alignment of the bearing position

Dimensions [mm]

Part No.	d1	d2	d3	X	B	C	Max. pivot angle
	E10			Min.			
KDGM-05-A-SR ☐ [32]	5	20	6	72	9	7.0	45°
KDGM-06-A-SR-J ☐ [32]	6	20	6	72	9	7.0	40°
KDGM-08-A-SR-J ☐ [32]	8	24	8	84	12	9.0	35°
KDGM-10-A-ER-J[145] ☐ [32]	10	30	10	96	14	10.5	35°
KDGM-12-A-SR-J ☐ [32]	12	34	12	108	16	12.0	35°

[32] Please add the required centre distance in mm
[145] Size only available with stainless steel tube (ER)

Order example, KDGM-05-A-SR, 100 : Double joint with 5mm inner diameter, version A, tube material made of steel, spherical ball made of iglidur® W300, centre distance 100mm

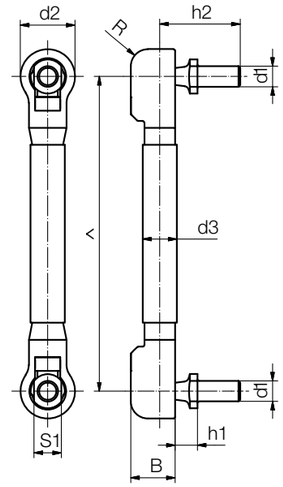
igubal® coupling joints | Product range

Variable coupling joints: WDGM



Version A Version B Version C Version D

- Socket cup M5, M6, M8 and M10
- Individual centre distance
- Individual alignment of the bearing position



Order key

Type	Size [mm]	Options
W DG M -	05	- A -SR-SZ

Angle | Coupling joint | 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 (AISI 303)

Ball stud material
- SZ = Galvanised steel
- EZ = Stainless steel[28]
- PZ = igumid G

Material:
Housing: **igumid G ▶ Page 1654**
Ball stud: **Plastic, galvanised or stainless steel[28]**
Tube: **Galvanised or stainless steel**

Dimensions [mm]

Part No.	d1	d2	d3	X	B	h1	h2	S1	R	Max. pivot angle
				Min.				Width across flats		
WDGM-05-A-SR-SZ ☐ [32]	M5	12.8	8	64	10.8	4.6	19.2	SW8	6.4	23°
WDGM-06-A-ER-SZ[145] ☐ [32]	M6	14.8	10	80	12.3	6.1	23.5	SW9	7.4	25°
WDGM-08-A-SR-SZ ☐ [32]	M8	19.3	12	80	16.2	5.9	29.5	SW12	9.7	24°
WDGM-10-A-SR-SZ ☐ [32]	M10[33]	19.3	12	80	16.2	7.9	36.0	SW14	9.7	24°

[145] Size only available with stainless steel tube (ER)
[28] Stainless steel ball stud upon request
[32] Please add the required centre distance in mm
[33] Housing's size 8 with a special M10 stud, available only in metal

Order example, WDGM-05-A-SR-SZ, 100: Coupling joint with 5mm ball stud thread, version A, tube material made of steel, ball stud made of steel, centre distance 100mm

Can be combined with accessories ▶ From page 859:


GZRM-IG


GZRM


GZRM-MS /GZRM-ES

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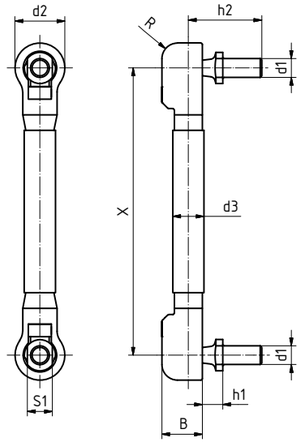
igubal® double joints | Product range

Variable coupling joints, removable: WDGM-DE



Version A | Version B | Version C | Version D

- Socket cup M6
- Individual centre distance
- Individual alignment of the bearing position
- Easy assembly and disassembly
- High holding forces when assembled



Order key

Type	Size [mm]	Options
WDGM-	06	- A -ER-SZ-DE

Angle	Coupling joint	metric	Ball stud thread	Ball stud direction (A, B, C or D)	Tube material	Ball stud material	Disassembly

Options:

Tube material
ER = Stainless steel (AISI 303)

Ball stud material
SZ = Galvanised steel
EZ = Stainless steel[28)]
PZ = igumid G

Material:
Housing: **igumid G ▶ Page 1654**
Ball stud: **Plastic, galvanised or stainless steel[28)]**
Tube: **stainless steel**

Dimensions [mm]

Part No.	d1	d2	d3	X Min.	B	h1	h2	S1 Width across flats	R	Max. pivot angle
WDGM-06-A-ER-SZ-DE ☐ [32)]	M6	16	10	100	13	6.5	23.5	SW8	5	23°

[145)] Size only available with stainless steel tube (ER)
[28)] Stainless steel ball stud upon request
[32)] Please add the required centre distance in mm

Order example, WDGM-06-A-ER-SZ-DE, 150 : Removable coupling joint with 6mm ball stud thread, version A, tube material made of stainless steel, ball stud made of steel, centre distance 150mm

Assembly:



Can be combined with accessories ▶ From page 859:


GZRM-IG


GZRM

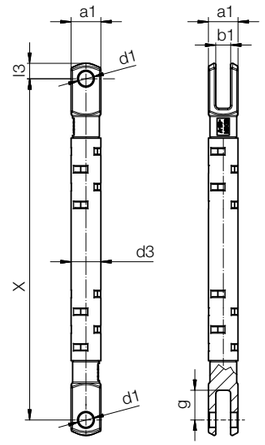

GZRM-MS /GZRM-ES

igubal® coupling joints | Product range New

Crimped coupling joints with clevis joints: GDGM-05-V



- Lubrication and maintenance-free
- Diameter 5mm
- Individual alignment of the clevis joint – rotation feature
- Combination with spring-loaded fixing clip or bolt and securing clip possible
- Other installation sizes upon request
- Cost-effective solution for small and medium volumes



Order key

Type	Size [mm]	Options
GDGM-	05	- V -ER - F

Clevis joint	Coupling joint	metric	Inner Ø	Twistable	Tube material	Accessories

Options:
F = Spring-loaded fixing clip
K = Clevis pin and circlip

Material:
Housing: **igumid G ▶ Page 1654**
Tube: **Stainless steel (AISI 303)**

Dimensions [mm]

Part No.		d1 +0.1	d3	X Min.	a1 +0.3 –0.16	a2 +0.3 –0.16	b1 +0.3 +0.1	g ±0.3	l3 +0.3	Max. static tensile strain Short-term [N]
GDGM-05-V-ER-☐	New	5	10	90	10	10	5	10	5	350

Order example, GDGM-05-V-ER-F, 100: coupling joint with clevis joints for a pin diameter of 5mm. Adjustable alignment of the bearing points. Stainless steel tube, two spring-loaded fixing clips GEFM-05 DIN, centre distance 100mm, included

Can be combined with accessories ▶ From page 859:


GEFM


GBM


GSR

chanhvinh.com

My sketches



igubal® spherical thrust bearings

- Easy to fit
- Compensation of misalignment errors
- Resistant to edge loads
- Very good friction and wear properties



chanhvinh.com

igubal® spherical thrust bearing

igubal® self-aligning spherical thrust bearings are very easy to fit and help to compensate for alignment errors and prevent edge pressure.



Easy to fit

Compensation of misalignment errors

Resistant to edge loads

Very good friction and wear properties

When to use it?
- If you want to save weight
- If corrosion resistance is requested
- If a bearing with a good coefficient of friction is required

When not to use it?
- At very high loads
- When temperatures are higher than +80°C
- When high speeds have to be achieved

Available from stock
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity

Max. +80°C
Min. –30°C

Type 1
Ø 5 – 20mm

Online product finder
▶ www.igus-asean.com/igubal-finder

igubal® spherical thrust bearings | Technical data

Mechanical properties
igubal® self-aligning spherical thrust bearings are very easy to fit and help to compensate for alignment errors and prevent edge pressure. The housing pad is made of the impact-resistant, thermoplastic composite igumid G. The spherical washer is made of iglidur® W300 material. This combination provides exceptionally good friction and wear properties.

Loads
The load capacity of igubal® spherical thrust bearings is very high in standard ambient temperatures. For high continuous loads and high temperatures, the load capacity of the spherical thrust bearings should be tested in an experiment that simulates the application.

Coefficient of sliding friction and speed
Taking into account the radial load, maximum surface speeds up to 0.5m/s rotating are possible.

Assembly
The housing pad is installed so that it is countersunk and secured. The spherical washer is loosely fitted in the socket and is held in place by the shaft that is placed into the bearing.

Product range
igubal® spherical thrust bearings are available in standard form to suit diameters from 5 to 20mm. Please contact us if you require other dimensions.

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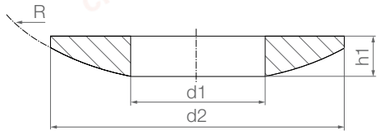
igubal® spherical thrust bearing | Product range

Spherical thrust bearings: SAM



Spherical washer



Housing pad



Order key

Type	Size [mm]
SA M	-05

Type | metric | Inner Ø d1

Material:
Spherical washer: **iglidur® W300** ▶ **Page 171**
Housing pad: **igumid G** ▶ **Page 1654**

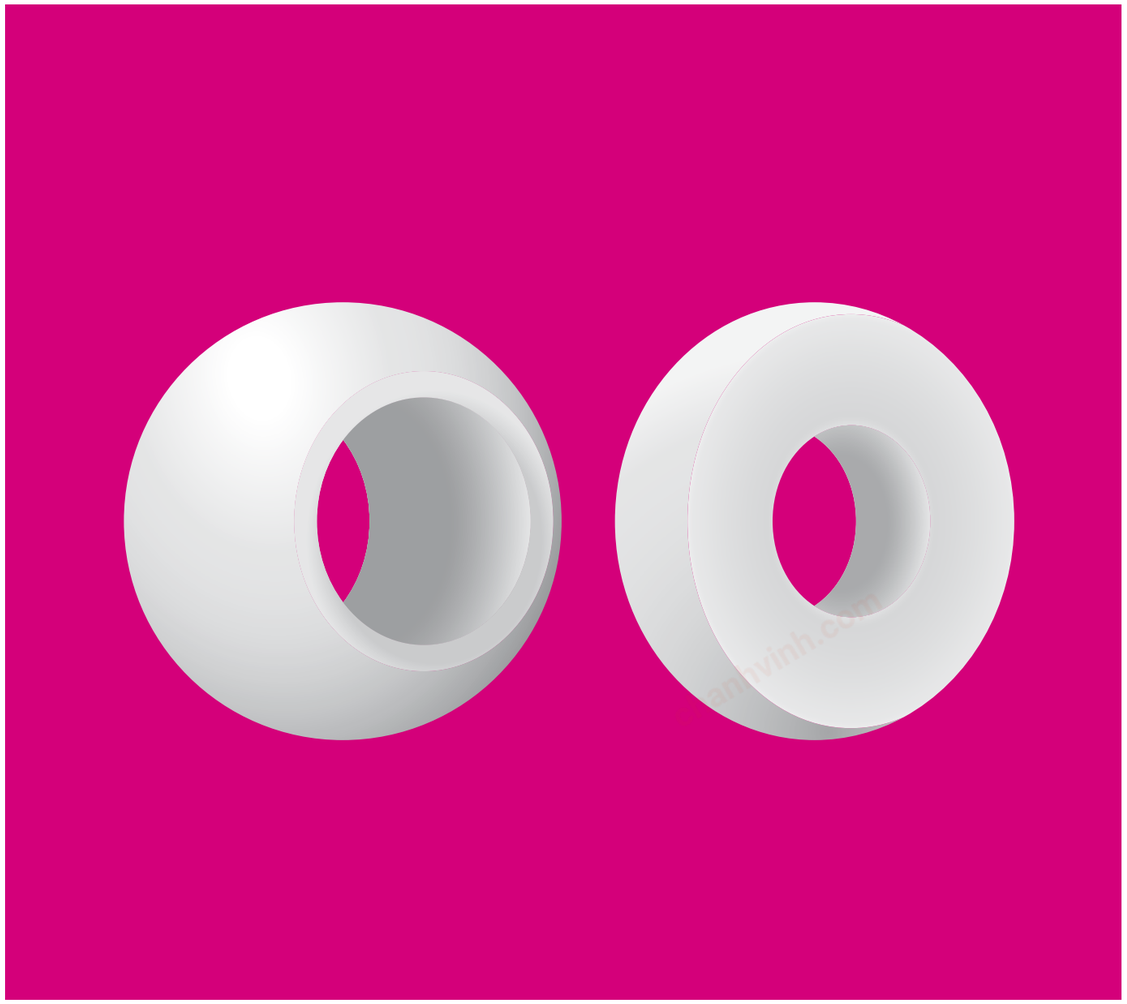
Technical data

Part No.	Max. static axial compressive strength Short-term [N]	Max. static axial compressive strength Long-term [N]	Weight [g]
SAM-05	4,000	2,000	0.9
SAM-06	5,000	2,500	1.1
SAM-08	8,000	4,000	2.2
SAM-10	10,000	5,000	3.4
SAM-12	12,000	6,000	5.9
SAM-16	17,000	8,500	8.5
SAM-20	22,000	11,000	12.8

Dimensions [mm]

Part No.	d1 Spherical washer DIN 2768 medium	d3 Housing pad DIN 2768 medium	d2	h1 Spherical washer	h2 Housing pad	H[34] Overall height	R Radius	Compensation angle
SAM-05	5.2	7.0	15	3.0	3.5	4.7	15	3°
SAM-06	6.2	7.5	16	3.0	4.0	5.3	16	3°
SAM-08	8.2	10.0	20	4.0	5.0	6.8	20	2°
SAM-10	10.2	12.0	24	4.5	5.5	7.5	24	2°
SAM-12	12.5	14.5	30	5.0	6.2	8.0	32	2°
SAM-16	16.2	19.0	36	5.5	6.5	8.7	40	2°
SAM-20	20.2	23.0	44	6.0	7.0	8.6	45	2°

[34] In assembled condition



igubal® spherical balls

- Maintenance-free dry operation
- Corrosion-free
- High compressive strength
- Flexible
- Lightweight
- Different materials
- Spherical balls for metallic bearing housings



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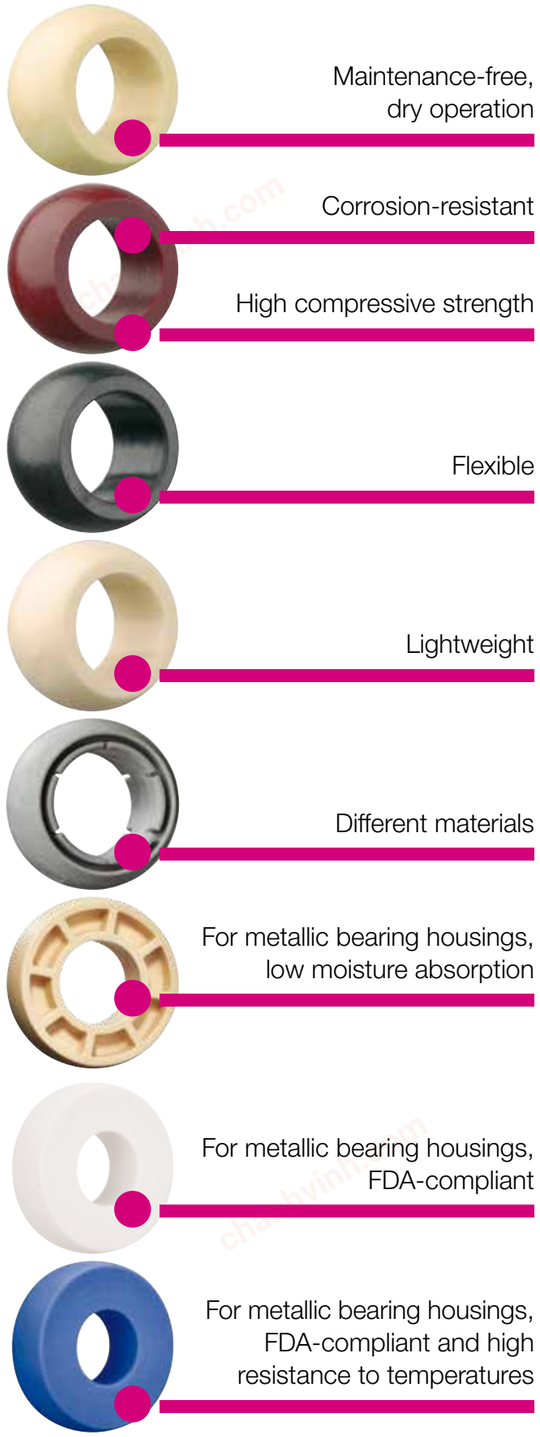
igubal® spherical balls

Every single iglidur® material has its own special properties, which determines the suitability for your special applications and requirements. We have available spherical balls made from iglidur® materials W300 (standard), J, J4, R, RN248, UW and X. The spherical balls 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 E and K series components should be fitted
- If different iglidur® materials should be tested
- If high compressive strength is required
- If high flexibility is required
- Replacing ball bearings in metallic housings

When not to use it?

- When temperatures are higher than +250°C
- When dimensions above 50mm are required
- When rotation speeds higher than 0.5m/s are required

Tolerances

Maintenance-free igubal® spherical balls are designed with a tolerance of the inner diameter of 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.

Price breaks online
No minimum order value. No minimum order quantity

Depending on material

8 types
Ø 2–50mm

Imperial dimensions available
▶ From page 1610

Online product finder
▶ www.igus-asean.com/igubal-finder

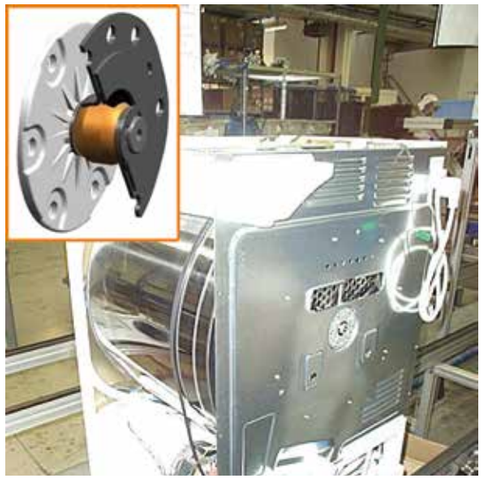
igubal® spherical balls | Application examples



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-asean.com/igubal-applications



Drum bearing in a tumble dryer



▶ www.igus-asean.com/food



Carriage in a crane system



▶ www.igus-asean.com/design

chanhvinh.com

igubal® spherical balls | Product overview

Standard – igubal® spherical balls
iglidur® W300 ▶ Page 171



WKM
K series
metric/imperial
▶ Page 845



WEM
E series
metric/imperial
▶ Page 845

Low-cost – igubal® spherical balls
iglidur® R ▶ Page 247



RKM
K series
metric
▶ Page 846



REM
E series
metric
▶ Page 846

High temperatures – igubal® spherical balls
iglidur® X ▶ Page 279



XKM
K series
metric
▶ Page 847



XEM
E series
metric
▶ Page 847

Low moisture absorption igubal® spherical balls
iglidur® J ▶ Page 159





JKM
K series
metric
▶ Page 848–850



JEM
E series
metric
▶ Page 848

Cost-effective – igubal® spherical balls
iglidur® J4, ▶ Page 1652



J4KM
K series
Metric
▶ Page 851



J4EM
E series
Metric
▶ Page 851

Underwater applications – igubal® spherical balls
iglidur® UW ▶ Page 509



UWEM
E series
Metric
▶ Page 852

Clearance-free, pre-loaded – igubal® spherical balls
iglidur® J4VEM ▶ Page 853



J4VEM
E series
Metric
▶ Page 853

Detectable – igubal® spherical balls
iglidur® RN248 ▶ Page 1657



RN248KM
K series
Metric
▶ Page 854



RN248EM
E series
Metric
▶ Page 854

For metallic bearing housings – igubal® spherical balls

iglidur® J ▶ Page 159



Standard
UC series
Metric
▶ Page 855

iglidur® A180 ▶ Page 401

FDA-compliant
UC series
Metric
▶ Page 855

iglidur® A350 ▶ Page 385

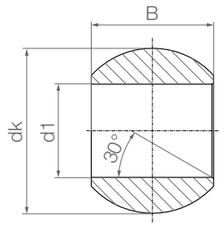


FDA-compliant, high temp.
UC series
Metric
▶ Page 855

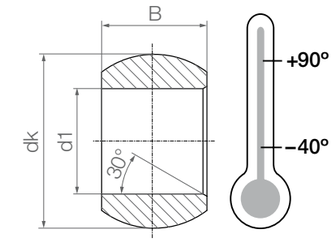
igubal® spherical balls | Product range

Standard spherical balls: WKM and WEM









Order key

Type	Size [mm]	Options

W ☐ M - 02 - 04

- W = iglidur® W300 spherical balls
- Dimensional series
- Metric
- Inner Ø d1
- Width

Series
K = Dimensional K series
E = Dimensional E series

inch Imperial dimensions available
▶ Page 1610

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
WKM-02-04	2	5.10	4	0.1
WKM-03-06	3	8.10	6	0.3
WKM-05-08	5	11.30	8	0.6
WKM-06-09	6	12.80	9	0.9
WKM-08-12	8	16.00	12	1.6
WKM-10-14	10	19.00	14	2.7
WKM-12-16	12	22.10	16	4.0
WKM-14-19	14	25.40	19	6.0
WKM-16-21	16	28.40	21	8.2
WKM-18-23	18	31.50	23	10.8
WKM-20-25	20	35.10	25	14.5
WKM-22-28	22	38.30	28	18.7
WKM-25-31	25	42.90	31	26.0
WKM-30-37	30	51.20	37	44.7

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
WEM-04-05	4	8.30	5	0.2
WEM-05-06	5	10.30	6	0.3
WEM-06-06	6	10.30	6	0.4
WEM-08-08	8	13.30	8	0.7
WEM-10-09	10	16.10	9	1.2
WEM-12-10	12	18.10	10	1.5
WEM-15-12	15	22.00	12	2.4
WEM-16-13	16	24.10	13	3.3
WEM-17-14	17	25.10	14	3.7
WEM-20-16	20	29.10	16	5.3
WEM-25-20	25	35.60	20	9.5
WEM-30-22	30	40.90	22	12.1

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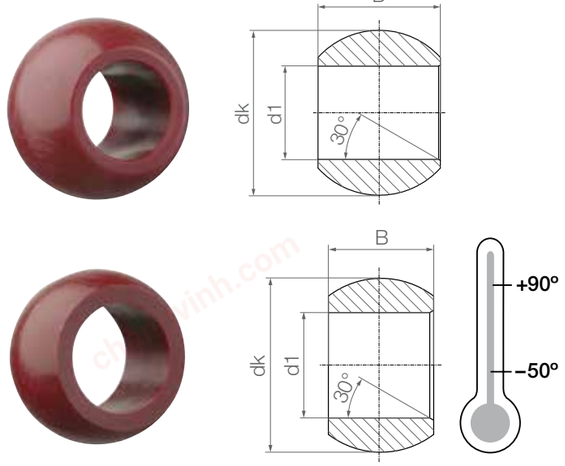
igubal® spherical balls | Product range

Low-cost spherical balls: RKM and REM



Order key

Type	Size [mm]	Options
R ☐ M - 08 - 12		

- iglidur® R spherical balls
- Dimensional series
- Metric
- Inner Ø d1 [mm]
- Width

Series
K = Dimensional K series
E = Dimensional E series

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
RKM-08-12	8	15.90	12	1.8
RKM-10-14	10	19.00	14	2.9

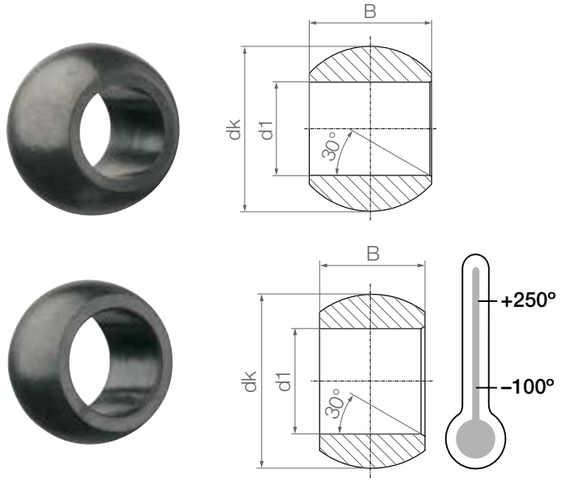
Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
REM-05-06	5	10.20	6	0.4
REM-06-06	6	10.20	6	0.4
REM-08-08	8	13.20	8	0.8
REM-10-09	10	16.10	9	1.3
REM-12-10	12	18.10	10	1.6

igus® spherical balls

igubal® spherical balls | Product range

High temperatures spherical balls: XKM and XEM



Order key

Type	Size [mm]	Options
X ☐ M - 10 - 14		

- iglidur® X spherical balls
- Dimensional series
- Metric
- Inner Ø d1
- Width

Series
K = Dimensional K series
E = Dimensional E series

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
XKM-10-14	10	19.10	14	2.9

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
XEM-05-06	5	10.30	6	0.4
XEM-06-06	6	10.20	6	0.4
XEM-08-08	8	13.30	8	0.8
XEM-10-09	10	16.10	9	1.3
XEM-12-10	12	18.10	10	1.6

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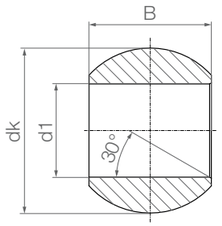
igubal® spherical balls | Product range

Low moisture absorption spherical balls: JKM and JEM

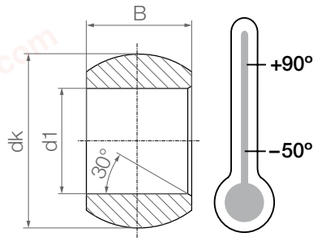


JKM





JEM



Order key

Type	Size [mm]	Options
J □ M - 03 - 06		

- iglidur® J spherical balls
- Dimensional series
- Metric
- Inner Ø d1
- Width

Series
K = Dimensional K series
E = Dimensional E series

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
JKM-03-06	3	8.10	6	0.3
JKM-05-08	5	11.30	8	0.7
JKM-06-09	6	12.80	9	1.0
JKM-08-12	8	15.90	12	1.9
JKM-10-14	10	19.00	14	3.1
JKM-12-16	12	22.10	16	4.7
JKM-16-21	16	28.40	21	9.4
JKM-18-23	18	31.50	23	13.2
JKM-20-25	20	35.10	25	17.6
JKM-25-31	25	42.80	31	31.6
JKM-30-37	30	51.20	37	53.0

Dimensions [mm]

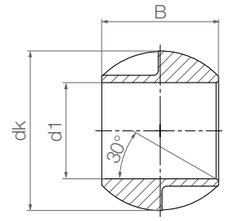
Part No.	d1 E10	dK	B	Weight [g]
JEM-04-05	4	8.30	5	0.3
JEM-05-06	5	10.20	6	0.4
JEM-06-06	6	10.20	6	0.4
JEM-08-08	8	13.30	8	0.8
JEM-10-09	10	16.10	9	1.3
JEM-12-10	12	18.10	10	1.7
JEM-15-12	15	22.00	12	2.9
JEM-16-13	16	24.10	13	3.9
JEM-17-14	17	25.20	14	4.1
JEM-20-16	20	29.10	16	6.4
JEM-25-20	25	35.60	20	11.5
JEM-30-22	30	40.90	22	14.5
JEM-40-28	40	53.00	28	31.0

igubal® spherical balls

igubal® spherical balls | Product range

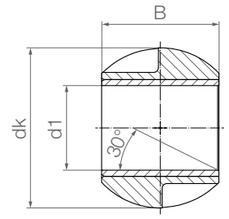
Low moisture absorption spherical balls: JKM





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
- K series
- Metric
- Inner Ø d1
- Width

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
JKM-35-49[35)]	35	66.30	49	75.5
JKM-40-49	40	66.30	49	54.5
JKM-45-60[35)]	45	82.40	60	125.1
JKM-50-60	50	82.40	60	92.1

[35)] Diameter reduced by means of a plain bearing

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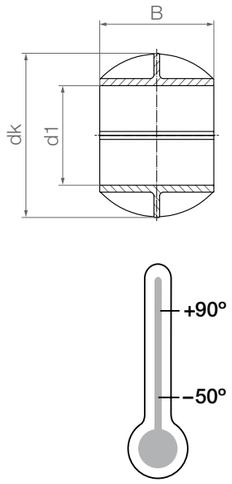
igubal® spherical balls | Product range

Low moisture absorption split spherical balls: JKM-GT





Order key

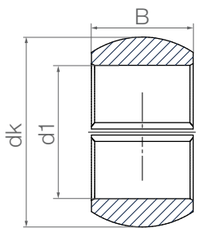
Type			Version	Size [mm]
J	K	M-	GT	40
iglidur® J spherical balls	K series	Metric	Split ball	Inner Ø d1 [mm]

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
JKM-GT40	40	66.30	49	54.5
JKM-GT50	50	82.40	60	92.1

Low moisture absorption split spherical balls: JEM-GT





Order key

Type			Version	Size [mm]
J	E	M-	GT	16
iglidur® J spherical balls	E series	Metric	Split ball	Inner Ø d1 [mm]

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
JEM-GT16	16	23.7	13	3.7
JEM-GT20	20	28.9	16	6.1
JEM-GT25	25	35.6	20	10.9
JEM-GT30	30	40.8	22	14.6

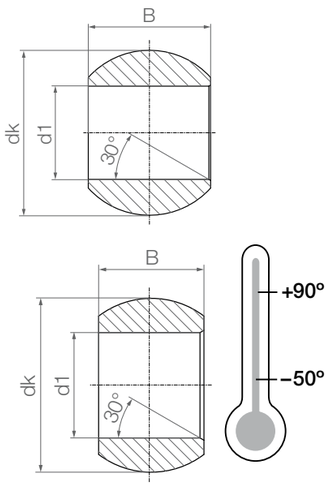
igubal® spherical balls

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 = Dimensional K series
E = Dimensional E series

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
J4KM-10-14	10	19.10	14	3.1
J4KM-12-16	12	22.10	16	4.7

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
J4EM-04-05	4	8.25	5	0.3
J4EM-05-06	5	10.20	6	0.4
J4EM-06-06	6	10.20	6	0.4
J4EM-08-08	8	13.30	8	0.8
J4EM-10-09	10	16.00	9	1.3
J4EM-12-10	12	18.00	10	1.7
J4EM-15-12	15	22.00	12	2.9
J4EM-16-13	16	24.00	13	3.9
J4EM-17-14	17	25.10	14	4.1
J4EM-20-16	20	28.90	16	6.4
J4EM-25-20	25	35.50	20	11.5
J4EM-30-22	30	40.90	22	14.5

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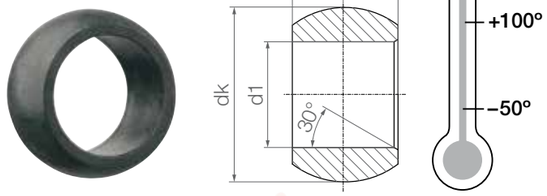
igubal® spherical balls | Product range

Spherical balls for underwater applications: UWEM



Order key

Type	Size [mm]				
UW	E	M	-16	-13	
igliduR® UW spherical balls	E series	Metric	Inner Ø d1	Width	

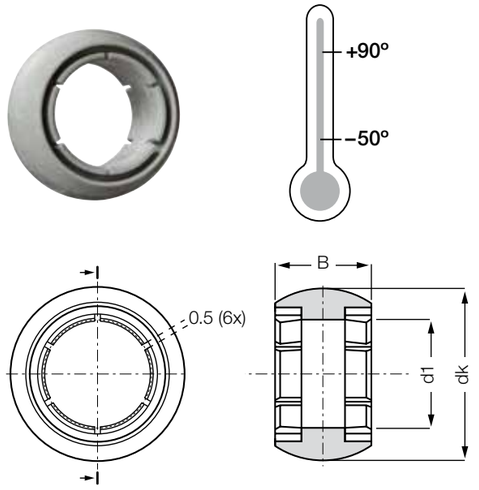
Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
UWEM-10-09	10	16.10	9	1.4
UWEM-16-13	16	23.80	13	4.0
UWEM-20-16	20	28.80	16	6.5
UWEM-25-20	25	35.30	20	11.6
UWEM-30-22	30	40.50	22	15.2

igubal® spherical balls

igubal® spherical balls | Product range

Clearance-free, pre-loaded spherical balls: J4VEM



- Can be combined with all E series housings
- Sizes from 8 to 20mm
- Clearance-free, pre-loaded
- Totally clearance-free in unloaded state

Order key

Type	Size [mm]				
J4	V	E	M	-08	-08
igliduR® J4 spherical balls	Pre-loaded	E series	Metric	Inner Ø d1	Width

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
J4VEM-08-08	8	13.20	8	0.7
J4VEM-10-09	10	16.10	9	1.2
J4VEM-12-10	12	18.10	10	1.5
J4VEM-16-13	16	24.10	13	3.7
J4VEM-20-16	20	29.10	16	6.2

5 sizes available: Ø 8, 10, 12, 16, 20mm

combinable with:

igubal® rod ends	EA(L)RM	▶ **Page 758**	igubal® fixed flange bearings	EFSM	▶ **Page 808**
igubal® rod ends	EB(L)RM	▶ **Page 756**	igubal® clip bearings	EGFM-T	▶ **Page 829**
igubal® pillow block bearings	ESTM	▶ **Page 795**	igubal® spherical bearings	EGLM	▶ **Page 825**
igubal® fixed flange bearings	EFOM	▶ **Page 806**	igubal® double joints	EGZM	▶ **Page 831**

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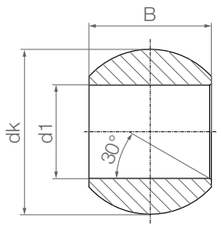
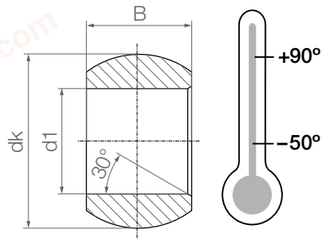
igubal® spherical balls | Product range

Detectable spherical balls: 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 = Dimensional K series
E = Dimensional E series

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
RN248KM-06-09	6	12.80	9	1

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
RN248EM-05-06	5	10.30	6	0.4
RN248EM-06-06	6	10.20	6	0.4
RN248EM-08-08	8	13.20	8	0.8
RN248EM-10-09	10	16.10	9	1.3

igubal® spherical balls

igubal® spherical balls | Product range

Slim spherical balls made of iglidur® materials for various metallic bearing housings

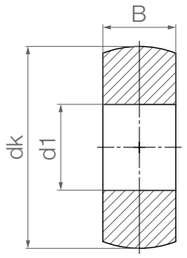


iglidur® J

iglidur® A180



iglidur® A350



- 3 different spherical ball materials available: iglidur® J, A180 and A350
- Eight dimensions for housing numbers range includes UC203 to UC210
- Maintenance-free, dry operation
- Durable
- Corrosion-free
- Resistant to dirt

Dimensions [mm]

Part No.	Housing No.	d1 E10	dk	B	Max. static compressive force radial [N]	Max. static compressive force axial [N]
made of iglidur® J, low coefficient of friction (material information ▶ From page 159)						
JEM-17-17	UC203	17	47	17	10,000	7,500
JEM-20-17	UC204	20	47	17	11,500	7,500
JEM-25-17	UC205	25	52	17	14,500	7,500
JEM-30-19	UC206	30	62	19	19,500	9,500
JEM-35-20	UC207	35	72	20	24,000	10,500
JEM-40-21	UC208	40	80	21	29,000	12,000
JEM-45-22	UC209	45	85	22	34,000	13,000
JEM-50-24	UC210	50	90	24	41,500	15,500
made of iglidur® A180, FDA-compliant all-rounder (material information ▶ From page 361)						
A180EM-17-17	UC203	17	47	17	7,500	6,000
A180EM-20-17	UC204	20	47	17	9,000	6,000
A180EM-25-17	UC205	25	52	17	11,500	6,000
A180EM-30-19	UC206	30	62	19	15,500	7,500
A180EM-35-20	UC207	35	72	20	19,000	8,500
A180EM-40-21	UC208	40	80	21	23,000	9,000
A180EM-45-22	UC209	45	85	22	27,000	10,000
A180EM-50-24	UC210	50	90	24	33,000	12,000
made of iglidur® A350, for high temperatures and chemicals (material information ▶ From page 369)						
A350EM-17-17	UC203	17	47	17	17,000	13,000
A350EM-20-17	UC204	20	47	17	20,000	13,000
A350EM-25-17	UC205	25	52	17	25,000	13,000
A350EM-30-19	UC206	30	62	19	34,000	17,000
A350EM-35-20	UC207	35	72	20	41,500	18,500
A350EM-40-21	UC208	40	80	21	50,000	20,000

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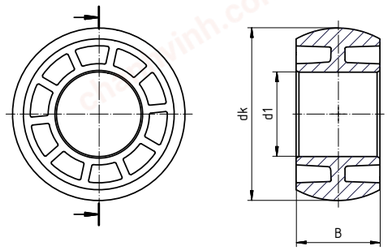
igubal® spherical balls | Product range

Cost-effective spherical balls for various metallic bearing housings





Order key

Type	Size [mm]	Version
J EM-	17 - 17	SP

- iglidur® material
- iglidur® J spherical balls
- Inner Ø d1
- Width
- Injection moulding

Material:
iglidur® J, low coefficients of friction ▶ **Page 159**
iglidur® J4, Low-cost material ▶ **Page 1652**

- Cost-effective due to injection moulding method
- Eight dimensions for housing numbers range includes UC203 to UC210
- Maintenance-free, dry operation
- Durable
- Resistant to corrosion and chemicals
- Resistant to dirt
- Low moisture absorption

Dimensions [mm]

Part No.	Housing No.	d1 E10	dk	B	Max. static compressive force radial [N]	Max. static compressive force axial [N]
JEM-17-17-SP	UC203	17	47	17	7,500	4,000
☐EM-20-14-SP New	P204	20	47	14	8,000	4,000
JEM-20-17-SP	UC204	20	47	17	8,000	4,000
☐EM-25-15-SP New	P205	25	52	15	9,000	4,000
JEM-25-17-SP	UC205	25	52	17	9,000	3,500
☐EM-30-16-SP New	P206	30	62	16	13,500	5,000
JEM-30-19-SP	UC206	30	62	19	13,500	5,000
JEM-35-20-SP	UC207	35	72	20	14,500	6,500
JEM-40-21-SP	UC208	40	80	21	21,000	6,000
JEM-45-22-SP	UC209	45	85	22	23,000	5,500
JEM-50-24-SP	UC210	50	90	24	25,000	5,500

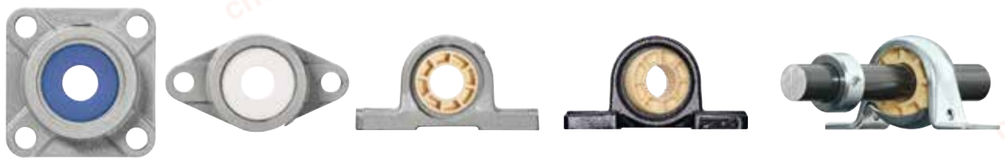
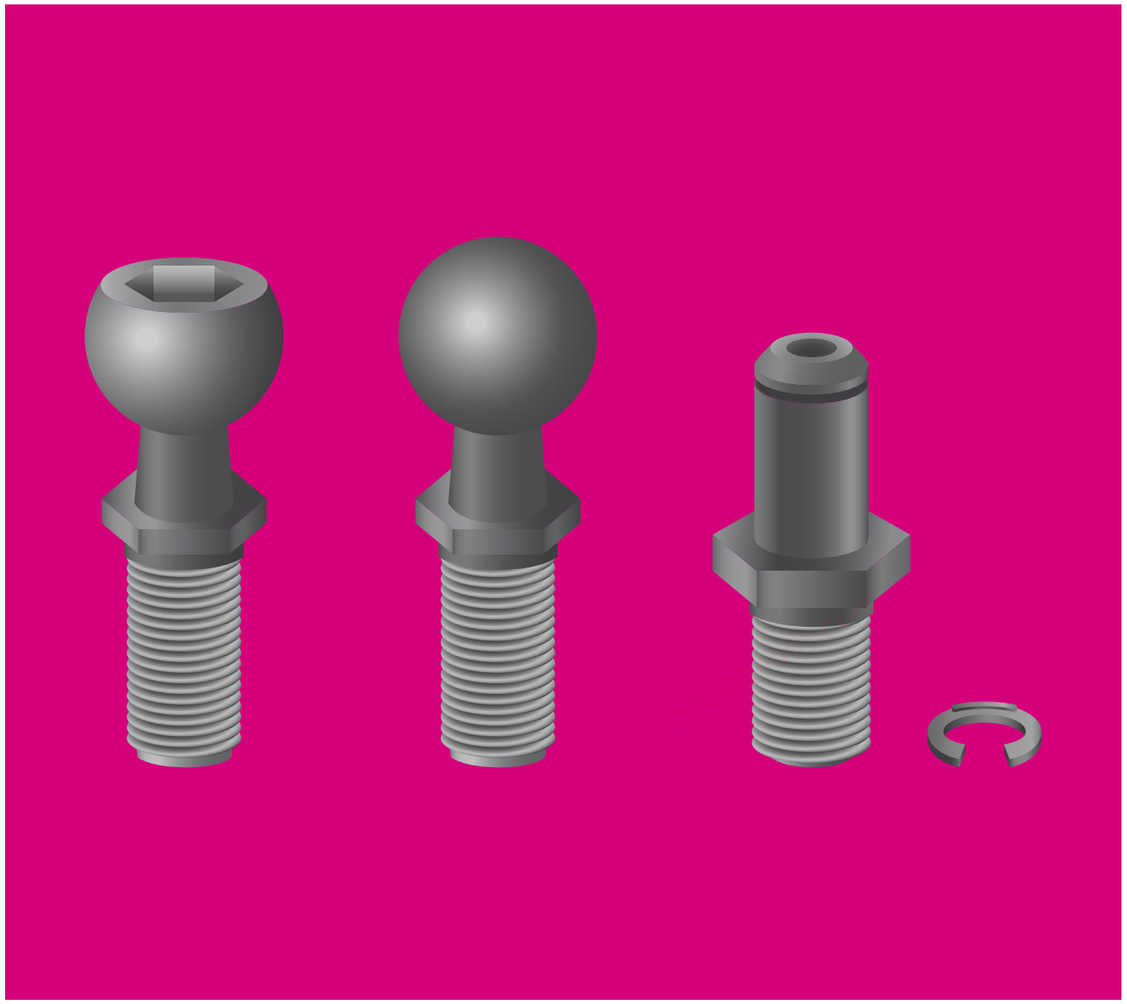


Image exemplary



igubal® accessories

Ball studs made of plastic, galvanised steel and stainless steel

Adapter screw made from plastic

Adapter for E series pillow block bearings



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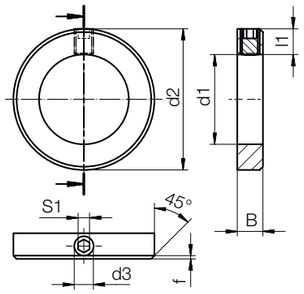
igubal® accessories | Product range New

Fixing collars with threaded pin





Order key

Type	Size [mm]	Version
SR M - S	20	- V

Fixing collar | Metric | without thread | Shaft diameter | Pre-assembled (screw)

Material:
Galvanised steel (stainless steel upon request)

- Easy to fit
- DIN 705 (lightweight series)
- Incl. DIN 914 threaded pin (Allen key)

Dimensions [mm]

Part No.	d1	d2	B	f	d3	l1	S1	Weight [g]
SRM-S20-V New	20	32	14	1.4	M6	6	SW3	53.0
SRM-S25-V New	25	40	16	1.6	M8	8	SW4	95.6
SRM-S30-V New	30	45	16	1.6	M8	8	SW4	111.0



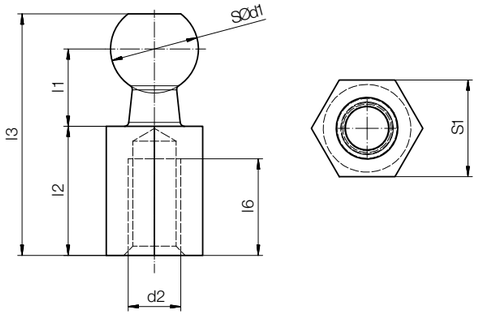


Image exemplary

igubal® accessories | Product range

Ball studs with female thread





Order key

Type	Size [mm]	Version
GZ R M -	05	- IG - ES

Threaded pin | Thread direction | Metric | Thread size M... | Female thread

Options:
Thread
R = Right-hand thread
L = Left-hand thread (upon request)

Add-on:
Blank = Galvanised steel
ES = Stainless steel[28)]

Material:
Galvanised and stainless steel (AISI 303)

- Easy to fit
- DIN connection size
- Corrosion-free

Dimensions [mm]

Part No.	d1 –0,05	d2	l1	l2	l6	l3	S1	Weight [g]
GZRM-05-IG	8	M5	7.0	12.2	9	22.7	SW10	10
GZRM-06-IG	10	M6	8.8	14.7	11	27.5	SW11	15
GZRM-08-IG	13	M8	10.8	18.7	12	35.2	SW14	30
GZRM-10-IG	16	M10	13.3	22.7	16	43.0	SW17	55

[28)] **Stainless steel ball stud upon request**

Can be combined with:


WGR(L)M


WGR(L)M LC


WGR(L)M-DE


GFSM-IG


ZCLM-06-10


WDGM


WDGM-DE

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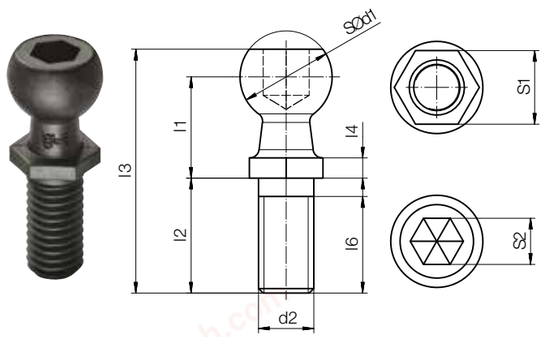
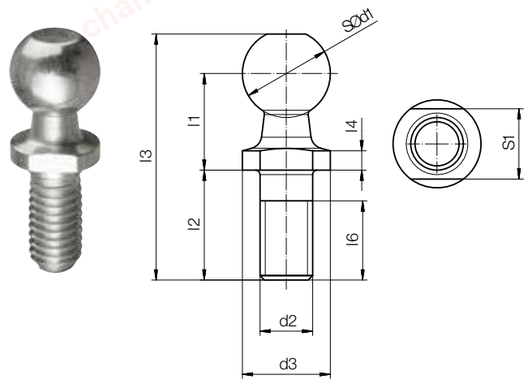
igubal® accessories | Product range

Ball studs with male thread





Order key

Type	Size [mm]
GZ R M - 05 - MS	
Threaded pin	Thread size M...
Thread direction	
Metric	

Options:

Thread

R = Right-hand thread

L = Left-hand thread (upon request)

Add-on:

Blank = Plastic

MS = Galvanised steel

ES = Stainless steel (upon request)

Material:

Plastic: **igumid G** ▶ **Page 1654**

Galvanised and stainless steel (AISI 303)

- Easy to fit
- DIN connection size
- Corrosion-free

Dimensions [mm] – ball studs made from plastic

Part No.	d1 ±0.1	d2	l1	l2	l3	l4 ±0.2	l6	S1	S2	Weight [g]
GZRM-05	8	M5	9	10.2	21.7	2.0	8.2	SW7	4	1
GZRM-06	10	M6	11	12.5	26.5	2.2	10.5	SW8	5	1
GZRM-08	13	M8	13	16.5	33.5	2.4	13.5	SW11	6	3
GZRM-10	16	M10	16	20.0	40.5	2.7	16.0	SW13	8	6

Dimensions [mm] – ball studs made of galvanised and stainless steel

Part No.	d1 h9	d2	d3 h14	l1 ±0.3	l2 ±0.3	l3 ±0.3	l4 ±0.4	l6 Min.	S1 h14	Weight [g]
GZRM-05-MS[115]	8	M5	8	9	10.2	22.7	2.0	6.2	SW7	4.5
GZRM-06-MS[115]	10	M6	10	11	12.5	28.0	2.2	8.5	SW8	8.5
GZRM-08-MS[115]	13	M8	13	13	16.5	35.0	2.4	11.2	SW11	17.7
GZRM-10-MS[115]	16	M10	16	16	20.0	43.0	2.7	12.7	SW13	35.1

[115] For the stainless steel version please replace the suffix MS by ES

Can be combined with:

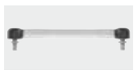

WGR(L)M


WGR(L)M LC


WGR(L)M-DE


GFSM-IG


ZCLM-06-10

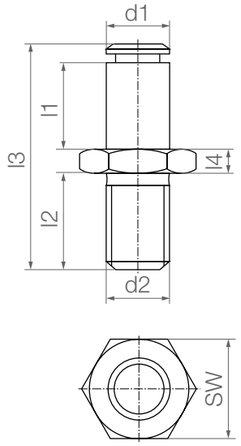

WDGM


WDGM-DE

igubal® accessories | Product range

Adapter screws: PKRM and PKLM





Order key

Type	Size [mm]	Options
P K ☐ M -	05	
Adapter screw	Thread size M...	Thread
K series		L = Left-hand thread[21]
Thread direction		R = Right-hand thread
Metric		

Material:

POM ▶ **Page 1654**

Solid plastic adapter screws with corresponding circlips are used as accessories for dimensional K series rod ends. In contrast to other "black" components of stock igubal® parts, the igubal® adapter screws consist of the **material POM**. This component effectively transforms a standard K series rod end into an angled ball and socket joint.

- Lightweight
- Absolute corrosion resistance
- Can be combined with K series rod end
- Vibration-dampening
- Easy to fit
- Left-hand thread upon request

Technical data and dimensions [mm]

Part No.	Max. static tensile strain		Max. static radial load		d1	d2	l1	l2	l3	l4	SW	Weight
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	h11	Thread	Length adjusting bolt	Thread length	Total length	Nut width	Width across flats	[g]
PK☐M-05	100	50	200	100	5	M5	8.5	11.3	25.0	2.7	SW8	0.7
PK☐M-06	150	75	250	125	6	M6	9.5	12.8	28.0	3.2	SW10	1.2
PK☐M-08	250	125	400	200	8	M8	12.5	12.5	32.0	4.0	SW13	2.6
PK☐M-10	500	250	600	300	10	M10	14.5	14.5	37.5	5.0	SW16	4.0
PK☐M-12	700	350	900	450	12	M12	16.5	15.5	42.0	6.0	SW18	7.5
PK☐M-14	800	400	1,100	550	14	M14	19.5	15.5	47.0	7.0	SW21	11.4
PK☐M-16	900	450	1,400	700	16	M16	22.0	16.5	52.0	8.0	SW24	16.9
PK☐M-18	800	400	1,700	850	18	M18 x 1.5	24.0	20.5	59.0	9.0	SW27	16.9
PK☐M-20	500	250	2,200	1,100	20	M20 x 1.5	26.0	25.0	67.0	10.0	SW30	34.4

[21] Delivery time: 4 – 6 weeks

Can be combined with:


KBR(L)M


KBR(L)M-CL


KAR(L)M


KAR(L)M-CL


KCR(L)M

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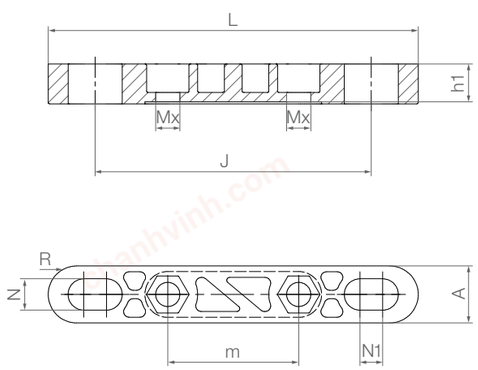
igubal® accessories | Product range

Adapters for dimensional E series pillow block bearings





- Same dimensions as metallic pillow block bearings
- Lightweight
- For pillow block bearings of dimensional E series (ESTM, ESTM-GT)
- Chemical and corrosion-resistant
- Fits directly
- Space-saving
- Same screws as traditional metallic versions



Order key

Type					Size [mm]
AD-	01-	E	ST	M	-20
Adapter		E series	Pillow block bearings	Metric	Inner Ø

Technical data

Part No.	Max. radial tensile force [Fz]		Max. radial compressive strength [Fd]		Max. 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-...	L	A	R	J	h1	N	N1	m	Mx
AD-01-ESTM-20[26]	ESTM-20	130	20	10.0	97	13.3	11	8	46	M8
AD-01-ESTM-25[27]	ESTM-25	130	20	10.0	102	12.5	11	9	54	M8
AD-01-ESTM-30[27]	ESTM-30	158	25	12.5	118	14.9	14	10	64	M10

[26] Material: plastic (igumid G)

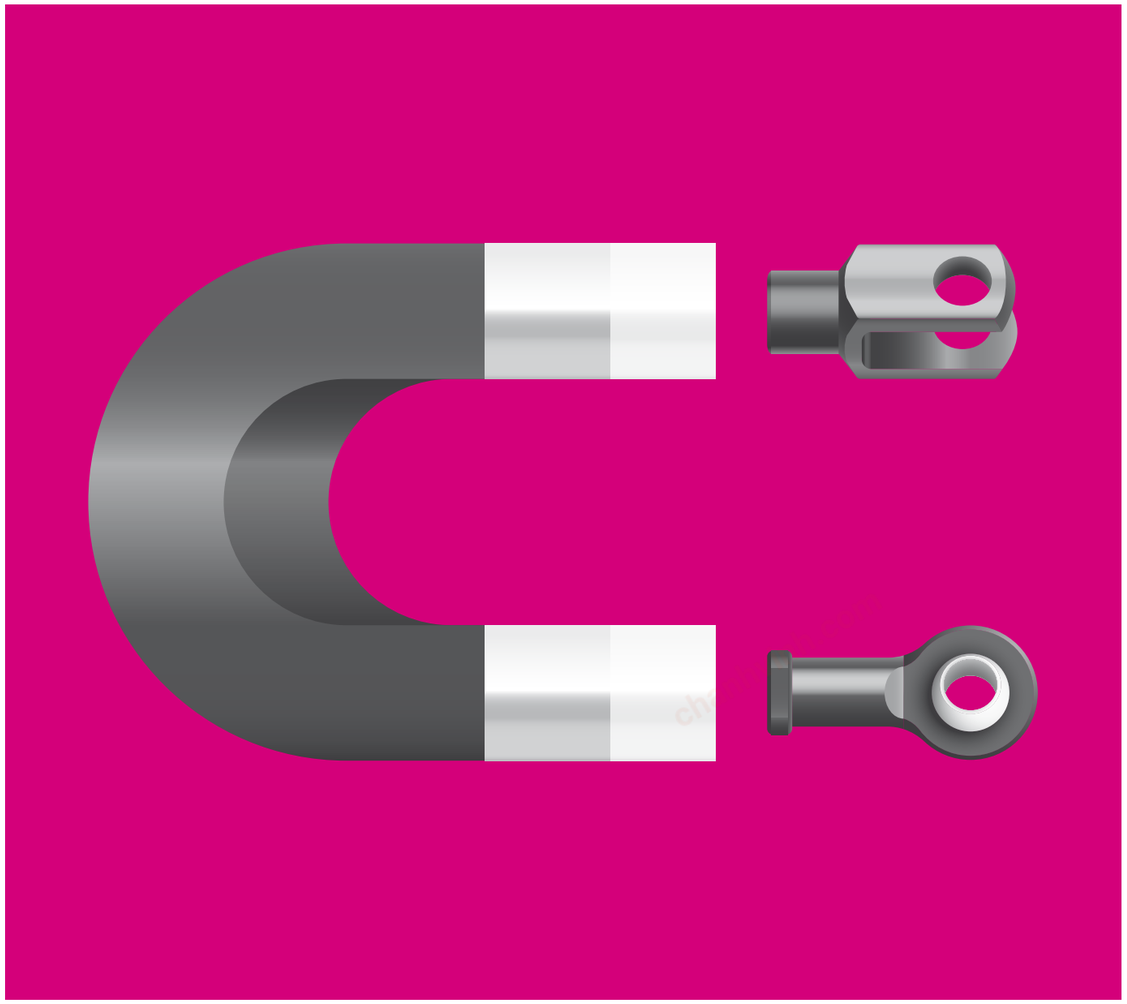
[27] Material: aluminium

Can be combined with:


ESTM


ESTM-GT-GT


ESTM-GT



igubal® detectable

- Resistant to dust and dirt
- Lubrication and maintenance-free
- Vibration-dampening
- Lightweight
- Corrosion-free



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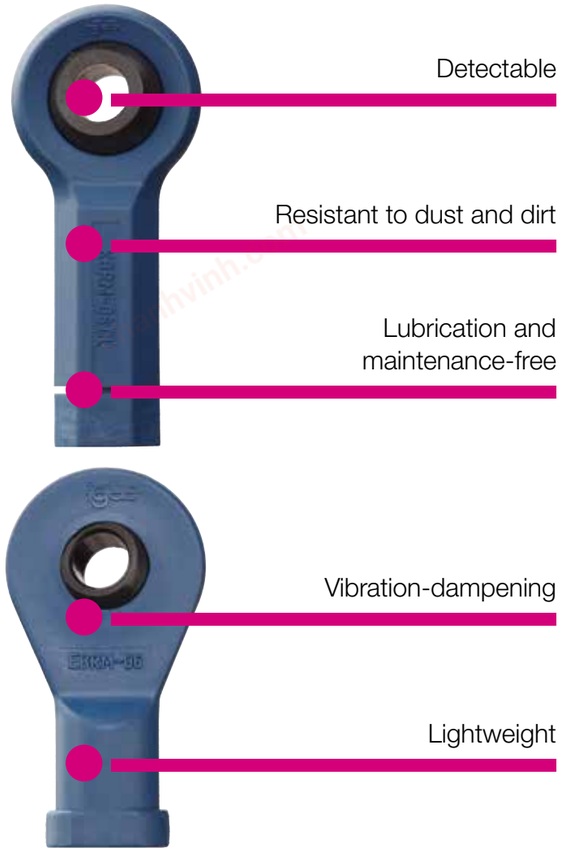
igubal® detectable

Following igubal® bearings can be found quickly in case of accidental damage 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 E and K series components should be fitted
- If high compressive strength is required

When not to use it?
- When temperatures are higher than +80°C
- When diameters above 16mm are required
- When rotation speeds higher than 0.5m/s are required

Available from stock
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity

Max. +80°C
Min. –30°C

4 types
Ø 4–16mm

Online product finder
▶ www.igus-asean.com/igubal-finder

igubal® detectable | Product overview

Available from stock



Easy assembly
K series
▶ Page 866



Space-saving
E series
▶ Page 867



Clevis joints, high strength
E series
▶ Page 868



Spring-loaded fixing clip
E series
▶ Page 870



Clevis joints with spring-loaded fixing clip
E series
▶ Page 871



Spherical balls
Dimensional K and E series
▶ Page 854

Upon request

Rod ends



Higher forces
▶ Page 754



Space-saving
▶ Page 758



With clipped-on ball
▶ Page 750

Pillow block bearings



Easy to fit
▶ Page 795



Extremely light, compact design
▶ Page 798

Fixed flange bearing



Easy to fit
▶ Page 806



For higher radial load
▶ Page 808

Spherical bearings



Easy to fit, cost-effective
▶ Page 823



For extremely narrow installation space
▶ Page 824



Space-saving
▶ Page 825



Simply snap into sheet metal
▶ Page 827



For tolerance compensation
▶ Page 829



Robust plastic
▶ Page 831

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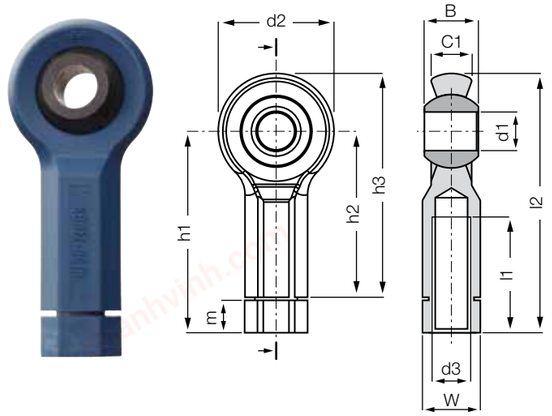
igubal® detectable | Product range

Rod ends with female thread, detectable: KBRM-CL-DT and KBLM-CL-DT



- Smooth design no dirt traps
- Compensation of misalignment errors
- Lightweight
- Absolute corrosion resistance
- Dimensional K series according to DIN ISO 12240

Order key

Type				Size [mm]	Version	
K	B	□	M-	06	-CL	-DT
K series	Housing (female thread)	Thread	Metric	Inner Ø	2nd generation	Detectable

Options:
Thread
L = Left-hand thread
R = Right-hand thread

Material:
Housing: **RN246** ▶ **Page 1657**
Spherical ball: **RN248KM** ▶ **Page 854**

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight
	Short-term	Long-term	Short-term	Long-term	Thread	Female thread	Standard without stainless steel sleeve	
	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[g]
KB□M-06-CL-DT	980	490	210	105	8	0.8	10	4.5

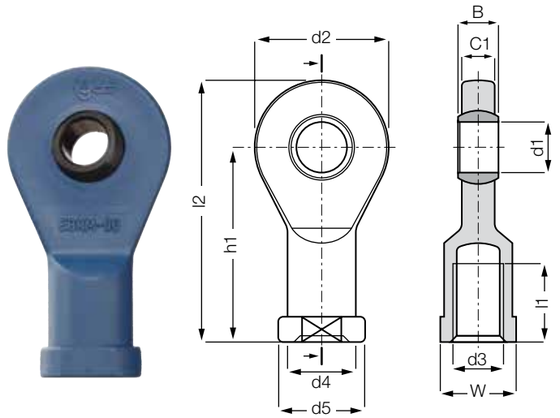
Dimensions [mm]

Part No.	d1 E10	d2	d3	W	B	C1	h3	h1	h2	l1	l2	m	Max. pivot angle
KB□M-06-CL-DT	6	20	M6	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 errors
- Lightweight
- Absolute corrosion resistance

Order key

Type				Size [mm]	Version
E	B	□	M-	04	-DT
E series	Housing (female thread)	Thread	Metric	Inner Ø	Detectable

Options:
Thread
L = Left-hand thread
R = Right-hand thread

Material:
Housing: **RN246** ▶ **Page 1657**
Spherical ball: **RN248EM** ▶ **Page 854**

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight
	Short-term	Long-term	Short-term	Long-term	Thread	Female thread		
	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[g]
EB□M-04-DT	560	280	70	35	7	0.4	2.0	1.8
EB□M-05-DT	910	455	105	52	8	0.5	2.0	3.2
EB□M-06-DT	1,050	525	140	70	8	1.5	2.5	4.0
EB□M-08-DT	1,400	700	315	157	11	5.0	7.0	6.9
EB□M-10-DT	1,610	805	350	175	13	15.0	14.0	11.2

Dimensions [mm]

Part No.	d1 E10	d2	d3	d4	d5	C1	B	h1	l1	l2	W	Max. pivot angle
EB□M-04-DT	4	15	M4	–	–	3.5	5	22.5	9.5	30.0	SW8	33°
EB□M-05-DT	5	19	M5	9.0	11	4.4	6	30.0	12	39.5	SW9	33°
EB□M-06-DT	6	21	M6	11.0	13	4.4	6	30.0	8	40.5	SW11	27°
EB□M-08-DT	8	24	M8	13.0	16	6.0	8	36.0	14	48.0	SW14	24°
EB□M-10-DT	10	29	M10	15.0	19	7.0	9	43.0	18	57.5	SW17	24°

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igubal® detectable | Product range

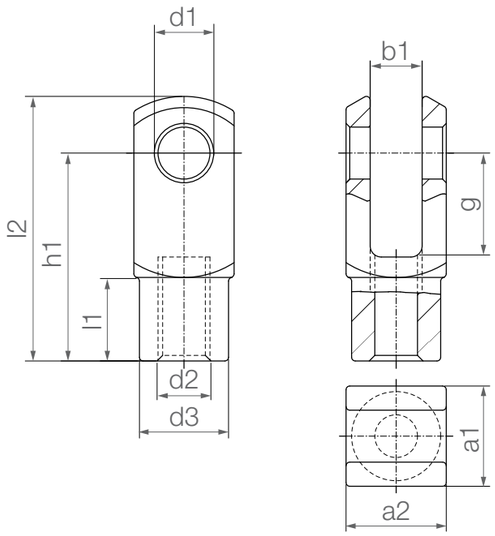
Clevis joints, detectable: GERM-DT and GELM-DT



- Resistant to dust and dirt
- Maintenance and lubrication-free
- Vibration-dampening
- Lightweight

igubal® detectable | Product range

Clevis joints, detectable: GERM-DT and GELM-DT



Order key

Type				Size [mm]	Version
G	E	□	M-	04	- DT
Clevis joint	E series	Thread	Metric	Inner Ø	Detectable

Options:
Thread
L = Left-hand thread
R = Right-hand thread

Material:
RN246 ▶ Page 1657

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
GE□M-04-DT	455	227.5	175	87.5	0.9
GE□M-05-DT	840	420	175	87.5	2.7
GE□M-06-DT	980	490	210	105	2.5
GE□M-08-DT	1,890	945	455	227.5	6.3
GE□M-10-DT	3,290	1,645	560	280	13.2
GE□M-10-DT-F	3,290	1,645	560	280	13.2
GE□M-12-DT	3,990	1,995	630	315	20.2
GE□M-12-DT-F	3,990	1,995	630	315	20.2

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	±0.5	±0.3	±0.2
GE□M-04-DT	4	8	8	8	4	M4	8	21.0	16	6
GE□M-05-DT	5	12	12	12	6	M5	10	30.6	24	9
GE□M-06-DT	6	12	12	12	6	M6	10	30.6	24	9
GE□M-08-DT	8	16	16	16	8	M8	14	41.6	32	12
GE□M-10-DT	10	20	20	20	10	M10	18	51.3	40	15
GE□M-10-DT-F	10	20	20	20	10	M10 x 1.25	18	51.3	40	15
GE□M-12-DT	12	24	24	24	12	M12	20	61.3	48	18
GE□M-12-DT-F	12	24	24	24	12	M12 x 1.25	20	61.3	48	18

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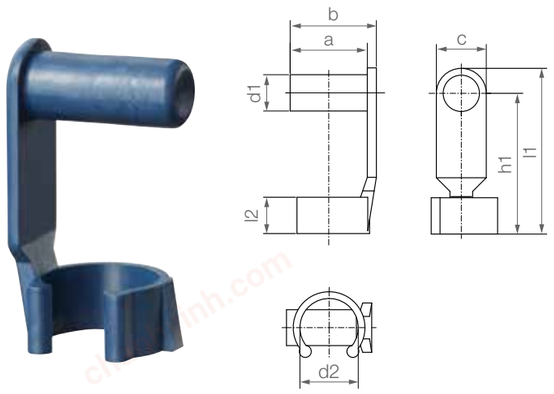
Spring-loaded fixing clips, detectable: GEFM-DT



Order key

Type	Size [mm]	Version
G E F M -	04	- DT
Clevis joint / E series / Spring-loaded fixing clip / Metric	Inner Ø	Detectable

Material:
RN246 ▶ Page 1657

- Resistant to dust and dirt
- Maintenance and lubrication-free
- Vibration-dampening
- Lightweight

Dimensions [mm]

Part No.	d1	d2	a	b	c	l1 ±0.5	h1	l2	Weight [g]
GEFM-04-DT	4	8	9.5	10.5	8	19.0	15	4.5	0.5
GEFM-05-DT	5	10	14.0	15.5	8	27.0	23	6.5	1.1
GEFM-06-DT	6	10	14.0	15.5	8	27.0	23	6.5	1.2
GEFM-08-DT	8	14	19.0	21.0	11	35.5	30	8.0	2.8
GEFM-10-DT	10	18	23.0	25.5	14	45.0	38	10.0	5.0
GEFM-12-DT	12	20	28.0	31.0	16	53.0	45	12.0	8.3

Clevis joints with spring-loaded fixing clips, detectable: GERMF-DT and GELMF-DT



Order key

Type	Size [mm]	Version
G E □ M F -	04	- DT
Clevis joint / E series / Thread / Metric / Spring-loaded fixing clip	Inner Ø	Detectable

Options:
Thread
L = Left-hand thread
R = Right-hand thread

Material:
RN246 ▶ Page 1657

- Resistant to dust and dirt
- Maintenance and lubrication-free
- Vibration-dampening
- Lightweight

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	[g]
GE□MF-04-DT	350	175	175	87.5	1.3
GE□MF-05-DT	630	315	175	87.5	3.8
GE□MF-06-DT	910	455	210	105.0	3.9
GE□MF-08-DT	1,470	735	455	227.5	9.1
GE□MF-10-DT	2,100	1,050	560	280.0	18.2
GE□MF-10-DT-F	2,100	1,050	560	280.0	18.2
GE□MF-12-DT	2,450	1,225	630	315.0	28.6
GE□MF-12-DT-F	2,450	1,225	630	315.0	28.6



Individual components: Clevis joint GERM-DT and spring-loaded fixing clip GEFM-DT
▶ Page 868 and 870

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xiros®...

Polymer ball bearings



...plastics

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xiros® polymer ball bearings | Application examples

Other exciting applications ▶ **www.igus-asean.com/xiros-applications**

Labelling machine
Depending on the size of the system, between 12 and 36 guide rollers are used in the Sleevematic's film storage. Two xiros® ball bearings 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)



Bike wash system
To mount the washing brushes, the manufacturer of the "cycleWash" has used two xiros® slewing ring ball bearings with stainless steel balls. The bearing rings consist of the wear-resistant ball bearing material xirodur® B180.



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 polymer ball bearing.



Film guide rollers
There is no contamination of the films through lubricants, due to the use of maintenance-free xiros® flange bearings.



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)



Pool cleaner
xiros® B180 polymer ball bearings from igus® allow pool cleaners a lubrication-free underwater operation. Resistant to chemicals, lightweight and maintenance-free.

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xiros® polymer ball bearings | Product overview

xiros® radial deep groove ball bearings – standard product range



The classic:

PA cage

▶ Page 886



Cost-effective and FDA-compliant:
B180 cage

▶ Page 886



FDA-compliant:

PE cage

▶ Page 886



With shield or labyrinth seal:
LCC with B180 cage

▶ Page 892



Black (for visible parts):
xirodur® S180,
PA cage

▶ Page 886



High resistance to chemicals:
xirodur® C160, PP cage

▶ Page 894



For high temperatures up to +120°C:
xirodur® A500, PA cage

▶ Page 898



For heat and chemicals:
xirodur® A500,
PEEK cage

▶ Page 898

xiros® radial deep groove ball bearings – standard product range



Lightweight and non-metallic:
xirodur® A500, PAI balls

▶ Page 898



Antistatic:
xirodur® F180,
PA cage

▶ Page 902



Antistatic and FDA-compliant:
xirodur® F180, PE cage

▶ Page 902



Conductive:
xirodur® F182,
PA cage

▶ Page 904

xiros® radial deep groove ball bearings – further materials



High speeds:
xirodur® D180,
PA cage

▶ Page 906



Detectable:
xirodur® M180,
xirodur® M180 cage

▶ Page 907



For the tobacco industry:
xirodur® T220,
PP cage

▶ Page 908



For temperatures up to +120°C:
xirodur® G220, PP cage

▶ Page 909

xiros® radial deep groove ball bearings with flange and guide rollers



Single flange:
xirodur® B180,
PA cage

▶ Page 910



With double flange:
xirodur® B180,
PA cage

▶ Page 910



Antistatic:
xirodur® F180,
PA cage

▶ Page 910



Guide roller:

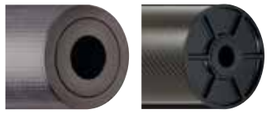
Aluminium tube

▶ Page 912



Guide roller:
Plastic approved for food contact

▶ Page 913



Guide roller:
Carbon fibre tube with ball bearing

▶ Page 914



End caps:
xirodur® B180,
PA cage

▶ Page 916

xiros® – other designs



With profile:

xirodur® B180

▶ Page 918



Spherical radial deep groove ball bearings:
xirodur® B180

▶ Page 919



Double row for higher loads:
xirodur® B180

▶ Page 920



Multi-axis bearing:
xirodur® B180,
PP balls

▶ Page 921



Skate wheel:
xirodur® B180,
PA cage

▶ Page 922



Fixed flange ball bearing, FDA-compliant, fixed version: xirodur® B180

▶ Page 923



Polymer balls transfer units:
wxirodur® B180 and F182

▶ Page 924



Axial polymer ball transfer units:
with spherical roller

▶ Page 926

xiros® thrust bearings and slewing ring ball bearings



Single row:
xirodur® B180,
glass/stainless steel balls

▶ Page 928



Double row:
xirodur® B180,
glass/PAI/stainless steel balls

▶ Page 928



Thrust bearing:
xirodur® B180,
glass/stainless steel balls

▶ Page 929



Slewing ring ball bearings:
xirodur® B180,
with gear teeth or with cage

▶ Page 930

xiros® combinations with igubal®



Pillow block ball bearing, FDA-compliant, fixed version: xirodur® B180

▶ Page 932



Pillow block ball bearing, fixed or pivoting

▶ Page 934



4-hole fixed flange ball bearing, pivoting

▶ Page 936



2-hole fixed flange ball bearing, pivoting

▶ Page 937

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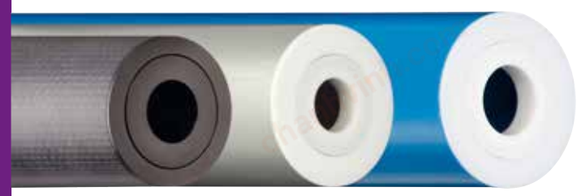
xiros® polymer ball bearings | Advantages

Lubrication and maintenance-free









Lubrication-free polymer ball bearings

xiros® polymer ball bearings revolutionise the ball bearing market. Thanks to their maintenance-free dry operation and the use of xirodur® high-performance polymers, many applications can be successfully implemented in which conventional metal ball bearings are not suitable.

- Lubrication and maintenance-free
- Corrosion-resistant
- Non-metallic (due to the use of glass and plastic balls), therefore non-magnetic
- For temperatures up to +150°C (depending on material)
- High media resistance, suitable for washdown
- Lightweight
- Electrically insulating (or ESD-compliant)
- FDA-compliant (depending on material)
- Predictable service life

Typical application areas

- Packaging
- Textile industry
- Test engineering and quality assurance
- Optical industry
- Model making

Available from stock
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity.

Max. +150°C
Min. –100°C

10 xirodur® materials
Ø 3–60mm

Imperial dimensions available
▶ Page 1611

Service life calculation
▶ www.igus-asean.com/xiros-expert

xiros® polymer ball bearings | Product overview

Overview types



xiros® radial deep groove ball bearings – standard product range for 3 materials:

- xirodur® B180 – cost-effective standard
- xirodur® C160 – resistant to chemicals
- xirodur® A500 – for heat and chemicals

▶ From page 886



xiros® radial deep groove ball bearings with flange and guide rollers

- With single or double flange
- Made from xirodur® B180 or F180
- xiros® system solution: Aluminium, PVC or carbon fibre tube with 2 fixed flange ball bearings

▶ From page 910



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
- xirodur® S180 – black (for visible parts)
- xirodur® F180 – antistatic
- xirodur® F182 – conductive
- xirodur® D180 – high speeds

▶ From page 907



xiros® radial deep groove ball bearings – further designs

- With spherical outer diameter
- Double row for higher loads
- Multi-axis bearing for rotary and linear movements

▶ From page 918



xiros® thrust bearing

- For absorbing axial loads
- Various options

▶ From page 928



xiros® slewing ring ball bearings

- With glass or stainless steel balls
- Outer toothed profile
- With cage

▶ From page 930



xiros® combinations with igubal®

- Fixed or pivoting versions
- For maintenance-free use in conveyor belts and guide rollers

▶ From page 934

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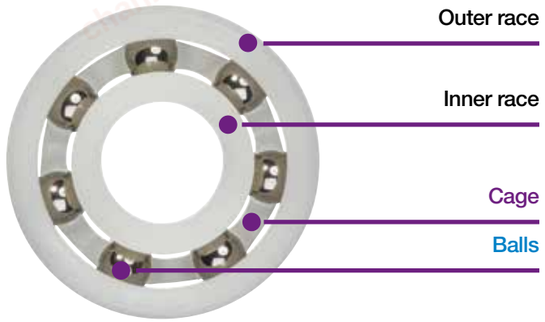
Radial deep groove ball bearings design

The xiros® polymer ball bearings are single-row deep groove ball bearings based on DIN 625. The lubrication and maintenance-free ball bearings consist of four components:

The outer and inner races

The suitability of a xiros® polymer ball bearings is largely determined by the materials of the two races. These are made from igus® tribo-polymers to maximise service life and minimise friction. Choice of 5 materials. They allow different values of application temperature, media resistance and price. The table of materials (▶ **Page 824**) provides exact information on this topic.



The cage

The material of the ball bearing cage must fit well to the application. The various material options have quite different chemical and temperature resistance values. The cage materials are compatible with all the different race options within xiros®.

The balls

The ball materials differ most significantly. In addition to steel, glass or plastics are used. This produces a large difference in mass, which in turn affects inertia, weight and chemical resistance. Stainless steel balls (1.4401) are cost-effective, resistant to chemicals and suitable for high temperatures, but are the heaviest in the range. Glass balls (soda-lime glass) are also resistant to chemicals and have a medium weight. Just like polymer balls, they are non-metallic and non-magnetic. In addition to their excellent chemical resistance, the polymer balls (PAI) are even lighter than stainless steel or glass balls.

Other designs

xiros® radial deep groove ball bearings

The other designs include:

- Convex rollers which can run directly on a profile
- Profiled rollers, e.g. for thread/cable guidance
- Thrust and slewing ring ball bearings for absorbing axial loads
- Multi-axis bearings for linear and radial movements
- Ball bearings designed e.g. for installation in tube ends (also for guide rollers)
- Double-row bearings for absorbing higher forces

Pillow block and fixed flange bearings

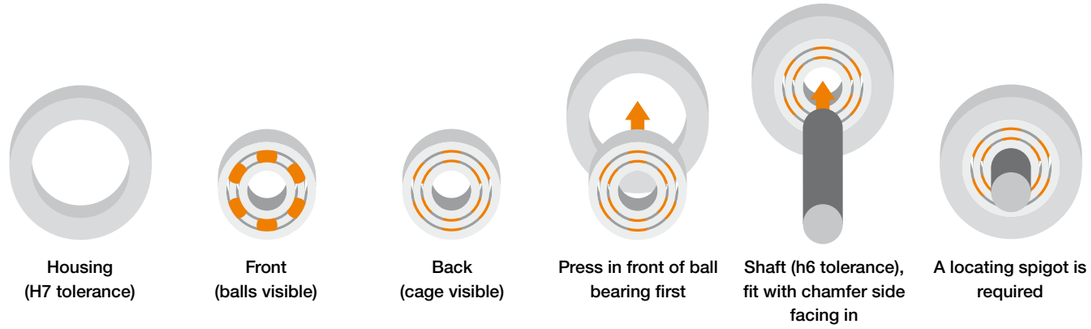
This range is made up by combining xiros® polymer ball bearings with the igubal® pillow block and fixed flange housings, resulting in a higher flexibility in terms of installation of the bearings. The bearing housings make it easy for the user to install these maintenance-free components. Both fixed flange and pillow block bearings are available as fixed or as pivoting design. The difference between the two options is that the pivoting type can compensate for shaft and/or bearing misalignment. A spherical outer race is pressed into the bearing housing, ensuring self-aligning action. If necessary, the inner bearing can be pivoted in all directions. Possible misalignment of two bearing points lying together can thus be compensated for.

Measurement requirement for injection-moulded xiros® polymer ball bearings

The outer race of our ball bearings has a conical shape. This simplifies the installation in a suitable housing (with the narrow side first). After press-fit into a housing machined to a H7 tolerance the bearing clearance is reduced. Therefore the bearings must be measured over the entire width of the ball bearing. Starting at an angle of 90° from the injection point.



xiros® polymer ball bearings | Technical data



To press in the xiros® polymer ball bearing over the entire width of the housing, apply pressure on the outer race. xiros® radial deep groove ball bearings are only suitable for limited axial loads.

Development and tests

Through numerous tests the race materials were optimised. The polymers we have developed for use with ball bearings allow higher speeds, greater loads, and longer service life. But the development continues. We believe that polymer ball bearing technology will continue to advance, especially with our experience in the development of tribological polymer materials. Challenge us, talk to us about your applications, tell us what you need from a polymer ball bearing. In the igus® test laboratory the service life and wear of xiros® polymer ball bearings are tested. In addition to the actual material comparison, tests indicate these experiments also answer questions about the impact of external influences such as temperature, humidity or dust.



igus® extends the xiros® test stand in the industry's largest test laboratory for plastics in motion

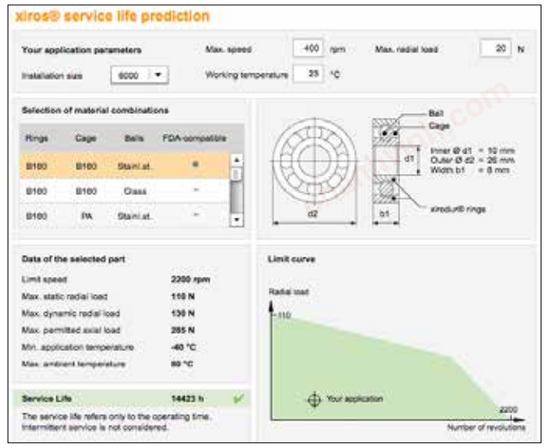
Predictability

As part of the development of xiros® polymer ball bearing tests are carried out continuously. The high number of test results makes it very difficult to present this information in tabular form. It is for this reason that igus® has developed the online service life calculator, which uses real test results to give an accurate calculation.

The predictability of xiros® polymer ball bearings is one of the most important advantages. Based on the results of many wear tests, the user can calculate the service life of xiros® polymer ball bearings reliably and interpret the application.



▶ www.igus-asean.com/xiros-expert



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xiros® polymer ball bearings | Technical data

Material properties and chemical resistance

General properties	Unit	xirodur® B180	xirodur® S180	xirodur® C160	xirodur® A500	xirodur® F180	xirodur® F182	xirodur® D180	xirodur® M180	xirodur® T220	xirodur® G220	igumid G
Density	g/cm³	1.41	1.40	1.11	1.30	1.36	1.42	1.22	1.67	1.28	1.14	1.37
Colour		white	black	opaque	brown	black	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	0.2	0.5	0.2	0.3	2.1	1.4
Max. total moisture absorption	% weight	0.7	0.7	0.2	0.4	1.3	0.7	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	3,000	135	2,500	1,800	3,000	7,800
Flexural strength at +20°C	MPa	68	65	35	130	70	95	n.a.	68	65	n.a.	240
Shore D hardness		77	78	67	85	79	79	48	77	76	n.a.	79
Electrical properties												
Specific volume resistance[1)]	Ωcm	> 10^{14}	> 10^{13}	> 10^{14}	> 10^{14}	< 10^{12} [1)]	< 10^{4}	> 10^{14}	> 10^{9}	> 10^{10}	> 10^{13}	> 10^{11}
Surface resistance[1)]	Ω	> 10^{14}	> 10^{13}	> 10^{14}	> 10^{14}	< 10^{12} [1)]	< 10^{4}	> 10^{14}	> 10^{9}	> 10^{10}	> 10^{12}	> 10^{11}
Thermal properties of xiros® polymer ball bearings[1)]												
Max. long-term application temperature	°C	+80	+80	+60	+150 (PEEK) +120 (PA)	+80	+80	+80	+80	+100	+100	+120
Min. long-term application temperatures (in combination with cage material)	°C	–40	–40	0	–100 (PEEK) –40 (PA)	–40	–40	–50	–40	–40	–40	–40

[1)] Depending on the geometry

Table 01: Material data

Medium	xirodur® B180	xirodur® S180	xirodur® C160	xirodur® A500	xirodur® F180	xirodur® F182	xirodur® D180	xirodur® M180	xirodur® T220	xirodur® G220	igumid G
Alcohols	+	+	+	+	+	+	+ up to 0	+	+	0	+
Greases, oils without additives	+	+	+	+	+	+	+	+	+	+	+
Hydrocarbons	+	+	+ up to 0	+	+	+	+	+	+	+	+
Fuels	+	+	+ up to 0	+	+	+	+	+	+	+	+
Strong alkali	+ up to 0	+ up to 0	+	+	+ up to 0	+ up to 0	+ up to 0	+ up to 0	+ up to 0	+ up to 0	–
Strong acid	–	-	+ up to 0	+	–	–	0	–	–	–	+ up to 0
UV radiation	–	0	0	+	0	0	–	–	+	–	–
Diluted base	+	+	+	+	+	+	+ up to 0	+	+	+	0 to –
Diluted acid	0 to –	0 to –	+	+	0 to –	0 to –	+ up to 0	0 to –	0 to –	0 to –	+

+ resistant 0 conditionally resistant – non-resistant

Table 02: Chemical resistance of xiros® materials

Detailed chemicals resistance table for xiros® products ▶ From page 1636

Recommended tolerances

Fitting	Housing hole	Shaft
Standard: Press-fit	H7	h6

For further questions about the dimensioning of the hole and the shaft please contact us.

Ball materials

Description	Specification
ES: Stainless steel	1.4401
GL: glass	Soda-lime glass or borosilicate glass
PAI: plastic	Polyamide-imide
PP: plastic	Polypropylene

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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								
Smooth running	●	●	●	●	●	●	●	●
Low moisture absorption	●	●	●	●	●	●	●	●
Chemical resistance			●	●	●		●	●
Seawater-resistant			●	●			●	●
Dirt-resistant	●	●	●	●	●	●	●	●
Higher temperatures								
Higher speeds								
Cost-effective			●	●				
Approvals and standards								
For contact with food			●		●			
Antistatic								
Conductive								
Non-metallic		●		●				●
Detectable								
Availabilities / variants								
Radial deep groove ball bearings	●	●	●	●	●	●	●	●
Radial deep groove ball bearings with flange	●	●	●	●				
End cap	●	●						
Spherical outer diameter	●	●						
Double row	●	●						
Slewing ring ball bearings			●					
Thrust bearing			●	●				

A500					F180		F182	D180	M180	T220	G220
PA		PEEK			PA	PE	PA	PA	M180	PP	PA
ES	GL	ES	GL	PAI	ES	ES	ES	ES	ES	ES	ES
●	●	●	●	●	●	●	●		●	●	
●	●	●	●	●	●	●	●		●	●	
		●	●	●							
		●	●								
●	●	●	●	●	●	●	●		●	●	
●	●	●	●	●							●
								●			
		●				●			●		
	●		●	●							
					●	●					
							●				
	●		●	●					●		
●	●	●	●	●	●	●	●	●	●	●	●
					●						
									●		

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xiros® radial deep groove ball bearings | Product range

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

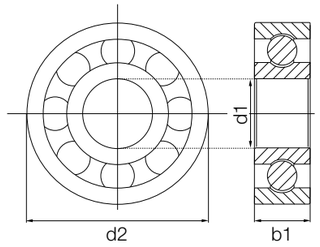


PE cage, stainless steel balls





Also available with S180 races for visible parts (xirodur® S180 and PA cage)



Order key

Type	Material

BB-623-B180-10-ES

Ball bearings | Dimensions according to DIN 625-1 | Race material | Cage material | Ball material

Options:

Cage material
10 = PA
30 = xirodur® B180
50 = PE

Ball material
ES = Stainless steel
GL = Glass

Race material
xirodur® B180
xirodur® S180

Imperial dimensions available ▶ Page 1611

Technical data

Installation size	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight B180/ES [g]	Weight B180/GL [g]	Weight PA/ES [g]	Weight PA/GL [g]	Weight PE/ES [g]
623	25	34	4,500	0.37	0.31	0.40	0.32	0.39
633	33	45	4,000	0.83	0.64	–	–	–
684	10	11	4,600	0.26	0.20	–	–	–
694	12	14	4,000	0.42	0.35	–	–	–
604	30	32	3,600	0.65	0.45	–	–	–
624	33	45	4,000	0.79	0.60	0.85	0.62	0.83
634	40	40	3,700	1.50	1.00	–	–	–
685	12	14	4,000	0.45	0.37	–	–	–
695	29	30	3,500	0.73	0.53	–	–	–
605	32	33	3,500	0.96	0.77	–	–	–
625	40	40	3,700	1.42	0.96	1.55	1.01	1.52
635	41	43	3,200	2.59	1.76	–	–	–
686	29	30	3,500	0.76	0.57	–	–	–
696	29	30	3,500	1.05	0.85	–	–	–
606	50	53	3,300	1.89	1.25	–	–	–
626	60	62	3,200	2.06	1.60	2.44	1.69	2.35
636	80	94	2,200	3.96	2.71	–	–	–
687	32	34	3,200	0.80	0.61	–	–	–
697	39	41	3,000	1.47	1.05	–	–	–
607	41	43	3,200	1.97	1.52	–	–	–
627	80	94	2,400	3.85	2.60	–	–	–
688	39	41	3,000	1.17	0.76	1.19	0.75	–
698	60	62	3,200	2.34	1.52	–	–	–
608	80	94	2,400	3.76	2.51	3.79	2.54	3.73

Order example:
BB-623-B180-10-ES = Radial deep groove ball bearing with race material xirodur® B180, PA cage and stainless steel balls

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination B180/ES	B180/GL	PA/ES	PA/GL	PE/ES	Part No.
3	10	4	●	●	●	●	●	BB-623-B180-□-□
3	13	5	●	●	–	–	–	BB-633-B180-30-□
4	9	4	●	●	–	–	–	BB-684-B180-30-□
4	11	4	●	●	–	–	–	BB-694-B180-30-□
4	12	4	●	●	–	–	–	BB-604-B180-30-□
4	13	5	●	●	●	●	●	BB-624-B180-□-□
4	16	5	●	●	–	–	–	BB-634-B180-30-□
5	11	5	●	●	–	–	–	BB-685-B180-30-□
5	13	4	●	●	–	–	–	BB-695-B180-30-□
5	14	5	●	●	–	–	–	BB-605-B180-30-□
5	16	5	●	●	●	●	●	BB-625-B180-□-□
5	19	6	●	●	–	–	–	BB-635-B180-30-□
6	13	5	●	●	–	–	–	BB-686-B180-30-□
6	15	5	●	●	–	–	–	BB-696-B180-30-□
6	17	6	●	●	–	–	–	BB-606-B180-30-□
6	19	6	●	●	●	●	●	BB-626-B180-□-□
6	22	7	●	●	–	–	–	BB-636-B180-30-□
7	14	5	●	●	–	–	–	BB-687-B180-30-□
7	17	5	●	●	–	–	–	BB-697-B180-30-□
7	19	6	●	●	–	–	–	BB-607-B180-30-□
7	22	7	●	●	–	–	–	BB-627-B180-30-□
8	16	5	●	●	●	●	–	BB-688-B180-□-□
8	19	6	●	●	–	–	–	BB-698-B180-30-□
8	22	7	●	●	●	●	●	BB-608-B180-□-□

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xiros® radial deep groove ball bearings | Product range

xirodur® B180 – cost-effective standard

Technical data

Installation size	Radial load capacity stat. [N]	dyn. [N]	Max. speed [rpm]	Weight B180/ES [g]	B180/GL [g]	PA/ES [g]	PA/GL [g]	PE/ES [g]
628	100	110	2,300	5.57	3.4	–	–	–
638	110	130	2,200	7.82	5.65	–	–	–
689	40	42	2,500	1.30	0.88	–	–	–
699	43	45	2,250	2.08	1.66	–	–	–
609	100	110	2,300	5.12	2.95	–	–	–
629	110	128	2,200	6.20	4.03	6.14	–	–
6800	43	45	2,250	1.56	1.07	–	–	–
6900	60	64	2,000	3.24	2.04	–	–	–
6000	110	130	2,200	5.98	3.83	5.95	3.78	5.98
6200	130	147	2,000	9.32	6.56	9.26	6.51	–
6300	140	150	1,800	13.83	11.02	13.75	–	–
6701	16	18	2,200	0.68	0.57	–	–	–
6801	60	64	2,000	1.82	1.40	–	–	–
6901	80	83	1,800	3.12	2.10	–	–	–
6001	130	147	2,000	6.36	4.18	6.78	4.34	6.66
6201	140	150	1,800	10.04	7.25	9.97	7.12	–
6301	160	220	1,600	15.69	12.90	–	–	–
6702	19	21	1,800	0.94	0.81	–	–	–
6802	80	83	1,800	2.46	1.46	–	–	–
6902	90	94	1,700	4.37	3.12	–	–	–
6002	140	150	1,800	8.68	5.92	8.72	6.23	8.60
6202	160	220	1,600	11.71	8.96	12.26	9.11	12.10
6302	250	320	1,400	10.56	3.95	10.49	–	–
6703	23	25	1,600	0.66	–	–	–	–
6803	90	94	1,700	2.83	1.65	–	–	–
6903	90	94	1,700	–	0.79	–	–	–
6003	160	220	1,600	10.23	7.45	10.72	7.61	10.55
6203	250	320	1,400	19.36	12.75	17.45	12.68	–
6303	280	360	1,200	21.68	13.60	–	–	–
6704	30	36	1,400	1.39	1.17	–	–	–
6804	100	120	1,500	5.19	3.59	–	–	–
6904	140	144	1,150	9.76	–	–	–	–
6004	250	320	1,400	20.81	12.93	19.46	12.89	19.44
6204	280	360	1,200	30.22	22.14	28.87	22.33	–
6304	380	400	1,000	43.85	31.05	–	–	–
6705	32	38	1,200	1.58	1.40	–	–	–
6805	140	144	1,150	6.48	4.16	–	–	–
6905	160	162	900	4.49	4.49	–	–	–
6005	280	360	1,200	24.14	16.07	22.93	15.67	22.58
6205	310	370	1,000	35.99	27.92	34.82	27.51	–
6305	480	520	850	61.12	45.48	–	–	–

Order example:
BB-628-B180-30-ES = Radial deep groove ball bearing with race material xirodur® B180, xirodur® B180 cage and stainless steel balls

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination B180/ES	B180/GL	PA/ES	PA/GL	PE/ES	Part No.
8	24	8	●	●	–	–	–	BB-628-B180-30-□
8	28	9	●	●	–	–	–	BB-638-B180-30-□
9	17	5	●	●	–	–	–	BB-689-B180-30-□
9	20	6	●	●	–	–	–	BB-699-B180-30-□
9	24	7	●	●	–	–	–	BB-609-B180-30-□
9	26	8	●	●	●	–	–	BB-629-B180-□-□
10	19	5	●	●	–	–	–	BB-6800-B180-30-□
10	22	6	●	●	–	–	–	BB-6900-B180-30-□
10	26	8	●	●	●	●	●	BB-6000-B180-□-□
10	30	9	●	●	●	●	–	BB-6200-B180-□-□
10	35	11	●	●	●	–	–	BB-6300-B180-□-□
12	18	4	●	●	–	–	–	BB-6701-B180-30-□
12	21	5	●	●	–	–	–	BB-6801-B180-30-□
12	24	6	●	●	–	–	–	BB-6901-B180-30-□
12	28	8	●	●	●	●	●	BB-6001-B180-□-□
12	32	10	●	●	●	●	–	BB-6201-B180-□-□
12	37	12	●	●	–	–	–	BB-6301-B180-30-□
15	21	4	●	●	–	–	–	BB-6702-B180-30-□
15	24	5	●	●	–	–	–	BB-6802-B180-30-□
15	28	7	●	●	–	–	–	BB-6902-B180-30-□
15	32	9	●	●	●	●	●	BB-6002-B180-□-□
15	35	11	●	●	●	●	●	BB-6202-B180-□-□
15	42	13	●	●	●	–	–	BB-6302-B180-□-□
17	23	4	●	–	–	–	–	BB-6703-B180-30-ES
17	26	5	●	●	–	–	–	BB-6803-B180-30-□
17	30	7	–	●	–	–	–	BB-6903-B180-30-GL
17	35	10	●	●	●	●	●	BB-6003-B180-□-□
17	40	12	●	●	●	●	–	BB-6203-B180-□-□
17	47	14	●	●	–	–	–	BB-6303-B180-30-□
20	27	4	●	●	–	–	–	BB-6704-B180-30-□
20	32	7	●	●	–	–	–	BB-6804-B180-30-□
20	37	9	●	–	–	–	–	BB-6904-B180-30-ES
20	42	12	●	●	●	●	●	BB-6004-B180-□-□
20	47	14	●	●	●	●	–	BB-6204-B180-□-□
20	52	15	●	●	–	–	–	BB-6304-B180-30-□
25	32	4	●	●	–	–	–	BB-6705-B180-30-□
25	37	7	●	●	–	–	–	BB-6805-B180-30-□
25	42	9	●	●	–	–	–	BB-6905-B180-30-□
25	47	12	●	●	●	●	●	BB-6005-B180-□-□
25	52	15	●	●	●	●	–	BB-6205-B180-□-□
25	62	17	●	●	–	–	–	BB-6305-B180-30-□

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xiros® radial deep groove ball bearings | Product range

xirodur® B180 – cost-effective standard

xiros®

Technical data

Installation size	Radial load capacity stat. [N]	dyn. [N]	Max. speed [rpm]	Weight B180/ES [g]	B180/GL [g]	PA/ES [g]	PA/GL [g]	PE/ES [g]
6706	34	41	1,000	1.76	1.59	–	–	–
6806	160	162	900	4.49	1.82	–	–	–
6906	190	193	850	13.15	10.13	–	–	–
16006	380	420	900	–	–	28.53	17.33	–
6006	380	400	1,000	–	–	34.15	22.70	–
6206	480	520	850	55.89	39.73	–	–	–
6306	520	660	750	27.00	8.52	–	–	–
6007	480	520	850	–	–	47.29	30.71	–
6008	520	660	750	–	–	54.84	38.73	–
6009	660	690	650	–	–	33.52	57.52	–
6010	740	780	600	–	–	82.33	54.00	–
6011	930	950	550	–	–	119.64	75.80	–
6012	990	1,050	500	–	–	126.66	80.54	–

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.
30	37	4	●	●	–	–	–	BB-6706-B180-30-
30	42	7	●	●	–	–	–	BB-6806-B180-30-
30	47	9	●	●	–	–	–	BB-6906-B180-30-
30	55	9	–	–	●	●	–	BB-16006-B180-10-
30	55	13	–	–	●	●	–	BB-6006-B180-10-
30	62	16	●	●	–	–	–	BB-6206-B180-30-
30	72	19	●	●	–	–	–	BB-6306-B180-30-
35	62	14	–	–	●	●	–	BB-6007-B180-10-
40	68	15	–	–	●	●	–	BB-6008-B180-10-
45	75	16	–	–	●	●	–	BB-6009-B180-10-
50	80	16	–	–	●	●	–	BB-6010-B180-10-
55	90	18	–	–	●	●	–	BB-6011-B180-10-
60	95	18	–	–	●	●	–	BB-6012-B180-10-

Order example:
BB-6706-B180-30-ES = Thin ring bearing with race material xirodur® B180, xirodur® B180 cage and stainless steel balls

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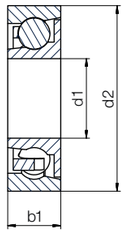
xiros® radial deep groove ball bearings | Product range

xirodur® B180 – with cover plate

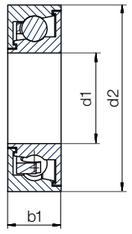


PA cage, with shield on one side stainless steel or glass balls





B180 cage, with labyrinth seal, stainless steel balls



Order key

Type	Material					
BB-	623-	B180-	10-	ES-	C	
Ball bearings	Dimensions according to DIN 625-1	Race material	Cage material	Ball material	With shield	

Options:

Cage material
10 = PA
30 = xirodur® B180

Ball material
ES = Stainless steel
GL = Glass

Shield or labyrinth seal
C = One-sided shield
LCC = Labyrinth seal

Technical data

Installation size	Radial load capacity stat. [N]	dyn. [N]	Max. speed [rpm]	Weight stainless steel [g]	glass [g]
623	10	25	4,500	0.41	0.33
626	41	43	3,200	2.56	1.71
608	80	94	2,200	3.93	2.67
6000	110	130	2,200	6.21	4.15
6001	138	147	2,000	7.09	4.61
6202	142	155	1,700	12.73	9.63
6003	160	220	1,600	11.12	8.03
6004	250	320	1,400	20.20	13.60
6005	280	360	1,200	23.89	16.51

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination PA/ES	PA/GL	Part No.
3	10	4	●	●	BB-623-B180-10-▭-C
6	19	6	●	●	BB-626-B180-10-▭-C
8	22	7	●	●	BB-608-B180-10-▭-C
10	26	8	●	●	BB-6000-B180-10-▭-C
12	28	8	●	●	BB-6001-B180-10-▭-C
15	35	11	●	●	BB-6202-B180-10-▭-C
17	35	10	●	●	BB-6003-B180-10-▭-C
20	42	12	●	●	BB-6004-B180-10-▭-C
25	47	12	●	●	BB-6005-B180-10-▭-C

With labyrinth seal

Installation size	Radial load capacity stat. [N]	dyn. [N]	Max. speed [rpm]	Weight stainless steel [g]	glass [g]
6003	160	220	1,600	11.02	8.27

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination B180/ES	B180/GL	Part No.
17	35	10	●	●	BB-6003-B180-30-▭-LCC

Order example:
BB-623-B180-10-ES-C = Radial deep groove ball bearing with race material xirodur® B180, PA cage, stainless steel balls and shield

Available from stock

chanhvinh.com

xiros® radial deep groove ball bearings | Product range

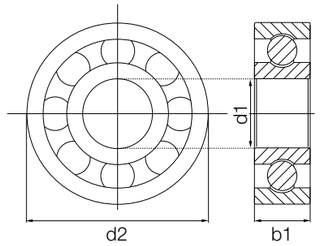
xirodur® C160 – resistant to chemicals



PP cage, stainless steel balls



PP cage, glass balls



Order key

Type	Material

BB-623-C160-20-ES

Ball bearings
Dimensions according to DIN 625-1
Race material
Cage material
Ball material

Cage material
20 = PP
Options:
Ball material
ES = Stainless steel
GL = Glass

Technical data

Installation size	Radial load capacity stat. [N]	dyn. [N]	Max. speed [rpm]	Weight PP/ES [g]	PP/GL [g]
623	10	11	4,000	0.35	0.26
624	12	13	3,650	–	–
625	20	22	3,100	–	0.21
635	30	31	2,900	1.76	1.03
626	30	34	2,600	2.15	1.43
636	40	42	2,050	2.06	–
627	40	43	2,000	–	–
688	20	21	2,750	1.06	0.24
608	40	46	2,200	3.37	2.21
628	57	61	1,800	–	–
638	60	62	1,670	6.27	4.10
629	60	63	1,680	–	–
6800	20	24	2,100	–	–
6000	60	65	1,700	5.48	3.33
6200	78	81	1,540	7.50	4.71
6801	30	32	1,920	0.84	0.92
6001	70	74	1,580	6.59	3.80
6201	80	83	1,260	–	–
6802	40	43	1,700	–	0.46
6002	80	85	1,500	5.72	4.86
6202	80	85	1,130	–	–
6803	50	51	1,650	–	–
6003	90	96	1,300	9.10	6.22
6203	140	142	1,010	–	–
6804	50	54	1,480	–	–

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination PP/ES	PP/GL	Part No.
3	10	4	●	●	BB-623-C160-20-▭
4	13	5	●	●	BB-624-C160-20-▭
5	16	5	●	●	BB-625-C160-20-▭
5	19	6	●	●	BB-635-C160-20-▭
6	19	6	●	●	BB-626-C160-20-▭
6	22	7	●	●	BB-636-C160-20-▭
7	22	7	●	●	BB-627-C160-20-▭
8	16	5	●	●	BB-688-C160-20-▭
8	22	7	●	●	BB-608-C160-20-▭
8	24	8	●	●	BB-628-C160-20-▭
8	28	9	●	●	BB-638-C160-20-▭
9	26	8	●	●	BB-629-C160-20-▭
10	19	5	●	●	BB-6800-C160-20-▭
10	26	8	●	●	BB-6000-C160-20-▭
10	30	9	●	●	BB-6200-C160-20-▭
12	21	5	●	●	BB-6801-C160-20-▭
12	28	8	●	●	BB-6001-C160-20-▭
12	32	10	●	●	BB-6201-C160-20-▭
15	24	5	●	●	BB-6802-C160-20-▭
15	32	9	●	●	BB-6002-C160-20-▭
15	35	11	●	●	BB-6202-C160-20-▭
17	26	5	●	●	BB-6803-C160-20-▭
17	35	10	●	●	BB-6003-C160-20-▭
17	40	12	●	●	BB-6203-C160-20-▭
20	32	7	●	●	BB-6804-C160-20-▭

Order example:
BB-623-C160-20-ES = Radial deep groove ball bearing with race material xirodur® C160, PP cage and stainless steel balls

Available from stock
Upon request

chanhvinh.com

xiros® radial deep groove ball bearings | Product range

xirodur® C160 – resistant to chemicals

xiros®

Technical data

Installation size	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight PP/ES [g]	Weight PP/GL [g]
6004	140	142	1,000	17.81	11.20
6204	140	145	950	22.85	4.89
6805	80	82	1,075	–	–
6005	140	151	960	20.63	13.29
6205	170	181	810	26.70	4.89

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination PP/ES	Cage/ball material combination PP/GL	Part No.
20	42	12	●	●	BB-6004-C160-20-
20	47	14	●	●	BB-6204-C160-20-
25	37	7	●	●	BB-6805-C160-20-
25	47	12	●	●	BB-6005-C160-20-
25	52	15	●	●	BB-6205-C160-20-

chanhvinh.com

Order example:
BB-6004-C160-20-ES = Radial deep groove ball bearing with race material xirodur® C160, PP cage and stainless steel balls

Available from stock
Upon request

chanhvinh.com

xiros® radial deep groove ball bearings | Product range

xirodur® A500 – for chemicals and heat up to +150°C



PA cage,
stainless steel balls



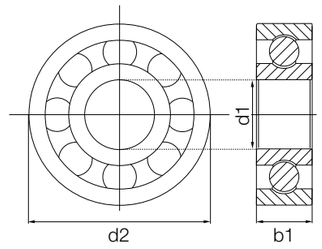
PEEK cage,
stainless steel balls



PEEK cage,
glass balls



PEEK cage,
PAI balls



Order key

Type	Material

BB-623-A500-10-ES

Ball bearings
Dimensions according to DIN 625-1
Race material
Cage material
Ball material

Options:
Cage material
10 = PA
70 = PEEK
Ball material
ES = Stainless steel
GL = Glass
PAI = Polyamide-imide

Technical data

Installation size	Radial load capacity stat.	dyn.	stat. PEEK/PAI	dyn. PEEK/PAI	Max. speed	Weight PA/ stainless steel	PEEK/ stainless steel	PEEK/ glass	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	–	–	4,500	1.9	1.0	0.9	–
625	36	43	–	–	3,700	–	–	–	–
635	48	52	–	–	3,400	–	–	–	–
626	54	60	15	20	3,400	2.3	2.3	1.6	1.4
636	72	76	–	–	2,450	–	–	–	–
627	72	74	–	–	2,600	–	–	–	–
688	36	38	–	–	3,150	–	–	–	–
608	72	78	18	25	2,700	3.7	3.7	2.4	2.2
628	98	104	–	–	2,500	–	–	–	–
638	102	108	–	–	2,300	–	–	–	–
629	102	112	–	–	2,350	–	–	–	–
6800	42	46	–	–	2,300	–	–	–	–
6000	102	107	25	34	2,100	6.0	6.0	3.8	3.4
6200	126	132	–	–	2,100	–	–	–	–
6801	54	57	–	–	2,150	–	–	–	–
6001	105	124	–	–	2,040	–	–	–	–
6201	132	141	–	–	1,820	–	–	–	–
6802	72	76	–	–	1,920	–	–	–	–
6002	132	145	32	41	1,900	9.1	9.1	5.2	5.6
6202	135	146	–	–	1,600	–	–	–	–
6803	84	84	–	–	1,760	–	–	–	–
6003	138	152	–	–	1,790	–	–	–	–
6203	228	232	–	–	1,450	–	–	–	–

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 d1	Outer Ø d2	Width b1	Cage/ball material combination PA/ES	PEEK/ES	PEEK/GL	PEEK/PAI	Part No.
3	10	4	●	●	●	–	BB-623-A500-□-□
4	13	5	●	●	●	–	BB-624-A500-□-□
5	16	5	●	●	●	–	BB-625-A500-□-□
5	19	6	○	●	○	–	BB-635-A500-□-□
6	19	6	●	●	●	●	BB-626-A500-□-□
6	22	7	○	○	○	–	BB-636-A500-□-□
7	22	7	○	●	●	–	BB-627-A500-□-□
8	16	5	●	●	●	–	BB-688-A500-□-□
8	22	7	●	●	●	●	BB-608-A500-□-□
8	24	8	●	○	○	–	BB-628-A500-□-□
8	28	9	○	○	○	–	BB-638-A500-□-□
9	26	8	○	○	○	–	BB-629-A500-□-□
10	19	5	○	●	○	–	BB-6800-A500-□-□
10	26	8	●	●	●	●	BB-6000-A500-□-□
10	30	9	●	●	●	–	BB-6200-A500-□-□
12	21	5	○	●	○	–	BB-6801-A500-□-□
12	28	8	●	●	●	●	BB-6001-A500-□-□
12	32	10	○	○	●	–	BB-6201-A500-□-□
15	24	5	●	○	○	–	BB-6802-A500-□-□
15	32	9	●	●	●	●	BB-6002-A500-□-□
15	35	11	○	●	●	–	BB-6202-A500-□-□
17	26	5	○	●	●	–	BB-6803-A500-□-□
17	35	10	●	●	●	●	BB-6003-A500-□-□
17	40	12	●	○	○	–	BB-6203-A500-□-□

Available from stock
Upon request

chanhvinh.com

xiros® radial deep groove ball bearings | Product range

xirodur® A500 – for chemicals and heat up to +150°C

xiros®

Technical data

Installation size	Radial load capacity stat.	dyn.	stat. PEEK/PAI	dyn. PEEK/PAI	Max. speed	Weight PA/ stainless steel	PEEK/ stainless steel	PEEK/ glass	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	422	440	–	–	1,100	–	–	–	–

Dimensions [mm]

Inner Ø	Outer Ø	Width	Cage/ball material combination PA/ES	PEEK/ES	PEEK/GL	PEEK/PAI	Part No.
d1	d2	b1					
20	32	7	●	●	●	–	BB-6804-A500-□-□
20	42	12	●	●	●	●	BB-6004-A500-□-□
20	47	14	●	●	●	–	BB-6204-A500-□-□
25	37	7	●	●	●	–	BB-6805-A500-□-□
25	47	12	●	●	●	●	BB-6005-A500-□-□
25	52	15	●	●	●	–	BB-6205-A500-□-□

Order example:
BB-623-A500-10-ES = Radial deep groove ball bearing with race material xirodur® A500, PA cage and stainless steel balls

Available from stock
Upon request

chanhvinh.com

xiros® radial deep groove ball bearings | Product range

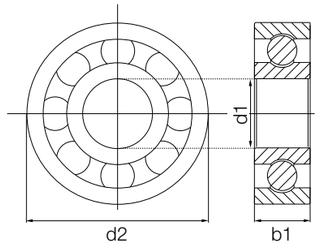
xirodur® F180 – antistatic



PA cage,
stainless steel balls



PE cage,
stainless steel balls



Special designs made from xirodur® F180
▶ Page 910

Order key

Type	Material

BB-623-F180-10-ES

Ball bearings | Dimensions according to DIN 625-1 | Race material | Cage material | Ball material

Options:
Cage material
10 = PA
50 = PE
Ball material
ES = Stainless steel

Technical data

Installation size	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight PA/ES [g]	Weight PE/ES [g]
623	10	25	4,500	0.39	0.39
624	20	33	4,000	0.83	0.82
625	40	40	3,700	1.54	1.50
626	41	43	3,200	2.50	2.36
608	80	94	2,200	3.79	3.67
6000	110	130	2,200	5.86	5.76
6001	138	147	2,000	6.72	6.62
6002	140	150	1,800	8.59	8.50
6003	160	220	1,600	10.53	10.39
6004	250	320	1,400	19.24	19.18
6005	280	360	1,200	22.43	22.04

Dimensions [mm]

Inner Ø d1	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

Order example:
BB-623-F180-10-ES = Radial deep groove ball bearing with race material xirodur® F180, PA cage and stainless steel balls

Available from stock

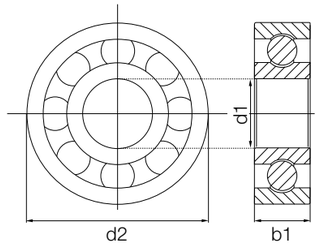
chanhvinh.com

xiros® radial deep groove ball bearings | Product range

xirodur® F182 – electrically conductive



PA cage,
stainless steel balls



Order key

Type	Material

BB-608-F182-10-ES

Ball bearings | Dimensions according to DIN 625-1 | Race material | Cage material | Ball material

Cage material
10 = PA
Ball material
ES = Stainless steel

Technical data

Installation size	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight PA/ES [g]
608	80	94	2,200	–
6000	110	130	2,200	–
6001	138	147	2,000	4.31

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination PA/ES	Part No.
8	22	7	●	BB-608-F182-10-ES
10	26	8	●	BB-6000-F182-10-ES
12	28	8	●	**BB-6001-F182-10-ES**

Order example:
BB-608-F182-10-ES = Radial deep groove ball bearing with race material xirodur® F182, PA cage and stainless steel balls

Available from stock
Upon request

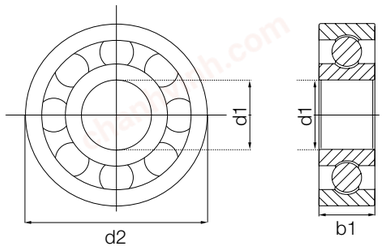
chanhvinh.com

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 bearings
Dimensions according to DIN 625-1
Race material
Cage material
Ball material

Cage material
10 = PA
Ball material
ES = Stainless steel

Technical data

Installation size	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight PA/ES [g]
623	7	12	5,500	0.40
626	13	18	4,500	2.00
608	20	32	4,300	3.70
6000	28	36	4,200	5.78
6001	32	49	4,000	6.55
6002	44	50	3,870	8.26

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
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

Upon request

xiros®

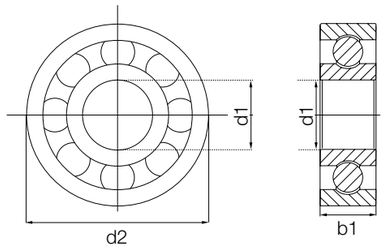
xiros® radial deep groove ball bearings | Product range

xirodur® M180 – detectable

FDA



xirodur® M180 cage,
stainless steel balls



Order key

Type	Material
BB-6000-M180-40-ES	

Ball bearings
Dimensions according to DIN 625-1
Race material
Cage material
Ball material

Cage material
40 = xirodur® M180
Ball material
ES = Stainless steel

Technical data

Installation size	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight M180/ES [g]
6000	85	119	1,900	6.53
6003	180	250	1,400	11.01

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

Upon request

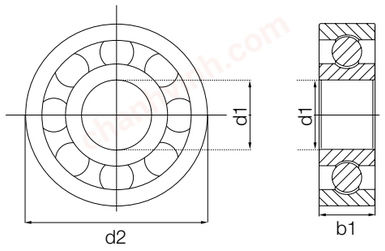
chanhvinh.com

xiros® radial deep groove ball bearings | Product range

xirodur® T220 – for the tobacco industry



PP cage,
stainless steel balls



Order key

Type	Material

BB-6002-T220-20-ES

- Ball bearings
- Dimensions according to DIN 625-1
- Race material
- Cage material
- Ball material

Cage material
20 = PP
Ball material
ES = Stainless steel

Technical data

Installation size	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight PP/ES [g]
6002	130	160	1,200	8.36

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Part No.
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

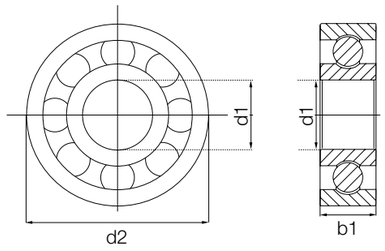
Upon request

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 bearings
- Dimensions according to DIN 625-1
- Race material
- Cage material
- Ball material

Cage material
10 = PA
Ball material
ES = Stainless steel

Technical data

Installation size	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight PA/ES [g]
6000	95	110	2,000	5.49

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Part No.
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

Upon request

chanhvinh.com

xiros® radial deep groove ball bearings with flange

xirodur® B180 or xirodur® F180

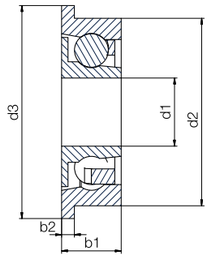
Single flange with shield



xirodur® B180,
PA cage, stainless
steel balls



xirodur® S180,
PA cage, stainless
steel balls



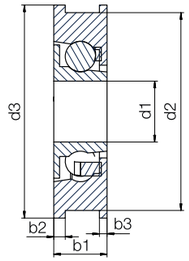
Double flange with shield



xirodur® B180 races
PA cage, stainless
steel or glass balls



xirodur® F180 races
PA cage, stainless
steel balls



Technical data

Installation size	Double flange	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight PA/ES [g]	Weight B180 PA/GL [g]	Weight B180/ES [g]	Weight F180 PA/ES [g]	Weight S180 PA/ES [g]
Radial deep groove ball bearing with single flange with shield for guide roller									
626	–	60	62	3,200	–	–	–	–	1.32
688	–	39	41	3,000	–	–	–	–	0.66
608	–	80	94	2,400	–	–	–	–	2.00
608	–	80	94	2,200	5.55	–	–	–	–
6000	–	110	130	1,900	7.55	–	–	–	–
6000	–	110	130	1,900	10.06	–	–	–	–
6001	–	130	147	1,750	7.53	5.09	–	–	–
6001	–	130	147	1,750	12.02	–	–	–	–
6002	–	140	150	1,600	11.44	–	–	–	–
6003	–	160	220	1,550	11.42	–	–	–	–
6004	–	250	320	1,400	–	–	16.36	–	–
6004	–	250	320	1,400	–	–	29.60	–	–
Radial deep groove ball bearing with single or double flange and shields									
608	–	80	94	2,200	5.69	4.47	–	5.49	–
608	●	80	94	2,200	5.82	5.93	–	5.61	–

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

Product range

Order key with single flange

Type	Material
BB-6000	F 2830 B180-10-ES

Ball bearings	Dimensions according to DIN 625-1	Single flange	Outer Ø [mm]	Race material	Cage material	Ball material

Also available as complete system solution
▶ Page 912

Order key with double flange

Type	Material	Design
BB-608	FF B180-10-ES	-CC

Ball bearings	Dimensions according to DIN 625-1	Double flange	Race material	Cage material	Ball material	Double shield

Flange
F = Single flange
FF = Double flange
Race material
F180 = xirodur® F180
B180 = xirodur® B180
S180 = xirodur® S180

Cage material
10 = PA
30 = xirodur® B180
Ball material
ES = Stainless steel
GL = Glass
Shield
C = With shield
CC = Double shield

Dimensions [mm]

Inner Ø d1	Outer Ø d2	d3	Width b1	b2	Cage/ball material combination PA/ES	B180 PA/GL	B180/ES	F180 PA/ES	S180 PA/ES	Part No.
6.0	19.0	22.0	6.0	1.5	–	–	–	–	●	BB-626F-S180-10-ES-C
8.0	16.0	18.0	5.0	1.0	–	–	–	–	●	BB-688F-S180-10-ES-C
8.0	22.0	25.0	7.0	1.5	–	–	–	–	●	BB-608F-S180-10-ES-C
8.0	28.0	30.0	7.0	2.0	●	–	–	–	–	BB-608F2830-B180-10-ES
10.0	28.0	30.0	9.0	2.0	●	–	–	–	–	BB-6000F2830-B180-10-ES
10.0	35.0	38.0	9.0	2.0	●	–	–	–	–	BB-6000F3538-B180-10-ES
12.0	28.0	30.0	9.0	2.0	●	–	–	–	–	BB-6001F2830-B180-10-ES
12.0	35.0	38.0	9.0	2.0	●	–	–	–	–	BB-6001F3538-B180-10-ES
15.0	35.0	38.0	9.0	2.0	●	–	–	–	–	BB-6002F3538-B180-10-ES
17.0	35.0	38.0	10.0	2.0	●	–	–	–	–	BB-6003F3538-B180-10-ES
20.0	46.0	50.0	12.0	2.0	–	–	●	–	–	BB-6004F4650G-B180-30-ES
20.0	56.0	60.0	12.0	2.0	–	–	●	–	–	BB-6004F5660G-B180-30-ES
8.0	26.0	28.0	8.5	1.5	●	●	–	●	–	BB-608F-□-10-□-CC
8.0	26.0	28.0	7.0	1.5/1.0 (b3)	●	●	–	●	–	BB-608FF-□-10-□-CC

Available from stock

chanhvinh.com

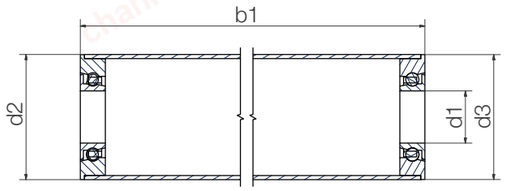
xiros® guide rollers | Product range

xiros® system solution – aluminium tube with fixed flange ball bearings



Aluminium tube with xirodur® B180 ball bearing

- Suitable for contact with food



Order key

Type	Material

BBT-AC 38-6000-B180-10-ES

Ball bearing guide roller	Aluminium tube	Outer Ø	Dimensions according to DIN 625-1	Race material	Cage material	Ball material

Radial deep groove ball bearings with flange also available as individual parts
▶Page 910

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.	
6	20	19.9	50–500	BBT-AC20-606-B180-30-ES	New
8	20	19.9	50–500	BBT-AC20-688-B180-30-ES	New
8	30	29.9	50–1,500	BBT-AC30-608-B180-10-ES	
10	30	29.9	50–1,500	BBT-AC30-6000-B180-10-ES	
12	30	29.9	50–1,500	BBT-AC30-6001-B180-10-ES	
10	38	37.9	50–1,500	BBT-AC38-6000-B180-10-ES	
12	38	37.9	50–1,500	BBT-AC38-6001-B180-10-ES	
15	38	37.9	50–1,500	BBT-AC38-6002-B180-10-ES	
17	38	37.9	50–1,500	BBT-AC38-6003-B180-10-ES	
20	50	49.9	50–1,500	BBT-AC50-6004-B180-30-ES	
20	60	59.9	50–1,500	BBT-AC60-6004-B180-30-ES	

Online configurator for xiros® system solutions
▶ www.igus-asean.com/xirosAlu

Order example:
BBT-AC38-6000-B180-10-ES, L=500mm = Aluminium tube with 2 ball bearings with race material xirodur® B180, PA cage and stainless steel balls, total length 500mm

Available from stock

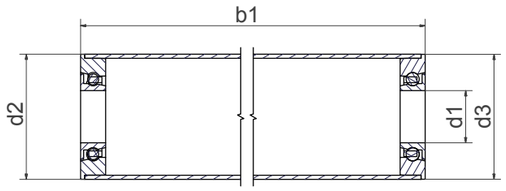
xiros® guide rollers | Product range

xiros® system solution – plastic for food contact



PVC tube with xirodur® B180 ball bearing

- Components for use in food in accordance with 10/2011/EU and 1935/2004/EG



Order key

Type	Material

BBT-PVC 50-6004-B180-30-ES

Ball bearing guide roller	PVC tube	Outer Ø	Dimensions according to DIN 625-1	Race material	Cage material	Ball material

Cage material
30 = xirodur® B180
Ball material
ES = Stainless steel

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Flange Ø d3	Length b1	Part No.
8	30	30	50–1,000	BBT-PVC30-608-B180-30-ES
10	30	30	50–1,000	BBT-PVC30-6000-B180-30-ES
10	40	40	50–1,000	BBT-PVC40-6000-B180-30-ES
12	40	40	50–1,000	BBT-PVC40-6001-B180-30-ES
15	40	40	50–1,000	BBT-PVC40-6002-B180-30-ES
17	40	40	50–1,000	BBT-PVC40-6003-B180-30-ES
20	50	50	50–1,000	BBT-PVC50-6004-B180-30-ES
20	63	63	50–1,000	BBT-PVC63-6004-B180-30-ES

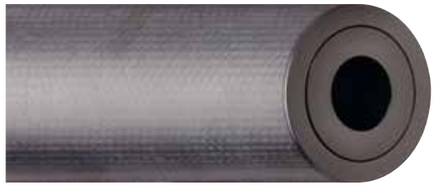
Order example:
BBT-PVC50-6004-B180-30-ES, L=200mm = PVC tube with 2 ball bearings with race material xirodur® B180, xirodur® B180 cage and stainless steel balls, total length 200mm

Available from stock

chanhvinh.com

xiros® guide rollers | Product range

xiros® system solution – Carbon fibre tube



Carbon fibre tube with xirodur® S180 ball bearing, available as ESD version (with xirodur® F180 ball bearing)



Carbon fibre tube with xirodur® F180 ball bearing

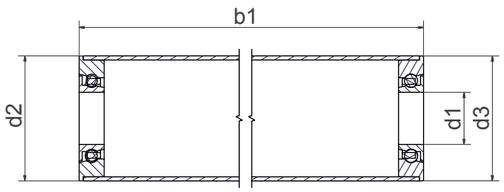
Order key

Type	Material

BBT-CF 50-6004-□-30-ES

Ball bearing guide roller	Carbon fibre tube	Outer Ø	Dimensions according to DIN 625-1	Race material	Cage material	Ball material

Cage material
30 = xirodur® B180
Ball material
ES = Stainless steel



Dimensions [mm]

Inner Ø d1	Outer Ø d2	Flange Ø d3	Length b1	Part No.
20	50	49.9	50 – 1,000	**BBT-CF50-6004-S180-30-ES**
20	100	100.0	50 – 1,000	**BBT-CF100-6004-F180-30-ES**

Order example:
BBT-CF50-6004-S180-30-ES, L=200mm = Carbon fibre tube with 2 ball bearings xirodur® S180, xirodur® B180 cage and stainless steel balls, total length 200mm

Delivery time: approximately 3 weeks
With xirodur® F180 as ESD version available upon request

xiros® guide rollers | Product range

xiros® system solution – closed on one end



Closed special solution with aluminium tube and polymer ball bearing for guide rollers and label rollers

Ready-to-install complete systems with shaft to required size upon request

Order key

Type	Material

BBTG-AC 30-□-30-ES

Ball bearing guide roller	Aluminium tube	Outer Ø	Length – upon request	Cage material	Ball material

Cage material
30 = xirodur® B180
Ball material
ES = Stainless steel

Dimensions [mm]

Outer Ø d2	Length L1	Part No.
30	According to customer request	**BBTG-AC30-XX-30-ES**

Order example:
BBTG-AC30-200-30-ES, L=200mm = Aluminium with 2 ball bearings with race material xirodur® S180, xirodur® B180 cage and stainless steel balls, total length 200mm

Available upon request

chanhvinh.com

xiros® end caps | Product range

Races made from xirodur® B180



PA cage,
stainless steel or
glass balls



PA cage,
stainless steel balls
hexagon nut socket

- Fast and easy retrofits in many standard tubes
- Good axial stability

Order key

Type	Material

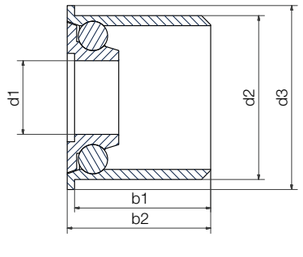
BB-6204EC44.5-B180-10-ES

Ball bearing type	End cap	Outer Ø (d2)	Race material	Cage material	Ball material

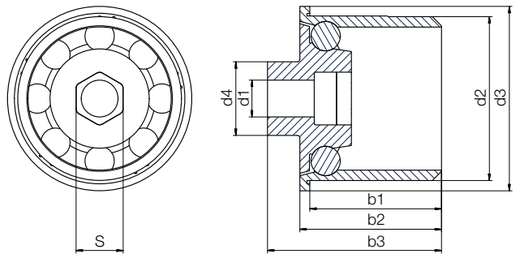
Cage material
10 = PA

Options:
Ball material
ES = Stainless steel
GL = Glass

Example "6204EC"



Example "6204ECM8"



Technical data

Installation 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	41.66	29.85
6204	245	294	1,800	48.44	–

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Outer Ø d3	Width d4	Width b1	Width b2	Width b3	S	Cage/ball material combination PA/ES	Cage/ball material combination PA/GL	Part No.
20	44.5	50	–	35.8	38.5	–	–	●	●	**BB-6204EC44.5-B180-10-**
10	44.5	50	20	35.8	38.5	47.3	M8	●	–	**BB-6204ECM8-B180-10-ES**

Order example:
BB-6204EC44.5-B180-10-ES = End cap with race material xirodur® B180, with PA cage and stainless steel balls

Available from stock

My sketches

chanhvinh.com

xiros® profiled radial deep groove ball bearings | Product range

Races made from xirodur® B180



xirodur® B180 cage,
stainless steel balls
Type 6000PP3



xirodur® B180 cage,
stainless steel balls
Type 608P6

- One-piece design
- Replaces several components

Order key

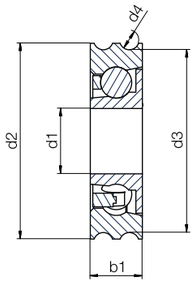
Type	Material	Design

BB-608 P6-B180-30-ES-C

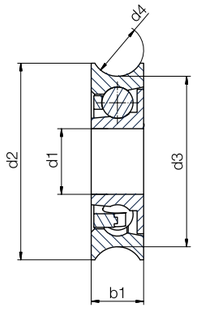
Ball bearings	Dimensions according to DIN 625-1	Profile P6	Race material	Cage material	Ball material	With shield

Cage material
30 = xirodur® B180
Ball material
ES = Stainless steel
Shield
C = Shield on one side

Example "Profile PP3"



Example "Profile P8"



Technical data

Installation size	Radial load capacity stat.	Max. speed	Weight B180/ES
	[N]	[rpm]	[g]
608P6	80	2,200	3.96
608P8	140	1,800	23.37
6000P8	110	2,200	7.14
6000PP3	110	2,200	7.86
6201P9	160	1,600	27.05

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Base Ø d3	Groove Ø d4	Width b1	Part No.
8	24	20.5	6	7	BB-608P6-B180-30-ES-C
8	48	32	8	14	BB-608P8-B180-30-ES
10	30	26	8	8	BB-6000P8-B180-30-ES-C
10	30	28	3	8	BB-6000PP3-B180-30-ES-C
12	60	43.5	9	12	BB-6201P9-B180-30-ES

Order example:
BB-608P6-B180-30-ES = Radial deep groove ball bearing, profile P8 with race material xirodur® B180, xirodur® B180 cage and stainless steel balls

Available from stock

xiros® spherical radial deep groove ball bearings | Product range

Races made from xirodur® B180

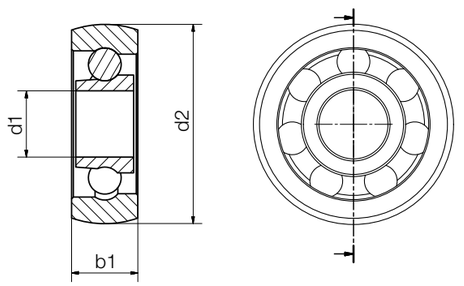


xirodur® B180 races
PA cage,
stainless steel balls



xirodur® B180 races
PA cage,
glass balls

- Use in skewed/curved/twisted profiles
- Prevents edge stress



Order key

Type	Material

BB-608SO-B180-10-ES

Ball bearings	Dimensions according to DIN 625-1	Spherical outer Ø	Race material	Cage material	Ball material

Race material
B180 = xirodur® B180
Cage material
10 = PA
Options:
Ball material
ES = Stainless steel
GL = Glass

Technical data

Installation size	Radial load capacity stat.	dyn.	Max. speed	Weight PA/ES	PA/GL
	[N]	[N]	[rpm]	[g]	[g]
608	80	94	2,200	4.63	3.34
6000	110	130	1,900	7.86	5.70
6001	138	147	1,750	13.51	11.10

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Width b2	Cage/ball material combination PA/ES	PA/GL	Part No.
8	24.00	8	7	●	●	BB-608SO-B180-10-□
10	28.96	10	8	●	●	BB-6000SO-B180-10-□
12	35.56	12	8	●	●	BB-6001SO-B180-10-□

Order example:
BB-608SO-B180-10-ES = Ball bearing with spherical outer diameter, race material xirodur® B180, PA cage and stainless steel balls

Available from stock

chanhvinh.com

xiros® double row ball bearing | Product range

Races made from xirodur® B180



PA cage, stainless steel or glass balls

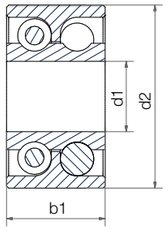
- Higher loads
- More cost-effective than two comparable bearings

Order key

Type	Material	Design
BB-6000-B180-10-ES-D		

Ball bearings | Dimensions according to DIN 625-1 | Race material | Cage material | Ball material | Double row

Cage material
10 = PA
Options:
Ball material
ES = Stainless steel
GL = Glass



Technical data

Installation size	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight PA/ES [g]	Weight PA/GL [g]
6000	200	240	1,000	11.23	6.90
6004	420	470	650	35.60	22.55

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination PA/ES	Cage/ball material combination PA/GL	Part No.
10	26	14	●	●	BB-6000-B180-10-☐-D
20	42	20	●	●	BB-6004-B180-10-☐-D

Order example:
BB-6000-B180-10-ES-D = double row ball bearing with race material xirodur® B180, PA cage and stainless steel balls

Available from stock

xiros® multi-axis bearing | Product range

Races made from xirodur® B180



PP balls

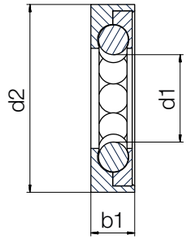
- For rotary and linear motions

Order key

Type	Material
BB-MB-1633-11-B180-PP	

Ball bearings | Multi-axis bearing | 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 stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight B180/PP [g]
BB-MB	55	70	500	6.86

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Part No.
16.3	33	11	BB-MB-1633-11-B180-PP

Order example:
BB-MB-1633-11-B180-PP = Multi-axis bearing with race material xirodur® B180, B180 housing and PP balls

Available from stock

chanhvinh.com

xiros® skate wheels | Product range

Races made from xirodur® B180

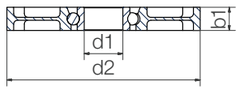


PA cage,
stainless steel balls



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 bearings
Dimensions according 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

Installation 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	58.81	58.81

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Part No.
20	100	12	**BB-6004SW100-B180-10-**

Order example:
BB-6004SW100-B180-10-ES = xiros® skate wheel with race material xirodur® B180. 100mm outer diameter, PA cage and stainless steel balls

Available from stock

xiros® fixed flange ball bearings | Product range

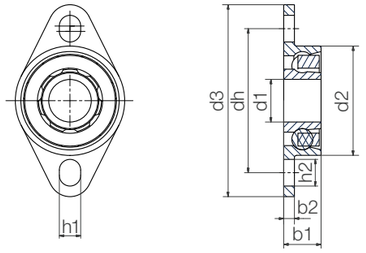
FDA-compliant, fixed version

FDA



xirodur® B180 cage
Stainless steel balls

- For less precise holding fixtures



Order key

Type	Material

BB-FL-608-B180-30-ES

Ball bearings
Fixed flange ball bearing
Dimensions according to DIN 625-1
Housing material
Cage material
Ball material

Cage material
30 = xirodur® B180
Ball material
ES = Stainless steel

Technical data

Installation size	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight B180/ES [g]
626	60	62	3,200	2.89
608	80	92	2,200	3.65
6000	110	130	2,200	6.49
6001	130	147	2,000	7.68
6003	160	220	1,600	11.13
6004	250	320	1,400	25.06

Dimensions [mm]

d1	d2	d3	b1	b2	dh	h1	h2	Part No.
6	19	33.5	6	2	25	3	4.5	**BB-FL-626-B180-30-ES**
8	20.7	35.8	7	2	26.8	4	5	**BB-FL-608-B180-30-ES**
10	26	41	8	2	32	4	5	**BB-FL-6000-B180-30-ES**
12	28	44	8	2	35	4	5	**BB-FL-6001-B180-30-ES**
17	35	54	10	2.5	44	4	6	**BB-FL-6003-B180-30-ES**
20	42	84	12	4	63	8	12	**BB-FL-6004-B180-30-ES**

Order example:
BB-FL-608-B180-30-ES = Fixed flange ball bearing with xirodur® B180 housing, xirodur® B180 cage and stainless steel balls

Available from stock

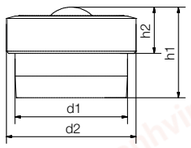
chanhvinh.com

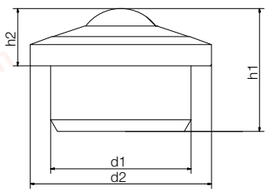
xiros® polymer ball transfer units | Product range

Polymer ball transfer units made from xirodur® B180









BB-505(B)-B180-POM

BB-515(B)-B180-POM
BB-522(B)-B180-POM

Order key

Type	Material

BB-522B-B180-POM

Ball bearings	Type	New generation	Housing material	Ball transfer unit
		B	B180	POM

Polymer ball transfer unit
POM = POM (ball transfer unit)
Option
B = New generation

Technical data and dimensions [mm]

Installation size	Max. stat. load capacity axial [N]	Inner Ø d1	d2	Height h1	h2	Weight [g]	Part No.
505	35	10.4	12.0	8.4	4.3	0.88	**BB-505-B180-POM**
515	80	24.0	31.0	21.0	9.8	10.73	**BB-515-B180-POM**
522	110	36.0	45.0	30.0	9.8	28.80	**BB-522-B180-POM**

Technical data and dimensions [mm]

Installation size	Max. stat. load capacity axial [N]	Inner Ø d1	d2	Height h1	h2	Weight [g]	Part No.	
505B	150	10.4	12.0	8.4	4.3	0.92	**BB-505B-B180-POM**	
515B	300	24.0	31.0	21.0	9.8	11.19	**BB-515B-B180-POM**	
522B	500	36.0	45.0	30.0	9.8	29.97	**BB-522B-B180-POM**	
530B	1000	45.0	55.0	37.0	13.8	67.40	**BB-530B-B180-POM**	New

Recommended tolerances
We recommend the following hole tolerances for the ball transfer units housings:
Installation size
505 ▶ 10.40mm H7
515/515A ▶ 24mm H7
522/522A ▶ 36mm H7
In general: The height tolerance of all installation sizes is ± 0.2mm

Order example:
BB-505-B180-POM = Polymer ball transfer unit with housing material xirodur® B180 and POM ball transfer unit

Available from stock

xiros® polymer ball transfer units | Product range New

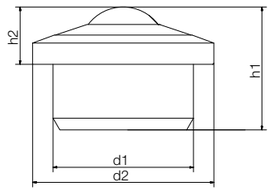
Polymer ball transfer unit with stainless steel balls



With stainless steel balls



Electrostatically dissipative



Order key

Type	Material

BB-522B-□-ES

Ball bearings	Type	New generation	Housing material	Ball transfer unit
		B	B180	ES

Ball transfer unit
ES = Stainless steel

Technical data and dimensions [mm]

Installation size	Max. stat. load capacity axial [N]	Inner Ø d1	d2	Height h1	h2	Weight stainless steel [g]	Part No.
515	300	24.0	31.0	21.0	9.8	22.8	**BB-515B-B180-ES**
515	300	24.0	31.0	21.0	9.8	22.8	**BB-515B-F182-ES**
522	500	36.0	45.0	30.0	9.8	66.6	**BB-522B-B180-ES**

Technical data and dimensions [mm]

Installation size	Max. stat. load capacity axial [N]	Inner Ø d1	d2	Height h1	h2	Weight [g]	Part No.
515B	300	24.0	31.0	21.0	9.8	11.19	**BB-515B-B180-ES**
522B	500	36.0	45.0	30.0	9.8	29.97	**BB-522B-B180-ES**

Recommended tolerances
We recommend the following hole tolerances for the ball transfer units housings:
Installation size
515/515A ▶ 24mm H7
522/522A ▶ 36mm H7
In general: The height tolerance of all installation sizes is ± 0,2mm

Order example:
BB-515-B180-ES = Polymer ball transfer unit with housing material xirodur® B180 and stainless steel ball transfer unit

Available from stock

chanhvinh.com

xiros® polymer ball transfer units | Product range

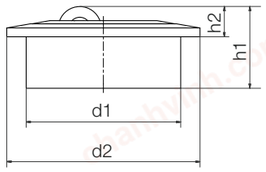
Axial polymer ball transfer unit made from xirodur® B180



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 bearings	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]

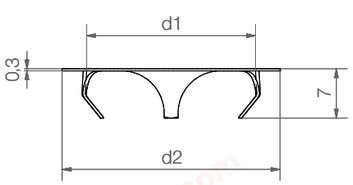
Installation size	Max. stat. load capacity axial [N]	Inner Ø d1	d2	Height h1	h2	Weight HS [g]	HH [g]	Part No.
515A	150	24.0	31.0	14.3	5.3	9.96	9.99	BB-515A-B180-☐
522A	300	36.0	45.0	19.2	7.05	24.69	24.71	BB-522A-B180-☐

Order example:
BB-515A-B180-HS = Axial polymer ball transfer unit with housing material xirodur® B180 and soft roller made from xirodur® D180

Available from stock

Accessories: Clamping rings for xiros® polymer ball transfer units





xiros® clamping rings made of stainless steel offer the possibility to install xiros® polymer ball transfer units in another orientation than the standard horizontal position. Easy assembly and disassembly.

Dimensions [mm]

For ball transfer unit	d1	d2	Housing hole	Weight [g]	Part No.
BB-515-B180-POM/BB-515A-B180-☐	24	31	25H7	0.91	BB-515-CR
BB-522-B180-POM/BB-522A-B180-☐	36	41	37H7	1.61	BB-522-CR

Available from stock

My sketches

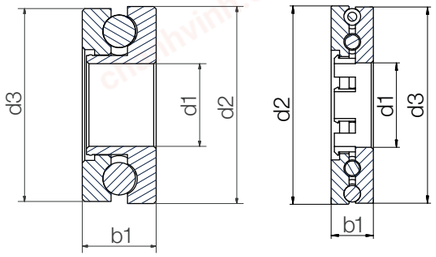
chanhvinh.com

xiros® thrust bearings | Product range

Races made from xirodur® B180



Single or double row,
with stainless steel or glass balls



Single row bearing Double row bearing

Order key

Type	Material

BB-51104-B180-ES-D

Ball bearings	Dimensions according to DIN 711	Race/cage material	Ball material	Double row

Options
Ball material
ES = Stainless steel
GL = Glass
Suffix
Blank = Single row
D = Double row

Technical data

Installation size	Single row	Double row	Load capacity stat. [N]	Load capacity dyn. [N]	Max. speed [rpm]	Weight B180/ES [g]	Weight B180/GL [g]
51100	●	–	200	250	600	6.61	4.12
51104	●	–	650	810	460	13.72	8.19
51104	–	●	975	1,215	460	18.96	8.99

Dimensions [mm]

Inner Ø d1	Outer Ø d2	d3	Width b1	Cage/ball material combination B180/ES	B180/GL	Part No.
10	24	23.5	9	●	●	BB-51100-B180-☐
20	35	34.5	10	●	●	BB-51104-B180-☐
20	47	46.5	10	●	●	BB-51104-B180-☐-D

Order example:
BB-51100-B180-ES = Thrust bearing with race material xirodur® B180, B180 cage and stainless steel balls

Available
from stock

xiros® thrust washers | Product range

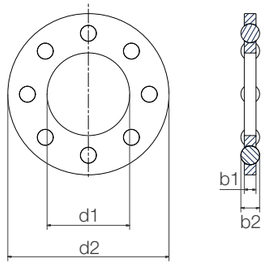
Races made from xirodur® B180



Standard type with
stainless steel or
glass balls



Slim Line design with
stainless steel or
glass balls



Order key

Type	Material

BB-6004TW-B180-ES-SL

Ball bearings	Dimensions according to DIN 625-1	Axial thrust washer	Race material	Ball material	Slim Line

Options
Ball material
ES = Stainless steel
GL = Glass
Suffix
Blank = Standard
SL = Slim Line

Technical data (related to metallic shafts)

Installation size	Slim Line	Recommended load capacity stat. [N]	Recommended load capacity dyn. [N]	Max. speed [rpm]	Weight B180/ES [g]	Weight B180/GL [g]
626	–	341	425	2,000	1.35	0.81
608	–	482	600	1,700	2.25	1.17
6000	–	610	782	1,500	3.04	1.50
6000	●	405	500	1,500	2.09	1.20
6004	–	975	1,215	700	6.87	4.41
6006	–	925	1,540	600	5.51	3.39
6006	●	520	680	600	4.23	2.98

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	b2	Race/ball material combination B180/ES	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

chanhvinh.com

xiros® slewing ring ball bearings | Product range

xirodur® B180 – for absorbing higher axial loads



Stainless steel balls



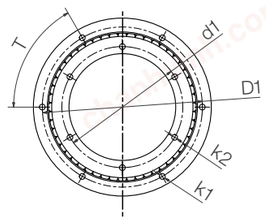
Glass balls

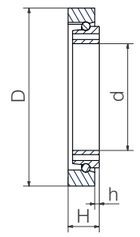


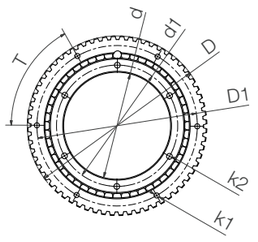
Stainless steel balls, with cage made from xirodur® B180



Stainless steel balls, with outer drive ring (HDT5)







Order key

Type	Design	Material
BB-RT-01	-60	-ES
Ball bearings	Slewing ring ball bearings	Type 01	Inner Ø	Ball material

Options
Ball material
ES = Stainless steel
GL = Glass

Order key with cage

Type	Design	Material
BB-RT-01	-60	-B180-30-ES
Ball bearings	Slewing ring ball bearings	Type 01	Inner Ø	Race material	Cage material	Ball material

Technical data

Type	Load capacity Axial [N]	Load capacity Radial [N]	Max. permissible moment [Nm]	Max. speed [rpm]	Weight ES [g]	Weight glass [g]
Standard with stainless steel or glass balls						
RT-01-60	800	720	40	350	111.68	98.3
RT-01-100	1,600	1,250	60	250	283.85	243.76
Slewing ring ball bearings with xirodur® B180 cage						
RT-01-40-B180-30	500	260	30	900	63.46	–
RT-01-60-B180-30	600	300	30	800	101.22	–
RT-01-100-B180-30	1,020	760	55	650	248.90	–
RT-01-150-B180-30	2,000	1,100	75	600	398.00	–
RT-01-400-B180-30	5,800	2,900	170	500	–	6338
Slewing ring ball bearings with outer drive ring						
RT-01-60HDT5-B180-30	800	720	40	320	97.00	–

Dimensions [mm]

d	d1	D	D1	h	H	T	k1	k2	Part No.
Standard with stainless steel or glass balls									
60	68	100	90	2.5	17.5	60	3.3	3.3	BB-RT-01-60-☐
100	110	160	150	5.0	20.0	60	5.2	5.2	BB-RT-01-100-☐
Slewing ring ball bearings with xirodur® B180 cage									
40	47	80	72	2.5	15	60	3.3	3.3	BB-RT-01-40-B180-30-ES
60	68	100	90	2.5	17.5	60	3.3	3.3	BB-RT-01-60-B180-30-ES
100	110	160	150	5.0	20	60	5.2	5.2	BB-RT-01-100-B180-30-ES
150	163	210	197	5.0	20	60	6.1	6.1	BB-RT-01-150-B180-30-ES
400	450	600	550	10.0	40	51.43	8.0	8.0	BB-RT-01-400-B180-30-GL
Slewing ring ball bearings with outer drive ring									
60	68	100	90	2.5	17.5	60	M3	3.3	BB-RT-01-60HDT5-B180-30-ES

Order example:

BB-RT-01-60-ES = Standard slewing ring ball bearing with race material xirodur® B180 and stainless steel balls

BB-RT-01-60-B180-30-ES = Slewing ring ball bearing with race material xirodur® B180, xirodur® B180 cage and stainless steel balls

BB-RT-01-60-HDT5-B180-ES = Slewing ring ball bearing with race material xirodur® B180, outer drive ring and stainless steel balls

BB-RT-01-60-HDT5-B180-30-ES = Slewing ring ball bearing with race material xirodur® B180, outer drive ring, xirodur® B180 cage and stainless steel balls

Available from stock

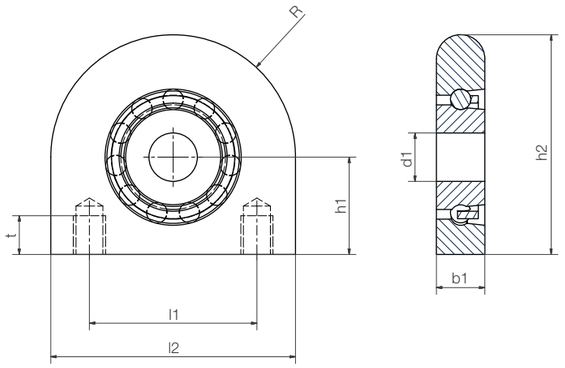
chanhvinh.com

xiros® pillow block ball bearing | Product range

FDA-compliant, fixed version – "like for like" replacement possible



- FDA-compliant components
- Can withstand loads of up to approximately 50kg (depending on installation size)



Order key

Type	Material

ESTM-BB1-F25-B180-ES-SL

Pillow block bearing	Ball bearing, single row	Fixed version	Inner Ø	Race/cage material	Ball material	Slim Line

Race/cage material
B180 = xirodur® B180
Ball material
ES = Stainless steel

Technical data

Type	Load capacity, radial		Max. speed	Weight
	stat.	dyn.		ES
	[N]	[N]	[rpm]	[g]
ESTM-F15	270	350	1,250	86
ESTM-F17	280	360	1,200	85
ESTM-F20	290	370	1,150	83
ESTM-F25	480	520	850	119
ESTM-F30	500	550	840	163

Technical data

d1	b1	h1	h2	l1	l2	R	Thread	t	Part No.
15	15	30.2	68.2	52	76	38	M10	12	**ESTM-BB1-F15-B180-ES-SL**
17	15	30.2	68.2	52	76	38	M10	12	**ESTM-BB1-F17-B180-ES-SL**
20	15	30.2	68.2	52	76	38	M10	12	**ESTM-BB1-F20-B180-ES-SL**
25	17	36.5	78.5	56	84	42	M10	15	**ESTM-BB1-F25-B180-ES-SL**
30	19	42.9	89.9	66	94	47	M14	18	**ESTM-BB1-F30-B180-ES-SL**

Available from stock

My sketches

chanhvinh.com

xiros® pillow block ball bearing | Product range

Fixed version

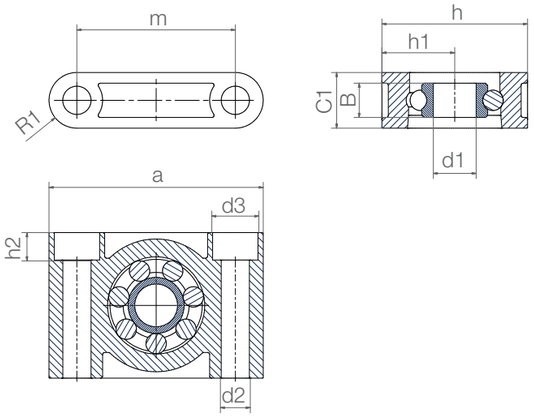


igumid G housing, PA cage, stainless steel balls



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	Hole Ø d2	d3	h	h1	h2	a	m	C1	B	R1	Part No.
6	5.5	–	22	11	–	36	26	10	6	5.0	ESTM-BB1-F06-B180-▭
10	6.6	10.6	34	17	6.6	50	37	13	8	6.5	ESTM-BB1-F10-B180-▭
20	9.0	14.0	48	24	8.6	72	54	18	12	9.0	ESTM-BB1-F20-B180-▭

Order example:
ESTM-BB1-F06-B180-ES = Pillow block bearing, fixed version, made from xirodur® B180 with stainless steel balls

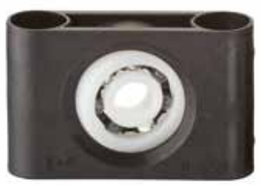
Available from stock

xiros® pillow block ball bearing | Product range

Pivoting version

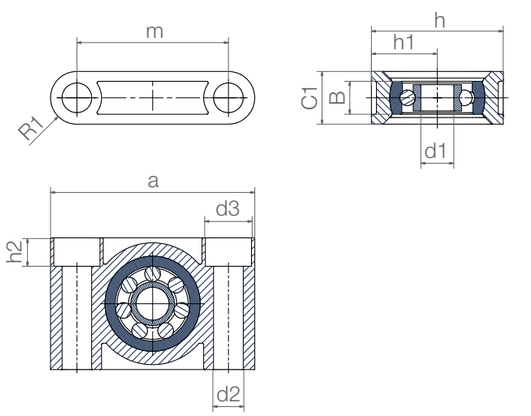


igumid G housing, PA cage, stainless steel balls



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	Hole Ø d2	d3	h	h1	h2	a	m	C1	B	R1	Max. pivot angle	Part No.
8	6.6	10.6	34	17	6.4	50	37	13	8	6.5	±5°	ESTM-BB1-P08-B180-▭
10	9.0	14.0	40	20	8.6	62	46	16	10	8	±5°	ESTM-BB1-P10-B180-▭
12	9.0	14.0	48	24	8.6	72	54	18	12	9	±5°	ESTM-BB1-P12-B180-▭

Order example:
ESTM-BB1-P08-B180-ES = Pillow block bearing, pivoting version, made from xirodur® B180 with stainless steel balls

Available from stock

chanhvinh.com

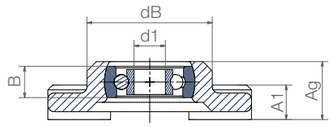
xiros® 4-hole fixed flange ball bearings | Product range

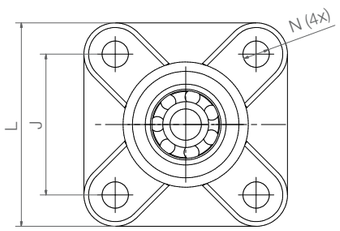
Pivoting version



igumid G housing,
PA cage,
stainless steel balls or
glass balls

- Compensation of misalignment errors





Order key

Type	Material

EFSM-BB1-P 08-B180-ES

4-hole fixed 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	±20°	**EFSM-BB1-P08-B180-▭**
10	40.0	65	45	11	18.8	10	8.4	±20°	**EFSM-BB1-P10-B180-▭**
12	48.0	74	52	14	23.5	12	8.4	±20°	**EFSM-BB1-P12-B180-▭**

Order example:
EFSM-BB1-P08-B180-ES = 4-hole fixed flange ball bearing with race material xirodur® B180 and stainless steel balls

Available from stock

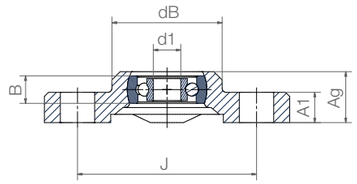
xiros® 2-hole fixed flange ball bearings | Product range

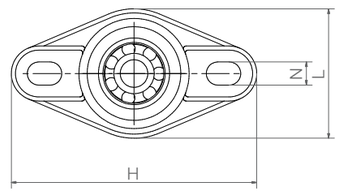
Pivoting version



igumid G housing,
PA cage,
stainless steel balls or
glass balls

- Trouble-free readjustment thanks to elongated holes
- Precise alignment of the bearings not necessary





Order key

Type	Material

EFOM-BB1-P 08-B180-ES

2-hole fixed 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	6.4x10.1	±20°	**EFOM-BB1-P08-B180-▭**
10	40.0	89.0	47	65	11	18.8	10	8.4x12.5	±20°	**EFOM-BB1-P10-B180-▭**
12	48.5	101.0	58.5	75	14	23.5	12	8.4x12.5	±20°	**EFOM-BB1-P12-B180-▭**

Order example:
EFOM-BB1-P08-B180-ES = 2-hole fixed flange ball bearing with race material xirodur® B180 and stainless steel balls

Available from stock

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xiros® customised special parts New

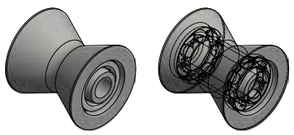
Customised and cost-effective



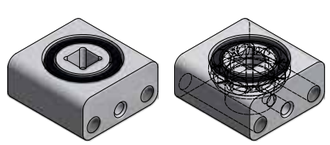
Infinite possibilities

Customised & cost-effective: your polymer ball bearing in the required design, material and quantity.

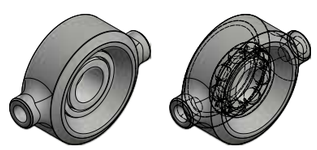
- Machined or injection-moulded
- Square or round
- With flange, outer toothed profile, etc.
- In customised quantity
- Lubrication and maintenance-free
- Cost-effective
- Select from different xirodur® materials
- In customised quantity



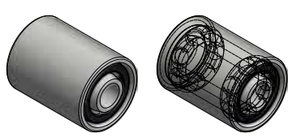
Guide roller for rubber seals in car production: which replaced a special unavailable roller



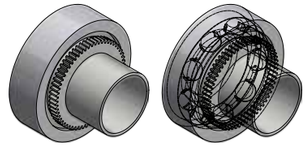
Non-magnetic for drylin® linear guide: design of a ball bearing with square housing, square shaft and glass balls



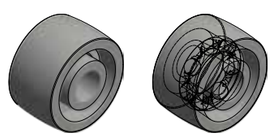
Consumer product camera stabilizer: injection-moulded special parts to improve engineered solution



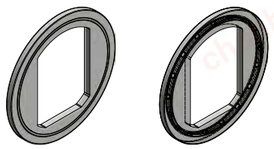
Blood pumps (peristaltic): lubrication-free and longer service life



Gear-driven shaft: one-part solution for full integration



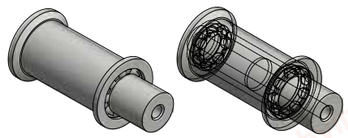
Roller for belt guide in ATM cash machines



Tension rollers in rubber production



Bearings for cash machines: lubrication-free and integration of 2 rubber rings for better paper grip



Tension roller for tape deflection: one-part solution (6 in 1)

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xiros®

xiros® customised special parts

In 3 steps to your individual ball bearing

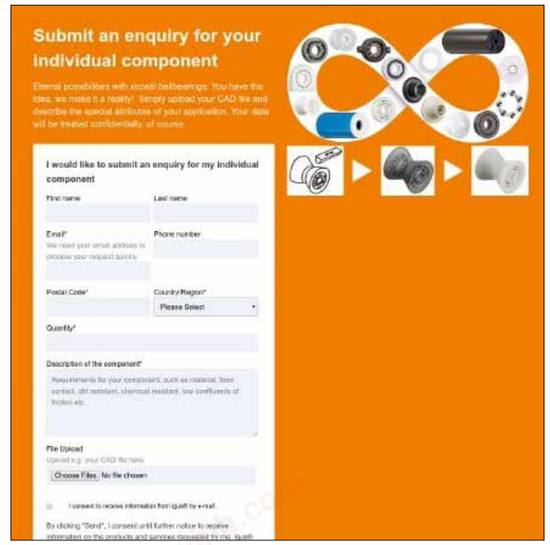
1. Submit an enquiry
Fill in the form with some basic information: quantity and requirement, such as food contact, dirt resistance, etc. and upload the CAD files, for example.

After one of our specialists has contacted you for a consultation, you will receive a quotation.

2. We manufacture your required component
Upon order, igus® starts the production process.

3. You receive your product
Your required component is ready to ship and delivered quickly.

Submit an enquiry:
▶ **www.igus-asean.com/xiros-specialparts**



igus® test lab

The material combinations included in xiros® ball bearings are subjected to a large number of load and speed tests in the igus® test laboratory.
The test results can be used to determine service life and suitability for both standard and special parts.



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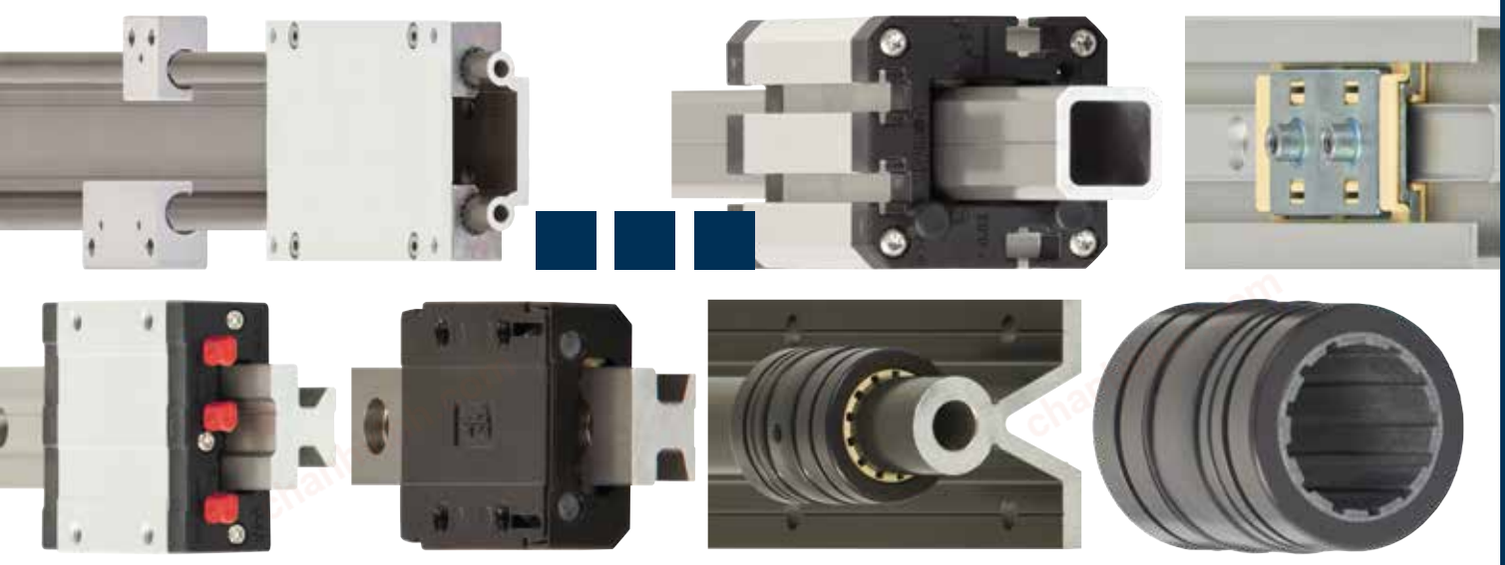
drylin®

Linear technology



...plastics

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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 practice show the proven employment from drylin® linear guides in a wide variety of applications.



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, Germany)



Forming, filling and sealing machine
Lubrication-free drylin® high temperature linear bearings (up to +120°C) are used in the tool guide system of this forming, filling and sealing machine. (Unifill SpA, Italy)

Label feeding system (packaging technology)
Quick and flexible lubrication-free format adjustment at lower costs – implemented with drylin® T rail guide. Further advantage: guide carriage with manual clamp.
(Geset Etikettier-Systeme GmbH, Germany)

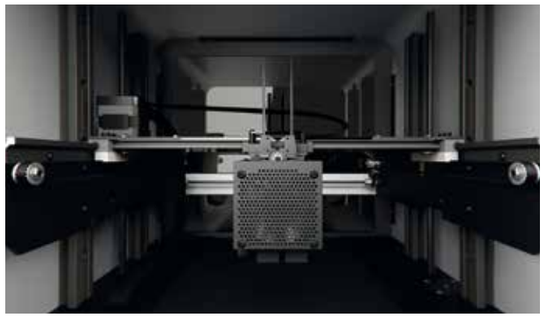




Door adjustment
The smooth, quiet operation and the enormous cost advantages are obtained by the use of drylin® R linear plain bearings on the hard-anodised guide shafts to guide the doors of machine tools. (Alzmetall GmbH + Co. KG, Germany)



System 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; Germany)



3D printers
Linear guides of the drylin® T and N series, and the drylin® SD lead screw system travel completely lubrication-free in this 3D printer. This eliminates the risk of contaminating the housing, the filament, and the print result. (Cobot)



Mobile and stationary saw mills
drylin® W modular guide system and iglidur® J liner for adjusting the saw blade guide.
(Serra Maschinenbau GmbH, Germany)

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drylin® linear technology | Product overview

drylin® W profile guides



Single rails, square:
WSQ-XX
▶ Page 976



Pillow blocks, square:
WJ200QM
▶ Page 977



Single rails, round:
WS-XX
▶ Page 978



Single rails, round made of stainless steel:
WS-XX-ES-(FG)
▶ Page 979



Pillow blocks, round:
WJ200UM
▶ Page 980



Pillow blocks, round made of stainless steel:
WJUM-XX-ES-(FG)
▶ Page 980



Tandem pillow blocks:
WJ200UMT-XX-AL
▶ Page 981



Manual clearance adjustment:
WJ(200)UME
▶ Page 982

drylin® W profile guides



With spring pre-load:
WJ(200)UM-XX-P
▶ Page 983



Pillow blocks, single, round:
WJ200UMA-XX-AL
▶ Page 984



Double rails:
square/round
WSQ-/WS-XX-XX
▶ Page 986/992



High torsional rigidity: high profile rails
WSX
▶ Page 987/993



Linear guides – lightweight, non-metallic:
WSPC
▶ Page 988



Linear guides – lightweight, non-metallic:
WSPG
▶ Page 989



Complete carriages: square/round
WW/WWQ
▶ Page 990/995



Mono-slide carriages:
WWC
▶ Page 991

drylin® W profile guides



Round double rail, made of stainless steel:
WS-XX-XX-ES-(FG)
▶ Page 994



Assembled stainless steel guide carriage, round:
WW-XX-XX-GESG-PES
▶ Page 996



Curved rail profiles:
WSB
▶ Page 998



Single bearings for curved rails:
WI3UBP-XX-LLZ
▶ Page 1000



Carriages for curved rails:
WWB
▶ Page 1001



Double rails with machine recesses:
WS(Q)-XX-CAM
▶ Page 1002



Complete carriages for slider:
WW-XX-SL
▶ Page 1003



Hybrid slider carriages with four double roller bearings:
WWH-XX-SL
▶ Page 1004

drylin® W hybrid roller bearings



New

Hybrid rail for lateral installation:
WSR
▶ Page 1010



New

Hybrid roller bearing for hybrid lateral rail:
WJRM-31/41
▶ Page 1011



Single hybrid roller bearings:
WJRM-01
▶ Page 1012



Double hybrid roller bearings:
WJRM-21
▶ Page 1013



Hybrid single and double rollers, stainless steel:
WRJM-XX-ES-FG
▶ Page 1014



Hybrid carriages for lateral installation:
WWR-21-XX
▶ Page 1015



Hybrid carriages with four double roller bearings:
WWH-21
▶ Page 1016



Hybrid carriages for horizontal installation:
WWH-10
▶ Page 1017

drylin® W hybrid roller bearings



New

Mounting plate for drylin® W hybrid roller bearing:
WWYR
▶ Page 1018

drylin® linear technology – Accessories



Manual clamp for simple positioning:
WHKA-XX-(AL)/WHKAQ
▶ Page 1020/1021



Manual clamp for higher holding force:
WHKD
▶ Page 1021



Manual clamp for drylin® W hybrid roller bearings:
WJRM-21-XX-HKA
▶ Page 1022



Liners made from dry-tech® polymers:
▶ Page 1023



Plastic liners:
J200UMA-XX
▶ Page 1024



End caps for drylin® high profile rails WSX:
WSX-XX-EC
▶ Page 1025

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drylin® linear technology | Product overview

drylin® linear technology – Accessories



New

Mounting plate for linear carriage:
WWY
▶ Page 1026

drylin® N low-profile linear guides



For small spaces and high load capacity:
Installation size 17
▶ Page 1034



The largest variety of carriages (options):
Installation size 27
▶ Page 1036



Suitable for aluminium construction profiles:
Installation size 40
▶ Page 1038



High loads with reduced height:
Installation size 80
▶ Page 1040



Prism rails:
NSV-01-27
▶ Page 1042



Prism carriages:
NWV-XX
▶ Page 1043

drylin® N low-profile linear guides



Accessories:
Manual clamp
NW-XX-HKA
▶ Page 1046



Accessories:
End cap
NSKB, NSK
▶ Page 1047

drylin® NT telescopic rails



Telescopic rails:
NT-35
▶ Page 1050



Telescopic rails with locking mechanism:
NT-LM-35
▶ Page 1051



New

Telescopic guide for higher loads:
NT-60
▶ Page 1052

drylin® T rail guides



Guide rails:
TS-01
▶ Page 1060



High performance carriages:
TW-12
▶ Page 1061

drylin® T rail guides



Manual clearance adjustment:
TW-01
▶ Page 1062



Automatic clearance adjustment:
TWA-01
▶ Page 1063



With manual clamp:
TW-01-XX-HKA
▶ Page 1064



Heavy-duty version:
TW-02
▶ Page 1065



Compact design:
TW-03
▶ Page 1066



Accessories:
TWBM-11
▶ Page 1067



Accessories:
TWBM-01
▶ Page 1067



Miniature guides:
TW-04
▶ Page 1068

drylin® T rail guides



Adjustable miniature guides:
TWE-04
▶ Page 1069



Accessories:
End caps for holes
TSZ
▶ Page 1070



Accessories:
Replacement plastic sliders
TEK
▶ Page 1070

drylin® R liners made from iglidur® J



Long, closed design for shafts:
JUM-01
▶ Page 1080



Long, open design for supported shafts:
JUMO-01
▶ Page 1081



Long, closed design, precise:
JUM-11
▶ Page 1082



Long, open design, precise:
JUMO-11
▶ Page 1083

... made from iglidur® J



Short, closed design for shafts:
JUM-02
▶ Page 1084

... made from iglidur® J200



Long, closed design for shafts:
J200UM-01
▶ Page 1085



Long, open design for shafts:
J200UMO-01
▶ Page 1086

... made from iglidur® E7



Long, closed design for shafts:
E7UM-01
▶ Page 1087



Long, open design for supported shafts:
E7UMO-01
▶ Page 1088



Short, closed design for shafts:
E7UM-02
▶ Page 1089

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drylin® linear technology | Product overview

... made from iglidur® X



Long, closed design, high temperature:
XUM-01
▶ Page 1090



Long, open design, high temperature:
XUMO-01
▶ Page 1091



Short, closed design, high temperature:
XUM-02
▶ Page 1092

... made from iglidur® A180



Long, closed design for shafts:
A180UM-01
▶ Page 1094



Long, open design for supported shafts:
A180UMO-01
▶ Page 1095

... made from iglidur® A160



Long, closed design for shafts:
A160UM-01
▶ Page 1096

drylin® R special designs



Slide disks for large force displacement
RSDJ
▶ Page 1098



Clip-on liners
JUCM
▶ Page 1099



Press-fit bearings made from iglidur® L100
WLM/WLFM
▶ Page 1100/1101

drylin® R solid plastic bearings



Standard design made from iglidur® J
RJM-01
▶ Page 1102



Standard design, precise, made from iglidur® J
RJMP-01
▶ Page 1103



Japanese dimensions made from iglidur® J4
RJ4JP-01
▶ Page 1104



Low-cost made from iglidur® J260
RJ260UM-02
▶ Page 1105

drylin® R linear plain bearings



Closed aluminium adapters
RJUM-01
▶ Page 1106



Closed aluminium adapters, precise
RJUM-11
▶ Page 1107



Closed adapters made of stainless steel 303
RJUM-ES
▶ Page 1108



Closed, anodised aluminium adapters, short design
RJUM-02
▶ Page 1109



Closed, anodised aluminium adapter
RE7UM-01
▶ Page 1110



Closed, anodised aluminium adapters, short design
RE7UM-02
▶ Page 1111



Closed aluminium adapters floating bearings
RJUM-03
▶ Page 1112



Split aluminium adapters
TJUM-01
▶ Page 1113

drylin® R linear plain bearings



Split aluminium adapters, floating bearings
TJUM-03
▶ Page 1114



Open, anodised aluminium adapters, for supported shafts
OJUM-01
▶ Page 1115



Open aluminium adapters, floating bearing
OJUM-03
▶ Page 1116

drylin® R pillow blocks



Closed aluminium adapters, short design
RJUM-05
▶ Page 1118



Closed, adjustable aluminium adapters, short design
RJUME-05
▶ Page 1119



Split aluminium adapters, short design
TJUM-05
▶ Page 1120



Closed aluminium adapters, tandem design
RJUMT-05
▶ Page 1121

drylin® R pillow blocks



Closed aluminium adapters, long design
RJUM-06
▶ Page 1122



Closed aluminium adapters, with manual clamp
RJUM-06-XX-HK
▶ Page 1123



Closed housings, floating bearings
RJUM-06-XX-LL
▶ Page 1124



Open housings, floating bearings
OJUM-06-XX-LL
▶ Page 1125



Open aluminium adapters, long design
OJUM-06
▶ Page 1126



Open aluminium adapters, with manual clamp
OJUM-06-XX-HK
▶ Page 1127



Open, adjustable aluminium adapters, long design
OJUME-06
▶ Page 1128

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drylin® linear technology | Product overview

drylin® R flanged linear plain bearings



Closed aluminium adapters, round flange
FJUM-01
▶ Page 1130



Closed aluminium adapters, square flange
FJUM-02
▶ Page 1132



Closed aluminium adapters, round flange, tandem design
FJUMT-01
▶ Page 1134



Closed aluminium adapters, square flange, tandem design
FJUMT-02
▶ Page 1136

drylin® R pillow blocks



Quad blocks, closed design
RQA
▶ Page 1138



Quad blocks, open design
OQA
▶ Page 1139



Closed tandem design
RTA
▶ Page 1140



Open tandem design
OTA
▶ Page 1141

drylin® R pillow blocks



Closed, long design
RGA
▶ Page 1142



Open, long design
OGA
▶ Page 1143



Closed, short design
RGAS
▶ Page 1144

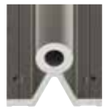


Open, short design
OGAS
▶ Page 1145

drylin® R shafts



Precision aluminium shafts
AWMP/AWMR
▶ Page 1154



Supported aluminium shafts
AWMU
▶ Page 1155



Steel shafts
SWM/SWMH
▶ Page 1156



Supported steel shafts
SWUM/SWUMN
▶ Page 1157

drylin® R shafts



Stainless steel shafts
EWM/EEWM/EWMR
▶ Page 1158



Supported stainless steel shafts
EWUM
▶ Page 1160



Low level supported stainless steel shafts
EWUMN
▶ Page 1161



Partially supported stainless steel shafts
EWUM-ES/EWUMS-ES
▶ Page 1162



Low level partially supported stainless steel shafts
EWUMN-/EWUMSN-ES
▶ Page 1164



Carbon fibre shafts
CWM
▶ Page 1166



Shaft end supports, floating
TA
▶ Page 1167



Shaft end supports, fixed
TAF
▶ Page 1168

drylin® R shafts



Shaft end blocks, standard design
WA
▶ Page 1169



Shaft end blocks, compact design
WAC
▶ Page 1170



Shaft end block, narrow design
WAS
▶ Page 1171



Flange shaft support
WAF
▶ Page 1172

drylin® Q square linear guides



Square section linear rails
AWMQ
▶ Page 1178



Adjustable linear carriages
QWE-01
▶ Page 1179



Adjustable linear carriages with manual clamp
QWE-01-XX-HKA
▶ Page 1180



Pillow blocks
QJRM(T)-05
▶ Page 1181

drylin® Q square linear guides



Fixed flange bearings with round flange:
QJFM(T)-01
▶ Page 1182



Fixed flange bearings with square flange:
QJFM(T)-02
▶ Page 1182



Solid plastic linear bearings
QJRMP-01
▶ Page 1183



Accessories for drylin® Q
▶ Page 1184



New

Clearance adjustment for columns:
ASDJ
▶ Page 1185

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drylin® linear technology | Product overview

drylin® digital measuring systems



Integrated measuring systems for drylin® Q
QKM
▶ Page 1192



Ready-to-install measuring systems for drylin® SLW linear modules
SLWM
▶ Page 1193



Digital measuring system for drylin® W
WKM2
▶ Page 1194



Measuring system with positionable readout display for drylin® W
WKMEDR
▶ Page 1195



Measuring systems for external data output for drylin® W
WKMEX
▶ Page 1196

drylin® carbon fibre



Extremely lightweight linear guides
WSPC, WWPL
▶ Page 1202



Non-metallic toothed belt axis
ZLW-XX-P
▶ Page 1203



Linear module with carbon fibre high profile
SAW-XX-P
▶ Page 1204



Linear module with carbon fibre hollow shaft
SHTP-XX-CWM
▶ Page 1205



Carbon fibre hollow shafts
CWM
▶ Page 1206

drylin® stainless steel

Closed adapters made of stainless steel 303
RJUM-XX-ES
▶ Page 1209



Stainless steel guides, single/double rails
WS-XX-ES-FG
▶ Page 1210/1213



Pillow blocks, made from 316 stainless steel
WJUM-XX-ES-FG
▶ Page 1211



Hybrid roller bearings made of stainless steel
WJRM-01/WJRM-21
▶ Page 1212



Assembled stainless steel guide carriages, round
WW-XX-GESG-PES
▶ Page 1214



Stainless steel shafts
EWM/EEWM/EWMR
▶ Page 1216



Supported stainless steel shafts
EWUM
▶ Page 1218



Partially supported stainless steel shafts
EWUM-ES/EWUMS-ES
▶ Page 1220

drylin® stainless steel



Low level supported stainless steel shafts
EWUMN
▶ Page 1222



Low level partially supported stainless steel shafts
EWUMN
▶ Page 1224



Stainless steel linear modules
SHT-ESJ
▶ Page 1226



"Hygienic design" linear module
SHTC-XX-HYD
▶ Page 1227



Stainless steel linear modules
SLW-ES
▶ Page 1228



XY tables Stainless steel version
SLW-XY-ES
▶ Page 1229



Reverse modular axes
ZLW-20
▶ Page 1230

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Lubrication-free drylin® linear guides

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 use dry operation and are maintenance-free. Linear guides with rails or shafts are available.
The focus is on, besides the freedom from maintenance and lubrication, the ruggedness and insensitivity to influences such as dirt, water, chemicals, heat or impacts.

- 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.

Price breaks online
No minimum order value. No minimum order quantity.

Service life calculation
▶ **www.igus-asean.com/drylin-expert**



drylin® rail guides

drylin® W profile guides

- Complex modular systems with more than 30 different profiles and more than 50 carriage options
- Versatile
- Easy installation

▶ **From page 967**



drylin® N low-profile linear guides

- Low profile installation heights from 6 to 12mm
- Lightweight
- Many carriage options – also with pre-load
- Pre-load prism slide for controlled adjustment

▶ **From page 1027**



drylin® T rail guides

- Same dimensions as ball guide systems
- Adjustable bearing clearance
- Automatic clearance adjustment
- High static load capacity

▶ **From page 1053**

drylin® shaft guides



drylin® R shaft guides

- Same dimensions as recirculating ball bearings
- For all shaft materials
- Lightweight
- Replaceable liners

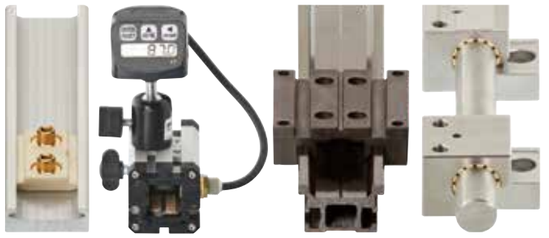
▶ **From page 1071**



drylin® Q square linear guides

- Lubrication-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 1175**



Measuring systems

▶ **From page 1187**

Special solutions with carbon fibre and stainless steel

▶ **From page 1199**

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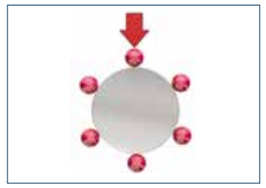
drylin® linear technology | Slides instead of rolling!

drylin® is a range of maintenance and lubrication-free linear plain bearings. This range includes linear units with lead screw, rack and toothed belt drives. The focus is on, besides the freedom from maintenance and lubrication, the ruggedness and insensitivity to influences such as dirt, water, chemicals, heat or impacts.



- Maintenance-free
- Wear-resistant
- Resistant to impacts and vibrations
- Corrosion-free
- Resistant to dirt, dust and humidity
- Low coefficient of friction
- Weight reduction
- Dry operation
- Suited for short-stroke applications
- High static load capacity
- High speeds and accelerations possible
- Self-lubricating
- Extremely quiet operation
- Low magnetism





Rolling 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 plain bearings operate on sliding elements 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, carbon fibre shafts, which offer the lightest option and stainless steel for the highest chemical resistance. Of course, hardened steel and stainless steel shafts as well as hard-chromed shafts can also be used with drylin® linear bearings.

Dry operation, without lubrication

drylin® linear bearing systems are designed for dry operation. 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 in coarse dirt or even sand. Particles are repelled from the contact surface by the movement itself. Here the front of the sliders works like a wiper. The contact surface remains clean.

drylin® linear technology | Slides instead of rolling!

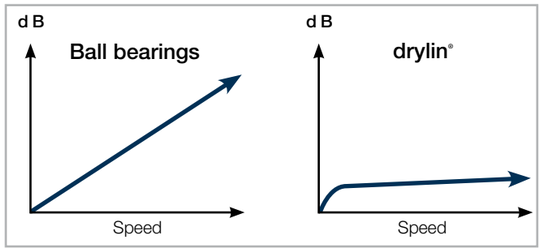
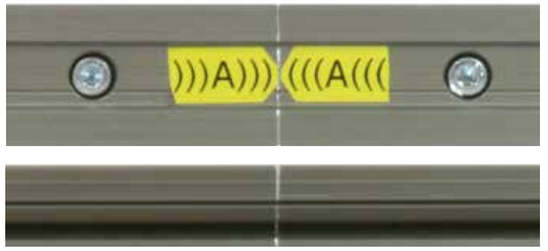


Figure 01: Comparison of noise development

Quiet

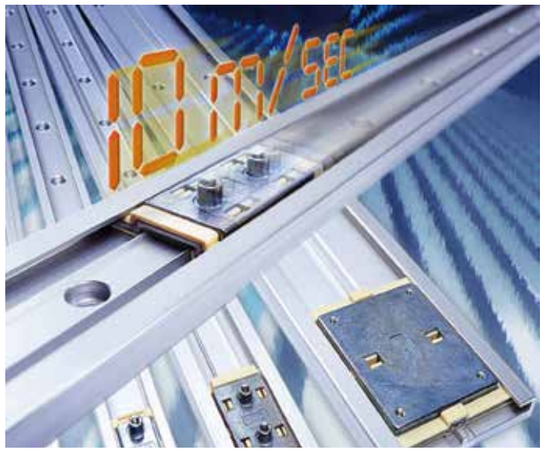
The quiet operation is also a benefit of sliding rather than rolling. There are no loud collisions between a hard steel ball and the shaft or rail. The sliding motion is extremely quiet and only a light friction noise is audible.



Track joint

Maximum stroke lengths

The lining 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 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	48–58
High-alloyed steel	15

Table 01: Thermal conductivity

Average surface speed

= Travel distance per cycle [m] / total cycle time [sec].

Permitted speeds/acceleration

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 10m/s and accelerations up to 100g.

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.

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drylin® linear technology | Slides instead of rolling!



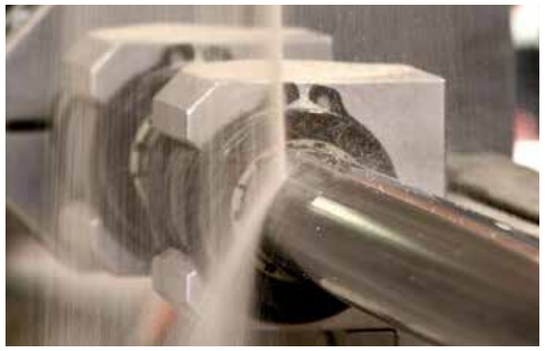
Extreme application conditions in the offshore industry



Filling machine, Krones AG, Rosenheim (Germany)



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. 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, it is recommended to use drylin® R linear bearings equipped with iglidur® X liners. The resistance of linear bearing systems is equally dependent on the counter partner. The most chemical-resistant option can be a high-alloyed steel stainless steel shaft, for instance high grade steel (AISI 440B), or alternatively the use of soft VA steels (e.g. (AISI 316Ti).

Operating temperatures

Sliding elements made from iglidur® J and J200 can be used in the temperature range between –40 and +90°C. The continuous operating temperature for overmoulded sliding elements is +50°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 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 sliding 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 endurance runner – iglidur® E7	The FDA-compliant – iglidur® A180	Blue Sky Thinking FDA/EU-compliant iglidur® A160
Application temperature	from –50°C to +90°C	from –50°C to +90°C	from –100°C to +250°C	from –50°C to +70°C	from –50°C to +90°C	from –50°C to +90°C
Best coefficient of friction with	Steel shaft	Hard-anodised aluminium	Hard-chromed steel	Steel/stainless steel shaft	Stainless steel shaft	Hardened stainless steel shafts
Volume resistance	> 10^{13}Ωcm	> 10^{8}Ωcm	< 10^{5}Ωcm	> 10^{9}Ωcm	> 10^{12}Ωcm	> 10^{12}Ωcm
Moisture absorption	1.3% weight	0.7% weight	0.5% weight	< 0.1% weight	0.2% weight	< 0.1% weight
Maximum service life with	Hard-anodised aluminium	Hard-anodised aluminium	Hardened stainless steel	Steel/stainless steel shaft	Stainless steel shaft	Hardened stainless steel shafts
Potential counter partner	All shaft materials	Hard-anodised aluminium	Hardened stainless steel	Steel/stainless steel shaft	All shaft materials	Stainless steel
Permissible stat. surface pressure	35MPa	23MPa	150MPa	18MPa	28MPa	15MPa
Part No.	JUM-...	J200UM-...	XUM-...	E7UM-...	A180UM-...	A160UM-...

igus® provides various materials for sliding elements and counter partners for drylin® 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 favourable wear and friction properties.

Ideal material combinations

iglidur® J:

- Maintenance-free dry operation
- Low coefficient of friction with all materials
- Excellent wear resistance
- Very low humidity absorption

▶ More about iglidur® J ▶ **From page 159**

iglidur® J200:

- Completely maintenance-free
- Extremely high service life on hard-anodised aluminium
- Low coefficient of friction with anodised aluminium
- Excellent wear resistance with anodised aluminium

▶ More about iglidur® J200 ▶ **From page 261**

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 279**

Other possible materials:

iglidur® A180, FDA-compliant

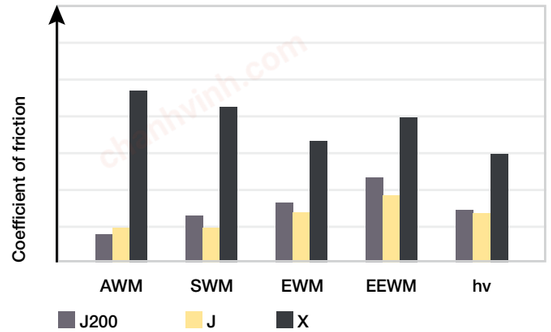
▶ More about iglidur® A180 ▶ **From page 401**

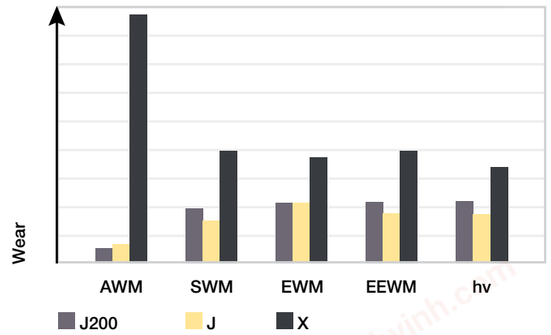
iglidur® A160, Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

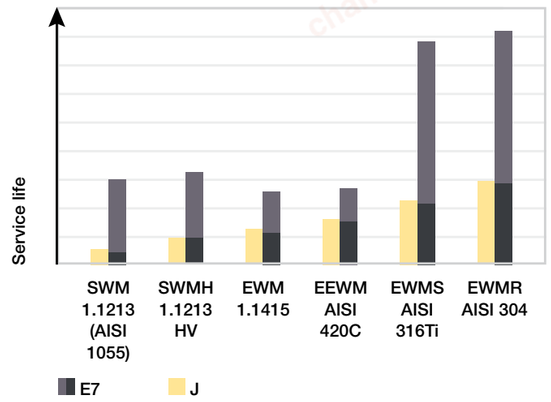
▶ More about iglidur® A160 ▶ **From page 419**

iglidur® E7, the endurance runner all-rounder

▶ More about iglidur® E7 ▶ **From page 267**







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drylin® linear technology | Product selection

Properties	Sizes	Lubrication-free and quiet operation	Dimensionally interchangeable with recirculating ball bearings	Profile rails	Shafts	Square profiles	Single pillow block	Complete carriage	Hybrid roller 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 pre-load	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

drylin® linear technology | Technical data rails/profiles/shafts

Aluminium profiles	
	Aluminium, extruded section according to EN AW 6061/6060

Shafts and rail profiles	Surfaces
drylin® W, drylin® T[155], drylin® R, drylin® Q	hard-anodised, bare surface
drylin® N, profile with CA marking	clear-anodised, bare surface
drylin® N, profile with AR marking	black-anodised (anti-reflect), bare surface

[155] Exception: TS-11-20 clear-anodised

Profile straightness tolerances	
Shafts AWMP/AWMR	DIN 754-3; 2mm/m, local 0.6mm/300mm
Profile rails AWMU/AWMQ, WS/NS/TS	DIN EN 12020-2 Total length up to 1,000mm; Straightness 0.7mm Total length up to 2,000mm; Straightness 1.3mm Total length up to 3,000mm; Straightness 1.8mm Total length up to 4,000mm; Straightness 2.2mm

Length tolerances of the profiles cut-to-length by igus® [mm]

Length	<400	>400–1000	>1000–2000	>2000–4000
Permissible variations of the standard saw length according to DIN ISO 2768-m	±0.5	±0.8	±1.2	±2.0

Minimum rail profile saw lengths [mm]

drylin® W	Hole spacing		Without holes
	C4 = 60[162]	C4 = 120[162]	
Rail profiles WS, WSQ, WSX	100	160	100

drylin® N	C4 = 60[162]	C4 = 150[162]	
Size 17/27 (miniature) NS, NS-AR, NSV, NSV-AR	100	–	70
Size 40/80 NS, NS-AR	100	200	100

drylin® T	C4 = 15/20/25/40	C4 = 60[162]	C4 = 80[162]	C4 = 120[162]	
Installation size 04 (miniature) TS-04	70	–	–	–	70
Installation size 01/11 TS-01/TS-11	–	100	120	160	100

[162] L min: C5 min + C4 + C6 min; saw length examples: drylin® WS-20 rail: C5 min = 20 min; C4 = 120mm; C6 = 20mm; 20mm + 120mm + 20mm = 160mm (min. saw lengths).
Lengths less than the minimum saw length upon request

Minimum shaft/square shaft saw lengths [mm]

drylin® R	Hole spacing				
Shafts AWMP/AWMR	100				
	T1 = 75[163]	T1 = 100[163]	T1 = 120[163]	T1 = 150[163]	T1 = 200[163]
Supported shaft AWMU	115	140	160	190	240
drylin® Q					
Square profile AWMQ			100		

[163] L min: C5 min + T1 + C6 min; saw length examples: AWMU-20 supported shaft: C5 min = 20mm; T1 = 100mm; C6 min = 20mm; 20mm + 100mm + 20mm = 140mm (min. saw length)
Lengths less than the minimum saw length upon request

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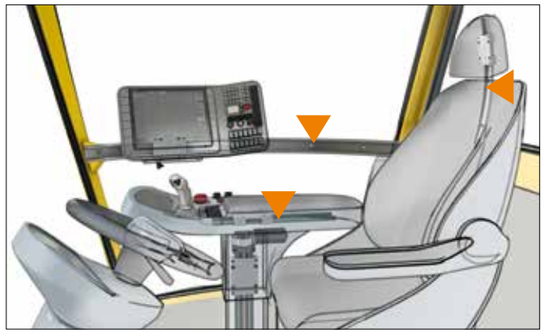
drylin® curved linear guide profiles

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.

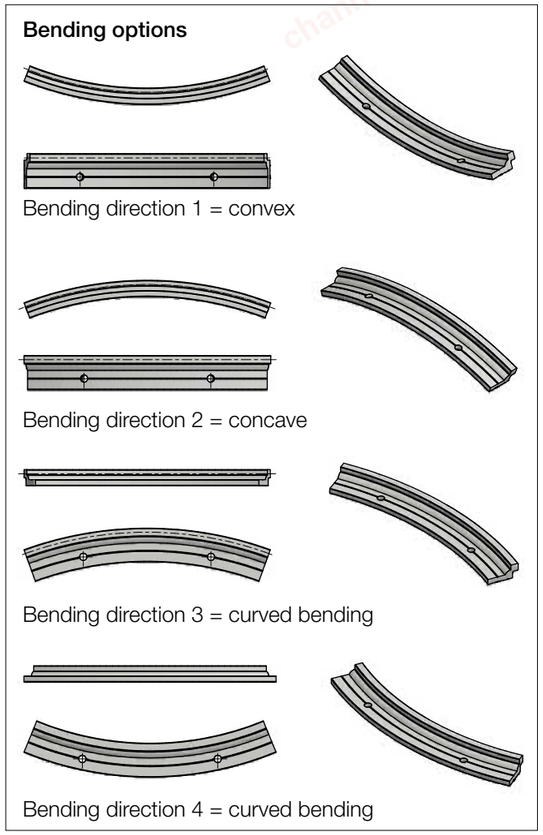
- Lubrication-free drylin® W carriages for curved rails ▶ **Page 1001**
- Variable profile directions
- Torque-resistant alternative to curved tube profiles
- Bending option depending on the radius, rail length, bearing/carriage and mounting
- Customised project service





Curved drylin® linear technology – for ergonomic operation and optimal field of view

Bending can give rise to surface changes (anodising, torsion) as a result of the deformation. Rail profiles with clear anodised (CA) surfaces that are undersized by up to 0.15 below nominal diameters are used to improve the surface finish of the curved rails. We recommend a bend radius of no less than 300mm and would like to point out that the surface finish quality after the bending process depends on the material quality. It may vary from batch to batch.



Different radii and bending directions available upon request

Curved rail profiles
▶ Page 998

More Information and checklist online
▶ www.igus-asean.com/curved

Floating bearings for guide systems

In the case of a system with two parallel guides, 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 the clearance 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 guides 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 plain 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.

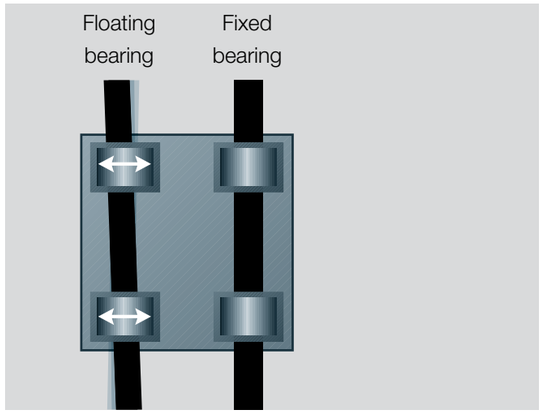


Figure 02: Automatic compensation of parallelism errors

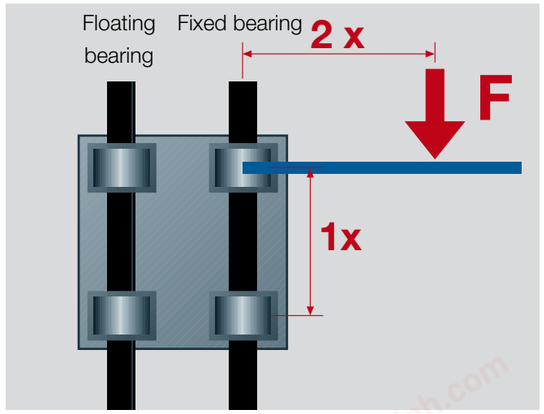


Figure 03: The 2:1 rule

Tightening torque for drylin® metallic screws

Metric thread (Da)	Tightening torque [Nm]	Recommended tightening 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

Please be aware of the minimal screw-in depth for aluminium and zinc die-casting parts: 1.5 x Da

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Cleanroom suitability and ESD compatibility of drylin®

drylin® linear guides from igus®

All drylin® guides are clearly qualified for cleanroom applications. The differentiation between the various cleanroom 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).

IPA Fraunhofer TESTED® DEVICE igus Energieführungsketten/ Lineargleitführung Report No. IG 0308-295

The following drylin® guides from igus® were tested: N40, W10, T25 and T30. See below for detailed results.

drylin® TK-10-30-01 linear guide system
"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 0.2µm, 0.3µm, 0.5µm, and 5µm with motion speed of v = 0.1m/s, to clearly derive suitability for cleanrooms classified as ISO Class 3 according to DIN EN ISO 14644-1."

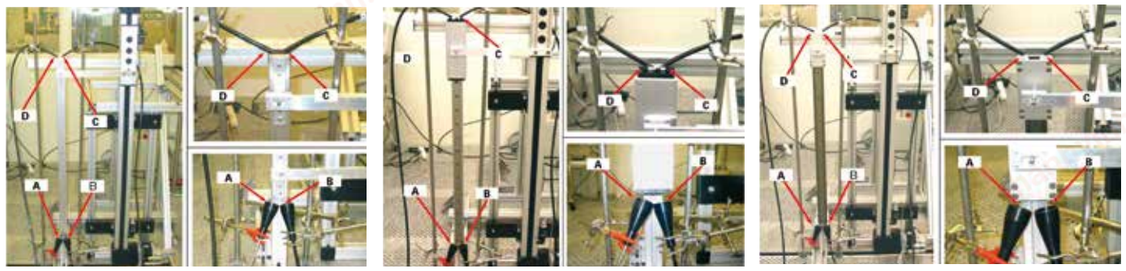
NK-02-40-02 drylin® linear guide system
"For the linear guide system drylin® NK-02-40-02 by igus® GmbH, it is possible, on the calculations of the likelihood of violation of threshold values of the detection sizes 0.2µm, 0.3µm, 0.5µm, and 5µm with motion speed of v =1m/s, to clearly derive suitability for cleanrooms 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

TK-01-25-02 drylin® linear guide system
"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 0.2µm, 0.3µm, 0.5µm, and 5µm with motion speed of v = 1m/s, to clearly derive suitability for cleanrooms 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).

WK-10-40-15-01 drylin® linear guide system
"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 0.2µm, 0.3µm, 0.5µm, and 5µm with motion speed of v =1m/s, to clearly derive suitability for cleanrooms 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





Expert for linear guides: System selection & service life calculation with CAD

Configure linear bearings and calculate their service life – 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. Select the bearing size, carriage, number and position. Then 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-asean.com/drylin-expert**

Download the online tool app now

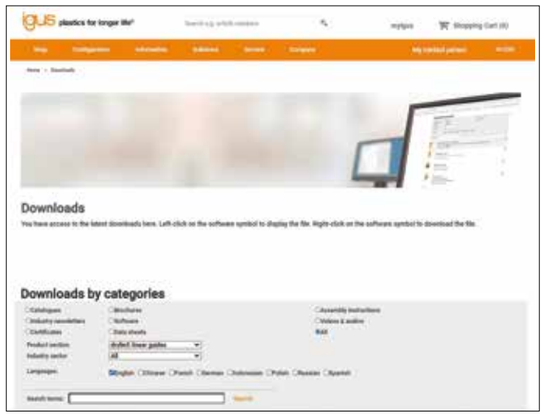
Download on the App Store



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-asean.com/drylin-CAD**



More information about the products can be found in the igus® download area

- Assembly instructions
- Assembly videos
- System design
- Catalogues

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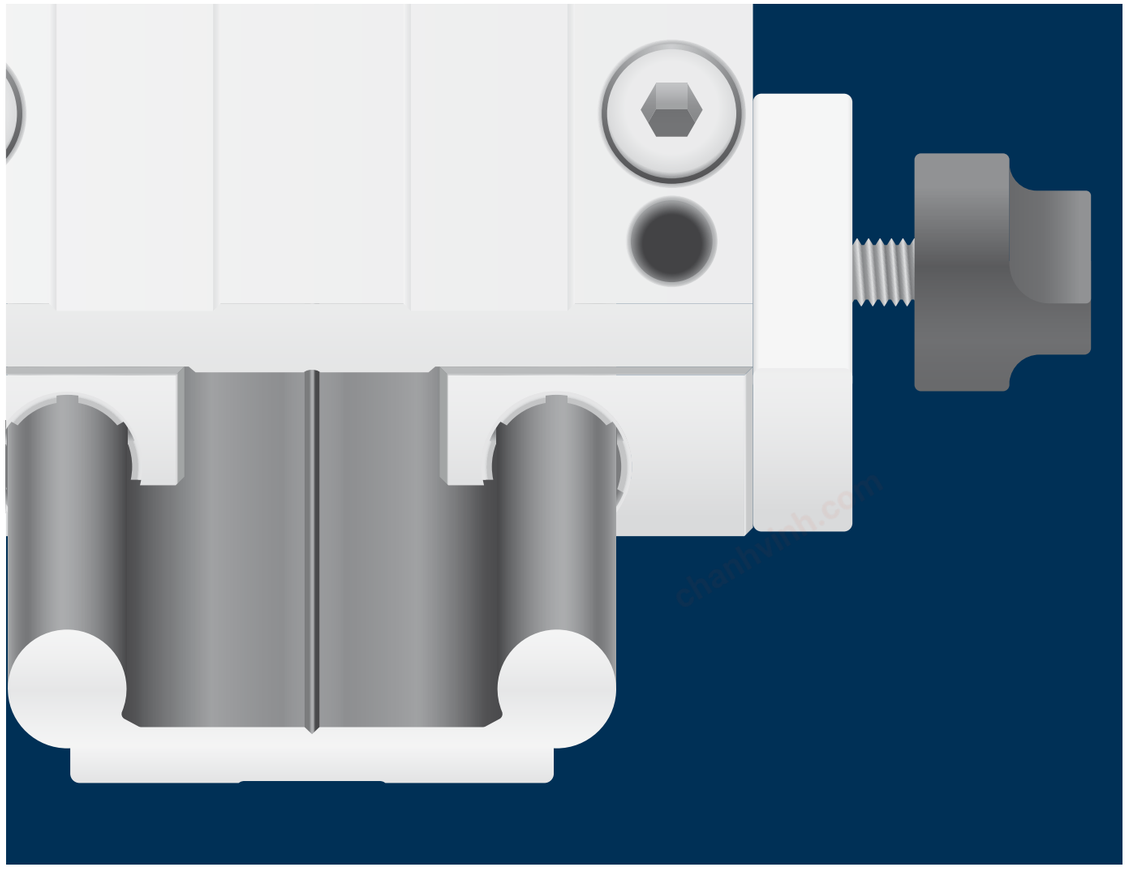
My sketches



drylin® linear technology – drylin® W profile guides

- Modular linear guides
- Replaceable lubrication-free drylin® liners
- Robust linear housings
- Ready-to-install linear carriages
- Single and double rails



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drylin® W profile guides | Advantages

Lubrication-free, light, quiet, long service life, cost-effective



Superior operating properties by combining iglidur® bearing elements and anodised rails with round shaft profiles

Corrosion-resistant with hard-anodised running surface

Quiet operation

Clean as no lubrication required

Lightweight due to the use of plastics and aluminium

Smooth operation with sliding elements made from lubrication-free iglidur® high-performance polymers

Maintenance-free due to integrated lubricants

Profiles with various geometric designs, installation sizes and clearances

Lubrication-free linear system – drylin® W

drylin® W profile guides are a cost-effective pre-assembled 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. The absence of lubrication makes the profile guide system extremely insensitive to dirt and, due to its cleanliness, it is also suitable for applications in clean and hygienic environments.

- Easy installation, maintenance-free
- Resistant to dirt thanks to dry operation
- Lightweight and quiet
- Square rail with floating bearing function for 90° 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.

Price breaks online
No minimum order value. No minimum order quantity.

Max. +200°C
Min. –40°C

Carriage lengths: 60 – 250mm
Carriage widths: 54 – 195mm
Rail length: up to 4,000mm

Service life calculation
▶ **www.igus-asean.com/drylin-expert**

drylin® W profile guides | Products overview

Profile guides for almost unlimited design freedom



Individual components: Pillow blocks

- Material: Zinc die-casting, aluminium or stainless steel
- Round or square design
- Liners made from iglidur® high-performance polymers

▶ **From page 977**



Single components: Single and double rails

- Material: aluminium, hard-anodised
- Design freedom
- 316 stainless steel rails

▶ **From page 976**



Assembled systems: Complete carriages

- Pre-assembled
- Variable lengths and widths
- Mono-slide carriage made from aluminium

▶ **From page 990**



Accessories

- Manual clamp for single bearing housing and complete carriages
- End caps for high profile rails

▶ **From page 1020**



Hybrid guides

- Linear housing with integrated single or double roller
- Low drive force
- Available as single housing or complete carriage

▶ **From page 1005**

Based on drylin® W



Measuring systems
▶ **From page 1187**



Linear modules SLW/SAW/GRW/ZLW
▶ **From page 1338**

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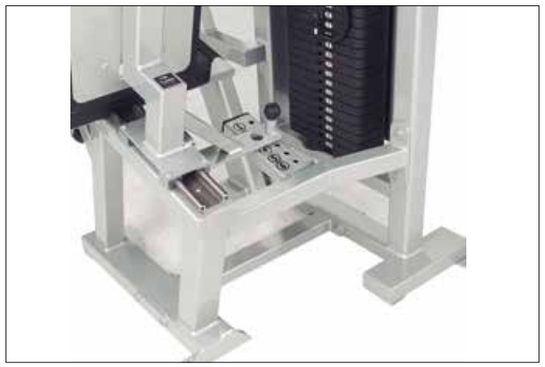
drylin® W profile guides | Application examples



drylin® linear bearings enable precise positioning at high speeds. Unlike conventional bearings, they do not require lubrication and are corrosion free.



Lightweight due to 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 equipment field are enabled through the use of drylin® W linear guides based on steel shafts in combination with stainless steel pillow blocks.

drylin® W profile guides | Online tools



Expert for linear guides: System selection and service life calculation with CAD

Configure and calculate the service life of 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. Select the bearing size, carriage, number and position. Then 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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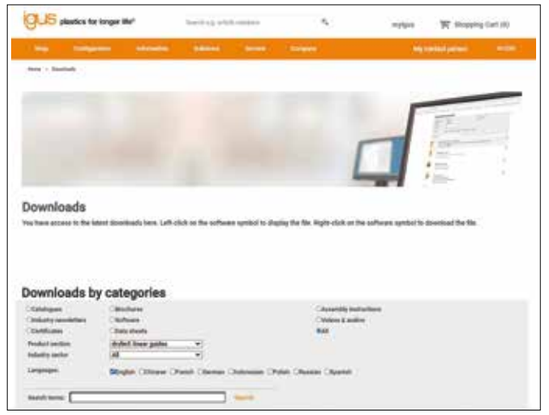
The igus® CAD online configurator gives you the ability to design and save your linear guide as a system, individual components directly as a 3D model in all commonly used formats, or to have these sent by e-mail – free of charge and without registration.

▶ **www.igus-asean.com/drylin-CAD**



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- Assembly instructions
- Assembly videos
- System design
- Catalogues

▶ **www.igus-asean.com/downloads**

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Lubrication-free iglidur® high-performance polymers

Form-fit anti-rotation feature

Vibration-dampening

Low coefficient of friction, low wear



Corrosion-free

Form-fit locating spigot

Resistant to dirt

Integrated flute design for dirt to pass through

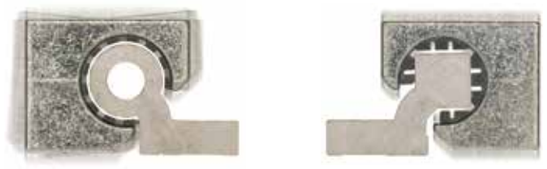
Open geometric design for rapid assembly

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-free
- Low coefficient 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 endurance runner – iglidur® E7	 The FDA-compliant – iglidur® A180	 Blue Sky Thinking FDA/EU-compliant iglidur® A160
Application temperature	from –50°C to +90°C	from –50°C to +90°C	from –100°C to +250°C	from –50°C to +70°C	from –50°C to +90°C	from –50°C to +90°C
Best coefficient of friction with	Steel shaft	Hard-anodised aluminium	Hard-chromed steel	Steel/stainless steel shaft	Stainless steel shaft	Hardened stainless steel shafts
Volume resistance	> 10^{13}Ωcm	> 10^{8}Ωcm	< 10^{5}Ωcm	> 10^{9}Ωcm	> 10^{12}Ωcm	> 10^{12}Ωcm
Moisture absorption	1.3% weight	0.7% weight	0.5% weight	< 0.1% weight	0.2% weight	< 0.1% weight
Maximum service life with	Hard-anodised aluminium	Hard-anodised aluminium	Hardened stainless steel	Steel/stainless steel shaft	Stainless steel shaft	Hardened stainless steel shafts
Potential counter partner	All shaft materials	Hard-anodised aluminium	Hardened stainless steel	Steel/stainless steel shaft	All shaft materials	Stainless steel
Permissible stat. surface pressure	35MPa	23MPa	150MPa	18MPa	28MPa	15MPa
Part No.	JUM-...	J200UM-...	XUM-...	E7UM-...	A180UM-...	A160UM-...



Floating bearings for all directions (up to ±1mm) 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 (±1mm) 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 assembling to sheet metal fabrications.

Possible combinations in assembled rail systems

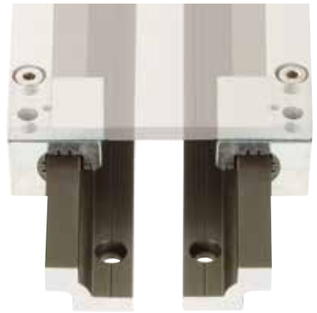
Fixed bearing Floating bearing



Fixed bearing Floating bearing



Fixed bearing Floating bearing



Available floating bearing blocks



LL – round



LLY – square



LLZ – square



rotating – square

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drylin® W profile guides | Product selection

Profiles	Installation size 06	10	16	20	25	Liner material J	J200	X	A180	E7	A160
Single rail, round		●	●	●	●	●	○	●	●	●	●
Single rail, square	●	●	●	●	●		○				
Double rail, round		●	●	●	●	●	○	●	●	●	●
Double rail, square	●	●	●	●			○				
High profile, round		●	●			●	○	●	●	●	●
High profile, square	●						○				
Stainless steel		●	●	●	●	○	●	●	●	●	●
Carbon fibre/fibreglass	●										
Curved rail	●	●									
Bearing housing – material											
Zinc die-cast	●	●	●	●	●	●	○	●	●	●	●
Aluminium	●	●	●	●	●	●	○	●	●	●	●
Stainless steel		●	●	●	●	○	●	●	●	●	●
Bearing housing – options											
With manual clamp	●	●	●	●	●	○	○	●	●	●	●
Clearance adjustment		●	●	●		○	○				
Hybrid roller bearing		●	●	●	●	○					
Pre-load		●	●	●							
Bearing can be changed on the rail		●					○				
Linear guides											
Pre-assembled carriages	●	●	●	●	●	●	○	●	●	●	●
Hybrid carriages		●	●	●		○					
Mono-slide carriage	●	●	●	●		○					
Systems											
Lead screw modules	●	●	●	●	●	○	●	●	●	●	●
Toothed belt axis	●	●	●	●			○				
With measuring system		●				○					

● Standard
● Optional

drylin® W profile guides | Liners

Available pillow blocks and carriages	Suitable liners iglidur® J200	iglidur® J	iglidur® X	iglidur® E7	iglidur® A180	iglidur® A160
Pillow block, square						
 Standard	○					
 Aluminium	○					
Pillow block, round						
 Standard	○	●	●	●	●	●
 Stainless steel	●	○	●	●	●	●
 Aluminium	○	●	●	●	●	●
 Aluminium, tandem	○	●	●	●	●	●
 "Turn-to-fit"	○	●				
 Spring pre-load	○					
 Bearing can be changed on the rail	○					
 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

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drylin® W profile guides | Product range

Single rail, square, hard-anodised aluminium



WSQ-06



WSQ-10



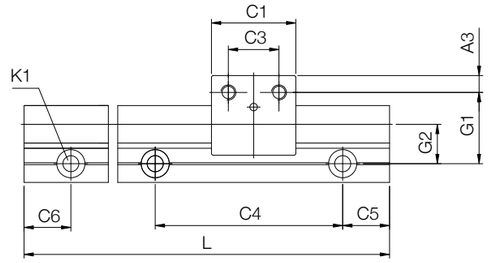
WSQ-16

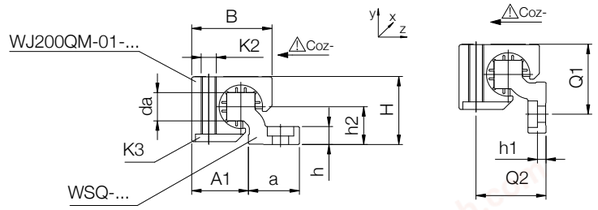


WSQ-20



WSQ-25





Hard-anodised surfaces
▶ Page 958

Curved rail profiles
▶ Page 962

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
WSQ-25	1.94	45	18.5	4,000	32	11.5	5.5	25	46.5	25.5	37.5	45.5	46

Part No.	C4	C5 Min.	C5 Max.	C6 Min.	C6 Max.	K1 for screw	Geometrical moment of inertia Iy	Iz	Moment of resistance Wby	Wbz
						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
WSQ-25	150	25	99.5	25	99.5	M10	115,900	73,500	4,500	3,700

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

Pillow blocks, square, made from zinc die-casting or aluminium



Can be combined with:



WSQ-...

WSQ-...



WSX-...

Suitable mounting plate
▶ Page 1026

Technical data and dimensions [mm]

Part No.	Floating bearing clearance	Floating bearing direction	Weight [g]	Weight -AL	B	C1	C3	A3	K2	K3 for countersunk head screw	Static load capacity Coy [N]	Coz+ [N]	Coz– [N]
WJ200QM-01-06	–	–	16	7.18	18	19	10	4.5	M4	M3	420	420	140
WJ200QM-01-06-AL	–	–	16	7.18	18	19	10	4.5	M4	M3	420	420	140
WJ200QM-01-06-LLY	± 0.5	y / z	16	7.18	18	19	10	4.5	M4	M3	420	420	140
WJ200QM-01-06-LLZ	± 0.5	y / z	16	7.18	18	19	10	4.5	M4	M3	420	420	140
WJ200QM-01-10	–	–	41	21	26	29	16	6.5	M6	M5	1,200	1,200	250
WJ200QM-01-10-AL	–	–	41	21	26	29	16	6.5	M6	M5	1,200	1,200	250
WJ200QM-01-10-LLY	± 0.7	y / z	41	21	26	29	16	6.5	M6	M5	1,200	1,200	250
WJ200QM-01-10-LLZ	± 0.7	y / z	41	21	26	29	16	6.5	M6	M5	1,200	1,200	250
WJ200QM-01-16	–	–	100	51	34.5	36	18	9	M8	M6	2,100	2,100	400
WJ200QM-01-16-AL	–	–	100	51	34.5	36	18	9	M8	M6	2,100	2,100	400
WJ200QM-01-16-LLY	± 1.0	y / z	100	51	34.5	36	18	9	M8	M6	2,100	2,100	400
WJ200QM-01-16-LLZ	± 1.0	y / z	100	51	34.5	36	18	9	M8	M6	2,100	2,100	400
WJ200QM-01-20	–	–	190	104	42.5	45	27	9	M8	M6	3,200	3,200	500
WJ200QM-01-20-AL	–	–	190	104	42.5	45	27	9	M8	M6	3,200	3,200	500
WJ200QM-01-20-LLY	± 1.0	y / z	190	104	42.5	45	27	9	M8	M6	3,200	3,200	500
WJ200QM-01-20-LLZ	± 1.0	y / z	190	104	42.5	45	27	9	M8	M6	3,200	3,200	500
WJ200QM-01-25	–	–	435	212	52.5	58	36	11	M10	M8	4,800	4,800	950
WJ200QM-01-25-AL	–	–	435	212	52.5	58	36	11	M10	M8	4,800	4,800	950
WJ200QM-01-25-LLY	± 1.0	y / z	435	212	52.5	58	36	11	M10	M8	4,800	4,800	950
WJ200QM-01-25-LLZ	± 1.0	y / z	435	212	52.5	58	36	11	M10	M8	4,800	4,800	950

Order example: **WJ200QM-01-06**: Pillow block, square
WJ200QM-01-06-LLZ: Pillow block, square, with floating bearing in z-direction
WJ200QM-01-06-AL: Pillow block, square, made from aluminium

Order key – single rail

Type	Length
WSQ-06-□	

- Guide rail
- Square
- Shafts Ø
- Rail length [mm]

Order key – pillow block

Type	Size
WJ200QM-01-10	

- drylin® W
- Liner material iglidur® J200
- Pillow block, square
- Standard
- Size

Options:
Blank: Fixed bearing
LLY: Floating bearing in y-direction
LLZ: Floating bearing in z-direction
AL: Pillow block made from aluminium

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drylin® W profile guides | Product range

Single rail, round, hard-anodised aluminium



WS-10



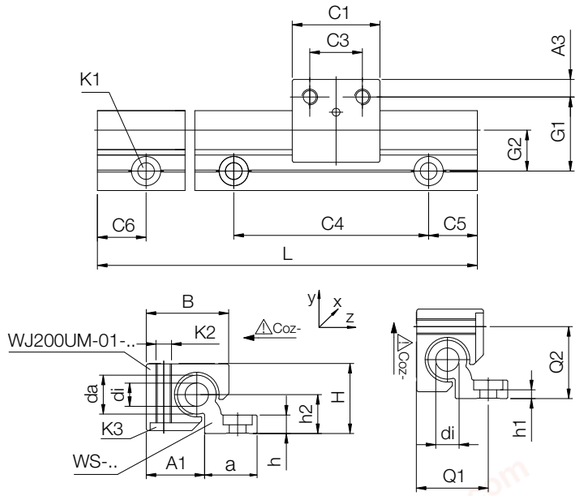
WS-16



WS-20



WS-25



This assembled position not possible for WS-10

Hard-anodised surfaces
▶ Page 958

Curved rail profiles
▶ Page 962

Stainless steel version available
▶ Page 1210

Technical data and dimensions [mm]

Part No.	Weight	H[57]	da	di	L	a	h	h1	h2	G1	G2	A1	Q1	Q2
	[kg/m]	±0.25	–0.1		Max.									
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	Geometrical moment of inertia		Moment of resistance	
				Min.	Max.	Min.	Max.			ly	lz	Wby	Wbz
									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

Single rails round, made of 316 stainless steel



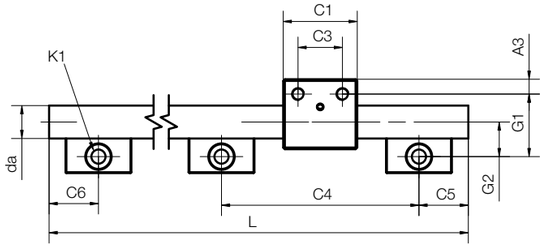
STAIN-LESS STEEL

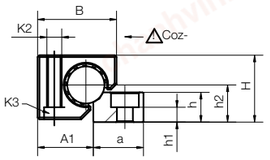
Order key – single rail

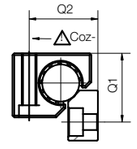
Type	Material
WS-10-ES-FG	

Guide rail | Shafts Ø | Stainless steel | Precision casting

Housing and shaft support material	AISI 316
Shaft material	AISI 316Ti
Installation size 25 Shaft, shaft support and housing material	AISI 316Ti







This assembled position is not possible for WS-10

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-FG	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	Geometrical moment of inertia		Moment of resistance	
				Min.	Max.	Min.	Max.			ly	lz	Wby	Wbz
									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-FG	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 material:



iglidur® J



iglidur® E7



iglidur® A180

chanhvinh.com

drylin® W profile guides | Product range

Pillow blocks, round, made from zinc die-casting or aluminium



Order example:
WJ200UM-01-10:
Pillow block, round
WJ200UM-01-10-LL:
Pillow block, round, floating bearing
WJ200UM-01-10-AL:
Pillow block, round, made from aluminium

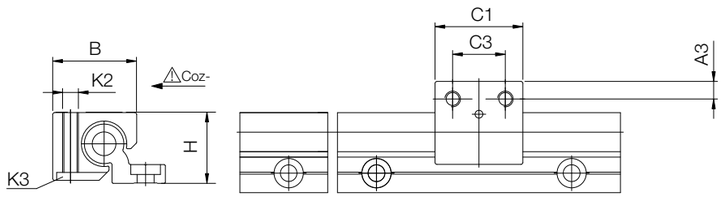
Suitable mounting plate
▶ Page 1026

Order key

Type	Size	Options
WJ200UM-01-	10	-AL

drylin® W	Liner material iglidur® J200	Pillow block, round	Standard	Size	Aluminium

Options:
Blank: Fixed bearing
LL: Floating bearing
AL: Pillow block made from aluminium
ES: Stainless steel
ES-FG: Stainless steel precision casting



Technical data and dimensions [mm]

Part No.	Floating bearing clearance	Weight [g]	B	C1	C3	A3	K2	K3 for countersunk head screw	Static load capacity Coy [N]	Coz+ [N]	Coz– [N]
WJ200UM-01-10	–	41	26.0	29	16	6.5	M6	M5	1,200	1,200	250
WJ200UM-01-10-LL	±0.2	41	26.0	29	16	6.5	M6	M5	1,200	1,200	250
WJ200UM-01-10-AL	–	20	26.0	29	16	6.5	M6	M5	1,200	1,200	250
WJUM-01-10-ES-FG[59]	–	57	26.0	29	16	6.5	M6	M5	3,800	3,800	950
WJ200UM-01-16	–	100	34.5	36	18	9.0	M8	M6	2,100	2,100	400
WJ200UM-01-16-LL	±0.2	100	34.5	36	18	9.0	M8	M6	2,100	2,100	400
WJ200UM-01-16-AL	–	48	34.5	36	18	9.0	M8	M6	2,100	2,100	400
WJUM-01-16-ES-FG[59]	–	134	34.5	36	18	9.0	M8	M6	6,900	6,900	1,450
WJ200UM-01-20	–	190	42.5	45	27	9.0	M8	M6	3,200	3,200	500
WJ200UM-01-20-LL	±0.25	190	42.5	45	27	9.0	M8	M6	3,200	3,200	500
WJ200UM-01-20-AL	–	99	42.5	45	27	9.0	M8	M6	3,200	3,200	500
WJUM-01-20-ES-FG[59]	–	280	42.5	45	27	9.0	M8	M6	11,000	11,000	1,900
WJ200UM-01-25	–	425	52.5	58	36	11.0	M10	M8	4,800	4,800	950
WJ200UM-01-25-LL	±0.25	425	52.5	58	36	11.0	M10	M8	4,800	4,800	950
WJ200UM-01-25-AL	–	250	52.5	58	36	11.0	M10	M8	4,800	4,800	950
WJUM-01-25-ES-FG[59]	–	564	52.5	58	36	11.0	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

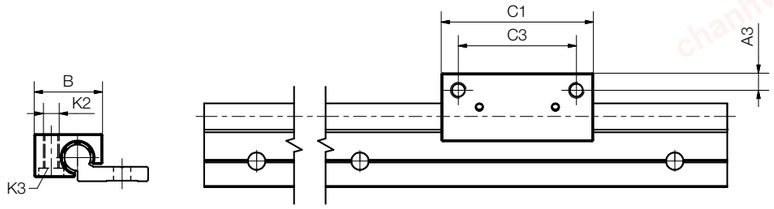
Pillow blocks, tandem, round, anodised aluminium



Order key

Type	Size	Material
WJ200UM T-01-	10	-AL

drylin® W	Liner material iglidur® J200	Pillow block, round	Tandem	Standard	Size	Aluminium



Technical data and dimensions [mm]

Part No.	Weight [g]	B	C1	C3	A3	K2	K3 for countersunk head screw	Static load capacity Coy [N]	Coz+ [N]	Coz– [N]
WJ200UMT-01-10-AL	43	26	58	45	6.5	M6	M5	2,000	2,000	420
WJ200UMT-01-16-AL	102	34.5	72	54	9	M8	M6	3,400	3,400	670
WJ200UMT-01-20-AL	182	42.5	80	62	9	M8	M6	5,300	5,300	830

Can be combined with:



WS-... | WS-..-ES-FG-... | WS-... | WS-...-ES-FG | WSX-...

Suitable liner material:



iglidur® J | iglidur® J200 | iglidur® X | iglidur® E7 | iglidur® A180

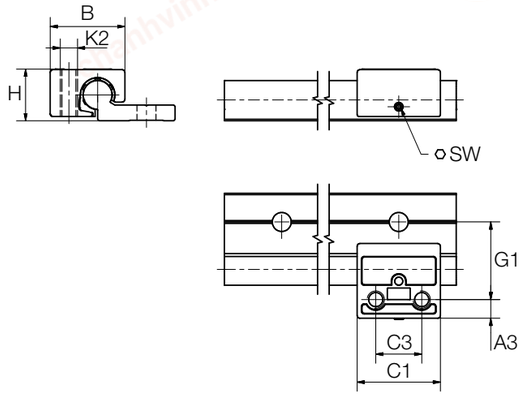
chanhvinh.com

drylin® W profile guides | Product range

Pillow blocks, round, adjustable bearing clearance



Turn-to-fit



Order key

Type	Size
WJ200UM E	-01-10

drylin® W	Liner material iglidur® J200	Pillow block, round	Adjustable	Standard	Size



Allen key supplied

Suitable mounting plate
▶ Page 1026

Technical data and dimensions [mm]

Part No.	Weight	B	C1	C3	A3	K2	H	SW	G1	Static load capacity Coy	Coz+	Coz–
	[g]						±0.25			[N]	[N]	[N]
WJUME-01-10	43	26	29	16	6.5	M6	18	1.5	27	560	560	250
WXUME-01-10	43	26	29	16	6.5	M6	18	1.5	27	560	560	250
WJUME-01-10-AL	19	26	29	16	6.5	M6	18	1.5	27	560	560	250
WJUME-01-10-ES	56	26	29	16	6.5	M6	18	1.5	27	560	560	250
WJ200UME-01-10	110	34.5	36	18	9	M8	27	2.5	33	560	560	250
WJ200UME-01-16	110	34.5	36	18	9	M8	27	2.5	33	980	980	400
WJ200UME-01-16-AL	45	34.5	36	18	9	M8	27	2.5	33	980	980	400
WJ200UME-01-16-ES	132	34.5	36	18	9	M8	27	2.5	33	980	980	400
WJ200UME-01-20	222	42.5	45	27	9	M8	36	2.5	38	1,500	1,500	500
WJ200UME-01-20-AL	95	42.5	45	27	9	M8	36	2.5	38	1,500	1,500	500
WJ200UME-01-20-ES	275	42.5	45	27	9	M8	36	2.5	38	1,500	1,500	500
WJ200UME-01-25	431	52.5	58	36	11	M10	45	2.5	46.5	2,250	2,250	950
WJ200UME-01-25-AL	194	52.5	58	36	11	M10	45	2.5	46.5	2,250	2,250	950
WJ200UME-01-25-ES	539	52.5	58	36	11	M10	45	2.5	46.5	2,250	2,250	950

Can be combined with:



WS-... WS-..-ES-FG-... WS-... WS-...-ES-FG WSX-...

Suitable liner material:

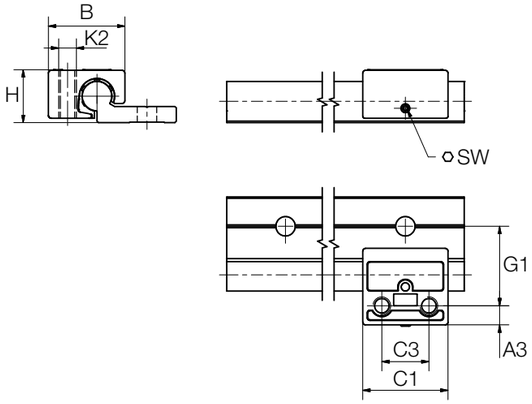


iglidur® J iglidur® J200

drylin® W profile guides | Product range

Pillow blocks, round, with spring pre-load





Order key

Type	Size	Material
WJ200UM-	01-16-	□-P40

drylin® W	Liner material iglidur® J200	Pillow block, round	Standard	Size	Housing material	Pre-load

Options:
Blank: Zinc die-casting (Zn)
AL: Aluminium
ES: Stainless steel (AISI 316Ti, machined)

Suitable mounting plate
▶ Page 1026

drylin® stop motion full product range online
▶ www.igus-asean.com/drylinstopmotion

Technical data and dimensions [mm]

Part No.	Spring colour	Pre-load	Weight (Zn)	Weight -ES	Weight -AL	B	C1	C3	A3	K2	H	SW	G1
		[N]	[g]	[g]	[g]						±0.25		
WJ200UM-01-10-□-P40	blue	4	43	56	19	26	29	16	6.5	M6	18	1.5	27
WJ200UM-01-10-□-P90	yellow	9	43	56	19	26	29	16	6.5	M6	18	1.5	27
WJ200UM-01-10-□-P140	red	14	43	56	19	26	29	16	6.5	M6	18	1.5	27
WJ200UM-01-16-□-P40	blue	4	110	132	46	34.5	36	18	9	M8	27	2.5	33
WJ200UM-01-16-□-P90	yellow	9	110	132	46	34.5	36	18	9	M8	27	2.5	33
WJ200UM-01-16-□-P140	red	14	110	132	46	34.5	36	18	9	M8	27	2.5	33
WJ200UM-01-16-□-P230	green	23	110	132	46	34.5	36	18	9	M8	27	2.5	33
WJ200UM-01-20-□-P40	blue	4	222	275	95	42.5	45	27	9	M8	36	2.5	38
WJ200UM-01-20-□-P90	yellow	9	222	275	95	42.5	45	27	9	M8	36	2.5	38
WJ200UM-01-20-□-P140	red	14	222	275	95	42.5	45	27	9	M8	36	2.5	38
WJ200UM-01-20-□-P230	green	23	222	275	95	42.5	45	27	9	M8	36	2.5	38

Can be combined with:



WS-... WS-..-ES-FG-... WS-... WS-...-ES-FG WSX-...

Suitable liner material:



iglidur® J iglidur® J200

chanhvinh.com

drylin® W profile guides | Product range

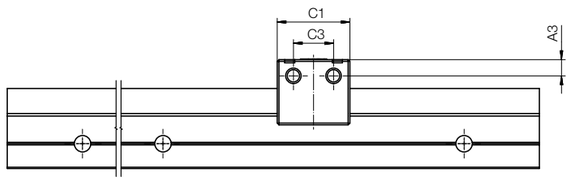
Pillow blocks, round; change the liner without disassembly

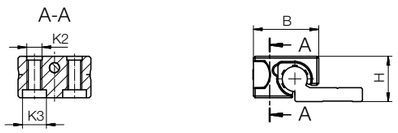


Order key

Type	Size
WJ200UM A	-01-10-AL

drylin® W	Liner material iglidur® J200	Pillow block, round	Replaceable	Standard	Size	Aluminium





Technical data and dimensions [mm]

Part No.	Weight	B	C1	C3	A3	K2	K3[150)]	H	Static load capacity		
									Coy	Coz+	Coz–
	[g]							±0.25	[N]	[N]	[N]
WJ200UMA-01-10-AL	18	26.0	29	16	6.5	M6	M5	18	1,000	1,000	200
WJ200UMA-01-16-AL New	44	34.5	36	18	9.0	M8	M6	27	1,250	1,250	275
WJ200UMA-01-20-AL New	91	42.5	45	27	9.0	M8	M6	36	1,500	1,500	350

[150)] Counterbore for socket cap bolt

Suitable mounting plate
▶ Page 1026

More installation can be found online
▶ www.igus-asean.com/replacement-bearing-installation

Can be combined with:



WS-... WS-..-ES-FG-... WS-... WS-...-ES-FG WSX-...

Suitable liner material/accessories



iglidur® J200 Assembling aid Liners

drylin® W profile guides | Application examples

drylin® W pillow blocks for longer and more reliable operating times



Application in delta robots
Pillow block with interchangeable WJ200UMA liner for drylin® delta robots ▶ **Page 1447.**





Quick bearing replacement directly on the rail

For 24/7 operation. Simple replacement without disassembly, with assembly tool. All existing drylin® W systems can be retrofitted

Installation guide online
▶ www.igus-asean.com/WJUMA

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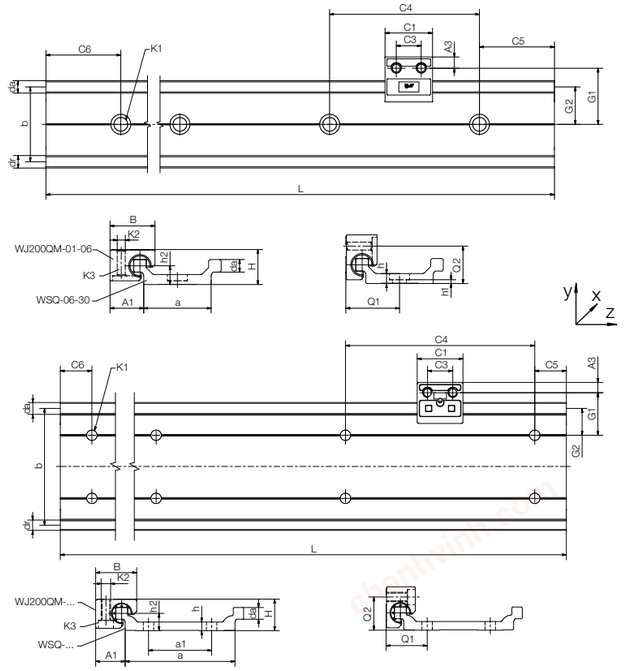
drylin® W profile guides | Product range

Double rails, square, hard-anodised aluminium





Hard-anodised surfaces
▶ Page 958

Curved rail profiles
▶ Page 962

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	14	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	7.5	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	Geometrical moment of inertia		Moment of resistance	
		Min.	Max.	Min.	Max.		ly	lz	Wby	Wbz
						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] With plain holes
[61] WSQ-06-30/-10-40/-16-60 a single row of mounting holes down the centreline, WSQ-06-60/10-80/-10-120/-20-80 two parallel rows of mounting holes

Can be combined with:


WJQM-...

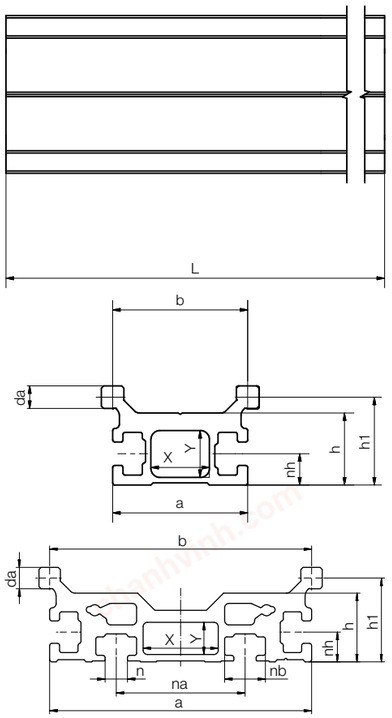

WW-...

WWC-...

drylin® W profile guides | Product range

High profile rails, square, hard-anodised aluminium





Suitable end caps
▶ Page 1025

Order example:
WSX-06-30/06-60: High profile rail, square
WSQ-06-30: Standard double rail, square

Technical data and dimensions [mm]

Part No.	Weight	da	L	a	b	h	h1	nh	n	nb	na	X	Y	Geometrical moment of inertia ly	Geometrical moment of inertia lz	Moment of resistance Wby	Moment of resistance Wbz
	[kg/m]	–0.1	Max.											[mm⁴]	[mm⁴]	[mm³]	[mm³]
WSX-06-30	0.76	5	4,000	29.7	30	16	19.5	7	–	–	–	12	10	30,391	11,674	1,736	845
WSX-06-60	1.39	5	4,000	61	61	16	19.5	6.9	5.2	9.5	30	17.5	7.5	212,826	17,018	6,448	1,398

Order key

Type	Length
WS Q	- 06 - 30 - 3000

Profile rail	Square	Shaft Ø	Rail width [mm]	Rail length [mm]

Order key

Type	Length
WS X	- 06 - 30 - 4000

Profile rail	High profile rail	Shaft Ø	Rail width [mm]	Rail length [mm]

Can be combined with:


WJQM-...


WW-...

WWC-...

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drylin® W profile guides | Product range

Linear guides – lightweight, non-metallic, strong and X-ray transparent

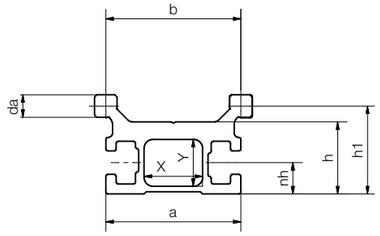


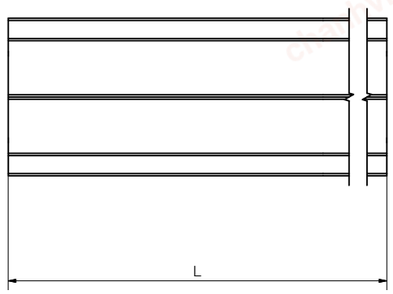
Order key

Type	Dimensions [mm]/Type

W S P C -06-30-1000

drylin® W	Rail	Plastic	Carbon fibre	Shaft Ø	Rail width	Rail length





Technical data – guide rail

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

Dimensions [mm] – guide profile

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

drylin® W profile guides

drylin® W profile guides | Product range

Linear guides – lightweight, non-metallic, strong and cost-effective

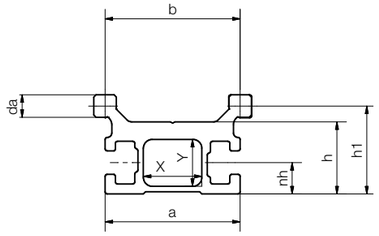


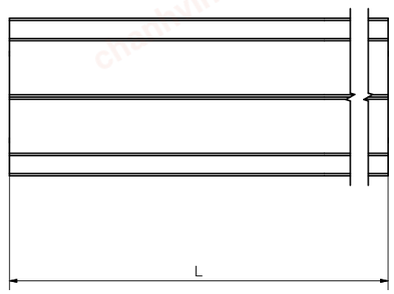
Order key

Type	Dimensions [mm]/Type

W S P G -06-30-1000

drylin® W	Rail	Plastic	Fibreglass	Shaft Ø	Rail width	Rail length





Technical data – guide rail

Part No.	F max. radial		Weight	Iy	Iz
	stat.	dyn.			
	[N]	[N]	[g/m]	[mm⁴]	[mm⁴]
WSPG-063001	200	50	505	30,391	11,674

Dimensions [mm] – guide profile

Part No.	a	b	da –0.1	h	h1	nh	X	Y	L
WSPG-063001	30	30	5	16	19.5	7	13	10	2,000

Dimensions [mm] – complete system

Part No.	H	A1	A	A2	C	C2
WSPG-063001	30	12	52	45	60	51

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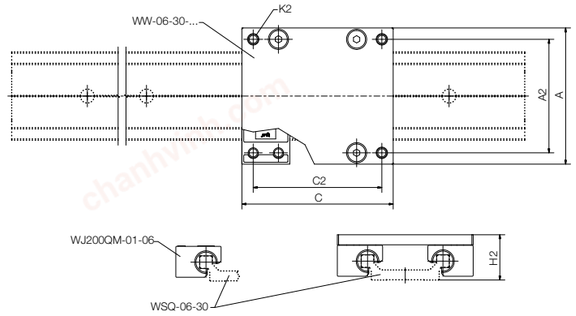
drylin® W profile guides | Product range

Guide carriages, assembled, square





Order key

Type	Size
WW Q	-06-30-06

Guide carriage	Square	Shafts-Ø [mm]	Profile width	Carriage length

Technical data and dimensions [mm]

Part No.[54]	Weight	A	C	A2	C2	K2	H2[57]	Static load capacity				
		Width	Length				±0.25	Coy	Coz	Mox	Moy	Moz
	[kg]							[N]	[N]	[Nm]	[Nm]	[Nm]
WWQ-06-30-06	0.10	54	60	45	51	M4	18	1,680	840	25	34	34
WWQ-06-30-08	0.11	54	80	45	71	M4	18	1,680	840	25	51	51
WWQ-06-30-10	0.12	54	100	45	91	M4	18	1,680	840	25	68	68
WWQ-06-60-06	0.13	85	60	76	51	M4	18	1,680	840	50	34	34
WWQ-06-60-08	0.15	85	80	76	71	M4	18	1,680	840	50	51	51
WWQ-06-60-10	0.17	85	100	76	91	M4	18	1,680	840	50	68	68
WWQ-10-40-10	0.29	73	100	60	87	M6	26	4,800	2,400	96	170	170
WWQ-10-40-15	0.34	73	150	60	137	M6	26	4,800	2,400	96	290	290
WWQ-10-40-20	0.40	73	200	60	187	M6	26	4,800	2,400	96	410	410
WWQ-10-80-10	0.34	107	100	94	87	M6	26	4,800	2,400	178	170	170
WWQ-10-80-15	0.42	107	150	94	137	M6	26	4,800	2,400	178	290	290
WWQ-10-80-20	0.50	107	200	94	187	M6	26	4,800	2,400	178	410	410
WWQ-10-120-10	0.41	153	100	140	87	M6	26	4,800	2,400	288	170	170
WWQ-10-120-15	0.54	153	150	140	137	M6	26	4,800	2,400	288	290	290
WWQ-10-120-20	0.66	153	200	140	187	M6	26	4,800	2,400	288	410	410
WWQ-16-60-10	0.71	104	100	86	82	M8	35	8,400	4,200	240	270	270
WWQ-16-60-15	0.84	104	150	86	132	M8	35	8,400	4,200	240	480	480
WWQ-16-60-20	0.97	104	200	86	182	M8	35	8,400	4,200	240	690	690
WWQ-20-80-15	1.20	134	150	116	132	M8	44	12,800	6,400	525	670	670
WWQ-20-80-20	1.30	134	200	116	182	M8	44	12,800	6,400	525	990	990
WWQ-20-80-25	1.50	134	250	116	232	M8	44	12,800	6,400	525	1,250	1,250

[57] Height dimension minus the bearing clearance tolerance [64] Optional with manual clamp, suffix "-HKA"

Can be combined with:



WSQ-... WSXQ-...

Suitable liner material:

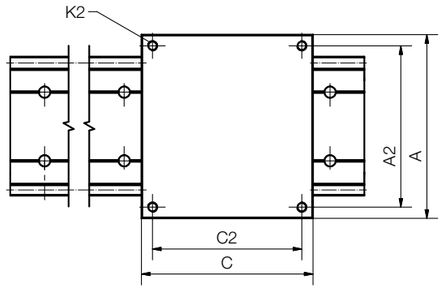


iglidur® J200

drylin® W profile guides | Product range

Mono-slide carriages, anodised aluminium





Order key

Type	Size
WWC-10-40-10	

Mono-slide guide carriage	Shafts-Ø [mm]	Profile width	Carriage length

Technical data and dimensions [mm]

Part No.	Weight	A	C	A2	C2	K2	H2[57]	Static 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

Can be combined with:



WSQ-... WSXQ-...

Suitable liner material:

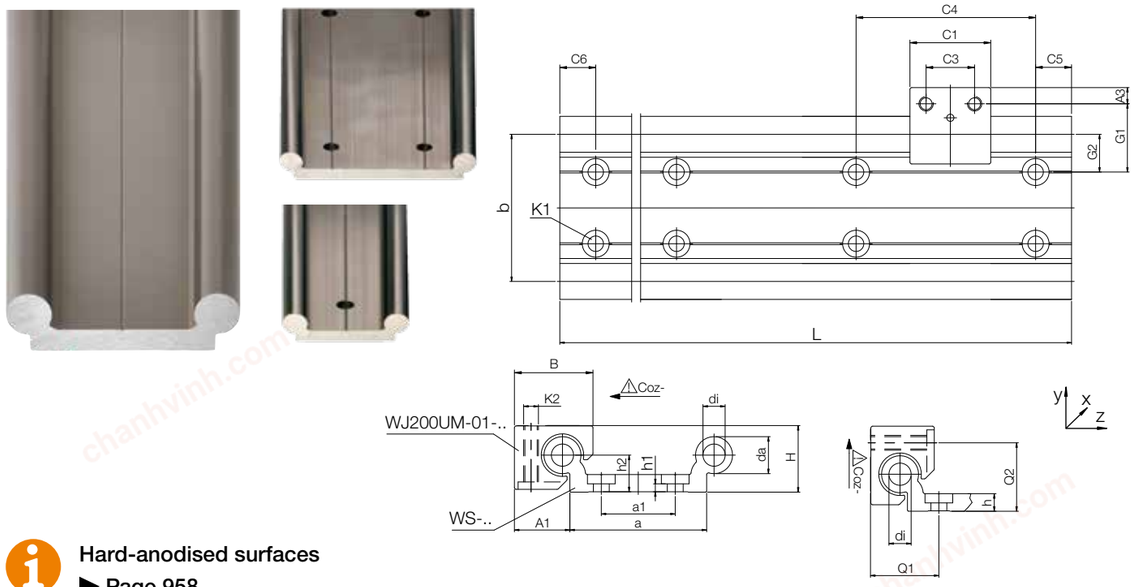


iglidur® J

chanhvinh.com

drylin® W profile guides | Product range

Double rails, round, hard-anodised aluminium



This orientation not possible for WS-10-40/ WS-10-80/WS-10-120

Hard-anodised surfaces
▶ Page 958

Curved rail profiles
▶ Page 962

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-10-30	0.85	18	10–0.1	–	4,000	30–0.5	16.5	30	5.5	5.5[58]	9	25	15	–	–	–
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	Geometrical moment of inertia		Moment of resistance	
		Min.	Max.	Min.	Max.		Iy	Iz	Wby	Wbz
						DIN 912	[mm⁴]	[mm⁴]	[mm³]	[mm³]
WS-10-30	120	20	79.5	20	79.5	M5[58]	47,500	4,400	2,370	540
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

drylin® W profile guides | Product range

High profile rails, round, hard-anodised aluminium



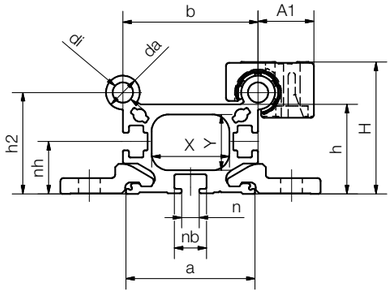
WSX-10-40



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	Surface inertia-moment		Moment of resistance	
					Iy	Iz	Wby	Wbz
					[mm⁴]	[mm⁴]	[mm³]	[mm³]
15.5	5.2	9.5	23	16	97,560	54,910	3,902	3,074
15.5	5.2	9.5	55	16	483,653	83,613	11,515	4,684
27.6	10	15.4	40	27.0	540,876	773,489	14,618	24,586

[57] Height dimension minus the bearing clearance tolerance

Order key

Type	Length
WS- 10 - 40 - 3000	

Profile rail, round	Shaft Ø	Rail width [mm]	Rail length [mm]

Order key

Type	Length
WS X - 10 - 40 - 4000	

Profile rail	High profile rail	Shaft Ø	Rail width [mm]	Rail length [mm]

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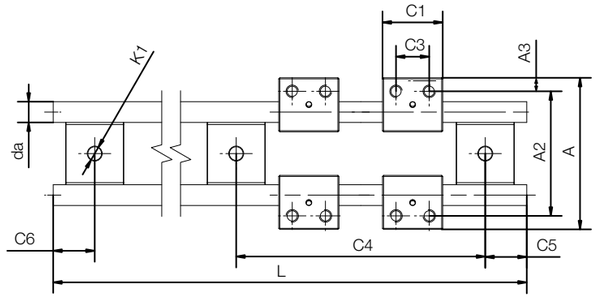
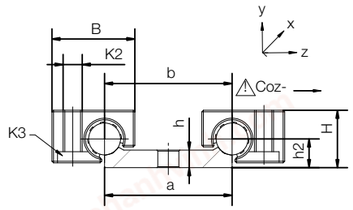
drylin® W profile guides | Product range

Double rail made of 316 stainless steel







Installation size 10–20

Housing and shaft support material	AISI 316
Shaft material	AISI 316Ti

Installation size 25

Shaft, shaft support and housing material	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

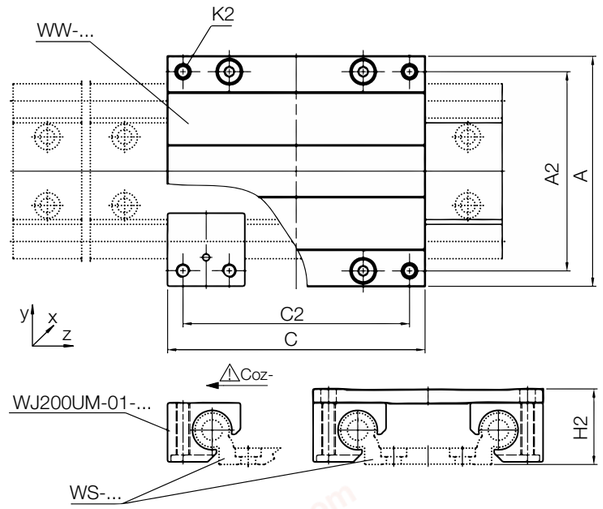
Part No.	C4	C5 Min.	C5 Max.	C6 Min.	C6 Max.	K1 for screw DIN 912
WS-10-40-ES-FG	120	20	79.5	20	79.5	M6

[57] Height dimension minus the bearing clearance tolerance

drylin® W profile guides | Product range

Assembled guide carriages, round





In the following sizes, also available with adjustable bearing clearance:
10, 16 and 20; order example: WWE-10-40-15

Technical data and dimensions [mm]

Part No.[64]	Weight	A Width	C Length	A2	C2	K2	H2[57] ±0.25	Static load capacity Coy	Coz	Mox	Moy	Moz
	[kg]							[N]	[N]	[Nm]	[Nm]	[Nm]
WW-10-30-08	0.26	63	80	50	67	M6	24	4,800	2,400	72	120	120
WW-10-30-10	0.28	63	100	50	87	M6	24	4,800	2,400	72	170	170
WW-10-30-15	0.32	63	150	50	137	M6	24	4,800	2,400	72	290	290
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 [64] Optional with manual clamp, suffix "-HKA"

Can be combined with:



WS-... WS-...-ES-FG WSX-...

Suitable liner material:



iglidur® J iglidur® J200 iglidur® X iglidur® E7 iglidur® A180

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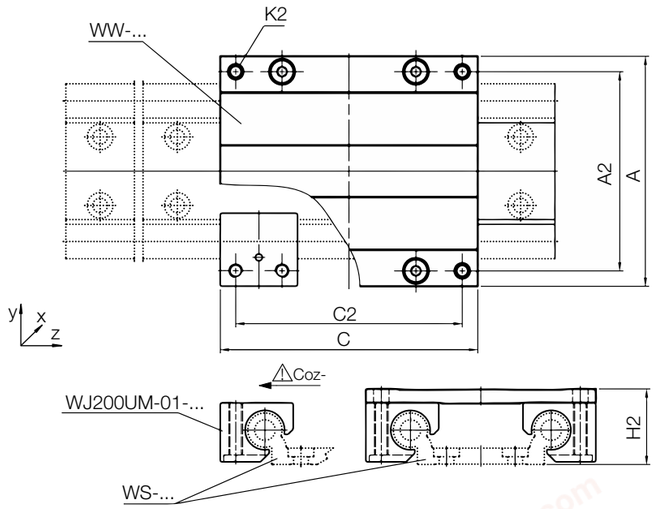
drylin® W profile guides | Product range

Assembled stainless steel guide carriages, round







Technical data and dimensions [mm]

Part No.[64]	Weight	A	C	A2	C2	K2	H2[57]	Static load capacity				
		Width	Length				±0.25	Coy	Coz	Mox	Moy	Moz
	[kg]							[N]	[N]	[Nm]	[Nm]	[Nm]
WW-10-40-10-J200-GESG-PES	0.29	73	100	60	87	M6	24	4,800	2,400	96	170	170
WW-10-40-15-J200-GESG-PES	0.34	73	150	60	137	M6	24	4,800	2,400	96	290	290
WW-10-40-20-J200-GESG-PES	0.40	73	200	60	187	M6	24	4,800	2,400	96	410	410

[57] Height dimension minus the bearing clearance tolerance [64] Optional with manual clamp, suffix "-HKA"

My sketches

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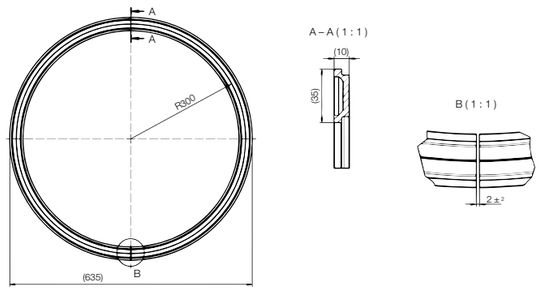
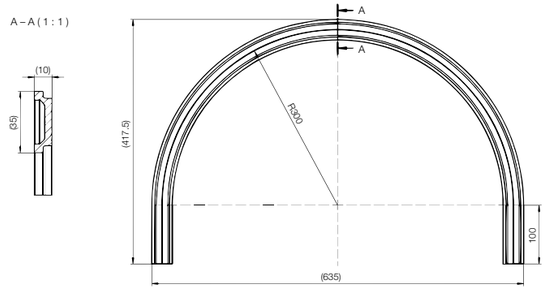
drylin® W profile guides | Product range

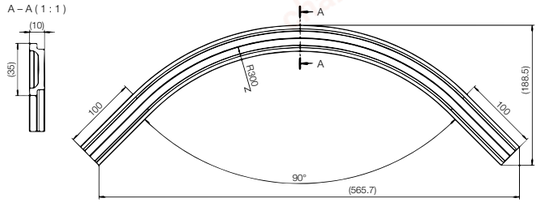
Curved rail profiles, square



WSB-06-30-RK300QS







More information
▶ www.igus-asean.com/curved

Curved rail profiles
▶ Page 962

Technical data and dimensions [mm]

Part No.	Matching carriage for curved rail	Design	Bend radius	End straight
WSB-06-30-RK300F[151)]	WWB-06-30-06-R300	Full circle	300	–
WSB-06-30-RK300HS	WWB-06-30-06-R300	Half circle	300	100
WSB-06-30-RK300QS	WWB-06-30-06-R300	Quarter circle	300	100
WSB-06-30-RK500HS	WWB-06-30-06-R500	Half circle	500	100
WSB-06-30-RK500QS	WWB-06-30-06-R500	Quarter circle	500	100

[151)] The F version (full circle) has a transition of 2mm (±0.2). Due to the bending process, material displacement tolerances, which can be up to several millimetres depending on the bend direction and radius, must be taken into account.

RK: Radius curved bending
S: Straight rail ends in the case of semicircle and quarter circle

Can be combined with:



WWB-...

drylin® W profile guides | Product range

Curved rail profiles, round



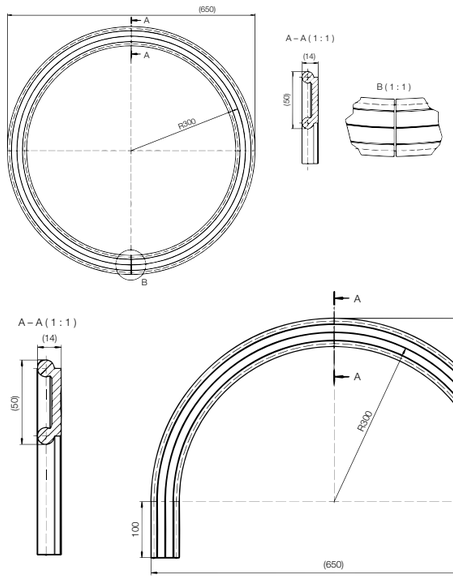
WSB-10-40-RK300QS

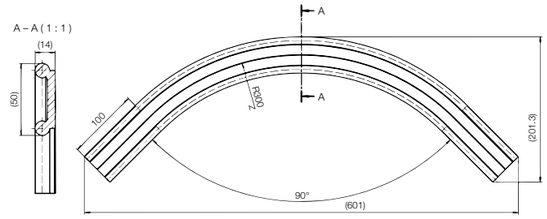
Order key

Type	Size	Option

WSB-06-30-RK 300- F

Curved rail profile	Shaft Ø	Profile width [mm]	RK: Radius curved bending	With spring pre-load	Full circle





Technical data and dimensions [mm]

Part No.	Matching carriage for curved rail	Design	Bend radius	End straight
WSB-10-40-RK300F[151)]	WWB-10-40-10-R300	Full circle	300	–
WSB-10-40-RK300HS	WWB-10-40-10-R300	Half circle	300	100
WSB-10-40-RK300QS	WWB-10-40-10-R300	Quarter circle	300	100
WSB-10-40-RK500F[151)]	WWB-10-40-10-R500	Full circle	500	–
WSB-10-40-RK500HS	WWB-10-40-10-R500	Half circle	500	100
WSB-10-40-RK500QS	WWB-10-40-10-R500	Quarter circle	500	100

[151)] The F version (full circle) has a transition of 2mm (±0.2). Due to the bending process, material displacement tolerances, which can be up to several millimetres depending on the bend direction and radius, must be taken into account.

RK: Radius curved bending
S: Straight rail ends in the case of semicircle and quarter circle

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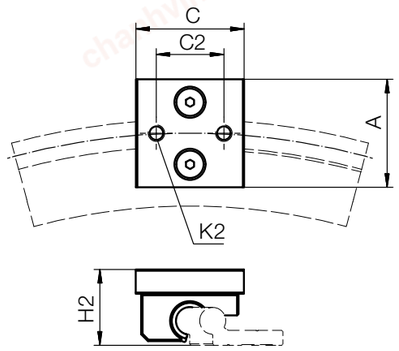
drylin® W profile guides | Product range

Single bearings for curved rails





Order key

Type	Option	Option
WI3U B P	-01-10-LLZ	

drylin® W	Liner material iglidur® I3	Curved	Pre-load	Standard	Size	Floating bearing in y-direction

Dimensions [mm]

Part No.	Weight [g]	A	C	C2	K2	H2
WI3UBP-01-10	50	40	40	25	M6	28
WI3UBP-01-10-R300-LLZ	44	40	40	25	M6	28
WI3UBP-01-10-R500-LLZ	44	40	40	25	M6	28
WI3UBP-01-10-LLZ	44	40	40	25	M6	28

Can be combined with:

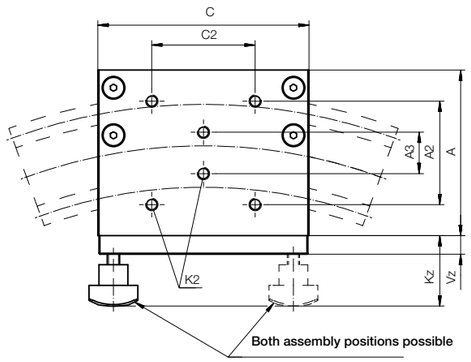
WSB-...

drylin® W profile guides | Product range

Carriage for curved rail







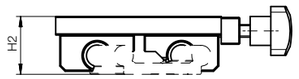
Order key

Type	Size	Option
WWB	-10-40-10-	P -HKA

Guide carriage for curved rails	Shaft Ø	Profile width [mm]	Carriage length [mm]	With spring pre-load	With manual clamp

Options:
Blank: Standard
HKA: With manual clamp

Curved rail profiles
▶ Page 962



Technical data and dimensions [mm]

Part No.[64]	Weight [kg]	A ±0.25	C –0.1	A2	A3	C2	K2	H2	Vz	Kz
WWB-06-30-06	0.31	58	60	30	16	30	M4	20	9	34
WWB-06-30-06-P	0.31	58	60	30	16	30	M4	20	7.5	29
WWB-06-30-06-R300[143]-P	0.31	58	60	30	16	30	M4	20	7.5	29
WWB-10-40-10	0.35	80	102	50	20	50	M6	28	9	34
WWB-10-40-10-P	0.35	80	102	50	20	50	M6	28	9	34
WWB-10-40-10-R300[143]-P	0.35	80	102	50	20	50	M6	28	9	34

[64] Optional with manual clamp, suffix "-HKA"
[143] Optional for 500mm radius = R500

Can be combined with:

WS-... WS-...-ES-FG WSB-...

More information
▶ www.igus-asean.com/curved

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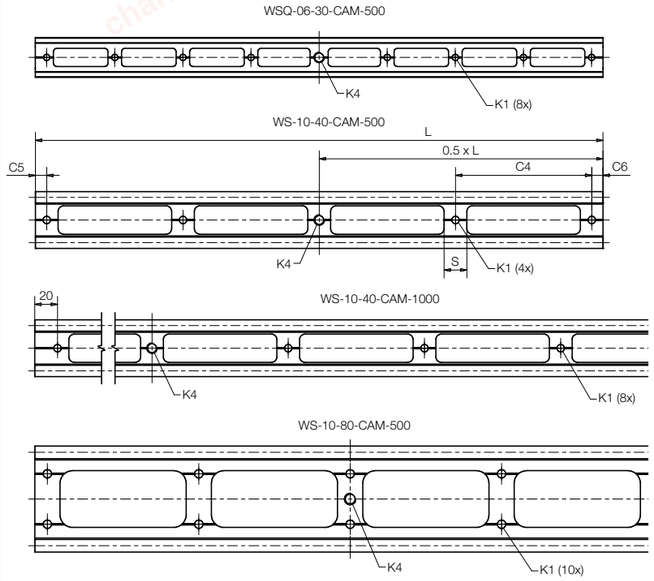
drylin® W profile guides | Product range

Double rails, reduced weight, hard-anodised aluminium



- 30% weight reduction through machined recesses
- Suitable pillow blocks and carriages made from plastic, aluminium, zinc die-casting or stainless steel



drylin® W guide rails – 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-asean.com/camera

drylin® W profile guides | Product range

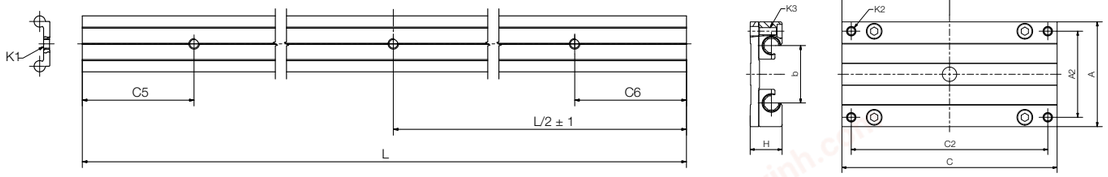
Double rails/carriages for camera slider



- 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 WS rails ▶ Page 992

Technical options:

- Adjustable bearing housing ▶ Page 982
- Manual clamp ▶ Page 1020



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-10-30-SL-1000	10	1,000	100	100	0.85
WS-10-30-SL-1500	10	1,500	100	100	0.85
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 Ø 10mm 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-10-30-10-SL[64) 65)]	10	100	63
WW-10-30-15-SL[64) 65)]	10	150	63
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

Part No.	Size	C	A
WW-10-80-15-SL[64) 65)]	10	150	107
WW-10-80-20-SL[64) 65)]	10	200	107
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 manual clamp, suffix "-HKA"

[65] Optional with adjustable "Turn-To-Fit" bearing (Order example: WWE-…)

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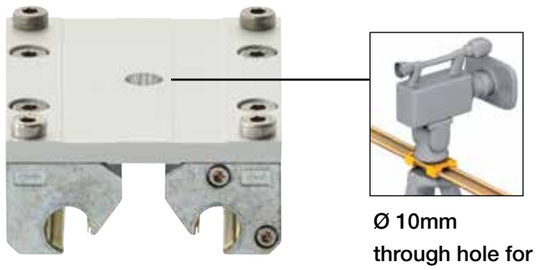
drylin® W profile guides | Product range

Hybrid slider carriages with four double roller bearings:



Ø 10mm
through hole for
3/8" thread for
cameras

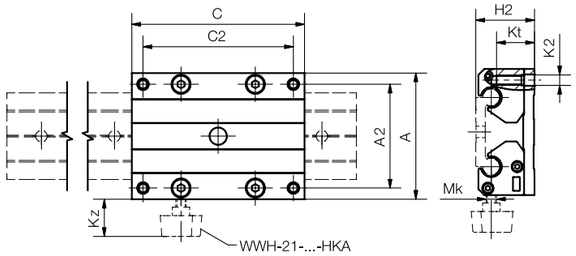
Order key

Type	Dimensions	Design

W WH- 21-10-40-10-SL

drylin® W	Hybrid carriage	Double roller bearing	Installation size	Carriage length [mm]	Slider carriage

Optional with manual clamp,
suffix "-HKA"



Technical data and dimensions [mm]

Part No.	Weight	A Width	C Length	A2	C2	K2	Kt	H2	Static load capacity Coy
	[kg]								[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:

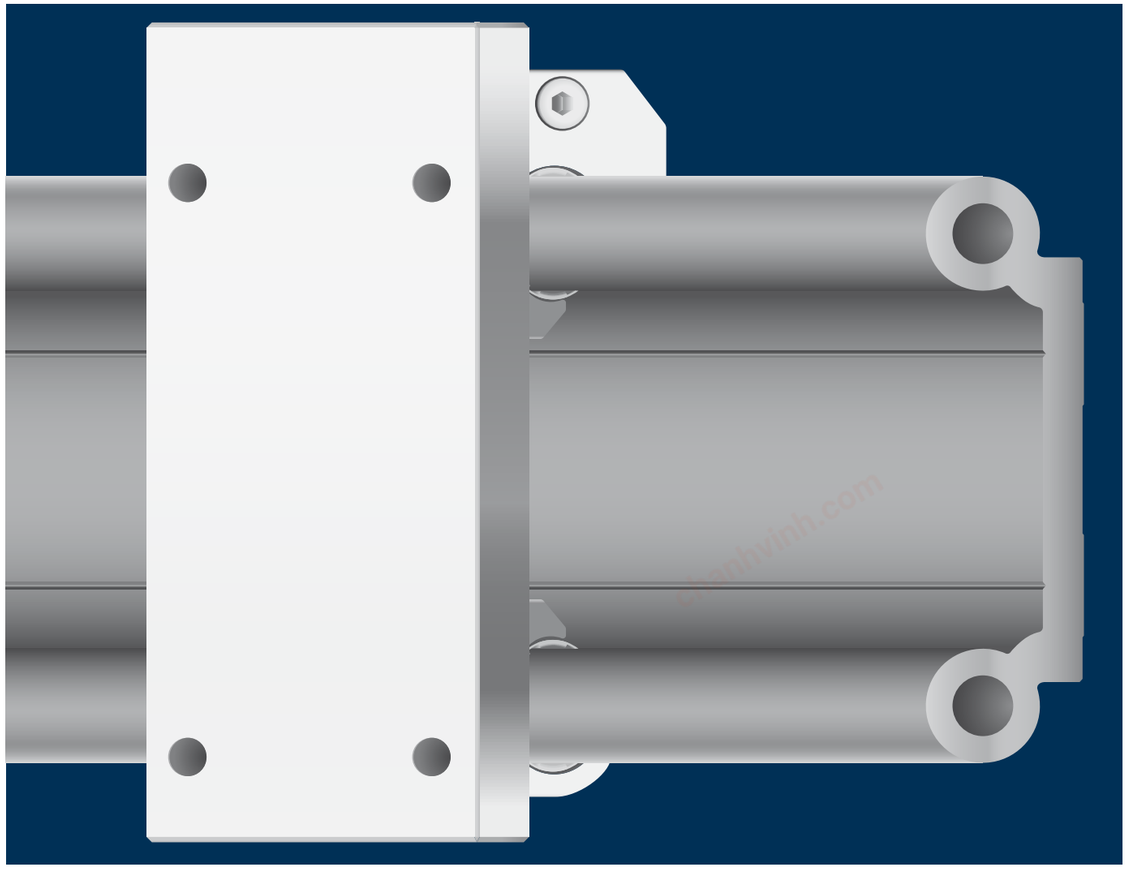
WS-20-80

WS-...-ES-FG


WSX-...

Can be combined with camera slider rails

▶ Page 1002



drylin® linear technology – drylin® W hybrid roller bearings

- Lubrication-free roll and slide
- Low drive force
- For manual adjustment
- Suitable for radial loads
- Single bearings and complete carriages



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drylin® W hybrid roller bearings | Advantages

Hybrid roller bearings from the drylin® W linear construction kit



Combined sliding and rolling for low driving forces

drylin® hybrid roller bearings offer an unique lubrication-free combination of plain and roller bearings. The integrated rollers achieve low driving forces, while the sliding effect simultaneously protect against radial loads. This makes drylin® hybrid roller 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
- Operator panels

Available from stock
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity.

Service life calculation
▶ **www.igus-asean.com/drylin-expert**

Tightening torque for drylin® metallic screws
▶ **Page 963**

drylin® W hybrid roller bearings | Product overview

Slide and roll



Hybrid roller bearing rail

- Ideal for flat structures
- Geometry optimised for hybrid roller bearings
- Low profile design with wide support

▶ **Page 1010**



Hybrid roller bearing for WSR roller bearing rail

- Suitable for WAS hybrid roller bearing rail
- Hybrid roller bearing with double rollers for better force absorption
- Hybrid roller bearings with single rollers as support

▶ **Page 1011**



Hybrid roller bearings with single roller

- Lubrication-free due to bearing supported plastic roller
- Low displacement force
- Can be combined with drylin® W single and double rails

▶ **Page 1012**



Hybrid roller bearings with double rollers

- Low coefficient of rolling friction is still maintained with deviating load directions
- Increased load capacity
- Variable bearing removed, but the housing is now available in corrosion-resistant stainless steel as well.

▶ **Page 1013**



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 1015**



Complete carriages WWH

- Complete carriage with 4 integrated hybrid roller bearings
- For horizontal installation
- Variable carriage lengths and widths

▶ **Page 1016**



Suitable rail profiles
▶ **From page 978**



Camera slider
▶ **From page 1003**

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drylin® W hybrid roller bearings | Application examples





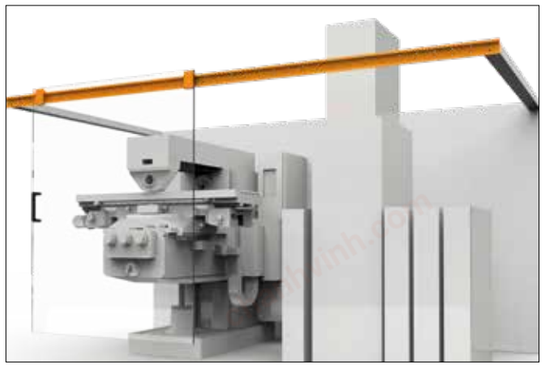
The smooth, quiet operation and the enormous cost advantages are obtained by the use of the drylin® linear bearings on the hard-anodised guide shaft to guide the doors of machine tools.



Adjustment control panel unit



Camera stand with drylin® W hybrid roller bearings for far smoother running. Vertical movements are now also possible.



The new drylin® W hybrid carriage with "door opener" function.



drylin® W hybrid roller bearings in combination with drylin® W profile guides offer optimum opportunities to construct dollies and sliders.

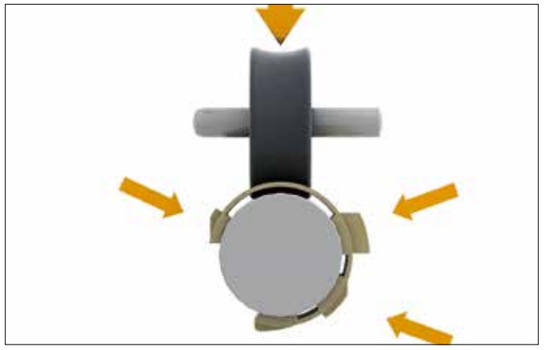
drylin® W hybrid roller bearings | Technical data

drylin® W hybrid roller bearings type 01

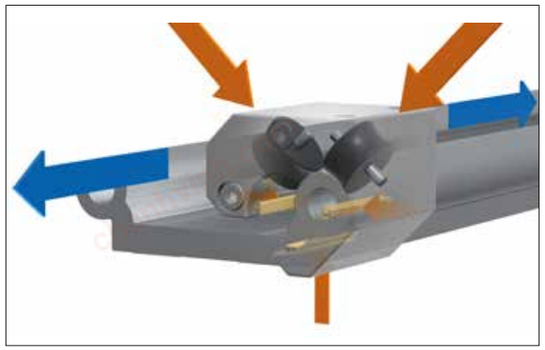
The drylin® W hybrid roller bearings from the WJRM-01-... type series are each equipped with a bearing-supported plastic roller. The bearing housing is available in three installation sizes and can be used with drylin® W single or double shaft rails in two installation positions. The hybrid roller bearing should be installed so that the load capacity is applied in the roll direction. Different load directions are possible but causes higher displacement forces.

drylin® W hybrid roller bearings type 21

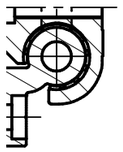
The drylin® W hybrid roller bearings in the WJRM-21-... type series are each equipped with two bearing-supported plastic rollers at an angle of 70° or 80°. Available in three installation sizes, they can be combined with drylin® W single and double rails. The double roller bearings offer a higher load 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.



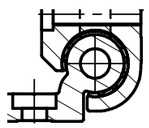
Forces absorbed by hybrid roller bearing



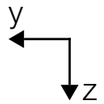
Hybrid double roller bearing applicable force absorption



Installation position 01



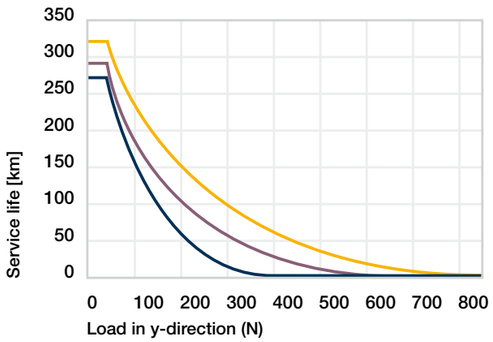
Installation position 02

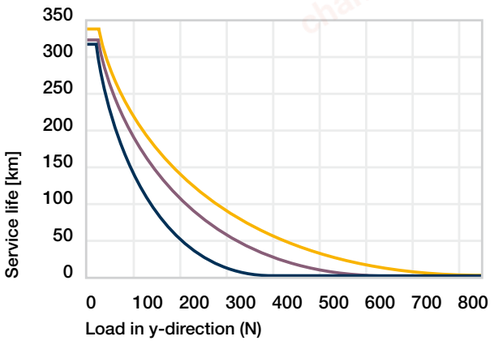


Installation position WJRM-01-...



Installation position WJRM-21-...





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drylin® W hybrid roller bearings | Product range New

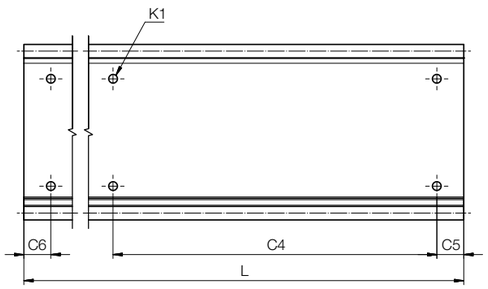
Hybrid rail for lateral installation

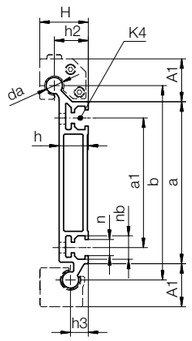


Order key

Type	Size
WSR-10-120-4000	

Hybrid lateral rail | Shaft Ø | Rail width [mm] | Rail length [mm]





Technical data [mm]

Part No.		Geometrical moment of inertia		Moment of resistance		K1 for screw	K4 for slot nut	Weight
		Iy	Iz	Wby	Wbz			
		[mm⁴]	[mm⁴]	[mm³]	[mm³]			[kg/m]
WSR-10-120	New	1,443,000	38,700	22,000	2,600	M6	–	2.58
WSR-10-120-UNGEBOHRT	New	1,443,000	38,700	22,000	2,600	–	MSX-B-0001-M6	2.58

Dimensions [mm]

Part No.		H	da	L	a	A1	b	h	h2	h3	a1	n	nb	C4	C5 = C6	
		±0.25	–0.1	Max.	±0.6										Min.	Max.
WSR-10-120	New	30	10	4,000	100	26.5	120	18	21	11	80	10	14.5	240	20	199.5
WSR-10-120-UNGEBOHRT	New	30	10	4,000	100	26.5	120	18	21	11	80	10	14.5	–	–	–

Can be combined with:

WJRM-31... WJRM-41...

drylin® W hybrid roller bearings | Product range New

Hybrid roller bearing for lateral rail

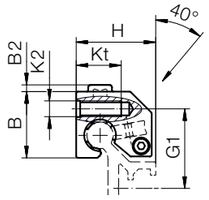


WJRM-31-10

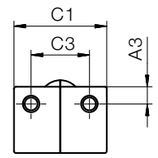


WJRM-41-10





WJRM-41



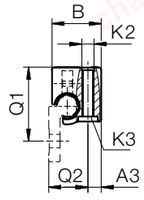
Order key

Type	Size
WJRM-31-10	

Hybrid roller bearing | Double roller bearing | Size 10

Options:
31: Single roller bearing, bottom assembly for better support
41: Double roller bearing, top assembly for better force absorption

Suitable mounting plate
▶ Page 1018



WJRM-31
Installation position 01

Technical data [mm]

Part No.		Static load capacity Co	Dyn. load capacity Cz+ at total running distance [km]			Coefficient of friction in z-direction	F · v	Weight
			10	100	200		Max.	
		[N]	[N]	[N]	[N]	[µ]	[N · m/s]	[g]
WJRM-31-10	New	250	250	90	50	< 0.1	50	91
WJRM-41-10	New	250	250	90	50	< 0.1	50	97

Dimensions [mm]

Part No.		A3	B	B2	C1	C3	H	G1	K2 for thread	K3 for screw	Q1	Q2	kt
WJRM-31-10	New	6.5	24	–	35	22	28	27	M6	M5	36	19	16
WJRM-41-10	New	6.5	25	2.5	35	22	30	30	M6	M5	–	–	–

Can be combined with:

WSR-...

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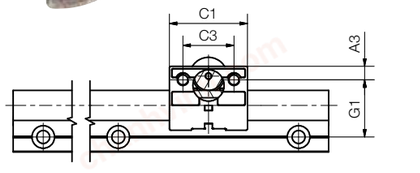
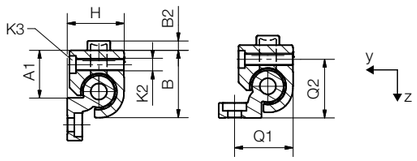
drylin® W hybrid roller bearings | Product range

Hybrid roller bearings







Installation position 01

Installation position 02

Order key

Type	Size
WJRM- 01- 10	

Hybrid roller bearing

Single roller bearing

Size 10

Options:
Blank: Bearing supported plastic roller
BB: Ball bearing supported plastic roller

Suitable mounting plate
▶ Page 1018

Installation position 02 in installation size Ø 10 when using a WJRM-02-10 hybrid roller bearing

Technical data and dimensions [mm]

Part No.		Static load capacity Co [N]	Dyn. load capacity Cy+ at total running distance [km] 10 [N]	100 [N]	200 [N]	F · v Max. [N · m/s]	Weight [g]
WJRM-01-10[71)]		250	250	90	50	50	46
WJRM-01-10-BB[71)]	New	250	250	90	50	100	46
WJRM-01-16		400	400	140	70	80	131
WJRM-01-16-BB	New	400	400	140	70	160	131
WJRM-01-20		550	550	200	100	80	232
WJRM-01-20-BB	New	550	550	200	100	160	232

Part No.		Coefficient of friction in z-direction [µ]	A1	A3	B	B2	C1	C3	G1	H	K2 for thread	K3 for screw	Q1	Q2
WJRM-01-10[71)]		< 0.10	16.5	6.5	26.0	2.5	35	22	27	18	M6	M5	–	–
WJRM-01-10-BB[71)]	New	< 0.03	16.5	6.5	26.0	2.5	35	22	27	18	M6	M5	–	–
WJRM-01-16		< 0.10	25.0	9.0	34.5	5.0	48	30	33	27	M8	M6	32	28
WJRM-01-16-BB	New	< 0.03	25.0	9.0	34.5	5.0	48	30	33	27	M8	M6	32	28
WJRM-01-20		< 0.10	30.0	9.0	42.5	6.0	52	34	38	36	M8	M6	37	37
WJRM-01-20-BB	New	< 0.03	30.0	9.0	42.5	6.0	52	34	38	36	M8	M6	37	37

[71)] Deviating from WJRM-02-10, available with an expanded opening angle for installation position 02

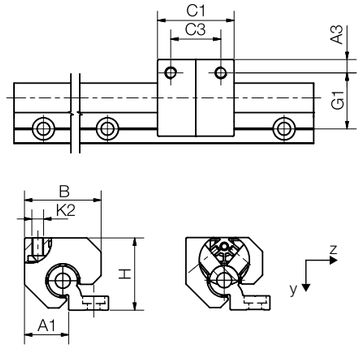
Can be combined with:

WS-... WS-..-ES-FG-... WS-... WS-...-ES-FG WSX-...

drylin® W hybrid roller bearings | Product range

Hybrid roller bearings with integrated double angled rollers





Order key

Type	Size
WJRM- 21- 10	

Hybrid roller bearing

Double roller bearing

Size 10

Options:
Blank: Bearing supported plastic roller
BB: Ball bearing supported plastic roller

Suitable mounting plate
▶ Page 1018

Optional with manual clamp, suffix "-HKA"



Technical data and dimensions [mm]

Part No.		Static load capacity Co [N]	Dyn. load capacity Cz+ at total running distance [km] 10 [N]	100 [N]	200 [N]	F · v Max. [N · m/s]	Weight [g]
WJRM-21-10		350	350	125	70	50	115
WJRM-21-10-BB	New	350	350	125	70	100	115
WJRM-21-16		600	600	210	105	80	250
WJRM-21-16-BB	New	600	600	210	105	160	250
WJRM-21-20		840	840	300	150	80	320
WJRM-21-20-BB	New	840	840	300	150	160	320

Part No.		Coefficient of friction in y-direction [µ]	A1	A3	B	C1	C3	G1	H	K2 for screw
WJRM-21-10		< 0.10	16.5	6.5	31	35	22	27	28	M6
WJRM-21-10-BB	New	< 0.03	16.5	6.5	31	35	22	27	28	M6
WJRM-21-16		< 0.10	25.0	9.0	44	48	30	33	41	M8
WJRM-21-16-BB	New	< 0.03	25.0	9.0	44	48	30	33	41	M8
WJRM-21-20		< 0.10	30.0	9.0	52	52	34	38	49	M8
WJRM-21-20-BB	New	< 0.03	30.0	9.0	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

Can be combined with:

WS-... WS-..-ES-FG-... WS-... WS-...-ES-FG WSX-...

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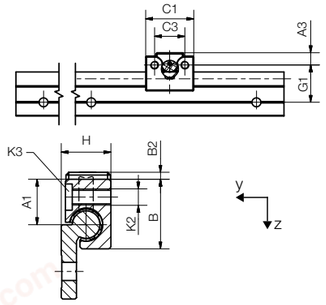
drylin® W hybrid roller bearings | Product range

Hybrid roller bearing made from stainless steel

WJRM-01 with single roller





Order key

Type	Size	Material
WJRM-01-10	-	ES

- Hybrid roller bearing
- Single roller bearing
- Size 10
- Stainless steel

Material
ES: Stainless steel (AISI 316Ti)
ES-FG: Stainless steel precision casting AISI 316
AL: Aluminium

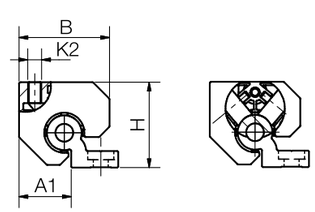
Technical data and dimensions [mm]

Part No.	Static load capacity Co [N]	Dyn. load capacity Cz+ at total running distance [km] 10 [N]	100 [N]	200 [N]	F · v Max. [N · m/s]
WJRM-01-10-ES-FG	250	250	90	50	50
WJRM-01-10-AL	250	250	90	50	50

Part No.	Coefficient of friction in z-direction [µ]	y-direction [µ]	Weight [g]	A1	A3	B	B2	C1	C3	G1	H	K2	K3 for screw
WJRM-01-10-ES-FG	< 0.1	–	57	16.5	6.5	26	2.5	35	22	27	18	M6	M5
WJRM-01-10-AL	< 0.1	–	18	16.5	6.5	26	2.5	35	22	27	18	M6	M5

WJRM-21 with double roller





Order key

Type	Size	Material
WJRM-21-20	-	ES

- Hybrid roller bearing
- Double roller bearing
- Size 20
- Stainless steel

Material
ES: Stainless steel (AISI 316Ti)
ES-FG: Stainless steel precision casting AISI 316

Technical data and dimensions [mm]

Part No.	Static load capacity Co [N]	Dyn. load capacity Cz+ at total running distance [km] 10 [N]	100 [N]	200 [N]	F · v Max. [N · m/s]
WJRM-21-20-ES-FG	840	840	300	150	80

Part No.	Coefficient of friction in z-direction [µ]	y-direction [µ]	Weight [g]	A1	A3	B	C1	C3	G1	H	K2	K3 for screw
WJRM-21-20-ES-FG	–	< 0.1	504	30	9	52	52	34	38	49	M8	M5

drylin® W hybrid roller bearings | Product range

Hybrid carriages for lateral installation



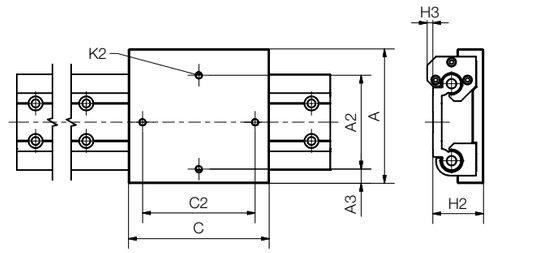


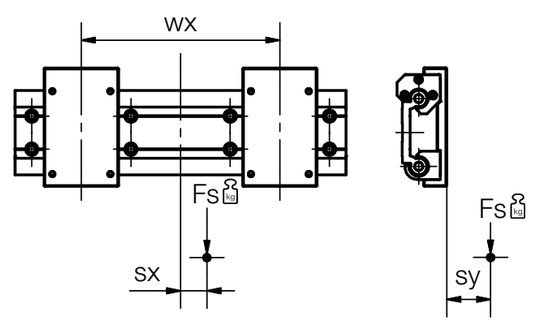
Order key

Type	Size	Option
WWR-21-80	-	01

- drylin® W
- Hybrid carriage
- Double roller bearing
- Installation size
- Compact

Options:
01: Carriage, short design
15: Carriage, long design





Technical data and dimensions [mm]

Part No.	A Width	C Length	A2	C2	K2	H2 ±0.17	A3	H3	sx min.	sx max.	sy min.	sy max.
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:
WWR-21-80-01 = Assembled single hybrid carriage as a "door opener" with two single roller hybrid bearings and two double roller hybrid bearings

Can be combined with:

WS-20-80

WS-...-ES-FG


WSX-...

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drylin® W hybrid roller bearings | Product range

Hybrid carriages with four double roller bearings



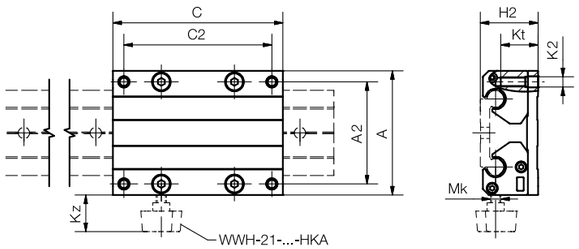
Order key

Type	Dimensions

WWH-21-10-40-10

drylin® W	Hybrid carriage	Double roller bearing	Installation size	Carriage length [mm]

Optional with manual clamp, suffix "-HKA"



Technical data and dimensions [mm]

Part No.	Weight	A	C	A2	C2	K2	Kt	H2	Static load capacity
		Width	Length						Coy
	[kg]								[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 roller bearings | Product range

Hybrid carriages with four single roller bearings for horizontal installation

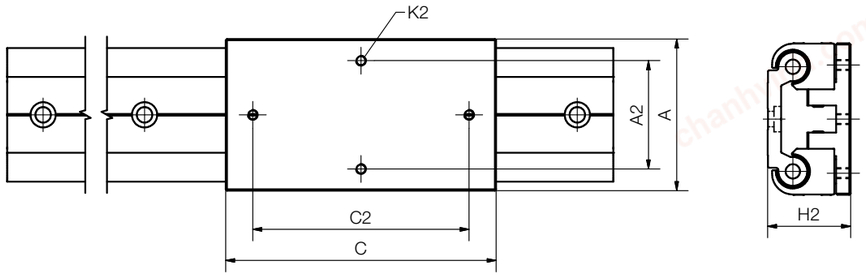


Order key

Type	Dimensions

WWH-10-40-10

drylin® W	Hybrid carriage	Installation size	Carriage length [mm]



Technical data and dimensions [mm]

Part No.	Weight	A	A2	C	C2	K2	H2	Stat. 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-...

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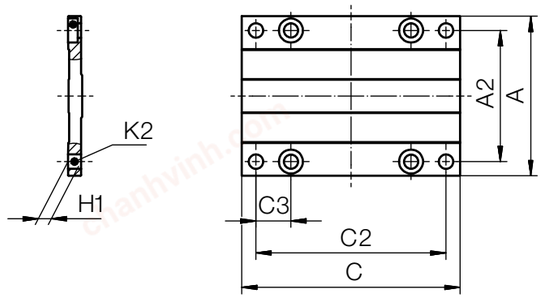
drylin® W hybrid roller bearings | Product range New

Carriage plates for drylin® W hybrid roller bearings





With four pillow blocks and the mounting plate, a linear carriage can be installed in less than a minute. Mounting plates are available in 3 lengths in each installation size and width.

- Robust corrosion-resistant anodised aluminium
- A variety of combinations of liners/bearings/slide plates are possible, also with manual clamp
- Required combination bearing and mounting plate also available pre-assembled

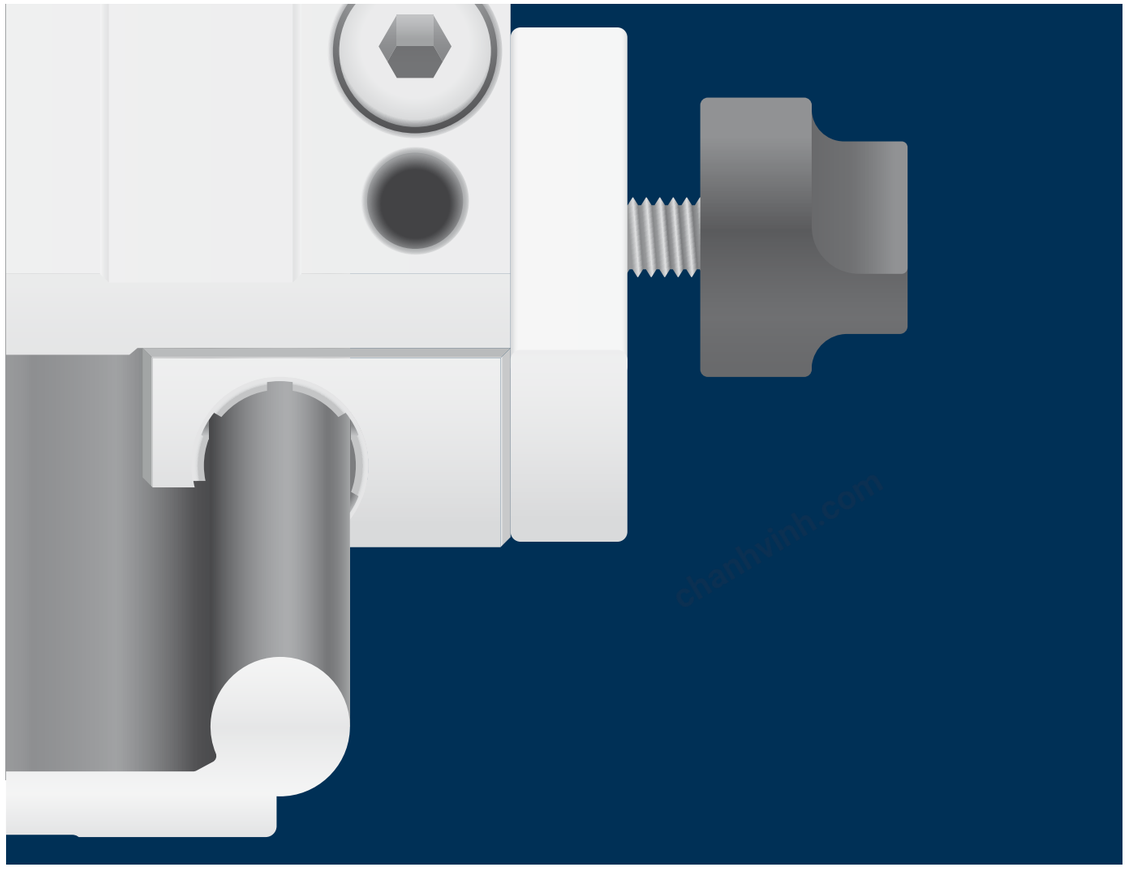
Modular system:
Can be combined with the complete drylin® linear bearing product range. 4 screws included in delivery.

Technical data and dimensions [mm]

Part No.		C	A	H1	A2	K2	Mounting screws included
WWYR-10-30-08-AL	New	80	63	6.5	50	M6	M6
WWYR-10-30-10-AL	New	100	63	6.5	50	M6	M6
WWYR-10-30-15-AL	New	150	63	6.5	50	M6	M6
WWYR-10-40-10-AL	New	100	73	6.5	60	M6	M6
WWYR-10-40-15-AL	New	150	73	6.5	60	M6	M6
WWYR-10-40-20-AL	New	200	73	6.5	60	M6	M6
WWYR-10-80-10-AL	New	100	107	6.5	94	M6	M6
WWYR-10-80-15-AL	New	150	107	6.5	94	M6	M6
WWYR-10-80-20-AL	New	200	107	6.5	94	M6	M6
WWYR-10-120-10-AL	New	100	153	6.5	140	M6	M6
WWYR-10-120-15-AL	New	150	153	6.5	140	M6	M6
WWYR-10-120-20-AL	New	200	153	6.5	140	M6	M6
WWYR-16-60-10-AL	New	100	104	8.5	86	M8	M8
WWYR-16-60-15-AL	New	150	104	8.5	86	M8	M8
WWYR-16-60-20-AL	New	200	104	8.5	86	M8	M8
WWYR-20-80-15-AL	New	150	134	8.5	116	M8	M8
WWYR-20-80-20-AL	New	200	134	8.5	116	M8	M8
WWYR-20-80-25-AL	New	250	134	8.5	116	M8	M8

Suitable for rails ▶ Page 992, 993, 1010
Suitable for bearings ▶ Page 1011, 1012, 1013, 1014

Available from stock



drylin® linear technology – Accessories

Manual clamps
Liners
End caps
Slot nuts
Clamps



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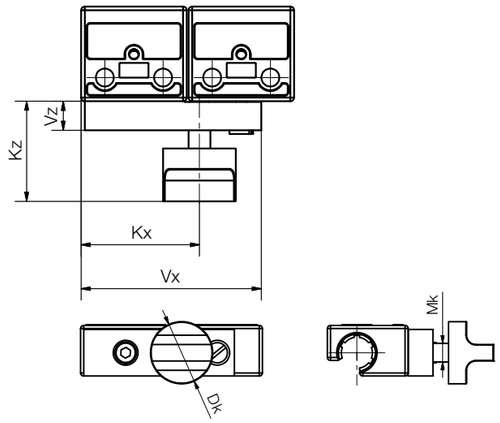
drylin® W profile guides | Product range

Accessories: Manual clamp for simple positioning





Technical data and dimensions [mm]

Part No.	Mk	Vx	Kx	Vz	Kz	Dk	Min. holding force[67]	Min. tightening torque
WHKA-10[66]	M6	50	33	8	28	20	30N	0.8Nm
WHKA-16[66]	M8	72	41	10	31	28	60N	1.5Nm
WHKA-20[66]	M8	90	62	10	31	28	70N	1.5Nm
WHKA-25[66]	M8	96	65	12	31	28	70N	1.5Nm

[67] Condition: dry rail surface

[66] The manual clamp is also available assembled as a complete carriage (suffix "-HKA", order example: WW-10-40-10-HKA). Dimensions complete carriage WWQ ▶ Page 995

Accessories: Aluminium manual clamp



Technical data and dimensions [mm]

Part No.	Mk	Vx	Kx	Vz	Kz	Dk	Min. holding force[67]	Min. tightening torque
WHKA-10-AL[68]	M6	50	33	8	28	20	30N	0.8Nm
WHKA-16-AL[68]	M8	72	41	10	31	28	60N	1.5Nm
WHKA-20-AL[68]	M8	90	62	10	31	28	70N	1.5Nm
WHKA-25-AL[68]	M8	96	65	12	31	28	70N	1.5Nm

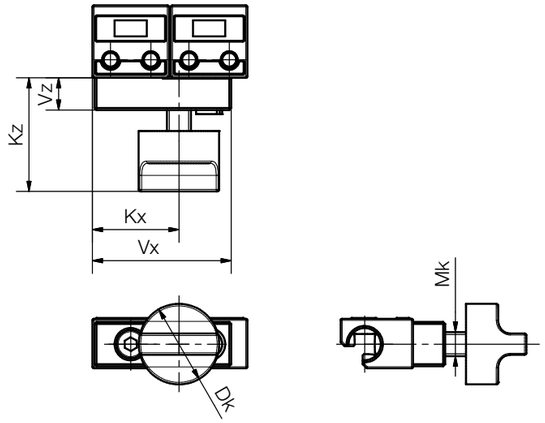
[67] Condition: dry rail surface

[68] The manual clamp is also available assembled as a complete carriage (suffix "-AL-HKA", order example: WW-10-40-10-HKA). Dimensions complete carriage WWQ ▶ Page 995

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 force[67]	Min. tightening torque
WHKAQ-06[133] [137]	M6	34.5	21.5	8	28	20	30N	0.8Nm
WHKAQ-10[137]	M6	50	33	8	28	20	30N	0.8Nm
WHKAQ-16[137]	M8	72	41	10	31	28	60N	1.5Nm
WHKAQ-20[137]	M8	90	62	10	31	28	70N	1.5Nm

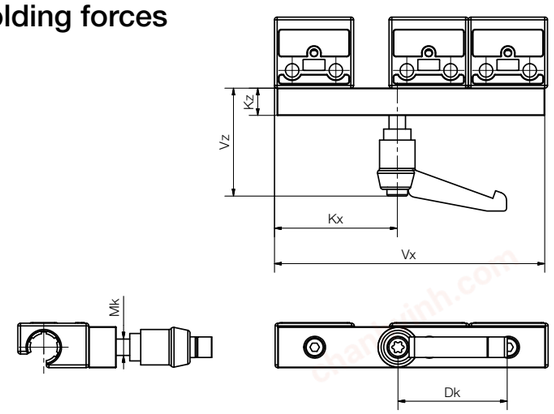
[67] Condition: dry rail surface

[133] 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 WWQ ▶ Page 990

Accessories: Manual clamp for higher holding forces





Technical data and dimensions [mm]

Part No.	Mk	Vx	Kx	Vz	Kz	Dk	Min. holding force[67]	Min. tightening torque
WHKD-1010[69]	M6	100	45	40	10	40	70N	2.5Nm
WHKD-1015[69]	M6	150	95	40	10	40	70N	2.5Nm
WHKD-1615[69]	M8	150	81	40	12	40	90N	3.5Nm
WHKD-1620[69]	M8	200	131	40	12	40	90N	3.5Nm
WHKD-2015[69]	M8	150	63	40	12	40	90N	3.5Nm
WHKD-2020[69]	M8	200	113	40	12	40	90N	3.5Nm

[67] Condition: dry rail surface

[69] The manual clamp is also available assembled as a complete carriage (suffix "-HKD", order example: WW-10-40-10-HKD). Dimensions complete carriage WWQ ▶ Page 995

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drylin® W profile guides | Product range

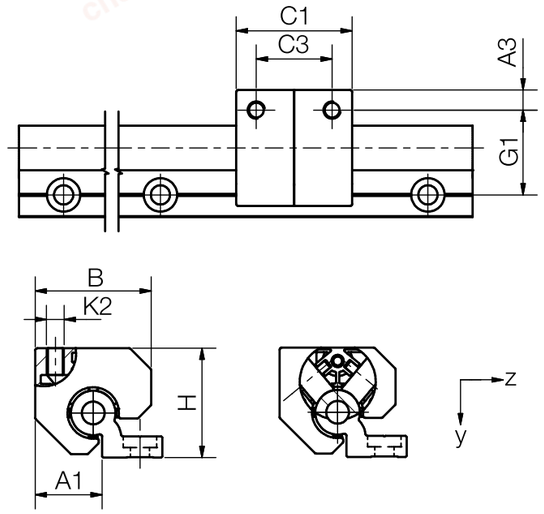
Accessories: Manual clamp for drylin® W hybrid roller bearings



Order key

Type	Size	Material
WJRM-21-10	-	HKA

- **Type:** Hybrid roller bearing; Double roller bearing
- **Size:** 10
- **Material:** Stainless steel
  - **ES:** Stainless steel (AISI 316Ti)
  - **ES-FG:** Stainless steel precision casting AISI 316
  - **AL:** Aluminium



Technical data and dimensions [mm]

Part No.	Weight [g]	A1	A3	B	C1	C3	G1	H	K2 for screw	Kz Max.
WJRM-21-10-HKA	115	16.5	6.5	31	35	22	27	28	M6	25
WJRM-21-16-HKA	250	25	9	44	48	30	32	41	M8	25
WJRM-21-20-HKA	320	30	9	52	52	34	38	49	M8	25

drylin® W profile guides | Product range

Accessories: Liners and end caps for high profile rails

drylin® W plastic liners – long, open design

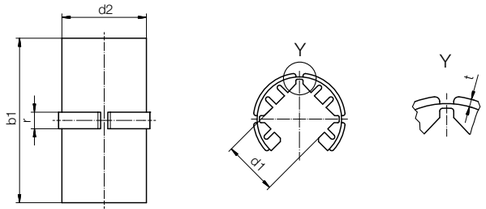


Size	Material	Pillow blocks	Liners Part No.	in the drylin® R-Chapter
10/16/20/25 (standard)	iglidur® J200	WJ200UM-01-Ø	J200UMO-01-Ø[70)]	▶ Page 1086
10/16/20/25	iglidur® J	WJUM-01-Ø	JUMO-01-Ø	▶ Page 1080
10/16/20/25 (High temperature)	iglidur® X	WXUM-01-Ø	XUMO-01-Ø	▶ Page 1091
10/16/20/25	iglidur® E7	WE7UM-01-Ø	E7UMO-01-Ø	▶ Page 1088

[70)] **Available also as floating bearing, Part No. J200UMO-01-Ø-LL**

drylin® W liners – long design, square



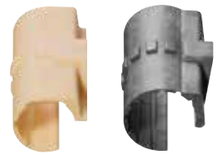


Dimensions [mm]

Part No.	d1	d1 tolerance	d2	b1	r	t
J200QM-01-06	5.0	+0.020 +0.080	8	19	3.0	0.5
J200QM-01-10	7.5	+0.020 +0.080	12	28	3.0	0.8
J200QM-01-16	11.5	+0.020 +0.080	18	35	3.0	0.8
J200QM-01-20	15.0	+0.020 +0.080	23	44	3.5	0.8

Available also as floating bearing J200QM-01-Ø-LLZ (z-direction), J200QM-01-Ø-LLY (y-direction)

drylin® W plastic liners – adjustable



Size	Material	Pillow blocks	Liners Part No.
10 (adjustable)	iglidur® J	WJUME-01-10	JUME-01-10
16/20 (adjustable)	iglidur® J200	WJ200UME-01-Ø	J200UME-01-Ø

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drylin® W profile guides | Product range

Accessories: Replacement liners

drylin® W plastic liners



Size	Material	Pillow blocks	Liners Part No.	
10	iglidur® J200	**WJ200UMA-01-10-AL**	**J200UMA-01-10**	
16	iglidur® J200	**WJ200UMA-01-16-AL**	**J200UMA-01-16**	New
20	iglidur® J200	**WJ200UMA-01-20-AL**	**J200UMA-01-20**	New

Replacement kit for WJ200UMA-01-10-AL pillow block



Consisting of
- 4 liners
- 4 housing end caps
- Assembly tool

Part No.:
WEKA-01-10-J200
WEKA-01-16-J200 New
WEKA-01-20-J200 New



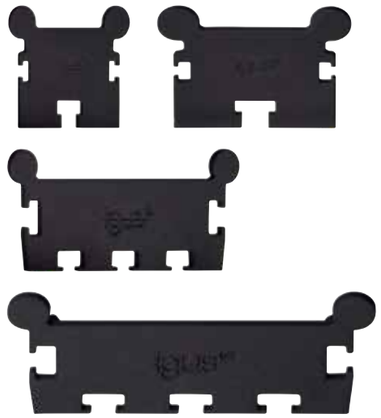


drylin® W profile guides

drylin® W profile guides | Product range

Accessories

End caps for drylin® high profile rails WSX



- For drylin® W high profile rails WSX
  ▶ **Page 993**
- 4 installation sizes
- Protection of the hollow chambers against the entry of foreign particle
- Easy to fit, easy sideways
- End caps for cutting edges

Part No.:
WSX-063001-EC
WSX-104001-EC
WSX-108001-EC
WSX-166001-EC

Slot nuts for mounting



- Variable positionable
- Ideal for drylin® limit and reference switches
- Suitable for T-slots of the drylin® WSX high-profile rails
  ▶ **Page 987, 993**
- Secure retention
- Can be retrofitted

Part No.	Suitable for rail profile
NOR-20602	WSX-06-30
NOR-20602	WSX-10-40
NOR-20602	WSX-10-80
NOR-20602	AWMQ-12/20
NOR-20602	WSX-16-60
NOR-20605	WSX-16-60

Clamps for WSX high profile rails



- Secure mounting
- Variable positionable
- For drylin® SAW linear modules and ZLW toothed belt axes
- For drylin® WSX high-profile rails
  ▶ **Page 987, 993**

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

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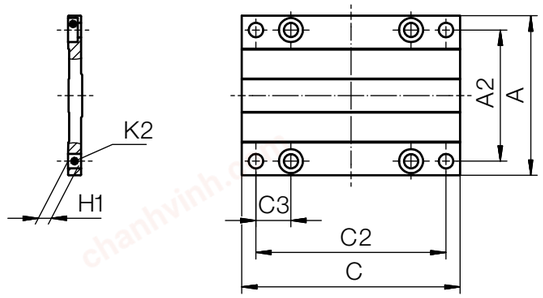
drylin® W profile guides | Product range New

Extension of the drylin® W modular system





With four pillow blocks and the mounting plate, a linear carriage can be installed in less than a minute. Mounting plates are available in 3 lengths in each installation size and width.

- Robust corrosion-resistant anodised aluminium
- A variety of combinations of liners/bearings/slide plates are possible, also with manual clamp
- Required combination bearing and mounting plate also available pre-assembled

Modular system:
Can be combined with the complete drylin® linear bearing product range. 4 screws included in delivery.

Technical data and dimensions [mm]

Part No.		C	A	H1	A2	K2	Mounting screws included
WWY-06-30-06-AL	New	60	54	4.0	45	M4	M4
WWY-06-30-08-AL	New	80	54	4.0	45	M4	M4
WWY-06-30-10-AL	New	100	54	4.0	45	M4	M4
WWY-06-60-06-AL	New	60	85	4.0	76	M4	M4
WWY-06-60-08-AL	New	80	85	4.0	76	M4	M4
WWY-06-60-10-AL	New	100	85	4.0	76	M4	M4
WWY-10-30-08-AL	New	80	63	6.5	50	M6	M6
WWY-10-30-10-AL	New	100	63	6.5	50	M6	M6
WWY-10-30-15-AL	New	150	63	6.5	50	M6	M6
WWY-10-40-10-AL	New	100	73	6.5	60	M6	M6
WWY-10-40-15-AL	New	150	73	6.5	60	M6	M6
WWY-10-40-20-AL	New	200	73	6.5	60	M6	M6
WWY-10-80-10-AL	New	100	107	6.5	94	M6	M6
WWY-10-80-15-AL	New	150	107	6.5	94	M6	M6
WWY-10-80-20-AL	New	200	107	6.5	94	M6	M6
WWY-10-120-10-AL	New	100	153	6.5	140	M6	M6
WWY-10-120-15-AL	New	150	153	6.5	140	M6	M6
WWY-10-120-20-AL	New	200	153	6.5	140	M6	M6
WWY-16-60-10-AL	New	100	104	8.5	86	M8	M8
WWY-16-60-15-AL	New	150	104	8.5	86	M8	M8
WWY-16-60-20-AL	New	200	104	8.5	86	M8	M8
WWY-20-80-15-AL	New	150	134	8.5	116	M8	M8
WWY-20-80-20-AL	New	200	134	8.5	116	M8	M8
WWY-20-80-25-AL	New	250	134	8.5	116	M8	M8
WWY-25-120-15-AL	New	150	195	10.0	173	M10	M10
WWY-25-120-20-AL	New	200	195	10.0	173	M10	M10
WWY-25-120-25-AL	New	250	195	10.0	173	M10	M10

Suitable for rails ▶ Page 986, 987, 988, 989, 992, 993
Suitable for bearings ▶ Page 976, 980, 982, 983, 984



drylin® linear technology – drylin® N low-profile linear guides

- Low profile and lightweight
- Lubrication-free dry-tech® sliding elements
- Anodised aluminium rail
- High speed and acceleration possible
- Quiet operation



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drylin® N low-profile linear guides | Advantages

Lightweight, maintenance-free, corrosion-resistant



Lubrication-free low-profile linear guides – drylin® N

The low-profile range drylin® N offers extremely low profiles in several widths. Like all drylin® products the carriages run without lubrication in an anodised aluminium profile. The selected materials and the unique design make drylin® N a cost-effective and flexible guide system.

- Low profile between 6 and 12mm
- Lightweight
- Many carriage options – also with pre-load
- Maintenance-free dry operation
- Corrosion-free
- Low wear with low coefficient of friction
- Silver or black-anodised rails

Typical application areas

- Agricultural machinery
- Automotive
- Medical technology
- Facade construction
- Packaging industry

Available from stock
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity.

Max. +90°C
(+50°C for overmoulded sliding elements)
Min. –40°C

17mm – 80mm

Service life calculation
▶ www.igus-asean.com/drylin-expert

Cleanroom certificated
IPA Fraunhofer

Free from toxins
2011/65/EU (RoHS)

ESD-compatible
(electrostatic discharge)

drylin® N low-profile linear guides | Product overview

Numerous options in four different widths for small installation heights



Guide rails

- Four installation sizes: 17, 27, 40 and 80mm
- Low profile, lightweight design
- Clear anodised (silver) or black anodised surfaces

▶ **From page 1034**



Guide carriage – installation size 17

- Solid plastic made from high-performance polymer iglidur® J
- Compact for the smallest installation spaces
- Length of carriage up to 40mm

▶ **Page** 1035



Guide carriage – installation size 27

- Carriage with changeable sliding elements
- Sliding carriages with captive overmoulded sliding elements
- Variable lengths and screw on options

▶ **Page 1037**



Guide carriage – installation size 40

- Carriage with thread pin or plain hole
- Pre-load version available

▶ **Page 1039**



Guide carriage – installation size 80

- Carriage with wide load-bearing surface
- Lubrication-free due to high-performance polymers iglidur® J/J200
- Low profile design due to threaded holes

▶ **Page 1041**



Telescopic system

- Continuous lengths up to 1,200mm (total extension)
- Available with partial, total or overextension
- With locking mechanism if required

▶ **Page 1050**



Pre-load prism slides

- Easy positioning of carriage
- Four pre-load classes
- Guaranteed drive force and holding force
- Extremely lightweight low-profile

▶ **From page 1042**



Based on drylin® N

drylin® SLN miniature linear module

▶ **From page1417**

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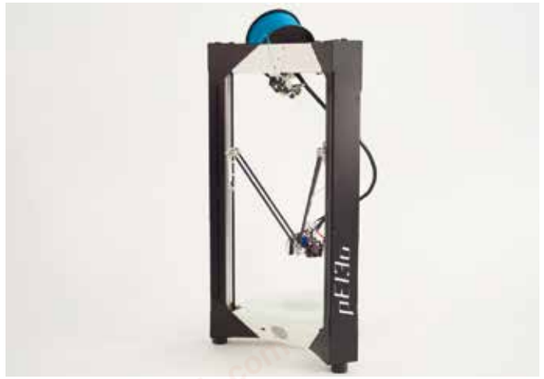
drylin® N low-profile linear guides | Application examples



The most important decision criterion for drylin® N low-profile linear guides is the low installation height as this makes it possible to achieve a maximum load.



drylin® N low-profile linear guides 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.



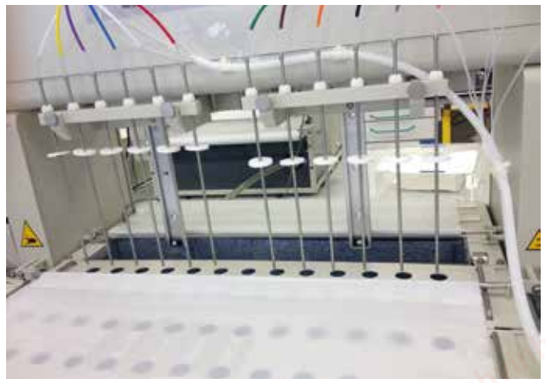
In the redesigning of the table guidance for this automated teller, the focus was on a ready-to-install, cost-effective, durable and lubrication-free bearing and system.



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 linear guide. The robust drylin® T guide system undertakes the vertical guidance.



The sampling device uses drylin® linear plain bearings to remove the products precisely and smoothly.

drylin® N low-profile linear guides | Online tools



Expert for linear guides: System selection & service life calculation with CAD

Configure and calculate the service life of 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. Select the bearing size, carriage, number and position. Then 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-asean.com/drylin-expert**

Download the online tool app now

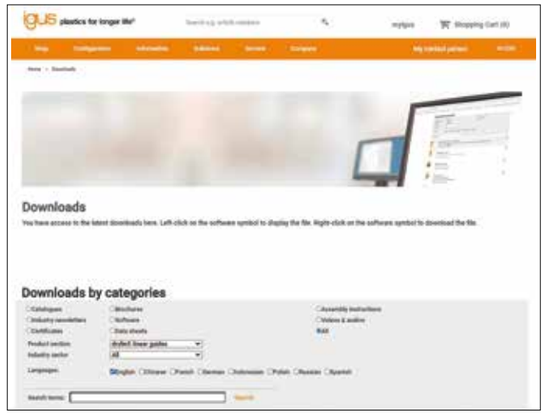
Download on the App Store



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-asean.com/drylin-CAD**



More information about the products can be found in the igus® download area

- Assembly instructions
- Assembly videos
- System design
- Catalogues

▶ **www.igus-asean.com/downloads**

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Floating bearings version



NW-... NW-... LLZ NW-... LLY NW-... LLYZ

LLZ Floating bearing in z-direction
LLY Floating bearing in y-direction
LLZ 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 Z: 0.8	Y: 0.6 Z: 0.8

Technical details on floating bearings ▶ Page 963
The 2:1 Rule ▶ Page 963

Technical options for drylin® low-profile linear guides

Clip-on sliding elements

Depending on the installation size, up to three lubrication-free sliding elements made from the high-performance polymer iglidur® J are clipped on around the zinc die-casting carriage body. These can be changed any time simply and fast, the zinc die-casting carriage can be reused. A set of appropriate sliding elements is available for every clip-on carriage (Part No. NEK... ▶ **Page 1048**).

Pre-load function

The use of sliding elements with an integrated spring pre-load function prevents the carriages in the rail profile from rattling. Adjustment occurs silently using the pre-load principle, making the guide suitable for use in noise-sensitive environments such as the automotive, medical or furniture sectors. Pre-load increases the displacement force by max. 10N.

Overmoulded sliding elements

With this carriage type, the zinc die-casting body is made as an integral part of the high-performance polymer iglidur® J/J200 during the injection moulding process. For the user this production process offers the advantage, that the sliding surface is connected captive and insolubly to the carriage. This makes it quicker to install the carriages in the profile. Robust 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. The continuous operating temperature for overmoulded sliding elements is +50°C.

Anodised surfaces

All drylin® N guide rails are anodised and are distinguished by good wear properties and corrosion resistance. All rail sizes are available as clear-anodised version (silver) as well as anti-reflect version with 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 sliding properties. Cutting surfaces and machined surfaces are uncoated.

Tightening torque for drylin® connections between metal parts

Metric thread (Da)	Tightening torque [Nm]	Recommended tightening 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

Please be aware of the minimal screw-in depth for aluminium and zinc die-casting parts: 1.5 x Da

System selection				
System	**N17**	**N27**	**N40**	**N80**
Rail width	17mm	27mm	40mm	80mm
Installation height	6mm	9.5mm	9.5mm	12mm
General properties				
Rail weight	150g/m	290g/m	450g/m	1,140g/m
Carriage weight	1.7g	9–12.5g	30g	100g
Max. rail length	2,000mm	3,000mm	3,000mm	4,000mm
Load capacity, static				
Fy	50N	500N	700N	1,000N
Fz	50N	500N	700N	1,000N
Mx	0.31Nm	5Nm	10Nm	32.4Nm
My, Mz	0.18Nm	2.5Nm	6Nm	15Nm
Carriage options				
Floating bearing in y-direction	●	●	●	●
Floating bearing in z-direction	●	●	●	●
Floating bearing in yz-direction	●	●	●	●
Pre-load (1N)	●	●	●	–
Overmoulded version	–	●	●	●
Carriage with through hole	–	●	●	–
Carriage with threaded pin	●	●	●	–
Carriage with threaded hole	–	–	–	●

Table 01: System selection ● available – not available

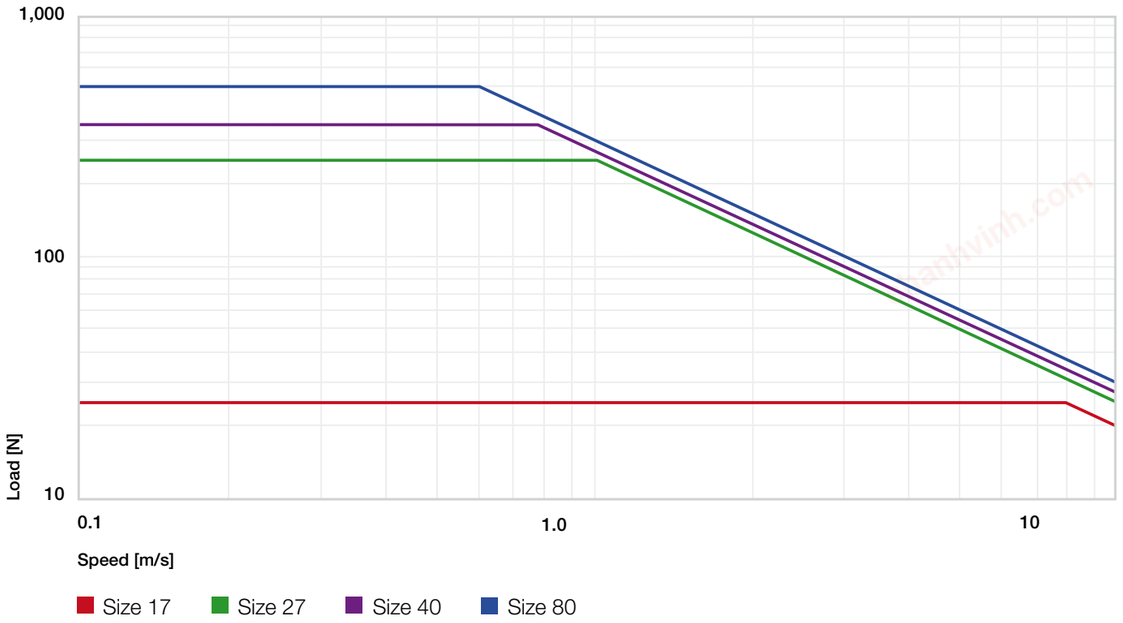

Diagram 01: F v diagram, maximum permissible dynamic load

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drylin® N low-profile linear guides | Product range

Guide rails and carriages – installation size 17



Complete system

Order key

Type					Installation size	Options
NW -	22 -	17 -	30 -	LLY		
drylin® N	Guide carriage	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: Pre-load

Floating bearing:
LLY: y-direction (not possible with the "P" version)
LLZ: z-direction
LLYZ: 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[159]	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 give the required length in mm, symmetrical standard hole pattern C5=C6
[73] For cap screw with low head (e.g. DIN 7984, DIN 6912, DIN 84, EN ISO 1707)
[74] Metal thread
[159] Hole min. Ø

All elements can be ordered individually or as assembled systems
NS-01-17-1500: Guide rail, installation size 17, 1,500mm length
NK-02-17-02-500-LLY: Complete system with two solid plastic guide carriages with threaded pins, installation size 17, floating bearing in y-direction and 500mm guide rails with standard holes

drylin® N low-profile linear guides

drylin® N low-profile linear guides | Product range

The linear guide for the smallest installation space



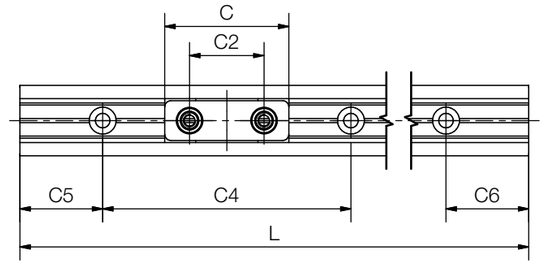
Standard | Without holes | Anti-reflect

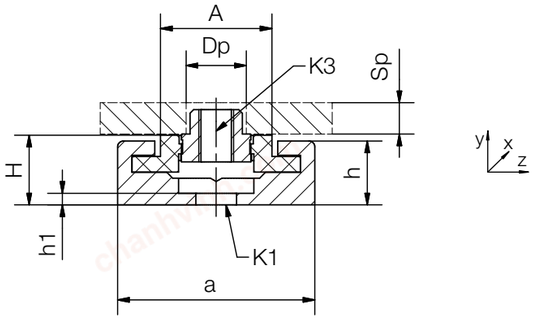


NW-02-17 | NW-02-17-P



NW-22-17-30 | NW-22-17-40





Selection aid – guide carriage

Part No.	Single	Double	Through hole	Threaded pin	Threaded hole	Pre-load	Solid plastic	Clipped-on	Over-moulded	High temp.
NW-02-17	●			●			●			
NW-02-17-P	●			●		●	●			
NW-22-17-30		●		●			●			
NW-22-17-40		●		●			●			

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drylin® N low-profile linear guides | Product range

Guide rails and carriages – installation size 27



Complete system

Order key

Type	Size	Options

NW - 01 - 27 - HT - LLY

drylin® N	Guide carriage	Type of carriage	Rail width	High temperature	Floating bearing in y-direction

Type of carriage:
See selection aid

Options:
P: Pre-load
HT: High temperature

Floating bearing:
LLY: y-direction
LLZ: z-direction
LLYZ: yz-direction

Guide rail – dimensions [mm]

Part No.	L	a	C4	C5 C6		h	h1	K1[73]	Iy	Iz	Weight
	Max.			Min.	Max.				[mm⁴]	[mm⁴]	[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	A	C	C1	C2	H2	K[73]	K3[74]	M[75]	Sp	Dp[159]	Weight
	±0.35								[Nm]			[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 give the required length in mm, symmetrical standard hole pattern C5=C6
[73] For cap screw with low head (e.g. DIN 7984, DIN 6912, DIN 84, EN ISO 1707)
[74] Metal thread [75] Max. screw tightening torque [159] Hole min. Ø

All elements can be ordered individually or as assembled systems
NS-01-27-1500: Guide rail, installation size 27, 1,500mm length
NW-02-27-P-LLY: Guide carriage with threaded pin, installation 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, installation size 27, floating bearing in y-direction and 500mm guide rails with standard holes

drylin® N low-profile linear guides

drylin® N low-profile linear guides | Product range

The installation size with the largest variety of carriages



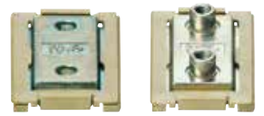
Standard | Without holes | Anti-reflect



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



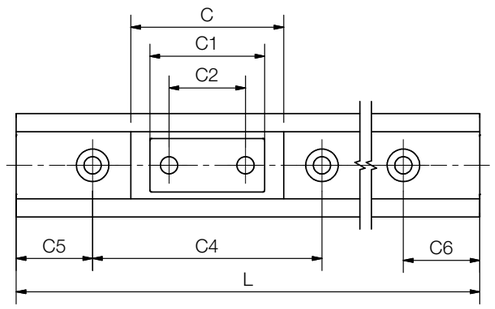
NW-32-27-60-P

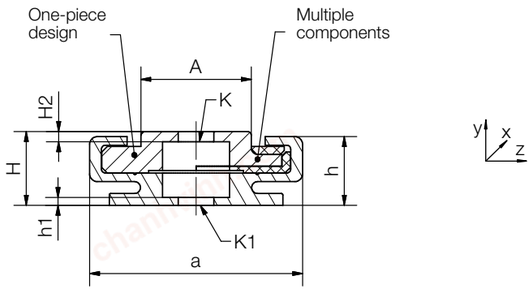


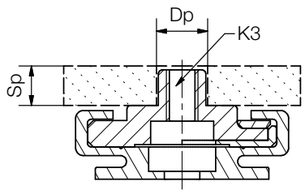
NW-11-27-80



NW-12-27-80







Selection aid – guide carriage

Part No.	Single	Double	Through hole	Threaded pin	Threaded hole	Pre-load	Solid plastic	Clipped-on	Over-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		●		●					●	

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drylin® N low-profile linear guides | Product range

Guide rails and carriages – installation size 40



Complete system

Order key

Type	Size	Options
NW - 01	- 40	- P - LLY

drylin® N | Guide carriage | Type of carriage | Rail width | Pre-load | Floating bearing in y-direction

Type of carriage:
See selection aid

Options:
P: Pre-load

Floating bearing:
LLY: y-direction
LLZ: z-direction
LLYZ: 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[159]	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 give the required length in mm, symmetrical standard hole pattern C5=C6
[73] For cap screw with low head (e.g. DIN 7984, DIN 6912, DIN 84, EN ISO 1707)
[74] Metal thread
[159] Hole min. Ø

All elements can be ordered individually or as assembled systems
NS-01-40-1500: Guide rail, installation size 40, 1,500mm length
NW-02-40-P-LLY: Guide carriage with threaded pin, installation 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, installation size 40, floating bearing in y-direction and 500mm guide rails with standard holes

drylin® N low-profile linear guides

drylin® N low-profile linear guides | Product range

Suitable for aluminium construction profiles



Standard



Without holes



Anti-reflect



NW-01-40



NW-02-40



NW-01-40-P



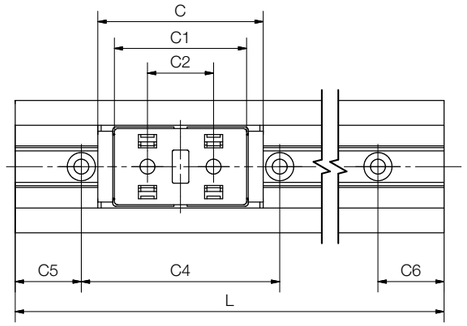
NW-02-40-P

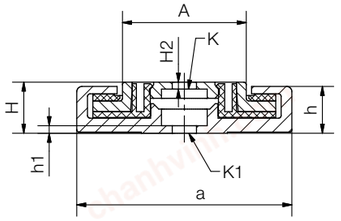


NW-11-40

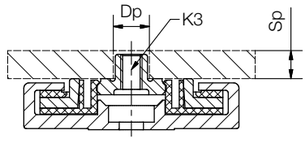


NW-12-40









Selection aid – guide carriage

Part No.	Single	Double	Through hole	Threaded pin	Threaded hole	Pre-load	Solid plastic	Clipped-on	Over-moulded	High temp.
NW-01-40	●		●					●		
NW-01-40-P	●		●			●		●		
NW-11-40	●		●						●	
NW-02-40	●			●				●		
NW-02-40-P	●			●		●		●		
NW-12-40	●			●					●	

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Guide rails and carriages – installation size 80



Complete system

Order key

Type	Size	Options
NW - 02 - 80 - LLY		

drylin® N | Guide carriage | Type of carriage | Rail width | Floating bearing in y-direction

Type of carriage:
See selection aid
Options:
Floating bearing:
LLY: y-direction
LLZ: z-direction
LLYZ: yz-direction

Guide rail (standard/without holes/AR anti-reflect) – dimensions [mm]

Part No.	L	a	C4	A3	C5	C6	h	h1	K1[73]	Iy	Iz	Weight
	Max.				Min.	Max.				[mm⁴]	[mm⁴]	[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	A	C	C1	C2	A2	K4[74]	Weight
	±0.35							[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 give the required length in mm, symmetrical standard hole pattern C5=C6
[73] For cap screw with low head (e.g. DIN 7984, DIN 6912, DIN 84, EN ISO 1707)
[74] Metal thread

All elements can be ordered individually or as assembled systems
NS-01-80-1500: Guide rail, size 80, 1,500mm length
NW-02-80-LLY: Guide carriage, clip-on, installation size 80, floating bearing in y-direction,
NK-02-80-02-500-LLY: Complete system with two clipped-on guide carriages with threaded pins, installation size 80, floating bearing in y-direction and 500mm guide rails with standard holes

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For high speeds at low loads



Standard



Without holes



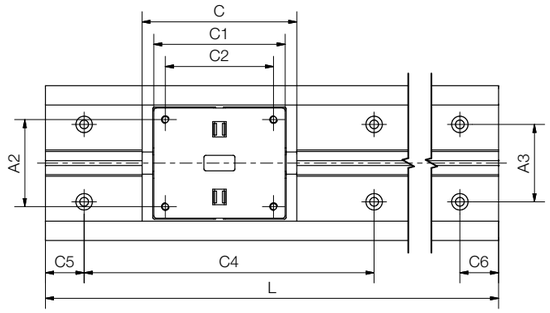
Anti-reflect

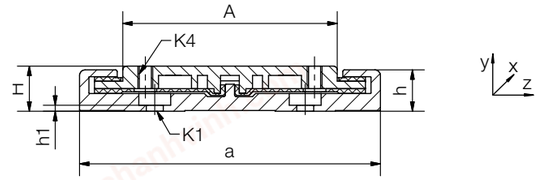


NW-12-80



NW-02-80





Selection aid – guide carriage

Part No.	Single	Double	Through hole	Threaded pin	Threaded hole	Pre-load	Solid plastic	Clipped-on	Over-moulded	High temp.
NW-02-80	●				●			●		
NW-12-80	●				●				●	

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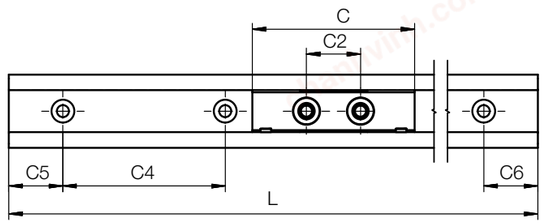
Prism rails



Order key

Type	Installation size	Options
NSV	01	27 - AR - UNGEBOHRT

- Guide rail for pre-load prism slide
- Type
- Installation size
- Anti-reflect



Guide rail – dimensions [mm]

Part No.		L Max.	a	C4	C5 Min.	C6 Max.	h	h1	K1	Iy [mm⁴]	Iz [mm⁴]	Weight [g/m]
NSV-01-27		3,000	27	60	20	49.5	8.8	1.1	Ø4.5	11,250	766	409
NSV-01-27-AR	New	3,000	27	60	20	49.5	8.8	1.1	Ø4.5	11,250	766	409
NSV-01-27-□[72)]		3,000	27	–	–	–	8.8	1.1	–	11,250	766	409
NSV-01-27-□-AR[72)]	New	3,000	27	–	–	–	8.8	1.1	–	11,250	766	409

[72)] Please give the required length in mm, symmetrical standard hole pattern C5=C6

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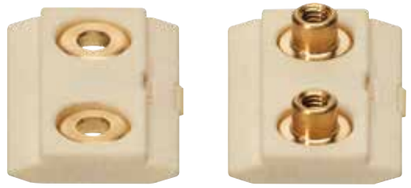
Short prism carriage with single pre-load

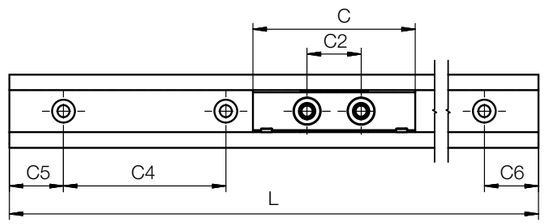


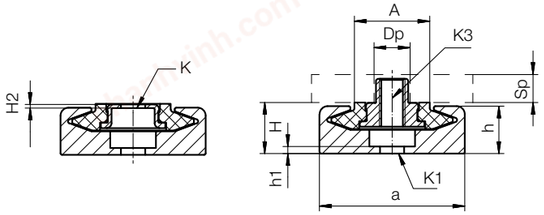
With threaded pin 22 or with through hole 21

Order key

Type	Installation size	Options
NWV	21 - 27	- 35 - P05

- Pre-load prism slide
- Type of carriage
- Rail width
- Carriage length
- Pre-load





Guide carriage – dimensions [mm]

Part No.		Pre-load [N]	H ±0.35	A	C	C2	H2	K	K3	M[75)] [Nm]	SP Min.	Dp[159)]	Weight [g]
NWV-21-27-35-P05		0.5	9.5	14	35	20	0.7	Ø4.5	–	–	–	–	6
NWV-21-27-35-P11		1.1	9.5	14	35	20	0.7	Ø4.5	–	–	–	–	6
NWV-21-27-35-P23		2.3	9.5	14	35	20	0.7	Ø4.5	–	–	–	–	6
NWV-21-27-35-P38		3.8	9.5	14	35	20	0.7	Ø4.5	–	–	–	–	6
NWV-21-27-35-P80	New	8.0	9.5	14	35	20	0.7	Ø4.5	–	–	–	–	6
NWV-22-27-35-P05		0.5	9.5	14	35	20	–	–	M4	1.2	5	6.5	11
NWV-22-27-35-P11		1.1	9.5	14	35	20	–	–	M4	1.2	5	6.5	11
NWV-22-27-35-P23		2.3	9.5	14	35	20	–	–	M4	1.2	5	6.5	11
NWV-22-27-35-P38		3.8	9.5	14	35	20	–	–	M4	1.2	5	6.5	11
NWV-22-27-35-P80	New	8.0	9.5	14	35	20	–	–	M4	1.2	5	6.5	11

[75)] Max. screw tightening torque
[159)] Hole min. Ø

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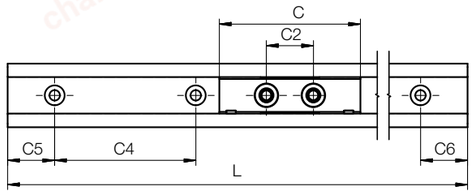
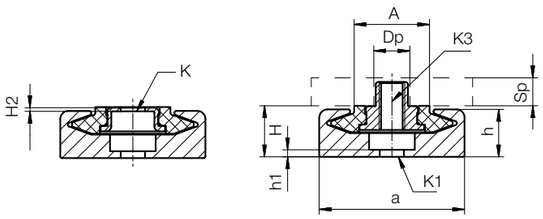
Long prism carriage with dual pre-load



With threaded pin 22 or with through hole 21





Order key

Type	Installation size	Options

NWV - 21 - 27 - 60 - P10

- Pre-load prism slide
- Type of carriage
- Rail width
- Carriage length
- Pre-load

Guide carriage – dimensions [mm]

Part No.	Pre-load	H	A	C	C2	H2	K	K3	M[75]	SP Min.	Dp[159]	Weight
	[N]	±0.35							[Nm]			[g]
NWV-21-27-60-P10	1.0	9.5	14	60	20	0.7	Ø4.5	–	–	–	–	10
NWV-21-27-60-P22	2.2	9.5	14	60	20	0.7	Ø4.5	–	–	–	–	10
NWV-21-27-60-P46	4.6	9.5	14	60	20	0.7	Ø4.5	–	–	–	–	10
NWV-21-27-60-P76	7.6	9.5	14	60	20	0.7	Ø4.5	–	–	–	–	10
NWV-21-27-60-P160 New	16.0	9.5	14	60	20	0.7	Ø4.5	–	–	–	–	6
NWV-22-27-60-P10	1.0	9.5	14	60	20	–	–	M4	1.2	5	6.5	13
NWV-22-27-60-P22	2.2	9.5	14	60	20	–	–	M4	1.2	5	6.5	13
NWV-22-27-60-P46	4.6	9.5	14	60	20	–	–	M4	1.2	5	6.5	13
NWV-22-27-60-P76	7.6	9.5	14	60	20	–	–	M4	1.2	5	6.5	13
NWV-22-27-60-P160 New	16.0	9.5	14	60	20	–	–	M4	1.2	5	6.5	11

[75] Max. screw tightening torque

[159] Hole min. Ø

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drylin® N low-profile linear guides | Technical data





Standard carriages

Part No.	Average displacement force [N]
NWV-21/22-27-35-P05	1.0
NWV-21/22-27-35-P11	2.2
NWV-21/22-27-35-P23	4.6
NWV-21/22-27-35-P38	7.6
NWV-21/22-27-35-P80	16.0

Part No.	Guaranteed holding force [N]
NWV-21/22-27-35-P05	0.5
NWV-21/22-27-35-P11	1.1
NWV-21/22-27-35-P23	2.3
NWV-21/22-27-35-P38	3.8
NWV-21/22-27-35-P80	8.0

Long carriages

Part No.	Average displacement force [N]
NWV-21/22-27-60-P10	2.0
NWV-21/22-27-60-P22	4.4
NWV-21/22-27-60-P46	9.2
NWV-21/22-27-60-P76	15.2
NWV-21/22-27-60-P160	32.0

Part No.	Guaranteed holding force [N]
NWV-21/22-27-60-P10	1.0
NWV-21/22-27-60-P22	2.2
NWV-21/22-27-60-P46	4.6
NWV-21/22-27-60-P76	7.6
NWV-21/22-27-60-P160	16.0

Note:
The average displacement force values apply to unloaded carriages at centric drive. The real displacement forces depend to a large extent on the displacement speed. At creep movement (few mm/min.), the values are slightly over the guaranteed holding force. At higher displacement forces, the values can considerably exceed the average displacement force. The values do not apply for applications in which dirt and moisture ingress into the system. The holding force cited is a minimum value – the displacement force required to move the carriage may be higher

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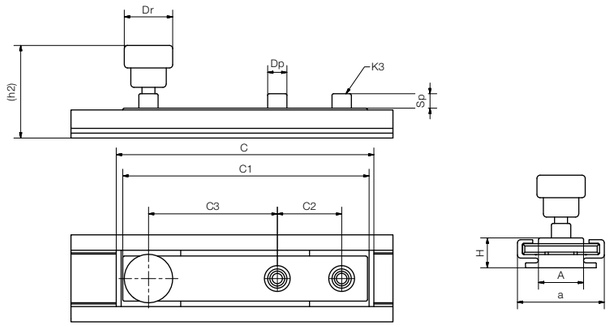
Accessories: Manual clamp



Order key

Type	Size	Version
NW - 12 - 27 - 80 - HKA		

drylin® N	Guide carriage	Type of carriage	Rail width	Carriage length	Manual clamp



Dimensions [mm]

Part No.	H	(h2)	A	a	C	C1	C2	C3	K3	M [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

M: Permissible torque of the complete system

Order example:
NW-12-27-80-HKA: Manual clamp for NW-12-27-80 carriage

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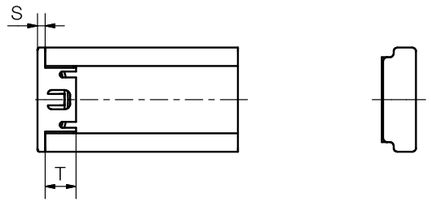
Accessories: End caps







Order key

Type	Size
N S K B - 40	

drylin® N – end cap	Push-fit	Rail width

Dimensions [mm]

Part No.	S	T	For rail
NSKB-17	1.5	7	NS-01-17
NSKB-27	2.0	8	NS-01-27
NSK-40	1.5	8	NS-01-40
NSKB-80	2.0	17	NS-01-80

Order example:
NSK-40: End caps for guide rail size 40, bolted



Easily assembled and disassembled by hand using a screwdriver. Part No.: NSKB



End caps for rail size 40, screwed
Part No.: NSK-40

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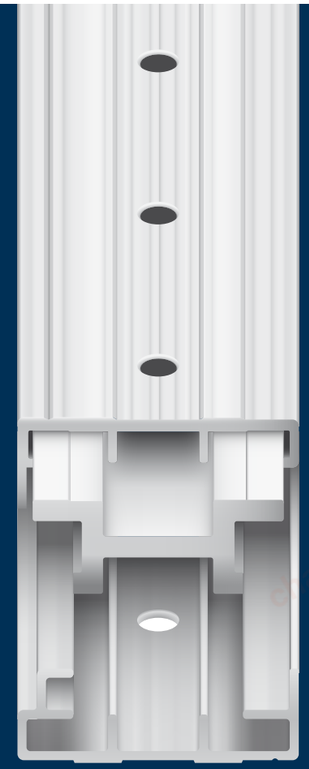
drylin® N low-profile linear guides | Ordering options

drylin® N replacement plastic sliders (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® N telescopic rails

- Continuously extendable
- Lubrication-free dry-tech® sliding elements
- Quiet, sliding movement
- Full extension, partial extension, overextension



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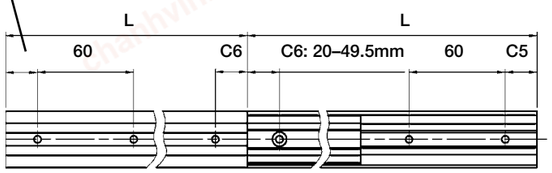
drylin® N low-profile linear guides | Product range

Telescopic rails

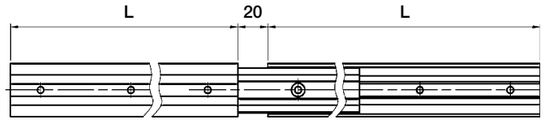
- Robust plastic/aluminium version
- Lightweight
- Cost-effective
- Corrosion-free
- Continuous lengths up to 1,200mm (total extension)

NT-35-"L" – Total extension

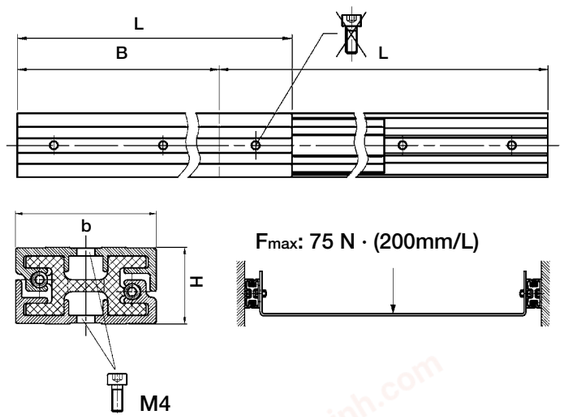
C5: 20–49.5mm



NT-35-"L"-"L+20" – overextension



NT-35-"L"-"B" – Partial extension



Order key

Type	Size
N T - 35 - 300	

drylin® N	Telescopic system	Rail width	Length [mm]

Order key overextension

Type	Size	Option
N T - 35 - 300 - 320		

drylin® N	Telescopic system	Rail width	Length [mm]	Overextension [mm]

Order key partial extension

Type	Size	Option
N T - 35 - 300 - 200		

drylin® N	Telescopic system	Rail width	Length [mm]	Partial extension [mm]

Option:
Partial extension
(example: compressed length 300mm, extended length 500mm)

Tip:
F_{max} calculated using this formula allows an easy manual use. Higher loads can be taken up by the system, but need a higher drive force.

Dimensions [mm]

Part No.	b	H	C4	C5 = C6		L	
				Min.	Max.	Min.	Max.
NT-35-... mm	35	19	60	20	49.5	100	600

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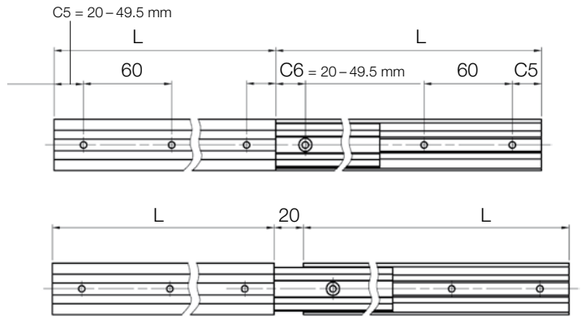
Telescopic rails with locking mechanism

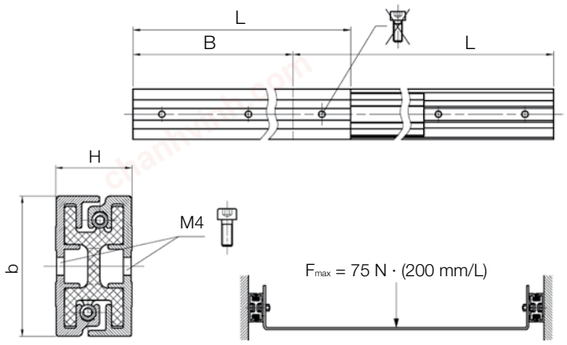




Order key

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 upon request; The length divided by the locking distance must be an even number.
e.g. Length 250mm, latching in 62.5mm step: 250/62.5 = 4

Order example:
NT-LM-35-300: drylin® N telescopic rail with locking mechanism, 35mm width, retracted length 300mm

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drylin® N low-profile linear guides | Product range New

Telescopic guide for higher loads



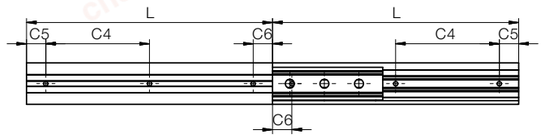
- Lubrication and maintenance-free
- Continuously extendable up to 2,000mm (extended length)
- Sliders made of durable high-performance polymers
- Quiet, sliding movement
- Full extension, partial extension and overextension possible

Order key

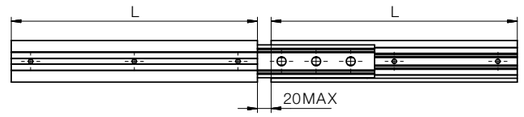
Type	Size
N T	- 60 - 200

drylin® N	Telescopic system	Rail width	Length [mm]

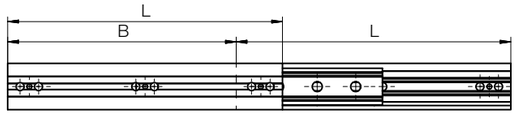
NT-60-"L" – Total extension

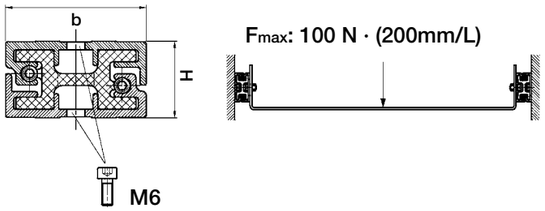


NT-60-"L"-"L+max. 20" – overextension

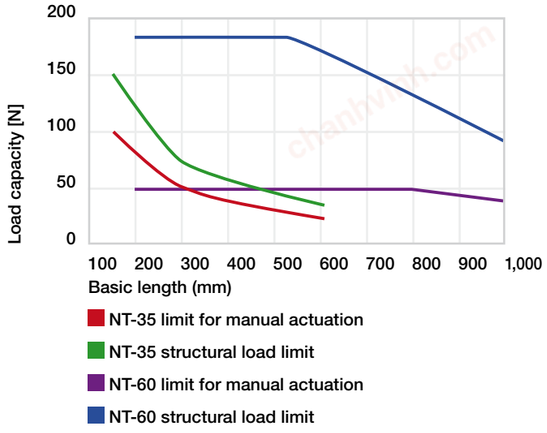


NT-60-"L"-"B" – Partial extension

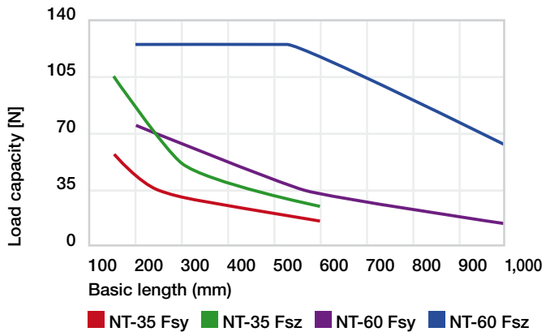




Tip:
F_{max} calculated using this formula allows an easy manual use. Higher loads can be taken up by the system, but need a higher drive force.



drylin® N telescope systems load capacity of a drawer with two systems installed upright



drylin® N telescope static load capacity in different load directions

Dimensions [mm]

Part No.	b	H	C4	C5 = C6		L	
				Min.	Max.	Min.	Max.
NT-60-... mm New	60	24	150	25	99.5	200	1,000



drylin® linear technology – drylin® T rail guides

- Robust linear guides
- Adjustable bearing clearance
- Wear-resistant and durable
- Dimensionally identical to recirculating ball-bearing guides
- Lubrication and maintenance-free



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drylin® T rail guides | Advantages

Resistant to dirt, low vibration, quiet, long service life



Lubrication-free rail guides – drylin® T

drylin® T rail guides were originally developed for applications in both automation and materials handling. The goal was to create a robust linear guide for use in the most diverse, even extreme environments. Their dimensions are identical to most recirculating ball bearing guides.

- 100% lubrication-free
- Adjustable bearing clearance
- Automatic clearance adjustment
- High static load capacity
- Service life up to 50,000km
- Resistant to dirt
- Low vibration and quiet

Typical application areas

- Mechanical engineering
- Wood working industry
- Machine tools
- Handling

Available from stock
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity.

Max. +90°C
Min. –40°C

7 carriage types
Rail length up to 4,000mm

Service life calculation
▶ **www.igus-asean.com/drylin-expert**

Cleanroom certificated
IPA Fraunhofer

Free from toxins
2011/65/EU (RoHS)

ESD-compatible
(electrostatic discharge)

drylin® T rail guides | Product overview

Dimensionally identical to most recirculating ball-bearing guides



High performance

- 50% longer service life due to iglidur® J200 sliding elements
- Fast assembly
- Adjustable bearing clearance

▶ **From page 1061**



Standard / with manual clamp

- Manual clearance adjustment on the carriage
- Long service life with iglidur® J sliding elements
- Manual clamp on carriage (optional)

▶ **From page 1062**



Automatic

- Automatic clearance adjustment
- Easy assembly with pre-load key
- Long service life with iglidur® J sliding elements

▶ **Page 1063**



Heavy duty

- Robust design, factory clearance adjustment
- Long service life with iglidur® J sliding elements
- Quick assembly

▶ **Page 1065**



Compact

- Narrow guide carriages for small spaces
- Captive plastic sliders
- Corrosion-free

▶ **Page 1066**



Miniature guides / Adjustable miniature guides

- Small compact design
- Easy to fit
- Individual clearance adjustment on carriage

▶ **Page 1068**



Clamps

- Compact or heavy duty design
- Available for installation sizes 15 – 30mm
- Holding force up to 500N

▶ **Page 1067**



drylin® T rails

- Lightweight, aluminium extruded section
- Robust and corrosion-resistant hard-anodised surfaces
- Shaft length delivered with millimetre precision up to max. 4,000mm

▶ **Page 1060**



Based on drylin® T
drylin® SLT linear module

▶ **From Page 1413**

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drylin® T rail guides | Application examples



Long service life and food grade quality are also prerequisites for the application like insensitivity to pungent detergents and humidity.



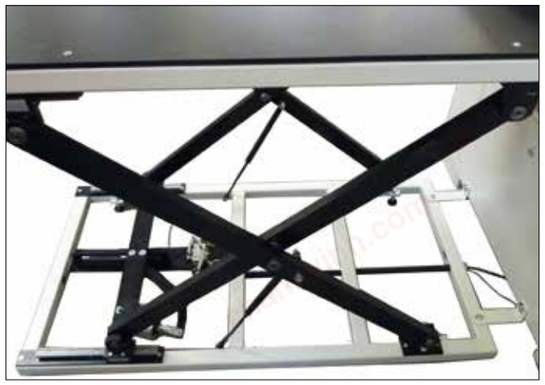
The adjustment of the pressing roller and the compensation of the imbalance of the grinding tools are implemented with drylin® T in place of recirculating ball bearing guides.



The drylin® T linear guides 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-resistant drylin® T linear guide finds the balance between high service life and low costs.

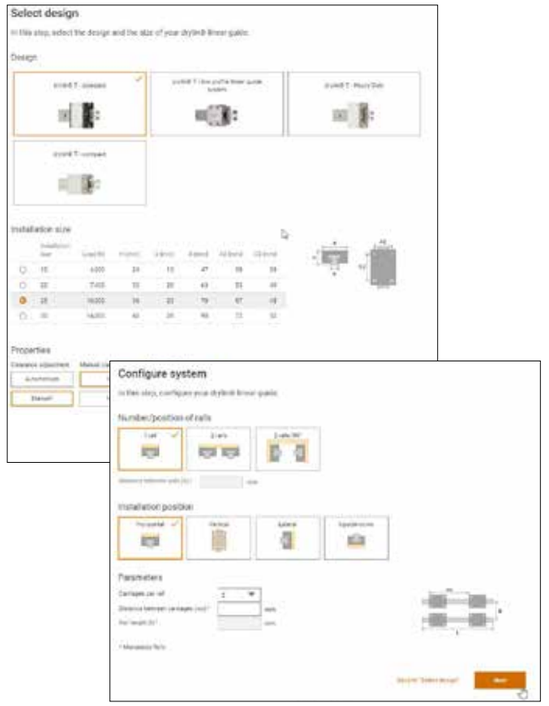


drylin® T rail guides with adjustable clearance change the height of the work table silently and precisely.



Time saving: Reduced tool changing time due to this measuring system. The gauge is guided on a drylin® T rail. This solution works also without problems in dusty environments.

drylin® T rail guides | Online tools



Expert for linear guides: System selection and service life calculation with CAD

Configure linear bearings and calculate their service life – 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. Select the bearing size, carriage, number and position. Then enter the distance between the rails and the mounting. Define the coordinates for the drive location and the centre of gravity, or enter these via the keyboard. Define the weight, acceleration, and distance of the bearing and select a rail length. The results are displayed.

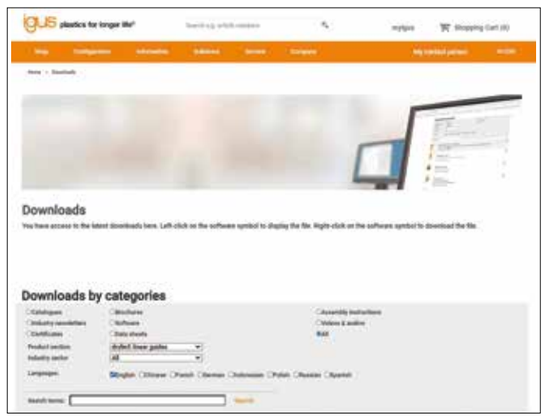
▶ **www.igus-asean.com/drylin-expert**



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-asean.com/drylin-CAD**



More information about the products can be found in the igus® download area

- Assembly instructions
- Assembly videos
- System design
- Catalogues

▶ **www.igus-asean.com/downloads**

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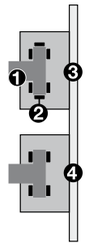
Design tip

The compensation of parallelism errors up to a maximum of 0.5mm 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 guide 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 (0.5mm) 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.

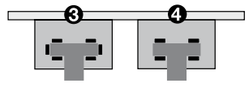
Technical details on floating bearings
▶ Page 963
The 2:1 Rule ▶ Page 963

Version with floating bearing in z-direction

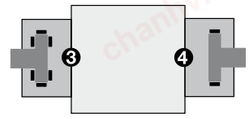
❶ Rail
❷ Slide elements
❸ Carriage with fixed bearings
❹ Carriage with floating bearings
LLZ or LLY



Horizontal version with floating bearing in z-direction



Horizontal version with floating bearing in the y-direction and lateral guide carriage

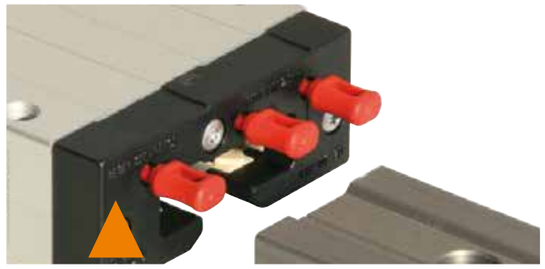


Installation drylin® T linear guide system

Make sure to assemble the side of the carriage saying "Reset Clearance" onto the rail first (see picture).



TW series, adjustable clearance



TWA series, automatic

Tightening torque for drylin® connections between metal parts

Metric thread (Da)	Torque [Nm]	Recommended tightening 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 die-casting parts: 1.5 x Da

Floating bearing clearances for drylin® T miniature guides

LLZ: Floating bearing in z-direction
LLY: Floating bearing in y-direction

Floating bearing clearances	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 rail	
Material	Aluminium, extruded section
Material	EN AW-6060 T66
Coating	Hard-anodised aluminium, 50 µm
Hardness	500 HV
Guide carriages	
Base structure	Aluminium, extruded section
Material	EN AW-6060 T66
Coating	Anodised aluminium
Sliding elements	Maintenance-free plain bearings materials iglidur® J, iglidur® J200 (TW-12/TW-04-07)
Bolts, springs	Stainless steel
End cap	Plastic (TW-01/TWA-01), steel (TW-02)/TW-03/TW-12
Max. surface speed	5m/s
Temperature range	from –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-/12-15	4	4	2	32	25	25
01-/02-/12-20	7.4	7.4	3.7	85	45	45
01-/02-/03-/12-25	10	10	5	125	65	65
01-/02-/12-30	14	14	7	200	100	100

Table 02: drylin® – permissible static load capacity

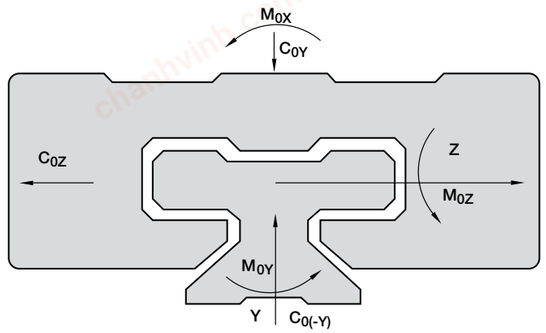


Diagram 01: Marking of the directions

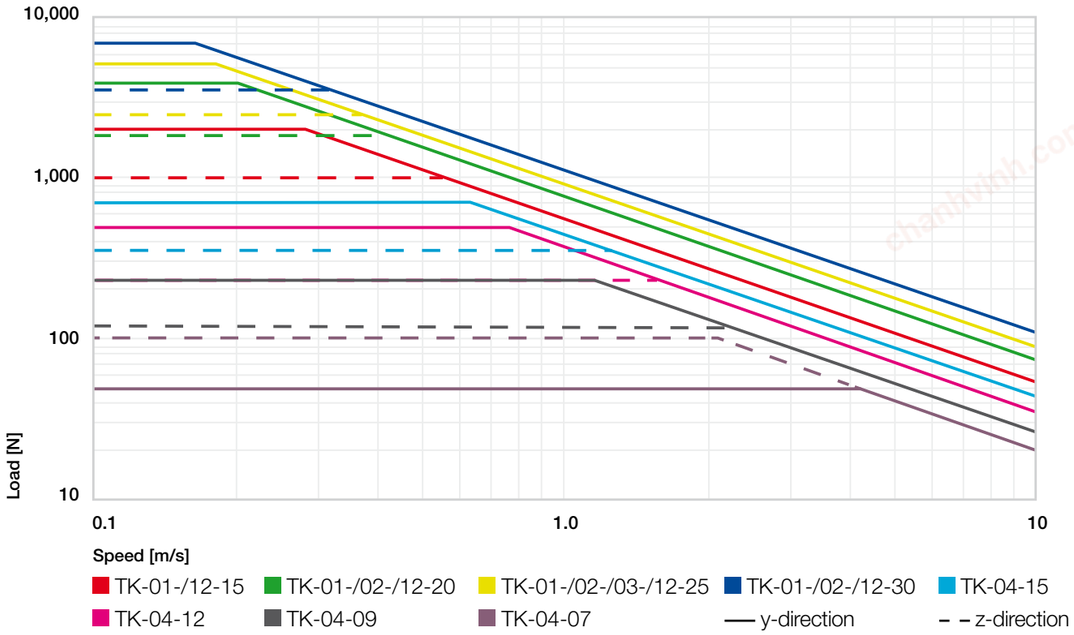


Diagram 02: drylin® T– permissible dynamic load capacity

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drylin® T rail guides | Product range

Guide rails



TS-01



TS-11

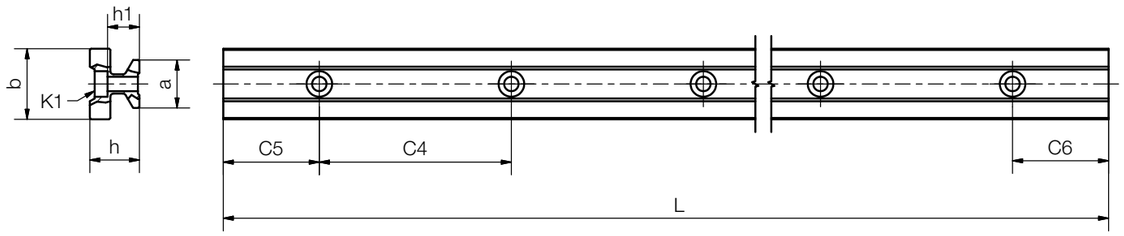
Order key

Type	Options
TS-01-15-1000	

Guide rail | Standard | Installation size | Rail length [mm]

Curved rail profiles
▶ Page 962

Options:
TS-01: Standard rail, hard-anodised
TS-11: Weight-reduced rail, clear-anodised
Hard-anodised surfaces
▶ Page 958



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-...

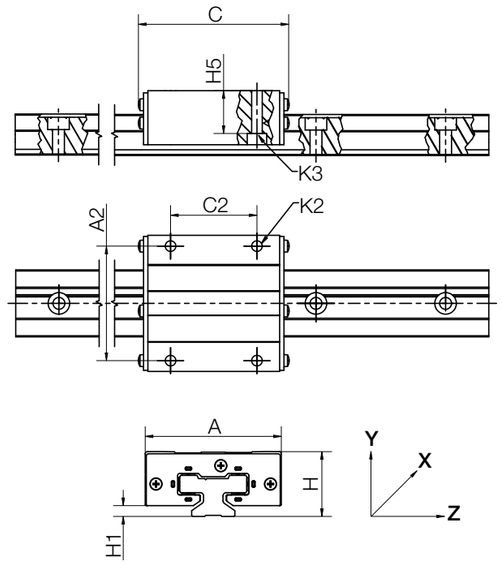

TW-03-...

Technical data
▶ Page 1059

drylin® T rail guides | Product range

High performance carriage with clearance adjustment





Order key

Type
TW-12-15

Guide carriage | High performance | Installation size

Dimensions [mm]

Part No.	Weight	H	H5	A	C	A2	C2	H1	K2	K3 for	Sliding
		±0.35						±0.35	thread	cap screw	elements
	[kg]										
TW-12-15	0.11	24	16.0	47	63	38	30	4.0	M5	M4	iglidur® J200
TW-12-20	0.19	30	19.8	63	72	53	40	5.0	M6	M5	iglidur® J200
TW-12-25	0.29	36	24.8	70	82	57	45	5.0	M8	M6	iglidur® J200
TW-12-30	0.50	42	27.0	90	94	72	52	6.5	M10	M8	iglidur® J200

Can only be combined with:


TS-01-20


TS-11-20

Technical data
▶ Page 1059

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drylin® T rail guides | Product range

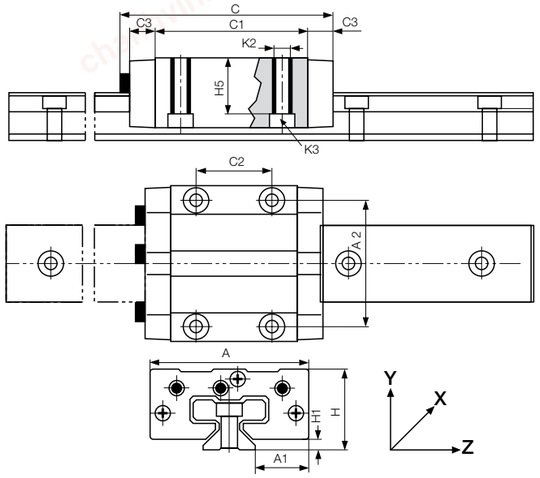
Guide carriage – manual clearance adjustment



TW-01



Complete system online



Order key

Type

TW-01-15

Guide carriage	Standard	Installation size
TW	01	15

Options:

LLY: Floating bearing in y-direction

LLZ: Floating bearing in z-direction

Dimensions [mm]

Part No.	Weight [kg]	H ±0.35	A	C	A1 ±0.35	A2	C1	C2	C3	H1 ±0.35	H5	K2 thread	Tightening torque Max. [Nm]	K3 for screw 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, 500mm length

Can be combined with:

TS-01-...

Technical data ▶ Page 1059

drylin® T rail guides

drylin® T rail guides | Product range

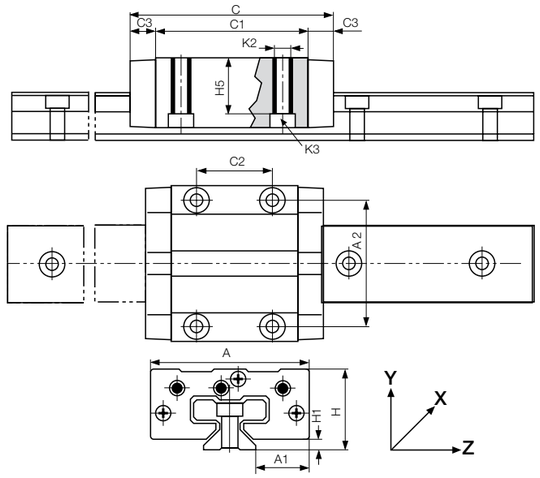
Guide carriages – automatic clearance adjustment



TWA-01



Complete system online



Order key

Type

TWA-01-15

Guide carriage Automatic version	Standard	Installation size
TWA	01	15

Options:

LLY: Floating bearing in y-direction

LLZ: Floating bearing in z-direction

Dimensions [mm]

Part No.	Weight [kg]	H ±0.35	A	C	A1 ±0.35	A2	C1	C2	C3	H1 ±0.35	H5	K2 Thread	Tightening torque Max. [Nm]	K3 for screw 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, 500mm length

Can be combined with:

TS-01-...

Technical data ▶ Page 1059

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drylin® T rail guides | Product range

Guide carriage – with manual clamp



TW-01-HKA



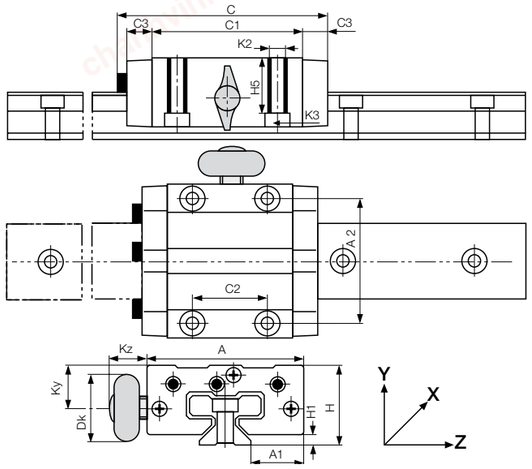
Complete system online

Order key

Type	Options
TW-01-15-HKA	

Guide carriage | Standard | Installation size | Manual clamp

Other dimensions as standard design
TW-01-... ▶ Page 1063



Dimensions [mm]

Part No.	Size	Kz	Ky	Dk	Manual 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, 500mm length

The manual clamp thread was developed for simple tasks. The creep behaviour of the clamped plastic causes a reduction in clamping force over time (up to 70%). Therefore no safety-relevant parts may be clamped. Please contact our technical consultant, if you require other options for the clamping.

Can be combined with:

TS-01-...

Technical data
▶ Page 1059

drylin® T rail guides | Product range

Guide carriage – heavy duty for extreme conditions



TW-02



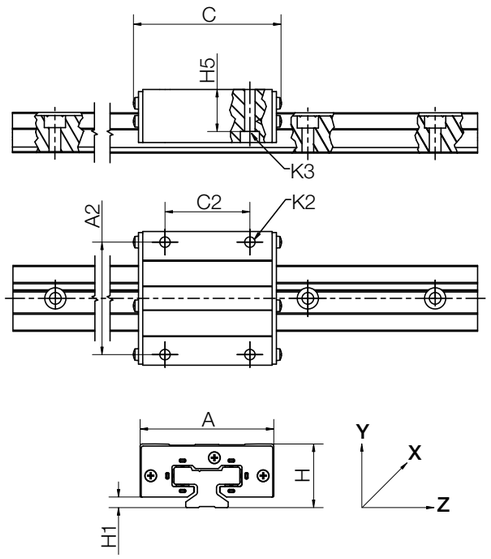
Complete system online

Order key

Type
TW-02-20

Guide carriage | Heavy duty | Installation size

Floating bearing upon 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 guide carriages type 02, installation size 20 and standard guide rail, 500mm length

Can be combined with:

TS-01-...

Technical data
▶ Page 1059

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drylin® T rail guides | Product range

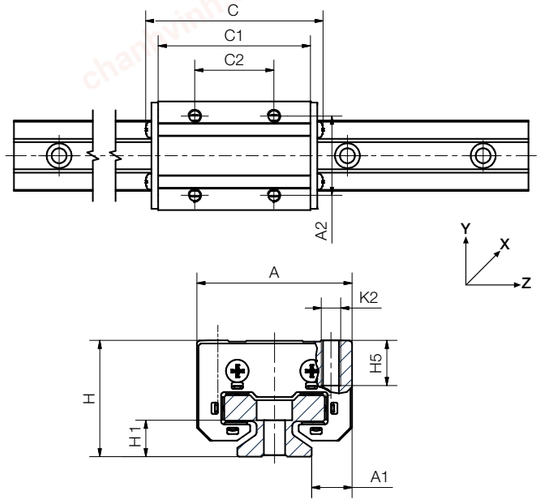
Compact for tough applications



TW-03



Complete system online



Order key

Type

TW-03-25

Guide carriage | Reduced weight | Installation size

Dimensions [mm]

Part No.	Weight [kg]	H ±0.35	A	C	A1	A2	C1	C2 ±0.35	H1	H5	K2	Tightening 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, 500mm length

Can only be combined with:

TS-01-20 TS-11-20

Technical data ▶ Page 1059

drylin® T rail guides

drylin® T rail guides | Product range

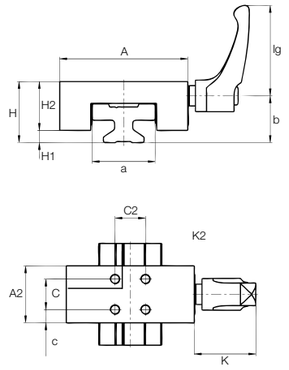
Accessories: Manual clamp

Compact design

Plastic clamping elements



TWBM-11



Order key

Type

TWBM-11-15

Manual clamp | Compact | Installation size

Dimensions [mm]

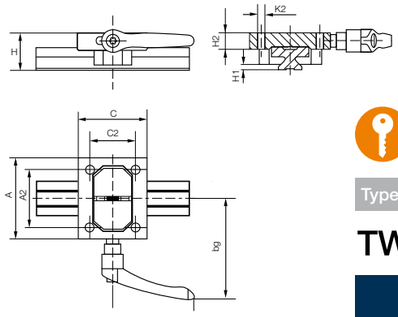
Part No.	Clamp force [N]	A	a	A2	H	H1	H2	K	K2	C	C2	c	lg	b
TWBM-11-15	180	47	22	23	24	4	20	30	M4	15	15	4	44	18.9
TWBM-11-20	180	63	31	28	30	5	24	30	M5	15	15	6.5	44	23.0
TWBM-11-25	400	70	34	35	36	5	31	39	M6	20	20	7.5	63.63	26.2
TWBM-11-30	500	90	40	38	42	6.5	35.5	47	M6	20	20	9	78	32.4

Standard design

with brass clamp



TWBM-01



Order key

Type

TWBM-01-25

Manual clamp | Standard | Installation size

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-...

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drylin® T rail guides | Product range

Miniature guide rails



TS-04



Complete system online

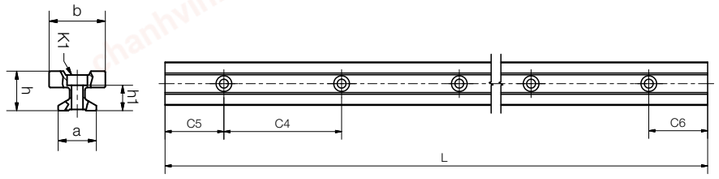
Order key

Type

TS-04-07

Guide rail | Miniature | Installation size

Curved rail profiles
▶ Page 962



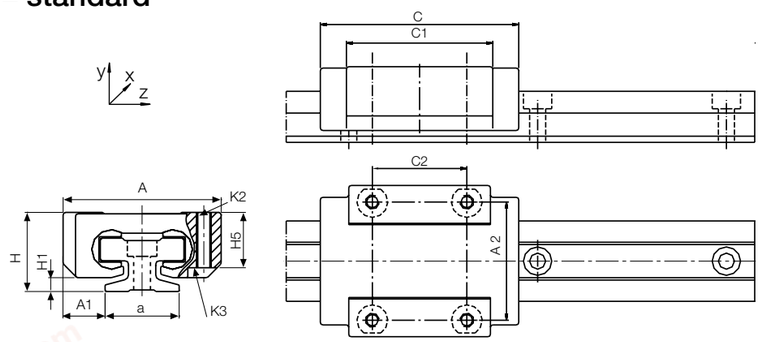
Dimensions [mm]

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 guide carriage – standard



TW-04



Dimensions [mm]

Part No.	Weight	H	A	C	A1	A2	C1	C2	H1	H5	K2 thread	Tightening 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	–
TW-04-12	34	13	27	34	7.5	20	22	15	2.2	9.5	M3	0.50	M2
TW-04-15	61	16	32	42	8.5	25	31	20	2.8	11	M3	0.50	M2

drylin® T rail guides | Product range

Adjustable miniature guide carriage



TWE-04



Complete system online

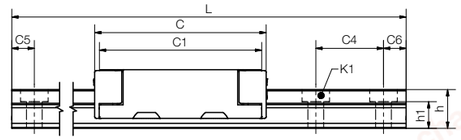
Order key

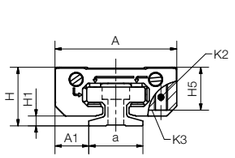
Type

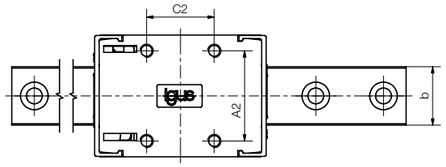
TW E -04-12

Guide carriage | 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 3mm edge wide



Right side: setting the height clearance



Left side: setting the lateral clearance

Can be combined with:



TS-04-...

Technical data
▶ Page 1059

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drylin® T rail guides | Ordering options



drylin® T replacement plastic slide elements (set)

Material iglidur® J ▶ Page 159

Material iglidur® J200 ▶ Page 261

Guide carriages	Part No. Sliding part set
TW-12-15	TEK-12-15 (J200)
TW-12-20	TEK-12-20 (J200)
TW-12-25	TEK-12-25 (J200)
TW-12-30	TEK-12-30 (J200)
TW-01-15	TEK-01-15 (J)
TW-01-20	TEK-01-20 (J)
TW-01-25	TEK-01-25 (J)
TW-01-30	TEK-01-30 (J)
TW-02-20	TEK-02-20 (J)
TW-02-25	TEK-02-25 (J)
TW-02-30	TEK-02-30 (J)
TW-04-09	TEK-04-09 (J)
TW-04-12	TEK-04-12 (J)
TWE-04-12	TEK-E-04-12 (J)
TW-04-15	TEK-04-15 (J)
TWE-04-15	TEK-E-04-15 (J)



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.

Part No.	Fymax., Fzmax. [N]
TW-01/-12-15	2,000
TW-01/-02/-12-20	3,700
TW-01/-02/-03/-12-25	5,000
TW-01/-02/-12-30	7,000

drylin® T – system design

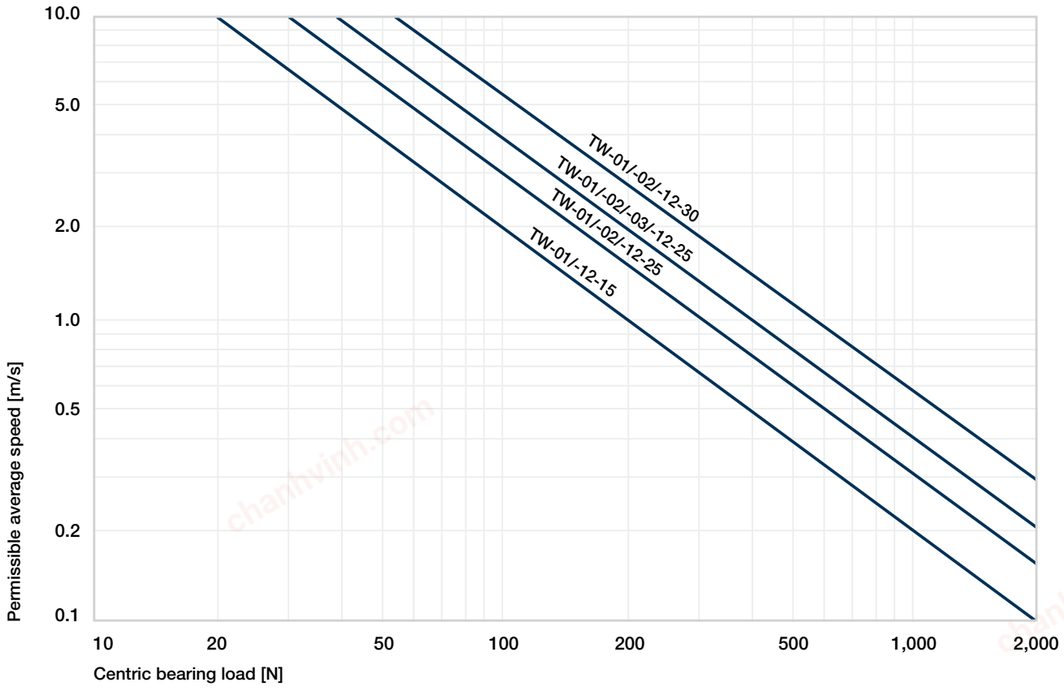

Diagram 04: Determination of the maximum permitted speed for the load



drylin® linear technology – drylin® R shaft guides

- Lubrication-free drylin® liners
- Resistance to dust and dirt
- Low coefficient of friction
- Extremely quiet operation
- Many adapter and housing options



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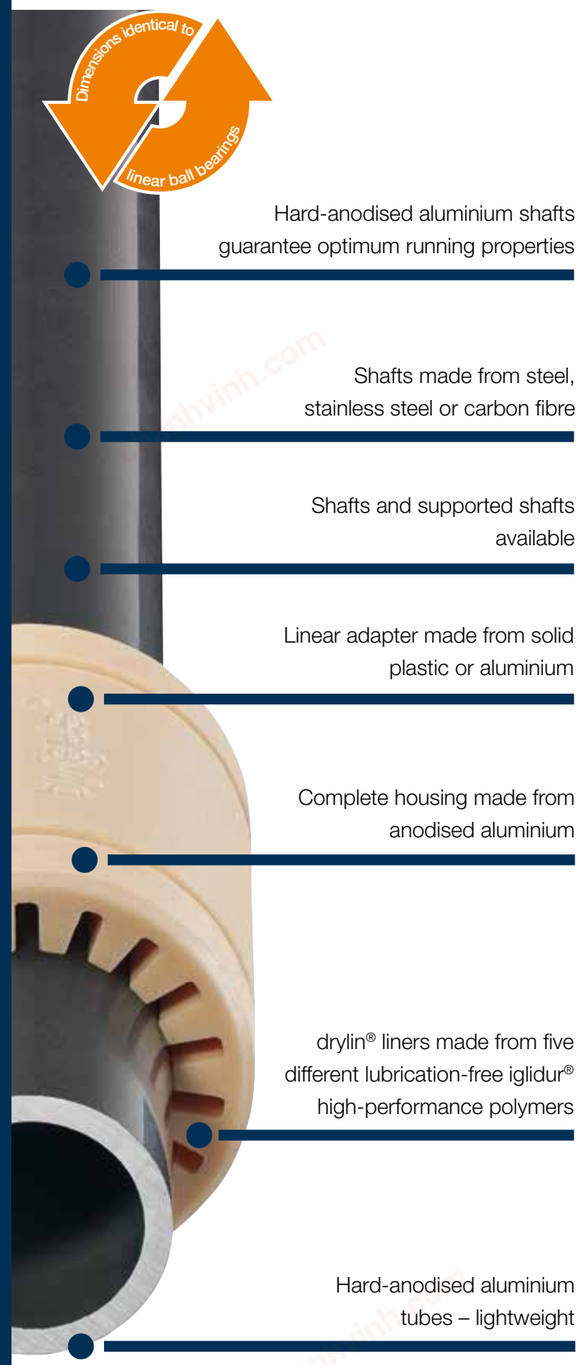
drylin® R shaft guides | Advantages

Extremely wear-resistant, robust in challenging environments and lightweight



Lubrication-free shaft guides – drylin® R

drylin® R shaft guides 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 end blocks and accessories available from stock
- Replaceable liners
- Stainless steel housings available

Typical application areas

- Agricultural machinery
- Automotive
- Medical technology
- Facade construction
- Packaging industry

Available from stock
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity.

Max. +200°C
Min. –40°C

Up to Ø 60mm
More dimensions upon request.

Imperial dimensions available
▶ From page 1612

Service life calculation
▶ www.igus-asean.com/drylin-expert

Cleanroom certificated
IPA Fraunhofer

Free from toxins
2011/65/EU (RoHS)

ESD-compatible
(electrostatic discharge)

drylin® R shaft guides | Product overview

Dimensions correspond to standard for recirculating ball bearings



Liners and press-fit bearings

- Made from iglidur® high-performance polymers
- Easy to fit
- Unaffected by dirt and dust
- Low coefficient of friction, optimised wear quality

▶ Page 1080



Linear plain bearings

- Dimensionally interchangeable with standard recirculating ball bearings
- Extremely lightweight solid plastic bearing
- Aluminium and stainless steel adapters equipped with iglidur® liners

▶ Page 1102



Closed pillow blocks

- Pre-assembled linear housing with drylin® liners
- Material: Anodised aluminium
- Fixed and floating bearing version available

▶ Page 1118



Linear bearings and pillow blocks, open design

- For supported shafts
- Round or with housing
- Clearance adjustment (optional)

▶ Page 1125



Flanged linear plain bearings

- Pre-assembled housings with drylin® liners
- Round or square flange
- Tandem flange housing for additional stability

▶ Page 1130



Quad block

- Closed and open design
- Torque-resistant quad block housing with four linear adapters
- Also available as tandem housing

▶ Page 1138

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drylin® R shaft guides | Application examples



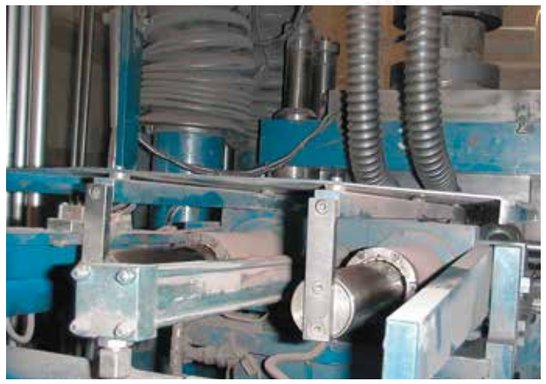
drylin® R linear plain bearings on supported aluminium shafts are used in this grinder to guide the cutting table. The drylin® components stand for extreme dirt resistance, accurate guidance and smooth operation.



Saw mill: linear guide with iglidur® J plastic liner for the angle stops. iglidur® J liners are best suited for most linear applications due to their 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 plain bearing, the maintenance rate of this compaction unit could be extended by two years, despite high stressing from powder particles and abrasive agents.

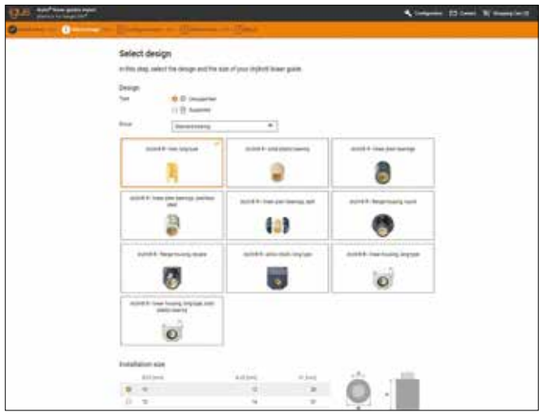


Since the sliding bearing should be maintenance-free, precise, compact, durable and very resilient, liners were mounted directly in the passages of the machine frame.



The production line should be adjusted without setup time being required. drylin® linear guides, which enable precise and fast adjustment, were used for this.

drylin® R shaft guides | Online tools



Expert for linear guides: System selection & service life calculation with CAD

Configure linear bearings and calculate their service life – 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. Select the bearing size, carriage, number and position. Then 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-asean.com/drylin-expert**

Download the online tool app now

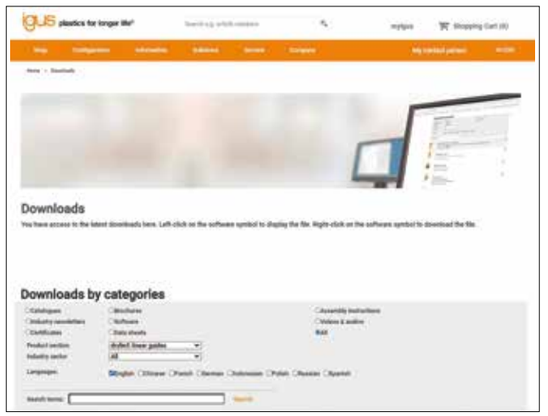
Download on the App Store



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-asean.com/drylin-CAD**



More information about the products can be found in the igus® download area

- Assembly instructions
- Assembly videos
- System design
- Catalogues

▶ **www.igus-asean.com/downloads**

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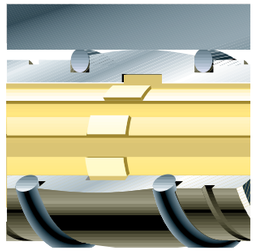
drylin® R linear plain bearings



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 locating spigot of the liner is carried out by a snap ring groove. drylin® R linear plain bearings, made from solid plastic, 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, e.g. 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 holes 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 series linear plain bearings, is clipped into the H7 housing hole. 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 slide 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 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 plain 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 all-rounder – iglidur® J	 The specialist – iglidur® J200	 The extreme – iglidur® X	 The endurance runner – iglidur® E7	 The FDA-compliant – iglidur® A180	 Blue Sky Thinking FDA/EU-compliant iglidur® A160
Application temperature	from –50°C to +90°C	from –50°C to +90°C	from –100°C to +250°C	from –50°C to +70°C	from –50°C to +90°C	from –50°C to +90°C
Best coefficient of friction with	Steel shaft	Hard-anodised aluminium	Hard-chromed steel	Steel/stainless steel shaft	Stainless steel shaft	Hardened stainless steel shafts
Volume resistance	> 10^{13}Ωcm	> 10^{8}Ωcm	< 10^{5}Ωcm	> 10^{9}Ωcm	> 10^{12}Ωcm	> 10^{12}Ωcm
Moisture absorption	1.3% weight	0.7% weight	0.5% weight	< 0.1% weight	0.2% weight	< 0.1% weight
Maximum service life with	Hard-anodised aluminium	Hard-anodised aluminium	Hardened stainless steel	Steel/stainless steel shaft	Stainless steel shaft	Hardened stainless steel shafts
Potential counter partner	All shaft materials	Hard-anodised aluminium	Hardened stainless steel	Steel/stainless steel shaft	All shaft materials	Stainless steel
Permissible stat. surface pressure	35MPa	23MPa	150MPa	18MPa	28MPa	15MPa
Part No.	JUM-...	J200UM-...	XUM-...	E7UM-...	A180UM-...	A160UM-...

drylin® R shaft guides | Technical data

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 range of split drylin® bearings, installation times can be reduced to a minimum.

Series 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 elongation 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 70MPa. However, only half of the load-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
- High static compressive strength
- Good chemical resistance
- Resistant to dirt
- Also suitable for soft and rough shafts

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 159
iglidur® J200 ▶ Page 261
iglidur® X ▶ Page 279
iglidur® E7 ▶ Page 267
iglidur® A160 ▶ Page 419
iglidur® A180 ▶ Page 401
iglidur® L100 ▶ Page 1654



Coefficient of 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 coefficient of sliding friction reduces with increasing load. Typical coefficient of friction 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. A firm fit could be determined in all the tests 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
Maximum, short-term	+190°C

Table 03: Temperature limits for iglidur® L100

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drylin® R shaft guides | Design standards

Floating bearings for linear plain bearings

drylin® 03 series linear plain bearings offer great advantages in applications with parallel shafts. With 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 pressure is not possible with the self-aligning drylin® linear bearings. In order to compensate parallelism errors between two shafts, the outer diameter is designed to be smaller than the housing hole diameter by 0.2 to 0.3mm (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 miss-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 are the pillow blocks in the OJUM-06 LL and RJUM-06 LL design series. The mounting of the bearing allows a parallelism adjustment between the shafts by ±3mm. 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°.

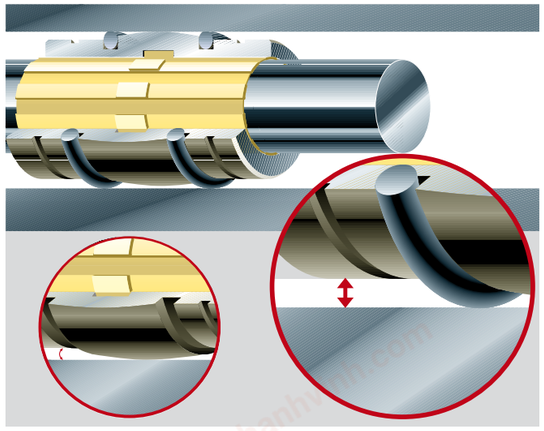

Diagram 02: By defined installation clearance and externally mounted O-rings, the self-aligning drylin® R bearings of the type series 03 can compensate parallelism errors. The spherical drylin® adapter can compensate for parallelism errors. A hard-anodisation protects the aluminium adapter from wear.

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 plain 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.

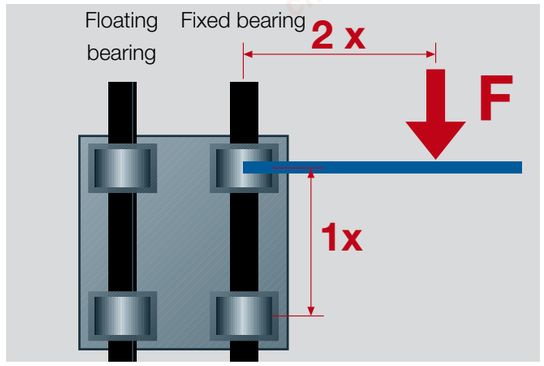

Figure 03: The 2:1 rule



RJUM-06-LL
▶ Page 1124

OJUM-06-LL
▶ Page 1125

RJUM-03/OJUM-03 series	±0.5°
RJUM-06-LL/OJUM-06-LL series	±3.5°

Table 04: Compensation of misalignment errors

RJUM-03/OJUM-03 series	±0.1mm
RJUM-06-LL/OJUM-06-LL series	±3.0mm

Table 05: Compensation of parallelism errors

drylin® R shaft guides | Installation instructions

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:

Design tips for drylin® linear plain bearings:
The mentioned values for "$F_{max.}$" relate to the performance of the iglidur® liners made from high-performance plastics and cannot be used as the 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-asean.com/drylin-expert

Recommended tolerance for the shaft: h6–h10
Surface roughness [Ra]: 0.15–0.6
Guide shafts round/supported **▶ Shafts page 1149**

Recommended housing hole H7
Linear plain bearings RJUM-01/03, TJUM-01/03, RJM, RJMP, RJ260(U)M02, press-fit bearings WLM, WLFM



Liners:
_UM-01, _UMO-01, _UM-11, _UMO-11, _UM-02
● Interlocking with the housing bore ● Locating spigot is supported by a snap ring groove ● Anti-rotation feature through engagement of the pin in hole Ø z



Press-fit bearings:
WLM, WLFM
● Press-fit installation into the H7 housing hole
▶ Assembly instructions, **page 57**



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)



Solid plastic bearings:
RJM, RJI-01
● Fastening with circlips according to DIN 471 or 472 (not included) ● The E9 inner tolerance applies only after the press-fit



Solid plastic bearings:
RJMP
● Easy assembly by soft press-fit
● Secured by DIN 471 or 472 circlips (not included)



Linear plain bearings:
RJUM-02
● Secured by press-fit in steel housing hole H7 or aluminium housing hole K7
● Alternatively, the adapter can be glued with commercially available 2-component adhesive into a housing



Compact bearings:
RJ260 (UM-02)
● Locating spigot and press-fit into housing hole 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
● Adapter secured with setscrews (not included)



Quad blocks: RQA, RGA
Tandem design: RTA
● The bearing in the housing is secured by DIN 472 circlips



Linear housings:
RGAS
● The bearing in the housing is secured by DIN 471 circlips



Quad blocks: OQA, OGA,
Linear housings: OGAS,
Tandem design: OTA
● The bearings is secured by screws



Pillow blocks: RJUM/E/T-05, RJUM-06/-LL, OJUM/E-06/-LL, Flange housings: FJUM/T-01/02
quad blocks: RGA, OGA
Tandem designs: RTA, OTA
Linear bearings: RGAS, OGAS
● Mounting screws of the housing DIN 912-8.8 ● Circlips according to DIN 7980

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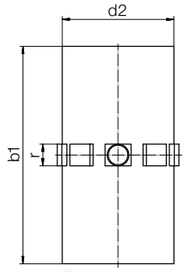
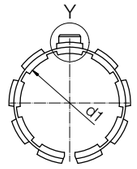
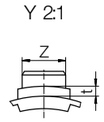
drylin® R liners | Product range

Long, closed design for shafts – made from iglidur® J (the all-rounder)









Order key

Type	Size
J U M	-01-10

iglidur® J	Liner	Metric	Standard	Inner Ø d1
■				

The all-rounder for all shaft surfaces in indoor and outdoor applications

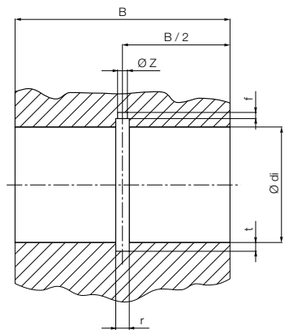
[78] According to igus® testing method ▶ Page 1146
Please note: Installation instructions ▶ Page 1079
Min. –50°C
Max. +90°C

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	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	2.0	6.5	70.00	**JUM-01-60[79]**

Housing hole for 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

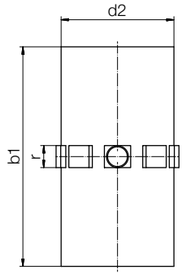

FJUM-01/-02

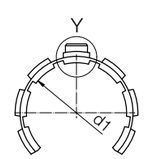
Imperial dimensions ▶ Page 1612

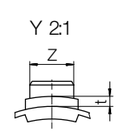
drylin® R liners | Product range

Long, open design for supported shafts – made from iglidur® J (the all-rounder)









Order key

Type	Size
J U M O	-01-10

iglidur® J	Liner	Metric	Open	Standard	Inner Ø d1
■					

The all-rounder for all shaft surfaces in indoor and outdoor applications

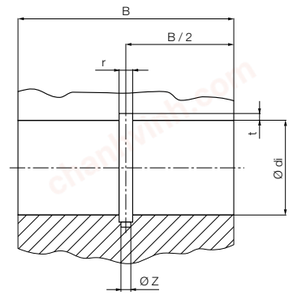
[78] According to igus® testing method ▶ Page 1146
Please note: Installation instructions ▶ Page 1079
Min. –50°C
Max. +90°C

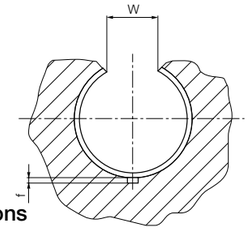
Dimensions [mm]

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	0.90	**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	2.0	6.5	60.10	**JUMO-01-60[79]**

Housing hole for 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

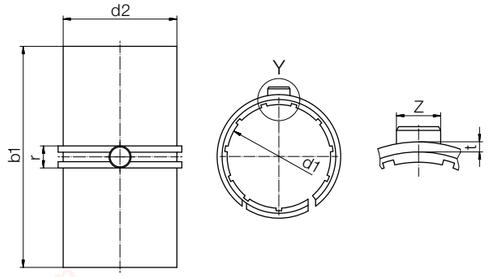
Imperial dimensions ▶ Page 1612

chanhvinh.com

drylin® R liners | Product range

Long, closed design, precise for shafts – made from iglidur® J (the all-rounder)





Order key

Type	Size
J U M-11-10	

iglidur® J	Liner	Metric	Precise	Inner Ø d1

- Max. bearing clearance reduced by 50%
- Increased contact surface: longer service life

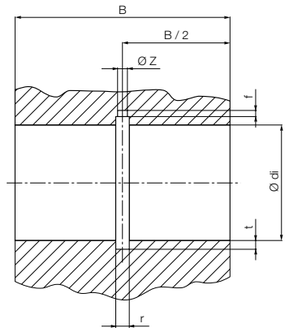
[78] According to igus® testing method ▶ Page 1146
Please note: Installation instructions ▶ Page 1079
Min. –50°C
Max. +90°C

Dimensions [mm]

d1	d1 tolerance[78]	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 hole for 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

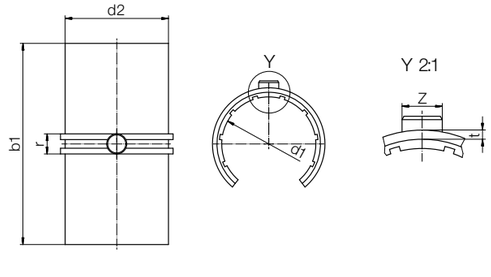

FJUM-01/-02

drylin® R shaft guides

drylin® R liners | Product range

Long, open design, precise for supported shafts – made from iglidur® J (the all-rounder)





Order key

Type	Size
J U M O-11-10	

iglidur® J	Liner	Metric	Open	Precise	Inner Ø d1

- Max. bearing clearance reduced by 50%
- Increased contact surface: longer service life

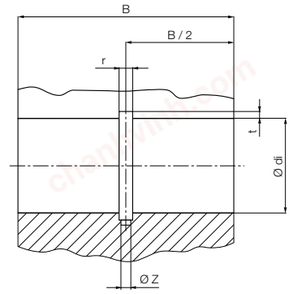
[78] According to igus® testing method ▶ Page 1146
Please note: Installation instructions ▶ Page 1079
Min. –50°C
Max. +90°C

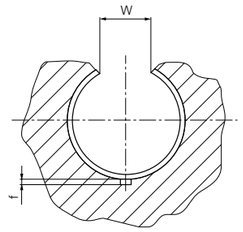
Dimensions [mm]

d1	d1 tolerance[78]	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 hole for 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

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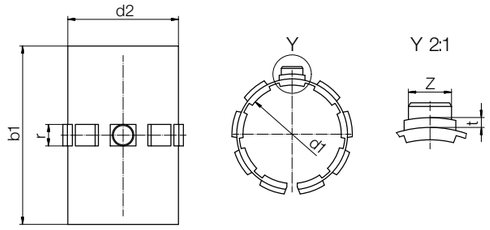
drylin® R liners | Product range

Short, closed design for shafts – made from iglidur® J (the all-rounder)





Order key

Type	Size
J U M-02-10	

iglidur® J	Liner	Metric	Compact	Inner Ø d1

The all-rounder for all shaft surfaces in indoor and outdoor applications

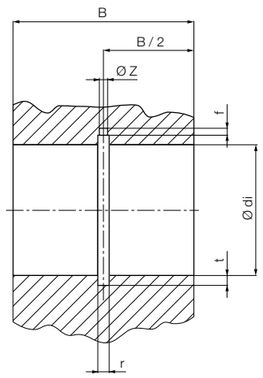
78) According to igus® testing method ▶ Page 1146
Please note: Installation instructions ▶ Page 1079
Min. –50°C
Max. +90°C

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 hole for 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

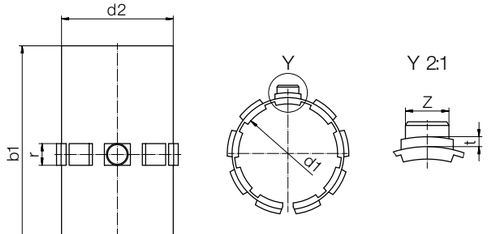

RJUM-05/RJUME-05
TJUM-05/RJUMT-05


FJUMT-01/-02

drylin® R liners | Product range

Long, closed design for shafts – made from iglidur® J200 (the specialist)





Order key

Type	Size
J200 U M-01-10	

iglidur® J200	Liner	Metric	Standard	Inner Ø d1

The "specialist" with the best running performance on aluminium

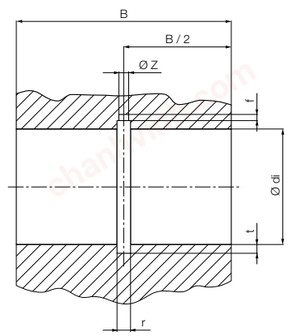
78) According to igus® testing method ▶ Page 1146
Please note: Installation instructions ▶ Page 1079
Min. –50°C
Max. +90°C

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	**J200UM-01-10**
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.50	**J200UM-01-12**
16	+0.030 +0.070	18	35	3.5	0.8	3.5	2.54	**J200UM-01-16**
20	+0.030 +0.070	23	44	5.0	0.8	3.5	5.66	**J200UM-01-20**
25	+0.030 +0.070	28	57	5.0	0.8	4.0	9.51	**J200UM-01-25**
30	+0.040 +0.085	34	67	5.0	0.8	4.0	17.27	**J200UM-01-30**
40	+0.040 +0.085	44	79	6.0	1.3	5.0	26.75	**J200UM-01-40**
50	+0.050 +0.150	55	99	7.0	1.3	6.0	52.38	**J200UM-01-50**

Housing hole for J200UM-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	**J200UM-01-10**
12	14	32	3.0	1.0	1.5	3.1	**J200UM-01-12**
16	18	36	3.5	1.0	1.7	3.6	**J200UM-01-16**
20	23	45	5.0	1.0	2.0	3.6	**J200UM-01-20**
25	28	58	5.0	1.0	2.0	4.1	**J200UM-01-25**
30	34	68	5.0	1.0	2.0	4.1	**J200UM-01-30**
40	44	80	6.0	1.5	2.5	5.1	**J200UM-01-40**
50	55	100	7.0	1.5	2.5	6.1	**J200UM-01-50**



Can be combined with:


RJUM-01/-03
TJUM-01/-03


RJUM-06/-06-LL


FJUM-01/-02

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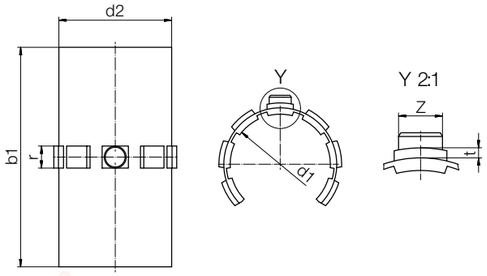
drylin® R liners | Product range

Long, open design for supported shafts – made from iglidur® J200 (the specialist)





Order key

Type	Size
J200 U M O	01-10

iglidur® J200	Liner	Metric	Open	Standard	Inner Ø d1

The "specialist" with the best running performance on aluminium

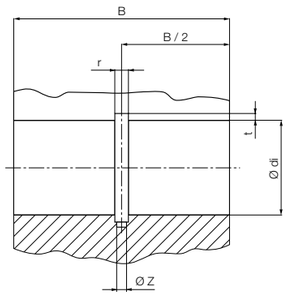
[78] According to igus® testing method ▶ Page 1146
Please note: Installation instructions ▶ Page 1079
Min. –50°C
Max. +90°C

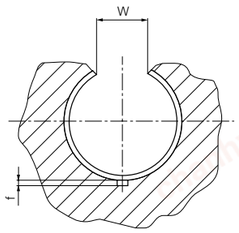
Dimensions [mm]

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	1.04	**J200UMO-01-10**
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.34	**J200UMO-01-12**
16	+0.030 +0.070	18	35	3.5	0.8	3.5	1.98	**J200UMO-01-16**
20	+0.030 +0.070	23	44	5.0	0.8	3.5	4.80	**J200UMO-01-20**
25	+0.030 +0.070	28	57	5.0	0.8	4.0	8.05	**J200UMO-01-25**
30	+0.040 +0.085	34	67	5.0	0.8	4.0	14.30	**J200UMO-01-30**
40	+0.040 +0.085	44	79	6.0	1.3	5.0	23.31	**J200UMO-01-40**

Housing hole for J200UMO-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	**J200UMO-01-10**
12	14	32	9.0	3.0	1.0	1.5	3.1	**J200UMO-01-12**
16	18	36	11.6	3.5	1.0	1.7	3.6	**J200UMO-01-16**
20	23	45	12.0	5.0	1.0	2.0	3.6	**J200UMO-01-20**
25	28	58	14.5	5.0	1.0	2.0	4.1	**J200UMO-01-25**
30	34	68	16.6	5.0	1.0	2.0	4.1	**J200UMO-01-30**
40	44	80	21.0	6.0	1.5	2.5	5.1	**J200UMO-01-40**





Can be combined with:

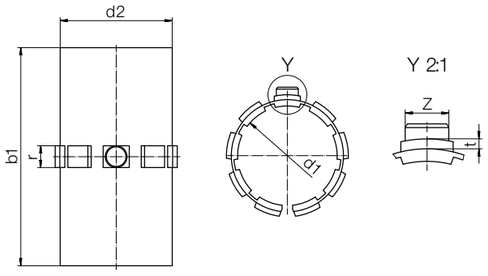

OJUM-01/-03


OJUM-06/-06-LL

drylin® R liners | Product range

Long, closed design for shafts – made from iglidur® E7 (the endurance runner)





Order key

Type	Size
E7 U M	01-10

iglidur® E7	Liner	Metric	Standard	Inner Ø d1

The "endurance runner" up to 8 times longer service life on steel shafts

[78] According to igus® testing method ▶ Page 1146
Please note: Installation instructions ▶ Page 1079
Min. –50°C
Max. +70°C

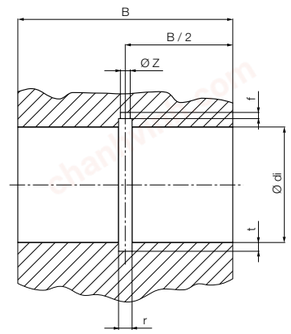
Dimensions [mm]

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-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	17.30	**E7UM-01-40**
50	+0.050 +0.150	55	99	7.0	1.3	6.0	36.30	**E7UM-01-50[79]**
60	+0.050 +0.150	65	124	8.0	2.5	6.5	54.80	**E7UM-01-60[79]**

Housing hole for 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

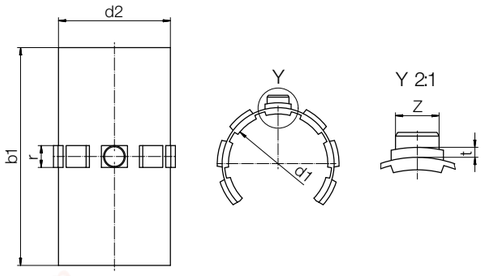
Imperial dimensions ▶ Page 1612

chanhvinh.com

drylin® R liners | Product range

Long, open design for supported shafts – made from iglidur® E7 (the endurance runner)





Order key

Type	Size
E7 U M O	01-10

iglidur® E7 | Liner | Metric | Open | Standard | Inner Ø d1

The "endurance runner" up to 8 times longer service life on steel shafts

78) According to igus® testing method ▶ Page 1146
Please note: Installation instructions ▶ Page 1079
Min. –50°C
Max. +70°C

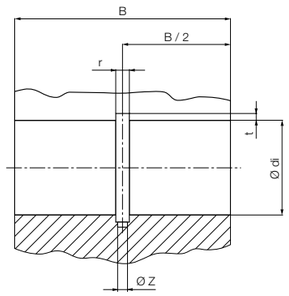
Dimensions [mm]

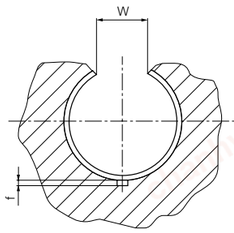
d1	d1 tolerance[78]	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.030 +0.070	12	28	3.0	0.8	2.5	0.73	**E7UMO-01-10**
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.01	**E7UMO-01-12**
16	+0.030 +0.070	18	35	3.5	0.8	3.5	1.45	**E7UMO-01-16**
20	+0.030 +0.070	23	44	5.0	0.8	3.5	3.25	**E7UMO-01-20**
25	+0.030 +0.070	28	57	5.0	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	17.30	**E7UMO-01-40**
50	+0.050 +0.150	55	99	7.0	1.3	6.0	36.40	**E7UMO-01-50[79]**
60	+0.050 +0.150	65	124	8.0	2.5	6.5	54.80	**E7UMO-01-60[79]**

Housing hole for 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:

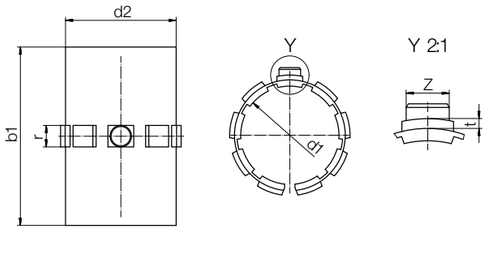

OJUM-01/-03


OJUM-06/-06-LL

drylin® R liners | Product range

Short, closed design for shafts – made from iglidur® E7 (the endurance runner)





Order key

Type	Size
E7 U M	02-10

iglidur® E7 | Liner | Metric | Compact | Inner Ø d1

The "endurance runner" up to 8 times longer service life on steel shafts

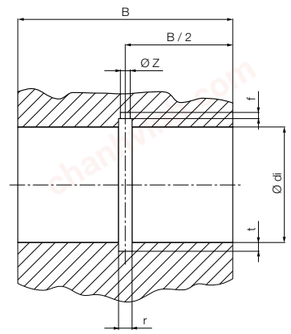
78) According to igus® testing method ▶ Page 1146
Please note: Installation instructions ▶ Page 1079
Min. –50°C
Max. +70°C

Dimensions [mm]

d1	d1 tolerance[78]	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.030 +0.070	12	25	3.0	0.8	2.5	0.73	**E7UM-02-10**
12	+0.030 +0.070	14	27	3.0	0.8	3.0	1.01	**E7UM-02-12**
16	+0.030 +0.070	18	29	3.5	0.8	3.5	1.45	**E7UM-02-16**
20	+0.030 +0.070	23	29	5.0	0.8	3.5	3.25	**E7UM-02-20**
25	+0.030 +0.070	28	39	5.0	0.8	4.0	5.44	**E7UM-02-25**
30	+0.040 +0.085	34	49	5.0	0.8	4.0	9.88	**E7UM-02-30**
40	+0.040 +0.085	44	59	6.0	1.3	5.0	17.30	**E7UM-02-40**

Housing hole for 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

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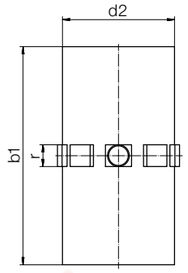
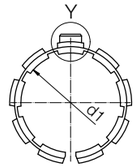
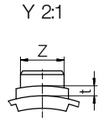
drylin® R liners | Product range

Long, closed design for shafts, two-piece – made from iglidur® X (the extreme)









Order key

Type	Size
X U M-01-12	

iglidur® X	Liner	Metric	Standard	Inner Ø d1

The "extreme", resistant to temperature and chemicals on stainless steel and chromed shafts

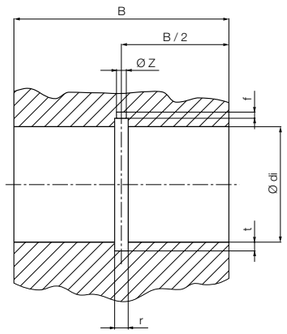
78) According to igus® testing method ▶ Page 1146
Please note: Installation instructions ▶ Page 1079
Min. –100°C
Max. +250°C

Dimensions [mm]

d1	d1 tolerance78)	d2	b1	r	t	Z	Weight [g]	Part No.
12	+0.020 +0.060	14	31	3.0	0.8	3.0	1.50	**XUM-01-12**
14	+0.020 +0.060	18	35	3.5	0.8	3.5	2.13	**XUM-01-14**
16	+0.020 +0.060	18	35	3.5	0.8	3.5	2.20	**XUM-01-16**
20	+0.030 +0.070	23	44	5.0	0.8	3.5	4.90	**XUM-01-20**
25	–0.030 +0.010	28	57	5.0	0.8	4.0	8.23	**XUM-01-25**
30	–0.040 +0.010	34	67	5.0	0.8	4.0	14.95	**XUM-01-30**
40	±0.000 +0.050	44	79	6.0	1.3	5.0	23.16	**XUM-01-40**

Housing hole for 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	30	3.5	1.0	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

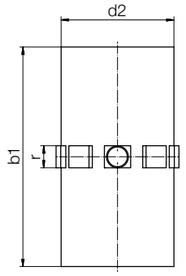

FJUM-01/-02

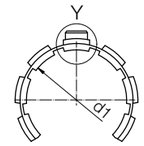
drylin® R shaft guides

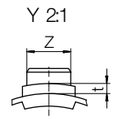
drylin® R liners | Product range

Long, open design for supported shafts, two-piece – made from iglidur® X (the extreme)









Order key

Type	Size
X U M O-01-10	

iglidur® X	Liner	Metric	Open	Standard	Inner Ø d1

The "extreme", resistant to temperature and chemicals on stainless steel and chromed shafts

78) According to igus® testing method ▶ Page 1146
Please note: Installation instructions ▶ Page 1079
Min. –100°C
Max. +250°C

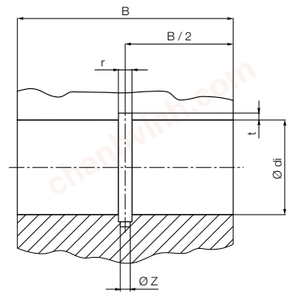
Dimensions [mm]

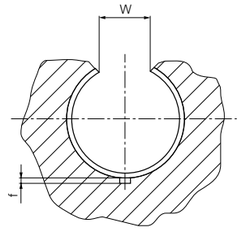
d1	d1 tolerance78)	d2	b1	r	t	Z	Weight [g]	Part No.
10	–0.020 +0.020	12	28	3.0	0.8	2.5	1.00	**XUMO-01-10**110)
12	+0.020 +0.060	14	31	3.0	0.8	3.0	1.20	**XUMO-01-12**
16	+0.020 +0.060	18	35	3.5	0.8	3.5	2.30	**XUMO-01-16**
20	+0.030 +0.070	23	44	5.0	0.8	3.5	4.30	**XUMO-01-20**
25	–0.030 +0.010	28	57	5.0	0.8	4.0	6.80	**XUMO-01-25**
30	–0.040 +0.010	34	67	5.0	0.8	4.0	13.30	**XUMO-01-30**
40	±0.000 +0.050	44	79	6.0	1.3	5.0	22.60	**XUMO-01-40**

Housing hole for 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

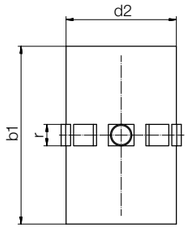

OJUM-06/-06-LL

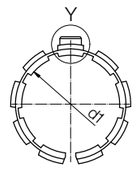
chanhvinh.com

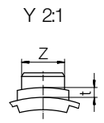
drylin® R liners | Product range

Short, closed design for shafts, two-pieces – made from iglidur® X (the extreme)









Order key

Type	Size
X U M	-02-12

iglidur® X	Liner	Metric	Compact	Inner Ø d1

The "extreme", resistant to temperature and chemicals on stainless steel and chromed shafts

78) According to igus® testing method ▶ Page 1146

Please note: Installation instructions ▶ Page 1079

Min. –100°C

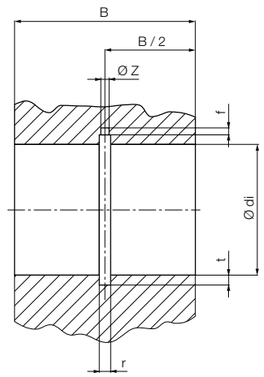
Max. +250°C

Dimensions [mm]

d1	d1 tolerance78)	d2	b1	r	t	Z	Weight [g]	Part No.
12	+0.020 +0.060	14	27	3.0	0.8	3.0	1.3	**XUM-02-12**
16	+0.020 +0.060	18	29	3.5	0.8	3.5	2.5	**XUM-02-16**
20	+0.030 +0.070	23	29	5.0	0.8	3.5	3.4	**XUM-02-20**
25	–0.030 +0.010	28	39	5.0	0.8	4.0	5.6	**XUM-02-25**
30	–0.040 +0.010	34	49	5.0	0.8	4.0	12.0	**XUM-02-30**
40	±0.000 +0.050	44	59	6.0	1.3	5.0	20.0	**XUM-02-40**

Housing hole for 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

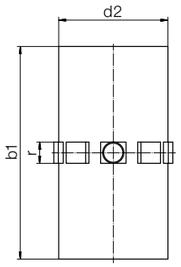
My sketches

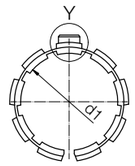
chanhvinh.com

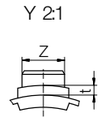
drylin® R liners | Product range

Long, closed design for round shafts – made from iglidur® A180 (FDA-compliant)









Order key

Type	Size
A180 U M-01-10	

iglidur® A180	Liner	Metric	Standard	Inner Ø d1

The FDA-compliant for the food and pharmaceutical industry

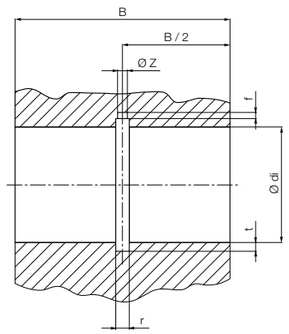
[78] According to igus® testing method ▶ Page 1146
Please note: Installation instructions ▶ Page 1079
Min. –50°C
Max. +90°C

Dimensions [mm]

d1	d1 tolerance[78]	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.000 +0.020	12	28	3.0	0.8	2.5	1.08	**A180UM-01-10**
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.47	**A180UM-01-12**
16	+0.030 +0.070	18	35	3.5	0.8	3.5	2.16	**A180UM-01-16**
20	+0.030 +0.070	23	44	5.0	0.8	3.5	4.80	**A180UM-01-20**
25	+0.030 +0.070	28	57	5.0	0.8	4.0	8.07	**A180UM-01-25**
30	+0.040 +0.085	34	67	5.0	0.8	4.0	14.65	**A180UM-01-30**
35	+0.040 +0.085	39	69	5.0	0.8	4.0	17.84	**A180UM-01-35**
40	+0.040 +0.085	44	79	6.0	1.3	5.0	22.70	**A180UM-01-40**
50	+0.050 +0.150	55	99	7.0	1.3	6.0	44.44	**A180UM-01-50**

Housing hole for A180UM-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	**A180UM-01-10**
12	14	32	3.0	1.0	1.5	3.1	**A180UM-01-12**
16	18	36	3.5	1.0	1.7	3.6	**A180UM-01-16**
20	23	45	5.0	1.0	2.0	3.6	**A180UM-01-20**
25	28	58	5.0	1.0	2.0	4.1	**A180UM-01-25**
30	34	68	5.0	1.0	2.0	4.1	**A180UM-01-30**
35	39	70	5.0	1.0	2.0	4.1	**A180UM-01-35**
40	44	80	6.0	1.5	2.5	5.1	**A180UM-01-40**
50	55	100	7.0	1.5	2.5	6.1	**A180UM-01-50**



Can be combined with:



RJUM-01/-03
TJUM-01/-03



RJUM-06/-06-LL

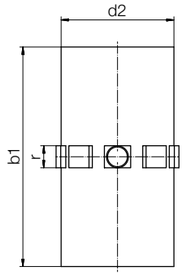


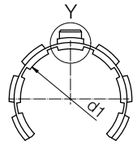
FJUM-01/-02

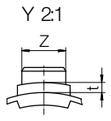
drylin® R liners | Product range

Long, open design for supported shafts – made from iglidur® A180 (FDA-compliant)









Order key

Type	Size
A180 U M O-01-10	

iglidur® A180	Liner	Metric	Open	Standard	Inner Ø d1

The FDA-compliant for the food and pharmaceutical industry

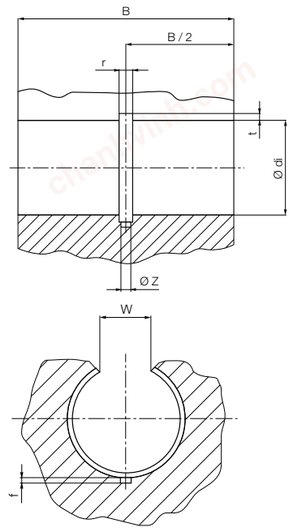
[78] According to igus® testing method ▶ Page 1146
Please note: Installation instructions ▶ Page 1079
Min. –50°C
Max. +90°C

Dimensions [mm]

d1	d1 tolerance[78]	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.000 +0.020	12	28	3.0	0.8	2.5	1.08	**A180UMO-01-10**
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.47	**A180UMO-01-12**
16	+0.030 +0.070	18	35	3.5	0.8	3.5	2.16	**A180UMO-01-16**
20	+0.030 +0.070	23	44	5.0	0.8	3.5	4.80	**A180UMO-01-20**
25	+0.030 +0.070	28	57	5.0	0.8	4.0	8.07	**A180UMO-01-25**
30	+0.040 +0.085	34	67	5.0	0.8	4.0	14.65	**A180UMO-01-30**
35	+0.040 +0.085	39	69	5.0	0.8	4.0	17.84	**A180UMO-01-40**
40	+0.040 +0.085	44	79	6.0	1.3	5.0	22.70	**A180UMO-01-50**

Housing hole for A180UMO-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	**A180UMO-01-10**
12	14	32	9.0	3.0	1.0	1.5	3.1	**A180UMO-01-12**
16	18	36	11.6	3.5	1.0	1.7	3.6	**A180UMO-01-16**
20	23	45	12.0	5.0	1.0	2.0	3.6	**A180UMO-01-20**
25	28	58	14.5	5.0	1.0	2.0	4.1	**A180UMO-01-25**
30	34	68	16.6	5.0	1.0	2.0	4.1	**A180UMO-01-30**
40	44	80	21.0	6.0	1.5	2.5	5.1	**A180UMO-01-40**
50	55	100	25.5	7.0	1.5	2.5	6.1	**A180UMO-01-50**



Can be combined with:



OJUM-01/-03
TJUM-01/-03



OJUM-06/-06-LL

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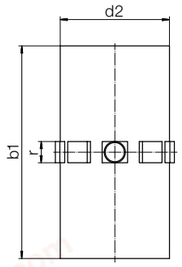
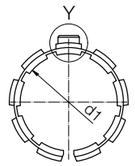
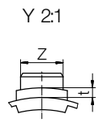
drylin® R liners | Product range

Long, closed design for round shafts – made from iglidur® A160 (compliant with Regulation (EU) No. 10/2011 and FDA guidelines)









Order key

Type	Size
A160 U M-01-10	

iglidur® A160	Liner	Metric	Standard	Inner Ø d1

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines for longer service life on hardened stainless steel shafts

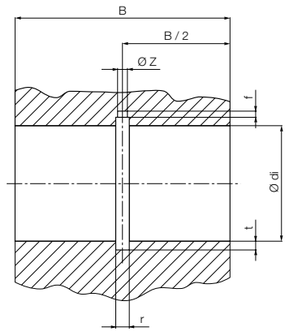
[78] According to igus® testing method ▶ Page 1146
Please note: Installation instructions ▶ Page 1079
Min. –50°C
Max. +90°C

Dimensions [mm]

d1	d1 tolerance[78]	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.03 +0.07	12	28	3.0	0.8	2.5	0.7	**A160UM-01-10**
12	+0.03 +0.07	14	31	3.0	0.8	3.0	1.0	**A160UM-01-12**
16	+0.03 +0.07	18	35	3.5	0.8	3.5	1.5	**A160UM-01-16**
20	+0.03 +0.07	23	44	5.0	0.8	3.5	3.3	**A160UM-01-20**
25	+0.03 +0.07	28	57	5.0	0.8	4.0	5.4	**A160UM-01-25**
30	+0.04 +0.09	34	67	5.0	0.8	4.0	9.9	**A160UM-01-30**
40	+0.04 +0.09	44	79	6.0	1.3	5.0	17.3	**A160UM-01-40**
50	+0.05 +0.15	55	99	7.0	1.3	6.0	36.3	**A160UM-01-50**

Housing hole for A160UM-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	**A160UM-01-10**
12	14	32	3.0	1.0	1.5	3.1	**A160UM-01-12**
16	18	36	3.5	1.0	1.7	3.6	**A160UM-01-16**
20	23	45	5.0	1.0	2.0	3.6	**A160UM-01-20**
25	28	58	5.0	1.0	2.0	4.1	**A160UM-01-25**
30	34	68	5.0	1.0	2.0	4.1	**A160UM-01-30**
40	44	80	6.0	1.5	2.5	5.1	**A160UM-01-40**
50	55	100	7.0	1.5	2.5	6.1	**A160UM-01-50**



Can be combined with:


RJUM-01/-03
TJUM-01/-03


RJUM-06/-06-LL


FJUM-01/-02

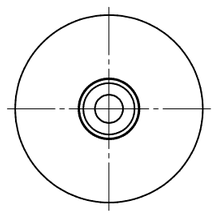
My sketches

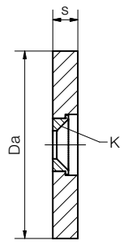
chanhvinh.com

drylin® R sliding discs | Product range

Large force displacement 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

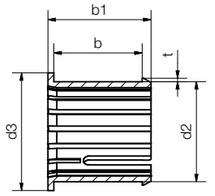
Dimensions [mm]

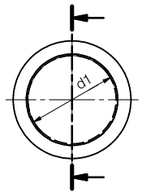
Outer Ø Da	Wear limit	Width s	K For countersunk screw	Max. static load capacity [N]	Part No.
40	1.5	6 ± 0.05	M6	28,500	**RSDJ-40-06**
60	2.5	8 ± 0.05	M8	66,000	**RSDJ-60-08**
80	2.5	8 ± 0.05	M8	120,000	**RSDJ-80-08**

drylin® R clip in | Product range

Clip-on liners







Order key

Type	Size
J U C M	-1216-16

iglidur® J | Liner | Clip-on | Metric | Inner Ø d1 | Outer Ø d2 | Length b

- Quick installation by hand for sheet thicknesses of 12 to 30mm
- No locating spigot required

[78] According to igus® testing method ▶ Page 1146
[82] Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079
Min. –50°C
Max. +90°C

Dimensions [mm]

d1	d2	d3	b +0.05 / +0.25	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**	
15	17	22	15	18.0	0.8	**JUCM-1517-15**	New
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	32.0	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**	

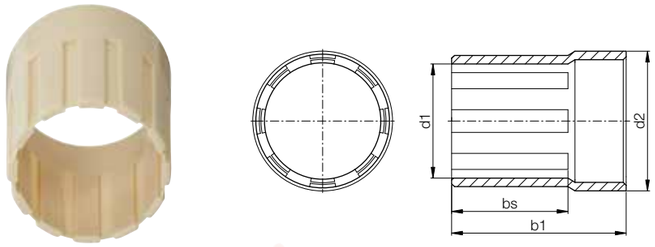
Technical data

Part No.	d1 tolerance[78] [mm]	Fmax. dynamic[82] p = 5MPa [N]	Fmax. static[82] p = 35MPa [N]	Weight [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-1517-15	+0.04 +0.10	380	1,900	1.4
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

chanhvinh.com

drylin® R press-fit bearings | Product range

Made from iglidur® L100



Order key

Type	Size
W L M	-0608-10

iglidur® L100	L1 series	Metric	Inner Ø d1	Outer Ø d2	Length

- Extreme wear resistance
- Low coefficient of friction

80) Measured with plug gauge
Please note: Installation instructions ▶ Page 1079
Material properties ▶ Page 1654
Min. –40°C
Max. +100°C

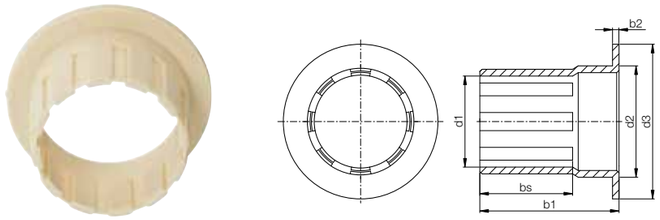
Dimensions [mm]

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 press-fit bearings | Product range

Made from iglidur® L100

drylin® R shaft guides



Order key

Type	Size
W L F M	-1214-15

iglidur® L100	L1 series	With flange	Metric	Inner Ø d1	Outer Ø d2	Length

- Extreme wear resistance
- Low coefficient of friction

80) Measured with plug gauge
Please note: Installation instructions ▶ Page 1079
Material properties ▶ Page 1654
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**

chanhvinh.com

drylin® R solid plastic bearings | Product range

Standard design made from iglidur® J (the all-rounder)



Order key

Type	Size
R J M	-01-10

Closed	iglidur® J	Metric	Standard	Inner Ø d1

- Assembly by press-fitting
- Secured by circlips

Min. –20°C
Max. +60°C

[78] According to igus® testing method ▶ Page 1146
[82] Design tips ▶ Page 1078
[83] Applies by room temperature: press-fit decrease with time depending on the temperature
Please note: Installation instructions ▶ Page 1079
Imperial dimensions ▶ Page 1613

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**

Technical data

Part No.	d1 tolerance[78]	Fmax. dynamic[82] p = 2.5MPa	Fmax. static[82] p = 17.5MPa	Weight	Press-fit force[83]
	[mm]	[N]	[N]	[g]	[N]
RJM-01-08	+0.025 +0.061	250	1,750	4	400
RJM-01-10	+0.025 +0.061	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

Can be combined with:


RQA-04


RTA-04


RGA-04


RGAS-04

drylin® R solid plastic bearings | Product range

Standard design, precise, made from iglidur® J (the all-rounder)



Order key

Type	Size
R J M P	-01-10

Closed	iglidur® J	Metric	Precise	Standard	Inner Ø d1

- Easy assembly by soft press-fit
- Reduced bearing clearance
- Secured by circlips

[78] According to igus® testing method ▶ Page 1146
[82] Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079
Min. –20°C
Max. +60°C
Imperial dimensions ▶ Page 1613

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**

Technical data

Part No.	d1 tolerance[78]	Fmax. dynamic[82] p = 2.5MPa	Fmax. static[82] p = 17.5MPa	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

Can be combined with:


RQA-04


RTA-04


RGA-04


RGAS-04

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drylin® R solid plastic 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	Inner Ø d1

- Alternative to ball bearings with Japanese dimension
- Quickly assembled
- Secured by circlips

78) According to igus® testing method ▶ Page 1146
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079
Material properties ▶ Page 1652

Min. –20°C
Max. +60°C

Dimensions [mm]

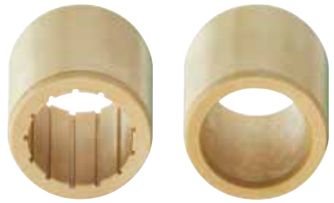
d1	d2	B	B1	s	dn	Part No.
8	15	24	17.5	1.1	14.3	**RJ4JP-01-08**
10	19	29	22.0	1.3	18.0	**RJ4JP-01-10**
12	21	30	23.0	1.3	20.0	**RJ4JP-01-12**
16	28	37	26.5	1.6	26.6	**RJ4JP-01-16**
20	32	42	30.5	1.6	30.3	**RJ4JP-01-20**
25	40	59	41.1	1.85	37.5	**RJ4JP-01-25**
30	45	64	44.6	1.85	42.5	**RJ4JP-01-30**

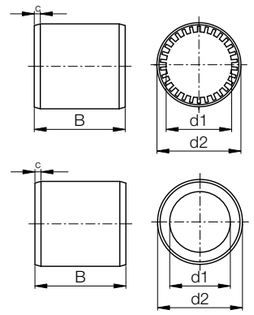
Technical data

Part No.	d1 tolerance78)	Fmax. dynamic82) p = 5MPa	Fmax. static82) p = 35MPa	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

drylin® R solid plastic 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	Inner Ø d1

- 2 variations: RJ260M (with plain design) and RJ260UM (grooved structure)

78) According to igus® testing method ▶ Page 1146
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079

Min. –20°C
Max. +60°C

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**

Technical data

Part No.	d1 tolerance78)	Fmax. dynamic82) p = 2.5MPa	Fmax. static82) p = 17.5MPa	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

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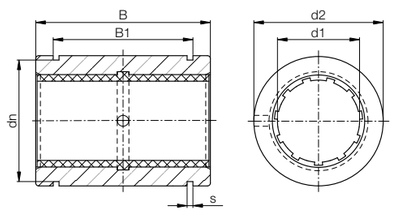
drylin® R linear plain bearings | Product range

Closed, anodised aluminium adapter





Order key

Type	Size

R J U M-01-10

Closed	iglidur® J	Liner	Metric	Standard	Inner Ø d1

- Secured by circlips

78) According to igus® testing method ▶ Page 1146
81) Ø < 10mm use press-fitted sleeve plain bearings
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079

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**

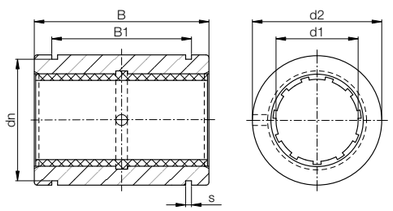
Technical data

Part No.	d1 tolerance78)	Fmax. dynamic82) p = 5MPa	Fmax. static82) p = 35MPa	Weight
	[mm]	[N]	[N]	[g]
RJZM-01-0581)	+0.025 +0.060	525	3,675	5
RJZM-01-0681)	+0.025 +0.060	525	3,675	5
RJZM-01-0881)	+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

drylin® R linear plain bearings | Product range

Closed, anodised aluminium adapter, precise





Order key

Type	Size

R J U M-11-10

Closed	iglidur® J	Liner	Metric	Precise	Inner Ø d1

- Max. bearing clearance reduced by 50%
- Secured by circlips

78) According to igus® testing method ▶ Page 1146
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079

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**

Technical data

Part No.	d1 tolerance78)	Fmax. dynamic82) p = 5MPa	Fmax. static82) p = 35MPa	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

Can be combined with:


RQA-01


RTA-01


RGA-01


RGAS-01

Available with drylin® liners (optional: J200/A180):


J


E7


X

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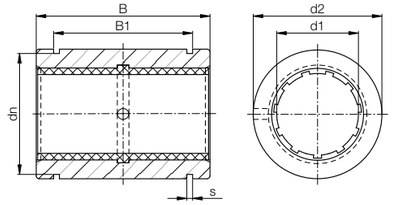
drylin® R linear plain bearings | Product range

Closed stainless steel adapter made of stainless steel 303





Order key

Type					Size	Material
R	J	U	M-	01-12	-	ES
Closed	iglidur® J	Liner	Metric	Standard	Inner Ø d1	Stainless steel

● Secured by circlips

78) According to igus® testing method ▶ Page 1146
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079

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**

Technical data

Part No.	d1 tolerance78)	Fmax. dynamic82) p = 5MPa	Fmax. static82) p = 35MPa	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

Available with drylin® liners (optional: J200/A180):


J

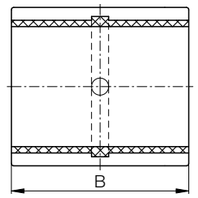

E7

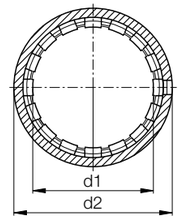

X

drylin® R linear plain bearings | Product range

Closed, anodised aluminium adapter, short design







Order key

Type						Size
R	J	U	M-	02-10		
Closed	iglidur® J	Liner	Metric	Compact	Inner Ø d1	

● Also available as a reduced clearance version RJUM-12 (Ø 10–50mm)

78) According to igus® testing method ▶ Page 1146
81) Ø < 10mm use press-fitted sleeve bearings
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079

Dimensions [mm]

d1	d2	B	Part No.
	H7	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**

Technical data

Part No.	Housing hole	d1 tolerance78)	Fmax. dynamic82) p = 5MPa	Fmax. static82) p = 35MPa	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

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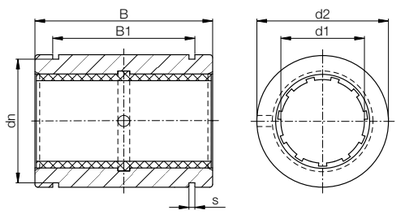
drylin® R linear plain bearings | Product range

Closed, anodised aluminium adapters with iglidur® E7 liner





Order key

Type	Size
R E7 U M	-01-10

Closed | iglidur® E7 | Liner | Metric | Standard | Inner Ø d1

● Secured by circlips

78) According to igus® testing method ▶ Page 1146
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079

Dimensions [mm]

d1	d2	B	B1	s	dn	Part No.
	H7	h10	H10	H10	h10	
10	19	29	21.6	1.30	17.5	**RE7UM-01-10**
12	22	32	22.6	1.30	20.5	**RE7UM-01-12**
16	26	36	24.6	1.30	24.2	**RE7UM-01-16**
20	32	45	31.2	1.60	29.6	**RE7UM-01-20**
25	40	58	43.7	1.85	36.5	**RE7UM-01-25**
30	47	68	51.7	1.85	43.5	**RE7UM-01-30**
40	62	80	60.3	2.15	57.8	**RE7UM-01-40**
50	75	100	77.3	2.65	70.5	**RE7UM-01-50**
60	90	125	101.7	3.15	86.5	**RE7UM-01-60**

Technical data

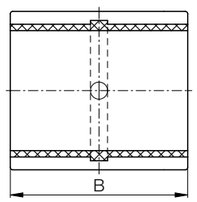
Part No.	d1 tolerance 78)	F max. dynamic82) p = 2.5MPa	F max. static82) p = 18MPa	Weight
	[mm]	[N]	[N]	[g]
RE7UM-01-10	+0.030 +0.088	360	2,610	14
RE7UM-01-12	+0.030 +0.088	480	3,450	21
RE7UM-01-16	+0.030 +0.088	720	5,180	28
RE7UM-01-20	+0.030 +0.091	1,120	8,100	49
RE7UM-01-25	+0.030 +0.091	1,810	13,050	108
RE7UM-01-30	+0.040 +0.110	2,550	18,360	162
RE7UM-01-40	+0.040 +0.115	4,000	28,800	334
RE7UM-01-50	+0.050 +0.180	4,500	45,000	579
RE7UM-01-60	+0.050 +0.190	6,000	61,700	1,070

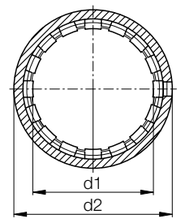
drylin® R shaft guides

drylin® R linear plain bearings | Product range

Closed, anodised aluminium adapters, short design with iglidur® E7 liner







Order key

Type	Size
R E7 U M	-02-10

Closed | iglidur® E7 | Liner | Metric | Compact | Inner Ø d1

78) According to igus® testing method ▶ Page 1146
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079

Dimensions [mm]

d1	d2	B	Part No.
	H7	h10	
10	17	26	**RE7UM-02-10**
12	19	28	**RE7UM-02-12**
16	24	30	**RE7UM-02-16**
20	28	30	**RE7UM-02-20**
25	35	40	**RE7UM-02-25**
30	40	50	**RE7UM-02-30**
40	52	60	**RE7UM-02-40**
50	62	70	**RE7UM-02-50**

Technical data

Part No.	Housing hole	d1 tolerance78)	F max. dynamic82) p = 2.5MPa	F max. static82) p = 18MPa	Weight
	Ø H7 [mm]	[mm]	[N]	[N]	[g]
RE7UM-02-10	17	+0.030 +0.088	325	2,340	8
RE7UM-02-12	19	+0.030 +0.088	420	3,020	10
RE7UM-02-16	24	+0.030 +0.088	600	4,320	17
RE7UM-02-20	28	+0.030 +0.091	750	5,400	18
RE7UM-02-25	35	+0.030 +0.091	1,250	9,000	42
RE7UM-02-30	40	+0.040 +0.110	1,875	13,500	56
RE7UM-02-40	52	+0.040 +0.115	3,000	21,600	113
RE7UM-02-50	62	+0.050 +0.180	4,375	31,500	147

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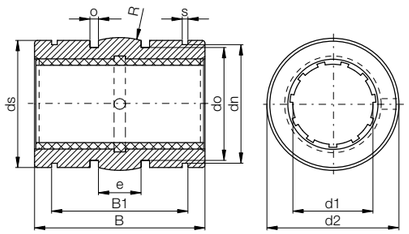
drylin® R linear plain bearings | Product range

Closed aluminium adapter (floating bearing)





Order key

Type						Size
R	J	U	M	-03		-10
Closed	iglidur® J	Liner	Metric	Self-aligning		Inner Ø d1

- With reduced outer diameter, spherical area on the outer diameter, O-rings for elastic seating and hard-anodised surface

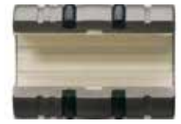
78) According to igus® testing method ▶ Page 1146
81) Ø < 10mm use press-fitted sleeve plain bearings
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079
Floating bearing ▶ Page 1078
Imperial dimensions ▶ Page 1615

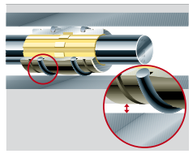
Dimensions [mm]

d1	d2 H7	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**

Technical data

Part No.	Housing hole Ø H7 [mm]	d1 tolerance[78] [mm]	F max. dynamic[82] p = 5MPa [N]	Fmax. static[82] p = 35MPa [N]	Weight [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





Can be combined with:


RQA-03


RTA-03


RGA-03


RGAS-03

Available with drylin® liners (optional: J200/A180):

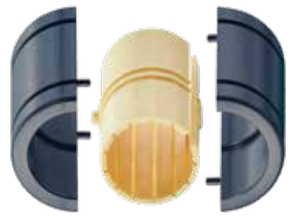

J

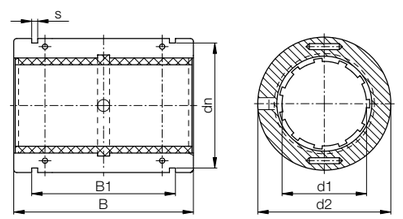

E7


X

drylin® R linear plain bearings | Product range

Split anodised aluminium adapter





Order key

Type						Size
T	J	U	M	-01		-10
Open	iglidur® J	Liner	Metric	Standard		Inner Ø d1

- Quick replacement of the liner without removing the shaft

78) According to igus® testing method ▶ Page 1146
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079
Imperial dimensions ▶ Page 1616

Dimensions [mm]

d1	d2 H7	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**

Technical data

Part No.	d1 tolerance[78] [mm]	Fmax. dynamic[82] p = 5MPa [N]	Fmax. static[82] p = 35MPa [N]	Weight [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

Can be combined with:


RQA-01


RTA-01


RGA-01


RGAS-01

Available with drylin® liners (optional: J200/A180):


J


E7

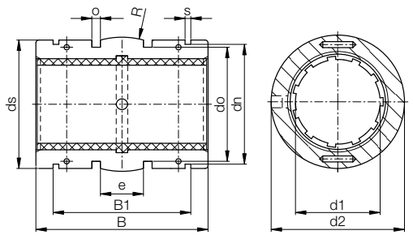

X

chanhvinh.com

drylin® R linear plain bearings | Product range

Split aluminium adapter (floating bearing)





Order key

Type	Size
T J U M-03	-10

Open	igliduR® J	Liner	Metric	Self-aligning	Inner Ø d1

- Split aluminium adapter with spherical middle area for automatic compensation of misalignments and O-rings for elastic seating

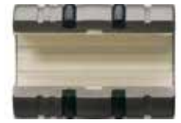
[78] According to igus® testing method ▶ Page 1146
[82] Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079
Floating bearing ▶ Page 1078
Imperial dimensions ▶ Page 1616

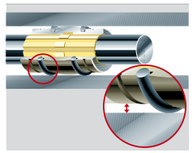
Dimensions [mm]

d1	d2	B	B1	s	dn	ds	do	o	e	R	Part No.
	H7	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**

Technical data

Part No.	d1 tolerance[78]	Fmax. dynamic[82] p = 5MPa	Fmax. static[82] p = 35MPa	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





Can be combined with:


RQA-03


RTA-03


RGA-03


RGAS-03

Available with drylin® liners (optional: J200/A180):


J

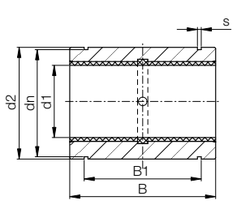

E7

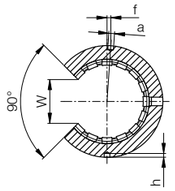

X

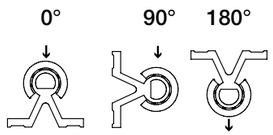
drylin® R linear plain bearings | Product range

Open, anodised aluminium adapters – for supported shafts









Order key

Type	Size
O J U M-01	-10

Open	igliduR® J	Liner	Metric	Standard	Inner Ø d1

[78] According to igus® testing method ▶ Page 1146
[82] Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079
Imperial dimensions ▶ Page 1614

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**

Technical data

Part No.	d1 tolerance[78]	Fmax. dynamic[82] p = 5MPa			Fmax. static[82] p = 35MPa			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

Can be combined with:


RQA-01


RTA-01


RGA-01


RGAS-01

Available with drylin® liners (optional: J200/A180):


J


E7

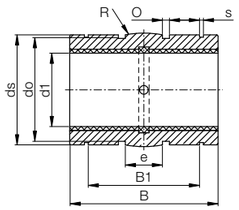

X

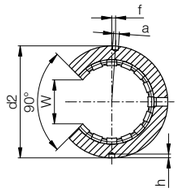
chanhvinh.com

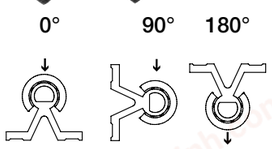
drylin® R linear plain bearings | Product range

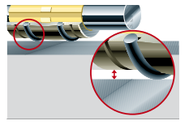
Open, anodised aluminium adapter, floating bearing











- 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 | Inner Ø d1

78) According to igus® testing method ▶ Page 1146
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079
Imperial dimensions ▶ Page 1614

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**

Technical data

Part No.	Housing hole	d1 tolerance78)	Fmax. dynamic82) p = 5MPa			Fmax. static82) p = 35MPa			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

Can be combined with:


RQA-03


RTA-03


RGA-03


RGAS-03

Available with drylin® liners (optional: J200/A180):


J


E7


X

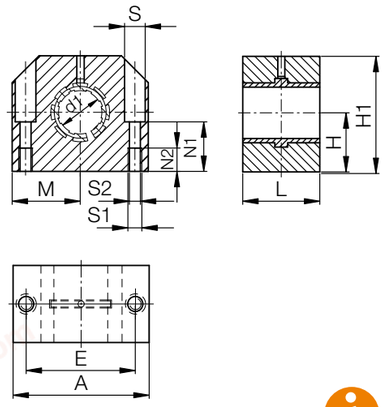
My sketches

chanhvinh.com

drylin® R pillow blocks | Product range

Closed, anodised aluminium housing, short design





Order key

Type	Size
R J U M-05-10	

Closed | iglidur® J | Liner | Metric | Compact | Inner Ø d1

78) According to igus® testing method ▶ Page 1146
81) Ø < 10mm use press-fitted sleeve bearings
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079

Dimensions [mm]

d1	H	H1	A	M	E	S	S1	S2	N1	N2	L	Part No.
	+0.01 –0.014				±0.15							
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**

Technical data

Part No.	d1 tolerance[78]	Fmax. dynamic[82] p = 5MPa	Fmax. static[82] p = 35MPa	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

Available with drylin® liners (optional: J200/A180):


J

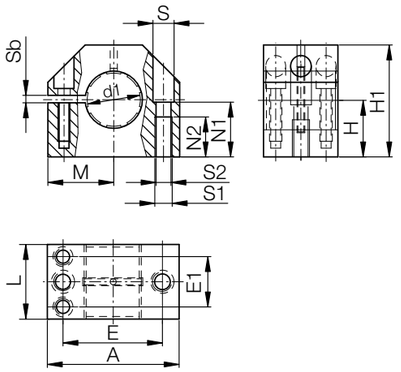

E7


X

drylin® R pillow blocks | 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 | Inner Ø d1

● With adjustable clearance

78) According to igus® testing method ▶ Page 1146
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079

Dimensions [mm]

d1	H	H1	A	M	E	E1	S	S1	S2	Sb	N1	N2	L	Part No.
	+0.01 –0.014				±0.15	±0.15								
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**

Technical data

Part No.	d1 tolerance[78]	Fmax. dynamic[82] p = 5MPa	Fmax. static[82] p = 35MPa	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

Available with drylin® liners (optional: J200/A180):


J


E7


X

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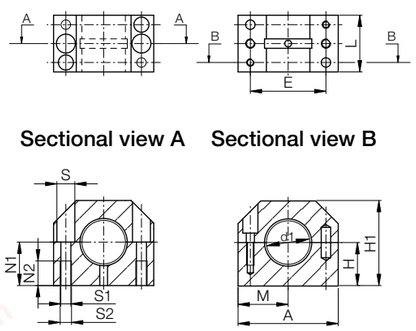
drylin® R pillow blocks | Product range

Split anodised aluminium housing, screwed, short design





Order key

Type						Size
T	J	U	M	-	05	-16
Open	iglidur® J	Liner	Metric	Compact	Inner Ø d1	

- Replacement of the liner without removing the shaft

78) According to igus® testing method ▶ Page 1146
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079

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**

Technical data

Part No.	d1 tolerance78)	Fmax. dynamic82) p = 5MPa	Fmax. static82) p = 35MPa	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

Available with drylin® liners (optional: J200/A180):


J

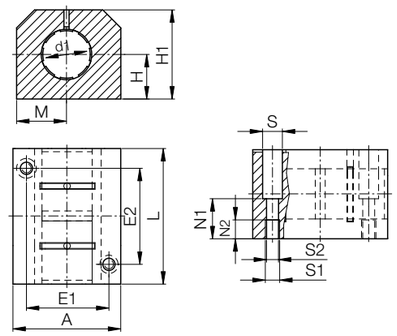

E7


X

drylin® R pillow blocks | 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	Inner Ø d1	

- Tandem design
- Equipped with two liners to increase the guide length

78) According to igus® testing method ▶ Page 1146
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079

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**

Technical data

Part No.	d1 tolerance78)	Fmax. dynamic82) p = 5MPa	Fmax. static82) p = 35MPa	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

Available with drylin® liners (optional: J200/A180):


J


E7

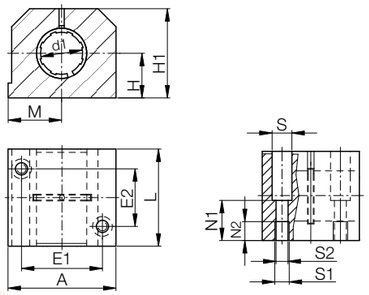

X

chanhvinh.com

drylin® R pillow blocks | 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	Inner Ø d1	

78) According to igus® testing method ▶ Page 1146
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079

Dimensions [mm]

d1	H	H1	A	M	E1	E2	S	S1	S2	N1	N2	L	Part No.
	+0.01 –0.014			±0.02	±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**

Technical data

Part No.	d1 tolerance[78)]	Fmax. dynamic[82)] p = 5MPa	Fmax. static[82)] p = 35MPa	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

Available with drylin® liners (optional: J200/A180):

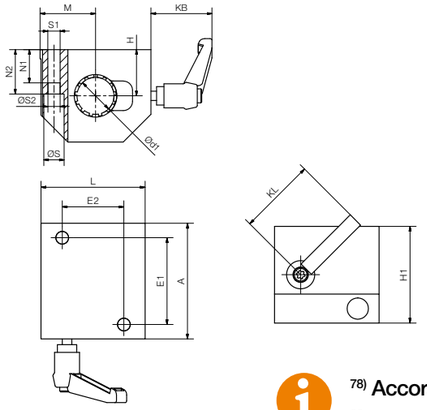


J E7 X

drylin® R pillow blocks | 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	Inner Ø d1	Manual clamp	

78) According to igus® testing method ▶ Page 1146
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079

Dimensions [mm]

d1	H	H1	A	M	E1	E2	S	S1	S2	N1	N2	W	L	KL	KB	Part No.
	+0.01; –0.014			±0.02	±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**

Technical data

Part No.	d1 tolerance[78)]	Fmax. dynamic[82)] p = 5MPa	Fmax. static[82)] p = 35MPa	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

Available with drylin® liners (optional: J200/A180):



J E7 X

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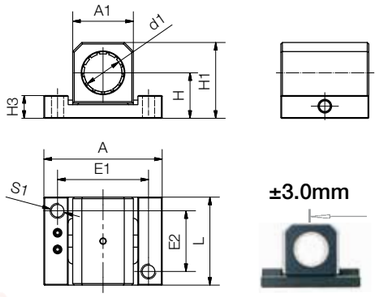
drylin® R pillow blocks | Product range

Closed, anodised aluminium, floating pillow blocks





Order key

Type	Size	Options
R J U M-06-12 - LL		

Closed | igliduR® J | Liner | Metric | Long design | Inner Ø d1 | Floating bearing

- Compensation of parallelism errors up to 6mm
- Quick assembly even on raw profiles

78) According to igus® testing method ▶ Page 1146
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079
Floating bearing ▶ Page 1078

Dimensions [mm]

d1	H	H1	A	E1	E2	S1	L	A1	H3	Part No.
	±0.01			±0.15	±0.15					
12	18	28	43	32	23	M5	32	20	11	**RJUM-06-12 LL**
16	22	35	53	40	26	M6	36	26	11	**RJUM-06-16 LL**
20	25	41	60	45	32	M8	45	32	12.5	**RJUM-06-20 LL**
25	30	50	78	60	40	M10	58	40	15	**RJUM-06-25 LL**
30	35	59	87	68	45	M10	68	48	15	**RJUM-06-30 LL**
40	45	76	108	86	58	M12	80	62	20	**RJUM-06-40 LL**
50	50	89	132	108	50	M16	100	78	24	**RJUM-06-50 LL**

Technical data

Part No.	d1 tolerance78)	Fmax. static or dynamic82)	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

Available with drylin® liners (optional: J200/A180):


J

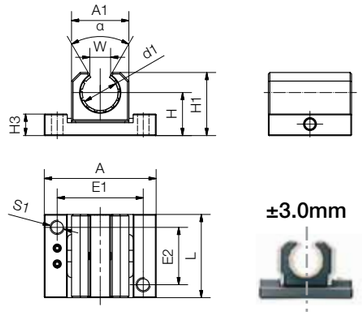

E7

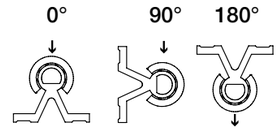

X

drylin® R pillow blocks | Product range

Open, anodised aluminium, floating pillow blocks







- Compensation of parallelism errors up to 6mm

Order key

Type	Size	Options
O J U M-06-12 - LL		

Open | igliduR® J | Liner | Metric | Long design | Inner Ø d1 | Floating bearing

78) According to igus® testing method ▶ Page 1146
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079
Floating bearing ▶ Page 1078

Dimensions [mm]

d1	H	H1	A	E1	E2	S1	L	A1	H3	W	α	Part No.
	±0.01			±0.15	±0.15					–1	[°]	
12	18	24.5	43	32	23	M5	32	20	11	10.2	90	**OJUM-06-12 LL**
16	22	30.5	53	40	26	M6	36	26	11	11.6	90	**OJUM-06-16 LL**
20	25	37.0	60	45	32	M8	45	32	12.5	12.0	60	**OJUM-06-20 LL**
25	30	44.0	78	60	40	M10	58	40	15	14.5	60	**OJUM-06-25 LL**
30	35	52.5	87	68	45	M10	68	48	15	16.8	60	**OJUM-06-30 LL**
40	45	69.0	108	86	58	M12	80	62	20	21.0	60	**OJUM-06-40 LL**
50	50	80.0	132	108	50	M16	100	78	24	25.5	60	**OJUM-06-50 LL**

Technical data

Part No.	d1 tolerance78)	Fmax. static or dynamic82)	Fmax. static82) with load 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

Available with drylin® liners (optional: J200/A180):


J


E7

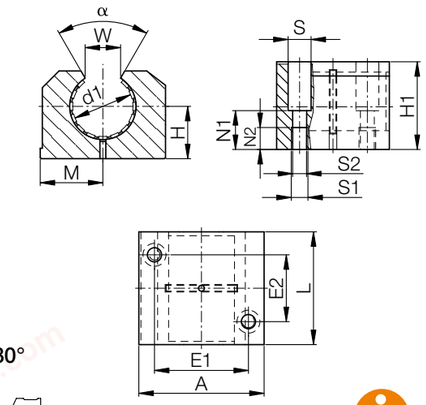

X

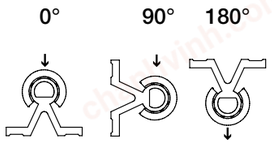
chanhvinh.com

drylin® R pillow blocks | 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	Inner Ø d1
O	J	U	M	06	12

78) According to igus® testing method ▶ Page 1146
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079

Dimensions [mm]

d1	H	H1	A	M	E1	E2	S	S1	S2	N1	N2	W	α	L	Part No.
	+0.01; –0.014			±0.02	±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**

Technical data

Part No.	d1 tolerance78)	Fmax. dynamic82) p = 5MPa			Fmax. static82) p = 35MPa			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

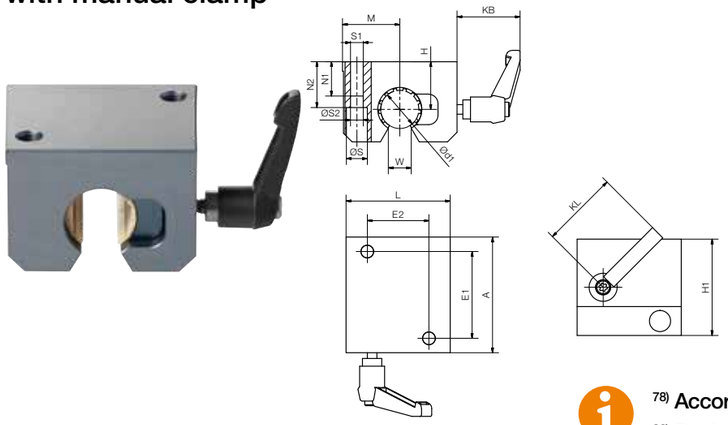
Available with drylin® liners (optional: J200/A180):



J E7 X

drylin® R pillow blocks | 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	Inner Ø d1	Manual clamp
O	J	U	M	06	12	HK

78) According to igus® testing method ▶ Page 1146
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079

Dimensions [mm]

d1	H	H1	A	M	E1	E2	S	S1	S2	N1	N2	W	L	KL	KB	Part No.
	+0.01; –0.014			±0.02	±0.15	±0.15						–1				
12	18	28	43	21.5	32	23	8	M5	4.3	16.5	11	10.2	39	40	33	**OJUM-06-12-HK**
16	22	35	53	26.5	40	26	10	M6	5.3	21	13	11.6	43	40	33	**OJUM-06-16-HK**
20	25	42	60	30.0	45	32	11	M8	6.6	24	18	12.0	54	40	33	**OJUM-06-20-HK**
25	30	51	78	39.0	60	40	15	M10	8.4	29	22	14.5	67	65	46	**OJUM-06-25-HK**
30	35	60	87	43.5	68	45	15	M10	8.4	34	22	16.6	79	65	46	**OJUM-06-30-HK**
40	45	77	108	54.0	86	58	18	M12	10.5	44	26	21.0	91	65	46	**OJUM-06-40-HK**
50	50	88	132	66.0	108	50	20	M16	13.5	49	34	25.5	113	65	46	**OJUM-06-50-HK**

Technical data

Part No.	d1 tolerance78)	Fmax. dynamic82) p = 5MPa			Fmax. static82) p = 35MPa			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

Available with drylin® liners (optional: J200/A180):



J E7 X

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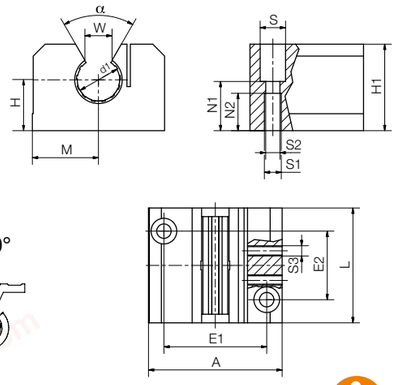
drylin® R pillow blocks | Product range

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-06-12

Open	igliduR® J	Liner	Metric	Adjustable	Long design	Inner Ø d1

[78] According to igus® testing method ▶ Page 1146
[82] Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079

Dimensions [mm]

d1	H	H1	A	M	E1	E2	S	S1	S2	S3	N1	N2	W	α	L	Part No.
	+0.01; –0.014			±0.02	±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**

Technical data

Part No.	d1 tolerance[78]	Fmax. dynamic[82] p = 5MPa			Fmax. static[82] p = 35MPa			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

Available with drylin® liners (optional: J200/A180):


J


E7


X

My sketches

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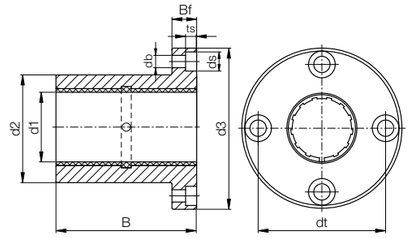
drylin® R flanged linear plain bearings | Product range

Closed, anodised aluminium adapter, round flange





78) According to igus® testing method ▶ Page 1146
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079

Dimensions [mm]

d1	d2 h7	d3	dt	B	Bf	ts	db	ds	Part No.
8.0	16	32	24	25	8	3.1	3.5	6.0	**FJZM-01-08**
10.0	19	39	29	29	9	4.1	4.5	7.5	**FJUM-01-10**
10.4	19	39	29	29	9	4.1	4.5	7.5	**FJUM-01-10-LL**
12.0	22	42	32	32	9	4.1	4.5	7.5	**FJUM-01-12**
12.4	22	42	32	32	9	4.1	4.5	7.5	**FJUM-01-12-LL**
16.0	26	46	36	36	9	4.1	4.5	7.5	**FJUM-01-16**
16.4	26	46	36	36	9	4.1	4.5	7.5	**FJUM-01-16-LL**
20.0	32	54	43	45	11	5.1	5.5	9.0	**FJUM-01-20**
20.5	32	54	43	45	11	5.1	5.5	9.0	**FJUM-01-20-LL**
25.0	40	62	51	58	11	5.1	5.5	9.0	**FJUM-01-25**
25.5	40	62	51	58	11	5.1	5.5	9.0	**FJUM-01-25-LL**
30.0	47	76	62	68	14	6.1	6.6	11.0	**FJUM-01-30**
30.6	47	76	62	68	14	6.1	6.6	11.0	**FJUM-01-30-LL**
40.0	62	98	80	80	18	8.1	9.0	14.0	**FJUM-01-40**
50.0	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 shaft guides

drylin® R flanged linear plain bearings | Product range

Order key

Type					Size	
F	J	U	M-	01-	10-	LL
With flange	iglidur® J	Liner	Metric	Round design	Inner Ø d1	

Option:
LL: Floating bearing

Technical data

Part No.	d1 tolerance78)	Fmax. dynamic82) p = 5MPa	Fmax. static82) p = 35MPa	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-01-10-LL	+0.030 +0.088	725	5,075	32
FJUM-01-12	+0.030 +0.088	960	6,720	42
FJUM-01-12-LL	+0.030 +0.088	960	6,720	42
FJUM-01-16	+0.030 +0.088	1,440	10,080	51
FJUM-01-16-LL	+0.030 +0.088	1,440	10,080	51
FJUM-01-20	+0.030 +0.091	2,250	15,750	88
FJUM-01-20-LL	+0.030 +0.091	2,250	15,750	88
FJUM-01-25	+0.030 +0.091	3,625	25,375	152
FJUM-01-25-LL	+0.030 +0.091	3,625	25,375	152
FJUM-01-30	+0.040 +0.110	5,100	35,700	266
FJUM-01-30-LL	+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

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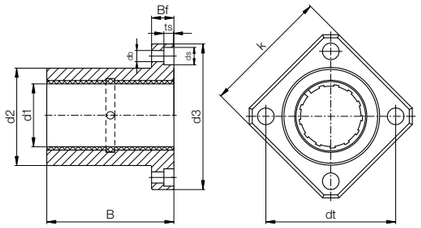
drylin® R flanged linear plain bearings | Product range

Closed, anodised aluminium adapter, square flange





78) According to igus® testing method ▶ Page 1146
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079

Dimensions [mm]

d1	d2	d3	dt	k	B	Bf	ts	db	ds	Part No.
±0.01	h7		±0.15	±0.15						
8.0	16	32	24	25	25	8	3.1	3.5	6.0	**FJZM-02-08**[82)]
10.0	19	39	29	30	29	9	4.1	4.5	7.5	**FJUM-02-10**
10.4	19	39	29	30	29	9	4.1	4.5	7.5	**FJUM-02-10-LL**
12.0	22	42	32	32	32	9	4.1	4.5	7.5	**FJUM-02-12**
12.4	22	42	32	32	32	9	4.1	4.5	7.5	**FJUM-02-12-LL**
16.0	26	46	36	35	36	9	4.1	4.5	7.5	**FJUM-02-16**
16.4	26	46	36	35	36	9	4.1	4.5	7.5	**FJUM-02-16-LL**
20.0	32	54	43	42	45	11	5.1	5.5	9.0	**FJUM-02-20**
20.5	32	54	43	42	45	11	5.1	5.5	9.0	**FJUM-02-20-LL**
25.0	40	62	51	50	58	11	5.1	5.5	9.0	**FJUM-02-25**
25.5	40	62	51	50	58	11	5.1	5.5	9.0	**FJUM-02-25-LL**
30.0	47	76	62	60	68	14	6.1	6.6	11.0	**FJUM-02-30**
30.6	47	76	62	60	68	14	6.1	6.6	11.0	**FJUM-02-30-LL**
40.0	62	98	80	75	80	18	8.1	9.0	14.0	**FJUM-02-40**
50.0	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 shaft guides

drylin® R flanged linear plain bearings | Product range

Order key

Type	Size

F J U M-02-10-LL

With flange	iglidur® J	Liner	Metric	Square design	Inner Ø d1

Option:
LL: Floating bearing

Technical data

Part No.	d1 tolerance[78)]	Fmax. static or dynamic[82)]	Fmax. static[82)] with load at 180°	Weight
	[mm]	[N]	[N]	[g]
FJZM-02-08[82)]	+0.032 +0.070	960	6,720	17
FJUM-02-10	+0.030 +0.088	725	5,075	25
FJUM-02-10-LL	+0.030 +0.088	725	5,075	25
FJUM-02-12	+0.030 +0.088	960	6,720	32
FJUM-02-12-LL	+0.030 +0.088	960	6,720	32
FJUM-02-16	+0.030 +0.088	1,440	10,080	41
FJUM-02-16-LL	+0.030 +0.088	1,440	10,080	41
FJUM-02-20	+0.030 +0.091	2,250	15,750	73
FJUM-02-20-LL	+0.030 +0.091	2,250	15,750	73
FJUM-02-25	+0.030 +0.091	3,625	25,375	135
FJUM-02-25-LL	+0.030 +0.091	3,625	25,375	135
FJUM-02-30	+0.040 +0.110	5,100	35,700	228
FJUM-02-30-LL	+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

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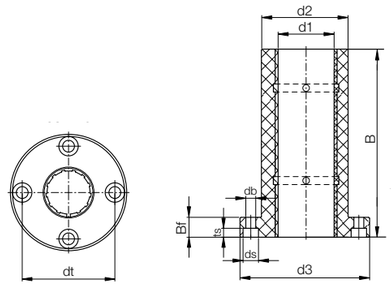
drylin® R flanged linear plain bearings | Product range

Closed, anodised aluminium adapter, round flange, tandem design





● Equipped with two liners to increase the guide length

78) According to igus® testing method ▶ Page 1146
85) Fitted with two pieces of JSM-0810-16
Please note: Installation instructions ▶ Page 1079

Dimensions [mm]

d1	d2 h7	d3	dt	B	Bf	ts	db	ds	Part No.
8.0	16	32	24	45	8	3.1	3.5	6.0	**FJZMT-01-08**[85]
10.0	19	39	29	52	9	4.1	4.5	7.5	**FJUMT-01-10**
10.4	19	39	29	52	9	4.1	4.5	7.5	**FJUMT-01-10-LL**
12.0	22	42	32	57	9	4.1	4.5	7.5	**FJUMT-01-12**
12.4	22	42	32	57	9	4.1	4.5	7.5	**FJUMT-01-12-LL**
16.0	26	46	36	70	9	4.1	4.5	7.5	**FJUMT-01-16**
16.4	26	46	36	70	9	4.1	4.5	7.5	**FJUMT-01-16-LL**
20.0	32	54	43	80	11	5.1	5.5	9.0	**FJUMT-01-20**
20.5	32	54	43	80	11	5.1	5.5	9.0	**FJUMT-01-20-LL**
25.0	40	62	51	112	11	5.1	5.5	9.0	**FJUMT-01-25**
25.5	40	62	51	112	11	5.1	5.5	9.0	**FJUMT-01-25-LL**
30.0	47	76	62	123	14	6.1	6.6	11.0	**FJUMT-01-30**
30.6	47	76	62	123	14	6.1	6.6	11.0	**FJUMT-01-30-LL**
40.0	62	98	80	151	18	8.1	9.0	14.0	**FJUMT-01-40**
50.0	75	112	94	192	18	8.1	9.0	14.0	**FJUMT-01-50**

Available with drylin® liners (optional: J200/A180):


J


E7


X

drylin® R shaft guides

drylin® R flanged linear plain bearings | Product range

Order key

Type	Size

F J U M T-01-10-LL

With flange	iglidur® J	Liner	Metric	Tandem	Round design	Inner Ø d1

Option:
LL: Floating bearing

Technical data

Part No.	Dimension nominal diameter [mm]	d1 tolerance[78] [mm]	Guide length [mm]	Projected bearing surface [N]	Weight [g]
FJZMT-01-08[85]	8	+0.032 +0.070	45	256	27.13
FJUMT-01-10	10	+0.030 +0.088	52	250	43.75
FJUMT-01-10-LL	10	+0.030 +0.088	52	250	43.75
FJUMT-01-12	12	+0.030 +0.088	57	324	57.00
FJUMT-01-12-LL	12	+0.030 +0.088	57	324	57.00
FJUMT-01-16	16	+0.030 +0.088	70	464	78.28
FJUMT-01-16-LL	16	+0.030 +0.088	70	464	78.28
FJUMT-01-20	20	+0.030 +0.091	80	580	126.42
FJUMT-01-20-LL	20	+0.030 +0.091	80	580	126.42
FJUMT-01-25	25	+0.030 +0.091	112	975	248.85
FJUMT-01-25-LL	25	+0.030 +0.091	112	975	248.85
FJUMT-01-30	30	+0.040 +0.110	123	1,470	388.37
FJUMT-01-30-LL	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

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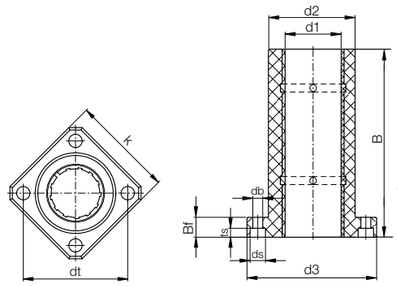
drylin® R flanged linear plain bearings | Product range

Closed, anodised aluminium adapter, square flange, tandem design





- Equipped with two liners to increase the guide length

78) According to igus® testing method ▶ Page 1146
85) Fitted with two pieces of JSM-0810-16
Please note: Installation instructions ▶ Page 1079

Dimensions [mm]

d1	d2 h7	d3	dt	k	B	Bf	ts	db	ds	Part No.
8.0	16	32	24	25	45	8	3.1	3.5	6.0	**FJZMT-02-08**[85]
10.0	19	39	29	30	52	9	4.1	4.5	7.5	**FJUMT-02-10**
10.4	19	39	29	30	52	9	4.1	4.5	7.5	**FJUMT-02-10-LL**
12.0	22	42	32	32	57	9	4.1	4.5	7.5	**FJUMT-02-12**
12.4	22	42	32	32	57	9	4.1	4.5	7.5	**FJUMT-02-12-LL**
16.0	26	46	36	35	70	9	4.1	4.5	7.5	**FJUMT-02-16**
16.4	26	46	36	35	70	9	4.1	4.5	7.5	**FJUMT-02-16-LL**
20.0	32	54	43	42	80	11	5.1	5.5	9.0	**FJUMT-02-20**
20.5	32	54	43	42	80	11	5.1	5.5	9.0	**FJUMT-02-20-LL**
25.0	40	62	51	50	112	11	5.1	5.5	9.0	**FJUMT-02-25**
25.5	40	62	51	50	112	11	5.1	5.5	9.0	**FJUMT-02-25-LL**
30.0	47	76	62	60	123	14	6.1	6.6	11.0	**FJUMT-02-30**
30.6	47	76	62	60	123	14	6.1	6.6	11.0	**FJUMT-02-30-LL**
40.0	62	98	80	75	151	18	8.1	9.0	14.0	**FJUMT-02-40**
50.0	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 shaft guides

drylin® R flanged linear plain bearings | Product range

Order key

Type	Size

F J U M T-02-10-LL

With flange	iglidur® J	Liner	Metric	Tandem	Square design	Inner Ø d1

Option:
LL: Floating bearing

Technical data

Part No.	Dimension nominal diameter [mm]	d1 tolerance[78] [mm]	Guide length [mm]	Projected bearing surface [N]	Weight [g]
FJZMT-02-08[85]	8	+0.032 +0.070	45	256	23.00
FJUMT-02-10	10	+0.030 +0.088	52	250	36.58
FJUMT-02-10-LL	10	+0.030 +0.088	52	250	36.58
FJUMT-02-12	12	+0.030 +0.088	57	324	48.19
FJUMT-02-12-LL	12	+0.030 +0.088	57	324	48.19
FJUMT-02-16	16	+0.030 +0.088	70	464	67.79
FJUMT-02-16-LL	16	+0.030 +0.088	70	464	67.79
FJUMT-02-20	20	+0.030 +0.091	80	580	110.06
FJUMT-02-20-LL	20	+0.030 +0.091	80	580	110.06
FJUMT-02-25	25	+0.030 +0.091	112	975	230.06
FJUMT-02-25-LL	25	+0.030 +0.091	112	975	230.06
FJUMT-02-30	30	+0.040 +0.110	123	1,470	350.74
FJUMT-02-30-LL	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

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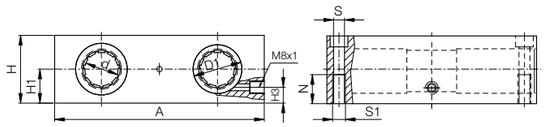
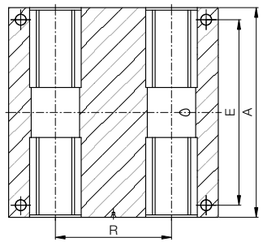
drylin® R quad blocks | Product range

Closed design



● Housing: Aluminium, equipped with four drylin® R linear plain bearings





Order key

Type	Option	Size
R Q A -	01	- 10

Quad block with RJUM bearings | Aluminium housing | Standard with RJUM-01 | Inner Ø d1

Options:
01: Standard with RJUM-01
03: with RJUM-03
04: with RJM-01

Please note:
Installation instructions
▶ Page 1079

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 plastic bearings 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

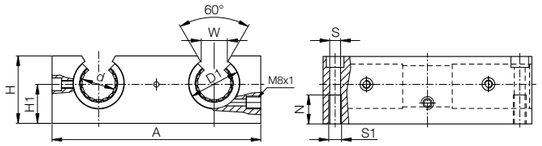

X

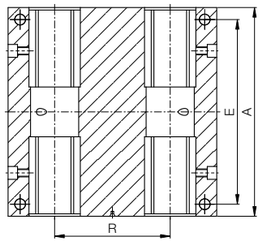
drylin® R quad blocks | Product range

Open design



● Housing: Aluminium, equipped with four drylin® R linear plain bearings





Order key

Type	Option	Size
O Q A -	01	- 12

Quad block with OJUM bearings | Aluminium housing | Standard with OJUM-01 | Inner Ø d1

Options:
01: Standard with OJUM-01
03: with OJUM-03

Please note:
Installation instructions
▶ Page 1079

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

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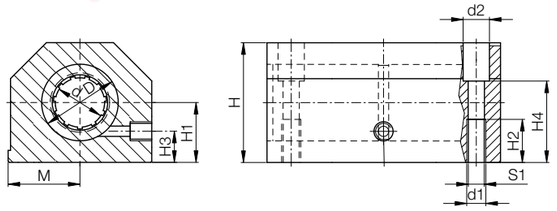
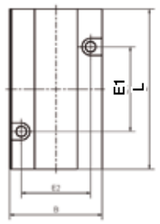
drylin® R quad blocks | Product range

Closed, tandem design



- Housing: Aluminium, equipped with two drylin® R linear plain bearings to increase the guide length





Order key

Type	Option	Size
R T A -	01 -	08
Tandem 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 1079

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 plastic bearings 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

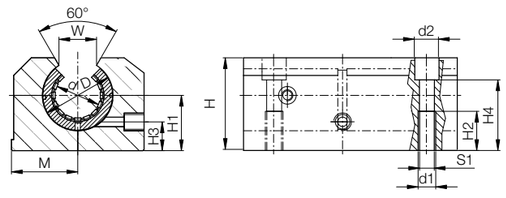

X

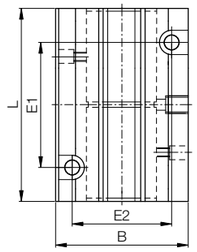
drylin® R quad blocks | Product range

Open, tandem design



- Housing: Aluminium, equipped with two 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 1079

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

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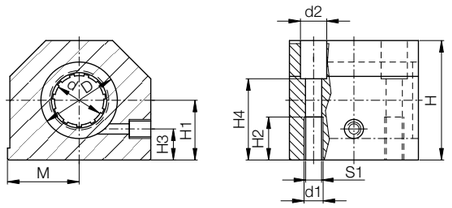
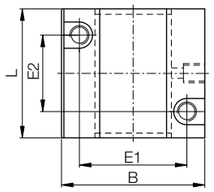
drylin® R quad blocks | Product range

Closed, long design



● Housing: Aluminium, equipped with drylin® R linear plain bearings





Order key

Type	Option	Size
R G A -	01	- 12
Linear 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 1079

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 plastic bearings 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

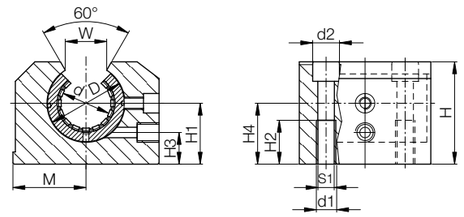

X

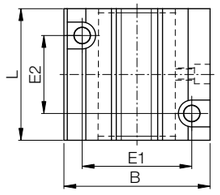
drylin® R quad blocks | Product range

Open, long design



● Housing: Aluminium, equipped with drylin® R linear plain bearings





Order key

Type	Option	Size
O G A -	01	- 12
Linear housing with OJUM bearing	Aluminium housing	Standard with OJUM-01	Inner Ø

Options:
01: Standard with OJUM-01
03: with OJUM-03

Please note:
Installation instructions
▶ Page 1079

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

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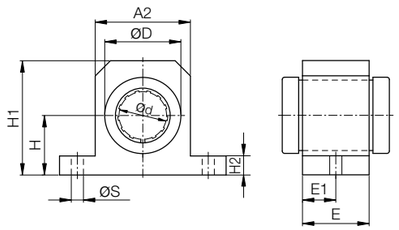
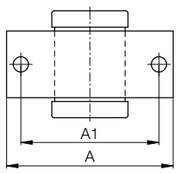
drylin® R pillow blocks | Product range

Closed, short design



- Housing: Aluminium, equipped with drylin® R linear plain bearings
- Variations:
  Standard: RGAS-01-Ø
  Self-aligning: RGAS-03-Ø
  Solid plastic bearing (cost-effective, lightweight): RGAS-04-Ø





Order key

Type	Option	Size
R G A S -	01	- 12
Linear housing with RJUM bearing	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 1079

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 plastic bearings 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

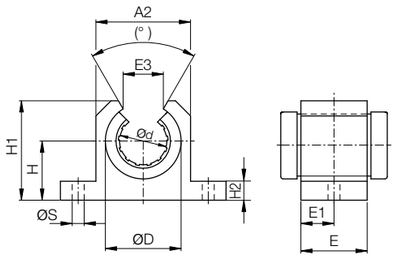

X

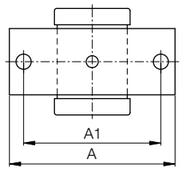
drylin® R pillow blocks | Product range

Open, short design



- Housing: Aluminium, equipped with drylin® R linear plain 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 bearing	Aluminium housing	Small	Standard with OJUM-01	Inner Ø

Options:
01: Standard with OJUM-01
03: with OJUM-03

Please note:
Installation instructions
▶ Page 1079

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

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drylin® R shaft guides | igus® testing method

igus® testing method for measuring the tolerance of drylin® linear plain bearings

To ensure the correct function of a drylin® linear plain bearing, it is necessary to use the bearing with a defined minimum oversize (bearing clearance). The quality control of this part 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 (plug gauge falls)	Max. bearing Øi (plug gauge sticks)
J / J200 / E7 / A180 / A160UM-01/02-10	0.981	12.000mm	10.030mm	10.070mm
J / J200 / E7 / A180 / A160UM-01/02-12	1.373	14.000mm	12.030mm	12.070mm
J / J200 / E7 / A180 / A160UM-01/02-16	1.864	18.000mm	16.030mm	16.070mm
J / J200 / E7 / A180 / A160UM-01/02-20	2.649	23.000mm	20.030mm	20.070mm
J / J200 / E7 / A180 / A160UM-01/02-25	3.729	28.000mm	25.030mm	25.070mm
J / J200 / E7 / A180 / A160UM-01/02-30	4.807	34.000mm	30.040mm	30.090mm
J / J200 / E7 / A180 / A160UM-01/02-40	7.063	44.000mm	40.040mm	40.090mm
J / J200 / E7 / A180 / A160UM-01/02-50	9.810	55.000mm	50.050mm	50.150mm
J / J200 / E7UM-01/02-60	13.047	65.000mm	60.050mm	60.150mm
JUI-01-06	0.981	0.4684in	0.3768in	0.3776in
JUI-01-08	1.373	0.5934in	0.5016in	0.5024in
JUI-01-10	1.864	0.7184in	0.6268in	0.6276in
JUI-01-12	2.649	0.8747in	0.7516in	0.7524in
JUI-01-16	3.729	1.1247in	1.0016in	1.0024in
JUI-01-20	4.807	1.4058in	1.2520in	1.2531in
JUI-01-24	7.063	1.6558in	1.5020in	1.5031in
JUI-01-32	9.810	2.1870in	2.0024in	2.0039in
RJM / RJMP / RJ4JP-01-08	–	16.000mm	8.025mm	8.061mm
RJM / RJMP / RJ4JP-01-10	–	19.000mm	10.025mm	10.061mm
RJM / RJMP / RJ4JP-01-12	–	22.000mm	12.032mm	12.075mm
RJM / RJMP / RJ4JP-01-16	–	26.000mm	16.032mm	16.075mm
RJM / RJMP / RJ4JP-01-20	–	32.000mm	20.040mm	20.092mm
RJM / RJMP / RJ4JP-01-25	–	40.000mm	25.040mm	25.092mm
RJM / RJMP / RJ4JP-01-30	–	47.000mm	30.040mm	30.092mm
RJM / RJMP-01-40	–	62.000mm	40.050mm	40.112mm
RJI-01-06	0.981	0.6250in	0.3762in	0.3776in
RJI-01-08	1.373	0.8750in	0.5013in	0.5030in
RJI-01-10	1.864	1.1250in	0.6265in	0.6282in
RJI-01-12	2.649	1.2500in	0.7516in	0.7536in
RJI-01-16	3.729	1.5625in	1.0035in	1.0056in
RJI-01-20	4.807	2.0000in	1.2520in	1.2544in
RJI-01-24	7.063	2.3750in	1.5020in	1.5044in
RJI-01-32	9.810	3.0000in	2.0024in	2.0053in
RJ260(U)M-02-12	–	19.000mm	12.032mm	12.084mm
RJ260(U)M-02-16	–	24.000mm	16.032mm	16.084mm
RJ260(U)M-02-20	–	28.000mm	20.040mm	20.100mm
RJ260(U)M-02-25	–	35.000mm	25.040mm	25.100mm

drylin® R shaft guides | igus® testing method

Part No.	Test force [N]	Øi test housing	Min. bearing Øi (plug gauge falls)	Max. bearing Øi (plug gauge sticks)
XUMO-01-10	0.981	12.000mm	9.98mm	10.02mm
XUM-01/02-12	1.373	14.000mm	12.02mm	12.06mm
XUM-01-14	1.500	16.000mm	14.02mm	14.06mm
XUM-01/02-16	1.864	18.000mm	16.02mm	16.06mm
XUM-01/02-20	2.649	23.000mm	20.03mm	20.07mm
XUM-01/02-25	3.729	28.000mm	24.97mm	25.01mm
XUM-01/02-30	4.807	34.000mm	29.96mm	30.01mm
XUM-01/02-40	7.063	44.000mm	40.00mm	40.05mm

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 plain 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 (e.g. JUM/RJM) in connection with an adapter/ housing (e.g. RJUM, OJUM, RGA) the factory tolerance of the housing hole (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 bearing 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 5MPa surface pressure.

F_{max} static:
The maximum values are the result of the projected surface and 35MPa surface pressure.

Installation instructions ▶ Page 1079

Tightening torque for drylin® connections between metal parts

Metric thread (Da)	Tightening torque [Nm]	Recommended tightening 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

Please be aware of the minimal screw-in depth for aluminium and zinc die-casting parts: 1.5 x Da

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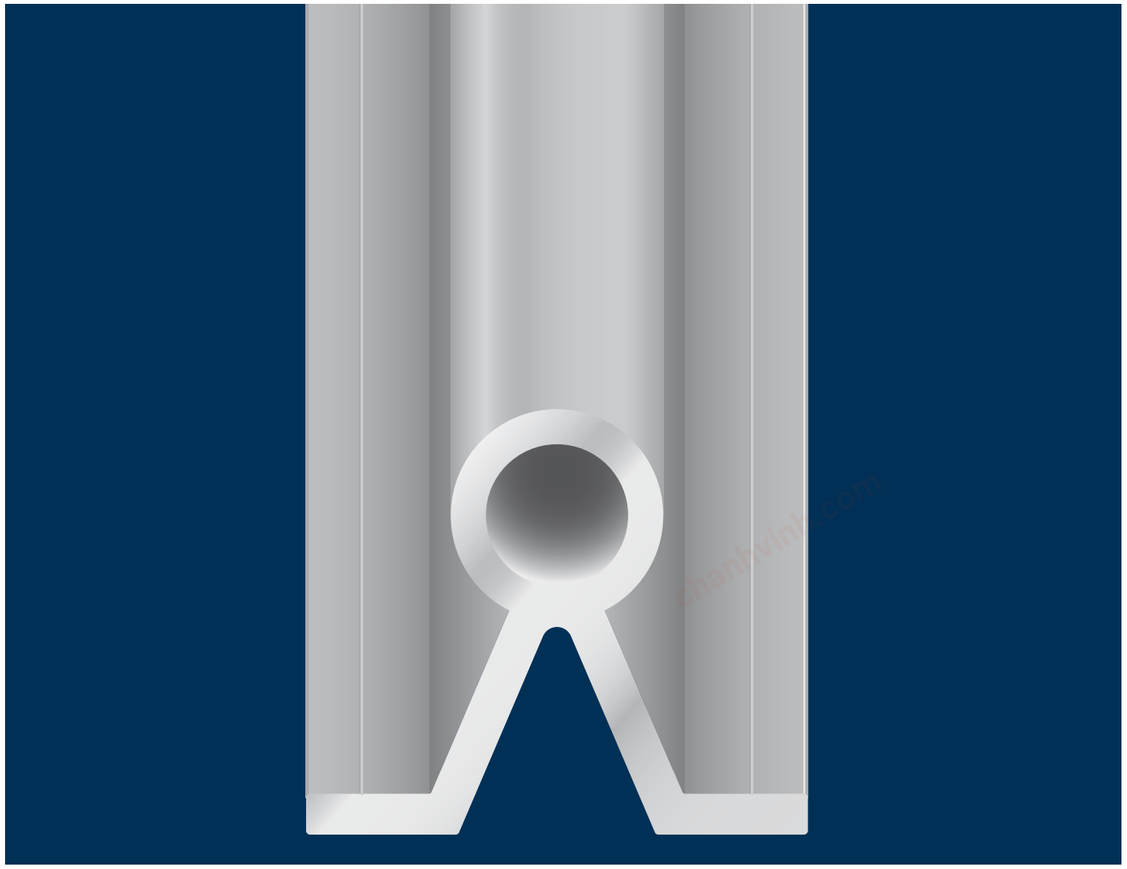
My sketches



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 or without support



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drylin® shafts | Advantages

Suitable liner materials:



	The all-rounder – iglidur® J	The specialist – iglidur® J200	The extreme – iglidur® X	The endurance runner – iglidur® E7	The FDA-compliant – iglidur® A180	Blue Sky Thinking FDA/EU-compliant iglidur® A160
Potential counter partner	All shaft materials	Hard-anodised aluminium	Hardened stainless steel	Steel/stainless steel shaft	All shaft materials	Stainless steel
Application temperature	from –50°C to +90°C	from –50°C to +90°C	from –100°C to +250°C	from –50°C to +70°C	from –50°C to +90°C	from –50°C to +90°C
Best coefficient of friction with	Steel shaft	Hard-anodised aluminium	Hard-chromed steel	Steel/stainless steel shaft	Stainless steel shaft	Hardened stainless steel shafts
Maximum service life with	Hard-anodised aluminium	Hard-anodised aluminium	Hardened stainless steel	Steel/stainless steel shaft	Stainless steel shaft	Hardened stainless steel shafts
Permissible stat. surface pressure	35MPa	23MPa	150MPa	18MPa	28MPa	15MPa
Moisture absorption	1.3% weight	0.7% weight	0.5% weight	< 0.1% weight	0.2% weight	< 0.1% weight
Volume resistance	> 10^{13}Ωcm	> 10^{8}Ωcm	< 10^{5}Ωcm	> 10^{9}Ωcm	> 10^{12}Ωcm	> 10^{12}Ωcm
More information	▶ Page 159	▶ Page 261	▶ Page 279	▶ Page 267	▶ Page 401	▶ Page 419

Available shaft materials:

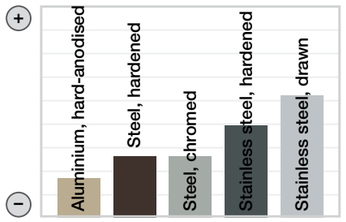
Aluminium
- Ideal in combination with liners made from iglidur® J/J200
- Lightweight
- Low wear
- Corrosion-free
- Available from stock

Steel
- E7 liners for up to 8 times longer service life
- Cost-effective standard
- High load capacity
- Dry area applications
- Hard chrome-plated also available
- Lower coefficient of friction against plastic bearings

Stainless steel
- A180 liners for food and pharmaceutical applications
- Corrosion resistance
- High chemical resistance
- Ideal solution for wet applications
- 316 stainless steel for extremely chemical intensive applications

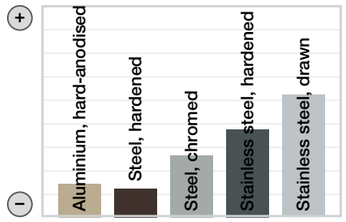
Please remember that this is a technical surface. Small colour variations are possible due to variable coating depths.

Wear



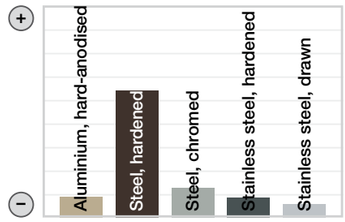
iglidur® J against particular shaft materials

Coefficient of friction



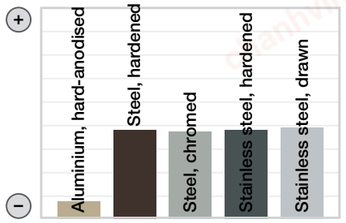
iglidur® J against particular shaft materials

Corrosion



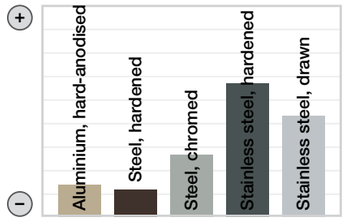
iglidur® J against particular shaft materials

Weight



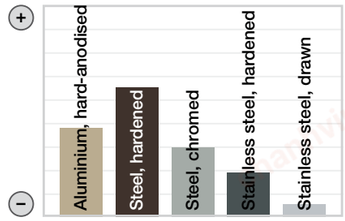
iglidur® J against particular shaft materials

Cost



iglidur® J against particular shaft materials

Chemical charge

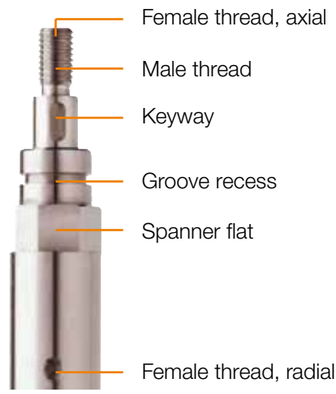


iglidur® J against particular shaft materials

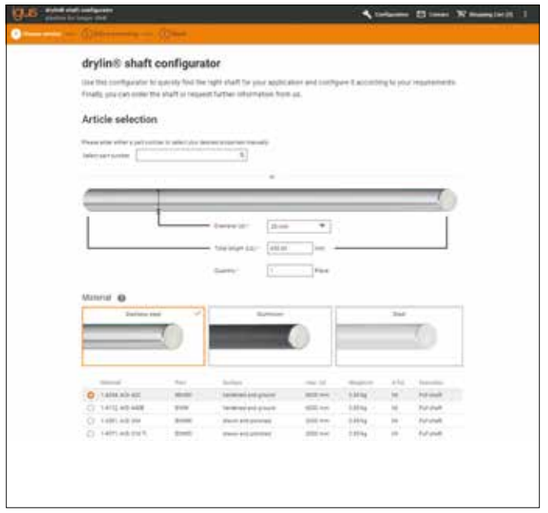
drylin® shafts | Product range New



Inquiries can be put online as well:
▶ **www.igus-asean.com/shaftinquiry**

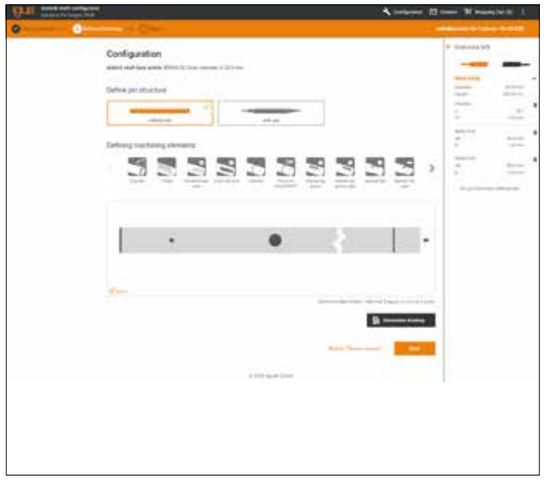


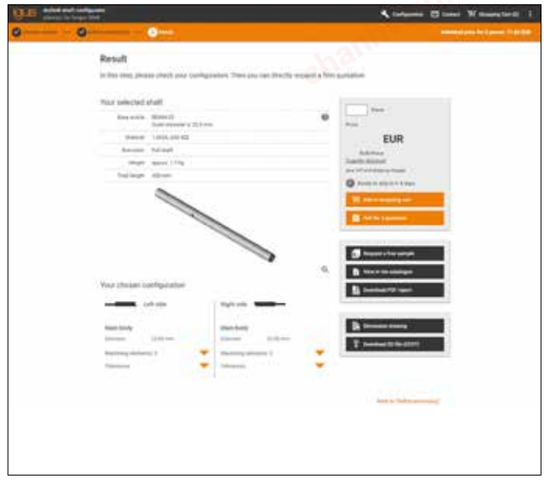
Special machining
All shafts can be individually machined. Please send us your drawing. We can then provide a quotation quickly.



Configurator for guide shafts: guide shafts with machining – anyone can configure online
With this online tool, guide shafts with and without machining can be individually configured and ordered. Fast and easy with no previous CAD experience. All in all, the tool makes it possible to order 7 shaft materials from Ø 6 to 50mm. Order online, delivered quickly.
- Add chamfers with just one click
- Offset machined end possible
- Radial and axial holes, with or without female thread
- With plausibility check
- Live price display

▶ **www.igus-asean.com/shaft-configurator**





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drylin® shafts | Product range

Material	Aluminium			Steel			
Designation	AWMP AWMPV	AWMU	AWMR	SWM	SWUM SWUMN	SWMH	SWUMH SWUMHN
Material	EN AW 6061/6060			AISI 1055		1.1213 HV	
Availability							
Ø 6	●			▲		▲	
Ø 8	●			▲		▲	
Ø 10	●	●		▲		▲	
Ø 12	●	●	●	▲	▲	▲	▲
Ø 16	●	●	●	▲	▲	▲	▲
Ø 20	●	●	●	▲	▲	▲	▲
Ø 25	●	●	●	▲	▲	▲	▲
Ø 30	●[164)] / ●	●		▲	▲	▲	▲
Ø 40	●[164)] / ●	●		▲	▲	▲	▲
Ø 50	●[164)]			▲	▲	▲	▲
Ø 60	●[164)]						
Ø Tolerance	h8	–0.1mm	h9	h6	h6	h7	h7
Max. supply length Ø 8–10mm	3,000	–	–	3,000	–	–	3,000
Max. supply length Ø 12–50mm	3,000	4,000	3,000	6,000	6,000	6,000	6,000
Surface	hard-anodised			hardened/ground		hard chromed	
Surface roughness Ra	< 0.6			0.15–0.3			
Hardness	up to 550 HV			60+4 HRC			
Roundness	≤ 1/2 Ø Tolerance			≤ 1/2 Ø Tolerance			

Material	Stainless steel, hardened				Drawn stainless steel			Carbon fibre
Designation	EWM	EWUM EWUMN	EEWM	EEWUM EEWUMN	EWMR	EWMS	EWUMS	CWM
Material	AISI 440B		AISI 420		AISI 304	AISI 316Ti		CFK Composite
Availability								
Ø 6	▲		▲		▲	▲		
Ø 8	▲		▲		▲	▲		
Ø 10	▲		▲		▲	▲		
Ø 12	▲	▲	▲	▲	▲	▲	▲	▲
Ø 16	▲	▲	▲	▲	▲	▲	▲	▲
Ø 20	▲	▲	▲	▲	▲	▲	▲	▲
Ø 25	▲	▲	▲	▲	▲	▲	▲	
Ø 30	▲	▲	▲	▲	▲	▲	▲	▲
Ø 40	▲	▲	▲		▲	▲	▲	
Ø 50	▲	▲	▲	▲	▲			
Ø 60								
Ø Tolerance	h6	h6	h6	h6	h9	h9	h9	–0.1mm
Max. supply length Ø 8–10mm	–	–	3,000	–	–	–	–	2,000
Max. supply length Ø 12–50mm	6,000	6,000	6,000	6,000	3,000	3,000	3,000	2,000
Surface	hardened/ground				drawn, polished			UCU unidirectional/ cross winding/ unidirectional
Surface roughness Ra	0.15–0.3				0.3–0.6			< 0.6µm
Hardness	52+8 HRC				soft			–
Roundness	≤ 1/2 Ø Tolerance				≤ 1/2 Ø Tolerance			± 0.05mm

Delivery time: ● From stock ▲ simply cut shafts 3–8 days; machined shafts 12 days

[164)] Hollow profile 30 · 7.5; 40 · 10; 50 · 11

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drylin® shafts | Product range

Precision aluminium shafts



AWMR AWMP

Order key

Type	Size	Options
AW M P -	06 -	2000

Aluminium shaft | Metric | Precise | Outer Ø | Shaft length [mm]

AWMP:
Solid shaft up to Ø 25mm
Hollow shaft from Ø 30mm
AWMR:
Tube

igus® recommendation: Linear plain bearings equipped with iglidur® J200 liners for the longest service life

- Material: EN AW 6061/6060
- Straightness: EN 754-3
- Hardness: 75 HB
- Surface: hard-anodised
- Hardness: up to 550 HV
- Imperial shafts available upon request

Hard-anodised surfaces
▶ Page 958
Minimum saw lengths
▶ Page 961

Please contact us!
drylin® shafts can be individually machined.
Please send us your drawing or configure online.
We can then provide a quotation quickly.
▶ **www.igus-asean.com/shaft-configurator**

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, 12mm Ø, 500mm length

drylin® shafts | Product range

Supported aluminium shafts



AWMU

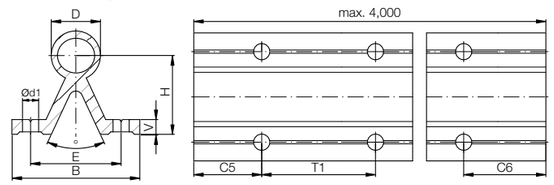
Order key

Type	Size	Options
AW M U -	12 -	2000

Aluminium shaft | Metric | Supported | Outer Ø | Shaft length [mm]

- Material: EN AW 6061/6060
- Straightness: DIN 12020
- Hardness: 75 HB
- Surface: hard-anodised
- Hardness: up to 550 HV
- Symmetrical standard hole pattern C5 = C6

Hard-anodised surfaces
▶ Page 958
Minimum saw lengths
▶ Page 961



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]	Iy [mm⁴]	Iz [mm⁴]	Wby [mm²]	Wbz [mm²]
AWMU-12	12	40	22	5	4.5	50	29	75	20	57	4,000	0.75	26,600	19,700	1,330	1,091
AWMU-16	16	45	26	5	5.5	50	33	100	20	69	4,000	1.00	40,000	39,200	1,778	1,844
AWMU-20	20	52	32	6	6.6	50	37	100	20	69	4,000	1.42	76,600	86,200	2,946	3,336
AWMU-25	25	57	36	6	6.6	50	42	120	20	79	4,000	1.81	109,800	146,700	3,853	5,103
AWMU-30	30	69	42	7	9.0	50	51	150	20	94	4,000	2.69	226,900	328,700	6,577	10,049
AWMU-40[86)]	40	73	50	8	9.0	50	55	200	20	119	4,000	4.06	382,100	734,800	10,468	19,160

[86)] **The tolerance for the shaft diameter D amounts –0.15**

Order example:
AWMU-16-500: supported aluminium shaft, 16mm Ø, 500mm length

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drylin® shafts | Product range

Standard steel shafts



SWM SWUMN SWUM

- Completely supported and mounted with standard aluminium support
- Available shaft materials:
  - ▶ Cf53 steel (AISI 1055), hardened/ground
  - ▶ Cf53 steel (AISI 1055), hard-chromed
- For supported shafts:
  - ▶ Partial shaft support supplied in lengths of 600mm max.
  - ▶ Standard pitch T2, T1 also possible upon request
  - ▶ Symmetrical hole pitches C5 = C6

Order key

Type	Size	Options
SW M-	06	-2000
Steel shaft	Metric	Outer Ø	Shaft length [mm]

igus® recommendation: Linear plain bearings equipped with iglidur® E7 liners for 8 times longer service life

Dimensions [mm] – steel shafts 1.1213

Part No.	Outer Ø	Weight [kg/m]	Max. length	Effective hardness depth (at 1.1213)
SWM-06	6	0.222	3,000	0.8
SWM-08	8	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

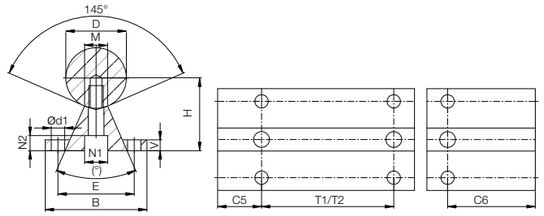
Part No.	Outer Ø	Weight [kg/m]	Max. length	Effective hardness depth (at 1.1213)
SWMH-06	6	0.222	3,000	0.8
SWMH-08	8	0.359	4,000	0.9
SWMH-10	10	0.617	4,000	0.9
SWMH-12	12	0.888	6,000	1.0
SWMH-16	16	1.578	6,000	1.2
SWMH-20	20	2.466	6,000	1.6
SWMH-25	25	3.853	6,000	1.8
SWMH-30	30	5.549	6,000	2.0
SWMH-40	40	9.865	6,000	2.2
SWMH-50	50	15.413	6,000	2.4

Order example:
SWM-16-500: steel shaft 16mm Ø 1.1213, 500mm in length

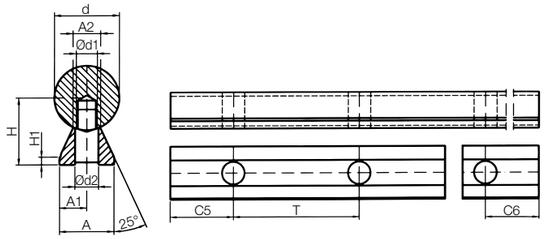
drylin® shafts | Product range

Supported standard steel shaft

SWUM



SWUMN



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drylin® shafts can be individually machined. Please send us your drawing or configure online. We can then provide a quotation quickly.
▶ **www.igus-asean.com/shaft-configurator**

Dimensions [mm] – supported steel shafts 1.1213

Part No.	D	B	H ±0.02	V	N1	N2	d1	M	(°)	E	T1 ±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

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 unmounted.

Order example:
SWUM-16-500: supported steel shaft 16mm Ø made from 1.1213, 500mm length

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drylin® shafts | Product range

Stainless steel shafts



EWM EEWM EWMR

STAIN-LESS STEEL

igus® recommendation: Linear plain bearings equipped with iglidur® E7 liners for 8 times longer service life

Please contact us!
drylin® shafts can be individually machined.
Please send us your drawing or configure online.
We can then provide a quotation quickly.
▶ **www.igus-asean.com/shaft-configurator**

Dimensions [mm] – hardened stainless steel AISI 440B

Part No.	Outer Ø	Weight [kg/m]	Max. length	Effective hardness depth
EWM-06	6	0.222	3,000	0.8
EWM-08	8	0.359	4,000	0.9
EWM-10	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

drylin® shafts | Product range

Materials: AISI 440B, AISI 420C, AISI 304, AISI 316Ti

Order key

Type	Size	Options
EW M	06	-2000

Steel shaft | Metric | Outer Ø | Shaft length [mm]

Available shaft materials
AISI 440B, hardened/ground ▶ EWM
AISI 420C, hardened/ground ▶ EEWM
AISI 304, drawn ▶ EWMR
AISI 316Ti, drawn ▶ EWMS

Dimensions [mm] – hardened stainless steel AISI 420C

Part No.	Outer Ø	Weight [kg/m]	Max. length	Effective hardness depth
EEWM-06	6	0.222	3,000	0.8
EEWM-08	8	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 AISI 304 (EWMR) or AISI 316Ti soft stainless steel (EWMS)

Part No.		Outer Ø	Weight [kg/m]	Max. length
EWMR-06	**EWMS-06**	6	0.222	3,000
EWMR-08	**EWMS-08**	8	0.359	3,000
EWMR-10	**EWMS-10**	10	0.617	3,000
EWMR-12	**EWMS-12**	12	0.888	3,000
EWMR-16	**EWMS-16**	16	1.578	3,000
EWMR-20	**EWMS-20**	20	2.466	3,000
EWMR-25	**EWMS-25**	25	3.853	3,000
EWMR-30	**EWMS-30**	30	5.549	3,000
EWMR-40	**EWMS-40**	30	5.549	3,000
EWMR-50		30	5.549	3,000

Order example:
EWM-16-500: Stainless steel shaft (AISI 440B) with 16mm Ø, 500mm in length

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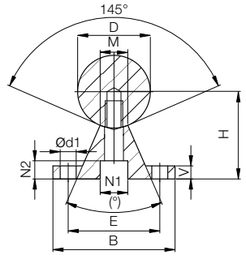
drylin® shafts | Product range

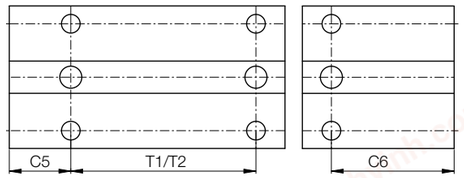
Supported stainless steel shafts



EWUM



STAIN-LESS STEEL



igus® recommendation: Linear plain 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 600mm max.
  - ▶ Standard pitch T2, T1 also possible upon request
  - ▶ Symmetrical hole pitches C5 = C6

Dimensions [mm] – supported stainless steel shafts AISI 440B

Part No.	D	B	H	V	N1	N2	d1	M	(°)	E	T1	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

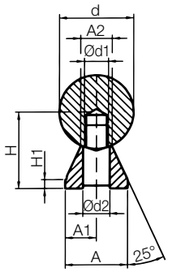
Order example:
EWUM-16-500-T1: Supported stainless steel shaft (AISI 440B) with 16mm outer Ø 500mm length, T1 pitch

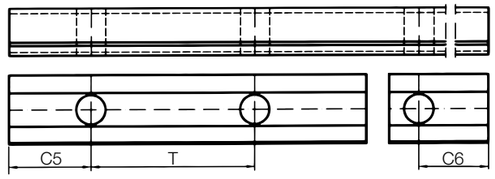
drylin® shafts | Product range

Low level supported stainless steel shafts



EWUMN





Order key

Type	Size	Options
EWUMN-	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 lengths:
AISI 440B, max. 6,000mm

Hole pattern:
T2: T2 pitch (standard)
T1: T1 pitch (upon request)

Dimensions [mm] – low level supported stainless steel shafts AISI 440B

Part No.	Outer Ø	H	H1	A	A1	A2	d1	d2	T	C5/C6		Weight
	d	±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 unmounted.

Order example:
EWUMN-16-500: Low level supported stainless steel shaft (AISI 440B) with 16mm outer Ø, 500mm length

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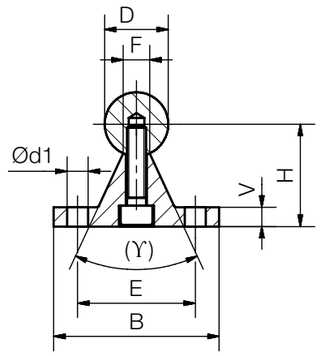
drylin® shafts | Product range

Partially supported stainless steel shafts



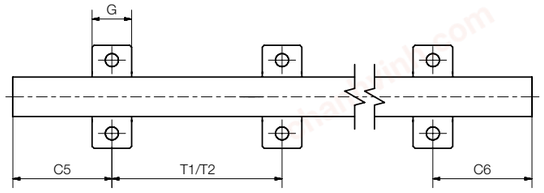
EWUM-ES/
EWUMS-ES



igus® recommendation: Linear plain bearings equipped with iglidur® E7 liners for 8 times longer service life

Standard shaft support blocks made of stainless steel
- Connection sizes are identical to aluminium supports

▶ **Page 1160**



Dimensions [mm] – partially supported stainless steel shafts AISI 440B

Part No.	D h6	B	H ±0.02	V	d1	E	ϒ	F	G	T1	C5/C6 for T1 Min.	C5/C6 for T1 Max.	T2 Standard	C5/C6 for T2 Min.	C5/C6 for T2 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

Order example:
EWUM-ES-20-500, partially supported stainless steel shaft (shaft and support made of stainless steel), AISI 440B material, T2 pitch, outer Ø 20mm, L = 500mm

drylin® shafts

drylin® shafts | Product range

STAIN-LESS STEEL

Order key

Type	Size	Options
EWUMS-	ES- 20 -	500-T2

Partially supported stainless steel shaft, metric	Material	Outer Ø	Shaft length [mm]	Hole pattern

Available materials and lengths:
AISI 440B, max. 6,000mm
▶ EWUM
AISI 316Ti, max. 3,000mm
▶ EWUMS

Options:
Blank: AISI 440B material
S: AISI 316Ti
Hole pattern:
T2: T2 pitch (standard)
T1: T1 pitch

Dimensions [mm] – partially supported stainless steel shafts AISI 316Ti

Part No.	D h6	B	H ±0.02	V	d1	E	ϒ	F	G	T1	C5/C6 for T1 Min.	C5/C6 for T1 Max.	T2 Standard	C5/C6 for T2 Min.	C5/C6 for T2 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

Order example:
EWUM-ES-20-500, partially supported stainless steel shaft (shaft and support made of stainless steel), AISI 316Ti material, T1 pitch, outer Ø 20mm, L = 500mm

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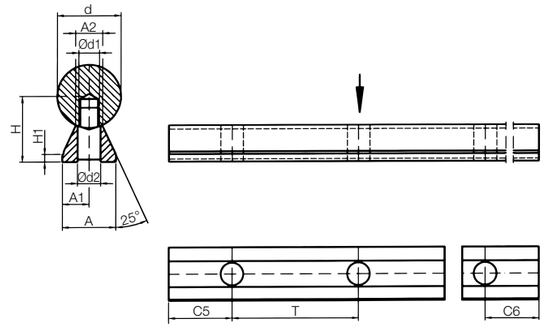
drylin® shafts | Product range

Low level partially supported stainless steel shafts



EWUMN-ES/
EWUMSN-ES



igus® recommendation: Linear plain bearings equipped with iglidur® E7 liners for 8 times longer service life

Low level shaft support blocks made of stainless steel
- Connection sizes are identical to low-level aluminium supports ▶ **Page 1161**

Dimensions [mm] – low level partially supported stainless steel shafts AISI 440B

Part No.	d	H	H1	A	A1	A2	d1	d2	T	C5/C6		Weight
		±0.02								Min.	Max.	[kg/m]
EWUMN-ES-12	12	14.5	3	11	5.5	5.4	M4	4.2	75	20	57.0	1.00
EWUMN-ES-16	16	18.0	3	14	7.0	7.0	M5	5.2	75	20	57.0	1.76
EWUMN-ES-20	20	22.0	3	17	8.5	8.1	M6	6.2	75	20	57.0	2.77
EWUMN-ES-25	25	26.0	3	21	10.5	10.3	M8	8.2	75	20	57.0	4.35
EWUMN-ES-30	30	30.0	3	23	11.5	11.0	M10	10.2	100	20	69.5	6.01
EWUMN-ES-40	40	39.0	4	30	15.0	15.0	M12	12.5	100	20	69.5	10.80

Low-level partially supported stainless steel shafts are supplied unassembled

Order example:
EWUMN-ES-20-500: Low level partially supported stainless steel shafts. AISI 440B material, T2 pitch (standard), 20mm outer Ø, 500mm length

drylin® shafts

drylin® shafts | Product range

STAIN-LESS STEEL

Order key

Type	Size	Options

EWUMSN-ES- 20 -500-T2

Partially supported stainless steel shaft, metric	Material	Outer Ø	Shaft length [mm]	Hole pattern

Available materials and lengths:
AISI 440B, max. 6,000mm
▶ EWUMN
AISI 316Ti, max. 3,000mm
▶ EWUMSN

Dimensions [mm] – low level partially supported stainless steel shafts AISI 316Ti

Part No.	d	H	H1	A	A1	A2	d1	d2	T	C5/C6		Weight
		±0.02								Min.	Max.	[kg/m]
EWUMSN-ES-12	12	14.5	3	11	5.5	5.4	M4	4.2	75	20	57.0	1.00
EWUMSN-ES-16	16	18.0	3	14	7.0	7.0	M5	5.2	75	20	57.0	1.76
EWUMSN-ES-20	20	22.0	3	17	8.5	8.1	M6	6.2	75	20	57.0	2.77
EWUMSN-ES-25	25	26.0	3	21	10.5	10.3	M8	8.2	75	20	57.0	4.35
EWUMSN-ES-30	30	30.0	3	23	11.5	11.0	M10	10.2	100	20	69.5	6.01
EWUMSN-ES-40	40	39.0	4	30	15.0	15.0	M12	12.5	100	20	69.5	10.80

Low-level partially supported stainless steel shafts are supplied unassembled

Order example:
EWUMSN-ES-20-500-T2: Low-level partially supported stainless steel shaft. AISI 316Ti material, T2 pitch, outer Ø 20mm, length 500mm

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drylin® shafts | Product range

Carbon fibre shafts



CWM

- Material: CFK composite
- Roundness tolerance: ± 0.05mm
- Diameter tolerance: –0.1mm
- Application temperature: max. +80°C
- Colour: Black

Order key

Type	Size	Options
CW M-	12	-1000
Carbon fibre shaft	Metric	Outer Ø	Shaft length [mm]

Dimensions [mm]

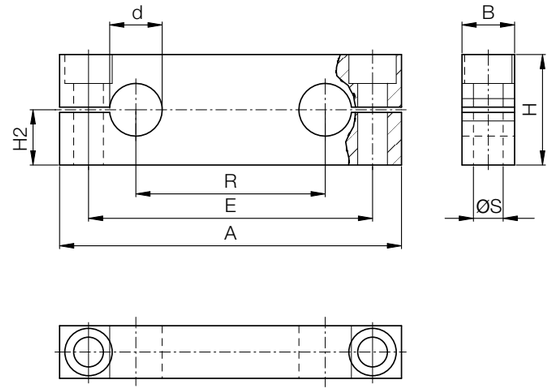
Part No.	Design	Outer Ø –0.1	Inner Ø –0.1	Max. length	Weight [g]
CWM-12	Hollow shaft	12	9.0	2,000	70
CWM-16	Hollow shaft	16	12.5	2,000	120
CWM-20	Hollow shaft	20	16.0	2,000	170
CWM-30	Hollow shaft	30	26.0	2,000	270

Order example:
CWM-16-500: Carbon fibre shaft, 16mm outer Ø, 500mm length

drylin® shafts | Product range

Shaft end supports, floating





Order key

Type	Size
TA -	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	34	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 10mm

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drylin® shafts | Product range

Shaft end supports, fixed

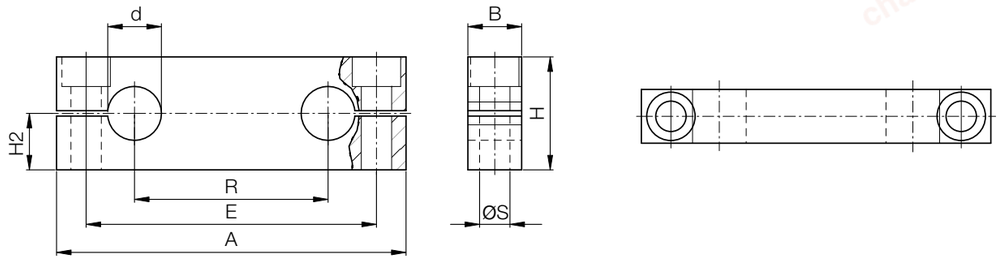


Order key

Type	Size
TA F -	08

Shaft end support | Fixed | Inner Ø

Material: aluminium
Through 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	34	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 12mm inner Ø

drylin® shafts | Product range

Shaft end blocks, standard design

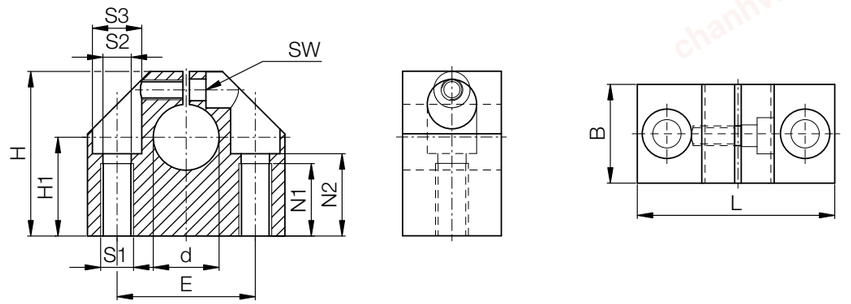


Order key

Type	Size
WA -	08

Shaft end block Standard design | 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 8mm

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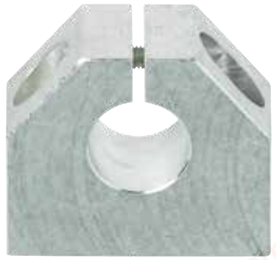
drylin® shafts | Product range

Shaft end blocks, compact design

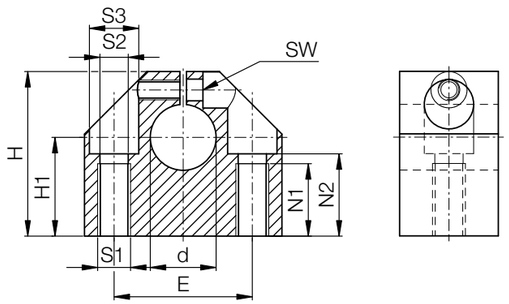


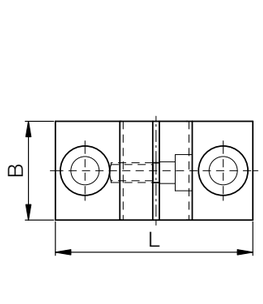
Order key

Type	Size
WA C - 06	

Shaft end block | Compact design | Inner Ø

Material: aluminium





Dimensions [mm]

Part No.	d	B	H	H1 from +0.01 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 12mm

drylin® shafts | Product range

Shaft end blocks, narrow design

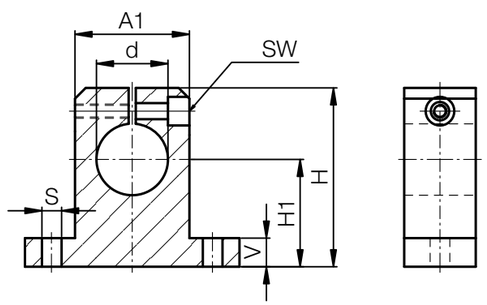


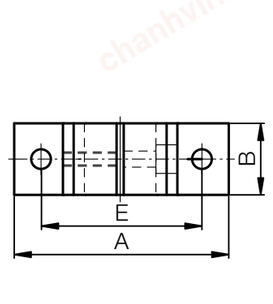
Order key

Type	Size
WA S - 08	

Shaft end block | Narrow design | 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 12mm

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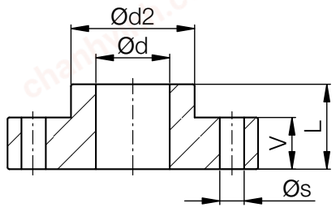
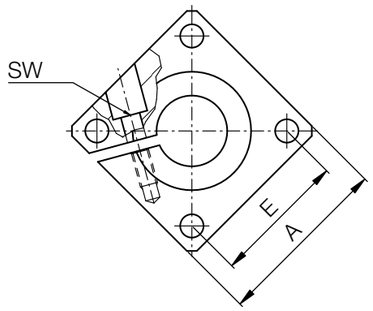
drylin® shafts | Product range

Flanged shaft end block







Order key

Type	Size
WA 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: Flange shaft support with inner Ø 16mm

drylin® expert 2.0 | Online tools



Expert for linear guides: System selection and service life calculation with CAD

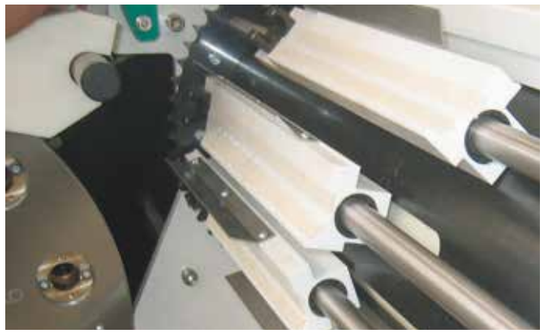
Configure linear bearings and calculate their service life – constantly expanded by new sizes and products

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. Select the bearing size, carriage, number and position. Then 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.

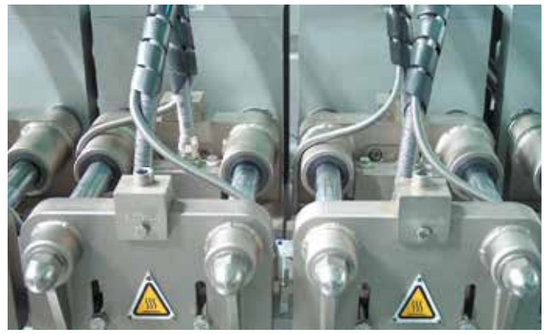
▶ **www.igus-asean.com/drylin-expert**

Download the online tool app now

Download on the App Store



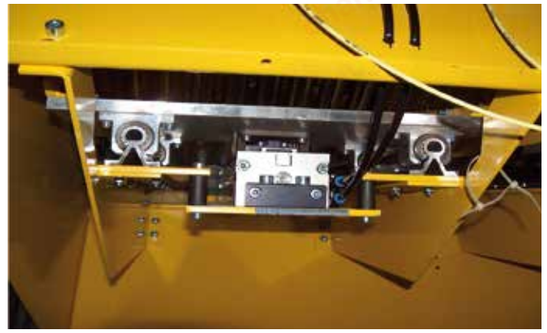
Aluminium shafts in combination with iglidur® J enable high speeds due to the lightweight.



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 with supported aluminium shaft.

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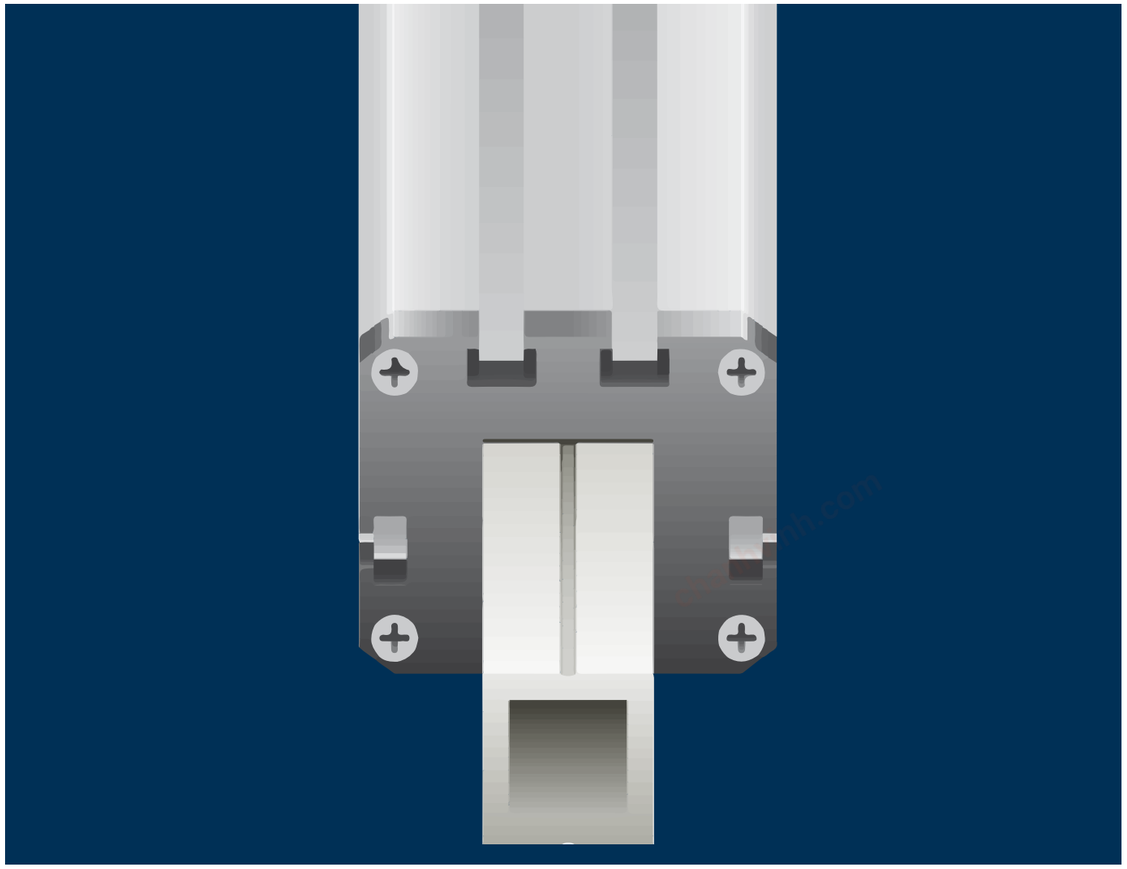
My sketches



drylin® linear technology – drylin® Q square linear guides

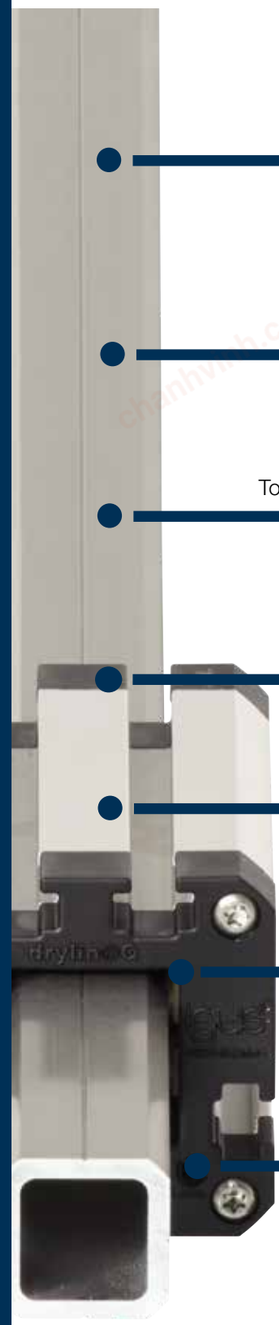
- Torque-resistant linear guides
- Square section linear rail made from hard-anodised aluminium
- Apply moments up to 10Nm
- Adjustable linear carriage with or without manual clamp
- Lubrication-free and lightweight



chanhvinh.com

drylin® Q square linear guides | Advantages

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 or adjustable housings with or without manual clamp are available. Due to the hollow design, the robust 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; installation size 20 can also be combined with all 20/20 aluminium profiles.

- 100% lubrication-free
- Torque-resistant
- Adjustable bearing clearance
- Applied forces from all directions possible
- Dirt resistance
- Low vibration and quiet
- Numerous mounting options

Typical application areas

- Mechanical engineering
- Wood working industry
- Machine tools
- Handling

Available from stock
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity.

Max. +90°C
Min. –40°C

3 installation sizes (10/12/20)
Rail length: 1,500/3,000mm

Technical details on floating bearings, 2:1 Rule, tightening torque for drylin® metallic screws ▶ Page 963

drylin® Q square linear guides | Product overview

Linear system with individual housing versions



Square section linear rails

- Material: aluminium, hard-anodised
- Lightweight and corrosion-resistant
- Hollow rail design for cables to feed-through

▶ **Page 1178**

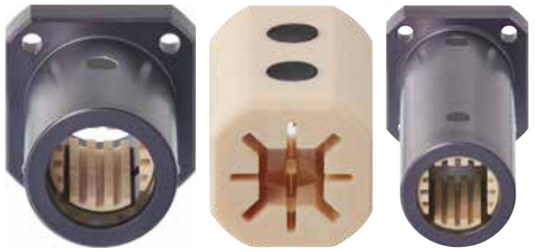




Linear carriage

- Unsupported carriage version with/without manual clamp
- Numerous fastening options on all sides via slot nuts
- Bearing clearance adjustable

▶ **Page 1179**



Bearing housing

- Enclosed anodised aluminium housing
- Apply moments up to 3Nm (size 10), 10Nm (size 20)
- Torque-resistant sliding elements made from iglidur® J

▶ **Page 1181**



Sliding plates for clearance adjustment

- Tolerance compensation for profiles, including lifting columns
- Adjustment mechanism included
- Easy assembly

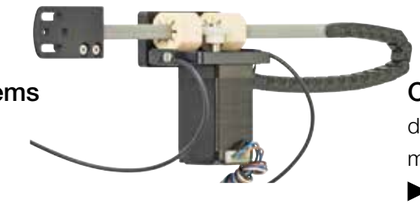
▶ **Page 1185**



Measuring systems

drylin® QKM

▶ **Page 1187**



Cantilever axis

drylin® GRQ miniature linear module

▶ **Page 1443**

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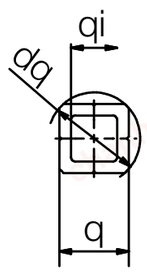
drylin® Q square linear guides | Product range

Square section linear rails





Order key

Type	Size	Option
AW M Q -	10 -	1000

Aluminium shaft	Metric	Square design	Installation size	Length [mm]

Minimum saw lengths ▶ Page 961

Dimensions [mm]

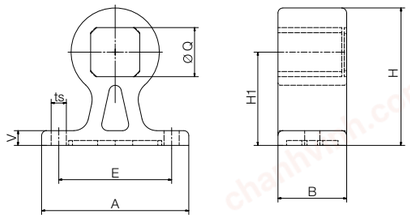
Part No.	Weight [kg/m]	q	dq	qi ±0.02	Max. length
AWMQ-10	0.082	7.5	10	5	1,500
AWMQ-12	0.193	12	16	8.5	1,500
AWMQ-20	0.46	20	25	15	3,000

Accessories

Shaft end supports made from plastic



- Cost-effective mounting option
- Can also be used as floating bearing

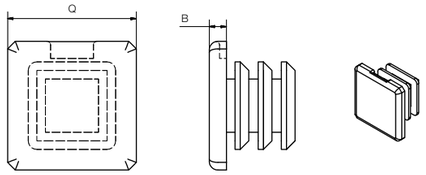


Dimensions [mm]

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 linear 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

drylin® Q square linear guides | Product range

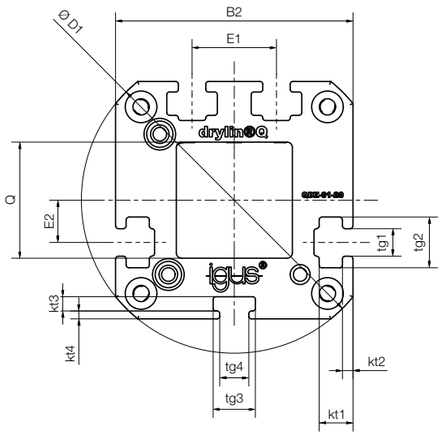
Adjustable linear carriage

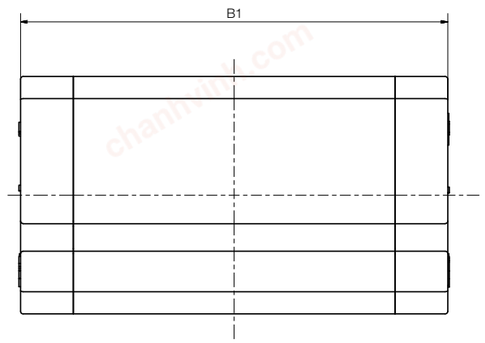


Order key

Type	Size
Q W E -	01 - 20

Square	Linear carriage	Adjustable	Standard design	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 offers attachment options (for example 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

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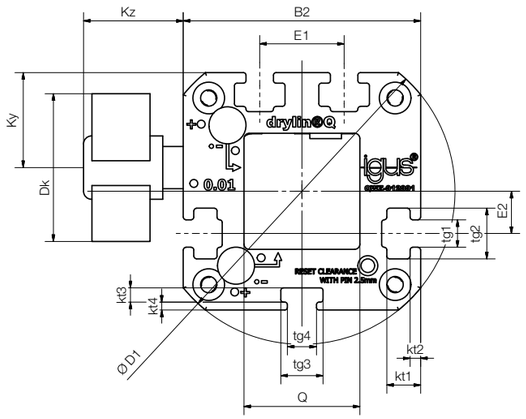
drylin® Q square linear guides | Product range

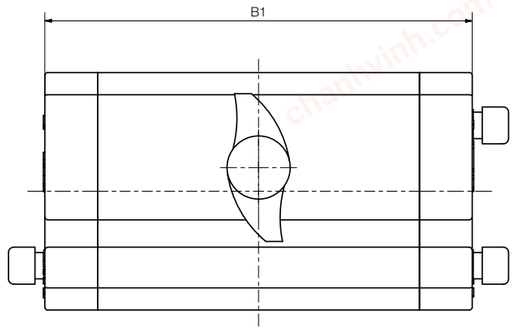
Adjustable linear carriage with manual clamp



Order key

Type				Size	Options
Q	W	E	- 01	- 20	- HKA
Square	Linear carriage	Adjustable	Standard design	Installation size	Manual clamp





Dimensions [mm]

Part No.	Weight	M max.	B1	B2	D1	Q	E1	E2	tg1	tg2	tg3	tg4
	[g]	[Nm]		h7								
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 thread was developed for simple tasks. The creep behaviour of the clamped plastic causes a reduction in clamping force over time (up to 70%). Therefore no safety-relevant parts may be clamped. Please contact our technical consultant, if you require other options for the clamping.

Can be combined with:



AWMQ-20

drylin® Q square linear guides | Product range

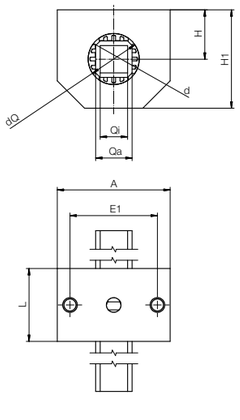
Q20 pillow blocks



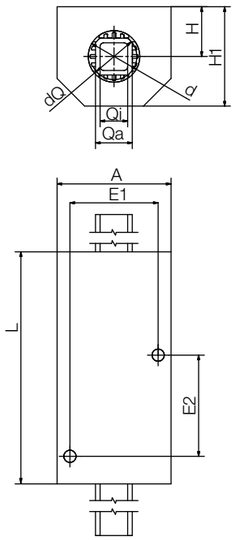
Order key

Type							Size	
Q	J	R	M	T	- 05	- 20		
Square	iglidur® J	Closed design	Metric	Tandem (optional)	Compact design	Installation size		

QJRM-05-20



QJRMT-05-20



Technical data [mm]

Part No.	Weight	Mx	Surface pressure	
	[kg]	[Nm]	dynamic [N]	static [N]
QJRM-05-20	0.25	5	1,500	10,500
QJRMT-05-20	0.55	10	1,500	10,500

Dimensions [mm]

Part No.	A	H	H1	dQ	Qa	Qi	E1	E2	d	L
		±0.02					±0.15	±0.15		
QJRM-05-20	62	27	54	25	20	15	48	–	28	40
QJRMT-05-20	62	27	54	25	20	15	48	55	28	85

Can be combined with:



AWMQ-20

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drylin® Q square linear guides | Product range

With flange



QJFM-02-...



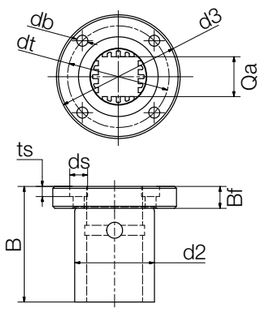
QJFMT-01-...

Order key

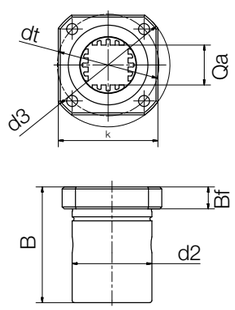
Type					Option	Size
Q	J	F	M	T	- 02	- 10
Square	iglidur® J	With flange	Metric	Tandem (optional)	Design	Installation size

Options:
01 = Round flange
02 = Square flange

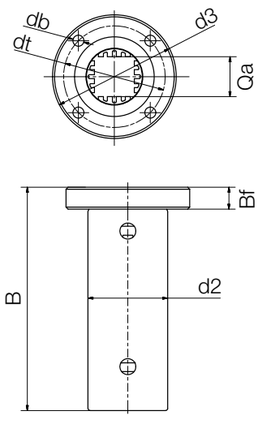
QJFM-01



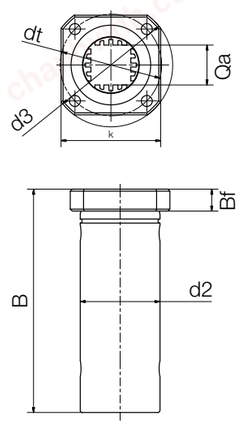
QJFM-02



QJFMT-01



QJFMT-02



Technical data and dimensions [mm]

Part No.	Weight	Surface pressure		Mx
	[kg]	dynamic [N]	static [N]	[Nm]
QJFM-01-20	0.14	1,500	10,500	5
QJFM-02-20	0.14	1,500	10,500	5
QJFMT-02-10	0.038	–	–	3
QJFMT-01-20	0.24	1,500	10,500	10
QJFMT-02-20	0.24	1,500	10,500	10

Part No.	k	d2	Bf	Qa	d3	dt	B	db	ds	ts
		h7			±0.15	±0.15				
QJFM-01-20	–	40	11	20	62	51	58	5.5	9.0	5.1
QJFM-02-20	50	40	11	20	62	51	58	5.5	9.0	5.1
QJFMT-02-10	30	19	9	7.5	39	29	52	4.5	7.5	4.1
QJFMT-01-20	–	40	11	20	62	51	112	5.5	9.0	5.1
QJFMT-02-20	50	40	11	20	62	51	112	5.5	9.0	5.1

Can be combined with:



AWMQ-10



AWMQ-20

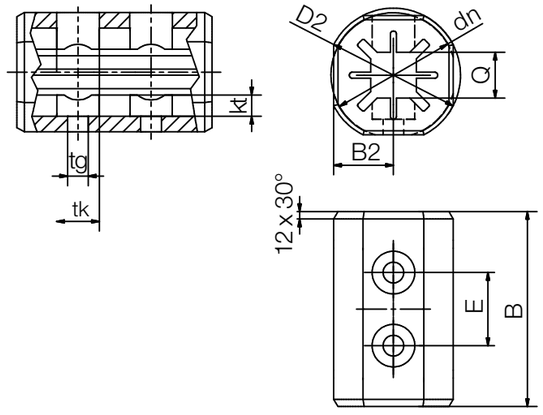
drylin® Q square linear guides | Product range

Q10 pillow blocks



Order key

Type						Size
Q	J	R	M	P	- 01	- 10
Square	iglidur® J	Closed design	Metric	Solid plastic	Standard design	Installation size

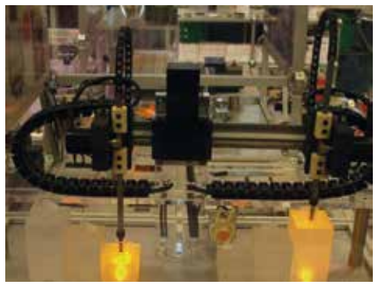




Manual clamp available.
Suffix "-HKA"

Dimensions [mm]

Part No.	Weight	M max.	B	B2	D2	dn	E	Q	tk	tg	kt
	[g]	[Nm]									
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 guide combined with drylin® GRW cantilever axis and NEMA stepper motor

Can be combined with:



AWMQ-10

chanhvinh.com

drylin® Q square linear guides | Product range

Accessories



- Hollow rail for supply lines (compressed air, cable)
- Small space requirement
- A host of possible applications

Single components



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



Plastic shaft end supports

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® Q square linear guides | Product range New

Clearance adjustment for columns

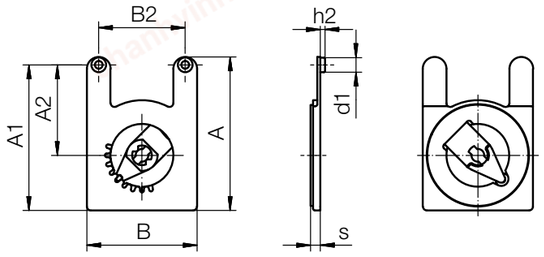


- Clearance-reduced guidance of the lifting columns by adjustment mechanism
- Low-cost due to injection moulding
- Lightweight solid plastic solution
- Lubrication-free, wear-resistant, maintenance-free due to dry-tech® polymer iglidur® J
- Corrosion-free

Order key

Type	Option	Size
ASD	J -	28 - 025

Type | iglidur® J | Width B | Installation size

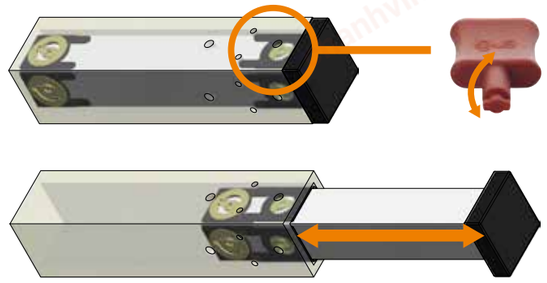


Dimensions [mm]

Part No.		Weight	s		A	B	A1	A2	B2	d1	h2
		[g]	Min.	Max.					±0.15	–0.1	±0.1
ASDJ-28-025	New	1.9	2.2	2.8	39	28	37	23	22	3.7	1.2



Adjustment key Part No.
ASDZ-012817



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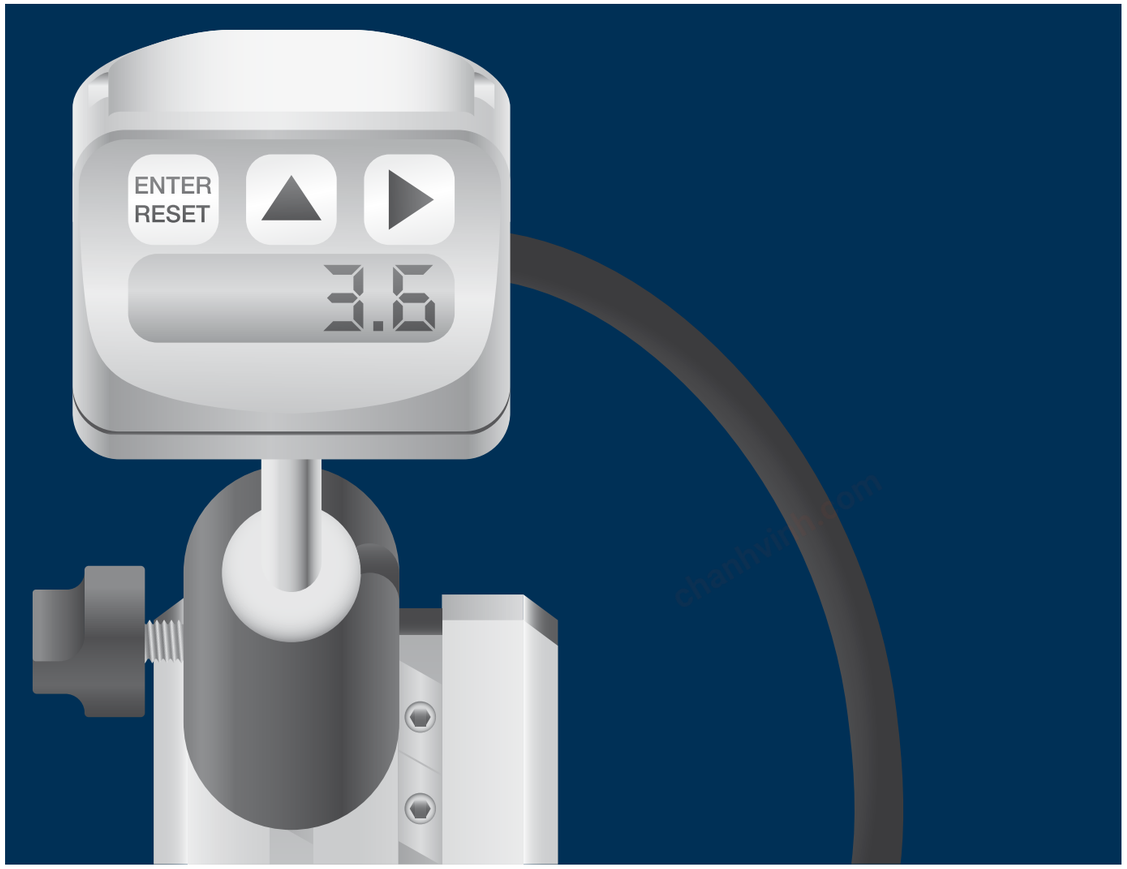
My sketches



drylin® linear technology – Digital measuring systems

- Ready-to-install complete systems
- Sensor, measuring display, magnetic tape included
- Battery operation
- Ideal for positional stops
- Operation without mains supply



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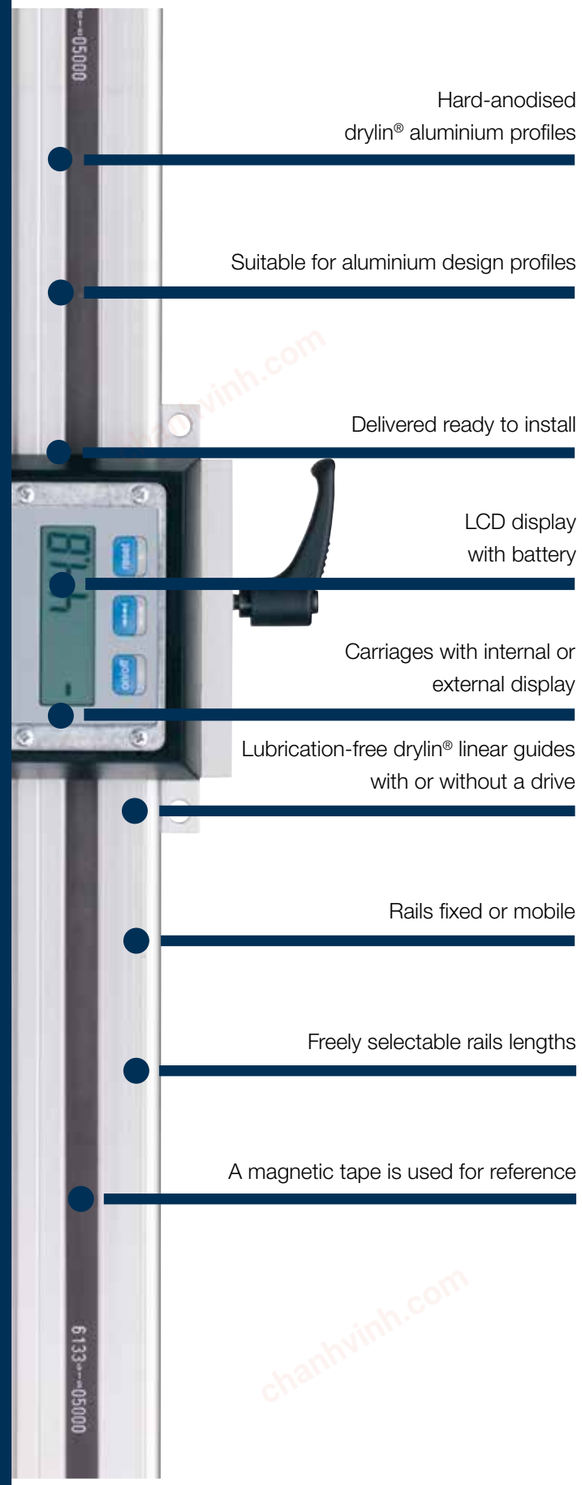
Digital drylin® measuring systems | Advantages

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 guides. 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.

Price breaks online
No minimum order value. No minimum order quantity.

Max. +70°C
Min. –10°C

Carriage widths: 45–134mm
Rail length: up to 4,000mm

Digital drylin® measuring systems | Products overview

Profile guides 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 1192



drylin® SLW with integrated measuring sensor

- Driven by trapezoidal thread
- Programmable display
- Positioning can be freely adjusted and locked

▶ Page 1193



drylin® W with digital measuring display

- Max. rail length up to 4,000mm
- Measuring display attached to the side of the carriage
- Lubrication-free adjusting of the carriage

▶ Page 1194



drylin® W with fixed measuring display

- Max. rail length: up to 2,000mm
- Measuring display fixed in place
- Moving rail with stationary carriage

▶ Page 1194



drylin® W with external measuring display

- Carriage with integrated sensor
- Flexible positioning of the measuring sensor
- Including manual clamp

▶ Page 1195



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 1196



Stop motion measuring system with rail scale

- econ measuring system based on drylin® pre-load prism slide
- Carriages with individually adjustable pre-load in 4 different strengths
- Including scaling on the rail

▶ Page 1197

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Digital drylin® measuring systems | Technical data

Measuring display for series SLWM/QKM



Properties	
Measuring principle	Incremental, with zero function
Display	LCD display 7.5mm high digits
Display accuracy	Max. 0.1mm
Display/display area	–99999 …+99999
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)
Design	Installation housing
Housing	Plastic
Protection class	IP54 display IP67 sensor
Working temperature	0…+50°C
Humidity	35-85%
Speed	Max. 2.5m/s
Display keyboard	3 function buttons

Measuring displays for series WKM2/WKMEDR



Properties	
Measuring principle	Incremental, with absolute value function
Display	Low power LCD with integrated sensor, quasi absolute, battery operated
Display accuracy	Max. 0.1mm
Repeatability	± 1 digit
Display/display area	–99999 …+99999
Function	Freely programmable, e.g. parameter, resolution or offset
Resolution	0.01 0.05 0.1 1mm 0.001, 0.01 inch Freely programmable angled display
Keys	3 keys, membrane keypad
Power supply	Battery integrated, service life of up to 10 years
Magnetic sensor	Securely connected
Reading distance	≤ 1.5mm integrated sensor ≤ 2mm external Sensor
Design	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	≤ 10m/s
EMC	EN61000-6-2 interference immunity / immission EN 61326-1 emitted interference / emission (class B)

Digital drylin® measuring systems | Technical data

Length measuring system WKMEX



Properties	
Measuring principle	Incremental
Repeatability	± 0.025mm
Measuring principle	Linear
Pole division	5mm
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	4.0m/s
VDC power supply	5 VDC or 10… 30 VDC
Current draw	5 VDC: max. 200mA 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	2.0mm
Connection method	Open cable ends

Magnetic tape for measuring display WKM



Properties	
Encoding	Incremental, single-track system
Basic pole division	5mm pole division
Band width	10mm
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)

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Digital drylin® measuring systems | Product range

Integrated measuring systems



Order key

Type	Option	Size
Q K M	- 01	- 20

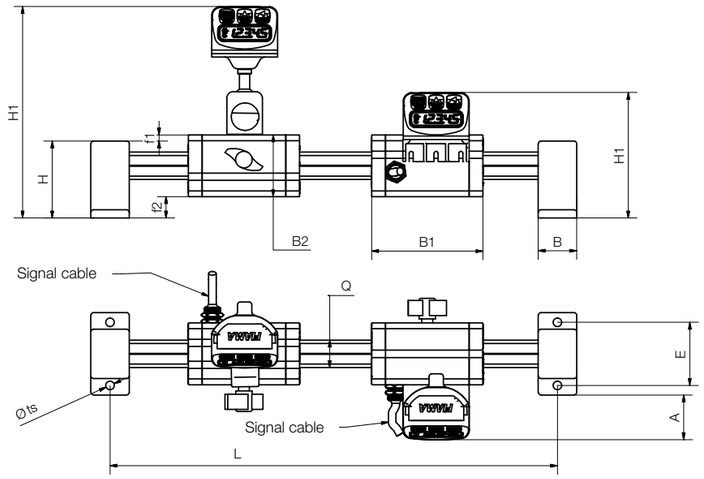
- **Q** Square
- **K** Measuring system
- **M** Metric
- Carriage type
- Installation size

Options:

01: Display flexible with angle joint

02: Display fixed in place

- Protected magnetic tape
- Attachment options using slot nuts
- Manual clamp on carriage
- Unsupported attachment
- Profile AWMQ-20 max. length 1,500mm
- Sensor integrated in the carriage, saving space
- Technical data ▶ **Page 1190**



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

Digital drylin® measuring systems | Product range

Ready-to-install systems for external data output

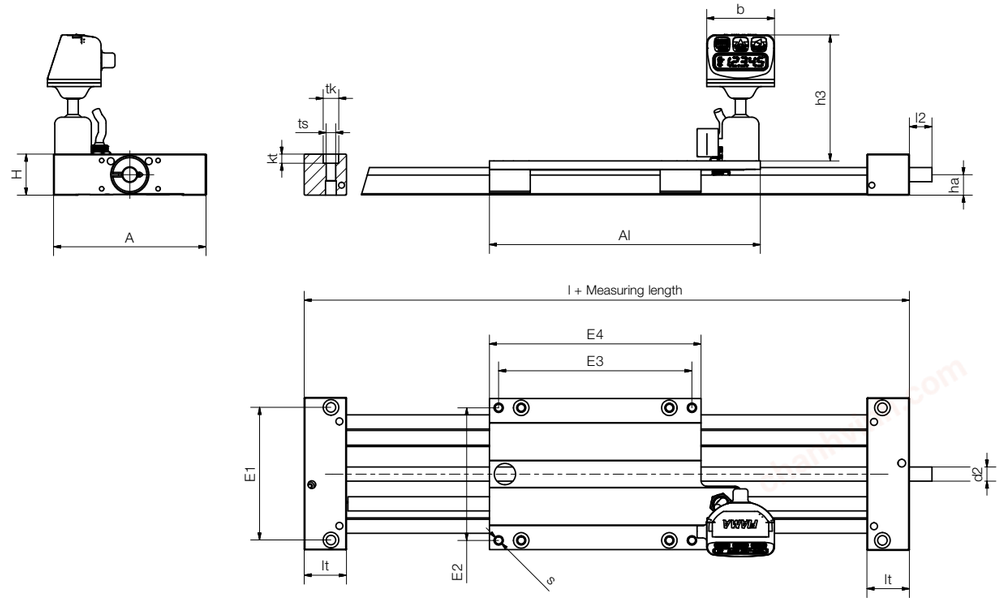


Order key

Type	Size
S L W M	- 1080

- **S L W M** drylin® SLW linear module
- 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 1190**
- Technical data drylin® linear module SLW ▶ **page 1383**



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

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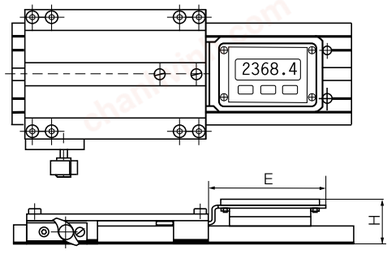
Digital drylin® measuring systems | Product range

Digital measuring systems with position readout

WKM2, series 10 and 20





Order key

Type	Design

WKM2 -10-80-15-01-R

drylin® W measuring system	Installation size	Rail width	Carriage length	Number of carriages	Display right-mounted

- Lockable carriage
- Display optionally to the right (R) or left (L) of the guide carriage
- Max. rail length 4,000mm (effective measuring length max. 3,757mm)
- Technical data ▶ **Page 1191**

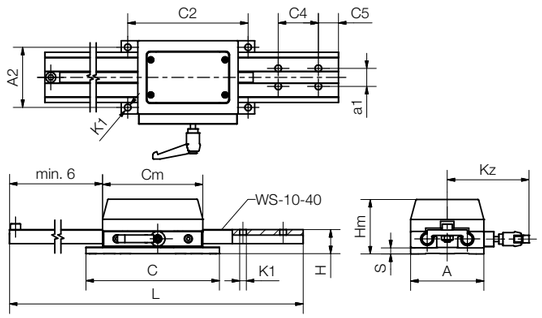
Dimensions [mm]

Part No.	drylin® rail profile[89]	H	E
WKM2-10-80-15-01-L	WS-10-80	36	93
WKM2-10-80-15-01-R	WS-10-80	36	93
WKM2-20-80-15-01-L	WS-20-80	40	93
WKM2-20-80-15-01-R	WS-20-80	40	93

[89] Profile dimensions ▶ Page 960

WKM2, series 11



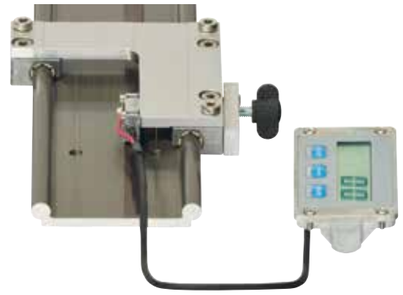


Dimensions [mm]

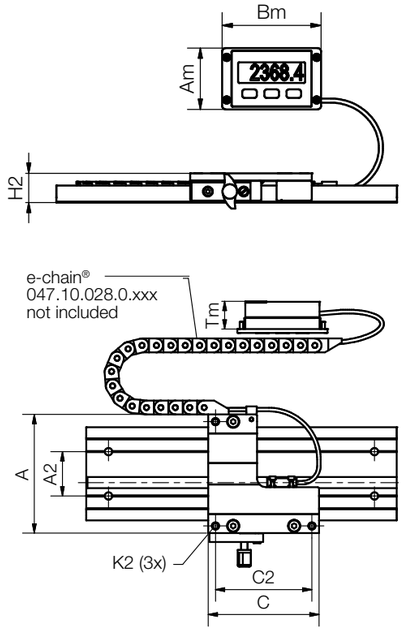
Part No.	L Max.	C4	C5	a1	C2	A2	K1	C	A	H	S	Cm	Hm	kz
WKM2-11-40	2,000	40	20	18	120	60	6.6	133	73	24	6	100	54	82

Digital drylin® measuring systems | Product range

Measuring system with positionable readout display



- Technical data ▶ **Page 1190**



Order key

Type	Size

WKMEDR - 10-80-10-0,3-01-2400

drylin® W measuring system	External Display	Assembly right	Installation size	Rail width	Carriage length	Cable length[165]	One measuring carriage per rail	Rail length [mm]

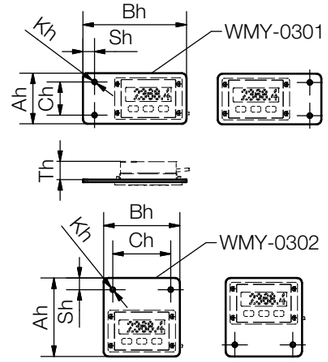
Options:

R: Assembly to the right of the guide carriage

L: Assembly to the left of the guide carriage

[165] **Cable length:**

Cable length between sensor and display [m] (0.1/0.2/0.3 up to max. 2.0)



Assembly options of the external display

Dimensions [mm]

Part No.	A Width	C Length	A2	C2	K2	H2 ±0.17	Am	Bm	Tm
WKMED-□[90]-10-80-10	107	100	94	87	M6	24	82	51	25
WKMED-□2[90]-10-80-10	107	100	94	87	M6	24	82	51	25

[90] Suitable for assembly on the right (R) or left (L)

Bracket dimensions [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

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Digital drylin® measuring systems | Product range

Ready-to-install system for external data output



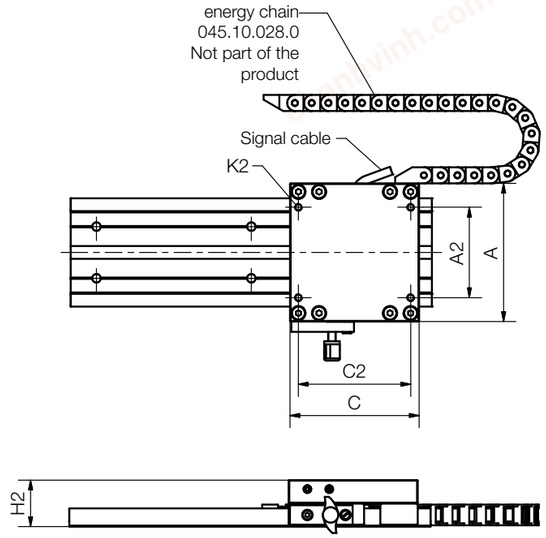
Order key

Type	Size/Design

WKM EX-10-80-10-2.5-00-01-1000

drylin® W measuring system	External data output	Installation size (shaft Ø)	Rail width	Rail length 100mm	Cable length [m]	Sensor version	Number 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: ±0.025mm
- 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: ±0.025mm
- 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 1191**



Dimensions [mm]

Part No.	H2	C	C2	A	A2	K2	Resolution
WKMEX-10-80	36	100	87	107	70	M6	0.1

Versions

Sensor version	Nominal voltage	Output power	Max. length of signal cable
00	10–30 V	HTL 10–30 V	30m
01	10–30 V	TTL Line Driver	50m
11	5 V	TTL Line Driver	10m

To place an order, please add the sensor type to the part number. Order example: WKMEX-10-80-00

Digital drylin® measuring systems | Product range

Stop motion measuring system with rail scale



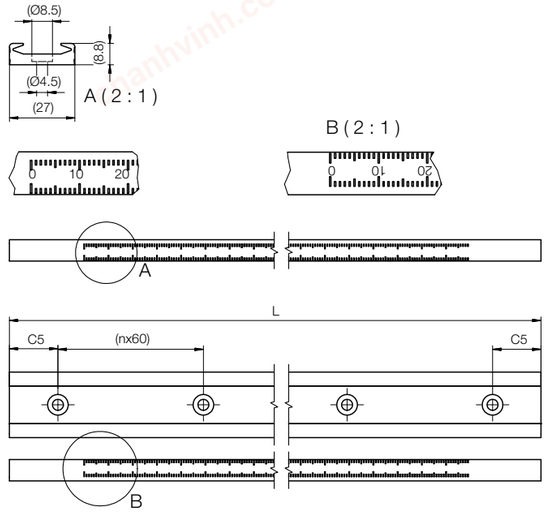
Order key

Type	Size

NKV - 27 - MES - 1000

drylin® pre-load prism slides	Installation size	Measuring system	Measuring length

- econ measuring system based on drylin® pre-load prism slide
- Carriages with individually adjustable pre-load in 4 different strengths
- Including scaling on the rail
- Cost-effective, durable, practical
- Guaranteed holding force from 1.3N to 11.7N
- Due to stop motion pre-loading, the measuring system is suitable for vertical installation without any further clamping



Dimensions [mm]

Part No.	A ±0.2	Al –0.1	H ±0.2	E1 ±0.15	E2 ±0.15	E3 ±0.15	l*
NKV-27-MES-1000	27	35/60	22	15	18	30	35/53/60/78
NKV-27-MES-2000	27	35/60	22	15	18	30	35/53/60/78

Part No.	hw ±0.25	lt ±0.2	lb	ts	tg	Average displacement force [N]	K1
NKV-27-MES-1000	22.5	20.5	5.5	3.5	M3	2–15	4.5
NKV-27-MES-2000	22.5	20.5	5.5	3.5	M3	2–15	4.5

drylin® stop motion full product range online
▶ www.igus-asean.com/drylinstopmotion

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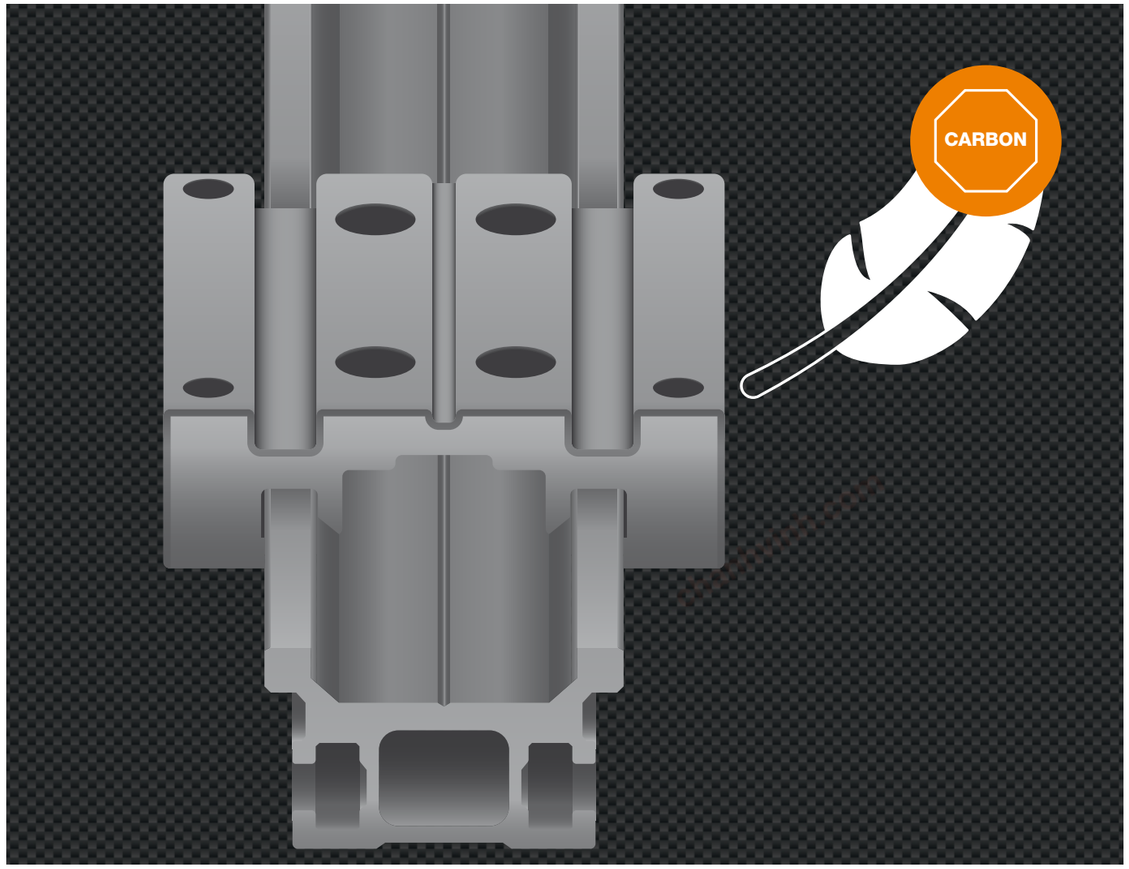
My sketches



drylin® linear technology – Carbon fibre

- Lightweight and robust
- Non-metallic
- Non-magnetic
- X-ray transparent
- Lubrication and maintenance-free



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Extremely lightweight 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 or linear axis: All systems are 100% lubrication and maintenance-free.

- Extremely lightweight
- Wear-resistant
- Tough and reliable
- Non-metallic
- Non-magnetic
- X-ray transparent

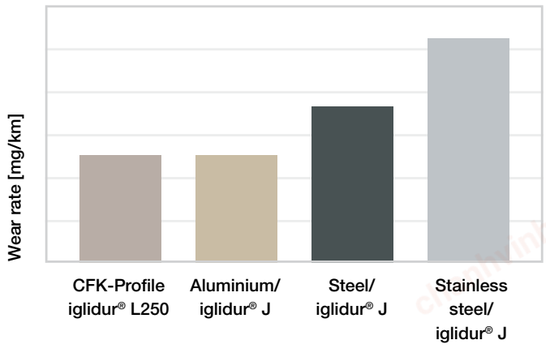
Typical application areas

- Aircraft interior
- Laboratory and medical technology
- Measuring technology

Available in 3–8 days
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity.

Max. +60°C
Min. 0°C



Linear guides and modules made of solid plastic and carbon fibre



drylin® W linear guide made of carbon/solid plastic

- Extremely lightweight and strong carbon profile
- Tribologically optimised
- Solid plastic carriage made from iglidur® L250

▶ **Page 1202**



drylin® ZLW toothed belt axis with carbon profile

- Absolutely non-metallic
- Neoprene toothed belt drive with glass fibre reinforcement
- Max. stroke length 1,000mm

▶ **Page 1203**



drylin® SAW linear module made from carbon fibre

- drylin® W profile made of carbon fibre
- Drive: Trapezoidal or high-helix lead screw
- Lightest version with carbon, solid plastic, aluminium lead screw

▶ **Page 1204**



drylin® SHTP linear module with round carbon fibre shafts

- Very lightweight due to carbon fibre hollow shafts and solid plastic
- Ideal for multi-carriage solutions, also opposite
- Configurable with accessories for manual and electric adjustment

▶ **Page 1205**



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 1206**

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drylin® W carbon fibre | Product range

Linear guide system – extremely lightweight and strong

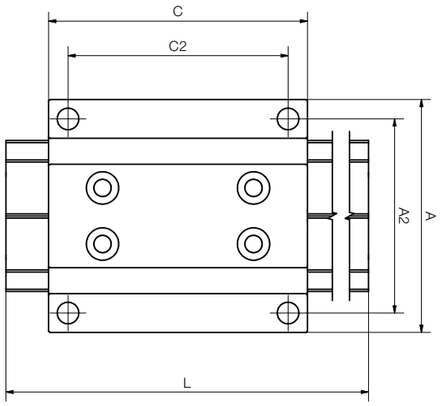


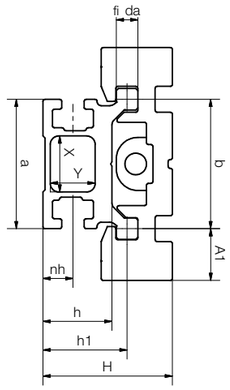
Order key

Complete solution

Type	Dimensions [mm]/Type
W K P C	-06-30-06

drylin® W	Complete system	Plastic	Carbon fibre	Shaft Ø	Rail width	Carriage length





Technical data – guide rail made from carbon

Part No.	F max. radial stat. [N]	F max. radial dyn. [N]	Weight [g/m]	Iy [mm⁴]	Iz [mm⁴]
WSPC-06-30	300	60	410	30,391	11,674

Dimensions [mm] – guide profile made from carbon

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

Dimensions [mm] solid plastic guide carriage made from iglidur® polymer

Part No.	H	A1	A	A2	C	C2
WWPL-06-30-06	30	12	54	45	60	51

drylin® ZLW carbon fibre | Product range

Toothed belt axis – non-metallic

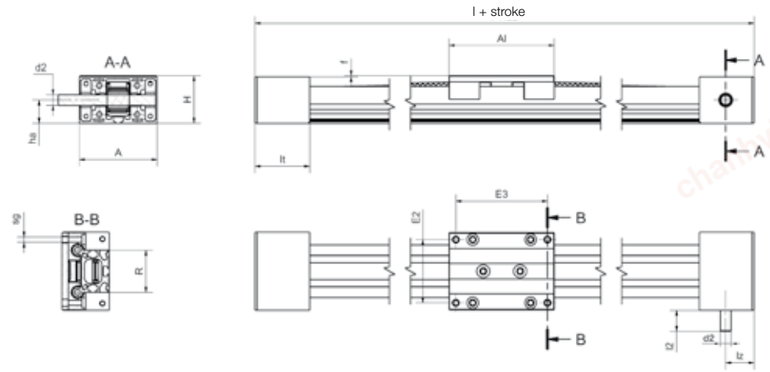


- Guide profile made from carbon
- Linear carriage made from iglidur® polymer

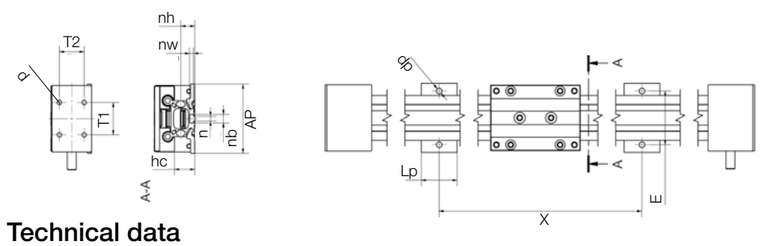
Order key

Type	Dimensions [mm]/Type
ZLW-06	30-P-1000

Toothed belt axis	Shaft Ø	Rail width	Plastic	Stroke length



Connection size



Technical data

Part No.	Weight without stroke [kg]	Weight 100mm stroke [kg]	Max. stroke length [mm]	Trans-mission [mm/rev]	Tooth profile	-material	Drive belt -width [mm]	Drive belt -tension [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

Connection size

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

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drylin® SAW carbon fibre | Product range

Linear module with high profile carbon fibre – lightweight and robust



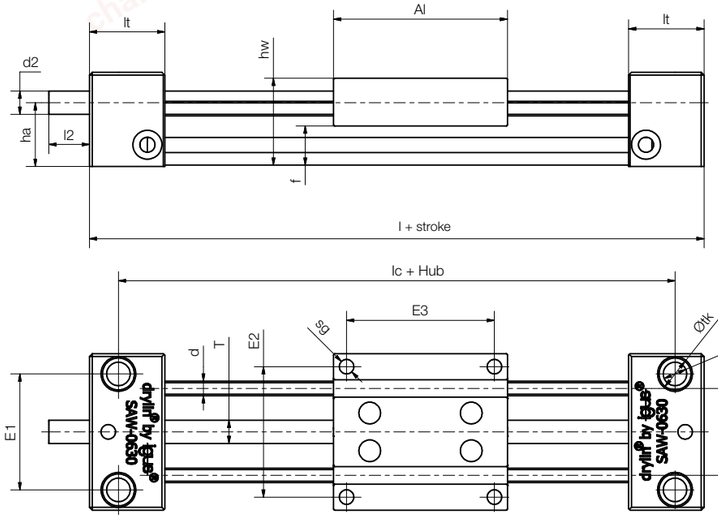
- Guide profile made from carbon
- Linear carriage made from iglidur® polymer

Order key

Complete solution

Type	Dimensions [mm]/Type
SAW-06	30-P-1000

drylin® linear module | Shaft Ø | Rail width | Plastic | Stroke length



Technical data

Part No.	Stroke length	Weight		Max. speed	Max. static load capacity	
		Standard	Additional			
	[mm]	[kg]	per 100mm [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	l2	d2	ha
					ø			
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



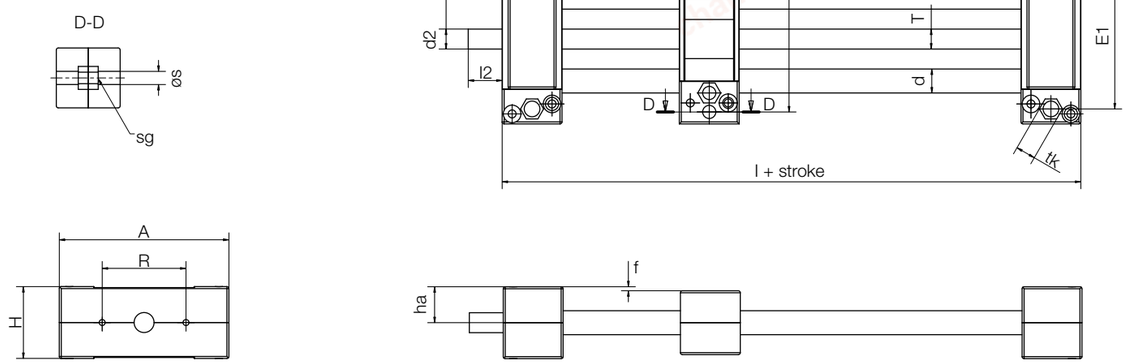
- Lead screws made from carbon
- Linear carriage made from iglidur® polymer

Order key

Complete solution

Type	Dimensions [mm]/Type
SHTP-01-12-CWM	

Linear module | Plastic | Design | Dimension | Carbon fibre shaft



Technical data

Part No.	Max. stroke length	Carbon fibre shaft		More information
		Weight	Additional [kg]	
	[mm]	[kg]	(per 100mm)	
SHTP-01-12-CWM	500	0.3	0.06	Drive nut and linear bearings 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)

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drylin® carbon fibre | Product range

Carbon fibre hollow shaft



- Material: CFK composite
- Roundness tolerance: ± 0.05mm
- Diameter tolerance: –0.1mm
- Application temperature: max. +80°C

CARBON

Order key

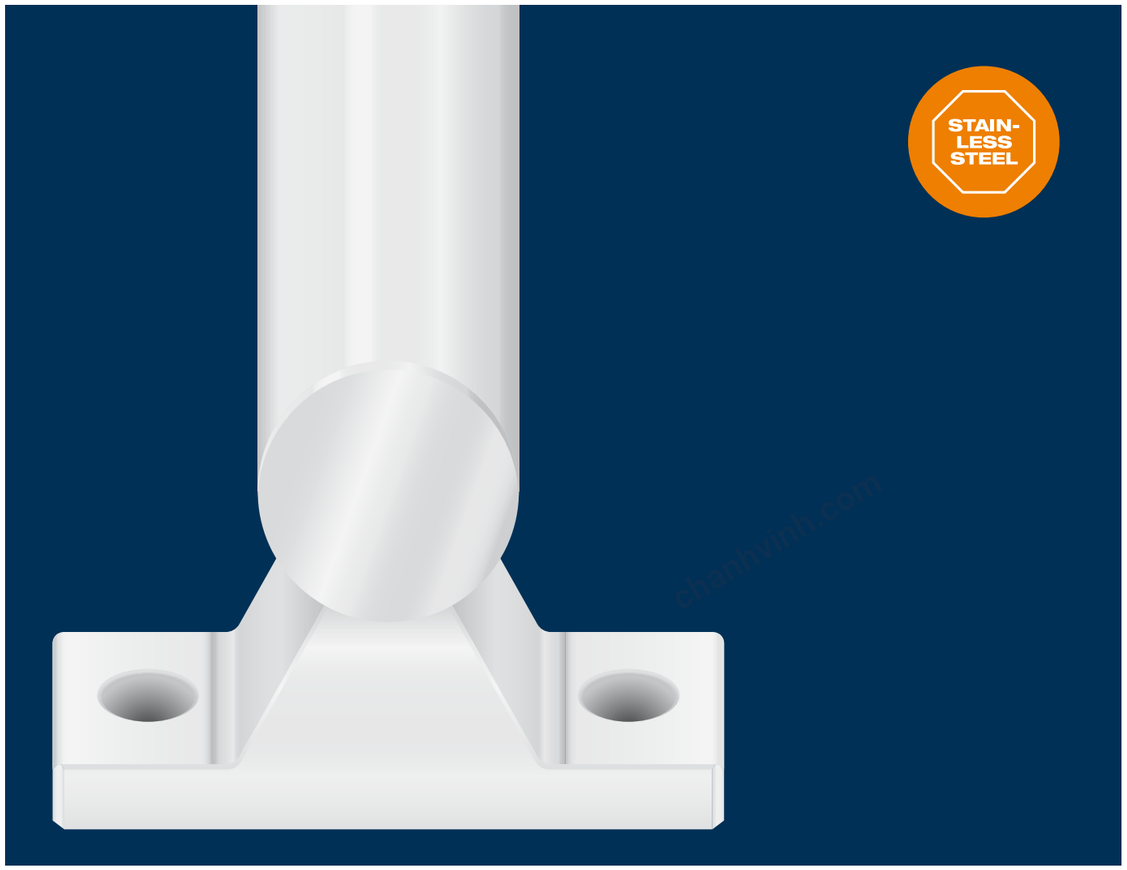
Type	Dimensions [mm]

CWM-12-300

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 of stainless steel

- Temperature resistant up to +250°C
- Corrosion-free
- Chemical resistance
- Ready-to-install linear guides and modules
- Lubrication and maintenance-free



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drylin® stainless steel | Advantages

Machine parts made of 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 and the plastic parts are secured axially and radially in the housings with positive fit.



The suitable iglidur® material can be selected according to the application and used for linear and/or rotary movements.

- Lubrication-free
- Temperature resistant up to +250°C
- Corrosion-resistant
- Chemical resistance
- Cost-effective

The use of **AISI 316Ti** and **AISI 304** makes of the guides resistant to seawater and chemical contact corrosion, and the guide shafts are also made from AISI 316Ti. Despite the lack of surface hardness, required for instance by recirculating ball bearings, they are suitable for use with plain bearings. The large contact surface of a plain bearing diminishes the surface pressure to a mostly safe value.

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

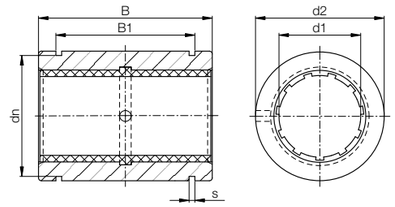


drylin® W guide rails are accredited to cleanroom-standards and therefore used in this blister machine

drylin® R linear plain bearings | Product range

Closed stainless steel adapter made of stainless steel 303





- Secured by circlips

Order key

Type	Size	Option
R J U M	-01-12	-ES

Closed	iglidur® J	Liner	Metric	Standard	Inner Ø d1	Stainless steel

78) According to igus® testing method ▶ Page 1146
82) Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079

Technical data

Part No.	d1 tolerance78)	Fmax. dynamic82) P = 5MPa	Fmax. static82) P = 35MPa	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

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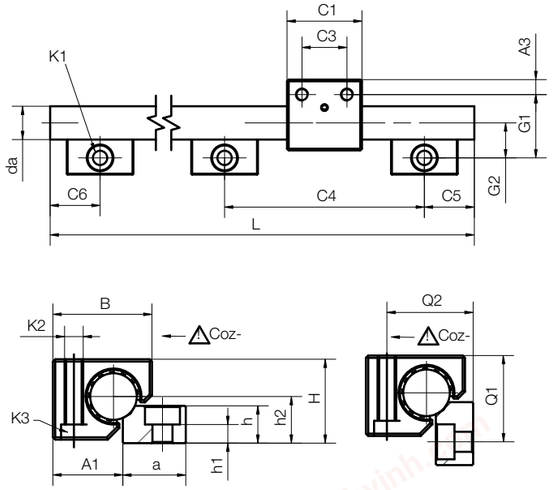
drylin® W profile guides | Product range

Single rail, made of 316 stainless steel



STAIN-LESS STEEL



Housing and shaft support material
AISI 316
Shaft material
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-FG	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-FG	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 material



iglidur® J iglidur® E7 iglidur® A180

drylin® W profile guides | Product range

Pillow blocks, made from 316 stainless steel



Order key

Type	Design

W J UM-01-10-ES-FG

drylin® W	iglidur® J liner	Pillow blocks, round	Standard	Size 10	Stainless steel	Precision casting

Material
ES-FG: Stainless steel precision casting AISI 316

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-FG[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-...

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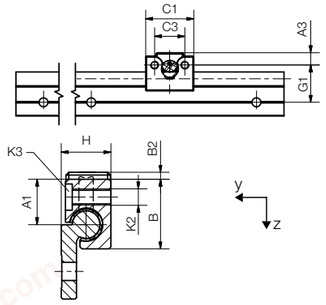
drylin® W profile guides | Product range

Hybrid roller bearings made of stainless steel

WJRM-01 with single roller





Order key

Type	Size	Material
WJRM-01-10 -		ES

Hybrid roller bearing | Single roller bearing | Size 10 | Stainless steel

Material
ES: Stainless steel (AISI 316Ti)
ES-FG: Stainless steel precision casting AISI 316

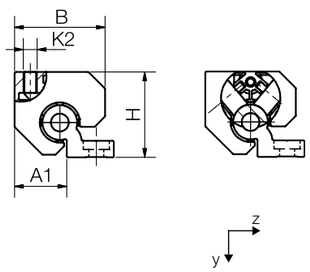
Technical data and dimensions [mm]

Part No.	Static 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

Part No.	Coefficient of friction in z-direction	y-direction	Weight	A1	A3	B	B2	C1	C3	G1	H	K2	K3 for screw
	[µ]	[µ]	[g]										
WJRM-01-10-ES-FG	< 0.1	–	57	16.5	6.5	26	2.5	35	22	27	18	M6	M5

WJRM-21 with double roller





Order key

Type	Size	Material
WJRM-21-20 -		ES

Hybrid roller bearing | Double roller bearing | Size 20 | Stainless steel

Material
ES: Stainless steel (AISI 316Ti)
ES-FG: Stainless steel precision casting AISI 316

Technical data and dimensions [mm]

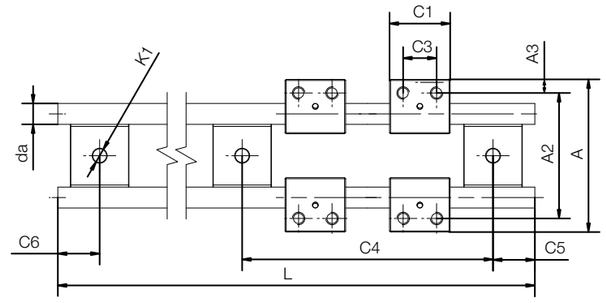
Part No.	Static load capacity Co	Dyn. load capacity Cy+ at total running distance [km]			F · v
		10	100	200	Max.
	[N]	[N]	[N]	[N]	[N · m/s]
WJRM-21-20-ES-FG	840	840	300	150	80

Part No.	Coefficient of friction in z-direction	y-direction	Weight	A1	A3	B	B2	C1	C3	G1	H	K2	K3 for screw
	[µ]	[µ]	[g]										
WJRM-21-20-ES-FG	–	< 0.1	504	30	9	52	–	52	34	38	49	M8	M5

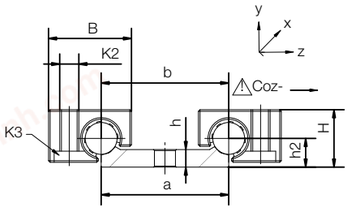
drylin® W hybrid roller bearings | Product range

Double rail





Installation size 10–20	
Housing and shaft support material	AISI 316
Shaft material	AISI 316Ti
Installation size 25	
Shaft, shaft support and housing material	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

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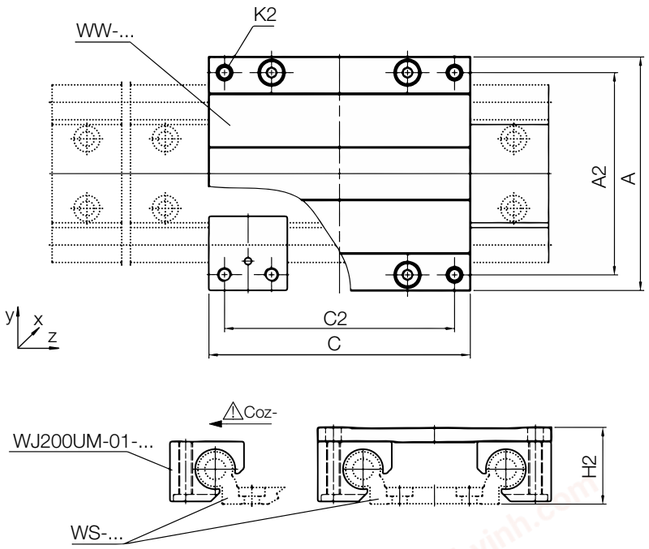
drylin® W profile guides | Product range

Assembled stainless steel guide carriages, round







Technical data and dimensions [mm]

Part No.[64]	Weight	A	C	A2	C2	K2	H2[57]	Static load capacity				
		Width	Length				±0.25	Coy	Coz	Mox	Moy	Moz
	[kg]							[N]	[N]	[Nm]	[Nm]	[Nm]
WW-10-40-10-J200-GESG-PES	0.29	73	100	60	87	M6	24	4,800	2,400	96	170	170
WW-10-40-15-J200-GESG-PES	0.34	73	150	60	137	M6	24	4,800	2,400	96	290	290
WW-10-40-20-J200-GESG-PES	0.40	73	200	60	187	M6	24	4,800	2,400	96	410	410

[57] Height dimension minus the bearing clearance tolerance [64] Optional with manual clamp, suffix "-HKA"

My sketches

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drylin® shafts | Product range

Stainless steel shafts



EWM EEWM EWMR

igus® recommendation: Linear plain bearings equipped with iglidur® E7 liners for 8 times longer service life

Please contact us!
drylin® shafts can be individually machined.
Please send us your drawing or configure online.
We can then provide a quotation quickly.
▶ **www.igus-asean.com/shaft-configurator**

- Completely supported and mounted with standard aluminium support
- For supported shafts:
  - ▶ Shaft support supplied in lengths of 600mm max.
  - ▶ Standard pitch T2, T1 also possible upon request
  - ▶ Symmetrical hole pitches C5 = C6

Dimensions [mm] – hardened stainless steel AISI 440B

Part No.	d	Weight [kg/m]	Max. length	Effective hardness depth
EWM-06	06	0.222	3,000	0.8
EWM-08	08	0.359	4,000	0.9
EWM-10	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

drylin® shafts | Product range

Materials: AISI 440B, AISI 420C, AISI 304, AISI 316Ti

Order key

Type	Size	Options
E W M	- 06	- ☐
Steel shaft	Metric	Outer Ø	Shaft length [mm]

Available shaft materials
AISI 440B, hardened/ground ▶ EWM
AISI 420C, hardened/ground ▶ EEWM
AISI 304, ground ▶ EWMR
AISI 316Ti, ground ▶ EWMS

Dimensions [mm] – hardened stainless steel AISI 420C

Part No.	d	Weight [kg/m]	Max. length	Effective hardness depth
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 AISI 304 (EWMR) or AISI 316Ti soft stainless steel (EWMS)

Part No.	d	Weight [kg/m]	Max. length
EWMR-10	10	0.617	4,000
EWMS-10	10	0.617	3,000
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	3,000
EWMR-25	25	3.853	6,000
EWMR-30	30	5.549	6,000

Order example:
EWM-16-500: Steel shaft 16mm Ø made of AISI 440B, 500mm in length

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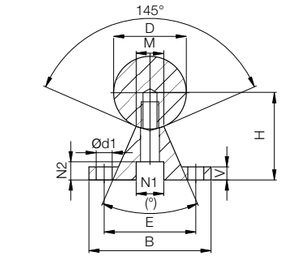
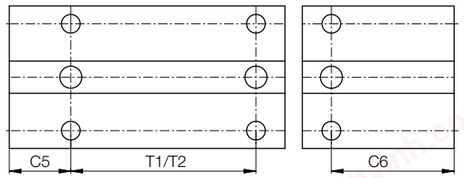
drylin® shafts | Product range

Supported stainless steel shafts



EWUM





STAIN-LESS STEEL

igus® recommendation: Linear plain bearings equipped with iglidur® E7 liners for 8 times longer service life

Shaft support blocks for Ø 20mm
made of stainless steel VA

- Connecting sizes as standard supports made from aluminium

Dimensions [mm] – supported stainless steel shafts AISI 440B

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] **T1 pitch upon request; standard is T2**

Order example:
EWUM-16-500-T1: Low level supported stainless steel shaft (AISI 440B), 16mm outer Ø, 500mm in length, pitch T1

My sketches

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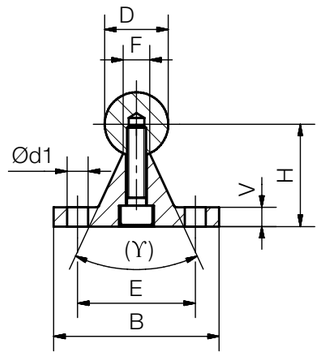
drylin® shafts | Product range

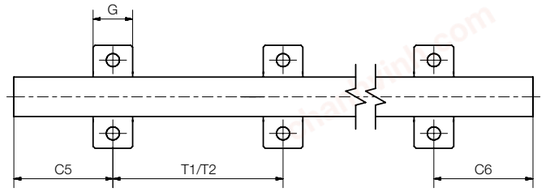
Partially supported stainless steel shafts



EWUM-ES/
EWUMS-ES



igus® recommendation: Linear plain bearings equipped with iglidur® E7 liners for 8 times longer service life



Shaft support blocks for Ø 20mm
made of stainless steel VA

- Connecting sizes as standard supports made from aluminium

Dimensions [mm] – partially supported stainless steel shafts AISI 440B

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 as standard, T1 upon request

Order example:
EWUM-ES-20-500: Partially supported stainless steel shaft. AISI 440B material, T2 pitch (standard), 20mm outer Ø, 500mm length

STAIN-LESS STEEL

Order key

Type					Size	Options	
E	W	U	M	S	ES - 20 -	☐	- T1
Partially supported stainless steel shaft, metric				Material	Outer Ø	Shaft length [mm]	Hole pattern

Available materials and lengths:
AISI 440B, max. 6,000mm
▶ EWUM
AISI 316Ti, max. 3,000mm
▶ EWUMS

Options
Blank: AISI 440B material
S: AISI 316Ti
Hole pattern
T2: T2 pitch (standard)
T1: T1 pitch

Dimensions [mm] – partially supported stainless steel shafts AISI 316Ti

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 as standard, T1 upon request

Order example:
EWUMS-ES-20-500-T1: Partially supported stainless steel shaft. AISI 316Ti material, T1 pitch, outer Ø 20mm, length 500mm

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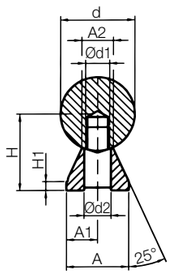
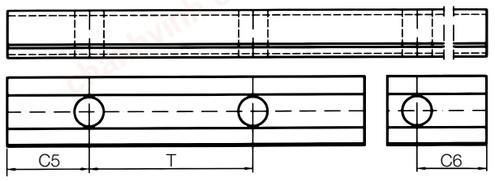
drylin® shafts | Product range

Low level supported stainless steel shafts



EWUMN





Order key

Type	Size	Options
E W U M N - 20 - ☐		- 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 lengths:
AISI 440B, max. 6,000mm

Hole pattern
T2: T2 pitch (standard)
T1: T1 pitch (upon request)

Dimensions [mm] – low level supported stainless steel shaft AISI 440B

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 unmounted.

Order example:
EWUMN-16-500: Low level supported stainless steel shaft (AISI 440B), 16mm outer Ø, 500mm length

My sketches

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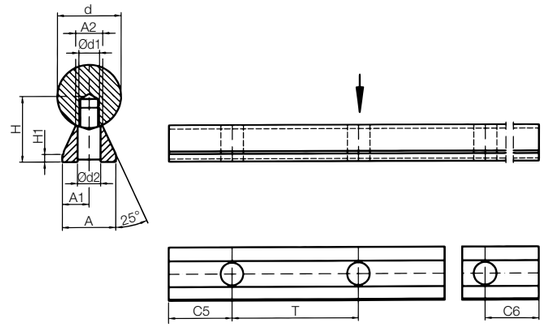
drylin® shafts | Product range

Low level partially supported stainless steel shafts



EWUMN-ES/
EWUMSN-ES



igus® recommendation: Linear plain bearings equipped with iglidur® E7 liners for 8 times longer service life

Low level shaft support blocks made of stainless steel

- Connection sizes are identical to low-level aluminium supports ▶ **Page 1161**

Dimensions [mm] – low level partially supported stainless steel shafts AISI 440B

Part No.	d	H	H1	A	A1	A2	d1	d2	T	C5/C6		Weight
		±0.02								Min.	Max.	[kg/m]
EWUMN-ES-12	12	14.5	3	11	5.5	5.4	M4	4.2	75	20	57.0	1.00
EWUMN-ES-16	16	18.0	3	14	7.0	7.0	M5	5.2	75	20	57.0	1.76
EWUMN-ES-20	20	22.0	3	17	8.5	8.1	M6	6.2	75	20	57.0	2.77
EWUMN-ES-25	25	26.0	3	21	10.5	10.3	M8	8.2	75	20	57.0	4.35
EWUMN-ES-30	30	30.0	3	23	11.5	11.0	M10	10.2	100	20	69.5	6.01
EWUMN-ES-40	40	39.0	4	30	15.0	15.0	M12	12.5	100	20	69.5	10.80

Low-level partially supported stainless steel shafts are supplied unassembled

Order example:
EWUMN-ES-20-500: Partially supported stainless steel shaft. AISI 440B material, T2 pitch (standard), 20mm outer Ø, 500mm length

drylin® shafts | Product range

drylin® stainless steel

STAIN-LESS STEEL

Order key

Type	Size	Options

EWUMSN - ES - 20 - ☐ - T1

- Stainless steel shaft with low level support, metric
- Stainless steel partial support
- Outer Ø
- Shaft length [mm]
- Hole pattern

Available materials and lengths:
AISI 440B, max. 6,000mm
▶ EWUMN
AISI 316Ti, max. 3,000mm
▶ EWUMSN

Dimensions [mm] – low level partially supported stainless steel shafts AISI 316Ti

Part No.	d	H	H1	A	A1	A2	d1	d2	T	C5/C6		Weight
		±0.02								Min.	Max.	[kg/m]
EWUMSN-ES-12	12	14.5	3	11	5.5	5.4	M4	4.2	75	20	57.0	1.00
EWUMSN-ES-16	16	18.0	3	14	7.0	7.0	M5	5.2	75	20	57.0	1.76
EWUMSN-ES-20	20	22.0	3	17	8.5	8.1	M6	6.2	75	20	57.0	2.77
EWUMSN-ES-25	25	26.0	3	21	10.5	10.3	M8	8.2	75	20	57.0	4.35
EWUMSN-ES-30	30	30.0	3	23	11.5	11.0	M10	10.2	100	20	69.5	6.01
EWUMSN-ES-40	40	39.0	4	30	15.0	15.0	M12	12.5	100	20	69.5	10.80

Low-level partially supported stainless steel shafts are supplied unassembled

Order example:
EWUMSN-ES-20-500-T1: Partially supported stainless steel shaft. AISI 316Ti material, T1 pitch, 20mm outer Ø, 500mm length

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drylin® SHT linear modules | Product range

Stainless steel linear modules

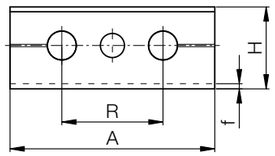


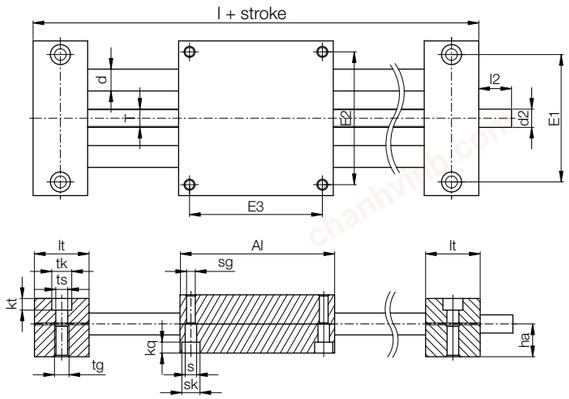
- Corrosion-resistant carriages and shaft end supports made of stainless steel
- High grade stainless steel shafts (AISI 440B)
- Stainless steel lead screw
- Temperature-resistant
- Up to +180°C with iglidur® X
- Food compliant with iglidur® A180
- Can be configured online as SHTC compact version

reddot design award winner 2006

Order key

Type	Size	Options
S H T -	ES J -	08
Standard	Stainless steel	Bearing material / Shaft material





Technical data

Part No.	Max. stroke length	Aluminium shaft		Steel shaft		Max. static load capacity	
		Weight	Additional (per 100mm)	Weight	Additional (per 100mm)	axial	radial
	[mm]	[kg]	[kg]	[kg]	[kg]	[N]	[N]
SHT-ESJ-08	300	0.24	0.05	0.27	0.1	100	360
SHT-ESJ-12	750	1.1	0.1	1.3	0.2	700	2,800
SHT-ESJ-20	1,000	3.2	0.3	3.9	0.6	1,600	6,400
SHT-ESJ-30	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-ESJ-08	65	65	23	52	55	55	96	32	1.5	15.5	10	5.5
SHT-ESJ-12	85	85	34	70	73	73	145	42	2	30	11	6.6
SHT-ESJ-20	130	130	48	108	115	115	202	72	2	36	15	9.0
SHT-ESJ-30	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-ESJ-08	M6	7	4.2	8	M5	4.6	8	Tr6x2	17	Tr6x2	13
SHT-ESJ-12	M8	6.4	6.3	10	M6	6.0	12	Tr10x2	17	Tr10x2[92)]	18
SHT-ESJ-20	M10	8.6	6.4	11	M8	7.0	20	Tr18x4	26	12h9	23
SHT-ESJ-30	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

Hygienic design



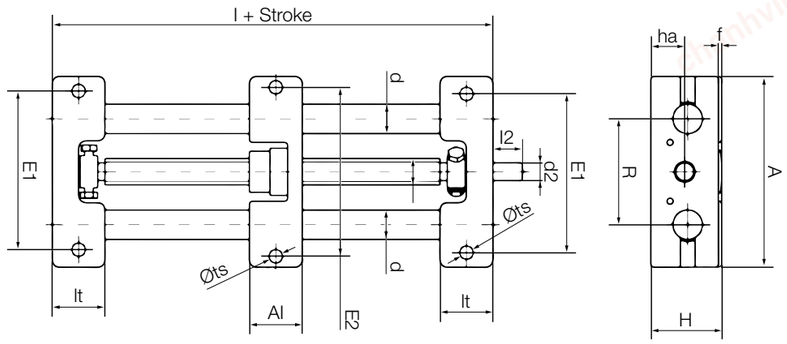
STAIN-LESS STEEL

- Easily cleaned solution
- Wide gaps
- Materials: plastic and stainless steel
- Lead screw nuts made of FDA-compliant iglidur® A180
- Available accessories ▶ Page 1503

Order key

complete solution ▶ Page 1306

Type	Size	Shaft	Option
SHTC -	20 -	EWM -	HYD
Flexible	Installation size	Shaft material	Hygienic design



FDA

The lead screw linear unit can be delivered with complete 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	36	48	108	115	108	72	2	36	9.0	20	Tr18x4	26	12 h9	23

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drylin® SLW linear modules | Product range

Made of stainless steel



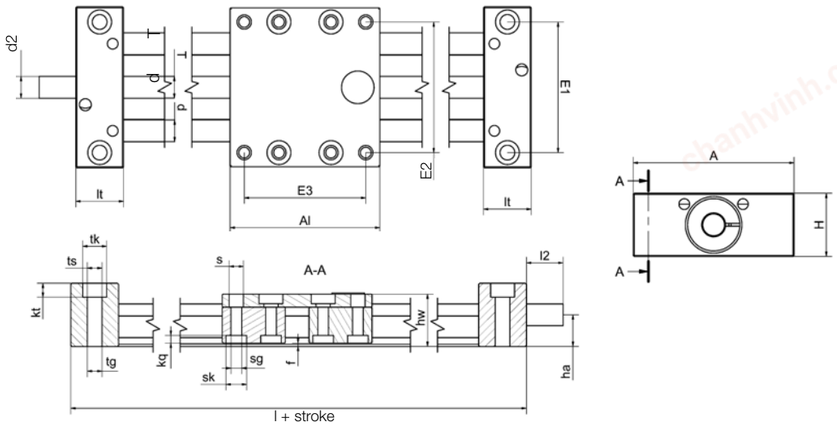
- Stainless steel version with corrosion-resistant steel components (AISI 303, AISI 316 and AISI 316Ti)
- Choice of bearing material:
  iglidur® J = Standard
  iglidur® A180 = FDA-compliant
  iglidur® X = High temperature up to +150°C[117)]
- Available accessories ▶ Page 1503

Order key
complete solution ▶ Page 1306

Type	Size
SLW - ESJ	- 1040

Compact | Stainless steel | iglidur® J bearing | Installation size

STAIN-LESS STEEL



Technical data

Part No.	Shaft Ø	Max. stroke length	Weight	Additional (per 100mm)	Max. stat. 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 –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

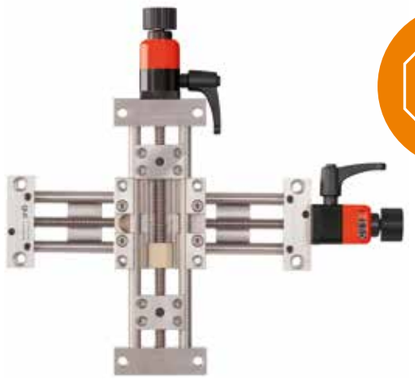
Part No.	kt ±0.1	s	sk	sg	kq	d	T	l2	d2 Standard	ha
SLW-ES-1040	6.4	6.6	9.5	M6	4.4	10	Tr10x2	17	Tr10x2[92)]	14.5
SLW-ES-2080	8.6	9.0	14	M8	5.5	20	Tr18x4	26	12h9	23.0

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 tables | Product range

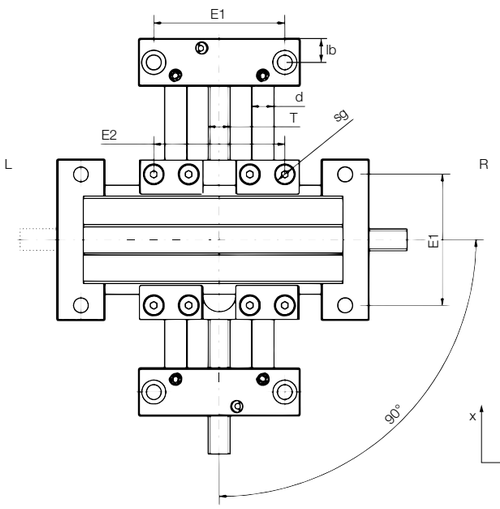
XY tables – stainless steel version

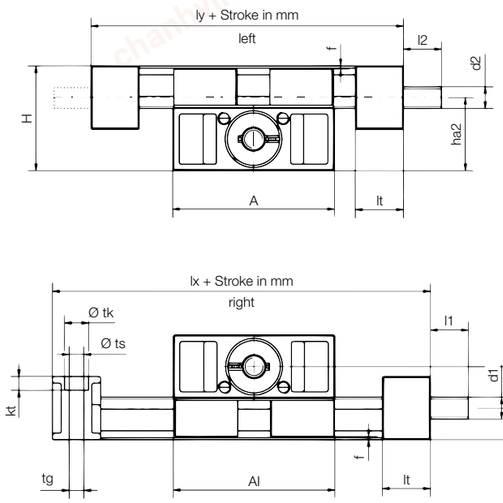


STAIN-LESS STEEL

Order key
▶ Page 1318

- For manual adjustments
- High torsional stability
- Structure entirely made from 316 stainless steel materials
- Chemical and corrosion-resistant
- Available accessories ▶ Page 1503





Dimensions [mm]

Part No.	Max. stroke length	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
	[mm]													
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 200mm stroke length on the x-axis and 300mm on the y-axis
Right: SLW-XY-ESJ-1040-R-200-300 for 200mm stroke length on the x-axis and 300mm on the y-axis

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drylin® ZLW linear modules | Product range

Stainless steel toothed belt modular drive system



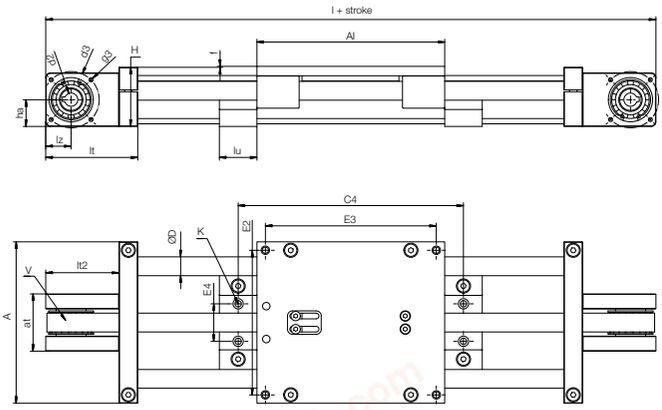
- High speed possible with ball bearings in end support
- Robust wide round belt
- Central belt adjustment on the carriage
- Based on lubrication-free drylin® W linear guide
- Variable motor connection due to solid and hollow shafts

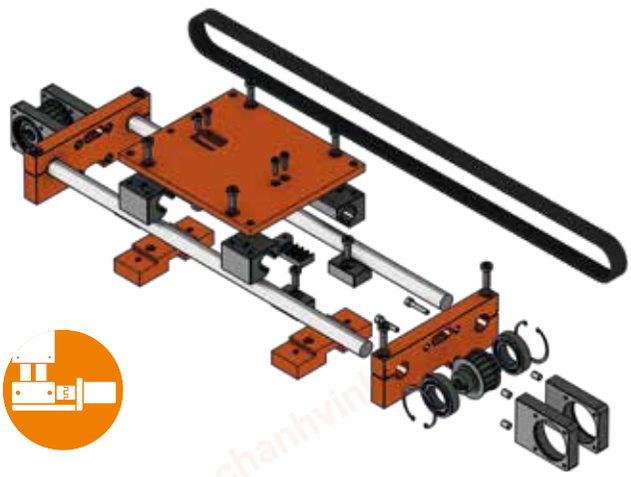
Order key

Type	Size	Options

ZLW-20120-ES-02-S-200-H-2000

Toothed belt axis	Installation size	Axis distance	Design	Version	Version	Carriage length	Drive pin	Stroke length





Technical data

Part No.	Max. stroke length [mm]	Transmission [mm/U]	Tooth profile	Drive belt -material	Drive belt -tension [N]
ZLW-20120-ES	2,500	144	8M	PU with steel cable	750
ZLW-20160-ES	2,500	144	8M	PU with steel cable	750
ZLW-20200-ES	2,500	144	8M	PU with steel cable	750

Dimensions [mm]

Part No.	A	Al	H	E2	E3	E4	C4	f	lt	ha	lz	l	d2 h7	d3	g3	D	K For DIN912 – M6	at	lt2	lu	V [mm/rev]
ZLW-20120-ES	172	200	63	154	182	40	240	–	98	28.5	27	396	14	60	M5	20	M8	61	78	40	144
ZLW-20160-ES	212	200	63	194	182	80	240	–	98	28.5	27	396	14	60	M5	20	M8	61	78	40	144
ZLW-20200-ES	252	200	63	234	182	120	240	–	98	28.5	27	396	14	60	M5	20	M8	61	78	40	144

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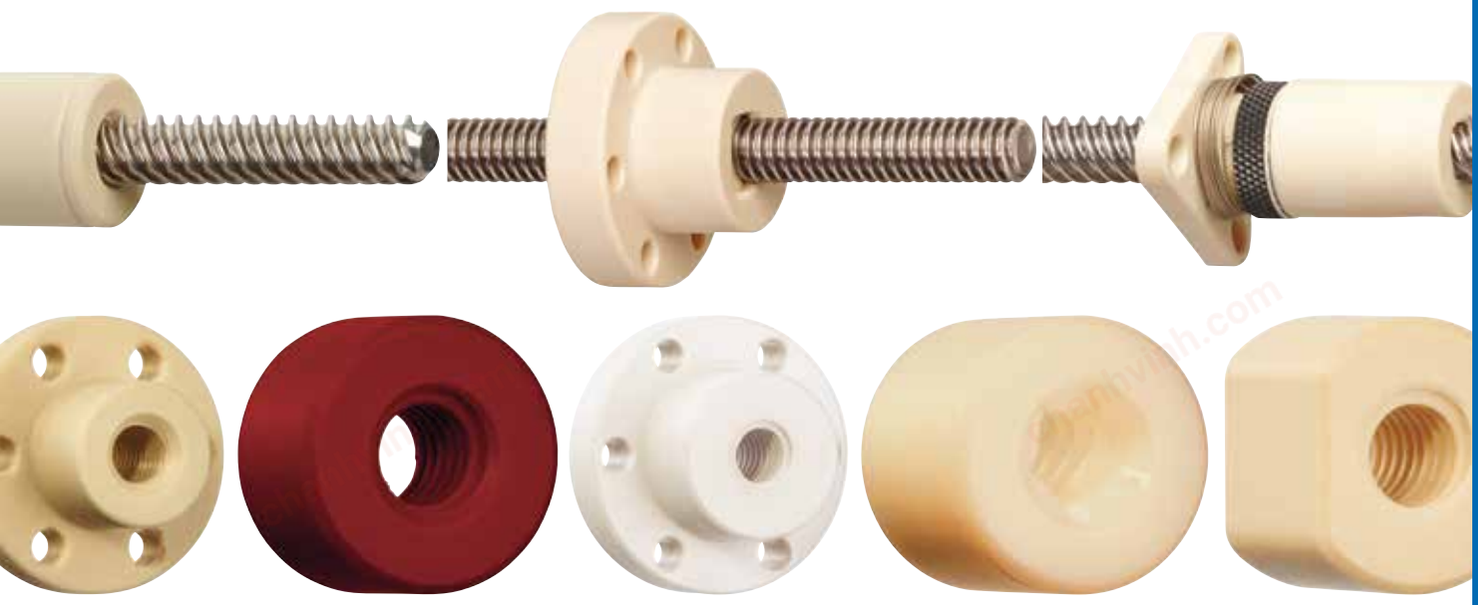
drylin®

Lead screw technology



...plastics

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drylin® lead screw technology | Product overview

drylin® lead screw technology – high helix thread with dryspin® technology



High helix lead screws made of stainless steel and aluminium
▶ Page 1244



High helix lead screws with right/left opposite drive
▶ Page 1248



Cylindrical lead screw nuts
▶ Page 1254



Lead screw nuts with flange
▶ Page 1260



Lead screw nuts with spanner flat, with flange
▶ Page 1264



Cost-effective injection-moulded lead screw nuts, cylindrical/with flange
▶ Page 1268



Lead screw nuts with pre-load iglidur® J
▶ Page 1277



Lead screw nuts, zero-backlash iglidur® J
▶ Page 1279

drylin® lead screw technology – trapezoidal and metric threads



Lead screws C15
▶ Page 1288



Lead screws made of stainless steel
▶ Page 1288



Lead screws made of aluminium
▶ Page 1288



Lead screws with machined end
▶ Page 1288

drylin® lead screw technology – trapezoidal and metric threads



Multi start lead screws
▶ Page 1290



LH/RH lead screws
▶ Page 1292



Metric lead screws
▶ Page 1294



Cylindrical lead screw nuts, single start
▶ Page 1300

drylin® lead screw technology – trapezoidal and metric threads



Cylindrical lead screw nuts, multi start
▶ Page 1304



Cylindrical lead screw nuts with spanner flat
▶ Page 1306



Lead screw nuts with flange, single start
▶ Page 1308



Lead screw nuts with flange, multi start
▶ Page 1310



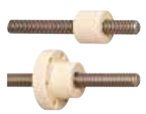
Lead screw nuts with spanner flat, with flange
▶ Page 1312



Cylindrical lead screw nuts, lead screw nuts with flange metric
▶ Page 1314



Cost-effective injection-moulded lead screw nuts
▶ Page 1316



Anti-backlash lead screw nuts
▶ Page 1324

drylin® lead screw technology – trapezoidal and metric threads



Flange lead screw nuts with pre-load
▶ Page 1326

drylin® lead screw technology – special designs



Split lead screw nuts made from iglidur® J
▶ Page 1328



Lead screw nuts for linear modules
▶ Page 1330



Lead screw nuts with locating spigot
▶ Page 1334



Spherical lead screw nuts in flanged bearing housing
▶ Page 1336

drylin® lead screw technology – special designs



Spherical lead screw nuts in pillow block bearing housing
▶ Page 1337



Lead screw nuts with quick-release
▶ Page 1338



drylin® discs, made from iglidur® J
▶ Page 1339



Complete lead screw nut housing, including lead screw nut
▶ Page 1340



Lead screw support blocks with plain bearings
▶ Page 1342



Lead screw support blocks with ball bearings
▶ Page 1346



Clamping rings
▶ Page 1348



The biggest online lead screw shop
▶ www.igus-asean.com/leadscrewshop

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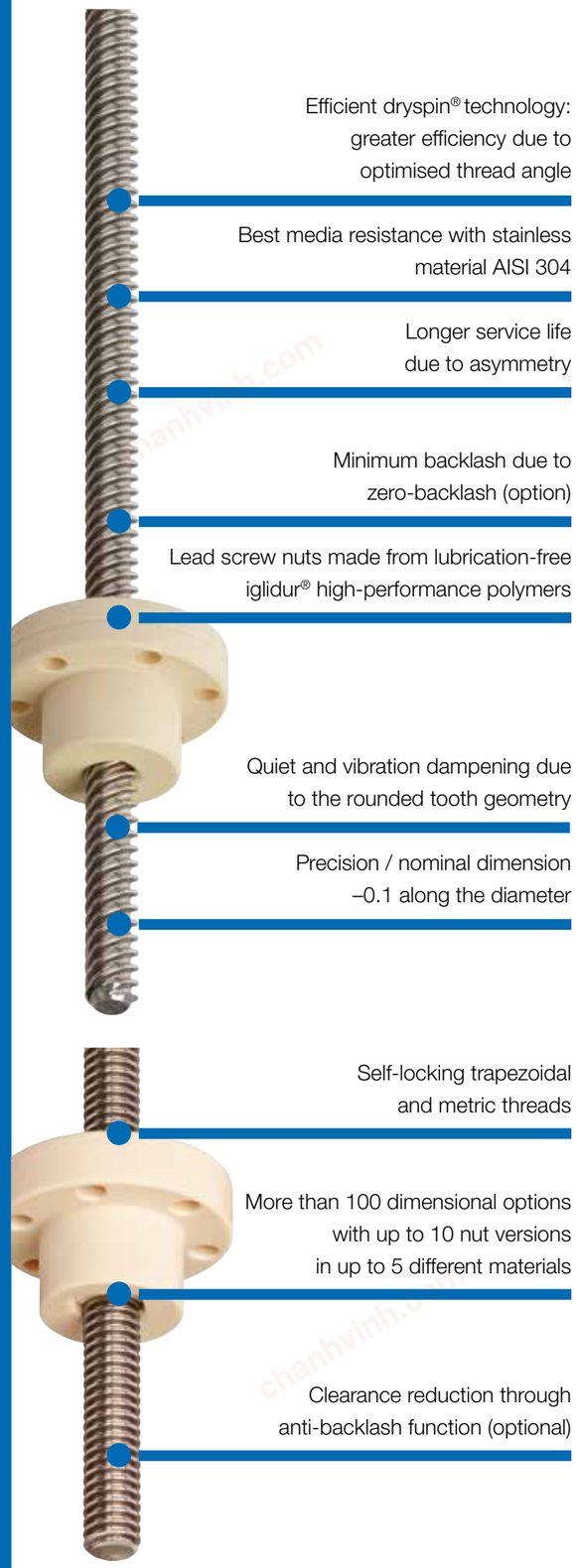
drylin® lead screw technology | Advantages

Maintenance-free, quiet operation, dirt-resistant and corrosion-resistant



Lubrication-free drylin® lead screw technology

Lead screw drives are machine elements that convert rotary movement into linear motion. drylin® lead screw drives are always based on self-lubricating plastic nuts, 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 operation
- Silent
- Corrosion-free
- Resistant to dirt

Typical application areas

- Format adjustments
- Drive technology
- Optical equipment
- Furniture industry
- Automotive industry

Available from stock
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity.

Max. +150°C
Min. –20°C

Service life calculation
▶ www.igus-asean.com/drylin-expert

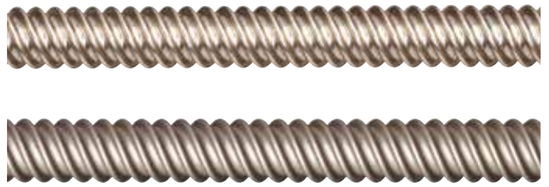
Imperial dimensions and ACME thread (USA standard) ▶ Page 1620

RoHS-II

In accordance with EC Directive 2011/65/EU (RoHS 2) Restriction (of the use of certain) hazardous substances

drylin® lead screw technology | Product overview

High helix threads with dryspin® technology





High helix lead screws

- Material: stainless steel or anodised aluminium
- Better efficiency due to optimised thread angle
- Quiet due to rounded tooth geometry
- Long service life due to asymmetric dryspin® geometry

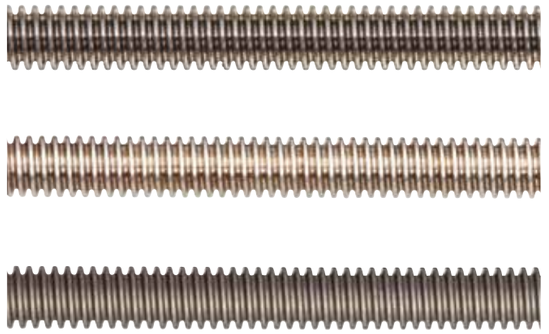
▶ **From page 1244**

High helix lead screw nuts

- Lubrication-free lead screw nuts made from 5 materials
- Types: Cylindrical, with flange or spanner flat
- Reduced clearance through zero-backlash

▶ **From page 1254**

Self-locking trapezoidal and metric threads





Trapezoidal and metric lead screws

- Material: steel, stainless steel or anodised aluminium
- Product range from M3 to Tr50x8
- Multi start lead screws and right/left opposite drive available

▶ **From page 1288**

Trapezoidal and metric lead screw nuts

- Lubrication-free lead screw nuts made from 10 different materials
- Types: Cylindrical, with flange or spanner flat
- Clearance reduction via anti-backlash feature

▶ **From page 1300**



Special designs

- Lead screw nuts for drylin® linear modules, with flange or locating spigot
- Split and spherical lead screw nuts with housing
- Disc for customised clearance adjustment
- Fast-Forward quick release nut for fast adjustment

▶ **From page 1327**



Lead screw technology accessories

- Nut housing for drylin® lead screw nuts
- Anodised lead screw support blocks, on plain or ball bearings
- Clamping ring for securing lead screw

▶ **From page 1342**

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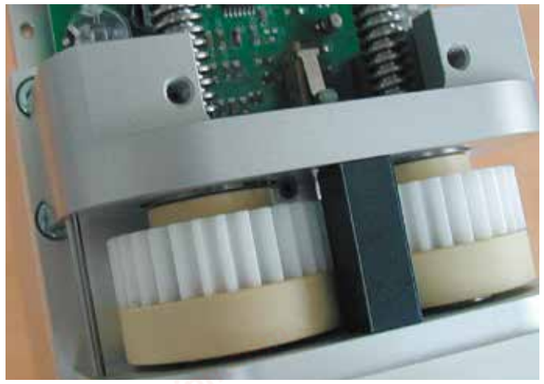
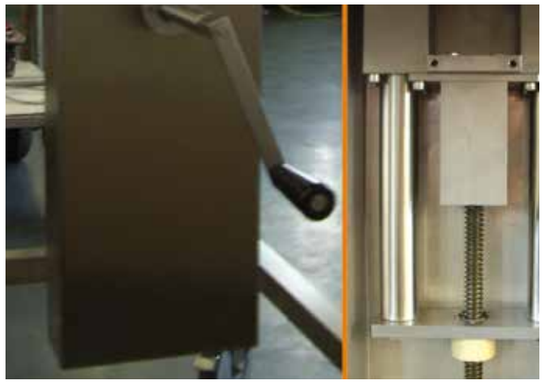
drylin® lead screw technology | Application examples



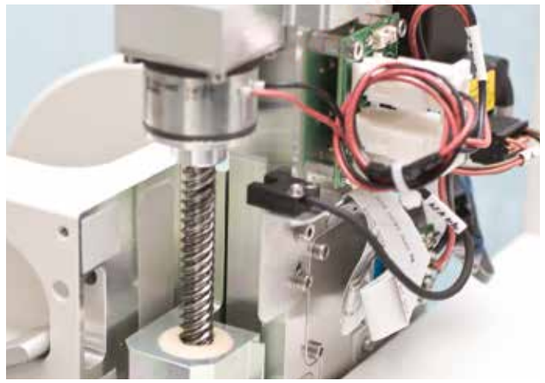
This mixing station uses two drylin® trapezoidal lead screw nuts made from iglidur® high-performance polymers for the optimal mixing ratio of a two-component silicone mass.



The customer was looking for a cost-effective, lightweight and maintenance-free standard solution for small installation space. Costs and weight could be reduced thanks to the lubrication-free products from igus®.



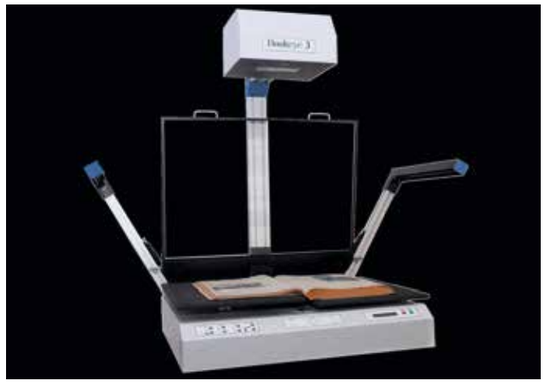
iglidur® J plain bearings for shaft guides and drylin® trapezoidal lead screw nuts for the height adjustment.



Clean use of lubrication-free drylin® trapezoidal lead screw nuts in a piece of laboratory equipment for liquid handling.



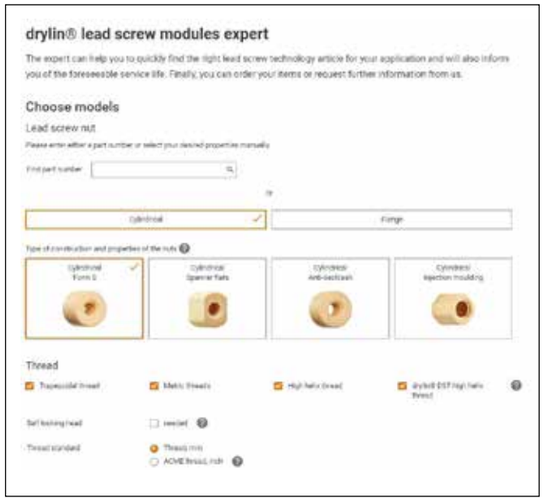
drylin® lead screw drives are used for feed mechanisms. In this, the customer combines a trapezoidal lead screw nut from iglidur® W300 with a rolled trapezoidal lead screw.



All of the main components of the mechanical movements, such as the linear axis, plain bearings, guide systems, etc. use igus® products.

drylin® lead screw technology | Online tools

drylin® lead screw drive expert and configurator



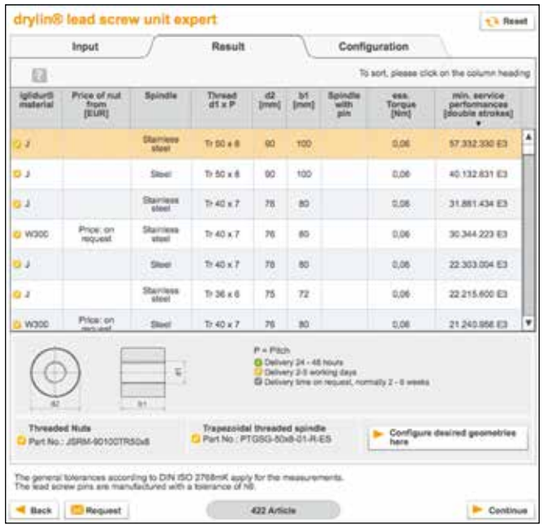
Expert for lead screw drives: Find and calculate suitable lead screw drives

Our drylin® expert systems for lead screw drives 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-asean.com/leadscrew-expert**

Download the online tool app now

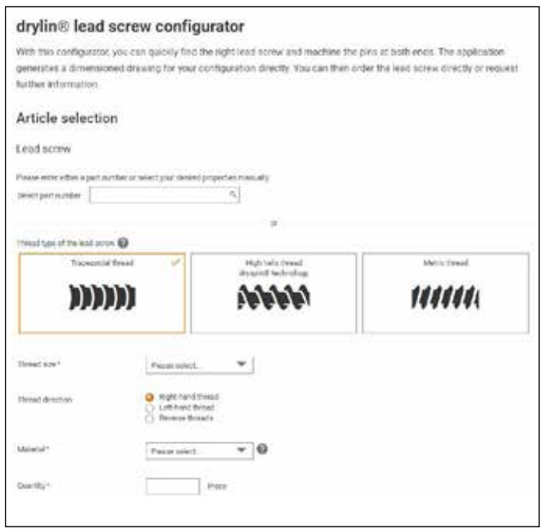
Download on the App Store



Configurator for lead screw drives: configure required dimensions

Ask quickly and easily for lead screw nuts and lead screws in individual dimensions.

▶ **www.igus-asean.com/leadscrew-configurator**



Lead screw configurator

Individually configured lead screws and machined ends can now be generated with just a few clicks. In addition to selection of the lead screw geometry and the materials, there are up to 7 options for machined ends.

▶ **www.igus-asean.com/leadscrew-configurator**

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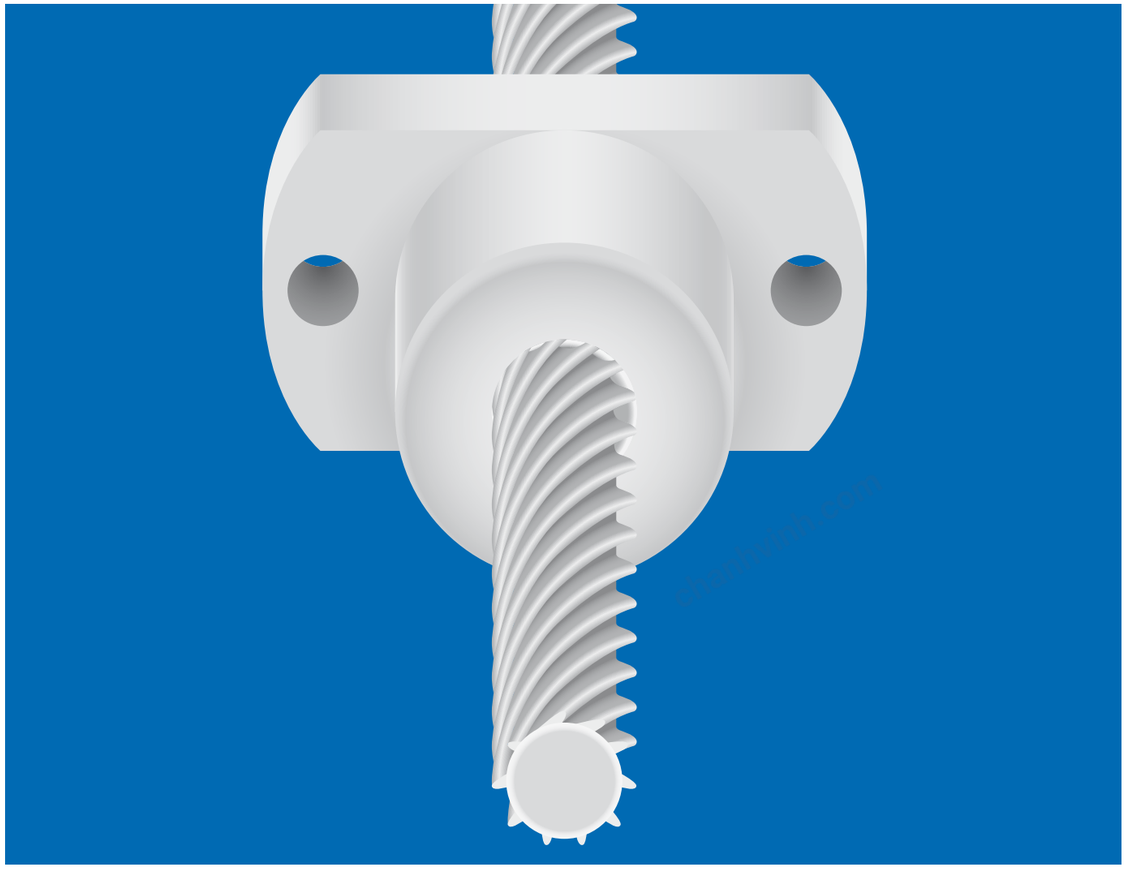
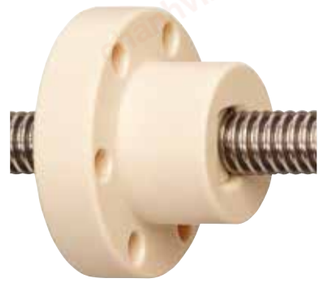


drylin® lead screw technology – dryspin® technology

- Efficient high helix thread
- Lead screw nuts made from lubrication-free dry-tech® tribo-polymers
- High efficiency and longer service life
- Quiet operation with vibration dampening
- Resistant to dirt



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dryspin® technology | Advantages

More combinations available in the thread section

The right lead screw nut material for every technical requirement

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 6 lubrication-free iglidur® high-performance polymers, in 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
- No minimum order quantity

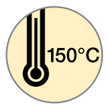
Find and calculate suitable lead screw drives
▶ www.igus-asean.com/leadscrewdrives-finder







High efficiency at all speeds:
iglidur® J ▶ Page 159
- High speed
- Low wear
- Best coefficient of friction







For temperatures up to +150°C:
iglidur® J350 ▶ Page 204
- For high temperatures
- Good coefficient of friction with medium loads







For medium to high speeds:
iglidur® R ▶ Page 247
- High wear resistance for low loads
- Low moisture absorption
- Vibration-dampening







FDA-compliant for the food and pharmaceutical industry:
iglidur® A180 ▶ Page 401
- FDA-compliant
- For contact with food







Best running partner for hard anodised aluminium:
iglidur® J200 ▶ Page 261
- Low coefficient of friction and wear
- Long service life







For high speeds:
iglidur® E7 ▶ Page 267
- Low loads up to 200N
- Speeds up to 1,200rpm

dryspin® technology | Material properties

Six standard materials

	Unit	iglidur® J	iglidur® J350	iglidur® R	iglidur® A180	iglidur® E7	iglidur® J200
General properties							
Density	[g/cm³]	1.49	1.44	1.39	1.46	1.05	1.72
Colour		yellow	yellow	red	white	dark grey	matt grey
Max. moisture absorption at +23°C and 50% relative humidity	[% weight]	0.30	0.30	0.20	0.20	0.1	0.2
Max. total moisture absorption	[% weight]	1.30	1.60	1.10	1.30	0.1	0.7
pv value, max. (dry)	[MPa·m/s]	0.34	0.45	0.27	0.31	0.08	0.30
Mechanical properties							
Permissible surface pressure in thread at +20°C	[MPa]	4.0	3.0	2.0	3.5	0.5	2.0
Shore D hardness		74	80	77	76	61	70
Physical and thermal properties							
Max. continuous operating temperature	[°C]	+90	+150	+90	+90	+70	+90
Max. short-term operating temperature	[°C]	+120	+150	+90	+90	+70	+90
Min. continuous operating temperature	[°C]	–20	–20	–20	–20	–20	–20
Thermal conductivity	[W/m · K]	0.25	0.24	0.25	0.25	0.25	0.24
Coefficient of thermal expansion at +23°C	[$K^{-1} \cdot 10^{-5}$]	10	7	11	11	11	8
Electrical properties							
Specific contact resistance	[Ωcm]	> 10^{13}	> 10^{13}	> 10^{12}	> 10^{12}	> 10^{9}	> 10^{8}
Surface resistance	[Ω]	> 10^{12}	> 10^{10}	> 10^{12}	> 10^{11}	> 10^{9}	> 10^{8}
More material properties	Page	159	204	247	401	267	261

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dryspin® technology | Technical data

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 linear motion. Compared with a steeper thread angle, this means a lower power loss.



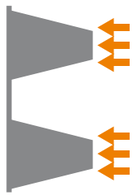
Steeper thread angle, standard geometry



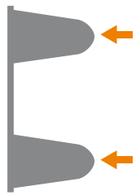
Flatter thread angle, dryspin® geometry

Silent and vibration-dampening due to rounded tooth geometry

Due to the rounded tooth geometry, 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 round teeth minimise this effect and the thread moves without lubrication and with no noise.



Angular tooth profile, standard geometry



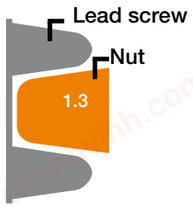
Rounded tooth profile, dryspin® geometry

Longer service life due to asymmetry

Due to the larger distances between the individual dryspin® thread pitches, the thread ideally matches the properties of the lubrication-free igus® high-performance polymers. The proportion of the tribologically optimised polymer in the thread pitches 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 with the use of dryspin® zero-backlash lead screw nuts with integrated spring pre-load.



Symmetrical standard geometry



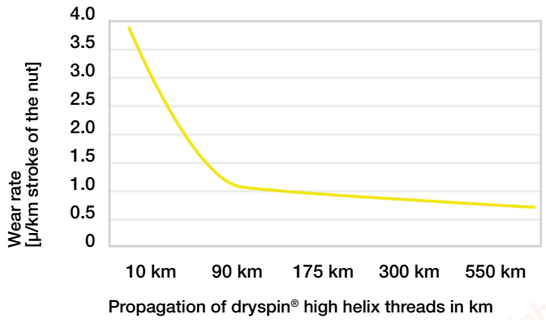
Asymmetrical dryspin® geometry

Tested: Lubrication-free iglidur® materials from igus®

Liners, sliding elements and lead screw nuts from drylin® adapted for your application: lubrication-free, tested and predictable.

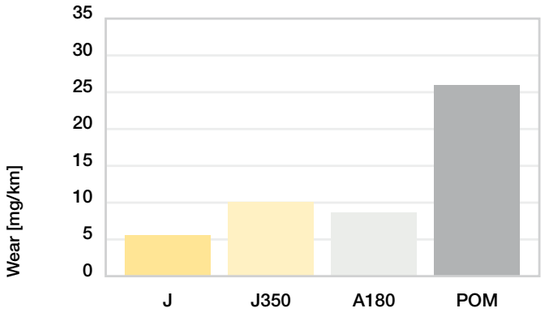
- 12,000 tribology tests per year
- More than 300 parallel test facilities
- 140 trillion test movements
- Continuous testing of drylin® products

▶ **www.igus-asean.com/test**

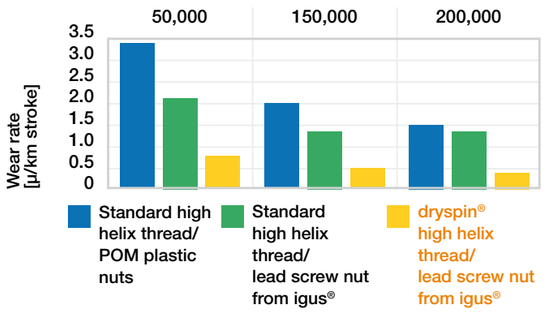


Wear test dryspin® high helix thread
DST 10x25, load 175N, 540mm stroke, 125rpm

dryspin® technology | Technical data



Wear test on C15 lead screw [mg/km]
Stroke 140mm, 50N, lead screw C15 rolled, 450rpm



Wear-resistant high helix thread 10x50, dryspin® high helix thread / standard high helix thread, load 36N, 100rpm for 50,000/150,000/200,000 cycles

dry-tech® tribo-plastics

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 operation, i.e. they are maintenance-free for their entire service life.

Material selection

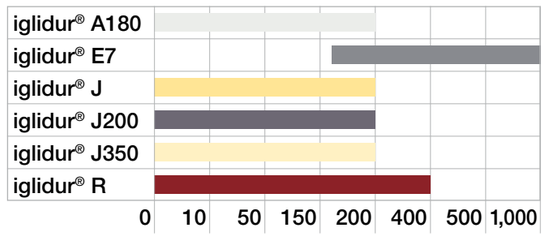
drylin® lead screw nuts are made from tribologically optimised materials. Already during the development phase, the focus is on optimising the friction properties of the drylin® lead screw drives, with the objective of attaining the lowest possible coefficient of wear and friction.

Service life

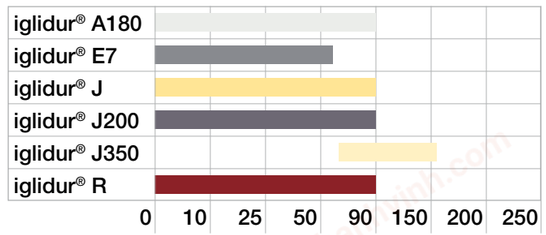
Every year, several hundred tests are set up and performed on test rigs in the igus® test laboratory. The results are incorporated into easily accessible online tools, where the service life and the required torque can be determined.

▶ **www.igus-asean.com/leadscrew-expert**

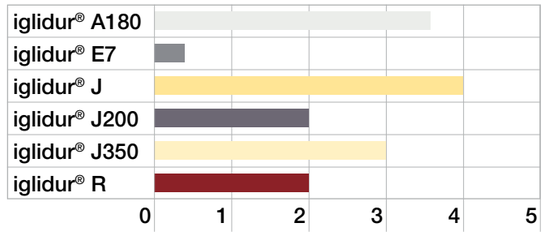
Correct choice of material



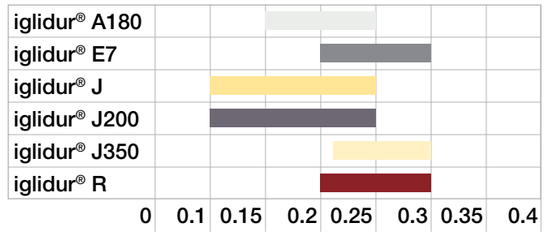
Speed [rpm]



Temperature [°C]



Surface pressure in thread [MPa]



Coefficient of friction [µ]

iglidur® J200 most suitable in combination with hard anodised aluminium

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dryspin® technology | Lead screws | Product range

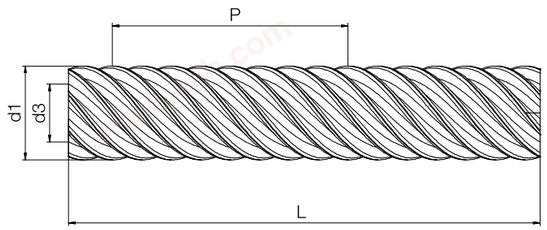
dryspin® high helix lead screws – corrosion-resistant



Stainless steel, rolled, AISI 304



Aluminium, rolled (EN AW 6082)



Technical data

Helix deviation	0.1mm to 300mm
Straightness (standard)	0.3mm to 300mm
Aligned	<0.1mm to 300mm

The tensile/compressive strength of the EN AW 6082 lead screw material is 160MPa per mm² (elongation limit 0.2mm).

Technical data

Thread	Hand of rotation right	Hand of rotation left	Material Stainless steel AISI 304	Material Aluminium EN AW 6082	Pitch P [mm]	Number of thread pitches	Pitch angle α [°]	Weight Stainless steel [kg/m]	Weight Aluminium [kg/m]
Ds4x2.4	●	–	●	–	2.4	2	10.81	0.10	–
Ds5x5	●	–	●	–	5.0	2	17.70	0.20	–
Ds6.35x2.54	●	●	●	–	2.54	2	7.26	0.25	–
Ds6.35x5.08	●	–	●	–	5.08	4	14.29	0.25	–
Ds6.35x12.7	●	–	●	–	12.7	4	32.48	0.25	–
Ds6.35x25.4	●	–	●	–	25.4	8	51.85	0.25	–
Ds8x10	●	●	●	●	10.0	4	21.70	0.40	0.14
Ds8x15	●	●	●	●	15.0	6	30.83	0.40	0.14
Ds8x24	●	–	●	–	24.0	8	43.70	0.40	–
Ds10x3	●	–	●	–	3.0	2	5.45	0.62	–
Ds10x12	●	●	●	●	12.0	4	21.54	0.62	0.21
Ds10x25	●	●	●	●	25.0	8	38.51	0.62	0.21
Ds10x50	●	●	●	●	50.0	10	57.86	0.62	0.21
Ds12x5	●	–	●	●	5.0	2	7.55	0.89	0.31
Ds12.7x12.7	●	–	●	–	12.7	4	17.65	0.90	–
Ds12x15	●	–	●	–	15.0	5	21.90	0.98	–
Ds12x25	●	–	●	●	25.0	8	33.55	0.89	0.31
Ds14x25	●	●	●	●	25.0	5	29.61	1.22	0.42
Ds14x30	●	–	●	●	30.0	6	34.30	1.22	0.42
Ds14x40.6	●	–	●	–	40.6	8	42.71	1.22	0.42
Ds16x35	●	–	●	●	35.0	7	34.85	1.59	0.54
Ds18x24	●	●	●	●	24.0	6	22.99	2.01	0.69

Available from stock
Upon request

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-hand thread
L: Left-hand thread
Length in mm: Freely selectable (see table)
Lead screw material
ES: Stainless steel, rolled
AL: Aluminium, rolled

Please contact us!
All drylin® leads screws can be custom machined. Please send us your drawing or configure online.
We can then provide a quotation quickly.
▶ **www.igus-asean.com/leadscrew-configurator**

Dimensions [mm]

Outer Ø d1 –0.1	Core Ø d3 –0.1	Max. total length L ES	Max. total length L AL	Part No.	
4.0 –0.05	3.0 –0.1	1,000	1,000	DST-LS-4X2.4-R-□□-ES	
5.0	3.30	1,000	–	DST-LS-5X5-R-□□-ES	New
6.35 –0.05	4.35 –0.05	1,000	1,000	DST-LS-6.35X2.54-□-□□-ES	
6.35 –0.05	4.85 –0.05	1,000	1,000	DST-LS-6.35X5.08-R-□□-ES	
6.35 –0.05	4.35 –0.05	1,000	1,000	DST-LS-6.35X12.7-R-□□-ES	
6.35 –0.05	4.15 –0.05	1,000	1,000	DST-LS-6.35X25.4-R-□□-ES	
8.0	5.63	1,000	1,000	DST-LS-8X10-□-□□-ES	
8.0	5.63	1,000	–	DST-LS-8X15-□-□□-ES	
8.0	5.55	1,000	–	DST-LS-8X24-R-□□-ES	New
10.0	7.85	3,000	–	DST-LS-10X3-R-□□-ES	New
10.0	6.95	3,000	1,000	DST-LS-10X12-□-□□-ES	
10.0	7.10	3,000	1,000	DST-LS-10X25-□-□□-ES	
10.0	7.35	3,000	1,000	DST-LS-10X50-□-□□-ES	
12.0	9.60	3,000	1,500	DST-LS-12X5-R-□□-ES	
12.7	9.60	3,000	–	DST-LS-12.7X12.7-R-□□-ES	New
12.0	9.00	3,000	–	DST-LS-12X15-R-□□-ES	New
12.0	8.95	3,000	1,500	DST-LS-12X25-R-□□-ES	
14.0	9.60	3,000	1,500	DST-LS-14X25-□-□□-ES	
14.0	9.60	3,000	1,500	DST-LS-14X30-R-□□-ES	
14.0	9.65	3,000	1,500	DST-LS-14X40.6-R-□□-ES	
16.0	11.60	3,000	1,500	DST-LS-16X35-R-□□-ES	
18.0	14.28	3,000	1,500	DST-LS-18X24-□-□□-ES	

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dryspin® technology | Lead screws | Product range

dryspin® high helix lead screws – corrosion-resistant

dryspin® technology

Technical data

Thread	Hand of rotation		Material		Pitch	Number	Pitch angle	Weight	
	right	left	Stainless steel	Aluminium	P	of thread pitches	α	Stainless steel	Aluminium
			AISI 304	EN AW 6082	[mm]		[°]	[kg/m]	[kg/m]
Ds18x40	●	●	●	●	40.0	8	35.55	2.01	0.69
Ds18x80	●	●	●	●	80.0	12	54.74	2.01	0.69
Ds18x100	●	●	●	●	100.0	12	60.51	2.01	0.69
Ds20x20	●	●	●	●	20.0	4	17.66	2.48	0.85
Ds20x50	●	–	●	●	50.0	8	38.51	2.48	0.85
Ds20x60	●	●	●	●	60.0	8	43.68	2.48	0.85
Ds20x80	●	●	●	●	80.0	12	55.07	2.48	0.85
Dx20x90	●	●	●	●	90.0	12	55.08	2.48	0.85

Dimensions [mm]

Outer Ø	Core Ø	Max. total length		Part No.
d1	d3	L		
–0.1	–0.1	ES	AL	
18.0	13.60	3,000	1,500	DST-LS-18X40-□-□-ES
18.0	14.00	3,000	1,500	DST-LS-18X80-□-□-ES
18.0	13.55	3,000	1,500	DST-LS-18X100-□-□-ES
20.0	15.60	3,000	1,500	DST-LS-20X20-□-□-ES
20.0	15.48	3,000	1,000	DST-LS-20X50-□-□-ES
20.0	15.55	3,000	1,500	DST-LS-20X60-□-□-ES
20.0	15.98	3,000	1,500	DST-LS-20X80-□-□-ES
20.0	15.55	3,000	1,500	DST-LS-20X90-□-□-ES

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Available from stock
Upon request

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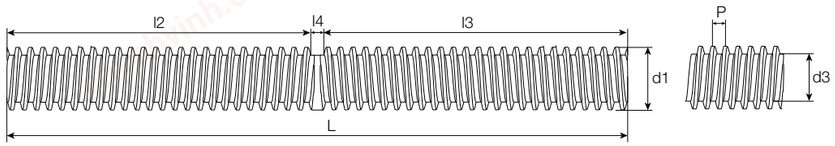
dryspin® technology | Lead screws | Product range

dryspin® high helix lead screw – with right/left opposite drive



Stainless steel, rolled, AISI 304



dryspin® technology

Order key

Part number | Thread | Options

DST-LS-10X50-R/L-480-480-ES

dryspin® technology	Lead screw	Diameter	Pitch	Hand of rotation	[47] Length right [mm]	[48] Length left [mm]	Lead screw material
DST	LS	10	X50	R/L	480	480	ES

Options:

[47] **l3:** Length right-hand thread

[48] **l2:** Length left-hand thread

Length in mm: Freely selectable (see table)

Lead screw material

ES: Stainless steel, rolled

Please contact us!

All drylin® leads screws can be custom machined. Please send us your drawing or configure online. We can then provide a quotation quickly.

▶ **www.igus-asean.com/leadscrew-configurator**

Technical data

Thread	Max. transferrable torque	Max. tensile strength	Material Stainless steel	Pitch P	Number of thread pitches	Pitch angle α
	[Nm]	[N]	AISI 304	[mm]		[°]
Ds10x12	2.0	450	●	12	4	21.54
Ds10x25	2.0	450	●	25	8	38.51
Ds10x50	2.0	450	●	50	10	57.86
Ds14x25	4.0	1,000	●	25	5	29.61
Ds18x24	7.5	1,600	●	24	6	22.99
Ds18x40	7.5	1,600	●	40	8	35.55
Ds18x80	7.5	1,600	●	80	12	54.74
Ds18x100	7.5	1,600	●	100	12	60.51

[46] Non-usable thread transition

[47] Length right-hand thread (l3)

[48] Length left-hand thread (l2)

Dimensions [mm]

Outer Ø d1	Core Ø d3	Thread transition	Max. thread length		Max. total length	Part No.
–0.10	–0.10	l4[46]	l2[48]	l3[47]	L	
10	6.95	25	487	487	1,000	**DST-LS-10X12-R/L-l2-l3-ES**
10	7.10	25	487	487	1,000	**DST-LS-10X25-R/L-l2-l3-ES**
10	7.35	25	487	487	1,000	**DST-LS-10X50-R/L-l2-l3-ES**
14	9.60	25	987	987	2,000	**DST-LS-14X25-R/L-l2-l3-ES**
18	14.40	25	987	987	2,000	**DST-LS-18X24-R/L-l2-l3-ES**
18	1360	25	987	987	2,000	**DST-LS-18X40-R/L-l2-l3-ES**
18	14.00	25	987	987	2,000	**DST-LS-18X80-R/L-l2-l3-ES**
18	13.55	25	987	987	2,000	**DST-LS-18X100-R/L-l2-l3-ES**

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Highly efficient at all speeds: iglidur® J

Thread	Efficiency	Coefficient of friction
	η	μ
Ds4x2.4	41 – 64	0.1 – 0.25
Ds5x5	52 – 74	0.1 – 0.25
Ds6.35x2.54	33 – 55	0.1 – 0.25
Ds6.35x5.08	47 – 70	0.1 – 0.25
Ds6.35x12.7	60 – 81	0.1 – 0.25
Ds6.35x25.4	57 – 81	0.1 – 0.25
Ds8x10	55 – 77	0.1 – 0.25
Ds8x15	60 – 81	0.1 – 0.25
Ds8x24	60 – 82	0.1 – 0.25
Ds10x3	27 – 48	0.1 – 0.25
Ds10x12	55 – 76	0.1 – 0.25
Ds10x25	61 – 82	0.1 – 0.25
Ds10x50	52 – 79	0.1 – 0.25
Ds12x5	34 – 56	0.1 – 0.25
Ds12.7x12.7	52 – 74	0.1 – 0.25
Ds12x15	55 – 77	0.1 – 0.25
Ds12x25	61 – 81	0.1 – 0.25
Ds14x25	60 – 80	0.1 – 0.25
Ds14x30	61 – 81	0.1 – 0.25
Ds14x40.6	61 – 82	0.1 – 0.25
Ds16x35	61 – 81	0.1 – 0.25
Ds18x24	56 – 77	0.1 – 0.25
Ds18x40	61 – 81	0.1 – 0.25
Ds18x80	55 – 80	0.1 – 0.25
Ds18x100	49 – 78	0.1 – 0.25
Ds20x20	52 – 74	0.1 – 0.25
Ds20x50	61 – 82	0.1 – 0.25
Ds20x60	60 – 82	0.1 – 0.25
Ds20x80	57 – 81	0.1 – 0.25
Ds20x90	55 – 80	0.1 – 0.25

For temperatures up to +150°C: iglidur® J350

Efficiency	Coefficient of friction
η	μ
41 – 51	0.17 – 0.25
52 – 62	0.17 – 0.25
33 – 42	0.17 – 0.25
47 – 57	0.17 – 0.25
60 – 70	0.17 – 0.25
57 – 69	0.17 – 0.25
55 – 65	0.17 – 0.25
60 – 70	0.17 – 0.25
60 – 71	0.17 – 0.25
35 – 48	0.17 – 0.25
55 – 65	0.17 – 0.25
61 – 71	0.17 – 0.25
52 – 66	0.17 – 0.25
34 – 43	0.17 – 0.25
62 – 71	0.17 – 0.25
55 – 65	0.17 – 0.25
61 – 71	0.17 – 0.25
60 – 70	0.17 – 0.25
61 – 71	0.17 – 0.25
61 – 71	0.17 – 0.25
61 – 71	0.17 – 0.25
56 – 66	0.17 – 0.25
61 – 71	0.17 – 0.25
55 – 68	0.17 – 0.25
49 – 64	0.17 – 0.25
52 – 62	0.17 – 0.25
61 – 71	0.17 – 0.25
60 – 71	0.17 – 0.25
57 – 69	0.17 – 0.25
55 – 68	0.17 – 0.25

For medium to high speeds: iglidur® R

Thread	Efficiency	Coefficient of friction
	η	μ
Ds4x2.4	37 – 47	0.2 – 0.3
Ds5x5	47 – 58	0.2 – 0.3
Ds6.35x2.54	29 – 38	0.2 – 0.3
Ds6.35x5.08	42 – 53	0.2 – 0.3
Ds6.35x12.7	55 – 66	0.2 – 0.3
Ds6.35x25.4	50 – 64	0.2 – 0.3
Ds8x10	50 – 61	0.2 – 0.3
Ds8x15	55 – 66	0.2 – 0.3
Ds8x24	54 – 67	0.2 – 0.3
Ds10x3	23 – 32	0.2 – 0.3
Ds10x12	50 – 61	0.2 – 0.3
Ds10x25	55 – 67	0.2 – 0.3
Ds10x50	44 – 61	0.2 – 0.3
Ds12x5	29 – 39	0.2 – 0.3
Ds12.7x12.7	47 – 58	0.2 – 0.3
Ds12x15	50 – 61	0.2 – 0.3
Ds12x25	55 – 67	0.2 – 0.3
Ds14x25	60 – 72	0.2 – 0.3
Ds14x30	61 – 74	0.2 – 0.3
Ds14x40.6	55 – 67	0.2 – 0.3
Ds16x35	61 – 74	0.2 – 0.3
Ds18x24	51 – 62	0.2 – 0.3
Ds18x40	61 – 74	0.2 – 0.3
Ds18x80	55 – 71	0.2 – 0.3
Ds18x100	40 – 58	0.2 – 0.3
Ds20x20	52 – 65	0.2 – 0.3
Ds20x50	55 – 67	0.2 – 0.3
Ds20x60	60 – 74	0.2 – 0.3
Ds20x80	50 – 64	0.2 – 0.3
Ds20x90	55 – 71	0.2 – 0.3

FDA-compliant for the food/ pharmaceutical industry: iglidur® A180

Efficiency	Coefficient of friction
η	μ
41 – 54	0.15 – 0.25
52 – 65	0.15 – 0.25
33 – 45	0.15 – 0.25
47 – 61	0.15 – 0.25
60 – 73	0.15 – 0.25
57 – 72	0.15 – 0.25
55 – 68	0.15 – 0.25
60 – 73	0.15 – 0.25
60 – 74	0.15 – 0.25
38 – 48	0.15 – 0.25
55 – 68	0.15 – 0.25
61 – 74	0.15 – 0.25
52 – 70	0.15 – 0.25
34 – 46	0.15 – 0.25
65 – 74	0.15 – 0.25
55 – 68	0.15 – 0.25
61 – 73	0.15 – 0.25
60 – 72	0.15 – 0.25
61 – 74	0.15 – 0.25
61 – 74	0.15 – 0.25
61 – 74	0.15 – 0.25
56 – 69	0.15 – 0.25
61 – 74	0.15 – 0.25
55 – 71	0.15 – 0.25
49 – 68	0.15 – 0.25
52 – 65	0.15 – 0.25
61 – 74	0.15 – 0.25
60 – 74	0.15 – 0.25
57 – 72	0.15 – 0.25
55 – 71	0.15 – 0.25

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For high speeds: iglidur® E7

Thread	Efficiency η	Coefficient of friction μ
Ds6.35x2.54	33–55	0.2–0.3
Ds6.35x5.08	47–70	0.2–0.3
Ds6.35x12.7	60–81	0.2–0.3
Ds6.35x25.4	57–81	0.2–0.3
Ds8x10	55–77	0.2–0.3
Ds8x15	60–81	0.2–0.3
Ds10x3	23–32	0.2–0.3
Ds10x12	55–76	0.2–0.3
Ds10x25	61–82	0.2–0.3
Ds10x50	52–79	0.2–0.3
Ds12x5	34–56	0.2–0.3
Ds14x25	60–80	0.2–0.3
Ds14x30	61–81	0.2–0.3
Ds16x35	–	–
Ds18x24	–	–
Ds18x40	–	–
Ds18x80	–	–
Ds18x100	–	–
Ds20x20	–	–
Ds20x50	–	–
Ds20x60	–	–
Ds20x80	–	–
Ds20x90	–	–

The specialist on hard anodised aluminium: iglidur® J200

Efficiency η	Coefficient of friction μ
–	–
–	–
–	–
–	–
–	–
–	–
–	–
–	–
–	–
–	–
–	–
–	–
–	–
61–71	0.1–0.25
56–77	0.1–0.25
61–71	0.1–0.25
55–68	0.1–0.25
49–64	0.1–0.25
52–62	0.1–0.25
52–62	0.1–0.25
60–71	0.1–0.25
57–69	0.1–0.25
55–68	0.1–0.25

My sketches

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Lead screw nuts, cylindrical (form S)



iglidur® J



iglidur® J350



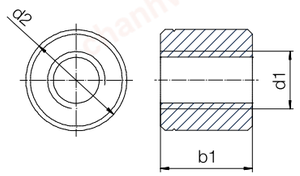
iglidur® R



iglidur® A180



iglidur® E7



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Order key

Type											d2	b1	Thread	
DST-	□	S	R	M-	14	13	DS	10	X	12				

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-hand thread
L: Left-hand thread

J	High efficiency at all speeds
J350	For temperatures up to +150°C
R	The cost-effective option for high volume
A180	FDA-compliant for the food and pharmaceutical industries
E7	For high speeds

Technical data

Thread	Hand of rotation		Effective supporting surface	Max. stat. axial F [N] iglidur®		
	right	left	[mm²]	J / J350 / A180	R	E7
Ds4x2.4	●	–	60	152	152	–
Ds5x5	●	–	57	152	152	–
Ds6.35x2.54	●	●	172	152	152	86
Ds6.35x5.08	●	–	135	152	152	68
Ds6.35x12.7	●	–	67	152	152	34
Ds6.35x25.4	●	–	74	152	152	24
Ds8x10	●	●	122	304	244	61
Ds8x15	●	●	123	308	244	61
Ds8x24	●	–	104	260	208	–
Ds10x3	●	–	410	1,025	820	–
Ds10x12	●	●	274	685	541	72
Ds10x25	●	●	249	623	499	125
Ds10x50	●	●	144	361	289	137
Ds12x5	●	–	398	995	796	–
Ds12.7x12.7	●	–	462	1,155	924	–
Ds12x15	●	–	712	1,113	891	–
Ds12x25	●	–	385	963	770	–
Ds14x25	●	●	444	1,110	888	–
Ds14x30	●	–	440	1,101	881	–
Ds14x40.6	●	–	434	1,095	868	–
Ds16x35	●	–	610	1,526	1,221	–
Ds18x24	●	●	844	2,110	1,688	–

Dimensions [mm]

d1[156]	d2[156]	b1[156]	Weight [g] iglidur®					Part No.	
			J	J350	R	A180	E7		
4	14	13	2.74	2.65	2.55	2.68	–	DST-□SRM-131315DS4X2.4	
5	14	13	2.4	2.3	2.2	2.3	–	DST-□SRM-1413DS5X5	New
6.35	14	13	2.4	2.3	2.2	2.3	1.67	DST-□S□M-1413DS6.35X2.54	
6.35	14	13	2.4	2.3	2.2	2.3	1.67	DST-□SRM-1413DS6.35X5.08	
6.35	14	13	2.4	2.3	2.2	2.3	1.67	DST-□SRM-1413DS6.35X12.7	
6.35	14	13	2.4	2.3	2.2	2.3	1.67	DST-□SRM-1413DS6.35X25.4	
8	18	12	3.7	3.5	3.4	3.6	2.57	DST-□S□M-1812DS8X10	
8	18	12	3.7	3.5	3.4	3.6	2.57	DST-□S□M-1812DS8X15	
8	18	12	3.7	3.5	3.4	3.6	–	DST-□SRM-1812DS8X24	New
10	22	20	9.0	8.7	8.4	8.8	–	DST-□SRM-2220DS10X3	New
10	22	20	9.0	8.7	8.4	8.8	6.33	DST-□S□M-2220DS10X12	
10	22	20	9.0	8.7	8.4	8.8	6.33	DST-□S□M-2220DS10X25	
10	22	20	9.0	8.7	8.4	8.8	6.33	DST-□S□M-2220DS10X50	
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-2624DS12.7X12.7	New
12	26	24	14.9	14.4	13.6	14.6	–	DST-□SRM-2624DS12X15	New
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-□S□M-4036DS18X24	

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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dryspin® technology

Technical data

Thread	Hand of rotation		Effective supporting surface	Max. stat. axial F [N] iglidur®		
	right	left	[mm²]	J / J350 / A180	R	E7
Ds18x40	●	●	786	1,966	1,573	–
Ds18x80	●	●	543	1,357	1,086	–
Ds18x100	●	●	476	1,191	953	–
Ds20x20	●	●	984	2,460	1,968	–
Ds20x50	●	–	1007	2,517	2,014	–
Ds20x60	●	●	663	1,657	1,325	–
Ds20x80	●	●	686	1,715	1,372	–
Ds20x90	●	●	610	1,657	1,220	–

Dimensions [mm]

d1[156]	d2[156]	b1[156]	Weight [g] iglidur®					Part No.
			J	J350	R	A180	E7	
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-□S□M-4036DS18X80
18	40	36	53.8	52.0	50.1	52.7	–	DST-□S□M-4036DS18X100
20	45	40	76.1	73.5	71.0	74.5	–	DST-□S□M-4540DS20X20
20	45	40	76.1	73.5	71.0	74.5	–	DST-□SRM-4540DS20X50
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-□S□M-4540DS20X80
20	45	40	76.1	73.5	71.0	74.5	–	DST-□S□M-4540DS20X90

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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dryspin® technology | Lead screw nuts | Product range

Cylindrical lead screw nuts with spanner flat



iglidur® J



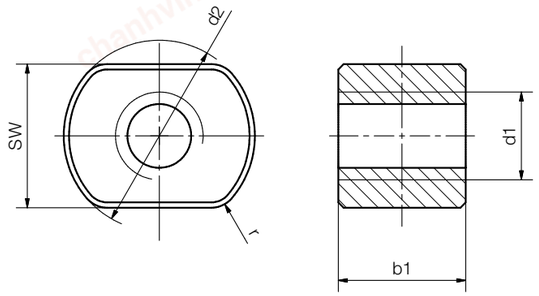
iglidur® J350



iglidur® R



iglidur® A180



Order key

Type					SW	d2	b1	Thread
DST-	□	S	R	M-17	22	20	DS	10X12

dryspin® technology	iglidur® material	Form S	Hand of rotation	Metric	Spanner flat [mm]	Outer Ø [mm]	Length [mm]	Thread type	Diameter [mm]	Pitch

Options:
Hand of rotation
R: Right-hand thread
L: Left-hand thread

J	High efficiency at all speeds
J350	For temperatures up to +150°C
R	The cost-effective option for high volume
A180	FDA-compliant for the food and pharmaceutical industries

Technical data

Thread	Hand of rotation		Effective support surface	Max. stat. axial F [N] iglidur®			
	right	left	[mm²]	J	J350	R	A180
DS10x12	●	●	271	677	677	541	677
DS10x25	●	●	249	623	623	499	623
DS10x50	●	●	144	361	361	289	361
DS12x5	●	–	391	977	977	782	977
DS12x15	●	–	633	990	990	792	990
DS12x25	●	–	385	964	964	771	964
DS14x25	●	●	440	1,101	1,101	881	1,101
DS14x30	●	–	440	1,101	1,101	881	1,101
DS14x40.6	●	–	430	1,075	1,075	860	1,075
DS16x35	●	–	610	1,526	1,526	1,221	1,526
DS18x24	●	●	824	2,061	2,061	1,649	2,061
DS18x40	●	●	786	1,966	1,966	1,573	1,966
DS18x80	●	●	543	1,357	1,357	1,086	1,357
DS18x100	●	●	476	1,191	1,191	953	1,191
DS20x20	●	●	984	2,460	2,460	1,968	2,460
DS10x50	●	●	795	1,988	1,988	1,590	1,988
DS20x50	●	–	663	1,657	1,657	1,325	1,657
DS20x60	●	●	663	1,657	1,657	1,325	1,657
DS20x80	●	●	697	1,742	1,742	1,393	1,742
DS20x90	●	●	663	1,657	1,657	1,325	1,657

Dimensions [mm]

d1[156]	d2[156]	b1[156]	SW	Weight [g] iglidur®				Part No.	
				J	J350	R	A180		
10	22	20	17	6.65	6.42	6.20	6.51	DST-□S□M-172220DS10x12	
10	22	20	17	6.65	6.42	6.20	6.51	DST-□S□M-172220DS10x25	
10	22	20	17	6.65	6.42	6.20	6.51	DST-□S□M-172220DS10x50	
12	26	24	19	10.90	10.53	10.17	10.68	DST-□SRM-192624DS12x5	
12	26	24	19	10.90	10.50	10.20	10.70	DST-□SRM-192624DS12x15	New
12	26	24	19	10.90	10.53	10.17	10.68	DST-□SRM-192624DS12x25	
14	30	27	25	16.05	15.51	14.97	15.73	DST-□S□M-253027DS14x25	
14	30	27	25	16.05	15.51	14.97	15.73	DST-□SRM-253027DS14x30	
14	30	32	25	19.02	18.39	17.75	18.64	DST-□SRM-253027DS14x40.6	
16	36	36	27	33.03	31.92	30.81	32.36	DST-□SRM-273632DS16x35	
18	40	36	27	40.11	38.76	37.41	39.30	DST-□S□M-274036DS18x24	
18	40	36	27	40.11	38.76	37.41	39.30	DST-□S□M-274036DS18x40	
18	40	36	27	40.11	38.76	37.41	39.30	DST-□S□M-274036DS18x80	
18	40	40	27	44.56	43.07	41.57	43.67	DST-□S□M-274036DS18x100	
20	45	40	30	57.34	55.42	53.49	56.19	DST-□S□M-304540DS20x20	
20	45	40	30	57.34	55.42	53.49	56.19	DST-□S□M-304540DS10x50	
20	45	40	30	57.34	55.42	53.49	56.19	DST-□S□M-304540DS20x50	
20	45	40	30	57.34	55.42	53.49	56.19	DST-□S□M-304540DS20x60	
20	45	40	30	57.34	55.42	53.49	56.19	DST-□S□M-304540DS20x80	
20	45	40	30	57.34	55.42	53.49	56.19	DST-□S□M-304540DS20x90	

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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dryspin® technology | Lead screw nuts | Product range

Lead screw nuts with flange (form F)



iglidur® J



iglidur® J350



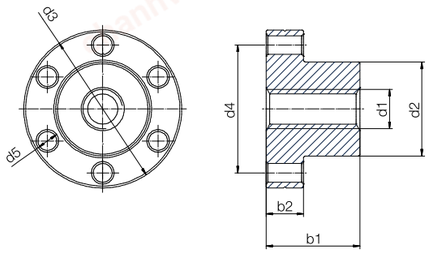
iglidur® R



iglidur® A180



iglidur® J200



Order key

Type											d2	b1	Thread
DST-	□	F	R	M-	25	25	D	S	10	X12			

dryspin® technology	iglidur® material	Form F	Hand of rotation	Metric	Outer Ø [mm]	Length [mm]	Thread type	Diameter [mm]	Pitch

J	High efficiency at all speeds
J350	For temperatures up to +150°C
R	The cost-effective option for high volume
A180	FDA-compliant for the food and pharmaceutical industries
J200	The specialist on hard anodised aluminium

Options:
Hand of rotation
R: Right-hand thread
L: Left-hand thread

Technical data

Thread	Hand of rotation		Effective supporting surface	Max. stat. axial F [N]		
	right	left		iglidur®		
			[mm²]	J / J350 / A180	R	J200
Ds4x2.4	●	–	69	125	125	–
Ds5x5	●	–	66	152	152	–
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	–
Ds8x24	●	–	173	432.5	346	–
Ds10x3	●	●	512	1,280	1,024	–
Ds10x12	●	●	343	845	677	–
Ds10x25	●	●	312	780	623	–
Ds10x50	●	●	181	453	361	–
Ds12x5	●	–	581	1,425	1,140	–
Ds12.7x12.7	●	–	599	1,497.5	1,198	–
Ds12x15	●	–	923	1,443	1,155	–
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	1,336

Dimensions [mm]

d1[156]	d2[156]	d3	d4	d5	b1[156]	b2	Weight [g] iglidur® J	J350	R	A180	J200	Part No.	
4.0	13	25	15	3.2	15	5	7.6	7.35	7.09	7.45	–	DST-□FRM-1315DS4X2.4	
5.0	13	25	19	3.2	15	5	4.9	4.8	4.6	4.8	–	DST-□FRM-1315DS5X5	New
6.35	13	25	19	3.2	15	5	4.9	4.8	4.6	4.8	–	DST-□F□M-1315DS6.35X2.54	
6.35	13	25	19	3.2	15	5	4.9	4.8	4.6	4.8	–	DST-□FRM-1315DS6.35X5.08	
6.35	13	25	19	3.2	15	5	4.9	4.8	4.6	4.8	–	DST-□FRM-1315DS6.35X12.7	
6.35	13	25	19	3.2	15	5	4.9	4.8	4.6	4.8	–	DST-□FRM-1315DS6.35X25.4	
8	20	36	28	4	20	8	12.3	11.9	11.5	12.0	–	DST-□F□M-2020DS8X10	
8	20	36	28	4	20	8	12.3	11.9	11.5	12.0	–	DST-□F□M-2020DS8X15	
8	20	36	28	4	20	8	12.3	11.9	11.5	12.0	–	DST-□FRM-2020DS8X24	New
10	25	42	34	5	25	10	28.7	27.7	26.8	28.1	–	DST-□FRM-2525DS10X3	New
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	18	47.6	46.0	44.4	46.6	–	DST-□FRM-2835DS12.7X12.7	New
12	28	48	38	6	35	18	47.6	46.0	44.4	46.6	–	DST-□FRM-2835DS12X15	New
12	28	48	38	6	35	18	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	
12	28	48	38	6	35	18	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	50	DST-□FRM-2835DS16X35	

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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Lead screw nuts with flange (form F)

Technical data

Thread	Hand of rotation		Effective supporting surface	Max. stat. axial F [N]		
	right	left		iglidur®		
			[mm²]	J / J350 / A180	R	J200
Ds18x24	●	●	844	2,110	1,688	1,688
Ds18x40	●	●	764	1,910	1,529	1,528
Ds18x80	●	●	528	1,320	1,056	1,056
Ds18x100	●	●	463	1,158	926	926
Ds20x20	●	●	1,083	2,708	2,165	2166
Ds20x50	●	–	729	1,823	1,458	1,750
Ds20x60	●	●	729	1,823	1,458	1,458
Ds20x80	●	●	755	1,888	1,510	1,510
Ds20x90	●	●	671	1,678	1,342	1,342

Dimensions [mm]

d1[156]	d2[156]	d3	d4	d5	b1[156]	b2	Weight [g] iglidur®					Part No.
							J	J350	R	A180	J200	
18	28	48	38	6	35	12	50.9	49.2	47.4	49.8	48	**DST-□F□M-2835DS18X24**
18	28	48	38	6	35	12	50.9	49.2	47.4	49.8	48	**DST-□F□M-2835DS18X40**
18	28	48	38	6	35	12	50.9	49.2	47.4	49.8	48	**DST-□F□M-2835DS18X80**
18	28	48	38	6	35	12	50.9	49.2	47.4	49.8	48	**DST-□F□M-2835DS18X100**
20	32	55	45	7	44	12	60.2	58.2	56.2	59.0	73	**DST-□F□M-3244DS20X20**
20	32	55	45	7	44	12	60.2	58.2	56.2	59.0	73	**DST-□F□M-3244DS20X50**
20	32	55	45	7	44	12	60.2	58.2	56.2	59.0	73	**DST-□F□M-3244DS20X60**
20	32	55	45	7	44	12	60.2	58.2	56.2	59.0	73	**DST-□F□M-3244DS20X80**
20	32	55	45	7	44	12	60.2	58.2	56.2	59.0	73	**DST-□F□M-3244DS20X90**

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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Lead screw nuts with spanner flat, with flange



iglidur® J



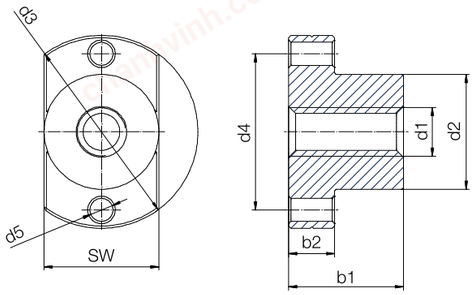
iglidur® J350



iglidur® R



iglidur® A180



Order key

Type												SW	d2	b1	Thread							
DST-	□	F	R	M-	25	25	25	DS	10	X	12											

dryspin® technology | iglidur® material | Form F | Hand of rotation | Metric | Spanner flat [mm] | Outer Ø [mm] | Length [mm] | Thread type | Diameter [mm] | Pitch

Options:
Hand of rotation
R: Right-hand thread
L: Left-hand thread

J	High efficiency at all speeds
J350	For temperatures up to +150°C
R	The cost-effective option for high volume
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
Ds4x2.4	●	–	69	125	125
Ds5x5	●	–	66	152	152
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
Ds8x24	●	●	173	432.5	346
Ds10x12	●	●	343	858	686
Ds10x25	●	●	312	779	623
Ds10x50	●	●	253	632	506
Ds12x5	●	–	581	1,452	1,162
Ds12x15	●	–	923	1,443	1,155
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

Dimensions [mm]

d1[156]	d2[156]	d3	d4	d5	b1[156]	b2	SW	Weight [g] iglidur®				Part No.
								J	J350	R	A180	
4.0	13	25	19	3.2	15	5	13	4.1	3.98	3.84	4.04	DST-□FRM-131315DS4X2.4
5.0	13	25	19	3.2	15	5	13	3.7	3.6	3.4	3.6	DST-□FRM-131315DS5X5
6.35	13	25	19	3.2	15	5	13	3.7	3.6	3.4	3.6	DST-□F□M-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-□F□M-202020DS8X10
8	20	36	28	4	20	8	20	12.7	12.3	11.8	12.4	DST-□F□M-202020DS8X15
8	20	36	28	4	20	8	20	12.7	12.3	11.8	12.4	DST-□F□M-202020DS8X24
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	18	28	39.2	37.9	36.6	38.4	DST-□FRM-282835DS12X15
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-□F□M-282835DS18X24
18	28	48	38	6	35	12	28	31.9	30.8	29.7	31.2	DST-□F□M-282835DS18X40

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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dryspin® technology | Lead screw nuts | Product range

Lead screw nuts with spanner flat, with flange

dryspin® technology

Technical data

Thread	Hand of rotation		Effective supporting surface	Max. stat. axial F [N] iglidur®	
	right	left	[mm²]	J / J350 / A180	R
Ds18x80	●	●	528	1,319	1,056
Ds18x100	●	●	463	1,158	926
Ds20x20	●	●	1,083	2,707	2,165
Ds20x50	●	–	729	1,822	1,458
Ds20x60	●	●	729	1,822	1,458
Ds20x80	●	●	755	1,888	1,510
Ds20x90	●	●	671	1,678	1,342

Dimensions [mm]

d1[156]	d2[156]	d3	d4	d5	b1[156]	b2	SW	Weight [g] iglidur®				Part No.
								J	J350	R	A180	
18	28	48	38	6	35	12	28	31.9	30.8	29.7	31.2	DST-□F□M-282835DS18X80
18	28	48	38	6	35	12	28	31.9	30.8	29.7	31.2	DST-□F□M-282835DS18X100
20	32	55	45	7	44	12	32	49.2	47.6	45.9	48.2	DST-□F□M-323244DS20X20
20	32	55	45	7	44	12	32	49.2	47.6	45.9	48.2	DST-□F□M-323244DS20X50
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-□F□M-323244DS20X80
20	32	55	45	7	44	12	32	49.2	47.6	45.9	48.2	DST-□F□M-323244DS20X90

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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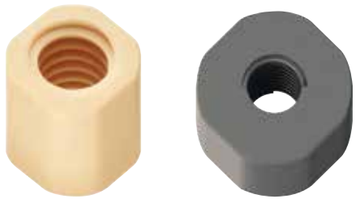
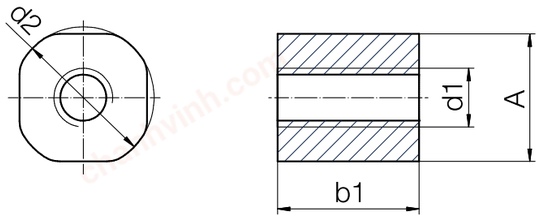
Cost-effective injection-moulded lead screw nuts, cylindrical (form S)



Images exemplary



dryspin® technology

Order key

Type										d2	b1	Thread
DST-	J	S	□	M-	C	-	01-	DS	10X12			
dryspin® technology	iglidur® material	Form S	Hand of rotation	Metric	Thread: cut		Type	Thread type	Diameter [mm]			Pitch

Options:
Hand of rotation
R: Right-hand thread
L: Left-hand thread

J	High efficiency at all speeds
E7	For high speeds

Technical data

Thread	Hand of rotation		Effective supporting surface	Max. stat. axial F
	right	left	[mm²]	[N]
Ds4x2.4	●	–	53	152
Ds5x5	●	–	53	152
Ds6.35x2.54	●	●	159	152
Ds6.35x5.08	●	–	125	152
Ds6.35x12.7	●	–	62	152
Ds6.35x25.4	●	–	69	152
Ds8x10	●	●	203	507
Ds8x15	●	●	203	507
Ds8x24	●	–	173	432.5
Ds10x3	●	–	410	1,025
Ds10x12	●	●	271	677
Ds10x25	●	●	249	623
Ds10x50	●	●	144	361
Ds12x5	●	–	407	1,018
Ds12.7x12.7	●	–	427	1,067.5
Ds12x15	●	–	659	1,031
Ds12x25	●	–	291	1,018
Ds14x25	●	●	408	1,019
Ds14x30	●	–	408	1,019
Ds16x35	●	–	477	1,192
Ds18x24	●	●	573	1,431
Ds18x40	●	●	546	1,365

Dimensions [mm]

d1[156]	d2[156]	A	b1[156]	Weight	Part No.	
				[g]		
4	12	11	12	1.46	DST-JSRM-C-01-DS4X2.4	New
5	12	11	12	1.46	DST-JSRM-C-01-DS5X5	New
6.35	12	11	12	1.46	DST-JS□M-C-01-DS6.35X2.54	
6.35	12	11	12	1.46	DST-JSRM-C-01-DS6.35X5.08	
6.35	12	11	12	1.46	DST-JSRM-C-01-DS6.35X12.7	
6.35	12	11	12	1.46	DST-JSRM-C-01-DS6.35X25.4	
8	20	18	20	7.86	DST-JS□M-C-01-DS8X10	
8	20	19	20	7.86	DST-JS□M-C-01-DS8X15	
8	20	18	20	7.90	DST-JSRM-C-01-DS8X24	New
10	20	18	20	7.02	DST-JSRM-C-01-DS10X3	New
10	20	18	20	7.02	DST-JS□M-C-01-DS10X12	
10	20	18	20	7.02	DST-JS□M-C-01-DS10X25	
10	20	18	20	7.02	DST-JS□M-C-01-DS10X50	
12	24	22.6	25	12.64	DST-JSRM-C-01-DS12X5	
12	24	22.6	25	12.64	DST-JSRM-C-01-DS12.7X12.7	New
12	24	22.6	25	12.60	DST-JSRM-C-01-DS12X15	New
12	26	22.6	25	12.64	DST-JSRM-C-01-DS12X25	
14	24	22.6	25	11.12	DST-JS□M-C-01-DS14X25	
14	24	22.6	25	11.12	DST-JSRM-C-01-DS14X30	
16	28	26.2	25	15.45	DST-JSRM-C-01-DS16X35	
18	28	26.2	25	13.46	DST-JS□M-C-01-DS18X24	
18	28	26.2	25	13.46	DST-JS□M-C-01-DS18X40	

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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Cost-effective injection-moulded lead screw nuts, cylindrical (form S)

dryspin® technology

Technical data

Thread	Hand of rotation		Effective supporting surface	Max. stat. axial F
	right	left	[mm²]	[N]
Ds6.35x2.54	●	●	159	79.5
Ds6.35x5.08	●	–	125	62.5
Ds6.35x12.7	●	–	62	31.0
Ds6.35x25.4	●	–	69	34.5
Ds8x10	●	–	203	101.5
Ds8x15	●	–	203	101.5
Ds10x12	●	–	217	108.5
Ds10x25	●	–	249	124.5
Ds10x50	●	–	144	72.0
Ds12x5	●	–	407	203.5
Ds12x25	●	–	291	145.5
Ds14x25	●	–	408	204.0
Ds14x30	●	–	408	204.0

Dimensions [mm]

d1[156]	d2[156]	A	b1[156]	Weight	Part No.	
				[g]		
6.35	12	11	12	1.20	DST-E7S□M-C-01-DS6.35X2.54	New
6.35	12	11	12	1.20	DST-E7SRM-C-01-DS6.35X5.08	New
6.35	12	11	12	1.20	DST-E7SRM-C-01-DS6.35X12.7	New
6.35	12	11	12	1.20	DST-E7SRM-C-01-DS6.35X25.4	New
8	20	18	20	5.00	DST-E7SRM-C-01-DS8X10	New
8	20	18	20	5.00	DST-E7SRM-C-01-DS8X15	New
10	20	18	20	5.00	DST-E7SRM-C-01-DS10X12	New
10	20	18	20	5.00	DST-E7SRM-C-01-DS10X25	New
10	20	18	20	5.00	DST-E7SRM-C-01-DS10X50	New
12	24	22.6	25	9.80	DST-E7SRM-C-01-DS12X5	New
12	26	22.6	25	9.80	DST-E7SRM-C-01-DS12X25	New
14	24	22.6	25	9.80	DST-E7SRM-C-01-DS14X25	New
14	24	22.6	25	9.80	DST-E7SRM-C-01-DS14X30	New

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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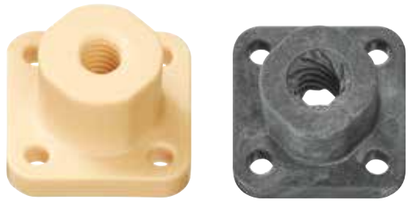
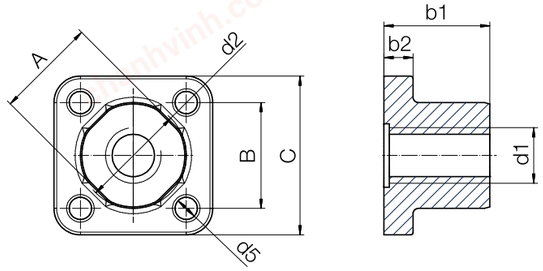
Cost-effective injection-moulded lead screw nuts with flange (form F)



Images exemplary



Order key

Type	d2	b1	Thread

DST - J F □ M - C - 01 - DS 10X12

dryspin® technology	iglidur® material	Form F	Hand of rotation	Metric	Thread: cut	Type	Thread type	Diameter [mm]	Pitch

J	High efficiency at all speeds
E7	For high speeds

Options:
Hand of rotation
R: Right-hand thread
L: Left-hand thread

Technical data

Thread	Hand of rotation right	Hand of rotation left	Effective supporting surface [mm²]	Max. stat. axial F [N]
Ds5x5	●	–	53	152
Ds6.35x2.54	●	●	199	125
Ds6.35x5.08	●	–	156	125
Ds6.35x12.7	●	–	78	125
Ds6.35x25.4	●	–	86	125
Ds8x10	●	●	203	507
Ds8x15	●	●	254	634
Ds8x24	●	–	173	432.5
Ds10x3	●	–	410	1,025
Ds10x12	●	●	338	846
Ds10x25	●	●	312	779
Ds10x50	●	●	181	451
Ds12x5	●	–	570	1,425
Ds12.7x12.7	●	–	427	1,067.5
Ds12x15	●	–	659	1,031
Ds12x25	●	–	548	1,425
Ds14x25	●	●	571	1,427
Ds14x30	●	–	571	1,427
Ds16x35	●	–	668	1,669
Ds18x24	●	●	802	2,004
Ds18x40	●	●	764	1,911

Dimensions [mm]

d1[156]	d2[156]	A	B	C	d5	b1[156]	b2	Weight [g]	Part No.	
5.0	14	11	12	18	3.2	12	4	2.71	DST-JFRM-C-01-DS5X5	New
6.35	12	11	12	18	3.2	12	4	2.71	DST-JF□M-C-01-DS6.35X2.54	
6.35	12	11	12	18	3.2	12	4	2.71	DST-JFRM-C-01-DS6.35X5.08	
6.35	12	11	12	18	3.2	12	4	2.71	DST-JFRM-C-01-DS6.35X12.7	
6.35	12	11	12	18	3.2	12	4	2.71	DST-JFRM-C-01-DS6.35X25.4	
8	20	19	20	30	4.2	20	5.5	12.66	DST-JF□M-C-01-DS8X10	
8	20	19	20	30	4.2	20	5.5	12.66	DST-JF□M-C-01-DS8X15	
8	20	19	20	30	4.2	20	5.5	12.60	DST-JFRM-C-01-DS8X24	New
10	20	19	20	30	4.2	20	5.5	11.82	DST-JFRM-C-01-DS10X3	New
10	20	19	20	30	4.2	20	5.5	11.82	DST-JF□M-C-01-DS10X12	
10	20	19	20	30	4.2	20	5.5	11.82	DST-JF□M-C-01-DS10X25	
10	20	19	20	30	4.2	20	5.5	11.82	DST-JF□M-C-01-DS10X50	
12	24	22.6	24	34	5	25	6	18.93	DST-JFRM-C-01-DS12X5	
12	24	22.6	24	34	5	25	6	18.93	DST-JFRM-C-01-DS12.7X12.7	New
12	24	22.6	24	34	5	25	6	19.00	DST-JFRM-C-01-DS12X15	New
12	24	22.6	24	34	5	25	6	18.93	DST-JFRM-C-01-DS12X25	
14	24	22.6	24	34	5	25	6	17.41	DST-JF□M-C-01-DS14X25	
14	24	22.6	24	34	5	25	6	17.41	DST-JFRM-C-01-DS14X30	
16	28	25.5	27	38	6	25	6.5	22.85	DST-JFRM-C-01-DS16X35	
18	28	25.5	27	38	6	25	6.5	21.48	DST-JF□M-C-01-DS18X24	
18	28	25.5	27	38	6	25	6.5	21.48	DST-JF□M-C-01-DS18X40	

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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dryspin® technology | Lead screw nuts | Product range

Cost-effective injection-moulded lead screw nuts, cylindrical (form S)

dryspin® technology

Technical data

Thread	Hand of rotation		Effective supporting surface	Max. stat. axial F
	right	left	[mm²]	[N]
Ds6.35x2.54	●	●	199	80
Ds6.35x5.08	●	–	156	63
Ds6.35x12.7	●	–	78	31
Ds6.35x25.4	●	–	86	35
Ds8x10	●	●	203	102
Ds8x15	●	●	254	102
Ds10x12	●	●	338	136
Ds10x25	●	●	312	125
Ds10x50	●	●	181	72

Dimensions [mm]

d1[156]	d2[156]	A	B	C	d5	b1[156]	b2	Weight	Part No.
								[g]	
6.35	12	11	12	18	3.2	12	4	1.9	DST-E7F□M-C-01-DS6.35X2.54
6.35	12	11	12	18	3.2	12	4	1.9	DST-E7FRM-C-01-DS6.35X5.08
6.35	12	11	12	18	3.2	12	4	1.9	DST-E7FRM-C-01-DS6.35X12.7
6.35	12	11	12	18	3.2	12	4	1.9	DST-E7FRM-C-01-DS6.35X25.4
8	20	19	20	30	4.2	20	5.5	9.0	DST-E7F□M-C-01-DS8X10
8	20	19	20	30	4.2	20	5.5	9.0	DST-E7F□M-C-01-DS8X15
10	20	19	20	30	4.2	20	5.5	9.0	DST-E7F□M-C-01-DS10X12
10	20	19	20	30	4.2	20	5.5	9.0	DST-E7F□M-C-01-DS10X25
10	20	19	20	30	4.2	20	5.5	9.0	DST-E7F□M-C-01-DS10X50

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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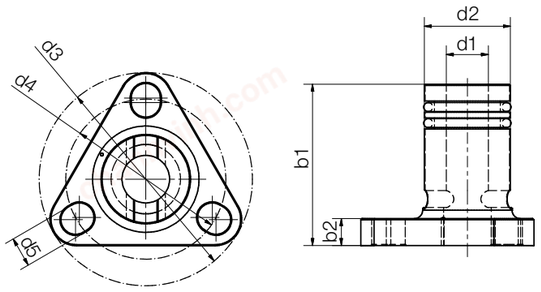
dryspin® technology | Lead screw nuts | Product range

Lead screw nuts with radial pre-load





Order key

Part number	Type	Thread

DST - J F R M - LC - 0001 - DS 10X12

dryspin® technology	iglidur® J	Form F	Hand of rotation	Metric	Low Clearance	Type 0001	Thread type	Thread Ø [mm]	Pitch

Technical data

Thread	Max. stat. axial F	Max. idling torque (with O-ring) from	Weight
	[N]	[Nm]	[g]
Ds6.35x2.54	40	0.005	3.8
Ds6.35x5.08	40	0.005	3.8
Ds6.35x12.7	40	0.005	3.8
Ds6.35x25.4	40	0.005	3.8
Ds8x10	75	0.01	12.1
Ds8x15	75	0.01	12.1
Ds10x12	75	0.01	12.1
Ds10x25	75	0.01	12.1
Ds10x50	75	0.01	12.1
Ds12x5	125	0.03	18.0
Ds12x25	125	0.03	18.0
Ds14x25	125	0.03	18.0
Ds14x30	125	0.03	18.0
Ds14x40.6	125	0.03	18.0

Dimensions [mm]

d1[156]	d2[156]	d3	d4	d5	b1[156]	b2	Part No.
6.35	10	285	22.2	3.7	25.0	4.1	**DST-JFRM-LC-0001-DS6.35X2.54**
6.35	10	285	22.2	3.7	25.0	4.1	**DST-JFRM-LC-0001-DS6.35X5.08**
6.35	10	285	22.2	3.7	25.0	4.1	**DST-JFRM-LC-0001-DS6.35X12.7**
6.35	10	285	22.2	3.7	25.0	4.1	**DST-JFRM-LC-0001-DS6.35X25.4**
8	16	38.1	28.3	5.2	28.8	4.8	**DST-JFRM-LC-0001-DS8X10**
8	16	38.1	28.3	5.2	28.8	4.8	**DST-JFRM-LC-0001-DS8X15**
10	16	38.1	28.3	5.2	28.3	4.8	**DST-JFRM-LC-0001-DS10X12**
10	16	38.1	28.3	5.2	28.3	4.8	**DST-JFRM-LC-0001-DS10X25**
10	16	38.1	28.3	5.2	28.3	4.8	**DST-JFRM-LC-0001-DS10X50**
12	20	41.1	31.8	5.2	44.0	7.0	**DST-JFRM-LC-0001-DS12X5**
12	20	41.1	31.8	5.2	44.0	7.0	**DST-JFRM-LC-0001-DS12X25**
14	20	41.1	31.8	5.2	44.0	7.0	**DST-JFRM-LC-0001-DS14X25**
14	20	41.1	31.8	5.2	44.0	7.0	**DST-JFRM-LC-0001-DS14X30**
14	20	41.1	31.8	5.2	44.0	7.0	**DST-JFRM-LC-0001-DS14X40.6**

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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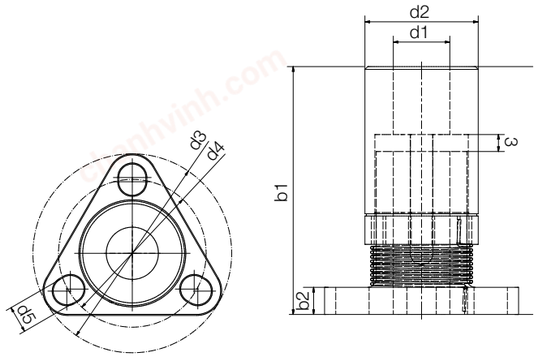
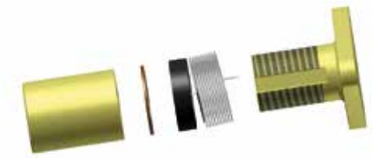
dryspin® technology | Lead screw nuts | Product range

Zero-backlash option







Installation instructions and video tutorials
▶ www.igus-asean.com/zero-backlash-nut

Order key

Part number	Type	Thread

DST - J F R M - ZB - 0001 - DS 10X12

dryspin® technology	iglidur® J	Form F	Hand of rotation	Metric	Zero-backlash	Type 0001	Thread type	Thread Ø [mm]	Pitch

Technical data

Thread	Max. stat. axial F	Max. idling torque (with spring)[170] from	Weight
	[N]	[Nm]	[g]
Ds5x5	75	0.02	5.1
Ds6.35x2.54	75	0.02	5.1
Ds6.35x5.08	75	0.02	5.1
Ds6.35x12.7	75	0.02	5.1
Ds6.35x25.4	75	0.02	5.1
Ds8x10	150	0.03	15.2
Ds8x15	150	0.03	15.2
Ds8x24	150	0.03	15.2
Ds10x12	150	0.04	15.2
Ds10x25	150	0.04	15.2
Ds10x50	150	0.04	15.2

[170] The idling torque of the zero-backlash lead screw nut increases with service life. When calculating the dimensions, it is recommended that the maximum idling torque be taken into account.

Dimensions [mm]

d1[156]	d2[156]	d3	d4	d5	b1[40] [156]	b2	Part No.	
5	13.5	28	22.2	3.7	31 – 36	4.1	**DST-JFRM-ZB-0001-DS5X5**	New
6.35	13.5	28	22.2	3.7	31 – 36	4.1	**DST-JFRM-ZB-0001-DS6.35X2.54**	
6.35	13.5	28	22.2	3.7	31 – 36	4.1	**DST-JFRM-ZB-0001-DS6.35X5.08**	
6.35	13.5	28	22.2	3.7	31 – 36	4.1	**DST-JFRM-ZB-0001-DS6.35X12.7**	
6.35	13.5	28	22.2	3.7	31 – 36	4.1	**DST-JFRM-ZB-0001-DS6.35X25.4**	
8	20	38.1	28.3	5.2	41 – 47	4.8	**DST-JFRM-ZB-0001-DS8X10**	
8	20	38.1	28.3	5.2	41 – 47	4.8	**DST-JFRM-ZB-0001-DS8X15**	
8	20	38.1	28.3	5.2	41 – 47	4.8	**DST-JFRM-ZB-0001-DS8X24**	New
10	20	38.1	28.3	5.2	41 – 47	4.8	**DST-JFRM-ZB-0001-DS10X12**	
10	20	38.1	28.3	5.2	41 – 47	4.8	**DST-JFRM-ZB-0001-DS10X25**	
10	20	38.1	28.3	5.2	41 – 47	4.8	**DST-JFRM-ZB-0001-DS10X50**	

[40] Variable according to thread pitch / clearance

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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dryspin® technology | Product range

Accessories for dryspin® technology

igus® offers a large modular kit for dryspin® lead screw drives. Bearing housing for lead screws and lead screw nuts enable the design of a custom linear system. With drylin® E lead screw motors, dryspin® combines the highest precision with a longer service life.



Lead screw nut housings

- Universal support for dryspin® lead screw nut with flange
- Material: anodised aluminium
- Available individually or completely pre-assembled

▶ **Page 1340**



Lead screw support blocks

- Lead screw support block including clamping rings and lubrication-free plain bearings
- Material: anodised aluminium
- Fixed and floating bearing version available

▶ **Page 1342**



drylin® E lead screw motor with dryspin® technology

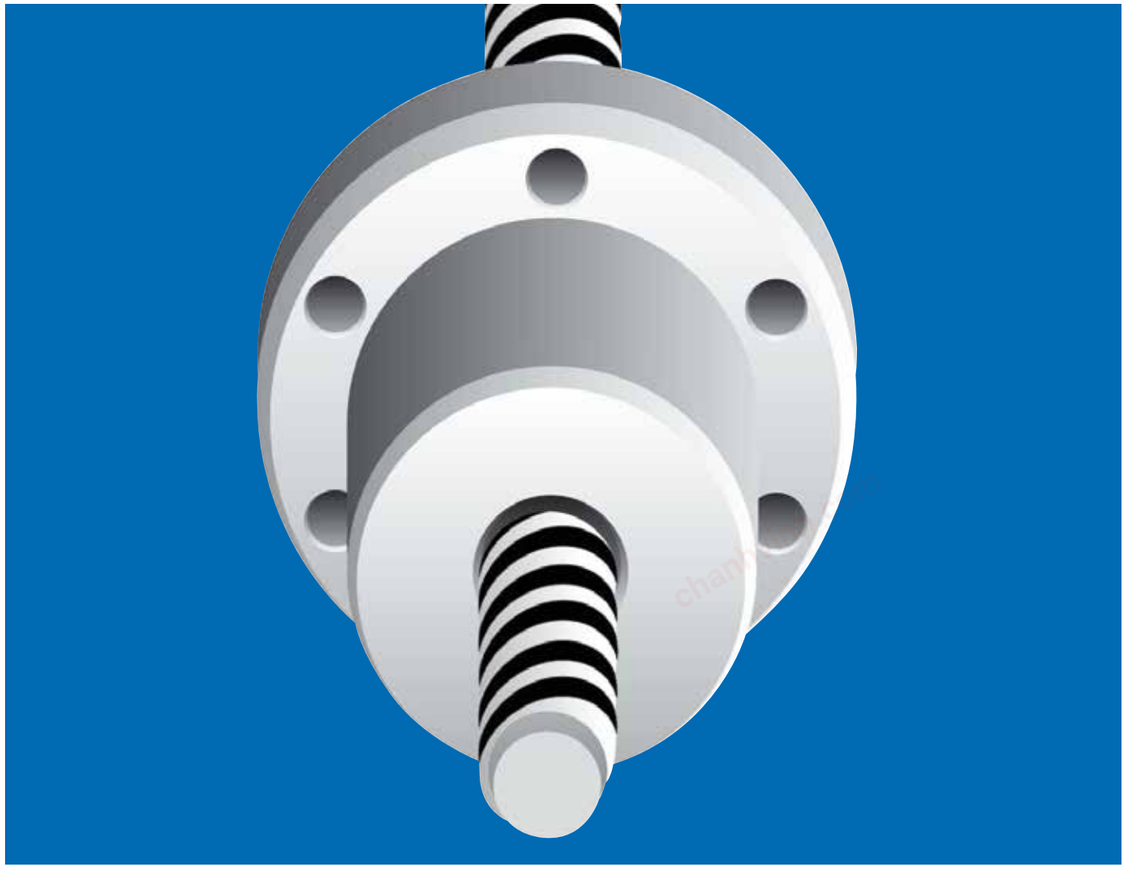
- NEMA 11/17/23 stepper motors
- Direct centring of the dryspin® lead screw for highest precision
- Many combination options

▶ **Page 1447**



Special components

- Special machined lead screw which can be configured online
- Custom machining nuts/lead screw upon request



drylin® lead screw technology – Trapezoidal and metric threads

Self-locking

Maintenance-free dry operation

Resistant to dirt and long service life

Lead screw nuts made from lubrication-free dry-tech® polymers

Lead screws made from steel, stainless steel or aluminium



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Radial loads

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 technology, from page 941**

Temperature

drylin® lead screw nuts, which are manufactured from maintenance-free iglidur® materials, are 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 temperature and load extremes, 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 environments

Trapezoidal lead screw nuts made 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 159 and ▶ iglidur® A180, page 401**

Dirt

With the use of the maintenance-free iglidur® materials for lead screw nut production, drylin® lead screw drives feature completely dry operation operation. Due to the deliberate avoidance of 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 swarf or granite dust, the lead screw should be covered.

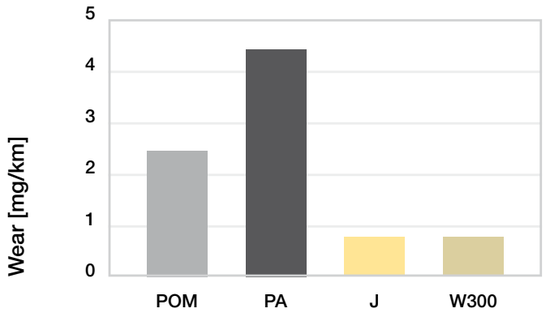

Diagram 01: Wear test on a rolled trapezoidal lead screw

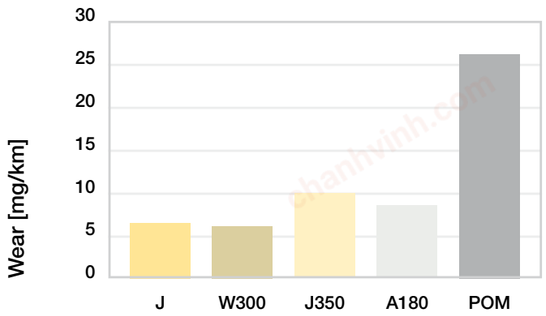

Diagram 02: Wear test on a C15 lead screw
Stroke 140mm, 50N, lead screw C15 rolled, 450rpm

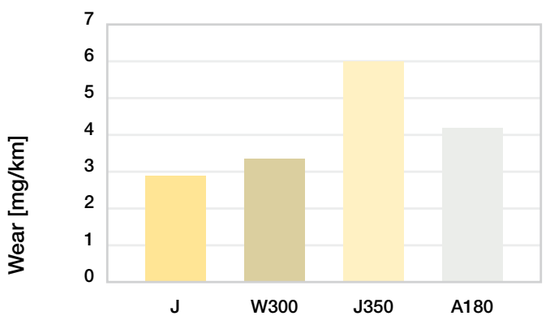

Diagram 03: Wear test on a VA lead screw
Stroke 140mm, 50N, lead screw VA rolled, 450rpm

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.

drylin® TR | Trapezoidal thread | Technical data

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 properties, lead screw nuts made from the tribologically optimised iglidur® materials tend to develop less noise than conventional plastics or metallic materials, such as bronze or brass. If your lead screw drive develops noise, please contact us to discuss this with our experts.
▶ **Anti-backlash lead screw nut, page 1324**

Clearance

The reliable operation of lead screw drives requires a basic amount of clearance. Application-specific parameters must be observed in addition to the lead 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 lead screw drives is therefore not recommended for precision drives without conducting practical tests. In practice, pre-load 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.

Levels of efficiency

Efficiency is the ratio between the output and input power rating. drylin® lead screw nuts are characterised by a low coefficient of friction, resulting in high efficiencies.
Single start trapezoidal lead screw nuts achieve efficiencies between 20 and 48% in dry operation.
High helix lead screw nuts achieve efficiencies between 50 and 80% in dry operation.
Even though drylin® lead screw nuts were developed for completely dry operation, 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 systems 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 on the lead screw drives by the axial clearance. By adding a radial pre-load, vibrations 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 high helix 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 lead screw nuts without zero-backlash feature or trapezoidal threads should be used for high loads, dirt accumulation or extreme external influences.

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Installation of lead screw nuts

drylin® lead screw nuts must be secured against twisting and sag.

Lead screw nuts with flange

The maximum tightening torque for the assembly of lead screw nuts with flange is 2.5Nm. 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 spanner flats. In practice, a screw mount has proven to be effective with low forces. Gluing lead screws nuts is not recommended. If however, the securing of the lead screw nuts by adhesives is planned, individual tests are necessary in each case.

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 screws 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-hand and left-hand versions.

Custom lead screws

Take advantage of our machining service - we manufacture ready-to-fit lead screws based on your requirements. 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 ready-to-fit lead screw nuts based on your requirements. Please send us your drawing. We can then provide a quotation quickly.



Custom nut examples

Material selection

drylin® lead screw nuts are supplied in 7 standard materials:

High efficiency at all speeds:
iglidur® J ▶ Page 159
- High speed
- Low wear
- Best coefficient of friction

For heavy duty applications up to 5MPa:
iglidur® W300 ▶ Page 171
- High static strength

For temperatures up to +150°C:
iglidur® J350 ▶ Page 199
- For high temperatures
- Good coefficient of friction with medium loads

For medium to high speeds:
iglidur® R ▶ Page 247
- High wear resistance for low loads
- Low moisture absorption
- Vibration-dampening

FDA-compliant for the food and pharmaceutical industry:
iglidur® A180 ▶ Page 401
- FDA-compliant
- For contact with food

Best running partner for hard anodised aluminium:
iglidur® J200 ▶ Page 261
- Low coefficient of friction and wear
- Long service life

For high speeds:
iglidur® E7 ▶ Page 267
- Low loads up to 200N
- Speeds up to 1,200rpm

drylin® TR | Trapezoidal thread | Technical data

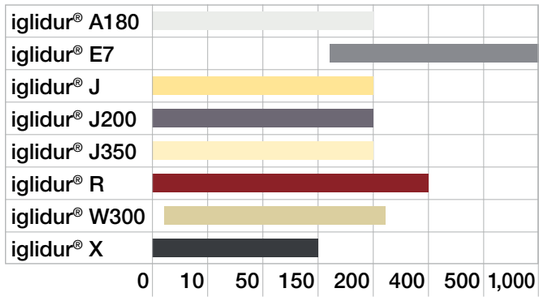
Service life

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 drives, with the objective of attaining the lowest possible coefficient of wear and friction. 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.

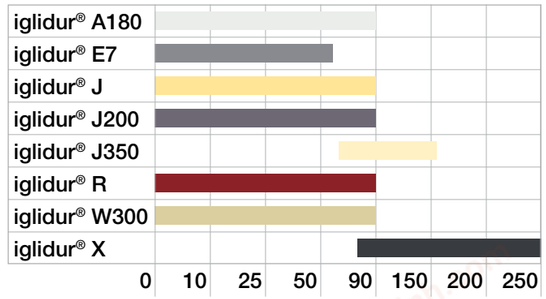
iglidur® material	Max. surface pressure [MPa]
iglidur® J	4.0
iglidur® W300	5.0
iglidur® J350	3.0
iglidur® R	2.0
iglidur® A180	3.5
iglidur® E7	0.5
iglidur® J200	2.0

Table 01: Permitted continuous surface pressure in the threads

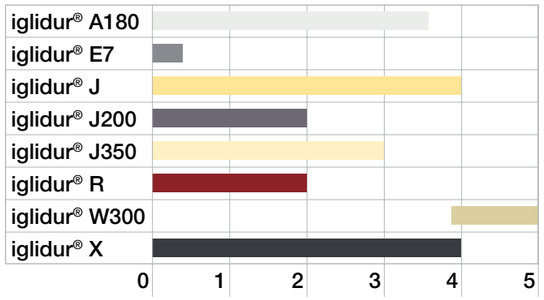
Correct choice of material



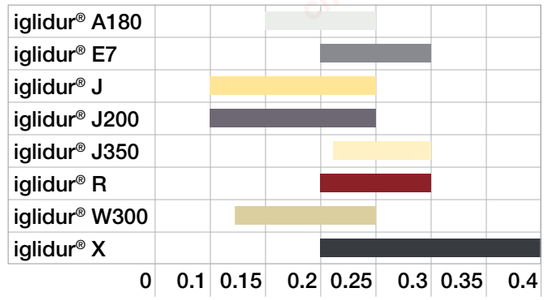
Speed [rpm]



Temperature [°C]



Surface pressure in thread [MPa]



Coefficient of friction [µ]

iglidur® X not available in combination with dryspin® high helix thread, iglidur® J200 only available in combination with aluminium

Tightening torque for drylin® connections between metal parts

Metric thread (Da)	Tightening torque [Nm]	Recommended tightening 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

Please be aware of the minimal screw-in depth for aluminium and zinc parts: 1.5xDa

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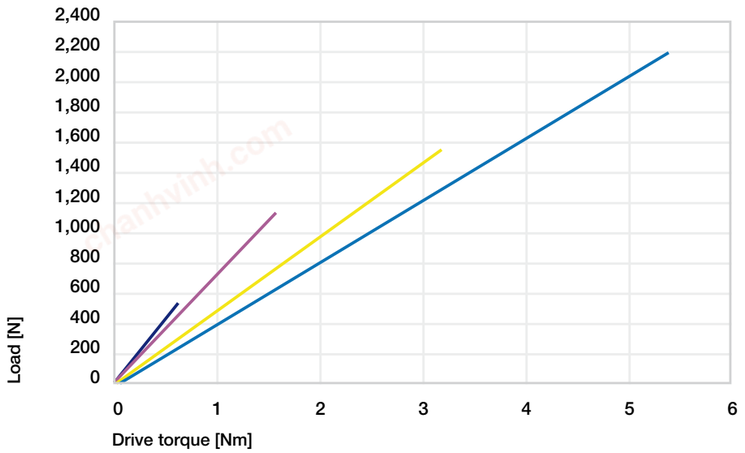
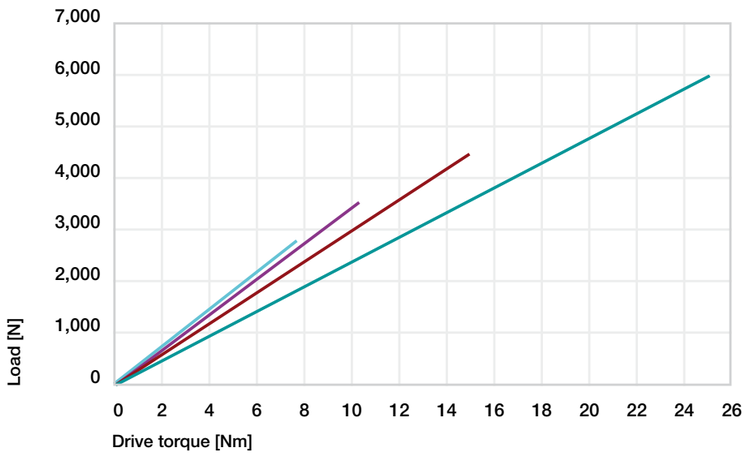
Required drive torque

The required drive torque of the lead screw nut is obtained from the axial load, the lead screw pitch, the coefficient of surface friction of the lead screw drive and the lead screw support. 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.



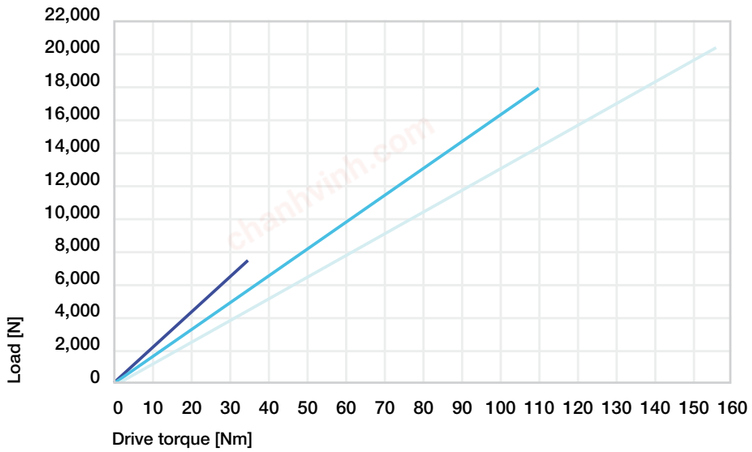
Tr8x1,5 Tr10x2 Tr12x3 Tr14x4

Diagram 06:
Required drive torque of lead screw drives Ø 8 to Ø 14 – assuming μ = 0.25, without considering the lead screw support



Tr16x4 Tr18x4 Tr20x4 Tr24x5

Diagram 07:
Required drive torque of lead screw drives Ø 16 to Ø 24 – assuming μ = 0.25, without considering the lead screw support



Tr30x6 Tr40x7 Tr50x8

Diagram 08:
Required drive torque of lead screw drives Ø 30 to Ø 50 – assuming μ = 0.25, without considering the lead screw support

drylin® TR | Trapezoidal thread | Technical data

Max. permissible pv value

With the pv value and the effective support surface stated in the dimensions tables, the permissible sliding speed and from it the feed rate 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 500mm stroke). A correction factor must be reckoned for very short or long strokes.

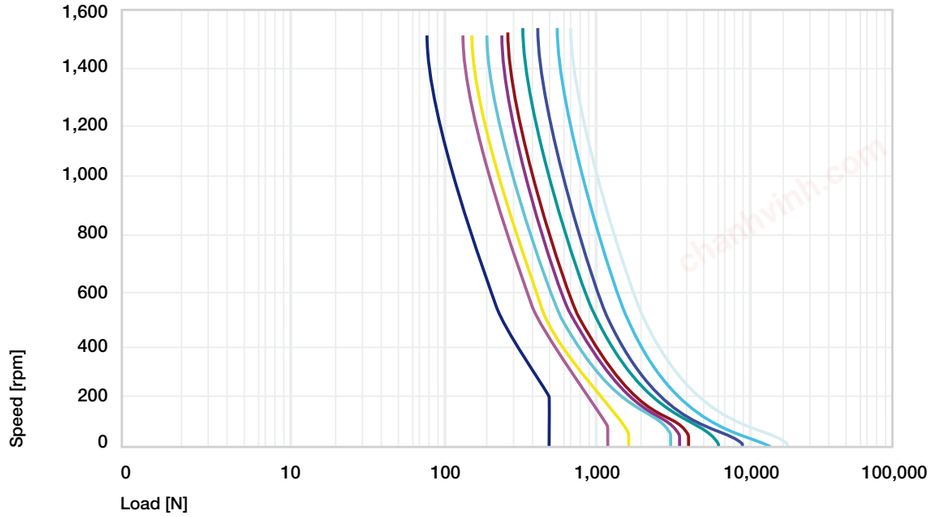


Diagram 09: Maximum dynamic load for lead screw drives with 10% ESD

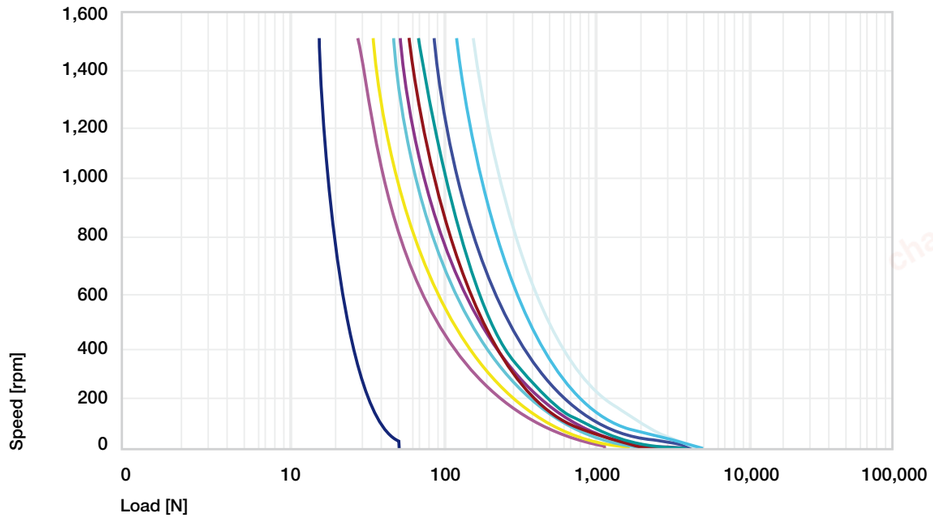


Diagram 10: Maximum dynamic load for lead screw drives with 100% ESD

Tr8x1,5 Tr10x2 Tr12x3 Tr16x4 Tr18x4 Tr20x4 Tr24x5 Tr30x6 Tr40x7 Tr50x8

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drylin® TR | Lead screws | Product range

Single start lead screws



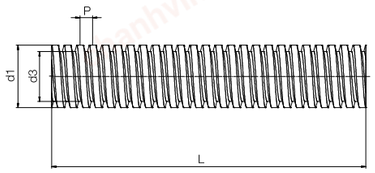
CF15, rolled, AISI 1015



Stainless steel, rolled, AISI 304



Aluminium, rolled (EN AW 6082)



Technical data

Pitch variation	0.1mm to 300mm
Straightness (standard)	0.3mm to 300mm
Aligned	<0.1mm to 300mm
Tolerance (according to DIN 103)	7e

The tensile/compressive strength of the EN AW 6082 lead screw material is 160MPa per mm² (elongation limit 0.2mm).

Order key

Part number	Thread	Options
PTGSG-	10X2 -	01- R -1000-ES

Lead screw | Diameter | Pitch | Number of thread pitches | Hand of rotation | Length [mm] | Lead screw material

Options:
Hand of rotation
R: Right-hand thread
L: Left-hand thread
Length in mm: Freely selectable (see table)
Lead screw material
Blank: C15, rolled
ES: Stainless steel, rolled
AL: Aluminium, rolled

inch ACME thread (US standard)
▶ page 1620

Technical data

Thread	Hand of rotation right	Hand of rotation left	Material C15	Material Stainless steel AISI 304	Material Stainless steel AISI 303	Material Stainless steel AISI 316L	Material Stainless steel AISI 321	Material Aluminium EN AW 6082	Pitch P [mm]	Pitch angle α [°]
Tr8x1.5	●	●	●	●	–	–	–	–	1.5	3.42
Tr10x2	●	●	●	●	–	–	–	●	2	3.64
Tr10x3	●	●	●	–	–	●	–	–	3	5.45
Tr12x3	●	●	●	●	–	–	–	●	3	4.55
Tr14x3	●	●	●	●	–	–	–	–	3	3.90
Tr14x4	●	●	●	–	–	–	●	–	4	5.20
Tr16x2	●	●	●	–	●	–	–	–	2	2.28
Tr16x4	●	●	●	●	–	–	–	●	4	4.55
Tr18x4	●	●	●	●	–	–	–	●	4	4.05
Tr20x4	●	●	●	●	–	–	–	●	4	3.64
Tr24x5	●	●	●	●	–	–	–	–	5	3.79
Tr26x5	●	●	●	●	–	–	–	–	5	3.50
Tr28x5	●	●	●	●	–	–	–	–	5	3.25
Tr30x6	●	●	●	●	–	–	–	–	6	3.64
Tr32x6	●	●	●	–	●	–	–	–	6	3.42
Tr36x6	●	●	●	–	●	–	–	–	6	3.04
Tr40x7	●	●	●	–	●	–	–	–	7	3.19
Tr50x8	●	●	●	–	●	–	–	–	8	2.92

Dimensions [mm]

Weight C15 [kg/m]	Weight Stainless steel [kg/m]	Weight Aluminium [kg/m]	Outer Ø d1 min.	Outer Ø d1 max.	Core Ø d3 min.	Core Ø d3 max.	Max. total length L C15 / ES	Max. total length L AL	Part No.
0.39	0.40	0.14	7.8	8	5.4	6.2	1,500	–	PTGSG-8X1.5-01-□-▭
0.62	0.62	0.21	9.8	10	7.2	7.5	3,000	1,000	PTGSG-10X2-01-□-▭
0.62	0.62	0.21	9.8	10	6.2	6.5	3,000	–	PTGSG-10X3-01-□-▭
0.89	0.89	0.31	11.8	12	7.7	8.5	3,000	1,000	PTGSG-12X3-01-□-▭
1.21	1.22	0.42	13.8	14	9.7	10.5	3,000	–	PTGSG-14X3-01-□-▭
1.21	1.22	0.42	13.7	14	9.1	9.5	3,000	–	PTGSG-14X4-01-□-▭
1.58	1.59	0.54	15.8	16	11.8	12.8	3,000	–	PTGSG-16X2-01-□-▭
1.58	1.59	0.54	15.7	16	10.5	11.5	3,000	1,000	PTGSG-16X4-01-□-▭
2.00	2.01	0.69	17.7	18	12.5	13.5	3,000	2,000	PTGSG-18X4-01-□-▭
2.47	2.48	0.85	19.7	20	14.5	15.5	3,000	2,000	PTGSG-20X4-01-□-▭
3.55	3.57	1.22	23.7	24	17.3	18.5	3,000	–	PTGSG-24X5-01-□-▭
4.17	4.19	1.43	25.7	26	19.3	20.5	3,000	–	PTGSG-26X5-01-□-▭
4.83	4.86	1.66	27.7	28	21.3	22.5	3,000	–	PTGSG-28X5-01-□-▭
5.55	5.58	1.91	29.6	30	21.6	23.0	3,000	–	PTGSG-30X6-01-□-▭
6.31	6.35	2.17	31.6	32	24.5	25.0	3,000	–	PTGSG-32X6-01-□-▭
7.99	8.04	2.75	35.6	36	27.6	29.0	3,000	–	PTGSG-36X6-01-□-▭
9.86	9.93	3.39	39.6	40	30.4	32.0	3,000	–	PTGSG-40X7-01-□-▭
15.41	15.51	5.30	49.6	50	39.2	41.0	3,000	–	PTGSG-50X8-01-□-▭

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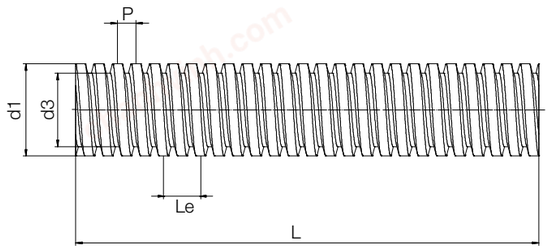
Multi start lead screws



CF15, rolled, AISI 1015



Stainless steel, rolled, AISI 304



P = Pitch
Le = Lead/pitch

Technical data

Pitch variation	0.1mm to 300mm
Straightness (standard)	0.3mm to 300mm
Aligned	<0.1mm to 300mm
Tolerance (according to DIN 103)	7e

Order key

Part number	Thread	Options

PTGSG-10X4 P2-02-R-1000-ES

Lead screw | Diameter | Pitch | Pitch | Number of thread pitches | Hand of rotation | Length [mm] | Lead screw material

Options:
Hand of rotation
R: Right-hand thread
L: Left-hand thread
Length in mm: Freely selectable (see table)
Lead screw material
Blank: C15, rolled, AISI 1015
ES: Stainless steel, rolled, AISI 304
AL: Aluminium, rolled

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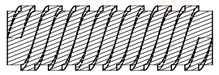
Technical data

Thread	Hand of rotation		Material		Total pitch	Pitch	Pitch	Weight	
	right	left	C15	Stainless steel AISI 304	Le [mm]	P [mm]	angle α [°]	C15 [kg/m]	Stainless steel [kg/m]
Tr06x2P1	●	–	●	●	2	1	6.06	0.22	0.22
Tr10x4P2	●	●	●	●	4	2	7.26	0.62	0.62
Tr12x6P3	●	●	●	●	6	3	9.04	0.89	0.89
Tr16x8P4	●	●	●	●	8	4	9.04	1.58	1.59
Tr18x8P4	●	●	●	●	8	4	8.05	2.00	2.01
Tr20x8P4	●	●	●	●	8	4	7.26	2.47	2.48

Dimensions [mm]

Outer Ø d1		Core Ø d3		Max. total length L	Part No.
min.	max.	min.	max.		
5.9	6	3.4	3.5	3,000	PTGSG-06X2P1-02-□-▭
9.8	10	7.2	7.5	3,000	PTGSG-10X4P2-02-□-▭
11.8	12	7.7	8.5	3,000	PTGSG-12X6P3-02-□-▭
15.7	16	10.5	11.5	3,000	PTGSG-16X8P4-02-□-▭
17.7	18	12.5	13.5	3,000	PTGSG-18X8P4-02-□-▭
19.7	20	14.5	15.5	3,000	PTGSG-20X8P4-02-□-▭

Definition: Multi start trapezoidal lead screw
Example 8P4 pitch



Pitch [P] = Pitch: distance to the next thread pitch, e.g. P4 = 4mm
Lead [Le] = Pitch: distance between threads flanks per thread pitch, e.g. Pitch 8 = Distance of 8mm

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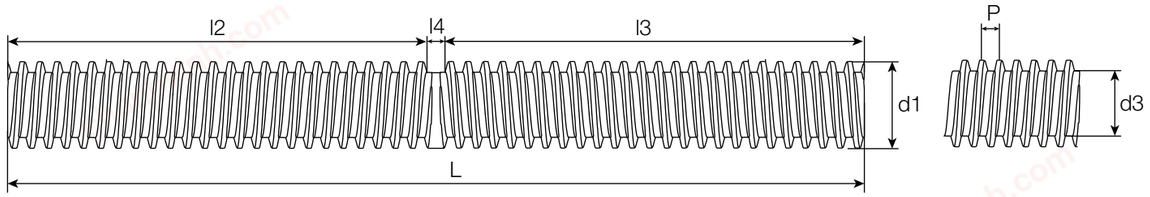
drylin® TR | Lead screws | Product range

LH/RH lead screws



Technical data

Pitch variation	0.1mm to 300mm
Straightness (standard)	0.3mm to 300mm
Aligned	<0.1mm to 300mm
Tolerance (according to DIN 103)	7e



Order key

Part number | Thread | Options

PTGSG-10X2-01-R/L-100-100-ES

Lead screw	Diameter	Pitch	Thread pitches	LH/RH	[47] Length right [mm]	[48] Length left-hand [mm]	Lead screw material

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, AISI 1015

ES: Stainless steel, rolled, AISI 304

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Technical data

Thread	Material		Pitch	Pitch	Weight	
	C15	Stainless steel AISI 304	P [mm]	angle α [°]	C15 [kg/m]	Stainless steel [kg/m]
Tr10x2	●	●	2	3.64	0.62	0.62
Tr12x3	●	●	3	4.55	0.89	0.89
Tr14x4	●	●	4	5.20	1.21	1.22
Tr16x4	●	●	4	4.55	1.58	1.58
Tr18x4	●	●	4	4.05	2.00	2.01
Tr20x4	●	●	4	3.64	2.47	2.48
Tr24x5	●	●	5	3.79	3.55	3.57

[46] Non-usable thread transition

[47] Length right-hand thread (l3)

[48] Length left-hand thread (l2)

Dimensions [mm]

Outer Ø d1		Core Ø d3		Thread transition	Max. total length	Part No.	
min.	max.	min.	max.	l4[46]	L		
9.8	10	7.2	7.5	20	1,000	PTGSG-10X2-01-R/L-□[47]-□[48]	
11.8	12	7.7	8.5	30	1,000	PTGSG-12X3-01-R/L-□[47]-□[48]	New
13.7	14	9.1	9.5	40	1,000	PTGSG-14X4-01-R/L-□[47]-□[48]	
15.7	16	10.5	11.5	30	1,000	PTGSG-16X4-01-R/L-□[47]-□[48]	New
17.7	18	12.5	13.5	55	1,500	PTGSG-18X4-01-R/L-□[47]-□[48]	
19.7	20	14.5	15.5	55	2,000	PTGSG-20X4-01-R/L-□[47]-□[48]	
23.7	24	17.3	18.5	60	2,000	PTGSG-24X5-01-R/L-□[47]-□[48]	

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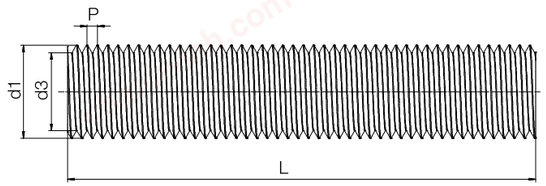
Metric lead screws





Technical data

Pitch variation	0.1mm to 300mm
Straightness (standard)	0.3mm to 300mm
Aligned	<0.1mm to 300mm
Tolerance (according to DIN 13)	6g

Order key

Part number	Thread	Options

PTGSG-M3-01-R-1000-ES

Lead screw	Thread size	Thread pitches	Hand of rotation	Length [mm]	Lead screw material

Options:
Length in mm: Freely selectable (see table)
Lead screw material
ES: Stainless steel, rolled, AISI 304

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Technical data

Thread	Hand of rotation right	Material Stainless steel AISI 304	Pitch P [mm]	Pitch angle α [°]	Weight [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
M8	●	●	1.25	2.85	0.40
M10	●	●	1.5	2.73	0.62

Dimensions [mm]

Outer Ø d1		Core Ø d3		Max. total length	Part No.
min.	max.	min.	max.	L	
2.8	3.0	2.2	2.3	1,000	PTGSG-M3-01-R-□-ES
3.8	4.0	2.9	3.1	1,000	PTGSG-M4-01-R-□-ES
4.8	4.9	3.8	4.0	1,000	PTGSG-M5-01-R-□-ES
5.7	5.9	4.5	4.7	1,000	PTGSG-M6-01-R-□-ES
7.8	8.0	6.47	6.65	1,000	PTGSG-M8-01-R-□-ES
9.8	10.0	8.16	8.38	1,000	PTGSG-M10-01-R-□-ES

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drylin® TR | Lead screw nuts | Technical data

drylin® trapezoidal thread

Highly efficient at all speeds: iglidur® J

Thread	Efficiency η	Coefficient of friction μ
Single start		
Tr8x1.5	19–37	0.1–0.25
Tr10x2	20–39	0.1–0.25
Tr10x3	27–48	0.1–0.25
Tr12x3	24–44	0.1–0.25
Tr14x3	24–40	0.1–0.25
Tr14x4	26–47	0.1–0.25
Tr16x2	14–28	0.1–0.25
Tr16x4	24–44	0.1–0.25
Tr18x4	22–41	0.1–0.25
Tr20x4	20–39	0.1–0.25
Tr24x5	21–40	0.1–0.25
Tr26x5	19–38	0.1–0.25
Tr28x5	18–36	0.1–0.25
Tr30x6	20–39	0.1–0.25
Tr32x6	19–37	0.1–0.25
Tr36x6	17–34	0.1–0.25
Tr40x7	18–36	0.1–0.25
Tr50x8	17–34	0.1–0.25
Multi start		
Tr06x2P1	29–51	0.1–0.25
Tr10x4P2	33–55	0.1–0.25
Tr12x6P3	37–60	0.1–0.25
Tr16x8P4	37–60	0.1–0.25
Tr18x8P4	35–58	0.1–0.25
Tr20x8P4	33–55	0.1–0.25
Metric		
M3	17–34	0.1–0.25
M4	18–36	0.1–0.25
M5	17–34	0.1–0.25
M6	17–34	0.1–0.25
M8	16–33	0.1–0.25
M10	16–32	0.1–0.25

Highly resilient and wear-resistant: iglidur® W300

Efficiency η	Coefficient of friction μ
19–33	0.12–0.25
20–34	0.12–0.25
27–44	0.12–0.25
24–39	0.12–0.25
21–36	0.12–0.25
26–43	0.12–0.25
14–25	0.12–0.25
24–39	0.12–0.25
22–37	0.12–0.25
20–34	0.12–0.25
21–35	0.12–0.25
19–34	0.12–0.25
18–32	0.12–0.25
20–34	0.12–0.25
19–33	0.12–0.25
17–30	0.12–0.25
18–31	0.12–0.25
17–30	0.12–0.25
29–46	0.12–0.25
33–51	0.12–0.25
37–56	0.12–0.25
37–56	0.12–0.25
35–53	0.12–0.25
33–51	0.12–0.25
17–30	0.12–0.25
18–31	0.12–0.25
17–30	0.12–0.25
17–30	0.12–0.25
16–29	0.12–0.25
16–28	0.12–0.25

For temperatures up to +150°C: iglidur® J350

Thread	Efficiency η	Coefficient of friction μ
Single start		
Tr8x1.5	19–26	0.17–0.25
Tr10x2	20–27	0.17–0.25
Tr10x3	27–35	0.17–0.25
Tr12x3	24–34	0.17–0.25
Tr14x3	21–28	0.17–0.25
Tr14x4	26–34	0.17–0.25
Tr16x2	14–19	0.17–0.25
Tr16x4	24–31	0.17–0.25
Tr18x4	22–29	0.17–0.25
Tr20x4	20–27	0.17–0.25
Tr24x5	21–28	0.17–0.25
Tr26x5	19–26	0.17–0.25
Tr28x5	18–25	0.17–0.25
Tr30x6	20–27	0.17–0.25
Tr32x6	19–26	0.17–0.25
Tr36x6	17–24	0.17–0.25
Tr40x7	18–24	0.17–0.25
Tr50x8	–	–
Multi start		
Tr06x2P1	29–38	0.17–0.25
Tr10x4P2	33–42	0.17–0.25
Tr12x6P3	37–47	0.17–0.25
Tr16x8P4	37–47	0.17–0.25
Tr18x8P4	35–44	0.17–0.25
Tr20x8P4	33–42	0.17–0.25
Metric		
M3	17–24	0.17–0.25
M4	18–24	0.17–0.25
M5	17–23	0.17–0.25
M6	17–24	0.17–0.25
M8	16–22	0.17–0.25
M10	16–22	0.17–0.25

For medium to high speeds: iglidur® R

Efficiency η	Coefficient of friction μ
16–23	0.2–0.3
17–24	0.2–0.3
23–32	0.2–0.3
20–28	0.2–0.3
18–25	0.2–0.3
23–31	0.2–0.3
12–16	0.2–0.3
20–28	0.2–0.3
19–26	0.2–0.3
17–24	0.2–0.3
18–25	0.2–0.3
17–23	0.2–0.3
16–22	0.2–0.3
17–24	0.2–0.3
16–23	0.2–0.3
–	–
–	–
–	–
25–34	0.2–0.3
29–38	0.2–0.3
33–43	0.2–0.3
33–43	0.2–0.3
31–40	0.2–0.3
29–38	0.2–0.3
15–21	0.2–0.3
15–22	0.2–0.3
14–20	0.2–0.3
15–21	0.2–0.3
14–20	0.17–0.25
14–19	0.17–0.25

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FDA-compliant for the food/ pharmaceutical industry: iglidur® A180

Thread	Efficiency η	Coefficient of friction μ
Single start		
Tr8x1.5	19–28	0.15–0.25
Tr10x2	20–30	0.15–0.25
Tr10x3	27–38	0.15–0.25
Tr12x3	24–44	0.15–0.25
Tr14x3	21–31	0.15–0.25
Tr14x4	26–47	0.15–0.25
Tr16x2	14–21	0.15–0.25
Tr16x4	24–34	0.15–0.25
Tr18x4	22–32	0.15–0.25
Tr20x4	20–30	0.15–0.25
Tr24x5	21–30	0.15–0.25
Tr26x5	19–29	0.15–0.25
Tr28x5	18–27	0.15–0.25
Tr30x6	20–30	0.15–0.25
Tr32x6	19–28	0.15–0.25
Tr36x6	17–26	0.15–0.25
Tr40x7	18–27	0.15–0.25
Tr50x8	–	–
Multi start		
Tr06x2P1	29–41	0.15–0.25
Tr10x4P2	33–45	0.15–0.25
Tr12x6P3	37–50	0.15–0.25
Tr16x8P4	37–50	0.15–0.25
Tr18x8P4	35–48	0.15–0.25
Tr20x8P4	33–45	0.15–0.25
Metric		
M3	17–26	0.15–0.25
M4	18–27	0.15–0.25
M5	17–25	0.15–0.25
M6	17–26	0.15–0.25
M8	16–25	0.15–0.25
M10	16–24	0.15–0.25

For high speeds: iglidur® E7

	Efficiency η	Coefficient of friction μ
Single start		
Tr8x1.5	16–23	0.2–0.3
Tr10x2	17–24	0.2–0.3
Tr10x3	23–32	0.2–0.3
Tr12x3	20–28	0.2–0.3
Tr14x3	18–25	0.2–0.3
Tr14x4	23–31	0.2–0.3
Tr16x2	–	–
Tr16x4	–	–
Tr18x4	–	–
Tr20x4	–	–
Tr24x5	–	–
Tr26x5	–	–
Tr28x5	–	–
Tr30x6	–	–
Tr32x6	–	–
Tr36x6	–	–
Tr40x7	–	–
Tr50x8	–	–
Multi start		
Tr06x2P1	25–34	0.2–0.3
Tr10x4P2	29–38	0.2–0.3
Tr12x6P3	33–43	0.2–0.3
Tr16x8P4	–	–
Tr18x8P4	–	–
Tr20x8P4	–	–
Metric		
M3	15–21	0.2–0.3
M4	15–22	0.2–0.3
M5	14–20	0.2–0.3
M6	15–21	0.2–0.3
M8	14–20	0.2–0.3
M10	14–19	0.2–0.3

drylin® TR | Lead screw nuts | Product range

drylin® trapezoidal thread

The specialist on hard anodised aluminium: iglidur® J200

Thread	Efficiency η	Coefficient of friction μ
Single start		
Tr8x1.5	–	–
Tr10x2	–	–
Tr10x3	–	–
Tr12x3	–	–
Tr14x3	–	–
Tr14x4	–	–
Tr16x2	–	–
Tr16x4	24–44	0.1–0.25
Tr18x4	22–41	0.1–0.25
Tr20x4	20–39	0.1–0.25
Tr24x5	21–40	0.1–0.25
Tr26x5	19–38	0.1–0.25
Tr28x5	18–36	0.1–0.25
Tr30x6	20–39	0.1–0.25
Tr32x6	19–37	0.1–0.25
Tr36x6	17–34	0.1–0.25
Tr40x7	18–36	0.1–0.25
Tr50x8	17–34	0.1–0.25
Multi start		
Tr06x2P1	29–51	0.1–0.25
Tr10x4P2	33–55	0.1–0.25
Tr12x6P3	37–60	0.1–0.25
Tr16x8P4	37–60	0.1–0.25
Tr18x8P4	35–58	0.1–0.25
Tr20x8P4	33–55	0.1–0.25
Metric		
M3	17–34	0.1–0.25
M4	18–36	0.1–0.25
M5	17–34	0.1–0.25
M6	17–34	0.1–0.25
M8	16–33	0.1–0.25
M10	–	–

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drylin® TR | Lead screw nuts | Product range

Single start lead screw nuts, cylindrical (form S)



iglidur® J



iglidur® W300



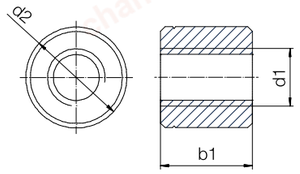
iglidur® J350



iglidur® R



iglidur® A180



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Order key

Type				d2	b1	Thread								
☐	S	R	M-	22	15	TR	10	X	2					

iglidur® material | Form S | Hand of rotation | Metric | Outer Ø [mm] | Length [mm] | Thread type | Diameter [mm] | Pitch

Options:
Hand of rotation
R: Right-hand thread
L: Left-hand thread

J	High efficiency at all speeds
W(300)	Extremely strong and wear-resistant
J350	For temperatures up to +150°C
R	The cost-effective option for high volume
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
Tr8x1.5	●	●	205	500[43)]	500[43)]	500[43)]	500[43)]	500[43)]
Tr8x1.5	●	●	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	2,362[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[156)]	d2[156)]	b1[156)]	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-1418TR8X1.5
8	18	12	3.7	3.8	3.5	3.4	3.6	☐S☐M-1812TR8X1.5
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

[156)] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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drylin® TR | Lead screw nuts | Product range

Single start lead screw nuts, cylindrical (form S)



iglidur® J



iglidur® W300



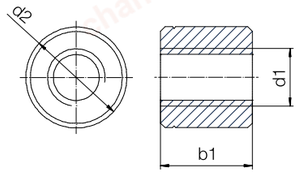
iglidur® J350



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 [mm]	Pitch

Options:
Hand of rotation
R: Right-hand thread
L: Left-hand thread

J	High efficiency at all speeds
W(300)	Extremely strong and wear-resistant
J350	For temperatures up to +150°C
R	The cost-effective option for high volume
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
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[156]	d2[156]	b1[156]	Weight [g] iglidur® 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

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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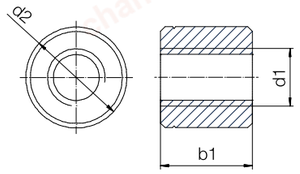
drylin® TR | Lead screw nuts | Product range

Multi start lead screw nuts, cylindrical (form S)





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 [mm]	Pitch

Options:
Hand of rotation
R: Right-hand thread
L: Left-hand thread

J	High efficiency at all speeds
W(300)	Extremely strong and wear-resistant
J350	For temperatures up to +150°C
R	The cost-effective option for high volume
A180	FDA-compliant for the food and pharmaceutical industries
E7	For high speeds

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	E7
Tr06x2P1	●	–	112	200[43]	200[43]	200[43]	200[43]	200[43]	56
Tr10x4P2	●	●	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	–

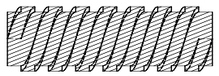
[43] Reduced axial load due to nut geometry

Dimensions [mm]

d1[156]	d2[156]	b1[156]	Weight [g] iglidur® J	W300	J350	R	A180	E7	Part No.
6	14	13	2.4	2.5	2.4	2.3	2.4	2.4	☐SRM-1413TR06X2P1
12	26	24	14.9	12.4	14.4	13.9	14.6	–	☐S☐M-2624TR10X4P2
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

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

Definition: Multi start trapezoidal lead screw
Example 8P4 pitch



P4 pitch: Distance to the next thread pitch 4mm
Pitch 8: Pitch 8mm

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drylin® TR | Lead screw nuts | Product range

Cylindrical lead screw nuts with spanner flat



iglidur® J



iglidur® W300



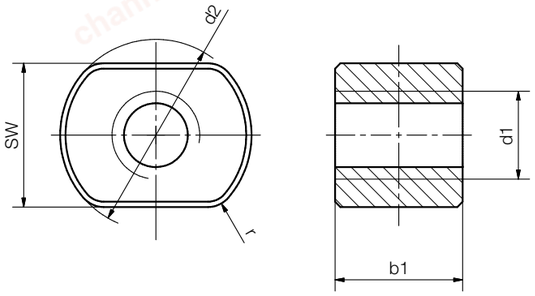
iglidur® J350



iglidur® R



iglidur® A180



Order key

Type	SW	d2	b1	Thread
☐ S R M-17	22	20	TR	10X2

iglidur® material	Form S	Hand of rotation	Metric	Width across flats	Outer Ø [mm]	Length [mm]	Trapezoidal thread	Diameter [mm]	Pitch

Options:
Hand of rotation
R: Right-hand thread
L: Left-hand thread

J	High efficiency at all speeds
W(300)	Extremely strong and wear-resistant
J350	For temperatures up to +150°C
R	The cost-effective option for high volume
A180	FDA-compliant for the food and pharmaceutical industries

Technical data

Thread	Hand of rotation right	Hand of rotation left	Effective support 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[156]	d2[156]	b1[156]	SW	Weight [g] iglidur® J	W300	J350	R	A180	Part No.
10	22	20	17	4.7	3.9	4.5	4.4	4.6	☐S☐M-172220TR10X2
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	60	45	126.4	105.2	123.8	122.1	117.9	☐S☐M-456060TR30X6

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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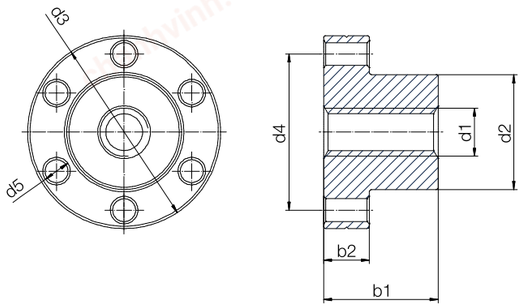
drylin® TR | Lead screw nuts | Product range

Single start lead screw nuts with flange (form F)



iglidur® J | iglidur® W300 | iglidur® J350 | iglidur® R | iglidur® A180 | iglidur® J200



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 [mm]	Pitch

Options:
Hand of rotation
R: Right-hand thread
L: Left-hand thread

J	High efficiency at all speeds
W(300)	Extremely strong and wear-resistant
J350	For temperatures up to +150°C
R	The cost-effective option for high volume
A180	FDA-compliant for the food and pharmaceutical industries
J200	The specialist on hard anodised aluminium

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	J200
Tr8x1.5	●	●	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	1,650
Tr16x4	●	●	770	3,079	3,848	2,309	1,539	2,694	1,540
Tr18x4	●	●	880	3,519	4,398	2,639	1,759	3,079	1,760
Tr20x4	●	●	1,244	4,976	6,220	3,732	2,488	4,354	2,488
Tr24x5	●	●	1,486	5,944	7,430	4,458	2,972	5,201	2,972
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	–	–	–	–
Tr36x6	●	●	3,629	14,514	–	–	–	–	–
Tr40x7	●	●	4,013	16,054	–	–	–	–	–

[43] Reduced load due to nut geometry

Dimensions [mm]

d1[156]	d2[156]	d3	d4	d5	b1[156]	b2	Weight [g] iglidur® J	W300	J350	R	A180	J200	Part No.
8	20	36	28	4	20	8	16.3	13.5	15.7	15.2	15.9	–	☐F☐M-2020TR8X1.5
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	50	☐F☐M-2835TR16X2
16	28	48	38	6	35	12	43.0	35.8	41.5	40.1	42.1	50	☐F☐M-2835TR16X4
18	28	48	38	6	35	12	40.2	33.4	38.8	37.5	39.4	48	☐F☐M-2835TR18X4
20	32	55	45	7	44	12	60.2	50.1	58.2	56.2	59.0	73	☐F☐M-3244TR20X4
24	32	55	45	7	44	12	51.2	42.6	49.5	47.7	50.1	66	☐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	–	–	–	–	☐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

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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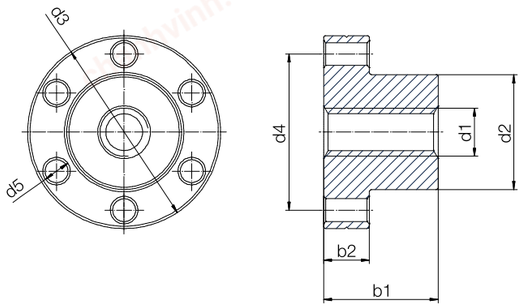
Multi start lead screw nuts with flange (form F)



iglidur® J | iglidur® W300 | iglidur® J350 | iglidur® R | iglidur® A180 | iglidur® J200



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 [mm]	Pitch

J	High efficiency at all speeds
W(300)	Extremely strong and wear-resistant
J350	For temperatures up to +150°C
R	The cost-effective option for high volume
A180	FDA-compliant for the food and pharmaceutical industries
J200	The specialist on hard anodised aluminium

Options:
Hand of rotation
R: Right-hand thread
L: Left-hand thread

Technical data

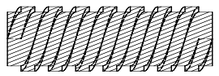
Thread	Hand of rotation right	Hand of rotation left	Effective supporting surface [mm²]	Max. stat. axial F [N] iglidur® J	W300	J350	R	A180	J200
Tr06x2P1	●	–	130	441	551	1,124	936	386	–
Tr10x4P2	●	–	353	1,202	1,502	1,051	3,064	2,552	–
Tr12x6P3	●	●	577	1,963	2,453	5,005	4,171	1,717	–
Tr16x8P4	●	●	770	2,617	3,271	6,673	5,561	2,290	1,540
Tr18x8P4	●	–	880	2,991	3,738	7,627	6,355	2,617	1,760
Tr20x8P4	●	–	1,244	4,230	5,287	10,786	8,988	3,701	2,488

Dimensions [mm]

d1[156]	d2[156]	d3	d4	d5	b1[156]	b2	Weight [g] iglidur® J	W300	J350	R	A180	J200	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-2525TR10X4P2
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	50	☐F☐M-2835TR16X8P4
18	28	48	38	6	35	12	40.2	33.4	38.8	37.5	39.4	48	☐FRM-2835TR18X8P4
20	32	55	45	7	44	12	60.2	50.1	58.2	56.2	59.0	73	☐FRM-3244TR20X8P4

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

Definition: Multi start trapezoidal lead screw
Example 8P4 pitch



P4 pitch: Distance to the next thread pitch 4mm
Pitch 8: Pitch 8mm

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Lead screw nuts with spanner flat, with flange



iglidur® J



iglidur® W300



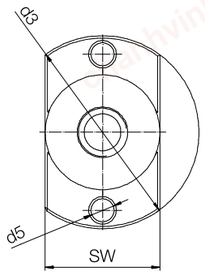
iglidur® J350

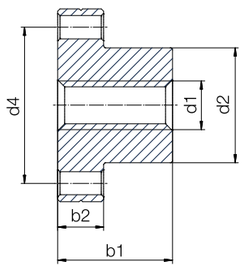


iglidur® R



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 [mm]	Pitch

Options:
Hand of rotation
R: Right-hand thread
L: Left-hand thread

J	High efficiency at all speeds
W(300)	Extremely strong and wear-resistant
J350	For temperatures up to +150°C
R	The cost-effective option for high volume
A180	FDA-compliant for the food and pharmaceutical industries

Technical data

Thread	Hand of rotation		Effective support surface	Max. stat. axial F [N] iglidur®				
	right	left						
single start			[mm²]	J	W300	J350	R	A180
Tr8x1.5	●	●	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								
M5	●	–	56	75[43)]	75[43)]	75[43)]	75[43)]	75[43)]
M8	●	–	278	911	1,139	683	456	797
M10	●	–	437	1,414	1,767	1,040	1,155	1,237

[43)] Reduced load due to nut geometry

Dimensions [mm]

d1[156)]	d2[156)]	d3	d4	d5	b1[156)]	b2	SW	Weight [g] iglidur®					Part No.
								J	W300	J350	R	A180	
8	20	36	28	4	20	8	20	12.7	10.6	–	–	12.4	☐F☐M-202020TR8X1.5
10	25	42	34	5	25	10	25	23.7	19.7	12.28	22.10	23.2	☐F☐M-252525TR10X2
12	28	48	38	6	35	12	28	39.2	32.7	37.92	36.60	38.4	☐F☐M-282835TR12X3
14	28	48	38	6	35	12	28	37.1	30.9	35.86	34.61	36.4	☐F☐M-282835TR14X4
16	28	48	38	6	35	12	28	34.6	28.8	33.48	32.32	33.9	☐F☐M-282835TR16X4
18	28	48	38	6	35	12	28	31.9	26.5	30.79	29.72	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
8	20	36	28	4	20	8	20	12.7	10.57	12.28	11.85	12.45	☐FRM-202020M8
10	25	42	34	5	25	10	25	23.7	19.70	22.90	22.10	23.20	☐FRM-252525M10

[156)] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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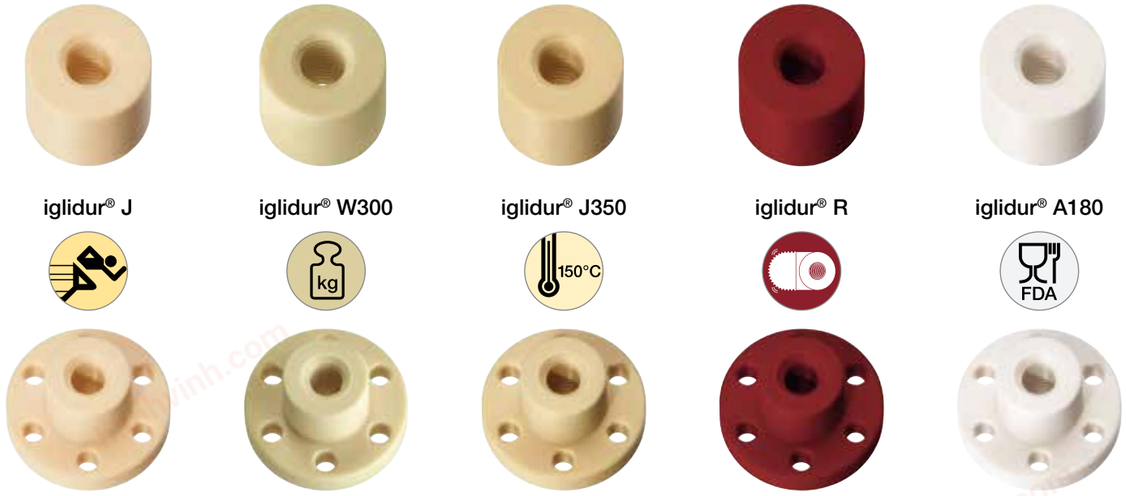
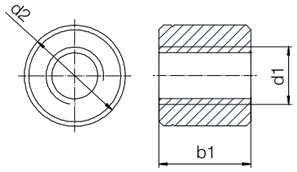
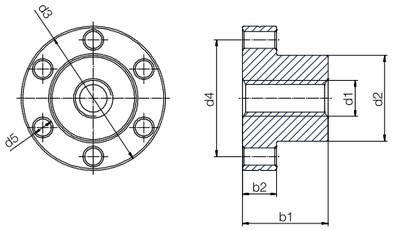
Metric lead screw nuts, right-hand thread



iglidur® J | iglidur® W300 | iglidur® J350 | iglidur® R | iglidur® A180





Also available as flanged nut and spanner flats ▶ Page 1312

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 cost-effective option for high volume
A180	FDA-compliant for the food and pharmaceutical industries

Technical data

Thread	Effective supporting surface	Max. stat. axial F [N] iglidur®				
	[mm²]	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
M8	151	602	753	452	301	527
M10	189	756	944	567	378	661
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
M8	228	911	1,139	683	456	797
M10	253	1,414	1,767	1,060	707	1,237

Dimensions [mm]

d1[156]	d2[156]	b1[156]	Weight [g] iglidur®					Part No.
			J	W300	J350	R	A180	
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
8	20	18	7.08	5.89	6.69	6.60	6.94	☐SRM-2018M8
10	22	20	8.99	7.48	8.69	8.38	8.81	☐SRM-2220M10
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	15	5	4.7	3.9	4.5	4.4	4.6	☐FRM-1315M6
8	20	36	28	4	20	8	16.25	13.53	15.93	15.71	15.17	☐FRM-2020M8
10	25	42	34	5	25	10	28.69	23.88	28.11	27.73	26.76	☐FRM-2525M10

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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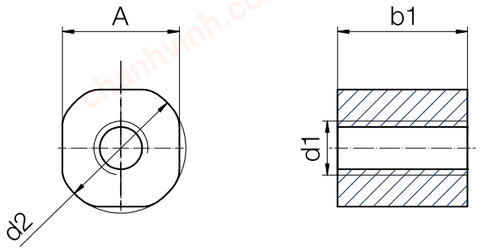
Cost-effective injection-moulded lead screw nuts, cylindrical (form S)



Image exemplary



drylin® trapezoidal thread

Order key

Type	d2	b1	Thread

J S □ M- C -01-TR 10X12

iglidur® material	Form S	Hand of rotation	Metric	Thread: cut	Type	Thread type	Diameter [mm]	Pitch

J	High efficiency at all speeds
E7	For high speeds

Options:
Hand of rotation
R: Right-hand thread
L: Left-hand thread

Technical data

Thread	Hand of rotation right	Hand of rotation left	Effective supporting surface [mm²]	Max. static axial F [N]
Single start				
Tr8x1.5	●	●	228	500[43]
Tr8x1.5	●	–	228	114.0
Tr10x2	●	●	283	1,131
Tr10x2	●	–	238	119.0
Tr10x3	●	●	267	1,068
Tr10x3	●	–	267	134.0
Tr12x3	●	●	412	1,649
Tr12x3	●	–	412	206.0
Tr14x3	●	●	491	1,963
Tr14x3	●	–	491	245.5
Tr14x4	●	●	471	1,885
Tr14x4	●	–	471	235.5
Tr16x2	●	●	589	2,356
Tr16x4	●	–	550	2,199
Tr18x4	●	●	628	2,362
multi start				
Tr10x4P2	●	–	325	1,106
Tr12x6P3	●	–	396	1,346
Tr16x8P4	●	–	528	1,794
Tr18x8P4	●	–	804	2,734

[43] Reduced load due to nut geometry

Dimensions [mm]

d1[156]	d2[156]	A	b1[156]	Weight [g]	Part No.	
8	20	19	20	7.86	JS□M-C-01-TR8X1.5	
8	20	18	20	5.00	E7SRM-C-01-TR8X1.5	New
10	20	19	20	7.02	JS□M-C-01-TR10X2	
10	20	18	20	5.00	E7SRM-C-01-TR10X2	New
10	20	19	20	7.02	JS□M-C-01-TR10X3	
10	20	18	20	5.00	E7SRM-C-01-TR10X3	New
12	24	22.6	25	12.64	JS□M-C-01-TR12X3	
12	24	22.6	25	9.80	E7SRM-C-01-TR12X3	New
14	24	22.6	25	11.12	JS□M-C-01-TR14X3	
14	24	22.6	25	9.80	E7SRM-C-01-TR14X3	New
14	24	22.6	25	11.12	JS□M-C-01-TR14X4	
14	24	22.6	25	9.80	E7SRM-C-01-TR14X4	New
16	28	26.2	25	15.45	JS□M-C-01-TR16X2	
16	28	26.2	25	15.45	JS□M-C-01-TR16X4	
18	28	26.2	25	13.46	JS□M-C-01-TR18X4	
10	20	19	20	7.02	JSRM-C-01-TR10X4P2	
12	24	22.6	25	12.64	JSRM-C-01-TR12X6P3	
16	28	26.2	25	15.45	JSRM-C-01-TR16X8P4	
18	28	26.2	25	13.46	JSRM-C-01-TR18X8P4	

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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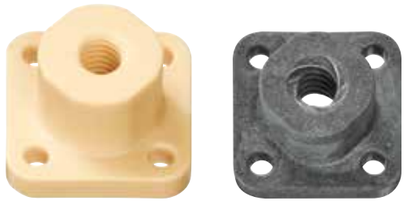
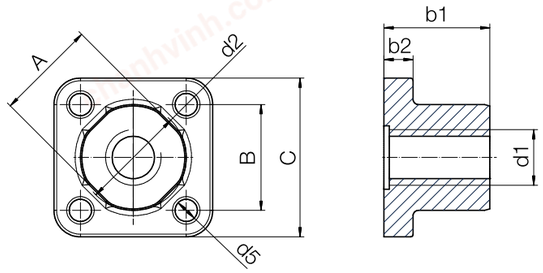
drylin® TR | Lead screw nuts | Product range

Cost-effective injection-moulded lead screw nuts with flange (form F)





Order key

Type	d2	b1	Thread
J F □	M-	C -	01-TR 10X12

iglidur® material	Form F	Hand of rotation	Metric	Thread: cut	Type	Thread type	Diameter [mm]	Pitch

Options:
Hand of rotation
R: Right-hand thread
L: Left-hand thread

J	High efficiency at all speeds
E7	For high speeds

Technical data

Thread	Hand of rotation		Effective supporting surface	Max. stat. axial F [N] iglidur®	
	right	left	[mm²]	J	E7
Single start					
Tr8x1.5	●	●	228	911	114
Tr10x2	●	●	283	1,131	142
Tr10x3	●	●	267	1,068	134
Tr12x3	●	●	412	1,649	–
Tr14x3	●	●	491	1,963	–
Tr14x4	●	●	471	1,885	–
Tr16x2	●	●	589	2,356	–
Tr16x4	●	●	550	2,199	–
Tr18x4	●	●	628	2,513	–
multi start					
Tr10x4P2	●	–	353	1,202	134
Tr12x6P3	●	–	577	1,963	–
Tr16x8P4	●	–	770	2,617	–
Tr18x8P4	●	–	880	2,991	–

Dimensions [mm]

d1[156]	d2[156]	A	B	C	d5	b1[156]	b2	Weight [g] iglidur®		Part No.
								J	E7	
8	20	19.0	20	30	4.2	20	5.5	7.4	1.9	□F□M-C-01-TR8X1.5
10	20	19.0	20	30	4.2	20	5.5	7.4	9.0	□F□M-C-01-TR10X2
10	20	19.0	20	30	4.2	20	5.5	7.4	9.0	□F□M-C-01-TR10X3
12	24	22.6	24	34	5	25	6	10.3	–	JF□M-C-01-TR12X3
14	24	22.6	24	34	5	25	6	10.3	–	JF□M-C-01-TR14X3
14	24	22.6	24	34	5	25	6	10.3	–	JF□M-C-01-TR14X4
16	28	25.5	27	38	6	25	6.5	14.0	–	JF□M-C-01-TR16X2
16	28	25.5	27	38	6	25	6.5	14.0	–	JF□M-C-01-TR16X4
18	28	25.5	27	38	6	25	6.5	14.0	–	JF□M-C-01-TR18X4
10	20	19.0	20	30	4.2	20	5.5	10.9	9.0	□FRM-C-01-TR10X4P2
12	24	22.6	24	34	5	25	6	19.9	–	JFRM-C-01-TR12X6P3
16	28	25.5	27	38	6	25	6.5	25.4	–	JFRM-C-01-TR16X8P4
18	28	25.5	27	38	6	25	6.5	23.9	–	JFRM-C-01-TR18X8P4

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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drylin® TR | Lead screw nuts | Product range

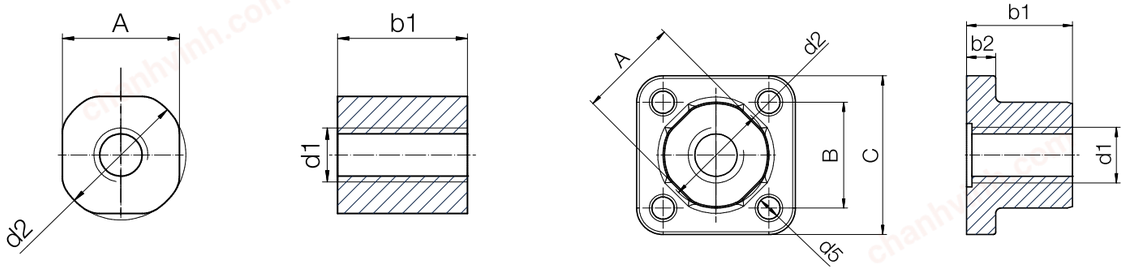
Cost-effective metric injection-moulded lead screw nuts

Cylindrical (form S)



With flange (form F)





drylin® trapezoidal thread

Order key

Type				d2	b1	Thread	
J	S	R	M-	C	-01-	M5	
iglidur® material	Form S	Hand of rotation	Metric	Thread: cut	Type	Diameter	

Options:
Form S: Cylindrical
Form F: With flange

Technical data

Thread	Effective supporting surface [mm²]	Max. static axial F [N]
Cylindrical (form S)		
M5	94	376
M6	112	449
M8	151	602
With flange (form F)		
M5	90	358
M6	104	415
M8	232	927

Dimensions [mm]

d1[156]	d2[156]	A	b1[156]	Weight [g]	Part No.
5	12	11	12	1.67	**JSRM-C-01-M5**
6	12	11	12	1.52	**JSRM-C-01-M6**
8	20	19	20	7.86	**JSRM-C-01-M8**

d1	d2	A	B	C	d5	b1	b2	[g]	
5	12	11	12	18	3.2	12	4	3.05	**JFRM-C-01-M5**
6	12	11	12	18	3.2	12	4	2.94	**JFRM-C-01-M6**
8	20	19	20	30	4.2	20	5.5	13.08	**JFRM-C-01-M8**

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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drylin® TR | Lead screw nuts | Product range

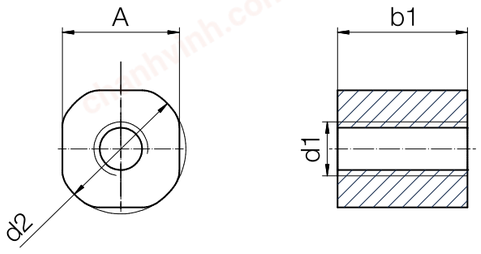
Cost-effective injection-moulded lead screw nuts

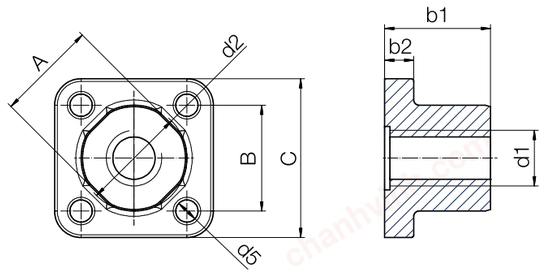
Cylindrical (form S)



With flange (form F)







drylin® trapezoidal thread

Order key

Type				d2	b1	Thread			
J	F	R	M-	M	-01-	TR	10X12		
iglidur® material	Form F	Hand of rotation	Metric	Thread: injectionmoulding	Type	Thread type	Diameter [mm]	Pitch	

Options:
Form S: Cylindrical
Form F: With flange

Technical data

Thread	Effective supporting surface [mm²]	Max. static axial F [N]
Cylindrical (form S)		
Tr8x1.5	228	500[43]
Tr10x2	283	1,131
Tr16x4	550	2,199
With flange (form F)		
Tr8x1.5	118	471
Tr10x2	228	911
Tr16x4	353	1,414

[43] Reduced load due to nut geometry

Dimensions [mm]

d1[156]	d2[156]	A	b1[156]	Weight [g]	Part No.
8	20	19	20	7.86	**JSRM-M-01-TR8X1.5**
10	20	19	20	7.02	**JSRM-M-01-TR10X2**
16	28	26.16	25	15.45	**JSRM-M-01-TR16X4**

d1	d2	A	B	C	d5	b1	b2	[g]	
8	20	19	20	30	4.2	20	5.5	7.38	**JFRM-M-01-TR8X1.5**
10	20	19	20	30	4.2	20	5.5	7.38	**JFRM-M-01-TR10X2**
16	28	25.5	27	38	6	25	6.5	13.99	**JFRM-M-01-TR16X4**

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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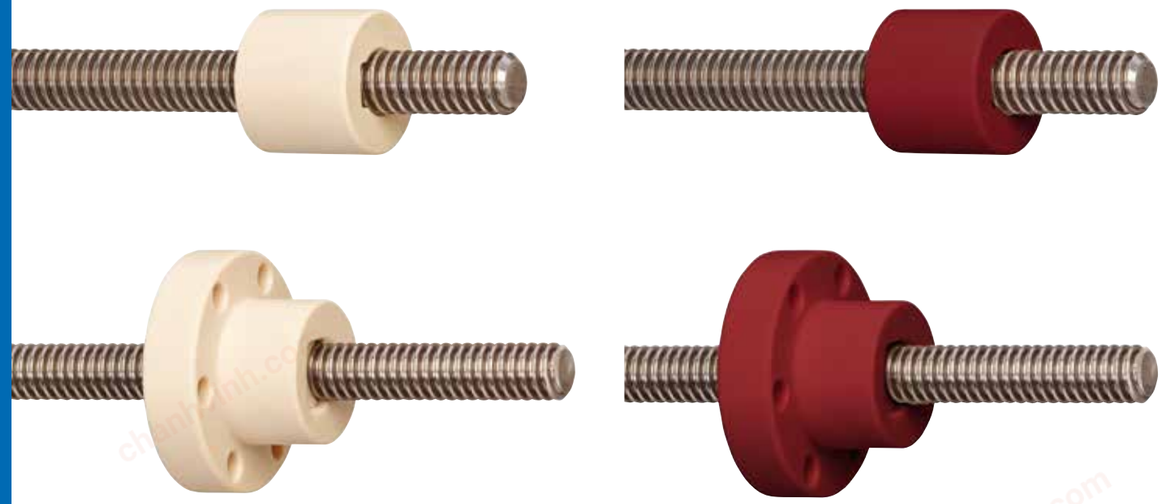
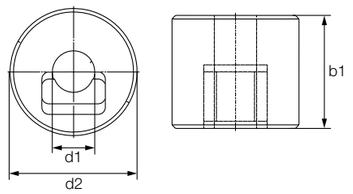
drylin® TR | Lead screw nuts | Product range

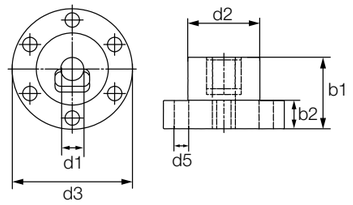
Anti-backlash lead screw nuts, cylindrical/with flange



Backlash is the phenomenon created on the lead screw drive by the axial clearance. By adding a radial pre-load, vibrations are significantly reduced.



Cylindrical (form S)



With flange (form F)

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 [mm]	Pitch
J	High efficiency at all speeds									
R	The cost-effective option for high volume									

Options:
Form S: Cylindrical
Form F: With flange

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
Tr8x1.5	●	–	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[156]	d2[156]	b1[156]	Weight [g] iglidur®		Part No.
			J	R	
8	22	20	9.8	9.2	☐SRM-AB-2220-TR8X1.5
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[156]	d2[156]	d3	d4	d5	b1[156]	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

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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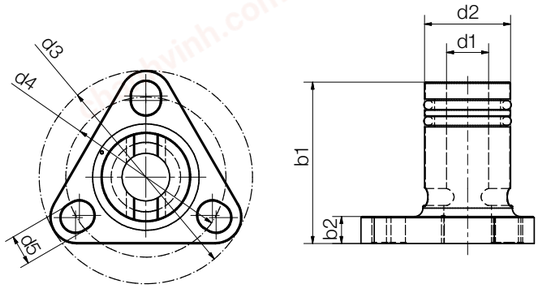
drylin® TR | Lead screw nuts | Product range

Flange lead screw nuts with pre-load





Order key

Type						Thread		
J	F	R	M	-LC-	0001	-TR	10	X2
iglidur® material	Form F	Hand of rotation	Metric	Low Clearance	Type	Trapezoidal thread	Diameter [mm]	Pitch

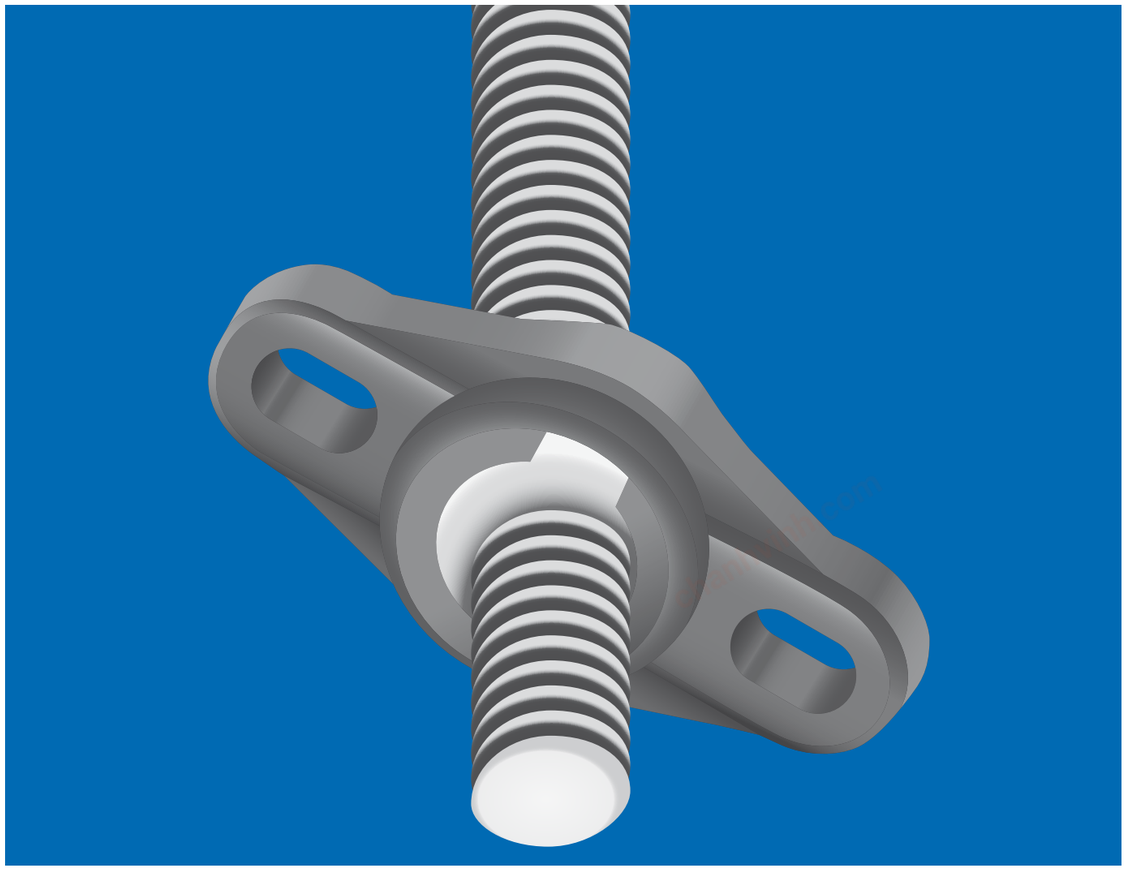
Technical data

Thread	Max. stat. axial F	Max. idling torque (with O-ring)	Weight	Part No.
Single start	[N]	[Nm]	[g]	
Tr8x1.5	75	0.01 – 0.03	6.8	JFRM-LC-0001-TR8X1.5
Tr10x2	75	0.01 – 0.03	6.8	JFRM-LC-0001-TR10X2
Tr10x3	75	0.01 – 0.03	6.8	JFRM-LC-0001-TR10X3
Tr12x3	125	0.06	18.0	JFRM-LC-0001-TR12X3
Tr14x3	125	0.08	18.0	JFRM-LC-0001-TR14X3
Tr14x4	125	0.08	18,0	JFRM-LC-0001-TR14X4
Multi start				
Tr06x2P1	40	0.01 – 0.03	3.9	JFRM-LC-0001-TR06X2P1
Tr12x6P3	125	0.06	18.0	JFRM-LC-0001-TR12X6P3

Dimensions [mm]

Thread	d1[156)]	d2[156)]	d3	d4	d5	b1[156)]	b2	Part No.
Single start								
Tr8x1.5	8	16.0	38.1	28.3	5.2	28.3	4.8	JFRM-LC-0001-TR8X1.5
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
Tr12x3	12	20	41.2	31.8	4.8	44.0	7.0	JFRM-LC-0001-TR12X3
Tr14x3	14	20	41.2	31.8	4.8	44.0	7.0	JFRM-LC-0001-TR14X3
Tr14x4	14	20	41.2	31.8	4.8	44.0	7.0	JFRM-LC-0001-TR14X4
Multi start								
Tr06x2P1	6	10.0	28.5	22.2	3.7	25.0	4.1	JFRM-LC-0001-TR06X2P1
Tr12x6P3	12	20	41.2	31.8	4.8	44.0	7.0	JFRM-LC-0001-TR12X6P3

[156)] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)



drylin® lead screw technology – Special designs

- Angular compensation with spherical balls
- With "Fast Forward" quick release mechanism
- Split lead screw nuts
- Accessories for lead screw nuts and lead screws
- Lubrication and maintenance-free



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drylin® | Special geometries | Product range

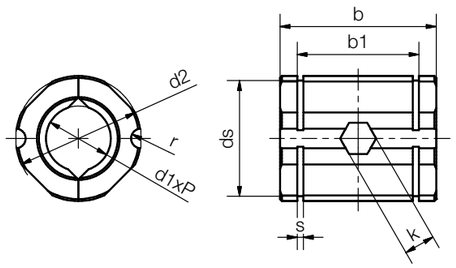
Split lead screw nuts, made from iglidur® J



Order key

Part number	Dimension		Thread		
J T R M-	22	30	-TR	10	X2
iglidur® material	d2	b1	Trapezoidal thread	Diameter [mm]	Pitch
Split nut					
Hand of rotation					
Metric					

This part includes 2 nut halves and 1 piece nut each based on DIN 934 made from 304 stainless steel to prevent twisting



Technical data

Part No.	Max. axial load static[50] [N]	Max. axial load 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[156]	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 DIN 934

[51] Mounting in the housing via circlips DIN 471

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

drylin® lead screw technology

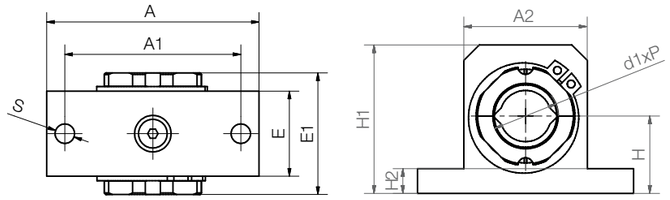
drylin® | Special geometries | Product range

Also available with housing block



Order key

Part number							Thread		
RG A S-	J	T	R	M-	TR	10X2			
Linear housing	iglidur® material	Split nut	Hand of rotation	Metric	Trapezoidal thread	Diameter [mm]	Pitch		
Aluminium									
Small									



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

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drylin® | Special geometries | Product range

Lead screw nuts for linear modules

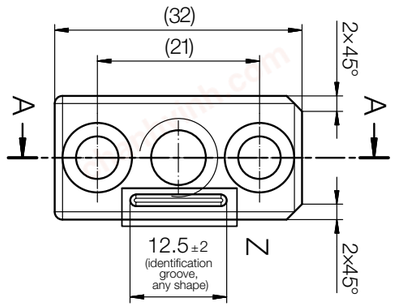
Square lead screw nuts



DST-SHT-1210



SHT-1210-TR



Order key

Order example

DST-SHT-1210-DS10x12- J -☐

High helix thread	SHT linear module	Installation size	Thread	iglidur® material	Hand of rotation

Options:
Hand of rotation
RH: Right-Hand
LH: Left-hand

Dimensions

Part No.	Hand of rotation		Thread d1xP	From SHT linear module	
	right	left			
DST-SHT-1210-DS10x12-J-☐	●	●	Ds10x12	SHT-12	▶ Page 1372
DST-SHT-1210-DS10x25-J-☐	●	●	Ds10x25	SHT-12	▶ Page 1372
DST-SHT-1210-DS10x50-J-☐	●	●	Ds10x50	SHT-12	▶ Page 1372
SHT-1210-TR10X2-J-☐	●	●	Tr10x2	SHT-12	▶ Page 1372
SHT-1210-TR10X3-J-☐	●	●	Tr10x3	SHT-12	▶ Page 1372

Part number suffix LH for left-hand thread, RH for right-hand thread

drylin® | Special geometries | Product range

drylin® trapezoidal thread

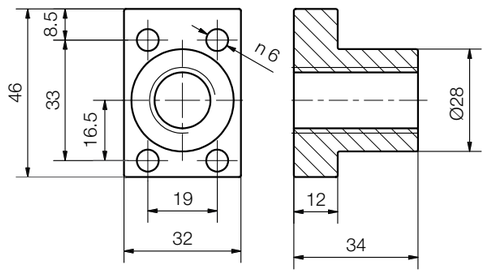
Lead screw nuts with flange



DST-SHT-2018



SHT-2018-TR



Please note: not symmetrical

Order key

Order example

DST-SHT-2018-DS18x24- J -☐

High helix thread	SHT linear module	Installation size	Thread	iglidur® material	Hand of rotation

Options:
Hand of rotation
RH: Right-Hand
LH: Left-hand

Dimensions

Part No.	Hand of rotation		Thread d1xP	From SHT linear module	
	right	left			
DST-SHT-2018-DS18x24-J-☐	●	●	Ds18x24	SHT-20	▶ Page 1372
DST-SHT-2018-DS18x40-J-☐	●	●	Ds18x40	SHT-20	▶ Page 1372
DST-SHT-2018-DS18x80-J-☐	●	●	Ds18x80	SHT-20	▶ Page 1372
DST-SHT-2018-DS18x100-J-☐	●	●	Ds18x100	SHT-20	▶ Page 1372
SHT-2018-TRM-18X4-☐	●	●	Tr18x4	SHT-20	▶ Page 1372
SHT-2018-TRM-18X8-☐	●	●	Tr18x8p4	SHT-20	▶ Page 1372

Part number suffix LH for left-hand thread, RH for right-hand thread

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Lead screw nuts for linear modules

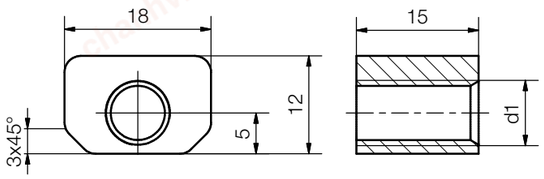
Lead screw nuts



DST-SLW-063001



SWZ-063009



Order key

Order example

DST-SLW-063001-DS8x10-☐

High helix thread	SLW linear module	Installation size	Thread	Hand of rotation

Options:

Hand of rotation

RH: Right-Hand

LH: Left-hand

Dimensions

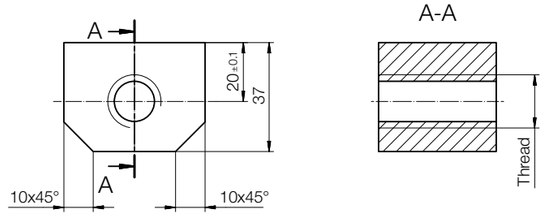
Part No.	Hand of rotation		Thread d1xP	From SLW linear module
	right	left		
DST-SLW-063001-DS8x10-☐	●	●	Ds8x10	SLW-0630 ▶ **Page 1386**
DST-SLW-063001-DS8x15-☐	●	●	Ds8x15	SLW-0630 ▶ **Page 1386**
SWZ-063001	●	–	M8	SLW-0630 ▶ **Page 1386**
SWZ-063003	–	●	M8	SLW-0630 ▶ **Page 1386**
SWZ-063009	●	–	Tr8x1.5	SLW-0630 ▶ **Page 1386**
SWZ-063010	–	●	Tr8x1.5	SLW-0630 ▶ **Page 1386**

Part number suffix LH for left-hand thread, RH for right-hand thread

drylin® | Special geometries | Product range

Lead screw nuts





Order key

Order example

DST-SLW-25120-DS18x24-J-☐

High helix thread	SLW linear module	Installation size	Thread	iglidur® material	Hand of rotation

Options:

Hand of rotation

RH: Right-Hand

LH: Left-hand

Dimensions

Part No.	Hand of rotation		Thread d1xP	From SLW linear module
	right	left		
DST-SLW-25120-DS18x24-J-☐	●	●	Ds18x24	SLW-25120 ▶ **Page 1386**
DST-SLW-25120-DS18x40-J-☐	●	●	Ds18x40	SLW-25120 ▶ **Page 1386**
DST-SLW-25120-DS18x80-J-☐	●	●	Ds18x80	SLW-25120 ▶ **Page 1386**
DST-SLW-25120-DS18x100-J-☐	●	●	Ds18x100	SLW-25120 ▶ **Page 1386**

Part number suffix LH for left-hand thread, RH for right-hand thread

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drylin® | Special geometries | Product range

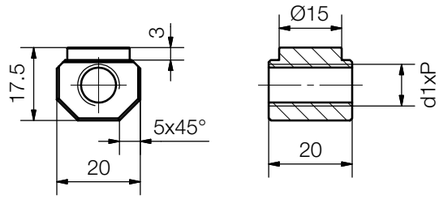
Lead screw nuts with locating spigot



DST-SLW-1040



SWZ-W-10XX

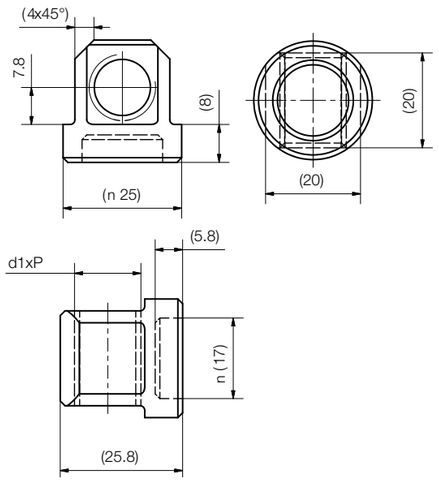


Dimensions

Part No.		Thread d1xP	Hand of rotation	From SLW linear module
DST-SLW-1040-DS10X12-J-RH	New	Ds10x12	right-hand	SLW-1040 ▶ Page 1386
DST-SLW-1040-DS10X12-J-LH	New	Ds10x12	left-hand	SLW-1040 ▶ Page 1386
DST-SLW-1040-DS10X25-J-RH	New	Ds10x25	right-hand	SLW-1040 ▶ Page 1386
DST-SLW-1040-DS10X25-J-LH	New	Ds10x25	left-hand	SLW-1040 ▶ Page 1386
DST-SLW-1040-DS10X50-J-RH	New	Ds10x50	right-hand	SLW-1040 ▶ Page 1386
DST-SLW-1040-DS10X50-J-LH	New	Ds10x500	left-hand	SLW-1040 ▶ Page 1386
SWZ-W-104003		Tr10x2	right-hand	SLW-1040 ▶ Page 1386
SWZ-W-104004		Tr10x2	left-hand	SLW-1040 ▶ Page 1386
SWZ-W-104009		TR10x3	right-hand	SLW-1040 ▶ Page 1386
SWZ-W-104015		Tr10x3	left-hand	SLW-1040 ▶ Page 1386



SWZ-W-16XX



Dimensions

Part No.	Thread d1xP	Hand of rotation	From SLW linear module
SWZ-W-166001	TR14x4	right-hand	SLW-1660 ▶ Page 1386
SWZ-W-166002	Tr14x3	right-hand	SLW-1660 ▶ Page 1386
SWZ-W-166003	Tr14x4	left-hand	SLW-1660 ▶ Page 1386

drylin® | Special geometries | Product range

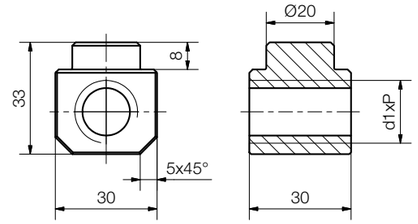
drylin® lead screw technology



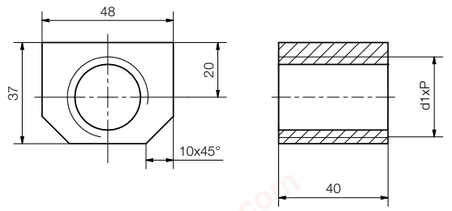
DST-SLW-2080



SWZ-W-20XX



SWZ-W-2080..



SWZ-W-25120..

Part No.		Thread d1xP	Hand of rotation	From SLW linear module
DST-SLW-2080-DS18X24-J-RH	New	Ds18x24	right-hand	SLW-2080 ▶ Page 1386
DST-SLW-2080-DS18X24-J-LH	New	Ds18x24	left-hand	SLW-2080 ▶ Page 1386
DST-SLW-2080-DS18X40-J-RH	New	Ds18x40	right-hand	SLW-2080 ▶ Page 1386
DST-SLW-2080-DS18X40-J-LH	New	Ds18x40	left-hand	SLW-2080 ▶ Page 1386
DST-SLW-2080-DS18X80-J-RH	New	Ds18x80	right-hand	SLW-2080 ▶ Page 1386
DST-SLW-2080-DS18X80-J-LH	New	Ds18x80	left-hand	SLW-2080 ▶ Page 1386
DST-SLW-2080-DS18X100-J-RH	New	Ds18x100	right-hand	SLW-2080 ▶ Page 1386
DST-SLW-2080-DS18X100-J-LH	New	Ds18x100	left-hand	SLW-2080 ▶ Page 1386
SWZ-W-208003		Tr18x4	right-hand	SLW-2080 ▶ Page 1386
SWZ-W-208004		Tr18x4	left	SLW-2080 ▶ Page 1386
SWZ-W-208008		Tr18x8p4	right-hand	SLW-2080 ▶ Page 1386
SWZ-W-208009		Tr18x8p4	left-hand	SLW-2080 ▶ Page 1386
SWZ-W-2512001[119)]		Tr24x5	right-hand	SLW-25120 ▶ Page 1386
SWZ-W-2512002[119)]		Tr24x5	left-hand	SLW-25120 ▶ Page 1386

[119)] Without locating spigot

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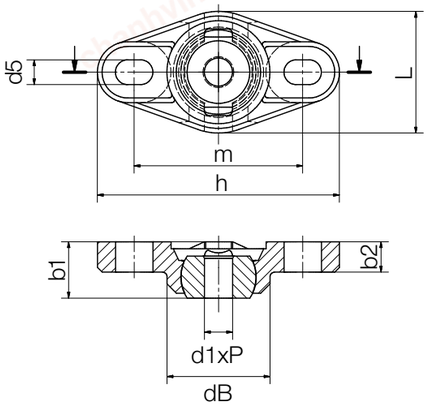
Angular compensation lead screw nut with spherical ball in flanged bearing housing





Order key

Part number	Thread
J F R K M-EFOM-TR 8X1.5	

iglidur® material	Form F	Hand of rotation	Dimensional series K	Metric	Flanged bearing housing	Trapezoidal thread	Diameter [mm]	Pitch

Options:
DS: High helix thread
TR: Trapezoidal thread

Dimensions [mm] – trapezoidal thread

Thread	Effective support surface [mm²]	d1[156]	h	L	b1[156]	b2	m	dB	d5	Max. static axial F [N]	Pivoting angle stat.	Pivoting angle dyn.	Part No.
Tr8x1.5	102	8	52	26	12	6.5	36	22.2	5.3x8	100	25°	30°	**JFRKM-EFOM-TR8X1.5**
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 support surface [mm²]	d1[156]	h	L	b1[156]	b2	m	dB	d5	Max. static axial F [N]	Pivoting angle stat.	Pivoting angle dyn.	Part No.
Ds8x15	61	8	52	26	12	6.5	36	22.2	5.3x8	50	25°	30°	**JFRKM-EFOM-DS8X15**
Ds10x12	82	10	52	26	12	6.5	36	22.2	5.3x8	50	25°	30°	**JFRKM-EFOM-DS10X12**

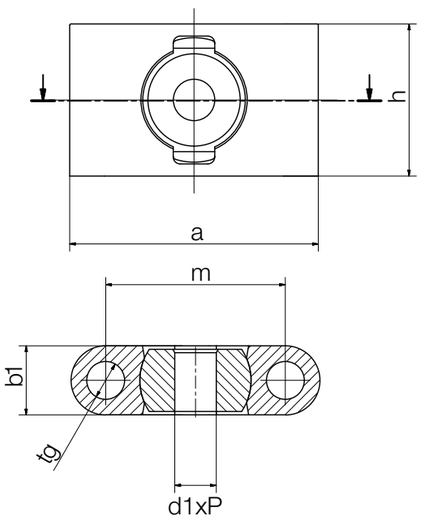
[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

drylin® lead screw technology

drylin® | Special geometries | Product range

Angular compensation lead screw nut with spherical ball in pillow block bearing housing





Order key

Part number	Thread
J F R K M-ESTM-TR 8X1.5	

iglidur® material	Form F	Hand of rotation	Dimensional series K	Metric	Pillow block bearing housing	Trapezoidal thread	Diameter [mm]	Pitch

Options:
DS: High helix thread
TR: Trapezoidal thread

Dimensions [mm] – trapezoidal thread

Thread	Effective support surface [mm²]	h	a	b1[156]	m	tg	Max. static axial F [N]	Pivoting angle stat.	Pivoting angle dyn.	Part No.
Tr8x1.5	102	22	36	10	26	5.5	100	25°	30°	**JFRKM-ESTM-TR8X1.5**
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 support surface [mm²]	h	a	b1[156]	m	tg	Max. static axial F [N]	Pivoting angle stat.	Pivoting angle dyn.	Part No.
Ds8x15	61	22	36	10	26	5.5	50	25°	30°	**JFRKM-ESTM-DS8X15**
Ds10x12	82	22	36	10	26	5.5	50	25°	30°	**JFRKM-ESTM-DS10X12**

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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Lead screw nut with quick-release – Fast Forward



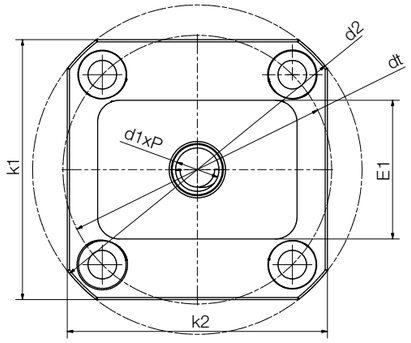
Quick release mechanism: A combination of accurate positioning and fast manual adjustment with trapezoidal lead screw nuts.

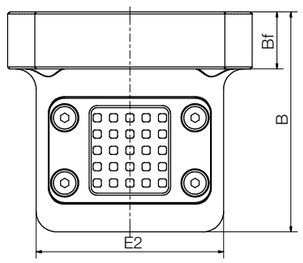
- For quick format adjustments
- Incl. 'stop/go' through automatic self-locking with thread
- Housing: AL anodised, lead screw nut made from iglidur® J
- Tough and reliable
- Only recommended for horizontal applications
- Max. axial load stat.: 200N, dyn.: 50N

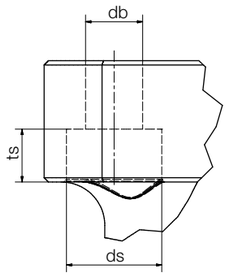
see SHT-FF ▶ **Page 1380**

Order key

Part number							Thread	
F	T	R	M-	FF	-		10X2	
Form F	Trapezoidal thread	Hand of rotation	Metric	Fast Forward			Diameter	Pitch







Dimensions [mm]

Thread	d2[156]	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**

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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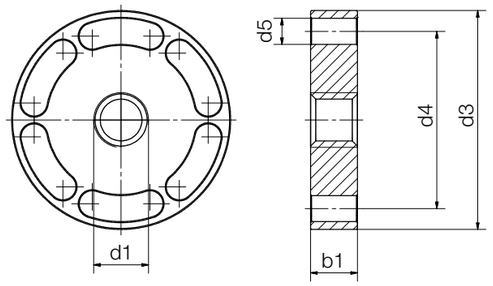
drylin® discs made from iglidur® J





Order key

Type				d3	b1	Thread		
J	D	R	M-	42	09	TR	10X2	
iglidur® material	Form: disc	Hand of rotation	Metric	Outer Ø [mm]	Height [mm]	Trapezoidal thread	Diameter	Pitch

Material properties:
iglidur® J ▶ Page 159

Technical data and dimensions [mm]

Thread	Effective supporting surface [mm²]	Max. stat. axial F[49] [N]	d1[156]	d3	d4	d5	b1[156]	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

[156] Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

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Assembled drylin® lead screw nut housing, including lead screw nut



- Standard lead screw nuts secured with fixing screws
- Can be fixed from above
- One housing is suitable for many thread geometries
- Limitless combinations

Order key

Part number

MH-1210-AL-TR10X2-R-J

Lead screw nut housings	Nut design (see drawing)	Aluminium	Thread size	Right-hand thread	iglidur® J nut

MHM-2835-AL-☐ / MHM-3244-AL-☐



MHM-ZB0810-AL-☐



MHM-2018-AL-☐



MHM-1210-AL-☐



Please use MHM (Assembled lead screw nut housing, including lead screw nut) for fully assembled systems. Order example: MHM-1210-AL-TR10x2-R-J

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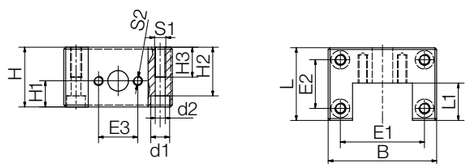
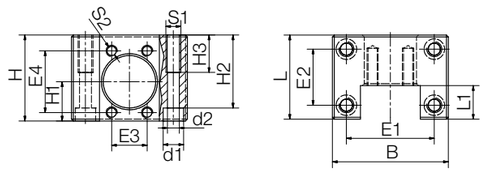
drylin® lead screw nut housings and lead screw nuts as an individual part

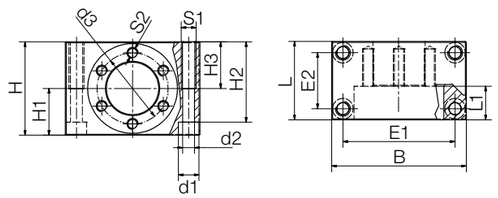
MH-1210-AL



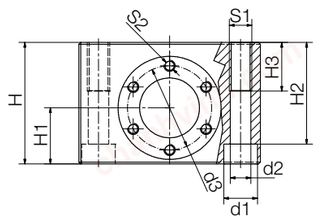
MH-2018-AL



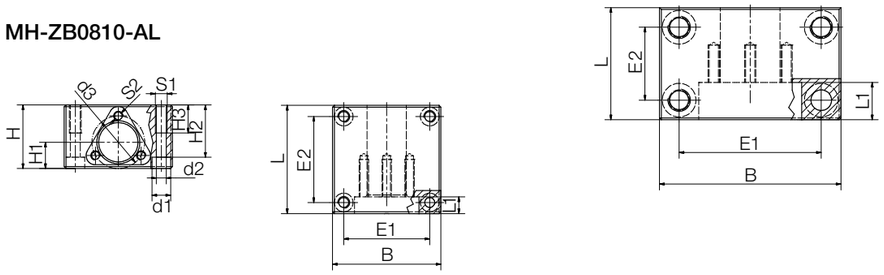
MH-2835-AL



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 size
MH-1210-AL	SHT-1210-TRM	Tr10x2 / Tr10x3 / Ds10x12 / Ds10x50
MH-2018-AL	SHT-2018-TRM	Tr18x4 / Tr18x8P4 / Ds18x24 / Ds18x100
MH-2835-AL	FRM-2835	Tr12x3 / Tr12x6P3 / Ds12x25 / Tr14x3 / Tr14x4 / Tr16x2 / Tr16x4 / Tr16x8P4 / Tr18x4 / Tr18x8P4 / Ds18x24 / Ds18x100
MH-3244-AL	FRM-3244	Tr20x4 / Tr20x8P4 / Tr24x5
MH-ZB0810-AL	Zero-backlash	Ds08x10 / Ds08x15 / Ds10x12 / Ds10x50

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Lead screw support blocks





Order key

Part No.	Thread	Options
SLS -	10X2 -	FL - LH

Lead screw support block	Diameter	Pitch	Fixed bearing	Option left-hand thread

Scope of delivery: Anodised lead screw support block

FL: Fixed bearing with anodised clamping ring with RH thread (standard) and maintenance-free iglidur® plain bearing[52)]

LL: Floating bearing with maintenance-free iglidur® plain bearing

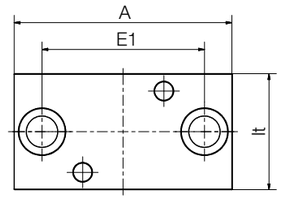
Options:

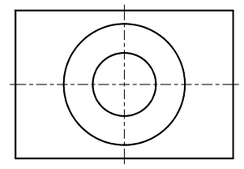
FL: Fixed bearing

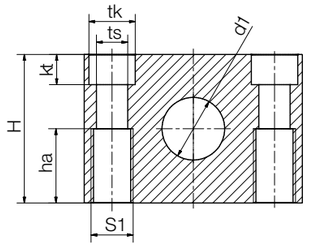
LL: Floating bearing

LH: Left-hand thread option only for Tr10x2, Tr10x3, Tr18x4, Tr24x5

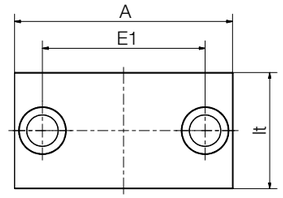
Fixed bearing

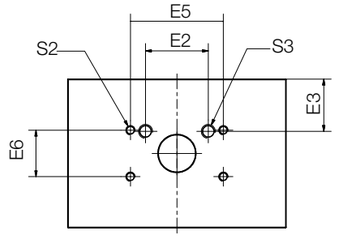


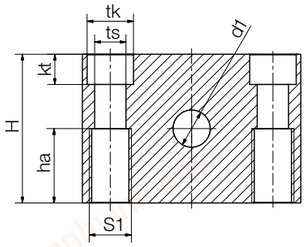




Floating bearing







▶ Page 1447

Technical data and dimensions [mm] – (for both right and left-hand threads)

Part No.		Weight [g]	Max. static load capacity axial [N]	S1	S2	S3
SLS-10X2-FL (LH)		88	700	M8	–	–
SLS-10X2-LL		115	–	M8	M4	M6
SLS-10X3-FL (LH)		88	700	M8	–	–
SLS-10X3-LL		115	–	M8	M4	M6
SLS-10X12-FL		88	700[53)]	M8	–	–
SLS-10X12-LL		115	–	M8	M4	M6
SLS-10X50-FL		88	700[53)]	M8	–	–
SLS-10X50-LL		115	–	M8	M4	M6
SLS-12X3-FL	New	205	1,600	M12	–	–
SLS-12X3-LL	New	295	–	M12	M4	M6
SLS-14X3-FL	New	205	1,600	M12	–	–
SLS-14X3-LL	New	295	–	M12	M4	M6
SLS-14X4-FL	New	205	1,600	M12	–	–
SLS-14X4-LL	New	295	–	M12	M4	M6
SLS-16X2-FL	New	205	1,600	M12	–	–
SLS-16X2-LL	New	295	–	M12	M4	M6
SLS-16X4-FL	New	205	1,600	M12	–	–
SLS-16X4-LL	New	295	–	M12	M4	M6

[52)] FL lead screw support block with trapezoidal thread TR10x2, TR10x3, TR18x4, TR24x5 lead screw also available with clamping rings with left-hand thread

[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 18mm

Dimensions [mm] – (for both right and left-hand threads)

A	H	E1	E2	E3	E5	E6	lt	kt	tk	ts	d1	ha
50	32	36	–	–	–	–	30	6.5	11	6.6	10	16
50	32	36	27	6.5	40	20	30	6.5	11	6.6	10	16
50	32	36	–	–	–	–	30	6.5	11	6.6	10	16
50	32	36	27	6.5	40	20	30	6.5	11	6.6	10	16
50	32	36	–	–	–	–	30	6.5	11	6.6	10	16
50	32	36	27	6.5	40	20	30	6.5	11	6.6	10	16
50	32	36	–	–	–	–	30	6.5	11	6.6	10	16
50	32	36	27	6.5	40	20	30	6.5	11	6.6	10	16
72	46	54	–	–	–	–	36	8.6	15	9	12	23
72	46	54	27	13.5	40	20	36	8.6	15	9	12	23
72	46	54	–	–	–	–	36	8.6	15	9	14	23
72	46	54	27	13.5	40	20	36	8.6	15	9	14	23
72	46	54	–	–	–	–	36	8.6	15	9	14	23
72	46	54	27	13.5	40	20	36	8.6	15	9	14	23
72	46	54	–	–	–	–	36	8.6	15	9	16	23
72	46	54	27	13.5	40	20	36	8.6	15	9	12	23
72	46	54	–	–	–	–	36	8.6	15	9	16	23
72	46	54	27	13.5	40	20	36	8.6	15	9	12	23

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Lead screw support blocks

Technical data and dimensions [mm] – (for both right and left-hand threads)

Part No.		Weight [g]	Max. static load capacity axial [N]	S1	S2	S3	A	H	E1	E2	E3	E5	E6	lt	kt	tk	ts	d1	ha
SLS-18X4-FL (LH)		205	1,600	M12	–	–	72	46	54	–	–	–	–	36	8.6	15	9.0	18	23
SLS-18X4-LL[54]		295	–	M12	M4	M6	72	46	54	27	13.5	40	20	36	8.6	15	9.0	12	23
SLS-18X8P4-FL		205	1,600	M10	–	–	72	46	54	–	–	–	–	36	8.6	15	9.0	18	23
SLS-18X8P4-LL[54]		295	–	M10	M4	M6	72	46	54	27	13.5	40	20	36	8.6	15	9.0	12	23
SLS-18X24-FL[55]		205	1,600[53]	M10	–	–	72	46	54	–	–	–	–	36	8.6	15	9.0	18	23
SLS-18X24-LL[54]		295	–	M10	M4	M6	72	46	54	27	13.5	40	20	36	8.6	15	9.0	12	23
SLS-18X100-FL[55]		205	1,600[53]	M10	–	–	72	46	54	–	–	–	–	36	8.6	15	9.0	18	23
SLS-18X100-LL[54]		295	–	M10	M4	M6	72	46	54	27	13.5	40	20	36	8.6	15	9.0	12	23
SLS-20X4-FL	New	525	2,500	M16	–	–	94	64	70	–	–	–	–	50	13	20	13.5	12	32
SLS-20X4-LL	New	725	–	M16	M4	M6	94	64	70	27	22.5	40	20	50	13	20	13.5	20	32
SLS-24X5-FL (LH)		525	2,500	M16	–	–	94	64	70	–	–	–	–	50	13	20	13.5	24	32
SLS-24X5-LL[54]		725	–	M16	M4	M6	94	64	70	27	22.5	40	20	50	13	20	13.5	14	32
Lead screw support blocks with plain bearings (clamping rings without thread)																			
SLS-S6-FL	New	115	–	M8	–	–	50	32	36	–	–	–	–	30	6.5	11	6.6	6	16
SLS-S6-LL	New	88	150	M8	M4	M6	50	32	36	27	6.5	40	20	30	6.5	11	6.6	6	16
SLS-S6.35-FL	New	115	–	M8	–	–	50	32	36	–	–	–	–	30	6.5	11	6.6	6.35	16
SLS-S6.35-LL	New	88	150	M8	M4	M6	50	32	36	27	6.5	40	20	30	6.5	11	6.6	6.35	16
SLS-S8-FL	New	115	–	M8	–	–	50	32	36	–	–	–	–	30	6.5	11	6.6	8	16
SLS-S8-LL	New	88	500	M8	M4	M6	50	32	36	27	6.5	40	20	30	6.5	11	6.6	8	16
SLS-S10-FL	New	88	700	M8	–	–	50	32	36	–	–	–	–	30	6.5	11	6.6	10	16
SLS-S10-LL	New	115	–	M8	M4	M6	50	32	36	27	6.5	40	20	30	6.5	11	6.6	10	16
SLS-S12-FL	New	205	1,600	M12	–	–	72	46	54	–	–	–	–	36	8.6	15	9.0	12	23
SLS-S12-LL	New	295	–	M12	M4	M6	72	46	54	27	13.5	40	20	36	8.6	15	9.0	12	23
SLS-S14-FL	New	205	1,600	M12	–	–	72	46	54	–	–	–	–	36	8.6	15	9.0	14	23
SLS-S14-LL	New	295	–	M12	M4	M6	72	46	54	27	13.5	40	20	36	8.6	15	9.0	14	23
SLS-S16-FL	New	205	1,600	M12	–	–	72	46	54	–	–	–	–	36	8.6	15	9.0	12	23
SLS-S16-LL	New	295	–	M12	M4	M6	72	46	54	27	13.5	40	20	36	8.6	15	9.0	16	23
SLS-S18-FL	New	205	1,600	M12	–	–	72	46	54	–	–	–	–	36	8.6	15	9.0	12	23
SLS-S18-LL	New	295	–	M12	M4	M6	72	46	54	27	13.5	40	20	36	8.6	15	9.0	18	23
SLS-S20-FL	New	525	2,500	M16	–	–	94	64	70	–	–	–	–	50	13.0	20	13.5	12	32
SLS-S20-LL	New	725	–	M16	M4	M6	94	64	70	27	22.5	40	20	50	13.0	20	13.5	20	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 18mm

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drylin® | Special geometries | Product range

Lead screw support blocks with ball bearings



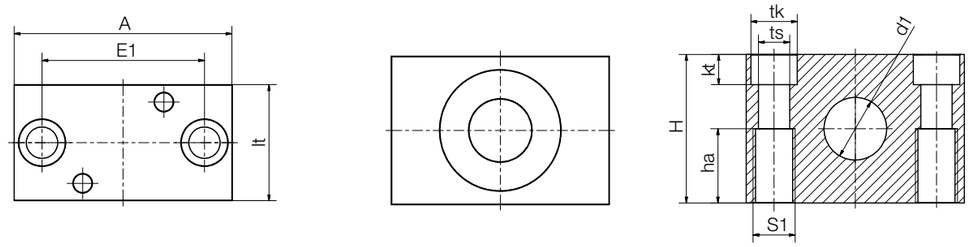
Order key

Part No.	Thread	Options
SLS	- 10X2	- BB
Lead screw support block	Diameter	Pitch	Ball bearing

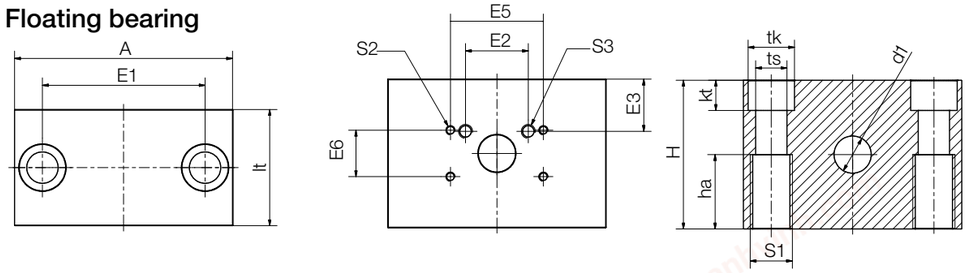
Options:
- **BB:** Ball bearings
- **FL:** Fixed bearing
- **LL:** Floating bearing

▶ Page 1447

Fixed bearing



Floating bearing



Technical data and dimensions, ball bearing [mm]

Part No.		Weight [g]	Max. stat. load capacity axial [N]	S1	S2
SLS-S6-BB	New	110	150	M8	M4
SLS-S6.35-BB	New	110	150	M8	M4
SLS-S8-BB	New	110	350	M8	M4
SLS-S10-BB	New	110	350	M8	M4
SLS-S12-BB	New	265	1,000	M12	M4
SLS-S14-BB	New	265	1,000	M12	M4
SLS-S16-BB	New	265	1,000	M12	M4
SLS-S18-BB	New	265	1,000	M12	M4
SLS-S20-BB	New	350	1,500	M16	M4
SLS-10X2-BB		110	350	M8	M4
SLS-10X3-BB	New	110	350	M8	M4
SLS-10X12-BB		110	350	M8	M4
SLS-10X50-BB		110	350	M8	M4
SLS-12X3-BB	New	265	1,000	M12	M4
SLS-14X4-BB	New	265	1,000	M12	M4
SLS-16X2-BB	New	265	1,000	M12	M4
SLS-16X4-BB	New	265	1,000	M12	M4
SLS-18X4-BB	New	265	1,000	M12	M4
SLS-18X8P4-BB		265	1,000	M10	M4
SLS-18X24-BB[55)]		265	1,000	M10	M4
SLS-18X100-BB[55)]		265	1,000	M10	M4
SLS-20X4-BB	New	350	1,500	M16	M4
SLS-24X5-BB		350	1,500	M16	M4

[55)] Lead screw end must be turned to 18mm

Dimensions, ball bearing [mm]

A	H	E1	E5	E6	lt	kt	tk	ts	d1	ha
50	32	36	40	20	30	6.5	11	6.6	6	16
50	32	36	40	20	30	6.5	11	6.6	6.35	16
50	32	36	40	20	30	6.5	11	6.6	8	16
50	32	36	40	20	30	6.5	11	6.6	10	16
72	46	54	48	36	36	8.6	15	9.0	12	23
72	46	54	48	36	36	8.6	15	9.0	14	23
72	46	54	48	36	36	8.6	15	9.0	16	23
72	46	54	48	36	36	8.6	15	9.0	18	23
94	64	70	48	36	50	13.0	20	13.5	20	32
50	32	36	40	20	30	6.5	11	6.6	10	16
50	32	36	40	20	30	6.5	11	6.6	10	16
50	32	36	40	20	30	6.5	11	6.6	10	16
50	32	36	40	20	30	6.5	11	6.6	10	16
72	46	54	48	36	36	8.6	15	9.0	12	23
72	46	54	48	36	36	8.6	15	9.0	14	23
72	46	54	48	36	36	8.6	15	9.0	16	23
72	46	54	48	36	36	8.6	15	9.0	16	23
72	46	54	48	36	36	8.6	15	9.0	18	23
72	46	54	48	36	36	8.6	15	9.0	18	23
72	46	54	48	36	36	8.6	15	9.0	18	23
72	46	54	48	36	36	8.6	15	9.0	18	23
94	64	70	48	36	50	13.0	20	13.5	20	32
94	64	70	48	36	50	13.0	20	13.5	24	32

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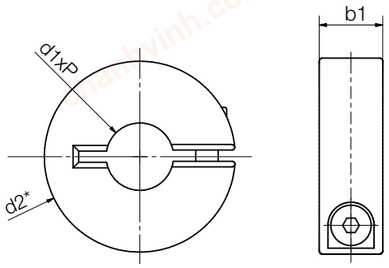
drylin® | Special geometries | Product range

drylin® clamping rings, right and left-hand thread





Order key

Part number	Thread
CR R - 01 - TR 10X 2	

Clamping rings	Hand of rotation	Type	Trapezoidal thread	Diameter	Pitch

Dimensions [mm]

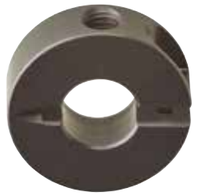
Thread	d2[56] h9	b1	Max. static axial F [N]	Part No. Right-hand thread
Tr8x1.5	16	9	1,530	CRR-01-TR8X1.5
Tr10x2	24	8	1,800	CRR-01-TR10X2
Tr12x3	28	8	2,096	CRR-01-TR12X3
Tr14x4	30	11	3,312	CRR-01-TR14X4
Tr16x4	34	11	3,840	CRR-01-TR16X4
Tr18x4	36	13	5,216	CRR-01-TR18X4
Tr20x4	45	15	6,784	CRR-01-TR20X4
Tr24x5	45	15	8,096	CRR-01-TR24X5

Thread	d2[56] h9	b1	Max. static axial F [N]	Part No. Left-hand thread
Tr8x1.5	16	9	1,530	CRL-01-TR8X1.5
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 dimension clamping ring. Screw head may protrude. Installation dimension d2 (+2mm)

Dimensions [mm] – clamping ring without thread

ø	d2	b1	Part No.
10	24	8	KRM-S10-V
12	28	11	KRM-S12-V
14	30	11	KRM-S14-V
16	34	11	KRM-S16-V
18	36	13	KRM-S18-V
24	45	15	KRM-S24-V



My sketches

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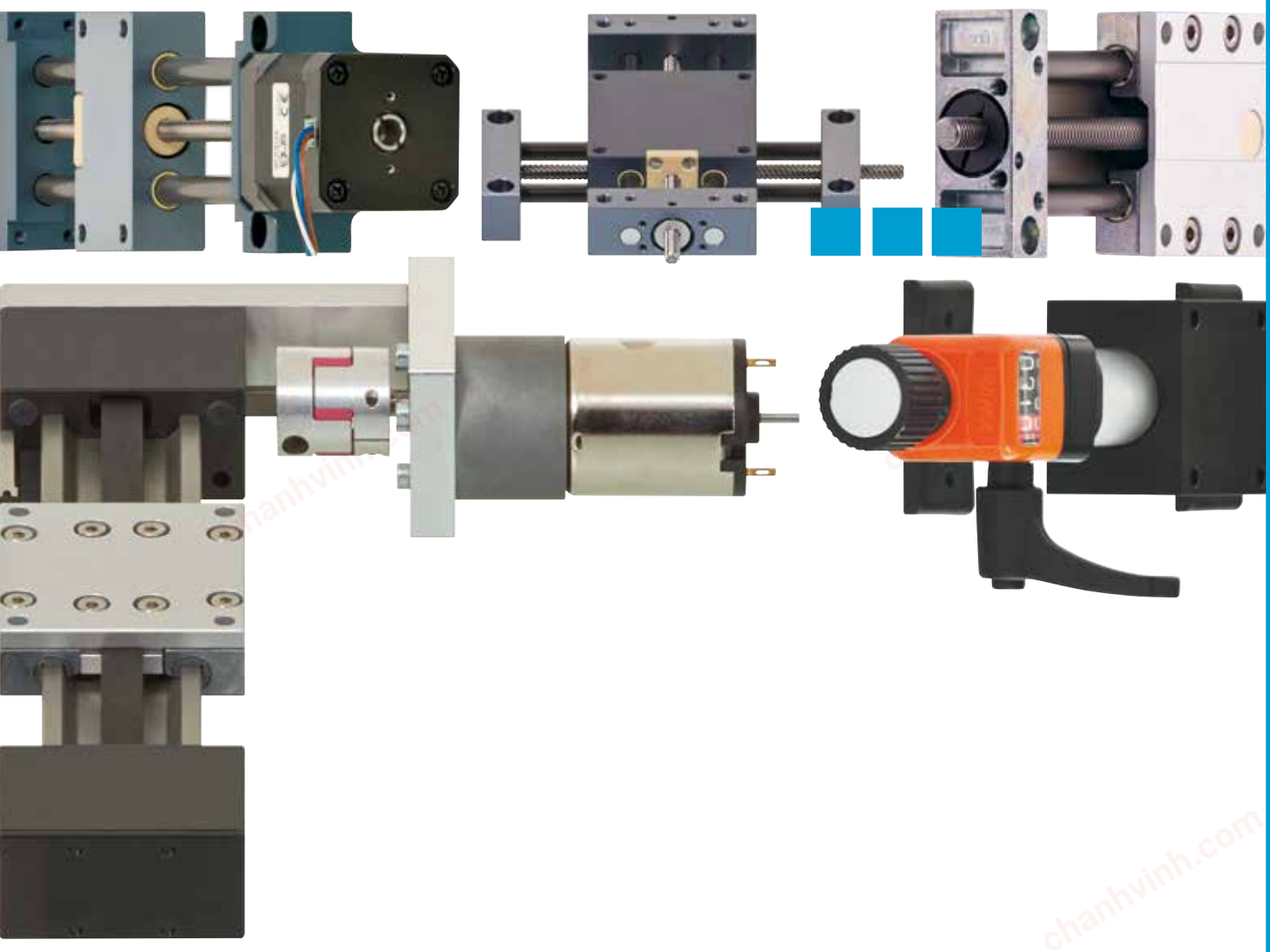
drylin®

Drive technology



...plastics

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drylin® drive technology | Application examples



Camera/laser adjustment in labelling system
In a labelling system the camera and laser positioning are guided with two drylin® SHT/SLWE-XY XY table units. (Co. Pago Etikettiersysteme GmbH)



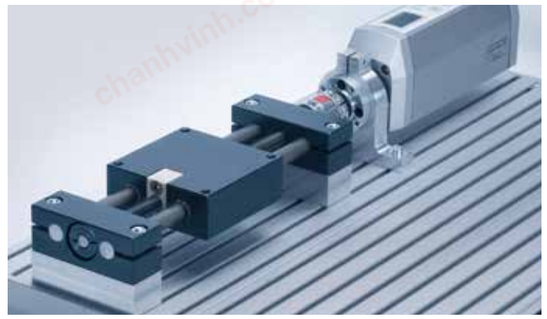
Positioning of milling heads
Aluminium dust and swarf cannot stick due to the absence of lubricants at any of the bearing points of the drylin® SHT linear module. (Berchtold GmbH)



Height adjustment of coding device
The drylin® linear module gives variable and precise adjustment, free from any maintenance or lubrication. (Filtec Europe GmbH)



Pick & Place
Quick and maintenance-free handling with drylin® toothed belt axes as a room linear robot (X, Y, Z-axis).



Electric actuator
drylin® linear module 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)



Train ticket detection
The drylin® SLW linear module with position indicator and hand wheel adjusts the sensors which detect the edges of the train ticket and any print marks.

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drylin® drive technology | Product overview

drylin® drive technology – SHT linear modules



Self-locking:
SHT
▶ Page 1372



Axial pre-load, radial adjustment:
SHT-PL
▶ Page 1373



Compact design:
SHTC
▶ Page 1374



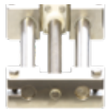
The fast one with dryspin® high helix thread:
SHTS
▶ Page 1375



With ball bearing supported lead screw:
SHT-BB
▶ Page 1376



Made of stainless steel:
SHT-ESJ
▶ Page 1378



Hygienic design:
SHTC-HYD
▶ Page 1379

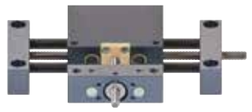


With quick-release mechanism:
SHTC-FF
▶ Page 1380

SHT linear modules



With quick-release mechanism:
SHT-FF
▶ Page 1381



XY table:
SHT-XY
▶ Page 1382

SLW linear modules



Self-locking:
SLW
▶ Page 1386



Axial pre-load, radial adjustment:
SLWE-PL
▶ Page 1387



With ball bearing supported lead screws:
SLEW-BB
▶ Page 1388



The fast one with dryspin® high helix thread:
SLWS
▶ Page 1389



With protected lead screw:
SLW-PT
▶ Page 1390



Dual action linear system:
SLWT
▶ Page 1391

SLW linear modules



Stainless steel version:
SLW-ES
▶ Page 1392



XY tables:
SLW-XY
▶ Page 1394



XY tables – stainless steel version:
SLW-XY-ES
▶ Page 1395

SAW linear modules



Robust design:
SAW
▶ Page 1400



Direct drive in short design:
SAWC
▶ Page 1402



With motor available from stock:
DLE-SA
▶ Page 1403

easytube linear unit



Single tube linear unit easytube:
SET
▶ Page 1408



easytube with double flange:
SET-F
▶ Page 1409



easytube with single flange:
SETB
▶ Page 1410



easytube with measurement scale:
SETM-SC
▶ Page 1411



easytube "light":
SETC
▶ Page 1412

Flat linear modules



Ball bearing supported lead screws based on drylin® T:
SLT-BB
▶ Page 1415

Miniature linear modules



Pre-load miniature linear module:
SLN-27
▶ Page 1419



Prism module for precise adjustment:
SLNV
▶ Page 1420

ZLW toothed belt axes



Standard toothed belt axes:
ZLW
▶ Page 1432



Modular toothed belt axes:
ZLW-AL/-ES
▶ Page 1434



Opposite drive toothed belt axes:
ZLW-OD
▶ Page 1436

New



Tandem toothed belt axis:
ZLWT
▶ Page 1438



Linear axes with motor from stock:
DLE-SA
▶ Page 1439



Cost-effective econ toothed belt axis:
ZLN econ
▶ Page 1440

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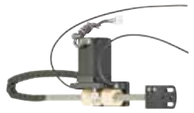
drylin® drive technology | Product overview

drylin® electric drive technology – cantilever axes



Dynamic z-axis for linear robot structures:
drylin® GRW
▶ Page 1442



Extremely light axis for pick & place:
drylin® GRQ
▶ Page 1443



Lightweight z-axis with direct rack drive:
drylin® GRR
▶ Page 1444



Cantilever axis:
drylin® ZAW
▶ Page 1445

Lead screw motors



Lead screw motors:
drylin® lead screw motors
▶ Page 1449



Lead screw with precision machined ends
▶ Page 1450

econ entry-level series



The SLW entry-level model:
SLWP-E
▶ Page 1454



The SLT entry-level model:
SLTP-E
▶ Page 1455

econ entry-level series



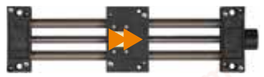
The SHT miniature version:
SHTP-AWM
▶ Page 1456



The lightweight entry-level model:
SHTP
▶ Page 1457



The cost-effective SHT version:
SHTP-AWM
▶ Page 1458



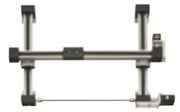
With quick-release mechanism:
SHTP-AWM-FF
▶ Page 1459



Miniature linear modules:
SLN basic
▶ Page 1460



Cost-effective toothed belt axis:
ZLW-E
▶ Page 1461

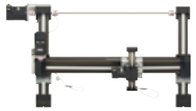


Flat linear robot:
DLE-FG
▶ Page 1462

drylin® automation



Automation with drylin®
▶ Page 1463



drylin® Low Cost Automation
▶ Page 1467

New



robolink® robot arms
▶ Page 1479



robolink® rotary axes
▶ Page 1484

New



robolink® Apiro®
▶ Page 1493

drylin® accessories – control elements



Accessories for manual positioning and format adjustment
▶ Page 1503

drylin® accessories – electrical



Motor control systems etc.
▶ Page 1515

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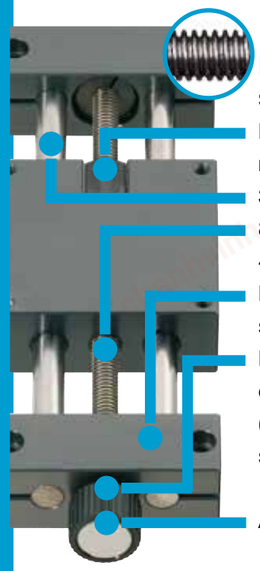
drylin® drive technology | Linear modules

The drylin® product portfolio provides lubrication-free linear modules 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 of stainless steel, aluminium, zinc or plastic
Lead screw machined to drawing or plain drive shaft (lead screws made of steel, stainless steel or aluminium)

Accessories available

Standard **Min. 0°C** **Max. +60°C**

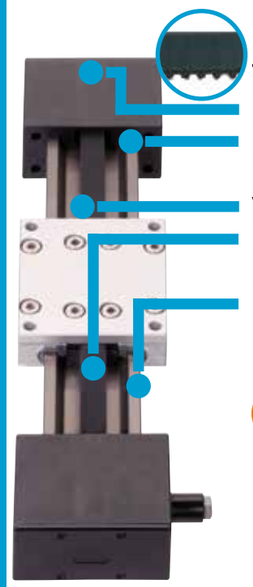
Stainless steel version with iglidur® X **Min. 0°C** **Max. +180°C**

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
- When a quiet operation is required

When not to use it?

- When high loads need to travel at highly dynamic forces
- When positioning accuracy <0.1mm is required
- When high running performance is required in continuous operation



Toothed belt axes

End supports with ball bearing
Lubrication-free linear guide with polymer plain bearings
Various carriage lengths
Polyurethane or neoprene toothed belts
Hard-anodised aluminium profile

Standard[91)] **Min. 0°C** **Max. +60°C**

LT version **Min. –30°C** **Max. +60°C**

[91)] Does not apply to accessories

When to use it?

- Fast positioning of small loads
- Quiet operation
- Slim design
- Underwater use with UW belt
- Cost-effective solution as basic version
- Continuous operation

When not to use it?

- When high loads need to travel at highly dynamic forces
- When positioning accuracy <0.1mm is required

drylin® drive technology | Product overview



SHT linear modules

- Drive: Trapezoidal or high-helix lead screw
- Ball-bearing mounted lead screw drives for higher dynamic forces
- Carriage in either quad block or compact design

▶ **Page 1369**



SLW linear modules

- Based on drylin® W
- Drive: Trapezoidal or high-helix lead screw
- Torsion-resistant double shaft systems

▶ **Page 1383**



SAW linear modules

- Drive: Ball bearing supported lead screw
- Rail profile in high design
- Extremely torsion-resistant

▶ **Page 1397**



SET easytube linear modules

- Corrosion-resistant
- Lightweight due to aluminium and plastic
- Simple, smooth design, protected lead screw

▶ **Page 1405**



SLT linear modules

- Variable pitch
- Adjustable drylin® T miniature carriage
- Lead screw arrangement can be selected either left or right

▶ **Page 1413**



SLN miniature linear modules

- Based on drylin® N, low installation height
- Basic, adjustable and pre-load versions

▶ **Page 1417**



ZLW toothed belt axes

- Versions basic, standard and econ
- For fast positioning
- End supports with ball bearing

▶ **Page 1421**



econ entry-level series

- Lightweight
- Cost-effective
- Corrosion-resistant

▶ **Page 1451**



drylin® – automation

- Lubrication-free linear modules with motor
- Ready to install with motor, cable and initiator
- Drive: Lead screw, toothed belt or rack

▶ **Page 1463**



Cantilever axis GRW

- Dynamic force transmission through rack
- Assembly option for limit and reference switch

▶ **Page 1442**



Accessories for linear modules

- Position indicator, hand wheels, lead screw clamps, angular drives and more

▶ **Page 1503**

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Linear module						
Linear module	Shaft Ø [mm]	Thread	Pitch	Lead screw Self-locking	Carriage length [mm]	Motor connection possible
SHT(C)-08	8	TR	6x2	+	35 / 65	+
		DS	6.35x2.54	+	35 / 65	+
		DS	6.35x5.08	–	35 / 65	+
		DS	6.35x12.7	–	35 / 65	+
		DS	6.35x25.4	–	35 / 65	+
SHT(C)-12	10	TR	10x2	+	30 / 85	+
		TR	10x3	+	30 / 85	+
		DS	10x12	–	30 / 85	+
		DS	10x25	–	30 / 85	+
		DS	10x50	–	30 / 85	+
SHT(C)-20	20	TR	18x4	+	36 / 130	+
		TR	18x8	+	36 / 130	+
		DS	18x24	–	36 / 130	+
		DS	18x40	–	36 / 130	+
		DS	18x80	–	36 / 130	+
		DS	18x100	–	36 / 130	+
SHT(C)-30	30	TR	25x4	+	50 / 180	+
SHTC-40	40	TR	26x5	+	70	–
SHTC-50	50	TR	30x6	+	80	–
SLW-0630 SLW-0660	5	TR	8x1.5	+	60 / 100	+ (121)
		DS	8x10	–	60 / 100	+ (121)
		DS	8x15	–	60 / 100	+ (121)
SLW-1040 SLW-1080 SLW-10120	10	TR	10x2	+	69 / 100 / 150	+ (121)
		TR	10x3	+	69 / 100 / 150	+ (121)
		DS	10x12	–	69 / 100 / 150	+ (121)
		DS	10x25	–	69 / 100 / 150	+ (121)
		DS	10x50	–	69 / 100 / 150	+ (121)
SLW-1660	16	TR	14x4	+	100 / 150 / 200	+
		DS	14x25	–	100 / 150 / 200	+
		DS	14x30	–	100 / 150 / 200	+
		DS	14x40.6	–	100 / 150 / 200	+
SLW-2080	20	TR	18x4	+	150 / 200 / 250	+
		TR	18x8	+	150 / 200 / 250	+
		DS	18x24	–	150 / 200 / 250	+
		DS	18x40	–	150 / 200 / 250	+
		DS	18x80	–	150 / 200 / 250	+
		DS	18x100	–	150 / 200 / 250	+
SLW-25120	25	TR	25x4	+	150 / 200 / 250	+

[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.

drylin® drive technology | Technical data

Lead screw with plain bearing support[121]					Ball bearing supported lead screws				
Max. stroke length[120] [mm]	Max. static, axial load capacity [N]	Max. static, radial load capacity [N]	Max. speed [rpm]	Max. feed rate [m/min]	Max. stroke length[120] [mm]	Max. static, axial load capacity [N]	Max. static, radial load capacity [N]	Max. speed [rpm]	Max. feed rate [m/min]
300	100	400	100	0.2	300	100	400	1,000	2.0
300	100	400	100	0.254	300	100	400	1,000	2.54
300	70	280	100	0.508	300	70	280	750	3.81
300	35	140	100	1.27	300	35	140	600	7.62
300	18	72	100	2.54	300	18	72	500	12.7
750	700	2,800	100	0.2	500	500	2,000	1,500	3.0
750	500	2,000	100	0.3	500	500	2,000	1,000	3.0
750	400	1,600	100	1.2	500	300	1,200	400	4.8
750	250	1,000	100	2.5	500	250	1,000	300	7.5
750	100	400	100	5.0	500	100	400	200	10.0
1,000	1,600	6,400	100	0.4	900	1,250	5,000	1,500	6.0
1,000	1,200	4,800	100	0.8	900	1,200	4,800	1,000	8.0
1,000	800	3,200	100	2.4	900	800	3,200	1,000	24.0
1,000	500	2,000	100	4.0	900	500	2,000	500	20.0
1,000	250	1,000	100	8.0	900	250	1,000	300	24.0
1,000	200	800	100	10.0	900	200	800	300	30.0
1,250	2,500	10,000	100	0.5	1,000	1,500	6,000	1,200	6.0
1,500	4,000	16,000	100	0.5	–	–	–	–	–
1,500	6,250	25,000	100	0.6	–	–	–	–	–
300	100	400	100	0.15	300	100	400	1,000	1.5
300	100	400	100	1.0	300	100	400	600	6.0
300	100	400	100	1.5	300	100	400	600	9.0
750	700	2,800	100	0.2	500	500	2,000	1,500	3.0
750	500	2,000	100	0.3	500	500	2,000	1,000	3.0
750	400	1,600	100	1.2	500	300	1,200	400	4.8
750	250	1,000	100	2.5	500	250	1,000	300	7.5
750	100	400	100	5.0	500	100	400	200	10.0
750	1,200	4,800	100	0.4	750	700	2800	1,500	6.0
750	1,200	4,800	100	2.5	750	350	1,400	500	12.5
750	400	1,600	100	3.0	750	350	1,400	500	15.0
750	250	1,000	100	4.06	750	250	1,000	500	20.3
1,000	1,600	6,400	100	0.4	900	1,250	5,000	1,500	6.0
1,000	1,200	4,800	100	0.8	900	1,200	4,800	1,000	8.0
1,000	800	3,200	100	2.4	900	800	3,200	1,000	24.0
1,000	500	2,000	100	4.0	900	500	2,000	500	20.0
1,000	250	1,000	100	8.0	900	250	1,000	300	24.0
1,000	200	800	100	10.0	900	200	800	300	30.0
1,250	2,500	10,000	100	0.5	1,000	1,500	6,000	1,200	6.0

[121] Linear modules on plain 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-asean.com/linearmodule-finder.

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Linear module						
Linear module	Shaft Ø [mm]	Thread	Pitch	Lead screw Self-locking	Carriage length [mm]	Motor connection possible
SAW-0630	8	TR	8x1.5	+	60 / 100	+
		DS	8x10	–	60 / 100	+
		DS	8x15	–	60 / 100	+
SAW-0660	6	TR	10x2	+	100	+
		DS	10x12	–	100	+
		DS	10x25	–	100	+
		DS	10x50	–	100	+
SAW-1040	10	TR	10x2	+	69 / 100 / 150	+
		DS	10x12	–	69 / 100 / 150	+
		DS	10x25	–	69 / 100 / 150	+
		DS	10x50	–	69 / 100 / 150	+
SAW-1080	10	TR	12x3	+	100 / 150	+
		TR	12x6P3	+	100 / 150	+
		DS	12x5	+	100 / 150	+
		DS	12x25	–	100 / 150	+
SAW-1660	16	TR	14x4	+	100 / 150 / 200	+
		DS	14x25	–	100 / 150 / 200	+
		DS	14x30	–	100 / 150 / 200	+
		DS	14x40.6	–	100 / 150 / 200	+
SLT-0412	5	TR	8x1.5	+	38	+
		DS	8x10	–	38	+
		DS	8x15	–	38	+
SLT-0415	10	TR	12x3	+	45	+
		TR	12x6P3	+	45	+
		DS	12x5	+	45	+
		DS	12x25	–	45	+
SLN(V)-27	27	M	M5x0.8	+	35	–
		DS	6.35x2.54	+	35	+
		DS	6.35x5.08	–	35	+
		DS	6.35x12.7	–	35	+
		DS	6.35x25.4	–	35	+
SHTP-01-06	6	M	M8x1.25	+	45	–
SHTP-01-10	10	TR	6x2	+	36	–
SHTP-01-12	12	TR	10x2	+	55	–
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.

drylin® drive technology | Technical data

Lead screw with plain bearing support[121]					Ball bearing supported lead screws				
Max. stroke length[120] [mm]	Max. static, axial load capacity [N]	Max. static, radial load capacity [N]	Max. speed [rpm]	Max. feed rate [m/min]	Max. stroke length[120] [mm]	Max. static, axial load capacity [N]	Max. static, radial load capacity [N]	Max. speed [rpm]	Max. feed rate [m/min]
–	–	–	–	–	300	100	400	1,000	1.5
–	–	–	–	–	300	100	400	600	6.0
–	–	–	–	–	300	100	400	600	9.0
–	–	–	–	–	500	100	400	1,000	0.7
–	–	–	–	–	500	100	400	400	4.8
–	–	–	–	–	500	100	400	300	7.5
–	–	–	–	–	500	100	400	200	10.0
–	–	–	–	–	500	500	2,000	1,500	3.0
–	–	–	–	–	500	300	1,200	400	4.8
–	–	–	–	–	500	250	1,000	300	7.5
–	–	–	–	–	500	100	400	200	10.0
–	–	–	–	–	750	750	3,000	1,500	4.5
–	–	–	–	–	750	400	1,600	1,000	6.0
–	–	–	–	–	750	200	800	300	1.5
–	–	–	–	–	750	200	800	300	7.5
–	–	–	–	–	750	700	2,800	1,500	6.0
–	–	–	–	–	750	350	1,400	500	12.5
–	–	–	–	–	750	350	1,400	500	15.0
–	–	–	–	–	750	250	1,000	500	20.3
–	–	–	–	–	300	100	400	1,000	1.5
–	–	–	–	–	300	25	100	600	6.0
–	–	–	–	–	300	25	100	600	9.0
–	–	–	–	–	600	200	800	1,500	4.5
–	–	–	–	–	600	100	400	750	4.5
–	–	–	–	–	600	100	400	750	3.75
–	–	–	–	–	600	100	400	750	18.75
250	10	40	100	0.08	250	10	40	250	0.2
250	10	40	100	0.254	250	10	40	500	1.27
250	10	40	100	0.508	250	10	40	500	2.54
250	10	40	100	1.27	250	10	40	500	6.35
250	10	40	100	2.54	250	10	40	500	12.7
300	50	200	100	0.1	–	–	–	–	–
350	100	400	100	0.2	–	–	–	–	–
500	200	800	100	0.2	–	–	–	–	–
500	200	800	100	0.2	–	–	–	–	–
200	10	40	100	0.1	–	–	–	–	–
750	150	600	100	0.2	–	–	–	–	–
850	200	800	100	0.3	–	–	–	–	–

[121] Linear modules on plain 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-asean.com/linearmodule-finder.

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drylin® drive technology | Technical options

In addition to the standard configurations, drylin® drives offer numerous solutions for the many requirements of different applications.

The following options can be configured online with the SHT configurator: www.igus-asean.com/sht-configurator

Pre-load (PL)

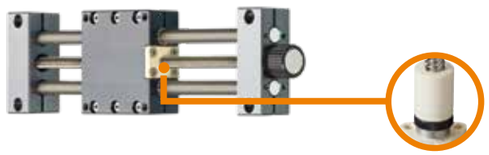
The axial pre-load reduces the backlash of the system. Positioning and repeatability can be optimised. The required drive torque increases only slightly.



For SHT, SLW and SAW linear modules

Zero-backlash (ZB)

Self-adjusting zero-backlash lead screw nuts are available for SHT modules in sizes 08 and 12. For movements that require repeatability and which are implemented through high helix thread, the ZB function provides a minimal lifelong backlash.



Linear modules with ball-bearing mounted lead screw

The SHT and SLW linear modules with ball bearing supported lead screws give reduced vibration, and increased dynamic capability. These are also suitable for applications with motor drives.



Shaft materials

When using linear modules 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 coefficient 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 stainless steel high helix lead screws. This allows for much higher pitches and drive speeds, but without the self-locking feature.



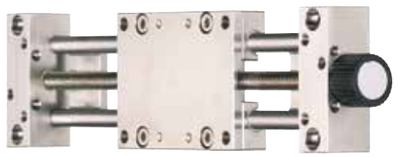
Bearing materials

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 +180°C (iglidur® X, SHT-ES series), and also for FDA-compliant environments (iglidur® A180).



Complete solutions made of stainless steel

The use of AISI 316Ti and AISI 304 makes of the guides resistant to seawater and chemical contact corrosion. The guide shafts are also made from AISI 316Ti.



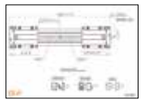
drylin® drive technology | Technical options

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 nut.



Online customer drawing
▶ www.igus-asean.com/customerdrawing

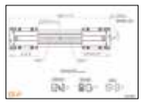


Right/left opposite drive

In addition to the standard right-handed lead screws, left-hand lead screws and opposite drive 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 opposite drive.



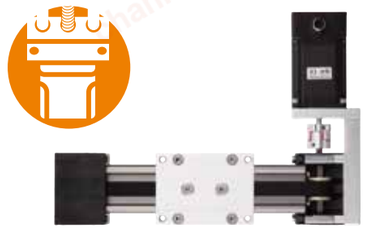
Online customer drawing
▶ www.igus-asean.com/customerdrawing



Linear axes with motor: www.igus-asean.com/drylinE-finder

Linear modules with motor

Several drylin® drive units are compatible with the drylin® modular kit. As linear axes, they can be easily and quickly configured directly to the matching igus® stepper motors, power cables and proximity switches – assembled and tested from one source.



More options:

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 series 10-20).



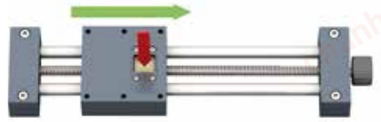
For SLW and SAW linear modules



For SHT linear modules

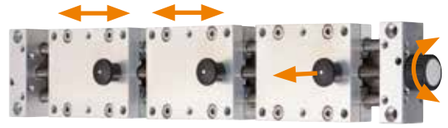
Fast Forward (FF)

SHT linear modules and SHTP plastic linear modules with quick-release mechanism offer a combination of accurate positioning and fast manual adjustment.



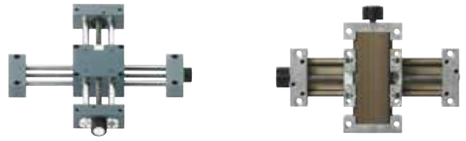
drylin® SLW "Stop and Go"

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 tables

The SHT and SLW linear modules can also be configured as XY tables. XY adjustments can therefore be given with a single unit.



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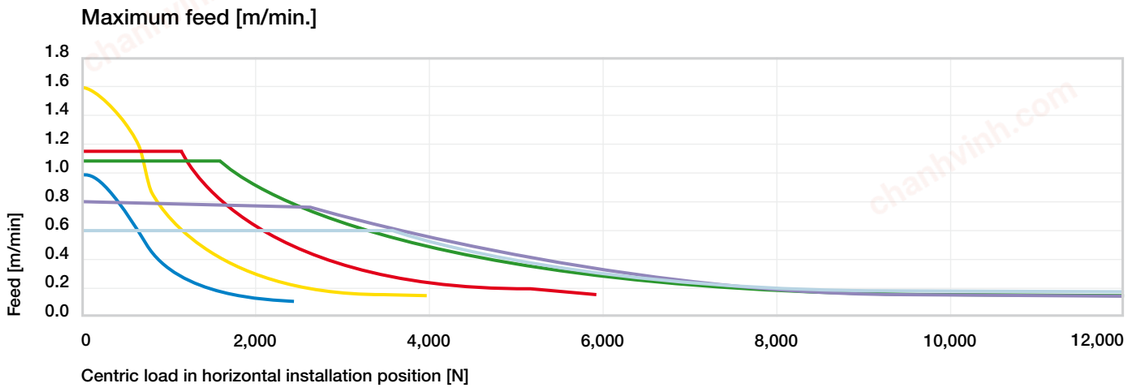
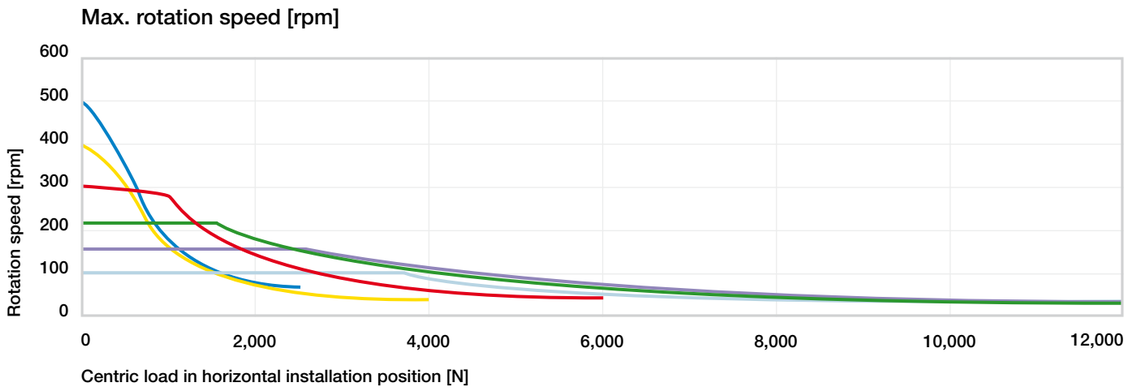
drylin® linear modules have been developed for position settings of all types. The linear setting is achieved by means of trapezoidal lead screws that can be operated manually or by motor. The maximum linear continuous speed is 1.6m/min depending on thread pitch and load. The suitability of the lead screw linear units for an application can be checked using the graphs below.

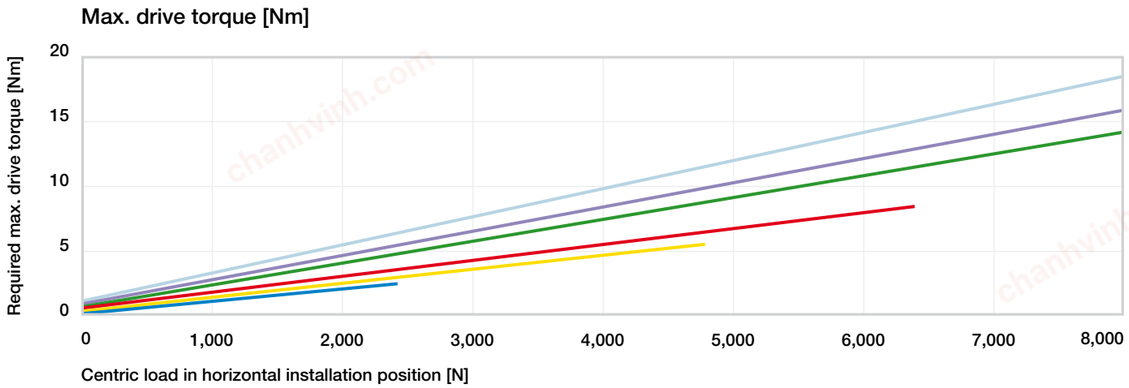
HORIZONTAL



HORIZONTAL







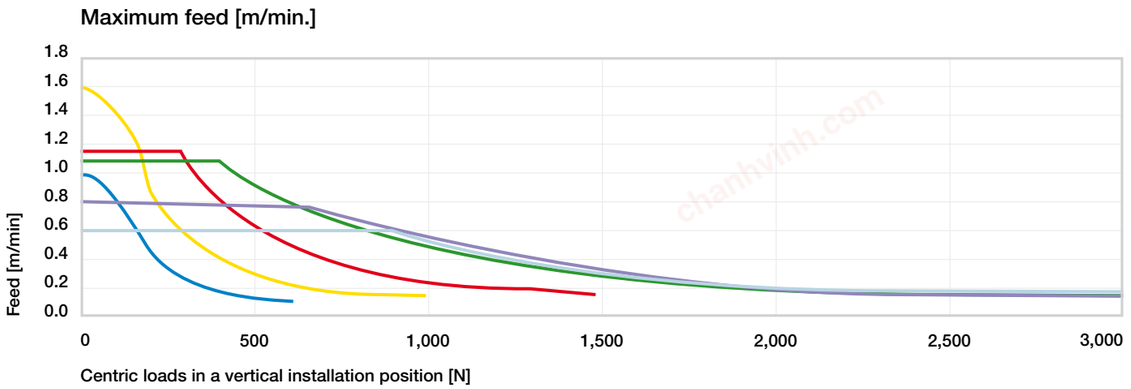
drylin® drive technology | Design and calculation

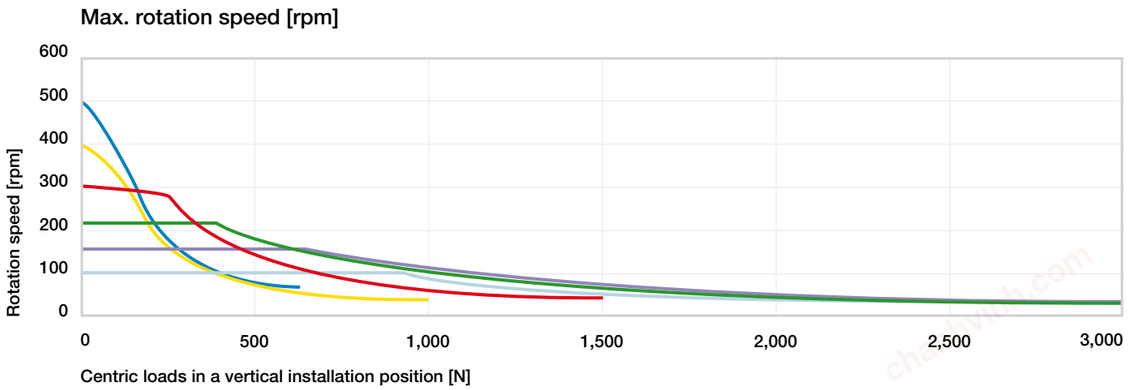
The following trapezoidal lead screw drive sizes are used in SHT, SLW and SET linear modules:

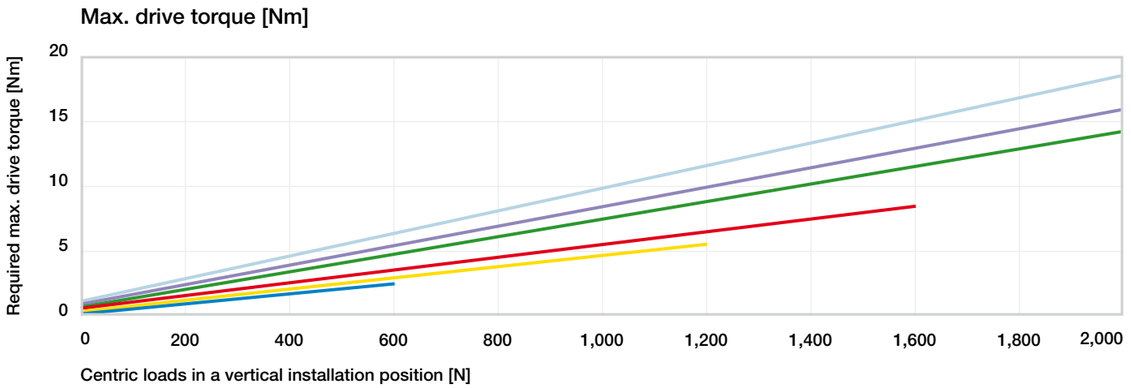
- **Tr10x2:** SHT-12, SHTC-12, SHTP-12, SLW-1040, SLW-1080, SLW-1040-ES, SET-25
- **Tr14x4:** SLW-1660
- **Tr18x4:** SHT-20, SHTC-20, SLW-2080
- **Tr24x5:** SHT-30, SHTC-30, SLW-25120
- **Tr26x5:** SHTC-40
- **Tr30x6:** SHTC-50



VERTICAL







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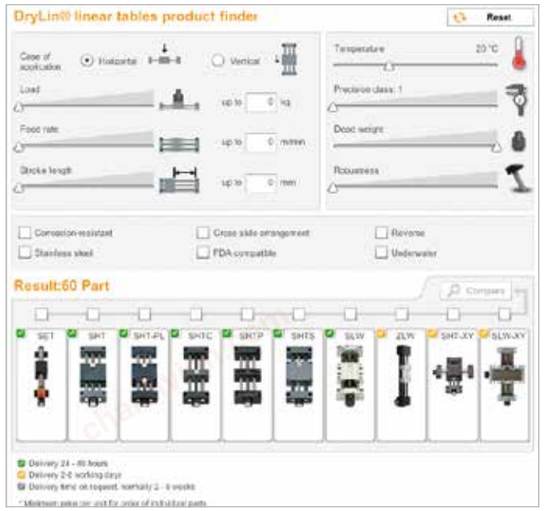
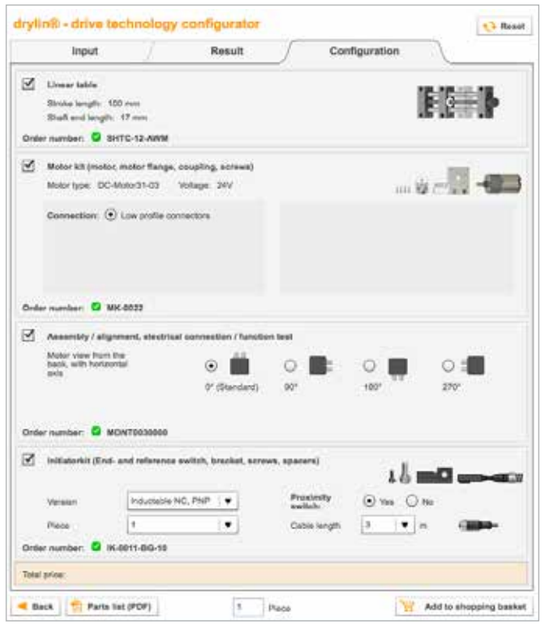
drylin® drive technology | Online product finder

Online configuration of linear units



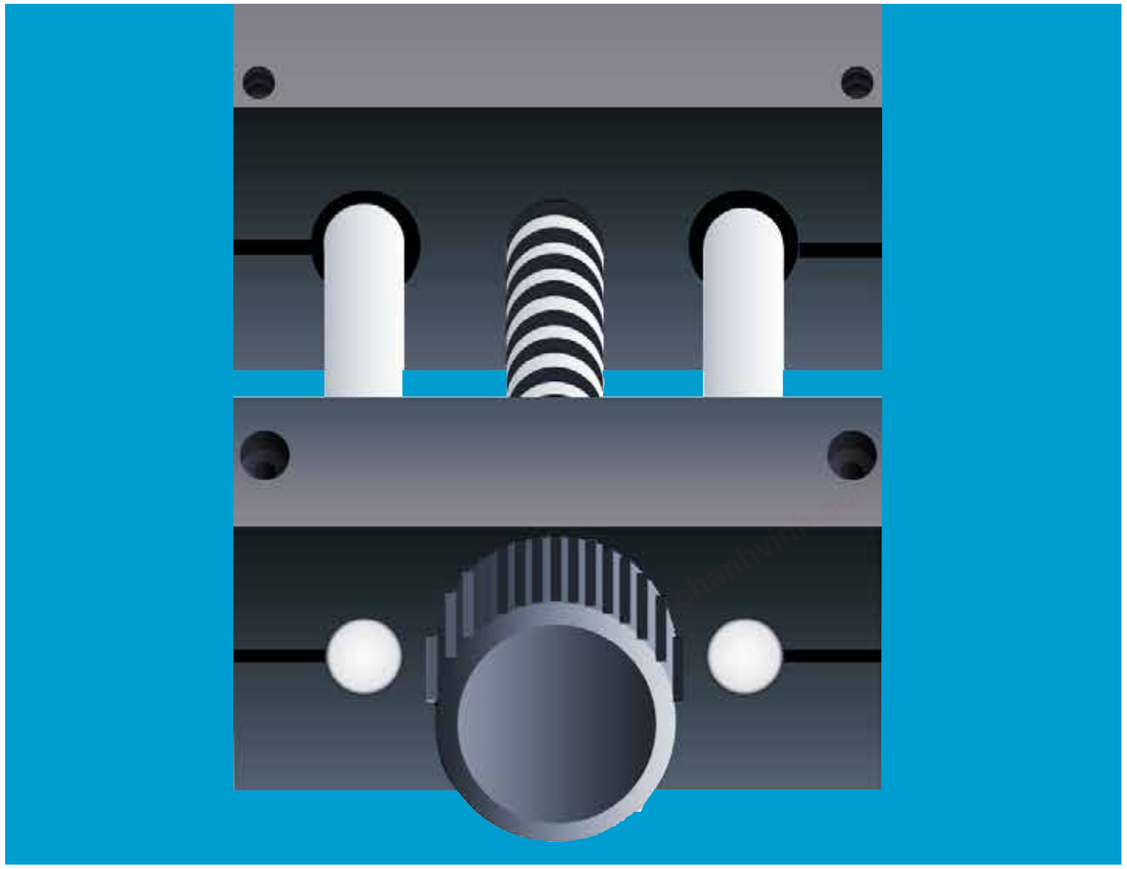




Complete drive technology configurable with or without motor

After you have selected your application parameters, the product finder shows an overview of the linear systems and the motors that are suitable. The product finder calculates the individual price of the linear axis as well as the utilisation rate of the motors and the service life in strokes. With just a few clicks, you can put together a complete linear axis incl. motor, connection cables and built-on parts.

▶ **www.igus-asean.com/linearmodule-configurator**



drylin® linear drive technology – SHT linear modules

- Drive: Trapezoidal or high-helix lead screw
- Ball-bearing mounted lead screw drives for higher dynamic forces
- Lead screws made from steel, stainless steel or aluminium
- Carriage in either quad block or compact design
- Configure online



chanhvinh.com

Robust and precise



Basic parts (shaft end supports/carriages) are made from machined aluminium with anodised surfaces or from stainless steel

Drive: Self-locking trapezoidal thread or fast adjust high helix thread

Bearing elements/ lead screw nut made from lubrication-free iglidur® polymers

Carriages in long or short "compact" design

Shaft material: Aluminium, steel or stainless steel

Lead screw material: steel or stainless steel, plain or ball bearings

For manual adjustments, large range of accessories available ▶ **Page 1503**

Configurable with motor as a ready-to-install linear drive

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® motors.

- All bearing positions 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 opposite drive

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.

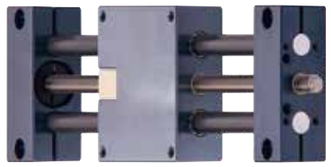
Price breaks online
No minimum order value. No minimum order quantity.

Carriage lengths: 30–180mm
Pitch: 2–100mm/rotation
Stroke lengths: up to 1,500mm

Product finder
▶ www.igus-asean.com/sht-productfinder

Configure SHT modules quickly and easily online
▶ www.igus-asean.com/drylin-sht-configurator

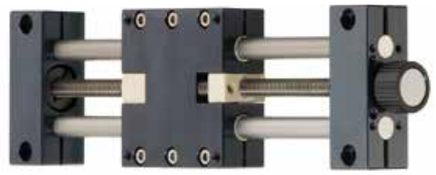
100% lubrication and maintenance-free



SHT linear module – standard

- Solid design
- Three different sizes
- Various materials for shaft and lead screw
- Maintenance-free and optionally corrosion-resistant

▶ **Page 1372**



SHT-PL linear module, pre-load

- Pre-loaded trapezoidal lead screw nuts, pre-load force: 50N
- Manually and continuously adjustable radial clearance
- Lightweight due to aluminium and plastic

▶ **Page 1373**



SHTC linear module – variable

- Design flexibility due to short carriages
- Ideal for 2 carriages
- 5 sizes from Ø 12 up to 50mm

▶ **Page 1374**



SHTS linear module – the fast one

- With high helix lead screw
- High-speed solution for fast positioning
- Up to 100mm travel/rotation

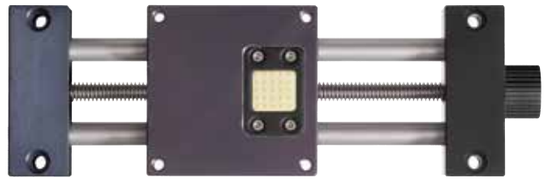
▶ **Page 1375**



SHT-BB linear module – ball-bearing supported

- Higher rotation speed and higher precision
- Belt drive permits radial loads
- Constant drive torque
- Less axial clearance

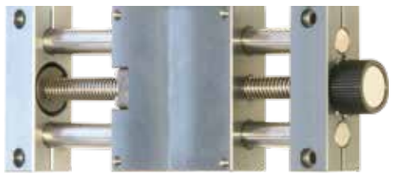
▶ **Page 1376**



SHT-FF linear module – "Fast-Forward"

- With quick-release mechanism
- Precise and fast positioning
- Including self-locking brake
- Only recommended for horizontal applications

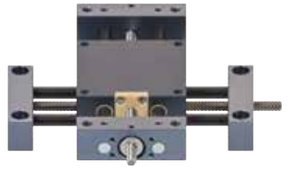
▶ **Page 1380**



SHT linear module made from stainless steel

- All components (shaft end supports, carriages, shafts, lead screws) made of corrosion-resistant stainless steel
- Select bearings from three different iglidur® materials

▶ **Page 1378**



XY tables

- XY tables standard and pre-load

▶ **Page 1382**

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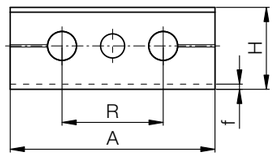
drylin® SHT | Linear modules | Product range

Self-locking



- Solid design
- Various materials for shaft and lead screw
- Maintenance-free and optionally corrosion-resistant
- Tr6x2, Tr10x2, Tr18x4, Tr24x5
- Temperature-resistant up to +60°C
- Available accessories ▶ **Page 1503**
- Lead screw nuts are available separately ▶ **Page 1330**
- **Available with motor**

reddot design award winner 2006



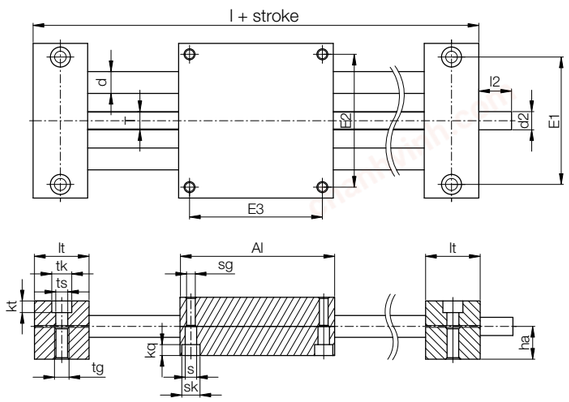
Configure online
▶ **www.igus-asean.com/drylin-sht-configurator**

Order key

Order example

SHT-12-AWM

Standard	Installation size	Shaft material



Technical data

Part No.	Max. stroke length	Aluminium shaft		Steel shaft		Max. static load capacity	
		Weight	Additional (per 100mm)	Weight	Additional (per 100mm)	axial	radial
	[mm]	[kg]	[kg]	[kg]	[kg]	[N]	[N]
SHT-08-AWM	300	0.24	0.05	0.27	0.1	100	360
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-08-AWM	65	65	23	52	55	55	96	32	1.5	15.5	10	5.5
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-08-AWM	M6	7	4.2	8	M5	4.6	8	Tr6x2	17	Tr6x2	13
SHT-12-AWM	M8	6.4	5.3	10	M6	6.0	12	Tr10x2[157)]	17	Tr10x2[92) 157)]	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; [157)] Also available with with Tr10x3

drylin® SHT | Linear modules | Product range

Axial pre-load, radial adjustment





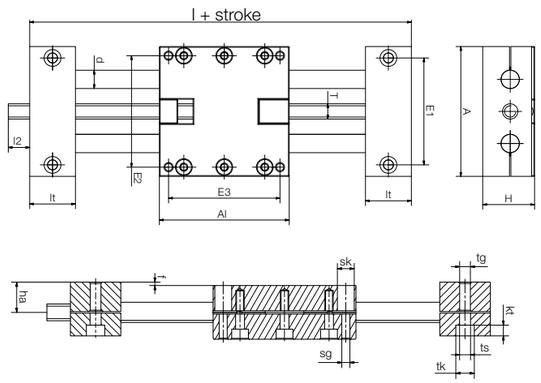
Pre-loaded trapezoidal lead screw nut

Order key

Order example

SHT-12-AWM- PL

Standard	Installation size	Shaft material	Clearance-free, pre-loaded



- Pre-loaded trapezoidal lead screw nuts, pre-load force: 50N
- Manually and continuously adjustable radial clearance
- Lightweight due to aluminium and plastic
- Lead screw end unmachined
- Temperature-resistant up to +60°C
- Available accessories ▶ **Page 1503**
- Lead screw nuts are available separately ▶ **Page 1330**
- **Available with motor**

Configure online
▶ **www.igus-asean.com/drylin-sht-configurator**

Technical data

Part No.	Max. stroke length	Aluminium shaft		Steel shaft		Max. static load capacity	
		Weight	Additional (per 100mm)	Weight	Additional (per 100mm)	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[157)]	17	Tr10x2[92) 157)]	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; [157)] Also available with with Tr10x3

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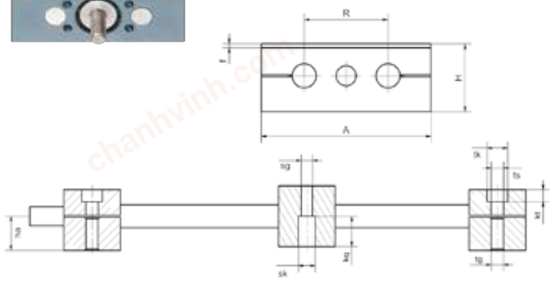
drylin® SHT | Linear modules | Product range

Compact design



- Design flexibility
- Ideal for 2 carriages
- Adjustable bearing clearance
- Available accessories
  ▶ **Page 1503**
- Lead screw nuts are available separately ▶ **Page 1330**
- **Available with motor**



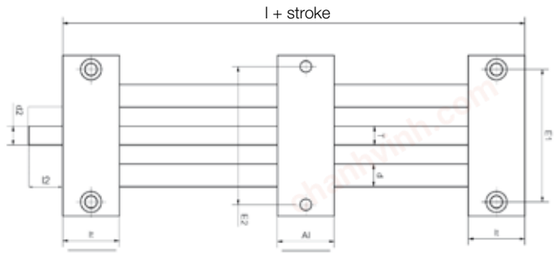
Configure online
▶ **www.igus-asean.com/drylin-sht-configurator**

Order key

Order example

SHTC-12-AWM

Variable	Installation size	Shaft material



Technical data and dimensions [mm]

Part No.	Max. stroke length	Aluminium shaft		Steel shaft		Max. static load capacity	
		Weight	Additional (per 100mm)	Weight	Additional (per 100mm)	axial	radial
	[mm]	[kg]	[kg]	[kg]	[kg]	[N]	[N]
SHTC-08-AWM	300	0.2	0.05	0.23	0.1	100	360
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

Part No.	A	Al	H	E1	E2	l	R	f	lt	tk	ts	tg
	–0.3	–0.3		±0.15	±0.15							
SHTC-08-AWM	65	38	52	55	55	69	32	1.5	15.5	10	5.5	M6
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-08-AWM	7	8	M5	4.6	8	Tr6x2	17	Tr6x2	13
SHTC-12-AWM	6.4	10	M6	6.0	12	Tr10x2[157)]	17	Tr10x2[92) 157)]	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; [157)] Also available with with Tr10x3

drylin® SHT | Linear modules | Product range

The fast one with dryspin® high helix thread



- Pitch Ds10x12, Ds10x50, Ds18x100
- High-speed solution
- Available accessories
  ▶ **Page 1503**
- Lead screw nuts are available separately ▶ **Page 1330**
- **Available with motor**

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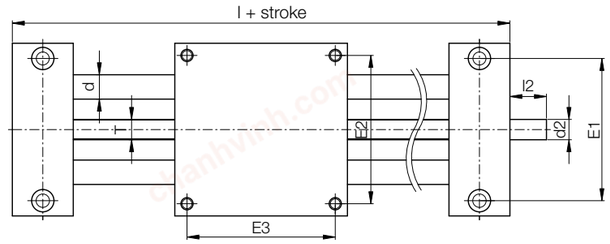
Configure online
▶ **www.igus-asean.com/drylin-sht-configurator**

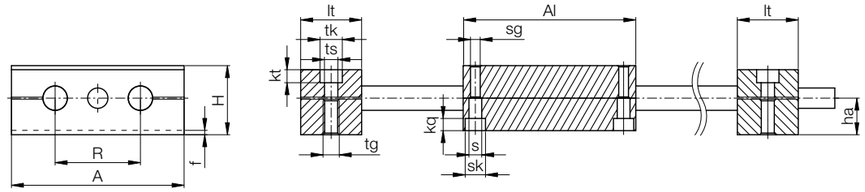
Order key

Order example

SHT S-12-AWM-10x12

Standard	High helix thread	Dimension	Shaft material	Pitch





Technical data and dimensions [mm]

Part No.	Max. stroke length	Aluminium shaft		Max. static load capacity	
		Weight	Additional (per 100mm)	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	Ds10x12[92)]	18
SHTS-12-AWM-10x50	6.4	6.3	10	M6	6.0	12	10x50	17	Ds10x50[92)]	18
SHTS-20-AWM-18x100	8.6	6.4	11	M8	7.0	20	18x100	26	12h9	23

[92)] Lead screw end unmachined

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drylin® SHT | Linear modules | Product range

With ball bearing supported lead screw



- 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 1503**
- Lead screw nuts are available separately ▶ **Page 1330**
- **Available with motor**

Configure online
▶ **www.igus-asean.com/drylin-sht-configurator**

Order key

Order example

SHT - BB - 12 - AWM

Standard	Ball bearing	Installation size	Shaft material

Order key

Order example

SHT - 08 - ZB - AWM

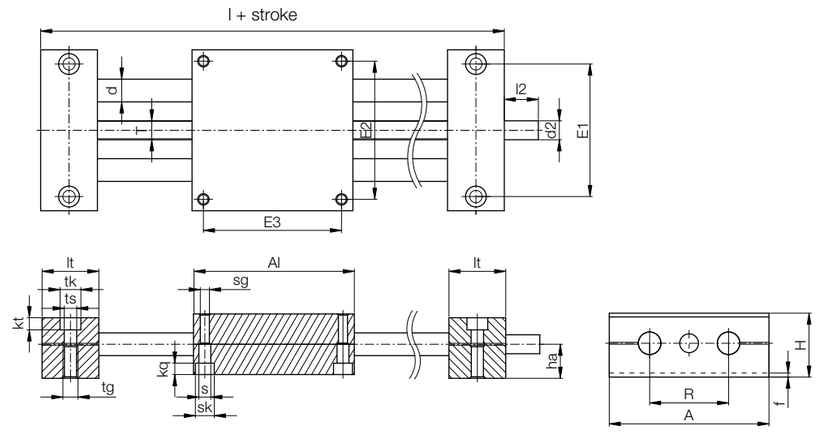
Standard	Installation size	Ball bearing, zero-backlash	Shaft material

Technical data

Part No.	Max. stroke length	Aluminium shaft		Steel shaft		Max. static load capacity	
		Weight	Additional (per 100mm)	Weight	Additional (per 100mm)	axial	radial
	[mm]	[kg]	[kg]	[kg]	[kg]	[N]	[N]
SHTC-08-ZB-AWM	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

drylin® SHT | Linear modules | Product range



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-AWM	65	38	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-AWM	M6	7	4.2	8	M5	4.6	8	6 / 6.35	15	6 / 6.35	13
SHT-08-ZB-AWM-6X2P1	M6	7	4.2	8	M5	4.6	8	Tr6x2	15	Tr6x2[92)]	13
SHT-08-ZB-AWM-6.35x12,7	M6	7	4.2	8	M5	4.6	8	6.35x12.7	15	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

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drylin® SHT | Linear modules | Product range

Made of stainless steel



- Corrosion-resistant carriages and shaft end supports made of stainless steel
- High grade stainless steel shafts (AISI 440B)
- Choice of bearing material:
  iglidur® J = Standard
  iglidur® A180 = FDA-compliant
  iglidur® X = High temperature up to +150°C[117)]
- Can be configured online as SHTC compact version

Configure online
▶ **www.igus-asean.com/drylin-sht-configurator**

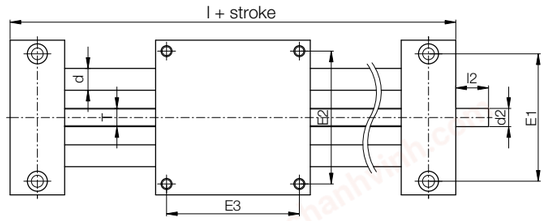
reddot design award
winner 2006

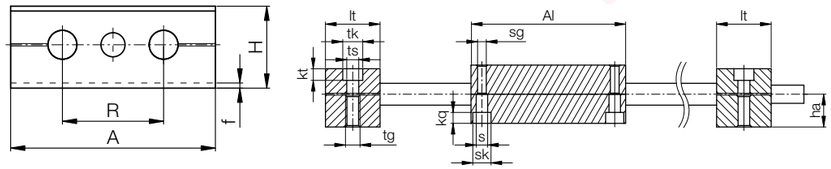
Order key

Order example

SHT-ES J-08

Standard	Stainless steel	Bearing material	Installation size





Technical data

Part No.	Max. stroke length	Steel shaft		Max. static load capacity	
		Weight	Additional (per 100mm)	axial	radial
	[mm]	[kg]	[kg]	[N]	[N]
SHT-ESJ-08	300	1.01	0.1	100	360
SHT-ESJ-12	750	2.81	0.24	700	2,800
SHT-ESJ-20	1,000	8.72	0.7	1,600	6,400
SHT-ESJ-30	1,250	24.11	1.47	2,500	10,000

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-ESJ-08	65	65	23	52	55	55	96	32	1.5	15.5	10	5.5
SHT-ESJ-12	85	85	34	70	73	73	145	42	2	30	11	6.6
SHT-ESJ-20	130	130	48	108	115	115	202	72	2	36	15	9.0
SHT-ESJ-30	180	180	68	150	158	158	280	96	4	50	20	13.5

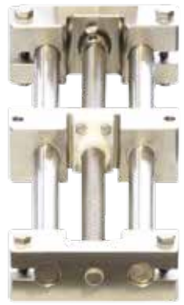
Part No.	tg	kt	s	sk	sg	kq	d	T	l2	d2	ha
		±0.1								Standard	
SHT-ESJ-08	M6	7	4.2	8	M5	4.6	8	Tr6x2	17	Tr6x2	13
SHT-ESJ-12	M8	6.4	6.3	10	M6	6.0	12	Tr10x2	17	Tr10x2[92)]	18
SHT-ESJ-20	M10	8.6	6.4	11	M8	7.0	20	Tr18x4	26	12h9	23
SHT-ESJ-30	M16	12.6	11.0	18	M12	10.6	30	Tr24x5	38	14h9	36

[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

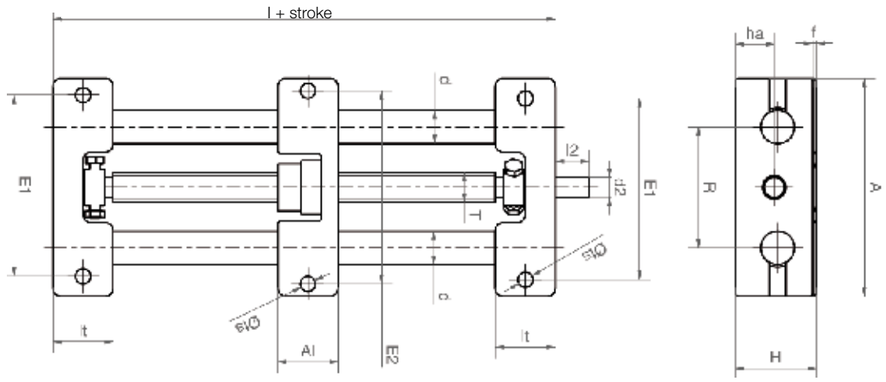
Order key

Order example

SHTC-20-EWM-HYD

Variable	Dimension	Shaft material	Hygienic design

- Lightweight
- For washdown
- Wide gaps
- Materials: plastic and stainless steel
- Lead screw nuts made of FDA-compliant iglidur® A180
- Available accessories ▶ **Page 1503**



FDA

The lead screw linear unit can be delivered complete 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

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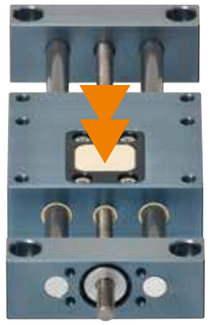
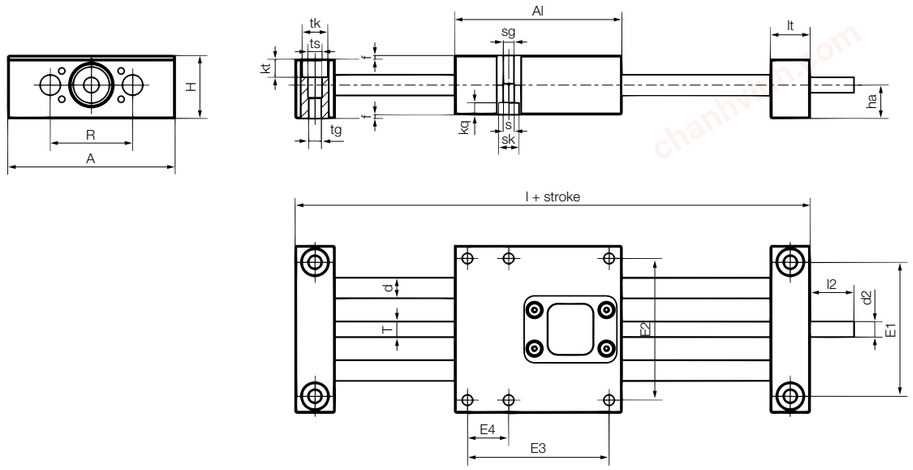
drylin® SHT | Linear modules | Product range

With "Fast-Forward" quick release mechanism



- Fast manual format adjustments
- Precise aluminium version
- Variable stroke length
- Multi-carriage solutions
- Recommended only for horizontal applications
- Available accessories ▶ **Page 1503**
- **Available with motor**



Technical data

Part No.	Max. stroke length	Aluminium shaft		Max. static load capacity
		Weight	Additional (per 100mm)	radial
	[mm]	[kg]	[kg]	[N]
SHT-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
SHT-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)]

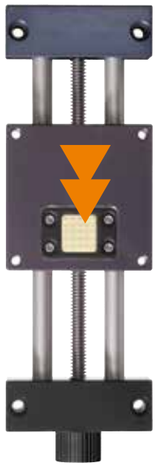
Part No.	f	tk ±0.1	ts	tg	kt	s	sk	sg	kg	d Standard	T	ha
SHT-08-AWM-FF	1.5	10	5.5	M6	7	4.2	8	M5	4.6	8	6	13
SHT-12-AWM-FF	2	11	6.6	M8	6.4	6.3	10	M6	6.0	12	Tr10x2	18

[92)] Lead screw end unmachined

drylin® SHT linear modules

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 200N (horizontal mounting position)
- Max. dynamic. axial load 50N
- Available accessories ▶ **Page 1503**
- **Available with motor**

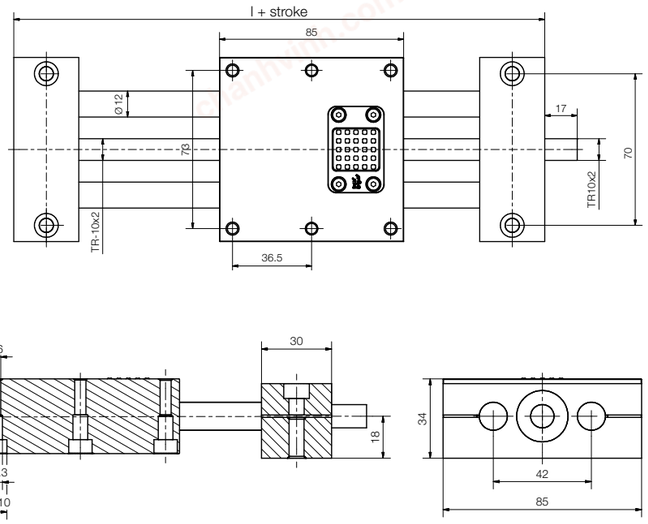
product design award 2011

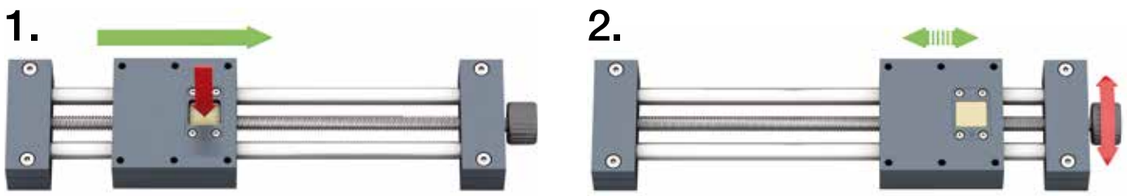
Order key

Order example

SHT-12-AWM-FF

Standard	Installation size	Shaft material	Fast Forward





press > disengage > move manually > click into place > fine-tuning

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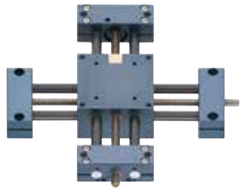
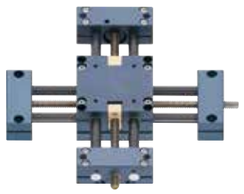
drylin® SHT | XY tables | Product range

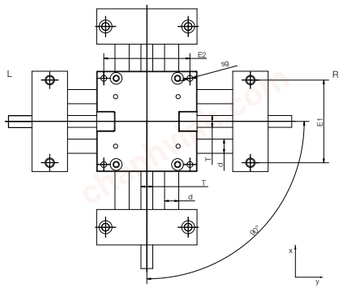
XY table standard/pre-load



drylin® SHT



drylin® SHT-PL



- Available as standard and pre-load 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 1503**

Select versions and accessories online
▶ www.igus-asean.com/drylinSHT

Order key

Order example

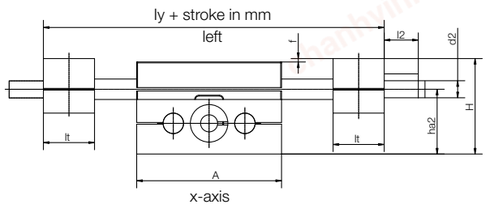
SHT-XY-12-AWM-PL-R

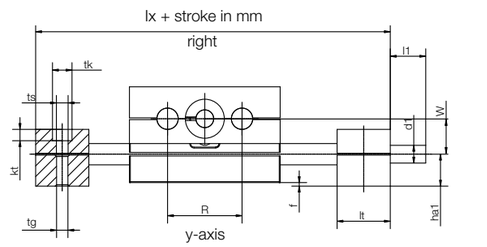
Standard	XY table	Dimension	Shaft material	Pre-load (optional)	Unit

Options: **unit**

R = y-unit right adjustment

L = y-unit left adjustment





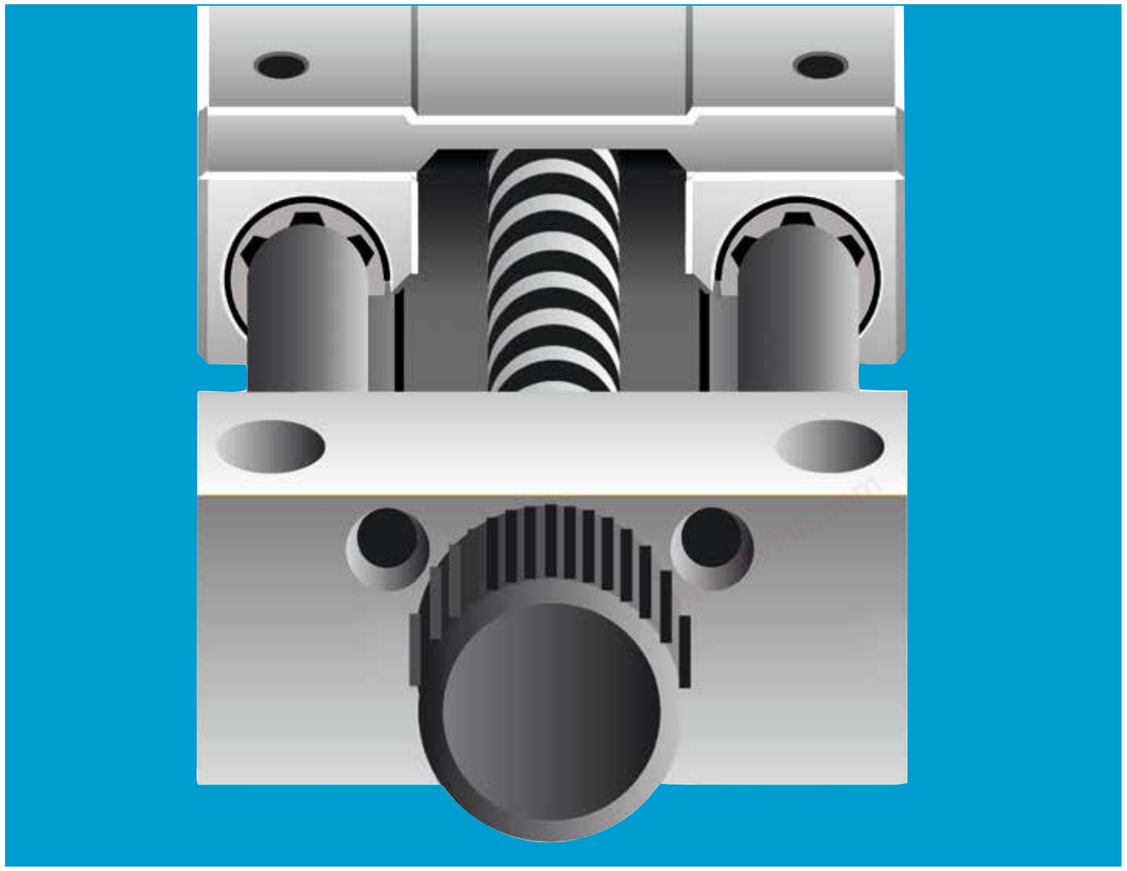
Dimensions [mm]

Part No.	Max. stroke length [mm]	A –0.3	H	E1 ±0.15	E2 ±0.15	Base length lx	Base length ly	R	f	lt	tk	ts	tg	kt
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	Tr6x2/ Tr6.35x2.54	–	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 200/300mm, two hand wheels

93) For size 20 we recommend stainless steel shafts (EWM), AWM also available



drylin® general drive technology – SLW linear modules

Lubrication-free linear modules based on drylin® W guides

Drive: Trapezoidal or high helix lead screw

Torsion-resistant double shaft systems

Many carriage and rail options

Suitable for manual and motor-operated adjustments



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Modular design



Lubrication-free linear modules – drylin® SLW

Torsion-resistant aluminium double shaft rails with many carriage versions characterise the drylin® W product range, and form a well rounded modular kit for the drylin® SLW linear modules. The modules are low profile, as well as robust. The drylin® SLW linear modules are ideal for manual adjustments, but can also 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 option made of 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.

Price breaks online
No minimum order value. No minimum order quantity.

Carriage lengths: 60 – 250mm
Carriage widths: 54 – 195mm
Stroke lengths: up to 1,250mm

Product finder
▶ www.igus-asean.com/slw-productfinder

Flat and torsion-resistant



SLW linear module – compact

- High torsional stability, fully supported
- Cost-effective
- Shaft end supports made from zinc, anodised aluminium or plastic (depending on installation size)

▶ Page 1386



SLWE-PL linear module, pre-load

- Lubrication-free and precise
- Pre-loaded trapezoidal lead screw nut (pre-load force: 50N)
- Manually adjustable radial clearance, reduction of the axial clearance

▶ Page 1387



SLWE-BB linear module, ball bearing

- Efficient and dynamic
- Quiet, reduced clearance
- Up to 1,500rpm (depending on length and load)

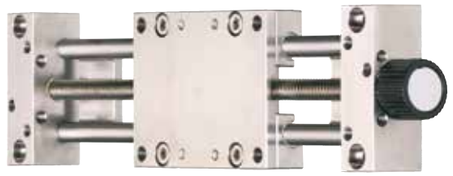
▶ Page 1388



SLWS linear module with high helix thread

- Fast positioning
- High-helix lead screw drives
- Up to 100mm stroke per rotation

▶ Page 1389



SLW-ES linear module – 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 1392



Linear module special designs

- SLW with protect mechanism for applications with high levels of dirt
- High flexibility through SLWT with double lead screw
- XY table solutions

▶ Page 1394

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drylin® SLW | Linear modules | Product range

Self-locking



- Flat and compact
- High torsional stability
- Fully supported
- drylin® W guide rails, hard-anodised aluminium
- Available accessories ▶ **Page 1503**
- Lead screw nuts are available separately ▶ **Page 1330**
- **Available with motor**

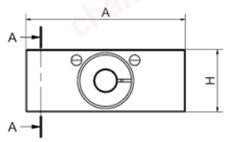
Order key

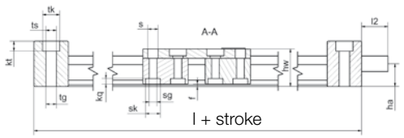
Order example

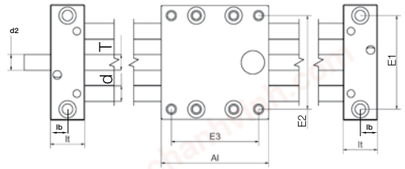
SLW-1040

Compact | Dimension

Select versions and accessories online
▶ www.igus-asean.com/drylinSLW







Technical data and dimensions [mm]

Part No.	Design	Max. stroke length [mm]	Weight [kg]	Additional (per 100mm) [kg]	Max. static load capacity axial [N]	Max. static load capacity radial [N]	Shaft end support 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 250mm lengths available upon request

drylin® SLW | Linear modules | Product range

Axial pre-load, radial adjustment



- Radial and axial pre-load
- Manual adjustable clearance
- High torsional stability
- Fully supported
- drylin® W guide rails, hard-anodised aluminium
- Available accessories ▶ **Page 1503**
- Lead screw nuts are available separately ▶ **Page 1330**
- **Available with motor**

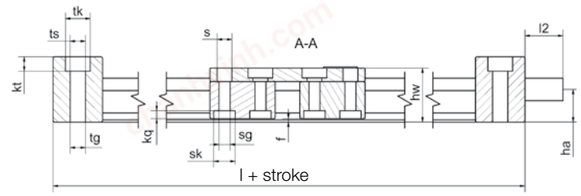
Order key

Order example

SLW E-1040-PL

Compact | Adjustable clearance | Dimension | Clearance-free, pre-loaded

Select versions and accessories online
▶ www.igus-asean.com/drylinSLW



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 250mm lengths available upon request

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drylin® SLW | Linear modules | Product range

With ball bearing supported lead screw



- Lower drive force
- Optimised clearance
- Up to 1,500rpm (depending on 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 1503**
- Lead screw nuts are available separately ▶ **Page 1330**
- **Available with motor**

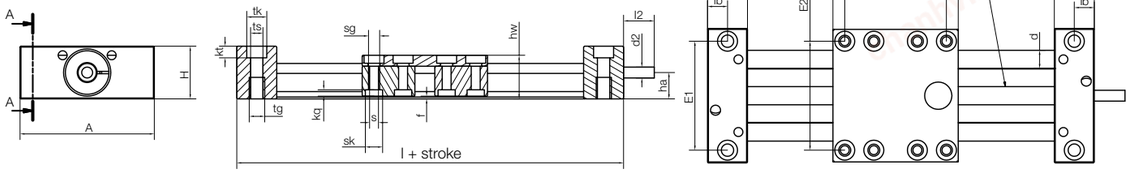
Order key

Order example

SLW E - BB - 1040

Compact	Adjustable clearance	Ball bearing	Dimension

Select versions and accessories online
▶ **www.igus-asean.com/drylinSLW**



Technical data and dimensions [mm]

Part No.	Design[96]	Max. stroke length [mm]	Weight [kg]	Additional (per 100mm) [kg]	Max. static load capacity axial [N]	Max. static load capacity radial [N]	Max. speed [1/min]	Max. feed rate [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
SLW-BB-25120	●	1,000	3.30	0.40	1,500	6,000	1,200	6.0

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	160	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
SLW-BB-25120	200	150	60	173	173	128	220	55	2.5	49	17.5	20	13.5	M16

Part No.	kt ±0.1	sk	sg	kq	s	d	T	l2	d2 Standard	d2[95]	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
SLW-BB-25120	12.6	15	M10	5.0	11.0	25	Tr24x5	38	14 h9	–	30.0

[95] Optional machined lead screw end [96] Double rails, square ▶ Page 986, round ▶ Page 992

drylin® SLW | Linear modules | Product range

Compact with dryspin® high helix thread



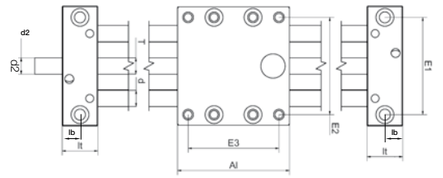
- Pitch 08x15, 10x12, 10x50, 18x100
- High torsional stability
- drylin® W guide rails, hard-anodised aluminium
- BB-version with ball bearing supported lead screw available
- Available accessories ▶ **Page 1503**
- Lead screw nuts are available separately ▶ **Page 1330**

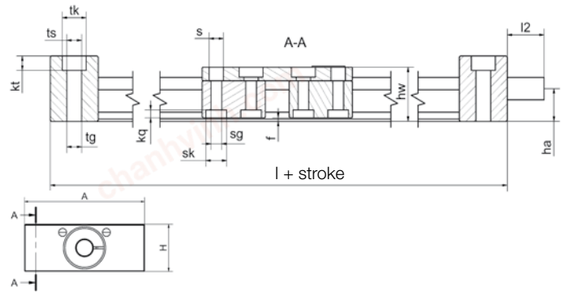
Order key

Order example

SLW S - 0630 - 08x15

Compact	High helix thread	Dimension	Pitch





Select versions and accessories online
▶ **www.igus-asean.com/drylinSLW**

Technical data and dimensions [mm]

Part No.	Design[96]	Max. stroke length [mm]	Weight [kg]	Additional (per 100mm) [kg]	Max. static load capacity axial [N]	Max. static load capacity radial [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	Ds08x15	15	Ds8x15[92]	9.5
SLWS-1040-10x12	6.4	6.6	9.5	M6	4.4	10	Ds10x12	17	Ds10x12[92]	14.5
SLWS-1040-10x50	6.4	6.6	9.5	M6	4.4	10	Ds10x50	17	Ds10x50[92]	14.5
SLWS-1080-10x12	6.4	6.6	9.5	M6	4.4	10	Ds10x12	17	Ds10x12[92]	14.5
SLWS-1080-10x50	6.4	6.6	9.5	M6	4.4	10	Ds10x50	17	Ds10x50[92]	14.5
SLWS-2080-18x100	12.6	11.0	15	M8	5.0	25	Ds18x100	38	14h9	30.0

[92] Lead screw end unmachined [96] Double rails, square ▶ Page 986, round ▶ Page 992

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drylin® SLW | Linear modules | Product range

With protected lead screw



- drylin® W profile rail as a protective mechanism
- Available with pitches 10x2, 10x12, 10x25, 10x50
- Low profile design
- **Available with motor**

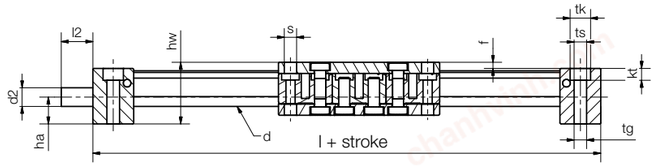
Order key

Order example

SLW-BB-PT-1040

Compact	Ball bearing	Protect	Dimension

Select versions and accessories online
▶ **www.igus-asean.com/drylinSLW**



Technical data

Part No.	Max. stroke length [mm]	Weight [kg]	Additional (per 100mm) [kg]	Max. static load capacity axial [N]	Max. static load capacity radial[97] [N]	Shaft end support material
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

Dual action linear system



- Carriages can be controlled separately
- Different lead screw pitches can be applied
- Separate manual adjustment of carriages
- Design flexibility
- Clearance adjustment (optional)

Order key

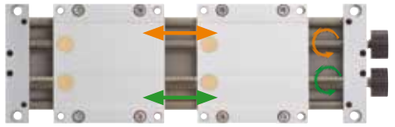
Order example

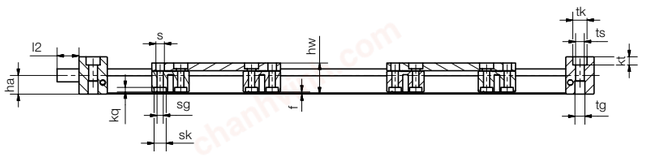
SLW T -1080

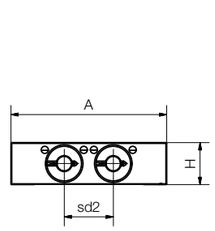
Compact	Double linear unit	Dimension

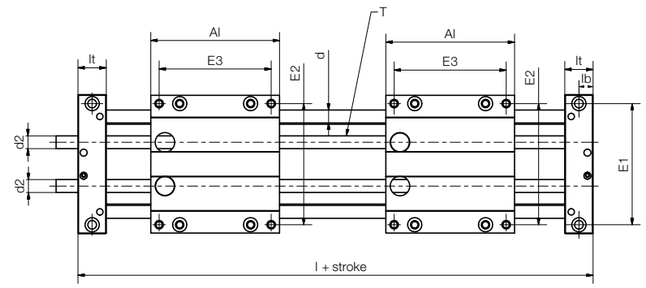
Options:
BB Ball bearings

Select versions and accessories online
▶ **www.igus-asean.com/drylinSLW**









Technical data

Part No.	Max. stroke length [mm]	Weight [kg]	Additional (per 100mm) [kg]	Max. static load capacity axial [N]	Max. static load capacity radial [N]	Shaft end support material
SLWT-1080	750	1.6	0.25	700	2,800	Aluminium
SLWT-BB-1080 New	750	1.6	0.25	700	2,800	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	tk	ts	tg ±0.1	lb
SLWT-1080	108	100	29	94	94	87	244	24	1.5	22	11	6.8	M8	11
SLWT-BB-1080 New	108	100	29	94	94	87	244	24	1.5	30	11	6.8	M8	19

Part No.	kt	sk	s	sg	kq	d	T	l2	d2	d2	ha	sd2
					Standard	Alternative			Standard	Alternative		
SLWT-1080	6.4	9.5	6.6	M6	4.4	10	Tr10x2[92]	17	Tr10x2	6 h9	14.50	34
SLWT-BB-1080 New	6.4	9.5	6.6	M6	4.4	10	Tr10x2[92]	17	Tr10x2	6 h9	14.50	34

[92] Lead screw end unmachined

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drylin® SLW | Linear modules | Product range

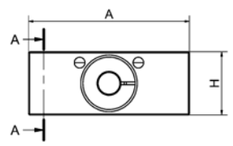
Made of stainless steel



- Stainless steel version with corrosion-resistant steel components (AISI 303, AISI 316 and AISI 316Ti)
- Choice of bearing material:
  iglidur® J = Standard
  iglidur® A180 = FDA-compliant
  iglidur® X = High temperature up to +150°C[117)]
- Available accessories
  ▶ Page 1503

Select versions and accessories online
▶ www.igus-asean.com/drylinSLW

STAIN-LESS STEEL

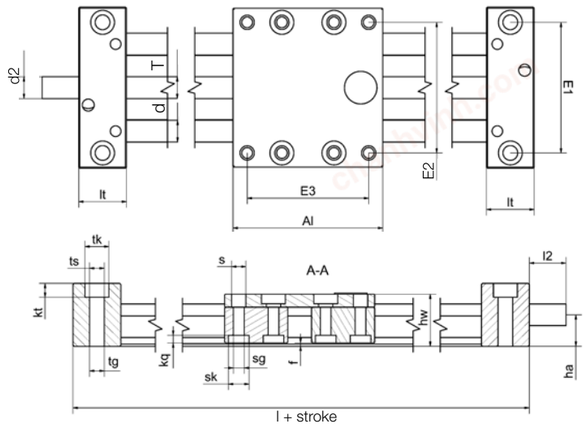


Order key

Order example

SLW-ES J -1040

Compact	Stainless steel	Bearing material	Dimension



Technical data

Part No.	Shafts Ø	Max. stroke length	Weight	Additional (per 100mm)	Max. stat. 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

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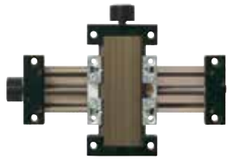
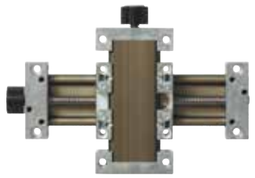
drylin® SLW | XY tables | Product range

Compact XY tables for manual adjustments



SLW-XY-0630



SLW-XY-1040



SLW-XY-1080

Order key

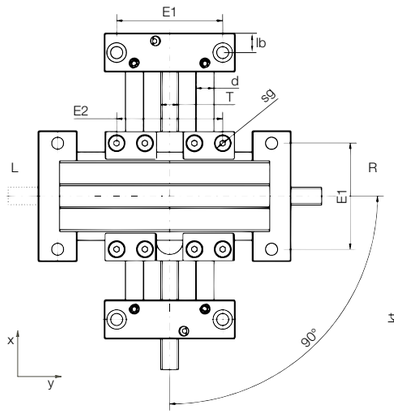
Order example

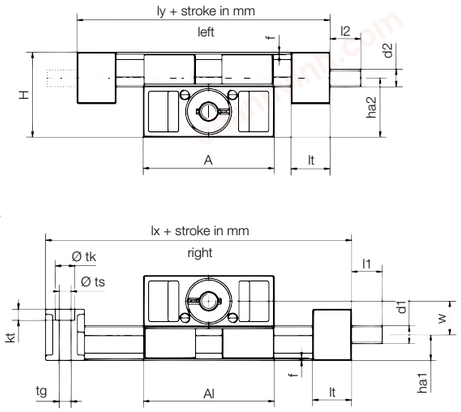
SLW-XY-1040-PL

Compact	XY table	Dimension	Preload

Options:
Preload
optional with sizes 1040 and 1080

- Aluminium drylin® W guide rails, hard-anodised
- Pre-load SLWE-XY-PL version also available (optional, sizes: 1040/1080)
- Available accessories ▶ **Page 1503**





Select versions and accessories online
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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

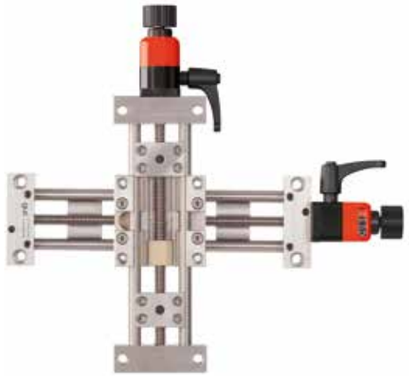
Dimensions [mm]

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 200mm stroke length on the x-axis and 300mm on the y-axis
Right: SLW-XY-1040-R-200-300 for 200mm stroke length on the x-axis and 300mm on the y-axis

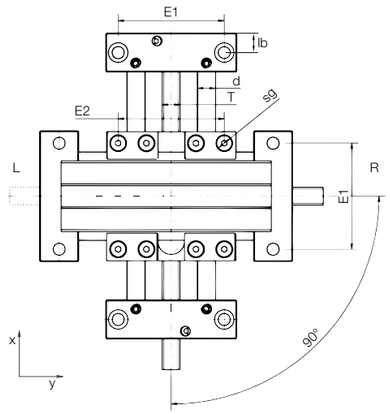
drylin® SLW | XY tables | Product range

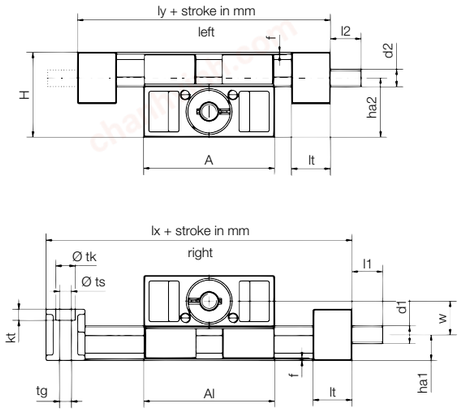
XY table – stainless steel version



STAIN-LESS STEEL

- For manual adjustments
- High torsional stability
- Structure entirely made from 316 stainless steel materials
- Chemical and corrosion-resistant
- Available accessories ▶ **Page 1503**





Select versions and accessories online
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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

Dimensions [mm]

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 200mm stroke length on the x-axis and 300mm on the y-axis
Right: SLW-XY-ESJ-1040-R-200-300 for 200mm stroke length on the x-axis and 300mm on the y-axis

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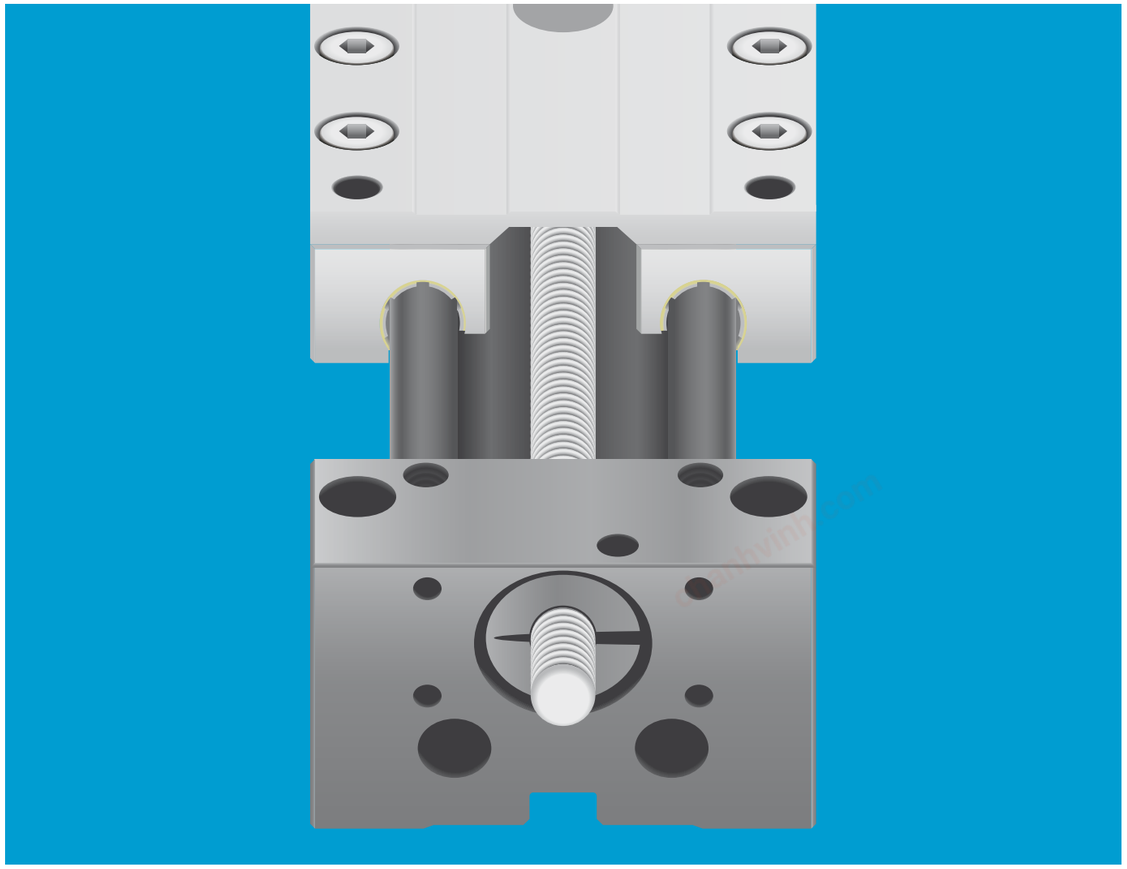
My sketches



drylin® general drive technology – SAW linear modules

Lubrication-free linear modules based on drylin® W guides

Drive: Trapezoidal or high helix lead screw

Robust design

Ready-to-install stepper or DC motors

Ball bearing



chanhvinh.com

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 supported 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 or 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.

Price breaks online
No minimum order value. No minimum order quantity.

Carriage lengths: 60–250mm
Carriage widths: 54–107mm
Stroke lengths: up to 750mm

Product finder
▶ **www.igus-asean.com/saw-productfinder**

Ball bearing



SAW linear module

- Robust high design in 4 sizes
- Drive: Trapezoidal or high helix lead screw
- For manual positioning or motorised operation

▶ **Page 1400**



SAWC linear module

- Compact short design
- With integrated drylin® lead screw motor
- Optimised ratio of useful length to total length

▶ **Page 1402**



DLE linear module

- Configured linear modules with NEMA stepper motors
- Available in 24 hours
- Pre-assembled and tested

▶ **Page 1403**

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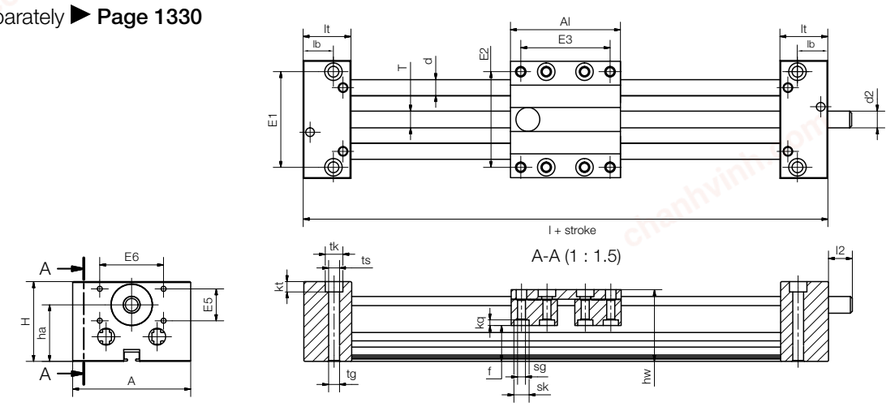
drylin® SAW | Linear modules | Product range

Robust design



- Trapezoidal or high helix threads
- Ball bearing supported lead screw
- 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 1503**
- Lead screw nuts are available separately ▶ **Page 1330**



Technical data

Part No.	Max. stroke length [mm]	Weight [kg]	Additional (per 100mm)	Max. speed [rpm]	Max. static load capacity axial [N]	radial [N]
SAW-0630	300	0.5	0.1	1,000	100	400
SAW-0660	500	0.9	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]

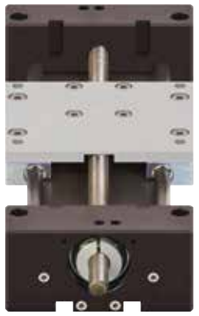
Part No.	A –0.3	Al –0.3	H	E1 +0.15	E2 +0.15	E3 +0.15	E5	E6	l	lc	hw	f	lt	lb
SAW-0630	54	60/100	32	40	45	51/91	11	23	112/152	92	30	13.5	26	10
SAW-0660	85	100	38	71	76	91	–	–	156	–	34	13.7	28	–
SAW-1040	74	69/100/150	50	60	60	56/87/137	20	40	129/160/210	91	45	22.5	30	19
SAW-1080	108	100	58	94	94	87	–	–	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	–	M4	10	□5	Tr8x1.5	15	Tr8x1.5	21.5
SAW-0660	–	–	M8	20	7	M4	2	□6	Tr10x2	15	Tr10x2	23.0
SAW-1040	11	6.8	M8	6.4	9.5	M6	3.5	10	Tr10x2	17	Tr10x2 Ø 6 h9[113)]	35.5
SAW-1080	11	6.8	M8	18	9.5	M6	3.5	10	Tr12x3	17	Tr12x3 Ø 8 h9[113)]	37.5
SAW-1660	15	9.0	M10	8.6	11	M8	5.5	16	Tr14x4	20	Tr14x4 Ø 8 h9[113)]	59.0

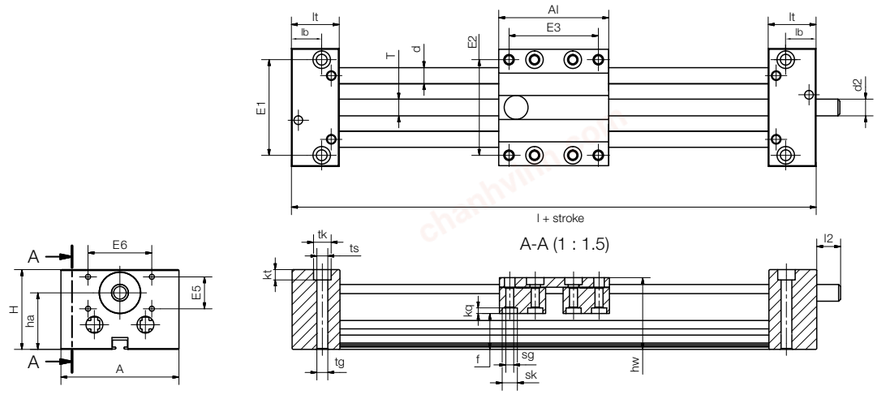
[113)] **Lead screw end unmachined, also available with machined end**

drylin® SAW | Linear modules | Product range

Reduced clearance with pretension in lead screw support and lead screw nut



- Lubrication and maintenance-free
- Quiet, reduced backlash
- Trapezoidal or high helix threads
- 3 carriage lengths (100/150/200mm) with spring-loaded second lead screw nut
- Liners made from wear-resistant high-performance polymers
- For manual and electric adjustment even in multi-axis linear robots



Technical data

Part No.	Max. stroke length [mm]	Weight [kg]	Additional (per 100mm)	Max. speed [rpm]	Max. static load capacity axial [N]	radial [N]
SAW-1080-PL	750	1.9	0.2	1,500	750	2,000

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-1080-PL	108	100	58	94	94	87	–	–	163	131.5	49	22.5	31.5	15.75

Part No.	tk	ts	tg	kt ±0.1	sk	sg	kq	d	T Ø	l2	d2	ha
SAW-1080-PL	11	6.8	M8	18	9.5	M6	3.5	10	Tr12x3	17	Tr12x3 Ø 8 h9[113)]	37.5

[113)] **Lead screw end unmachined, also available with machined end**

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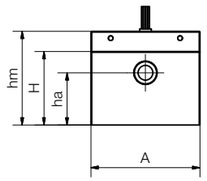
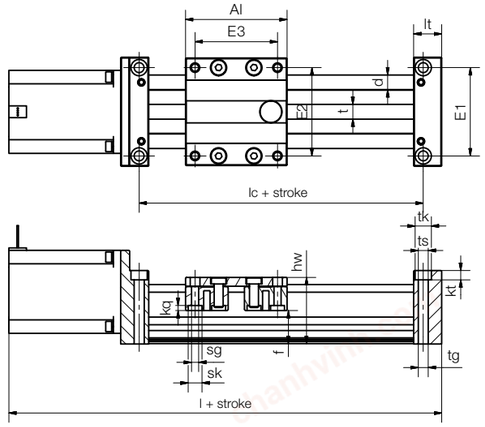
drylin® SAWC | Linear modules | Product range

Direct drive in short design



- Smaller installation space and more stroke
- Compact short design due to the use of drylin® lead screw motors
- Optimised ratio of useful length to total length (compared to the SAW series, up to 70mm)
- Improved operating characteristics
- Space-saving and lightweight





Technical data

Part No.	Max. stroke length	Weight	Additional	Max. speed	Max. static load capacity	
	[mm]	[kg]	(per 100mm)	[rpm]	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	Al	H	E1	E2	E3	l	lc	hw	f	lt	lb
	–0.3	–0.3		+0.15	+0.15	+0.15						
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	sk	sg	kq	d	T	ha
				±0.1					ø	
SAWC-0630	8	4.2	M5	20	7	M4	2	5	Tr08x1.5 Ds08x15	21.5
SAWC-1040	11	6.8	M8	6.4	9.5	M6	3.5	10	Tr10x2[92)] Ds10x12	35.5

[92)] Lead screw end unmachined

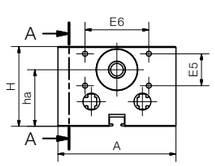
drylin® DLE | Linear modules | Product range

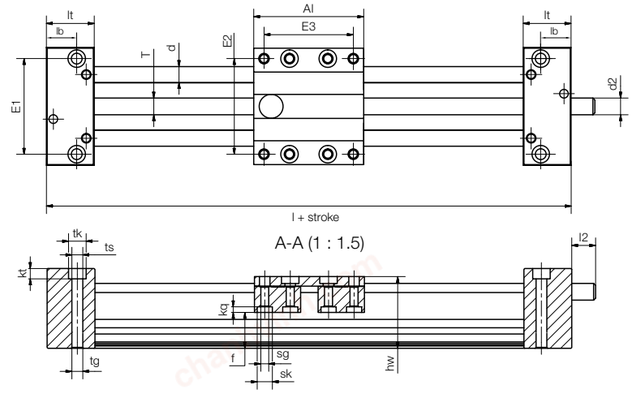
Linear modules with motor – deliverable within 24 hours from stock



igus® delivers ready-to-install, preconfigured 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.

- drylin® linear modules with motor
- Available from stock
- Ready-to-install and pre-assembled
- NEMA stepper motors with stranded wires
- Basis drylin® ZLW and SAW linear axes
- Available accessories ▶ **Page 1503**





Technical data

Part No.	Installation size	Carriage length	Stroke length	Motor type
DLE-SA-0004	SAW-0630 Tr08x1.5	60	250	NEMA17 stranded wires
DLE-SA-0005	SAW-1040 Tr10x2	69	500	NEMA23 stranded wires
DLE-SA-0006	SAW-1080 Tr12x3	100	500	NEMA23XL stranded wires

Part No.	Max. stroke length	Weight	Additional	Max. speed	Max. static load capacity	
	[mm]	[kg]	(per 100mm)	[rpm]	axial [N]	radial [N]
DLE-SA-0004	300	0.5	0.1	1,000	100	400
DLE-SA-0005	500	1.0	0.1	1,500	500	2,000
DLE-SA-0006	750	1.9	0.2	1,500	750	2,000

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	E5	E6	l	lc	hw	f	lt	lb
	–0.3	–0.3		+0.15	+0.15	+0.15								
DLE-SA-0004	54	60/100	32	40	45	51/91	11	23	112/152	92	30	13.5	26	10
DLE-SA-0005	74	69/100/150	50	60	60	56/87/137	20	40	129/160/210	91	45	22.5	30	19
DLE-SA-0006	108	100	58	94	94	87	–	–	163	131.5	49	22.5	31.5	15.75

Part No.	tk	ts	tg	kt	sk	sg	kq	d	T	l2	d2	ha
				±0.1					ø			
DLE-SA-0004	11	6.6	–	20	–	5	10	□5	Tr8x1.5	15	Tr8x1.5	21.5
DLE-SA-0005	11	6.8	M8	6.4	9.5	M6	3.5	10	Tr10x2	17	Tr10x2 Ø 6 h9[113)]	35.5
DLE-SA-0006	11	6.8	M8	18	9.5	M6	3.5	10	Tr12x3	17	Tr12x3 Ø 8 h9[113)]	37.5

[113)] Lead screw end unmachined, also available with machined end

Further information about the motors
▶ Page 1518

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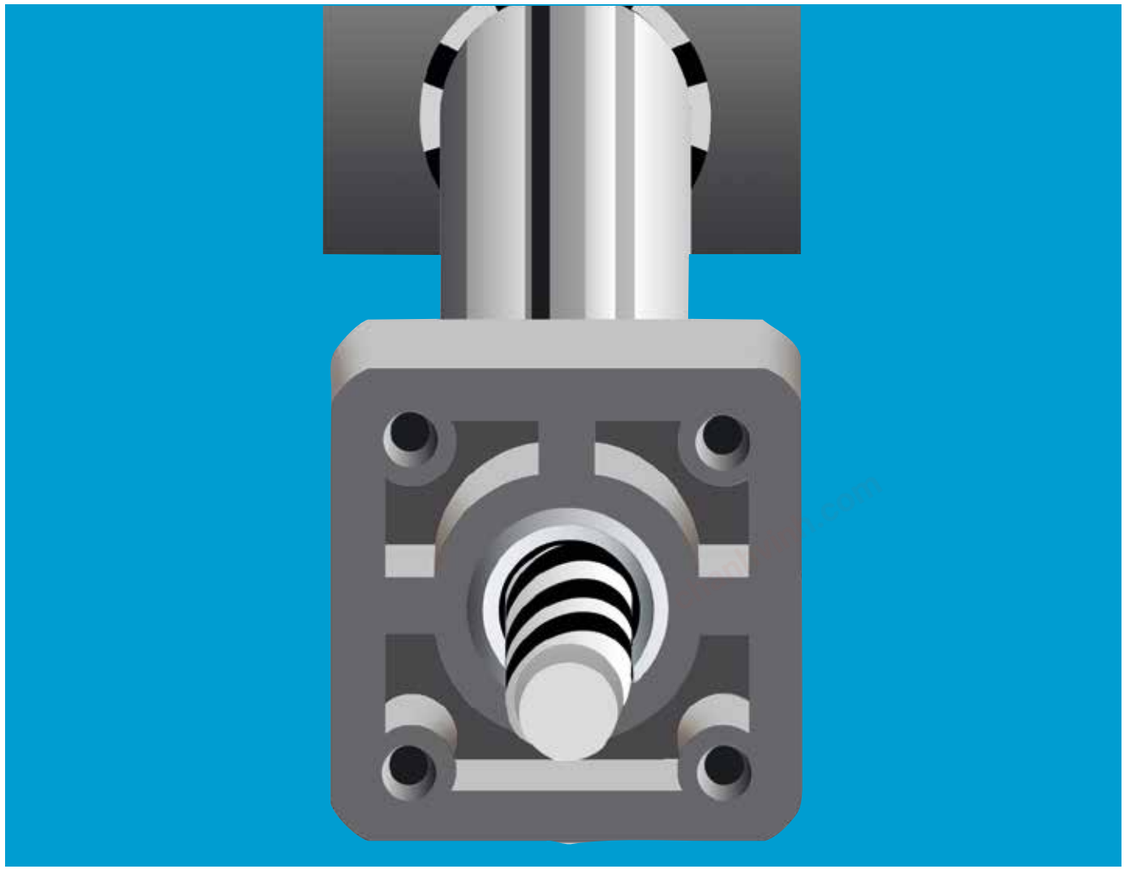
My sketches



drylin® general drive technology – SET linear modules

- Lubrication-free single-tube adjustment
- Drive: Trapezoidal thread
- Simple, smooth design
- Lightweight due to aluminium and plastic
- Temperature resistance up to +50°C



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drylin® SET | easytube | Advantages

Single-tube adjustment



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 are 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 thrust bearings of the lead screw.

- Protected lead screw
- Effective design
- Available with measurement scale without lead screw
- Flanged version for axial mounting in surfaces and profiles

Typical application areas

- Sensor and camera positioning
- Format adjustment

Available in 3–8 days
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity.

Carriage lengths: 30–55mm
Stroke lengths: up to 850mm

Product finder
▶ **www.igus-asean.com/set-productfinder**

drylin® SET | easytube | Product overview

Efficient design with protected lead screw and variable mounting



easytube single tube linear unit

- For light format adjustments
- Protected lead screw, torque-resistant
- Drive: Trapezoidal or high-helix lead screw

▶ **Page 1408**



easytube with double flange

- For axial mounting
- Simple, smooth design

▶ **Page 1409**



easytube with single flange

- For horizontal and vertical adjustments
- Single aluminium flange
- Space-saving structure

▶ **Page 1410**



easytube with measurement scale

- With lasered, wash-proof scale
- Carriage with clamp
- Available with/without lead screw

▶ **Page 1411**



easytube "light"

- Lightweight linear carriage
- Compact structure
- Also available as flanged version

▶ **Page 1412**



Accessories for linear modules

- Position indicator, hand wheels, lead screw clamps, angular drives and more

▶ **From page 1503**

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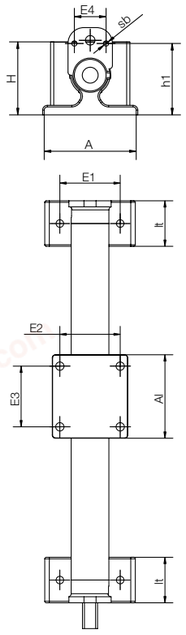
drylin® SET | easytube | Product range

easytube



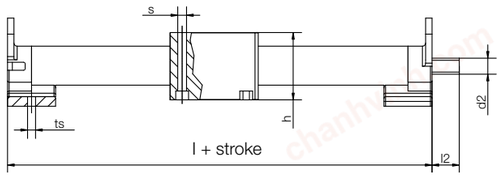


Order key

Order example

SET - 25 - AWM

easytube	Dimension	Shaft material



- For simple adjustments
- With protected lead screw
- Corrosion-free with stainless steel lead screw
- Lightweight due to aluminium and plastic
- Temperature-resistant up to +60°C
- Available accessories ▶ **Page 1503**

Technical data

Part No.	Max. stroke length	Aluminium shaft		Max. static load capacity	
		Weight shaft end supports and guide carriage	Additional (per 100mm)	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]

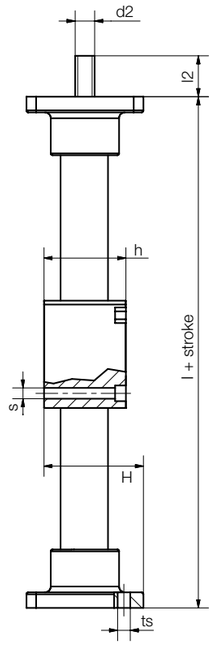
Part No.	A	Al	H	E1	E2	E3	E4	l	h	h1	lt	ts	s	sb	l2	d2[92)]
SET-12-AWM	30	30	23.5	20	20	20	–	60	22	–	15	3.3	4.2	–	10	M4
SET-25-AWM	60	55	44	40	40	40	20	115	39	45	30	5.2	5.2	M4	17	Tr10x2
SET-30-AWM	80	55	49	60	40	40	20	125	39	50	35	6.5	5.2	M4	20	Tr12x3

[92)] Lead screw end unmachined

drylin® SET | easytube | Product range

With flange



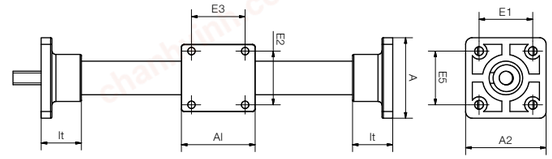


Order key

Order example

SET - 25 - AWM - F

easytube	Dimension	Shaft material	With flange



- Flanged version for axial mounting
- Simple, smooth design
- Available accessories ▶ **Page 1503**

Technical data

Part No.	Max. stroke length	Aluminium shaft		Max. static load capacity	
		Weight shaft end supports and guide carriage	Additional (per 100mm)	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

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drylin® SET | easytube | Product range

Pre-loaded on one side

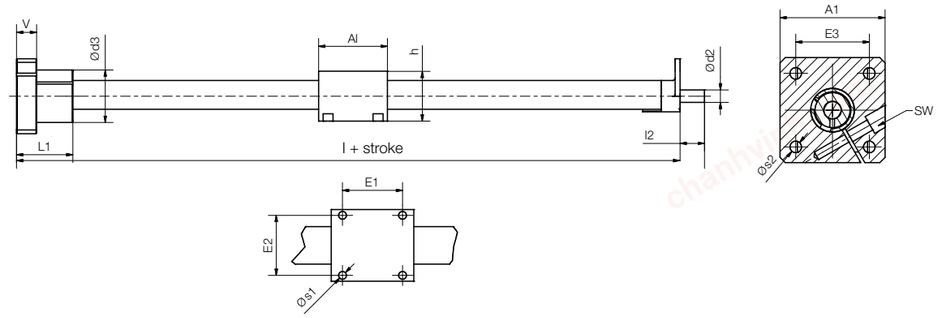


Order key

Order example

SETB - 25 - AWM

easytube	Dimension	Shaft material



- 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[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 upon request

[128] The supporting torque at the clamping flange must not exceed 10Nm

drylin® SET | easytube | Product range

With measurement scale



Order key

Order example

SET M - 25 - AWM - 200 - SC

easytube	Manual	Dimension	Shaft material	Stroke length	Scaling

Options:

Manual

without lead screw (optional)

- Lasered, wash-proof scale
- Corrosion-resistant
- Multi-position clamp
- 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 100N nominal load	[mm]	200
Max. drive force without load	[N]	10
Max. holding force	[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

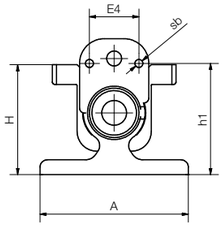
More dimensions see SET ▶ Page 1408

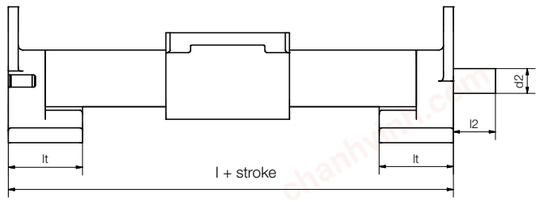
drylin® SET | easytube | Product range

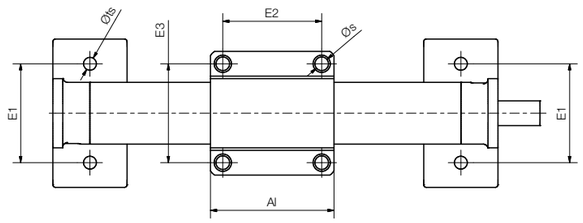
Lightweight carriage option



- Lightweight
- Cost-effective
- Simplified assembly
- Light, clean and quiet







Order key

Order example

SETC - 25 - AWM

easytube	Dimension	Shaft material

Technical data

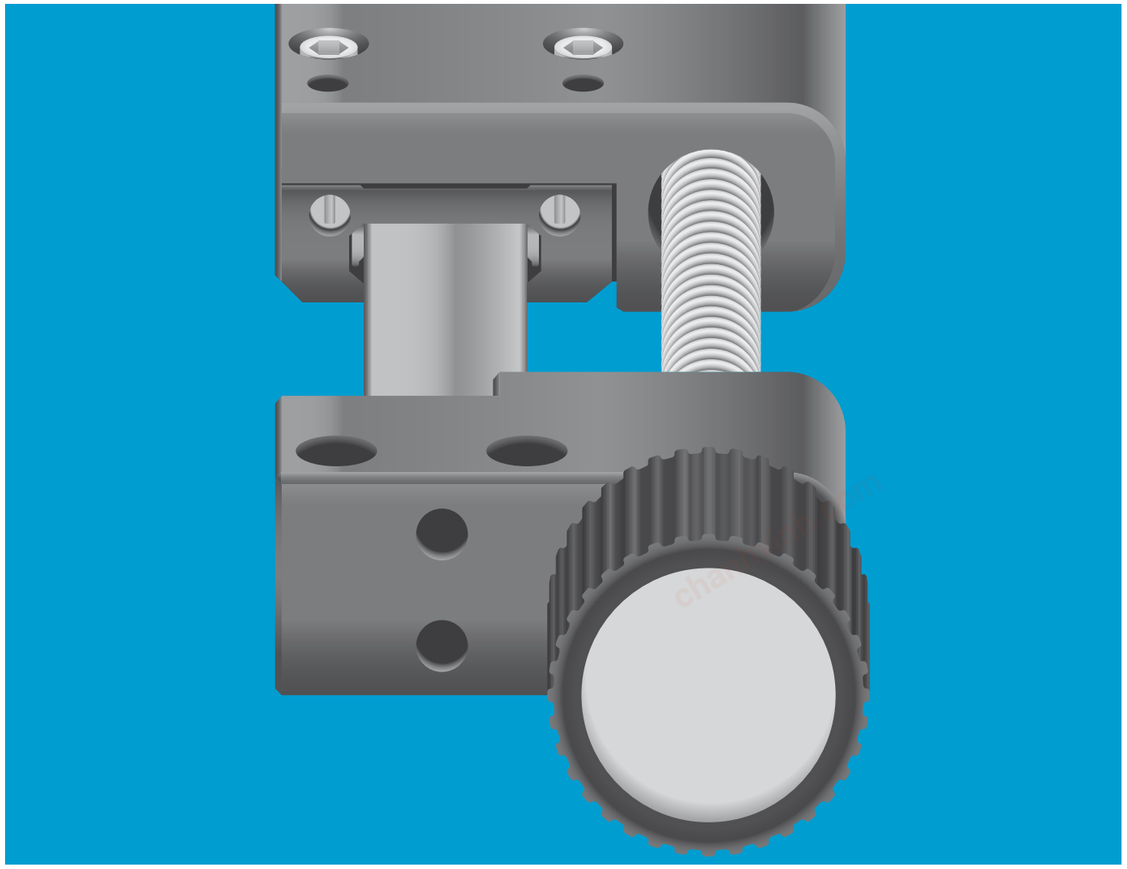
Part No.	Weight	Max. stroke length	Max. static load capacity	
			axial	radial
	[kg]	[mm]	[N]	[N]
SETC-25-AWM	0.15	750	150	300

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 upon request



drylin® general drive technology – SLT linear modules

Based on lubrication-free drylin® T miniature guide

Drive: Trapezoidal or high helix lead screw

Flat and compact design

Carriages with individually adjustable clearance

Variable lead screw options



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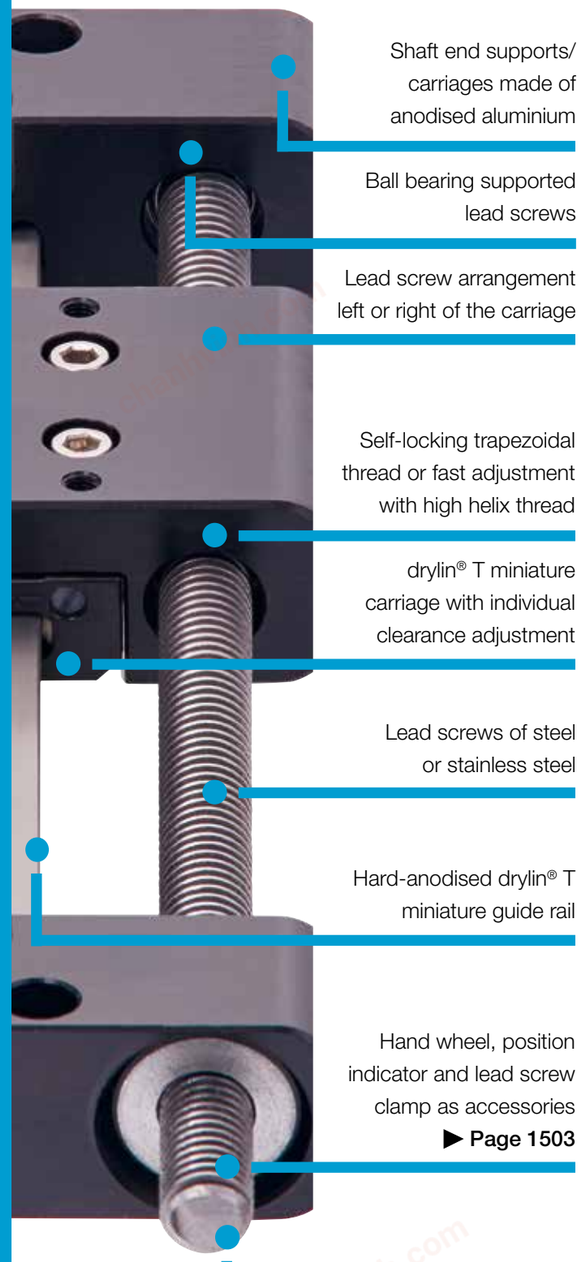
Flat, lightweight and lubrication-free



Lubrication-free linear modules – drylin® SLT

The low profile, the lateral lead screw arrangement and a striking design, are just some of the reasons why the drylin® SLT linear module was honoured with the 2014 IF Award. Technically, the system impresses with ball bearing mounted trapezoidal or high helix thread lead screws for motorised or manual operation. The basis of the SLT series is the drylin® T miniature guide 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 300–600mm
More dimensions upon request.

Product finder
▶ www.igus-asean.com/slt-productfinder

product design award 2013

Can be configured as ready-to-connect linear axis with motor and initiators
▶ www.igus-asean.com/drylin-automation

RoHS-II

In accordance with EU Directive 2011/65/EU (RoHS 2) Restriction (of the use of certain) hazardous substances

With ball bearing supported lead screw



Order key

Order example

SLT - BB - 0412 - E R - S 0015 R G - □

Type	Design	Installation size	Adjustable carriage TWE	Lead screw alignment	Lead screw	Pitch	Thread	Lead screw end	Stroke length in mm

Options:

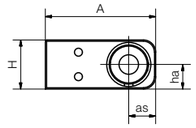
Design
BB = With ball bearings

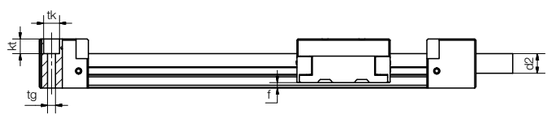
Lead screw alignment
R = Right (standard)
L = Left

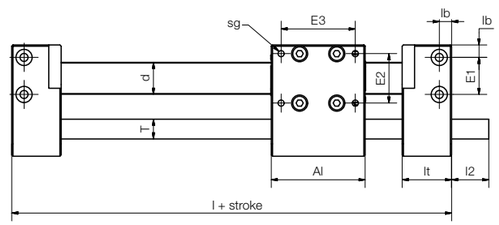
Lead screw
S = Steel
ES = Stainless steel

Thread
R = Right

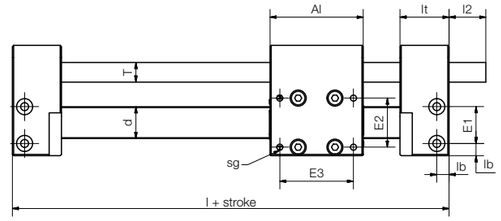
Lead screw end
G = Threaded end







Lead screw alignment left



Lead screw alignment right

Technical data and dimensions [mm]

Part No.	Pitch	Max. stroke length	Weight Additional (per 100mm)		Max. static load capacity Axial	radial	Max. rpm	Max. speed
			[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	M4	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

Also see econ chapter ▶ Page 1455

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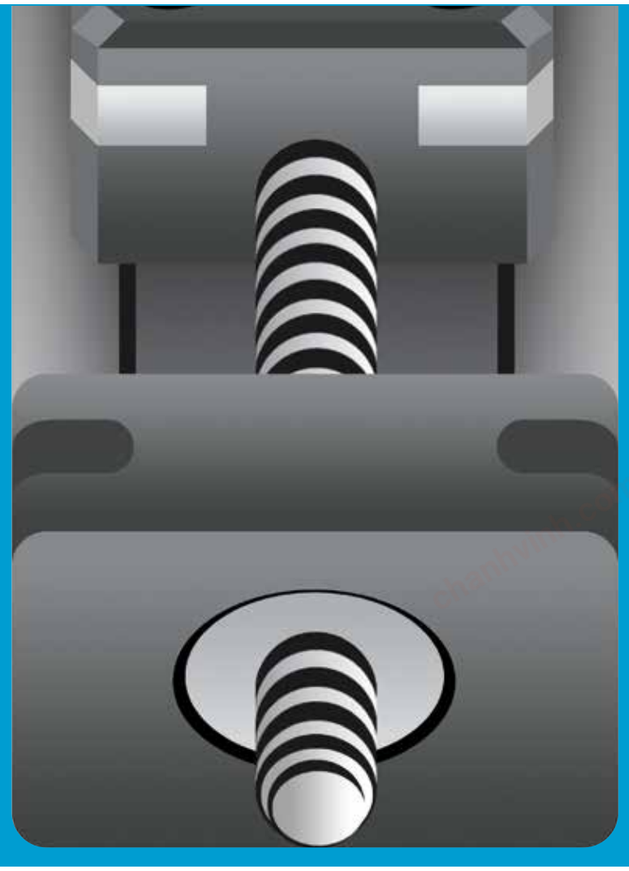
My sketches



drylin® general drive technology – SLN/SLNV linear modules

Based on lubrication-free drylin® N low-profile linear guide

Drive: Trapezoidal or high helix lead screw

Compact design

Clearance adjustment on carriage

Precise with pre-load



chanhvinh.com

Compact, precise and lubrication-free



Shaft end supports made from corrosion-resistant, robust plastic

Lead screw mounted with plain or ball bearings

Cost-effective, robust plastic carriages (basic series 03)

Carriage with manual height clearance adjustment (standard series 04)

Metal thread inserts

Minimal backlash with pre-load (pre-load series 05)

Rail made from anodised aluminium

Lead screws made from stainless steel with pitch M5 (5x0.8mm) or high helix thread (5x5, 6x12.7)

Hand wheel available
▶ Page 1511

Configurable with motor as a ready-to-install linear drive

Lubrication-free miniature linear modules – drylin® SLN

drylin® SLN linear axes is a compact solution. The axis measures 28 x 22mm and can be configured with stroke lengths of up to 250mm. Thanks to the lubrication-free plastic sliders, it is quiet and 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 on 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® stepper and DC motors.

- Ultra-compact design
- 3 carriage types (basic/adjustable/pre-load)
- Lubrication-free drylin® low-profile linear guide
- Modular design

Typical application areas

- Sensors
- Inspection technology
- Laboratory technology
- Medical technology

Available in 3–8 days
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity.

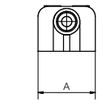
Carriage length: 35mm
Stroke lengths: up to 250mm

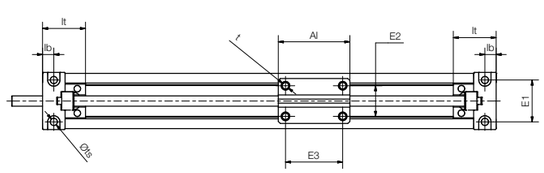
Product finder
▶ www.igus-asean.com/sln-productfinder

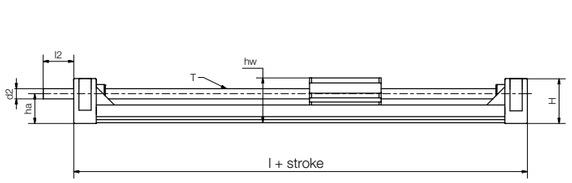
Miniature linear module, pre-load version



- Based on maintenance-free drylin® N low-profile linear guides size 27
- BB version (ball bearing) for low backlash run
- Manual and motorised operation possible
- Linear carriage with individual height clearance adjustment and pre-load (optional)
- Available accessories
  ▶ Page 1503
- Also see econ chapter
  ▶ Page 1460
- **Available with motor**







Order key

Order example

SLN- 27 - 1 4 - 0008

Linear module	drylin® N size 27	Shaft end support design	Carriage version	Pitch

Options:

Shaft end support design	Pitch
0 = Plain bearing	0008 = M5x0.8
1 = Ball bearing	0050 = Sg5x5
Carriage version	0008 = Ds6.35x2.54
4 = Standard, adjustable	0127 = Sg6.35x12.7
5 = Standard, pre-load	0254 = Ds6.35x25.4

Technical data

Part No.	Max. stroke length[101]	Weight	Additional	Max. static load capacity		Max. speed	Max. drive torque
			[kg]	Axial	radial		
	[mm]	[kg]	(per 100mm)	[N]	[N]	[rpm]	[Nm]
SLN-27-04	250	0.06	0.04	10	40	100	0.1
SLN-27-05	250	0.06	0.04	10	40	100	0.1
SLN-27-14	250	0.06	0.04	10	40	300	0.1
SLN-27-15	250	0.06	0.04	10	40	300	0.1

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	E11[102]	l	hw	lt	lb	ts	d2[98]	l2	ha
	±0.2	–0.1	±0.2	±0.15	±0.15	±0.15			±0.2	±0.2			Ø		
SLN-27-04	28	35	22	20.5	15	28	15	77	22.5	21	5	3.5	5 (4 h7)	15	14.5
SLN-27-05	28	35	22	20.5	15	28	15	77	22.5	21	5	3.5	5 (4 h7)	15	14.5
SLN-27-14	28	35	22	20.5	15	28	15	77	22.5	21	5	3.5	Ø 4h9[98]	15	14.5
SLN-27-15	28	35	22	20.5	15	28	15	77	22.5	21	5	3.5	Ø 4h9[98]	15	14.5

[101] Fixed stroke lengths for SLN option with ball bearings: 100/150/200/250mm

[102] The dimension E11 can only be found in conjunction with the igus® motor connection

[98] Thread/ remaining thread visible

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drylin® SLN | Miniature linear modules | Product range

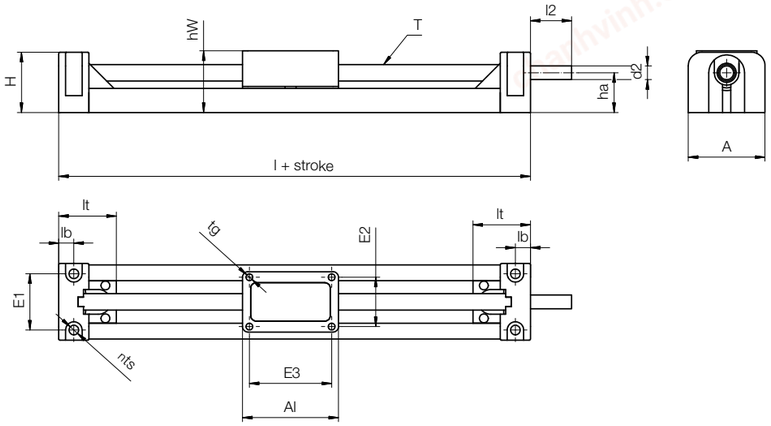
drylin® SLNV prism module for precise adjustment



- SLNV linear module for the smallest applications
- For stroke lengths up to 250mm
- High precision due to stop motion pre-load prism slide
- Clearance reduction in z and y directions due to pre-load
- Lead screw with plain or ball bearing
- Self-locking with trapezoidal thread Tr6x2
- Fast and efficient with pre-load
- Feed rate up to 25.4mm per rotation

Typical application areas:

- Medical technology
- Dental equipment
- Research and development
- Measuring technology



Technical data

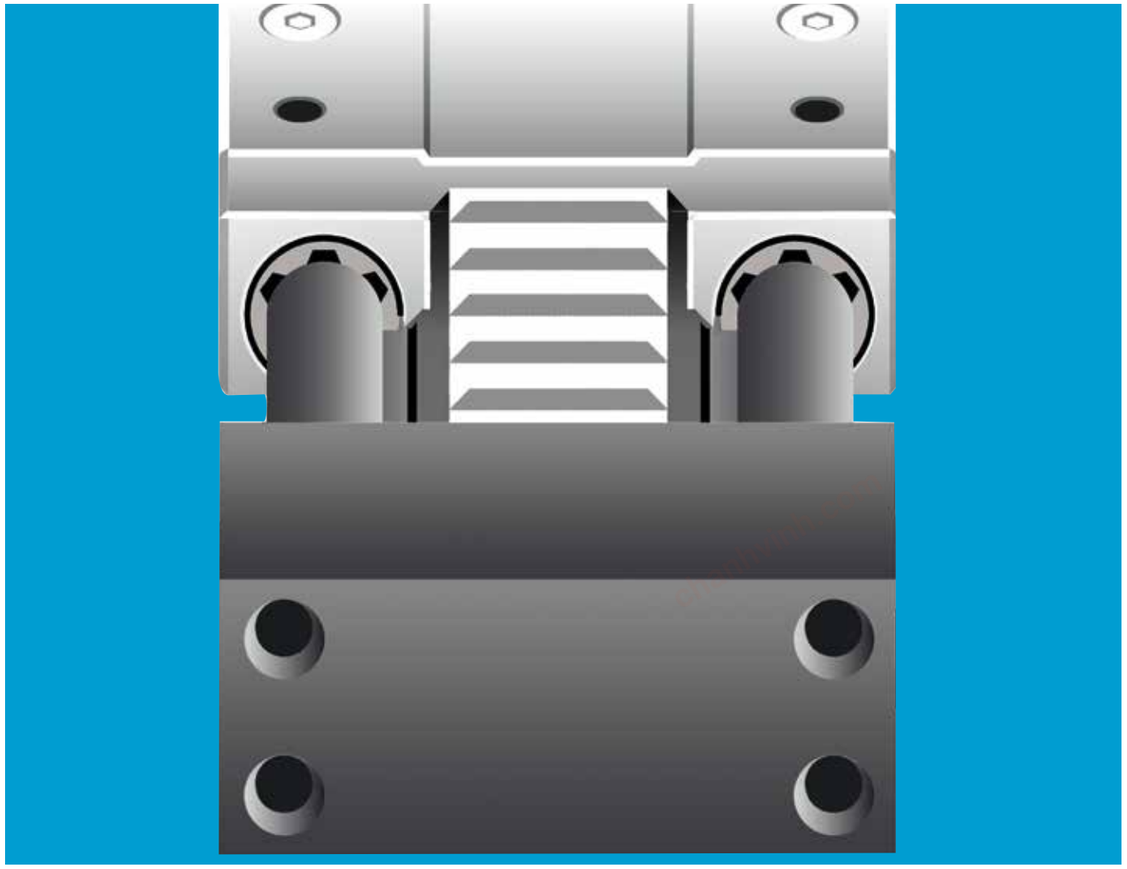
Part No.	Max. stroke length	Weight	Additional (per 100mm)	Max. static load capacity Axial	radial	Max. Speed	Max. Drive torque
	[mm]	[g]	[g]			[rpm]	[N]
SLNV-27-0025	250	80	56	10	40	300	0.1
SLNV-27-0051	250	80	56	10	40	300	0.1
SLNV-27-0127	250	80	56	10	40	300	0.1
SLNV-27-0254	250	80	56	10	40	300	0.1

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	l	hw	lt	lb	ts	tg	d2[98]	l2	ha
	±0.2	–0.1	±0.2	±0.15	±0.15	±0.15		±0.3	±0.2				4 h7		
SLNV-27-0025	28	35	22	20.5	18	30	77	22.5	21	5.5	3.5	6.35x2.54	5	15	14.5
SLNV-27-0051	28	35	22	20.5	18	30	77	22.5	21	5.5	3.5	6.35x5.08	5	15	14.5
SLNV-27-0127	28	35	22	20.5	18	30	77	22.5	21	5.5	3.5	6.35x12.7	5	15	14.5
SLNV-27-0254	28	35	22	20.5	18	30	77	22.5	21	5.5	3.5	6.35x25.4	5	15	14.5

[98] Thread/remaining thread visible

drylin® stop motion full product range online
▶ www.igus-asean.com/drylinstopmotion



drylin® general drive technology – Toothed belt axes

Lubrication-free linear modules based on drylin® W guides

Drive: Toothed belt

For fast positioning

End supports with deep groove ball bearings

As single axis or for multi-axis linear robots



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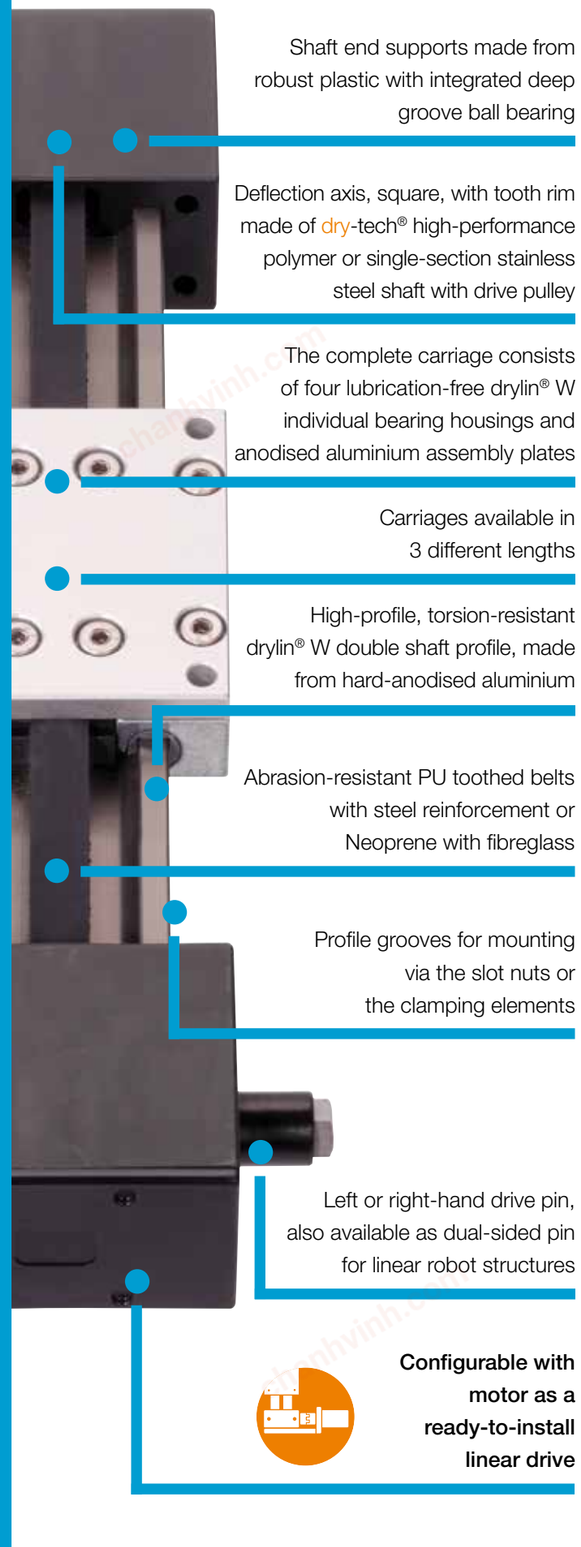
drylin® ZLW | Toothed belt axes | Advantages

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 freely 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 support. All drylin® ZLW toothed belt axes can be ordered ready for connection and configured with drylin® stepper and DC motors. It is also possible to integrate other motor components.

- Completely lubrication-free operation
- 3 types: econ/basic/standard
- Variable carriage lengths
- Many 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.

Price breaks online
No minimum order value. No minimum order quantity.

Carriage lengths: 60–250mm
Carriage widths: 54–107mm
Stroke lengths: up to 3,000mm

Product finder
▶ **www.igus-asean.com/zlw-productfinder**

drylin® ZLW | Toothed belt axes | Product overview

Positioning with lubrication-free toothed belt drive



ZLW econ series

- Cost-effective starter axis in 2 sizes
- Lightweight
- Carriage and deflection housing made of plastic
- Anodised drylin® W aluminium profile section

▶ **Page 1432**



ZLW basic series

- 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 1432**



ZLW standard series

- 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 1432**



ZLW specialists

- Deep-freeze LT version for applications down to –30°C
- UW version for underwater use
- SW version for splash water applications
- For installation size 1040

▶ **Page 1432**



ZLW-OD reverse

- For quick reverse positioning
- Fast right/left adjustment
- Compact due to flat drylin® W double rails
- With angle flange

▶ **Page 1436**



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 1,000mm

▶ **Page 1445**



ZLW – open design in installation size 20

- Variable shaft span of 120/160/200mm
- Effective deflection axis and toothed belt
- Lightweight aluminium version available
- Corrosion-resistant stainless steel version

▶ **Page 1434**



Motors and mounting accessories

▶ **Page 1503**

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drylin® ZLW | Toothed belt axes | Technical data

Toothed belt axis	Type	Shaft Ø	Weight		Max. stroke length[120]	Trans-mission	Tooth profile	Carriage length
			without stroke	100mm stroke				
		[mm]	[kg]	[kg]	[mm]	[mm/rev]		[mm]
ZLN-40	–	40	0.24	0.05	750	60	T2.5	50
ZLW-0630-...								
...-02-E	econ	□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-0660-S-02-	Standard	5	0.88	0.15	1,000	54	HTD 3M	100/150/200
ZLW-1040-...								
...-02-E	econ	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	0.21	2,000	70	AT5	100/150/200
ZLW-10120	Standard	10	2.03	0.16	2,000	75	3M	150/200/250
ZLW-10160	Standard	10	2.28	0.17	2,000	75	3M	151/200/250
ZLW-10200	Standard	10	2.54	0.19	2,000	75	3M	152/200/250
ZLW-1660-...								
...-02-S	Standard	16	4.00	0.5	3,000	120	AT5	100/150/200/250
ZLW-20...								
...120	Standard	20	5.36	0.386	3,000	144	20 RPP8	200/250/300
...160	Standard	20	5.78	0.426	3,000	144	20 RPP8	200/250/300
...200	Standard	20	62	0.466	3,000	144	20 RPP8	200/250/300

Max. radial load	Toothed belt material	Toothed belt width	Toothed belt tension	Guide bearing	Max. speed	Max. position accuracy	Idle torque	Max. drive torque
[N]		[mm]	[N]		[m/s]	[mm]	[Nm]	[Nm]
45	PU with steel	6	30	Deep groove ball bearing	2.0	± 0.30	0.15	0.4
30	Neoprene with fibre glass	9	20	Deep groove ball bearing	1.0	± 0.40	0.10	0.30
100	Neoprene with fibre glass	9	75	Deep groove ball bearing	2.0	± 0.35	0.10	0.75
150	PU with steel	9	100	Deep groove ball bearing	2.0	± 0.30	0.15	1.00
50	Neoprene with fibre glass	9	75	Deep groove ball bearing	1.0	± 0.35	0.10	0.75
75	PU with steel	9	100	Deep groove ball bearing	1.0	± 0.30	0.15	1.00
150	PU with steel	15	100	Deep groove ball bearing	5.0	± 0.30	0.15	1.25
100	Neoprene with fibre glass	15	50	Deep groove ball bearing	2.0	± 0.35	0.1	0.5
200	Neoprene with fibre glass	16	150	Deep groove ball bearing	3.0	± 0.30	0.2	1.75
300	PU with steel	16	200	Deep groove 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 bearings	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 fibre glass	16	150	Deep groove ball bearing	1.5	± 0.30	0.15	1.75
150	PU with steel	16	200	Deep groove ball bearing	2.5	± 0.20	0.25	2.40
300	PU with steel	16	200	Deep groove ball bearing	5.0	± 0.20	0.25	2.40
300	Neoprene with GF	15	200	Deep groove ball bearing	5.0	± 0.20	0.35	2.50
300	Neoprene with GF	15	200	Deep groove ball bearing	5.0	± 0.20	0.35	2.50
300	Neoprene with GF	15	200	Deep groove ball bearing	5.0	± 0.20	0.35	2.50
2,000	PU with steel	32	500	Deep groove ball bearing	5.0	± 0.20	0.4	10.00
3,000	PU with stainless steel	20	750	Deep groove ball bearing	5.0	± 0.20	1.0	15.00
3,000	PU with stainless steel	20	750	Deep groove ball bearing	5.0	± 0.20	1.0	15.00
3,000	PU with stainless steel	20	750	Deep groove ball bearing	5.0	± 0.20	1.0	15.00

[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.

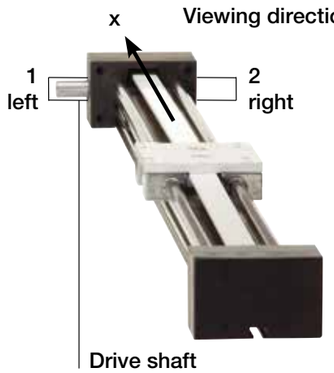
The technical values in the specifications are maximum values for each criterion, e.g. speed, stroke length etc.; they are not cumulative values. Suitability under specific parameters can be checked online at www.igus-asean.com/linearmodule-finder.

Tightening torque for drylin® connections between metal parts

Metric thread (Da)	Tightening torque [Nm]	Recommended tightening 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

Please be aware of the minimal screw-in depth for aluminium and zinc die-casting parts: 1.5 x Da

Drive pin alignment for all ZLW toothed belt axis



Drive pin
L: Drive pin left
R: Drive pin right
L/R: Drive pin, both sides

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drylin® ZLW-0630 | Technical Data

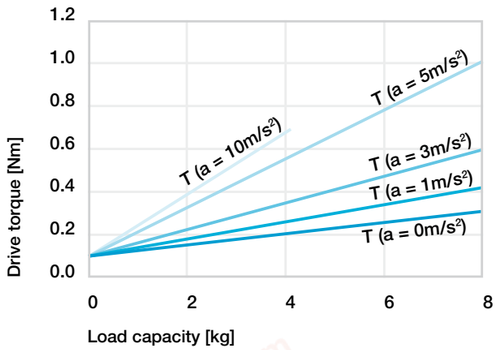

Diagram 01: Required drive torque[138]; horizontal orientation – ZLW-0630, version basic 02

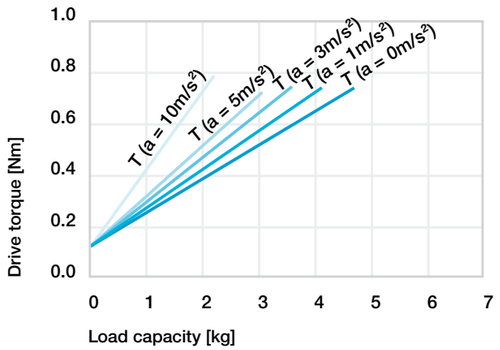

Diagram 02: Required drive torque[138]; vertical orientation – ZLW-0630, basic 02

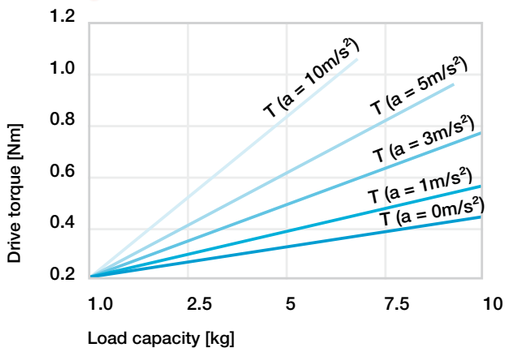

Diagram 03: Required drive torque[138]; horizontal orientation – ZLW-0630, version standard 02

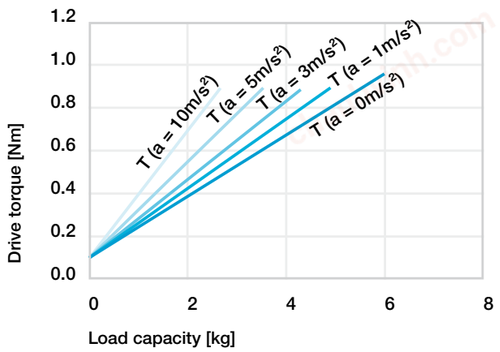

Diagram 04: Required drive torque[138]; vertical orientation – ZLW-0630, version standard 02

[138] Assumption: the moving mass is located in a circumscribed circle with a max. R = 100mm to the middle of the guiding rail, max. permissible torque ZLW-0630 basic 02: 0.75Nm, a = 0m/s² , ZLW-0630 standard 02: 1Nm, a = 0m/s2, constant drive without nominal acceleration value

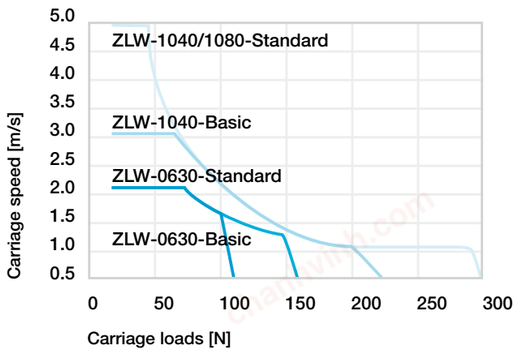

Diagram 05: Maximum load compared: ZLW-0630 and ZLW-1040/1080, 100% OT (On-time). The graph accounts for the sum of all forces active on the carriage.

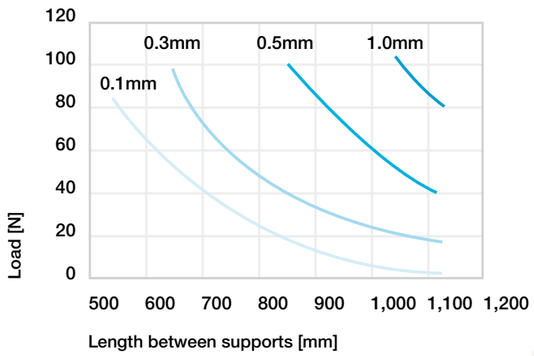

Diagram 06: Sag between unsupported end blocks ZLW-0630, basic 02 and standard 02 version. Sag permissible up to 2mm maximum.

drylin® ZLW-1040/1080 | Technical data

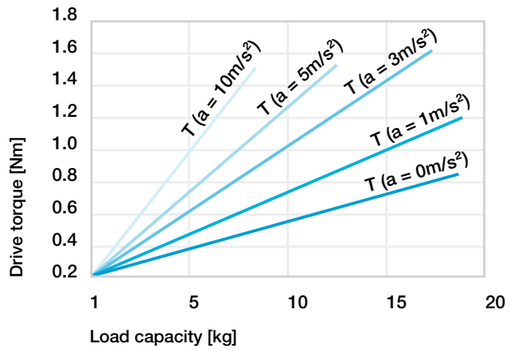

Diagram 07: Required drive torque[139]; horizontal orientation– ZLW-1040, version basic 02

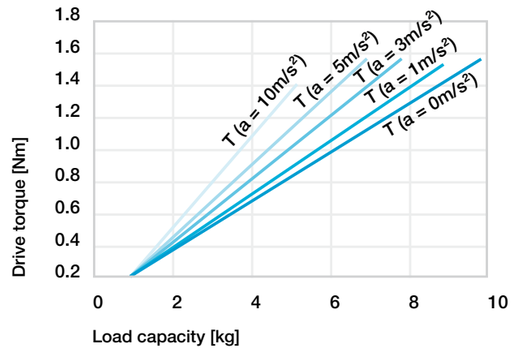

Diagram 08: Required drive torque[139]; vertical orientation – ZLW-1040, version basic 02

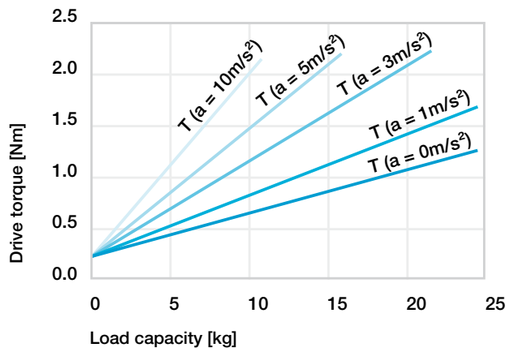

Diagram 09: Required drive torque[139]; horizontal orientation – ZLW-1040/1080, version standard 02

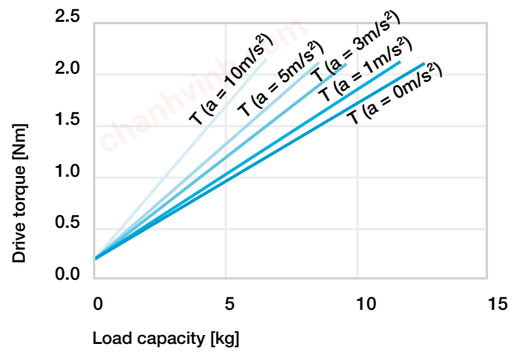

Diagram 10: Required drive torque[139]; vertical orientation – ZLW-1040/1080, version standard 02

[139] Assumption: The moving mass is located in a circumscribed circle with a max. R = 100mm to the middle of the guiding rail, max. permissible torque ZLW-1040/1080 basic 02: 1.75Nm, a = 0m/s² , ZLW-1040/1080 standard 02: 2.4Nm, a = 0m/s², constant drive without nominal acceleration value

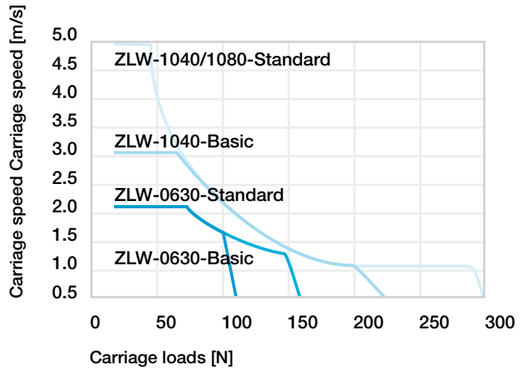

Diagram 11: Maximum load compared: ZLW-0630 and ZLW-1040/1080, 100% OT (On-time). The graph accounts for the sum of all forces active on the carriage.

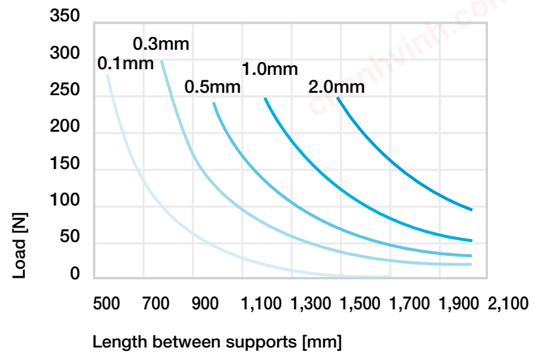

Diagram 12: Sag between unsupported end blocks ZLW-1040, basic version and ZLW-1040/1080 standard 02 version. Sag permissible up to 2mm maximum – horizontal orientation

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drylin® ZLW-1660 | Technical Data

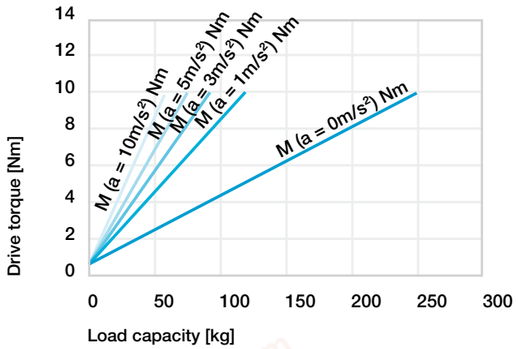

Diagram 13: Required drive torque[140]; horizontal orientation – ZLW-1660, version standard 02

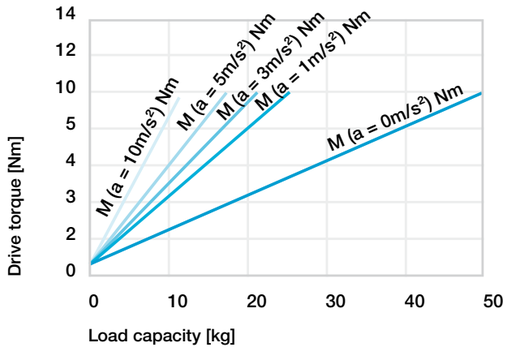

Diagram 14: Required drive torque[140]; vertical orientation – ZLW-1660, version standard 02

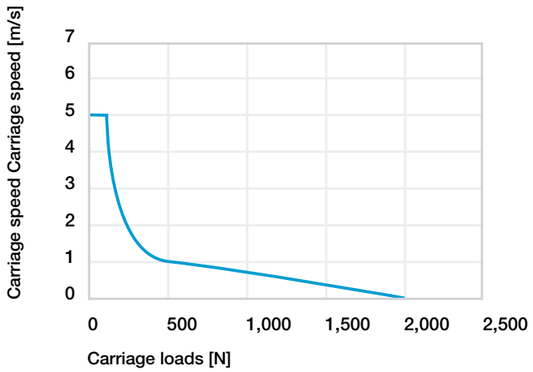

Diagram 15: Maximal load, horizontal installation; the graph accounts for the sum of all forces active on the carriage.

[140] Assumption: The moving mass is located in a circumscribed circle with R = 100mm to the middle of the guiding rail, max. permissible torque ZLW-1660 standard 02: 10Nm, a = 0m/s², constant drive without nominal acceleration value

Technical data

Part No.	Geometrical moment of inertia		Moment of resistance	
	Iy	Iz	Wby	Wbz
ZLW-0630	30,391	11,674	1,736	845
ZLW-0660	212,826	17,018	6,448	1,398
ZLW-1040	97,560	54,910	3,902	3,076
ZLW-1080	483,653	486,613	11,515	4,684
ZLW-1660	540,876	4,773,489	14,618	24,586

drylin® ZLW-20120 | Technical data

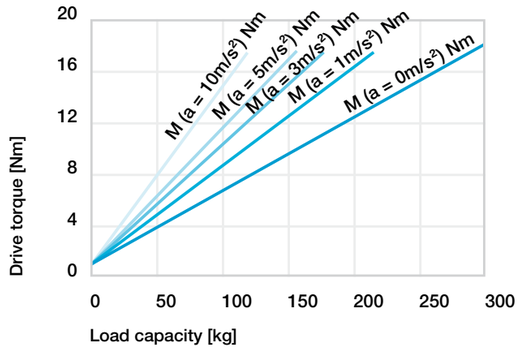

Diagram 17: Required drive torque[140]; horizontal orientation – ZLW-20120, version standard 02

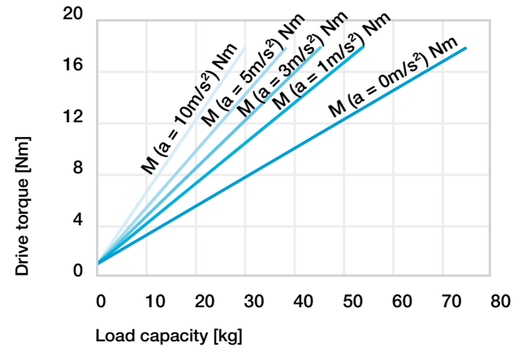

Diagram 16: Required drive torque[140]; vertical orientation – ZLW-20120, version standard 02

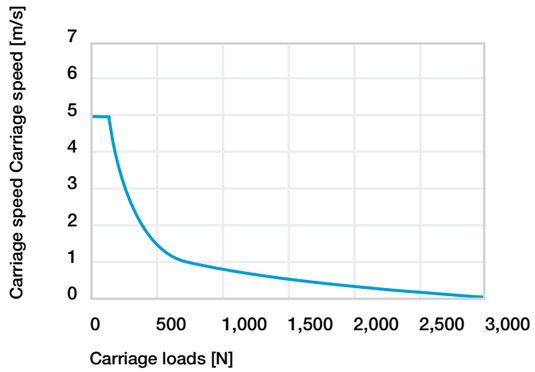

Diagram 18: Maximal load, horizontal installation; the graph accounts for the sum of all forces active on the carriage.

[140] Assumption: The moving mass is located in a circumscribed circle with R = 100mm to the middle of the guiding rail, max. permissible torque: 20Nm, a = 0m/s², constant drive without nominal acceleration value

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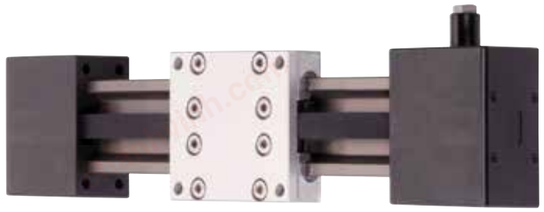
econ series

Many infeed movements require cost-effective linear axes that focus on pure adjustment tasks. This econ 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 econ 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 drive shaft, consisting of a square stainless steel and toothed pulley made of high-performance polymer, rests on 2 deep groove ball bearings. The drive pin is 6x6mm square and made of stainless steel. The scope of supply includes a plastic adapter for a pin diameter of 10mm.



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 groove ball bearings.



Modular kit series

A high degree of flexibility characterises the ZLW modular system series. A modular construction system based on individual rails from the drylin® W linear system. 3 widths up to 200mm, 8M PU with stainless steel reinforcement for smooth running, either in aluminium or stainless steel.



The ZLW specialists

LT

For use at temperatures down to –30°C, the drive and deflection shaft end supports are fitted with ball bearings. Drive is a toothed belt suitable for low temperatures.

UW

Maximum protection against corrosion is provided by the UW toothed belt axis; for underwater applications. Linear carriages, drive and deflection shaft end supports made of anodised aluminium, incl. lubrication-free xiros® ball bearings. A flexible toothed belt with aramid reinforcing serves as the belt.

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.

Stainless steel

The ZLW modular axis made of stainless steel offers maximum corrosion protection. All components are manufactured in stainless steel, driven by 8M PU toothed belt with stainless steel reinforcing.

More Information online
▶ www.igus-asean.com/ZLW

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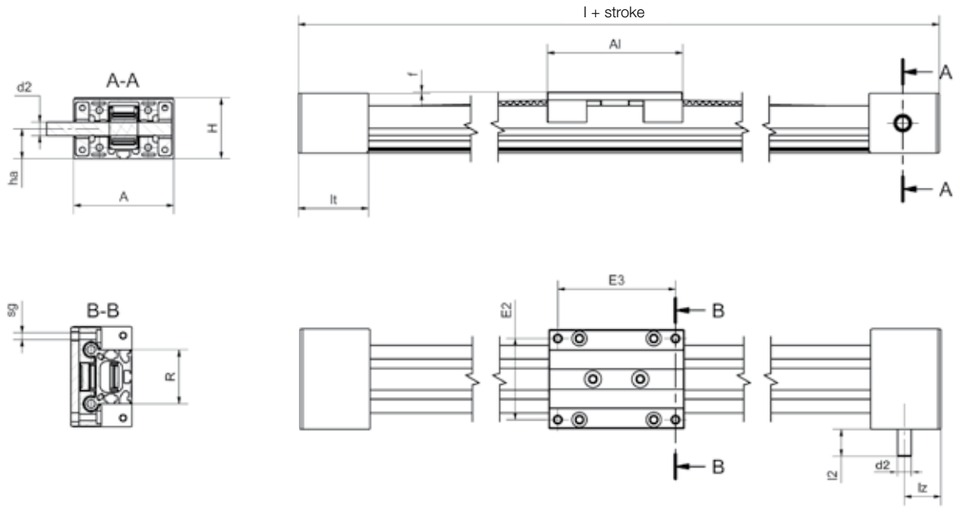
drylin® ZLW | Toothed belt axes | Product range

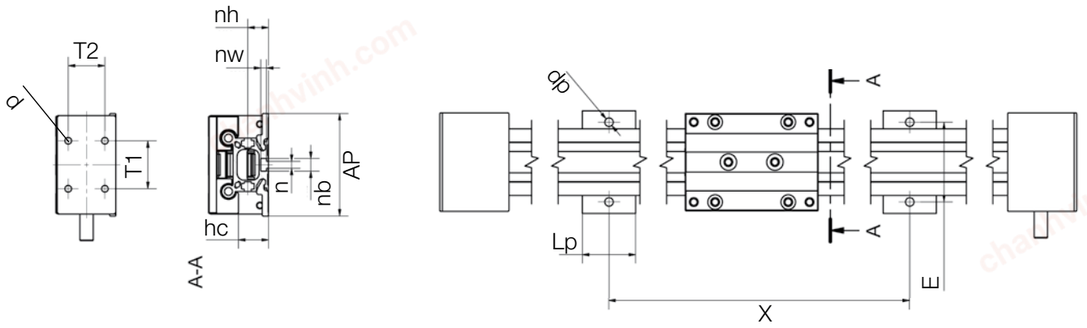
Toothed belt axis in econ, basic and standard version



- Fast positioning of small loads
- Quiet operation and flat design
- Drive pin on one or both sides
- Linear carriages available in different lengths (except for econ version)
- Configurable with motor as a ready-to-install linear drive
- Specialist in deep-freeze, underwater and spray-water areas ▶ **Page 1431**



Connecting dimensions



drylin® ZLW | Toothed belt axes | Product range

Order key

Order example

ZLW-0630-02-B

Toothed belt axis	Installation size	Type	Design

Options:

Type
02 = With deep groove ball bearings

Design
E = econ series (0630/1040)
B = Basic series (0630/1040)
S = Standard series (all sizes)

Order key specialists

Order example

ZLW-1040-LT-02-S

Toothed belt axis	Installation size	Options	Type	Design

Options:

Variation
LT = For deep-freeze applications down to –30°C
UW = For underwater applications
SW = For spray-water applications

Type
02 = With deep groove ball bearings

Design
S = Standard series

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	20.5	20	8
ZLW-0660	85	100	31	76	91	184	61	3	42	M4	14	22.5	20.5	19.5	8
ZLW-1040-02	74	100	44	60	87	204	40	1	52	M6	22	22.5	27	20	10
ZLW-1040-LT-02-S	74	100	44	60	87	204	40	1	52	M6	22	22.5	27	20	10
ZLW-1040-UW-02-S	74	100	44	60	87	204	40	1	52	M6	22	22.5	27	20	10
ZLW-1040-SW-02-S	74	100	44	60	87	204	40	1	52	M6	22	22.5	27	20	10
ZLW-1080-02	90	100	44	94	87	204	74	1	52	M6	22	22.5	24.5	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[109)]	variable	40	52	15	5.5	–	–	4.3	7	20	21	3.2
ZLW-0660	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

[109)] **Basic version: 6mm square, plastic adapter for pin diameter 10mm included**

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drylin® ZLW | Toothed belt axes | Product range



Aluminium version

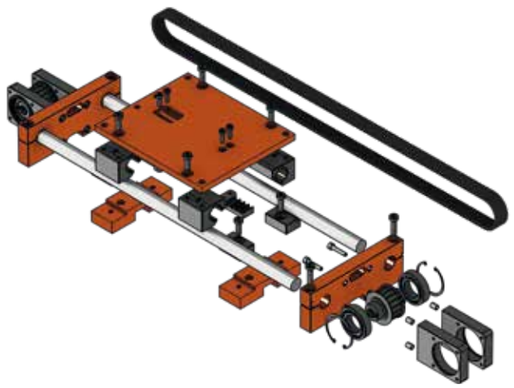


Stainless steel version

- High speed with ball bearing supported drive shaft
- Robust wide round belt
- Central belt adjustment on the carriage
- Based on lubrication-free drylin® W linear guide
- Variable motor connection due to solid and hollow shafts



ZLWA design with exchangeable liners



Technical data

Part No.	Max. stroke length -ES [mm]	Max. stroke length -AL [mm]	Transmission [mm/U]	Tooth profile	Toothed belt material	Toothed belt tension [N]
ZLW-10120[166)]	2,000	2,000	75	3M	Neoprene with fibre glass	200
ZLW-10160[166)]	2,000	2,000	75	3M	Neoprene with fibre glass	200
ZLW-10200[166)]	2,000	2,000	75	3M	Neoprene with fibre glass	200
ZLW-20120	2,500	3,000	144	8M	PU with stainless steel reinforcement	750
ZLW-20160	2,500	3,000	144	8M	PU with stainless steel reinforcement	750
ZLW-20200	2,500	3,000	144	8M	PU with stainless steel reinforcement	750

[166)] Option for WJ200UMA pillow blocks with exchangeable liners, ZLWA-□

drylin® ZLW toothed belt axes

drylin® ZLW | Toothed belt axes | Product range

Order key

Order example

ZLW A -20120

Toothed belt axis	Replaceable	Installation size	Axis distance

Options:

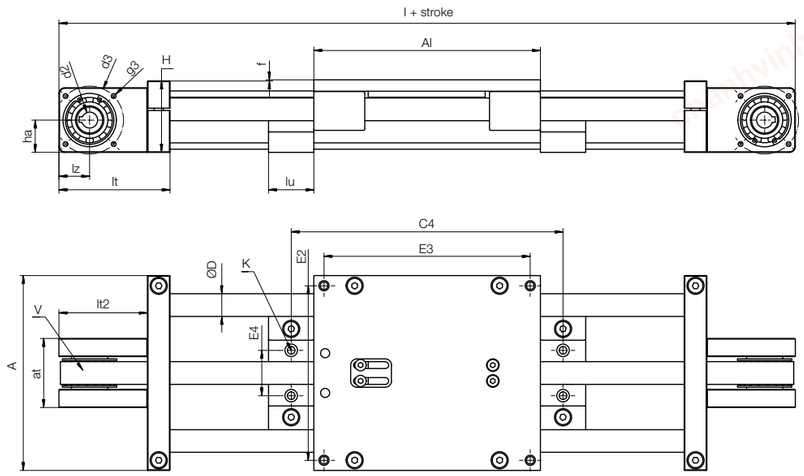
Axis distance
120 = 120mm
160 = 160mm
200 = 200mm

Design
AL = Aluminium
ES = Stainless steel

Carriage length
200 = 200mm

Drive pin
Hollow shaft

Stroke length
max. 3,000mm (AL)
max. 2,500mm (SS)



Dimensions [mm]

Part No.	A	Al	H	E2	E3	E4	C4	f	lt	ha	lz	l	d2 H7
ZLW-10120	153	150	40	140	137	40	240	1	74	18.0	18	198	10
ZLW-10160	193	150	40	180	177	90	240	1	74	18.0	18	198	10
ZLW-10200	233	150	40	220	217	120	240	1	74	18.0	18	198	10
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-10120	38	M4	10	M6[158)]	43	59	20	75
ZLW-10160	38	M4	10	M6[158)]	43	59	20	75
ZLW-10200	38	M4	10	M6[158)]	43	59	20	75
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

[158)] For DIN912 – M5

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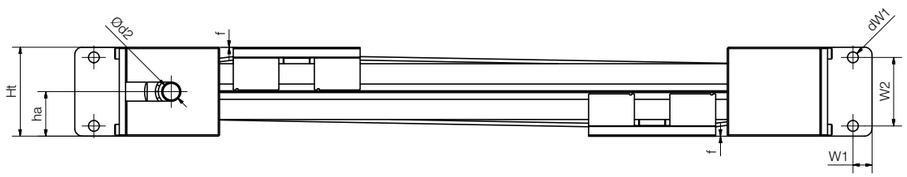
drylin® ZLW | Toothed belt axes | Product range

Opposite drive toothed belt with angle flange

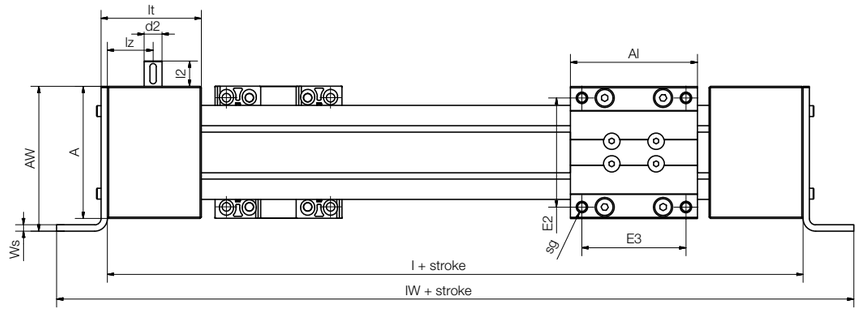


- Quick reverse positioning
- Fast right/left adjustment
- Available as standard and basic version
- Incl. angle flange for fixing
- Individual stroke lengths up to max. 3,000mm
- Radial loads up to 200N

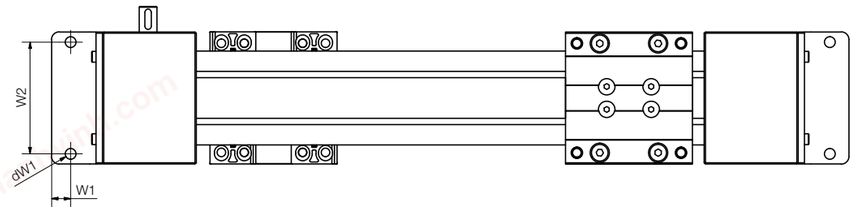


Angle flange alignment:

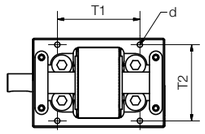
Option 02
mounted on the side,
ZLW alignment on
the edge



Option 04
mounted horizontally,
ZLW alignment horizontal



Option 03
mounted on the front



drylin® ZLW | Toothed belt axes | Product range

Order key

Order example

ZLW-1040-OD-02

Toothed belt axis	Installation size	Design	Type

Options:

Design
OD = Right/left opposite drive

Type
02 = With deep groove ball bearings

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	27	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: 6mm square, plastic adapter for pin diameter 10mm included**

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drylin® ZLW | Toothed belt axes | Product range

Tandem toothed belt axis



- Addition to the tandem toothed belt axis installation size 10/20
- Compact tandem toothed belt axis with two drive belts in one unit
- Two carriages can be controlled synchronously or independently
- With drylin® W exchange bearings for fast bearing exchange on the rail
- Can be supplied ready-to-connect with igus® motors and drylin® D1 dryve motor control system

Order key

Order example

ZLWT-10160

Toothed belt axis	Installation size

Technical data

Part No.	Max. stroke length [mm]	Trans-mission [mm/U]	Tooth profile	Drive belt Material	Tension [N]	Weight [kg]	Additional (per 100mm) [kg]
ZLWT-10160	2,000	75	3M	Neoprene with fibre glass	200	4.0	0.25
ZLWT-10200	2,000	75	3M	Neoprene with fibre glass	200	4.5	0.30
ZLWT-20200	3,000	144	8M	PU with stainless steel reinforcement	750	11.0	0.50
ZLWT-20300	3,000	144	8M	PU with stainless steel reinforcement	750	12.5	0.65

Dimensions [mm]

Part No.	A	Al	H	E2	E3	E4	C4	f	lt	ha	lz	l	d2 h7
ZLWT-10160	193	150/200/250	40	180	Al–13	90	240	1	74	18.0	18	448	10
ZLWT-10200	233	150/200/250	40	220	Al–13	120	240	1	74	18.0	18	448	10
ZLWT-20200	252	200/250/300/350	63	234	Al–18	120	240	1	98	28.5	27	596	14
ZLWT-20300	352	200/250/300/350	63	334	Al–18	200	240	1	98	28.5	27	596	14

Part No.	d3	g3	D	K For DIN912 – M6	at	lt2	lu	V [mm/rev]
ZLWT-10160	38	M4	10	M6	107	59	20	75
ZLWT-10200	38	M4	10	M6	107	59	20	75
ZLWT-20200	60	M5	20	M8	122	78	40	144
ZLWT-20300	60	M5	20	M8	122	78	40	144

drylin® ZLW | Toothed belt axes | Product range

Linear axes with motor from stock – available in 24hrs



DLE-SA-0001



DLE-SA-0002



DLE-SA-0003

Available in 24 hours:
drylin® linear axes with motor

igus® delivers ready-to-install, preconfigured 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
- Basis drylin® ZLW and SAW linear axes

Technical data

Part No.	Installation size	Carriage length	Stroke length	Motor type	Max. static load capacity axial [N]	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

Further information about the motors
▶ Page 1518

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drylin® econ | Linear axes | ZLN econ

Cost-effective, space-saving econ toothed belt axis



Order key

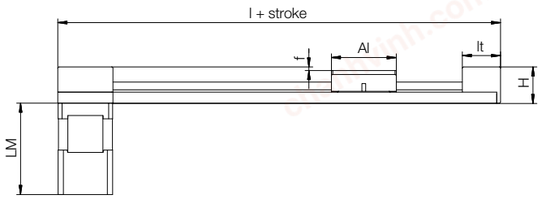
Order example

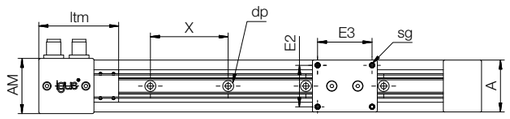
ZLN-40

Toothed belt axis

Installation size

- Motor can now be mounted on the bottom as well as on top
- Low-profile, 27mm height
- Vertical load from 30N
- Ready-to-install with NEMA stepper motors or BLDC/DC motors
- Delivery from 24 hours



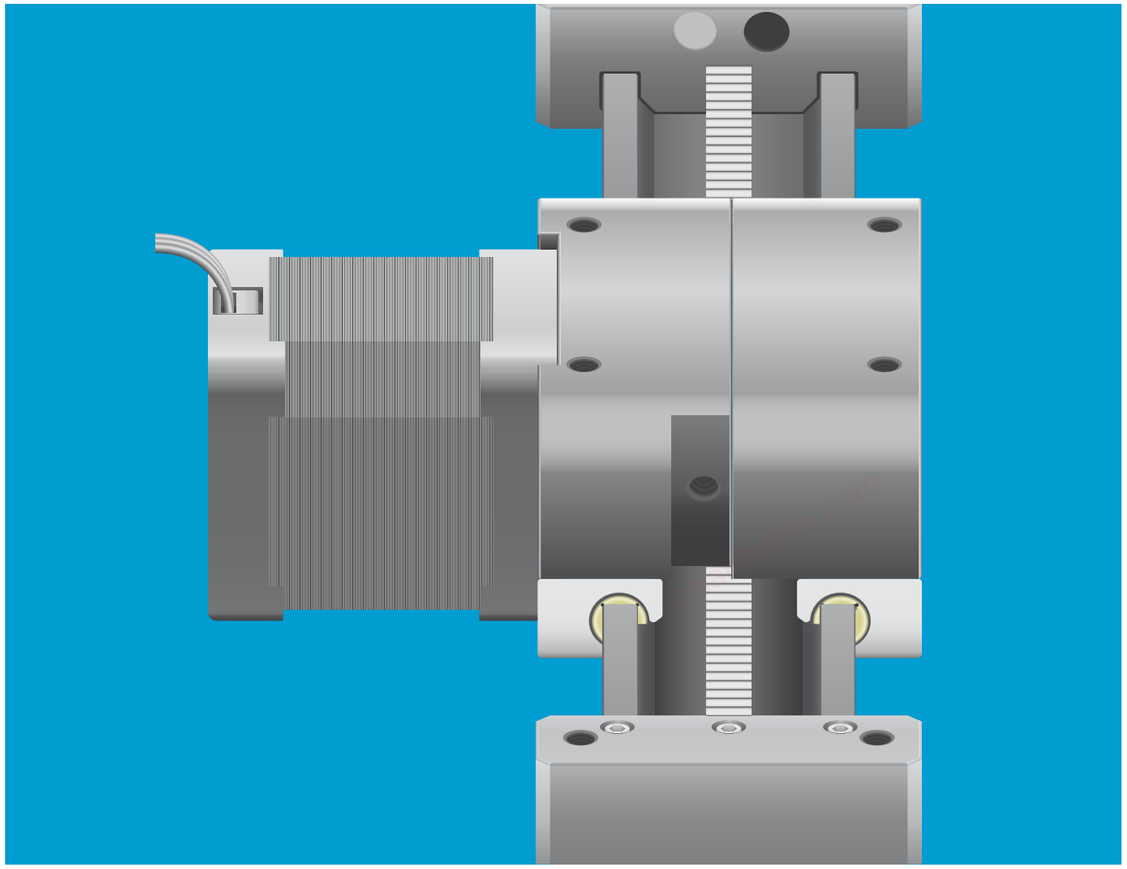


Technical data

Part No.	Max. stroke length [mm]	Weight [kg]	Additional [kg] (per 100mm)	Max. static load capacity Axial [N]	radial [N]	Shaft end support material [Nm]
ZLN-40	750	0.24	0.05	30	80	0.15

Dimensions [mm]

Part No.	A	Al	H	X	E2	E3	AM	LM	lt	ltm	dp	sg	l	v	f
ZLN-40	40	50	28	60	32	42	42.5	70	30	61.5	4.5	M3 ↧	141.5	60	2.8



drylin® electric drive technology – Cantilever axis

- High dynamics
- Drive: Rack or toothed belt
- Lightweight design
- For z-axis in multi-axis gantries
- Lubrication and maintenance-free



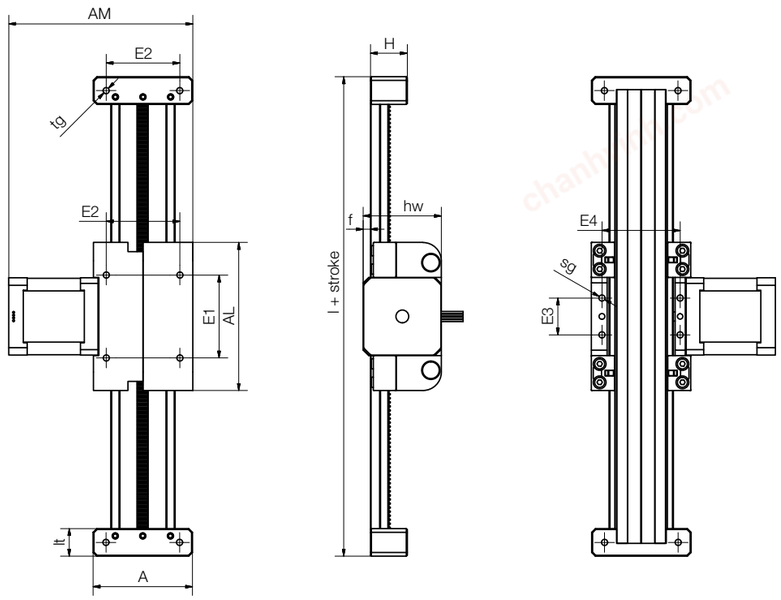
chanhvinh.com

drylin® GRW | Cantilever axes | Product range

Dynamic z-axis for linear robot structures



- Direct force transfer via rack
- Compact structure
- Handling for loads up to 10N
- Available accessories ▶ **Page 1503**
- **Available with motor**



Technical data

Part No.	Stroke length [mm]	Weight [kg]	Additional (per 100mm)	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

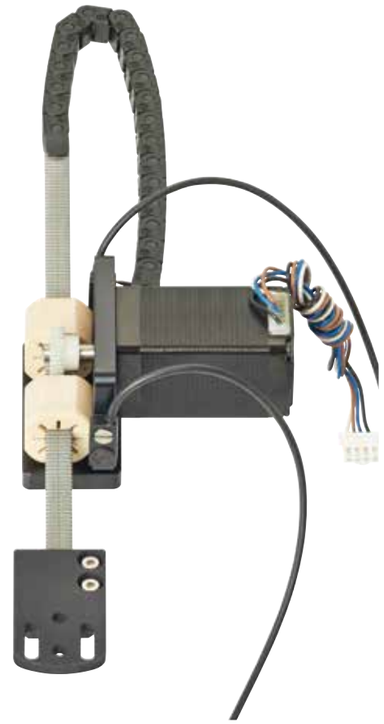
Dimensions [mm]

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

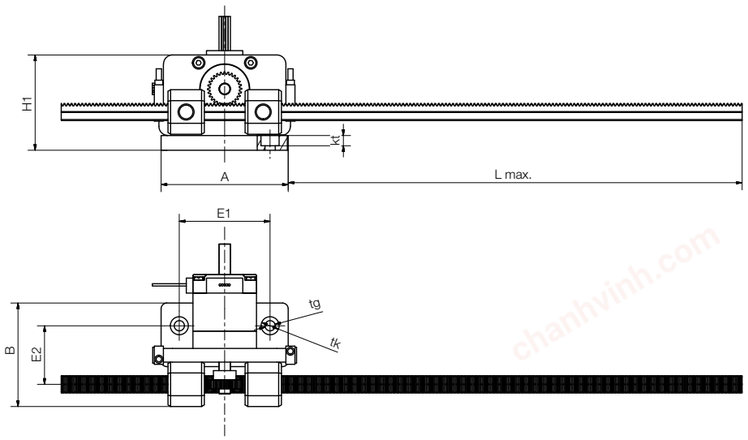
[131)] Depending on the type of motor

drylin® GRQ | Gripper axes | Product range

Extremely light axis for Pick & Place



- Toothed, hard-anodised, corrosion-resistant square hollow section
- Loads up to 500g with a speed of up to 0.7m/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	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	7.5	22

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drylin® GRR | Lightweight z-axis | Product range

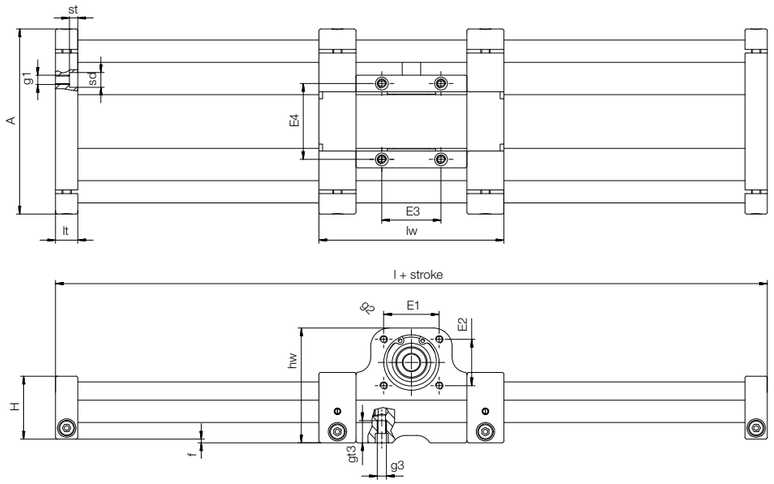
drylin® GRR lightweight z-axis with direct rack drive

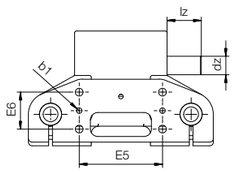


- Light z-axis for strokes up to 500mm
- Axis weight of only 1.45kg with 500mm stroke
- Made from aluminium and plastic
- Dynamic mass of only 0.9kg enables fast operation
- Ideal for linear robots
- Direct rack drive
- Torsionally rigid due to drylin® AWMR aluminium hollow shafts
- Lubrication-free and maintenance-free due to drylin® R liners

Typical application areas:

- Handling
- Sprue pickers
- Room linear robots
- Lifting equipment
- Lab automation





Technical data

Part No.	Max. stroke length [mm]	Transmission [mm/rev]	Tooth profile	Weight without stroke [kg]	Max. static load capacity axial [N]
GRR-1280	750	72.26	Module 1	0.86	50

Dimensions [mm]

Part No.	L	A	H	lw	hw	lz	dz h7	f	lt	E1	E2	g2
GRR-1280	124	100	34	100	62	18	10	2	12	30	25	M4-10

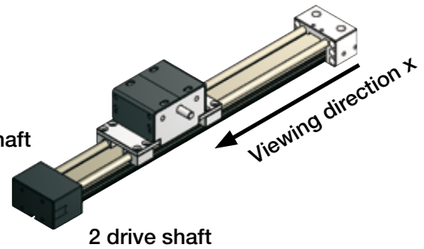
Part No.	E3	E4	g3	gt3	E5	E6	g1	sd	st	b1 h7
GRR-1280	32	41	M5	12	45	20	M5	8	4.5	3

drylin® ZAW | Toothed belt axes | Product range

Cantilever axis

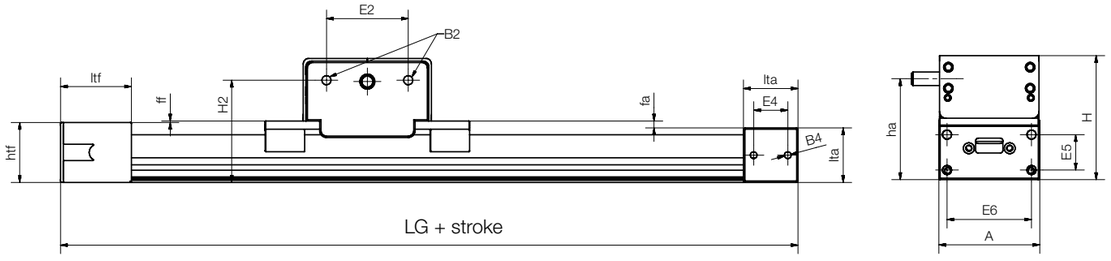


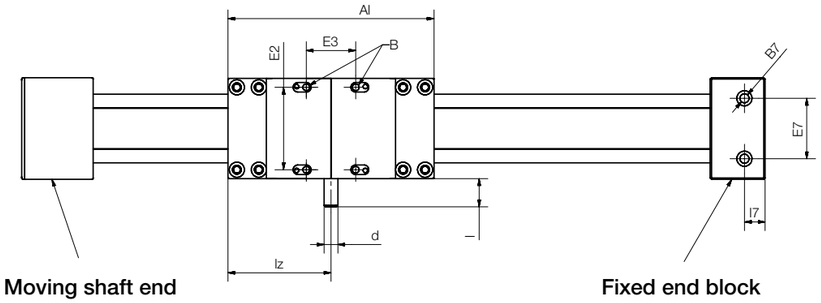
- Fixed drive unit
- Hard-anodised aluminium axis profile
- Lightweight
- Max. stroke 1,000mm
- Max. axial load 50N
- Permissible load for carriage $M_{y\,max}$: 15Nm



1 drive shaft right

2 drive shaft left





Moving shaft end support ZTF

Fixed end block ZTA

Order key

Cantilever axis with ball bearings

ZAW-1040-02-S-150-L-500

Cantilever axis	Installation size	Type	Design	Carriage length [mm]	Drive pin	Stroke length

Options:

Design
S = Standard

Drive pin
L = Drive pin left
R = Drive pin right
L/R = Drive pin on both sides

Stroke length
Max. 1,000mm

Dimensions [mm]

Part No.	A –0.3	H	H2	LG	Al ±0.3	ha ±0.1	d h9	l +1	l7	lz	E2 ±0.15	E3 ±0.15
ZAW-1040	74	91	75	242	150	74	10	20	15	75	60	60

Part No. Connecting dimensions	B –0.3	B2	htf	ltf ±0.3	ff ±0.1	fa h9	lta ±0.1	E4	B4 ±0.15	B7	E5 ±0.15	E6	E7
ZAW-1040	M6	M8	44	52	2	5	40	20	M6	M6	26	62	44

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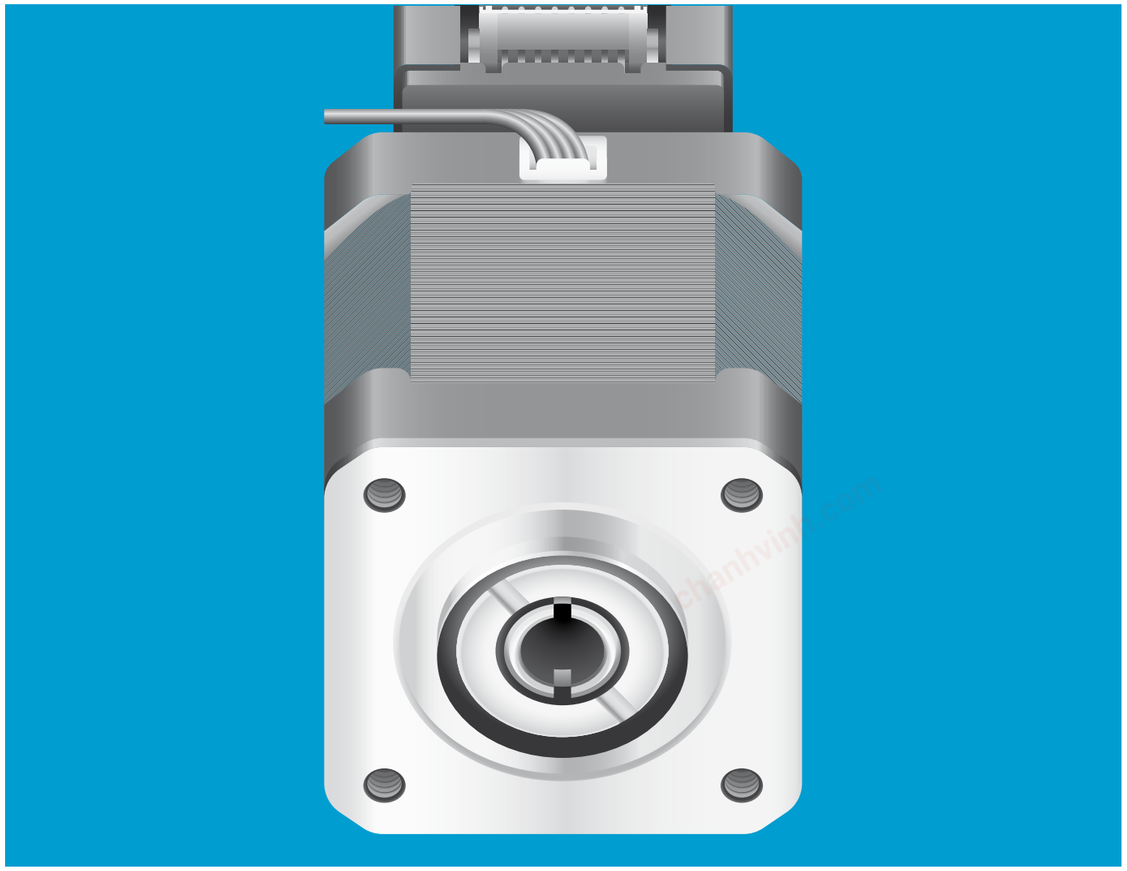
My sketches



drylin® electric drive technology – Lead screw motors

- Seven lead screw types with 0.8–50mm pitch
- 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® SAWC and SLN linear units



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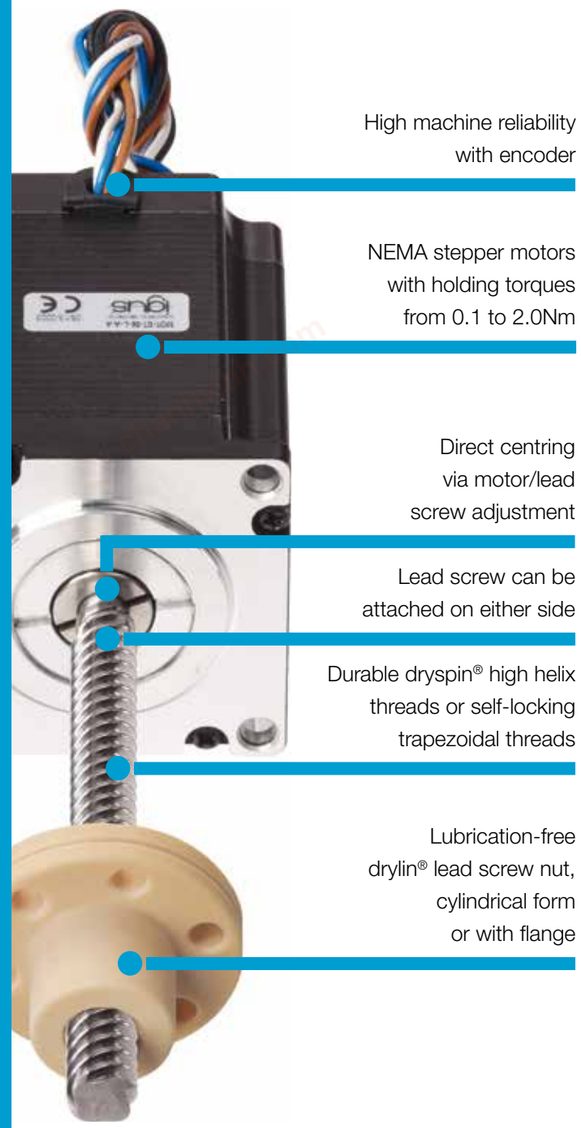

Efficient, precise and compact – drylin® lead screw motors

drylin® with the lead screw motor range is the optimum solution for systems that need a stepper motor and integrated lead screw. The stand-alone versions have a compact design and are available with NEMA stepper motors with or without an encoder. The lead screw is centred and, in combination with the dryspin® high helix thread technology, the system has a long service life.

- 3 stepper motor sizes
- Lubrication-free drylin® lead screw technology
- Available ready to connect

Typical application areas

- Medical technology
- Tool building
- Laboratory technology

Available from stock
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity.

Product finder
▶ www.igus-asean.com/drylinE-finder

Stand-alone solution for customer requirements – with or without encoder



- Stepper motors in three different sizes with stranded wire and 0.1–2Nm holding torque
- Seven lead screw types with 0.8–50mm pitch
- Maximum precision by centring the lead screw with a 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® SAWC, SLN and SLT linear axes

Technical data and dimensions [mm] – lead screw motors

Part No.	Motor size	Distance over hubs [mm]	Holding torque [Nm]	Shaft load axial [N]	Encoder Optional
MOT-ST-28-L-A-A	NEMA11	28	0.1	50	No
MOT-ST-28-L-A-B	NEMA11	28	0.06	50	No
MOT-ST-28-L-C-A	NEMA11	28	0.1	50	Yes
MOT-ST-28-L-C-B	NEMA11	28	0.06	50	Yes
MOT-ST-42-L-A-A	NEMA17	42	0.5	100	No
MOT-ST-42-L-A-B	NEMA17	42	0.2	100	No
MOT-ST-42-L-C-A	NEMA17	42	0.5	100	Yes
MOT-ST-42-L-C-B	NEMA17	42	0.2	100	Yes
MOT-ST-56-L-A-A	NEMA23	56	2.0	500	No
MOT-ST-56-L-A-B	NEMA23	56	1.0	500	No
MOT-ST-56-L-C-A	NEMA23	56	2.0	500	Yes
MOT-ST-56-L-C-B	NEMA23	56	1.0	500	Yes

Part No.	Installation size	B1	B2 ±0.2	D2 Ø ±0.025	D3 Ø	D4 Ø	D5 Ø	L2	L3	L4
Without encoder										
MOT-ST-28-L-A-B	short (S)	28.2	23.00	22.00	M2.5	–	–	31.5	2.0	0
MOT-ST-28-L-A-A	medium (M)	28.2	23.00	22.00	M2.5	19.05	2 x M2.5–2	51.0	2.0	0
MOT-ST-42-L-A-B	short (S)	42.3	31.00	22.00	M3	–	–	30.5	2.0	0
MOT-ST-42-L-A-A	medium (M)	42.3	31.00	22.00	M3	19.05	2 x M2.5–2	49.0	2.0	0
MOT-ST-56-L-A-B	short (S)	56.4	47.14	38.10	5	–	–	50.0	1.6	5
MOT-ST-56-L-A-A	medium (M)	56.4	47.14	38.10	5	20.9	6 x M2–2	76.0	1.6	5
With encoder										
MOT-ST-28-L-C-B	short (S)	28.2	23.00	22.00	M2.5	–	–	47.2	2.0	0
MOT-ST-28-L-C-A	medium (M)	28.2	23.00	22.00	M2.5	–	–	66.2	2.0	0
MOT-ST-42-L-C-B	short (S)	42.3	31.00	22.00	M3	–	–	46.2	2.0	0
MOT-ST-42-L-C-A	medium (M)	42.3	31.00	22.00	M3	–	–	65.0	2.0	0
MOT-ST-56-L-C-B	short (S)	56.4	47.14	38.10	5	–	–	65.7	1.6	5
MOT-ST-56-L-C-A	medium (M)	56.4	47.14	38.10	5	–	–	92.0	1.6	5

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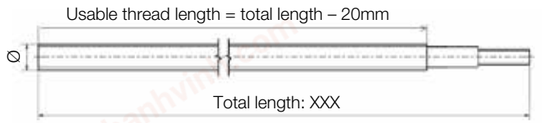
drylin® | Lead screw motors | Product range

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 thread with dryspin® technology

Part No.	Motor size	Distance over hubs [mm]	Thread type	Lead screw Ø [mm]	Pitch P	Max. 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

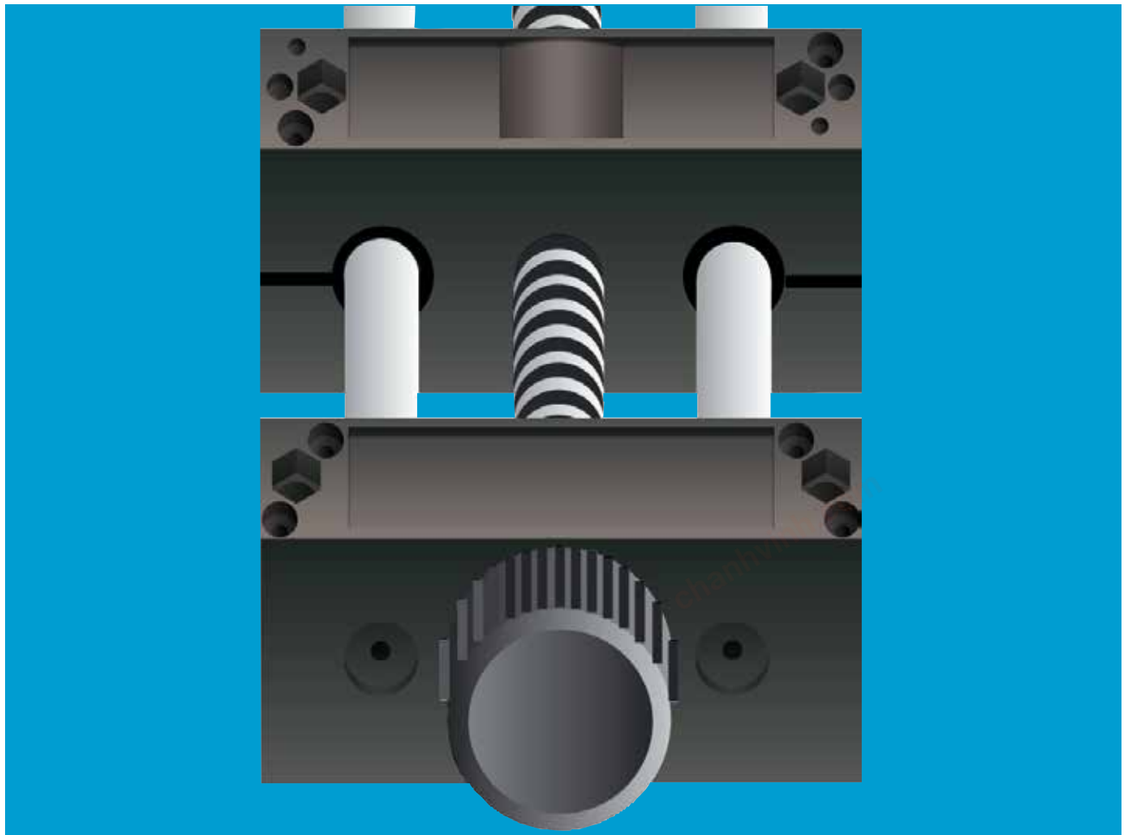
Part No.	Motor size	Distance over hubs [mm]	Thread type	Lead screw Ø [mm]	Pitch P	Max. Length
PTGSG-MOT-M5X0,8-R-XXX-ES	NEMA11	28	M5	5	0.8	250
PTGSG-MOT-08X1,5-R-XXX-ES	NEMA17/23	42 / 56	Tr	8	1.5	300
PTGSG-MOT-10X2-R-XXX-ES	NEMA17/23	42 / 56	Tr	10	2	500
PTGSG-MOT-12X3-R-XXX-ES	NEMA17/23	42 / 56	Tr	12	3	500
PTGSG-MOT-12X6P3-R-XXX-ES	NEMA17/23	42 / 56	Tr	12	6P3	500

XXX: Lead screw length

If desired 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 approximately 50%
after 24 hours 100%



drylin® general drive technology – econ entry-level series

- Cost-effective linear modules
- Drive: Trapezoidal and high helix lead screws, toothed belt
- Lightweight construction
- Corrosion-resistant
- For positioning and adjusting tasks



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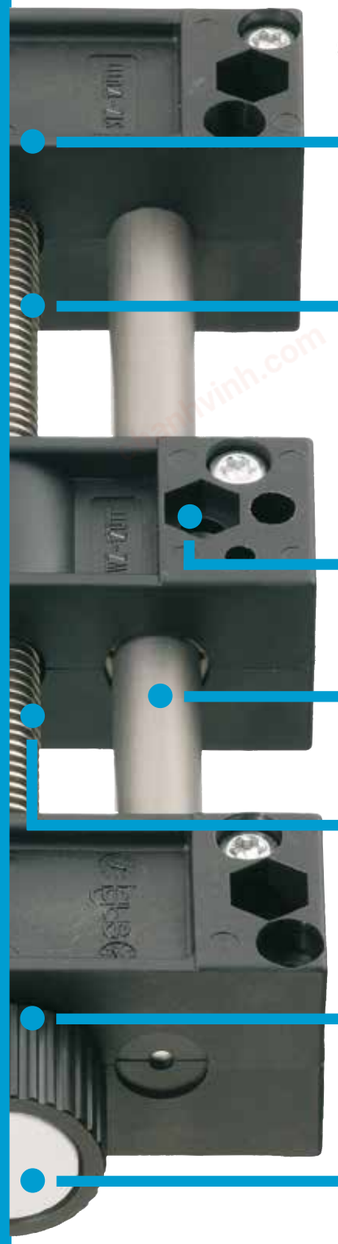
Lightweight and cost-effective



Lubrication-free linear modules – drylin® econ

With econ, igus® defines the cost-effective maintenance-free entry-level models of the drylin® linear axes. There are suitable entry-level models in almost every product line and installation size, either with a lead screw or toothed belt. The econ series is characterised by cost-effective components produced via injection moulding, anodised aluminium profiles and fast assembly. drylin® econ models are configured and delivered so that they are ready to install and are thus the perfect alternative to complex in-house solutions for simple adjustment tasks.

- Lightweight construction due to combination of plastic and aluminium
- Designed for a fast assembly
- Cost-effective due to injection moulding and clear anodised surface

Typical application areas

- Gripper technology
- Format adjustments
- Camera adjustment

Available in 3–8 days
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity.

Carriage lengths: 26–45mm
Stroke lengths: up to 500mm

Product finder
▶ www.igus-asean.com/shtp-productfinder



drylin® econ SLWP linear module – robust in 2 sizes

- Flat and torsion-resistant due to drylin® W double shaft profiles
- Lead screw with self-locking trapezoidal or metric thread
- Fast adjustment due to dryspin® high helix thread

▶ Page 1454



drylin® econ SHTP linear module – flexible in 3 sizes

- Lead screws made from aluminium, carbon, steel, stainless steel
- Carriage with integrated lead screw nuts and drylin® R liner
- With trapezoidal or high helix thread

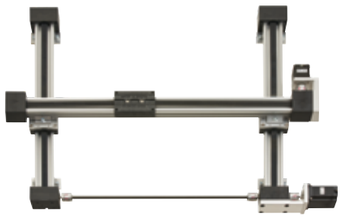
▶ Page 1456

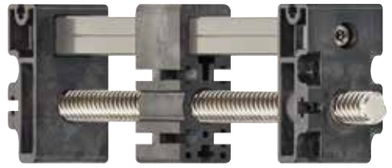


drylin® econ SLN miniature module SLN – small and fast

- Slim, narrow design
- Lead screw mounted on plain bearings with metric thread or dryspin® high helix thread
- Feed rate of up to 25mm per rotation

▶ Page 1460

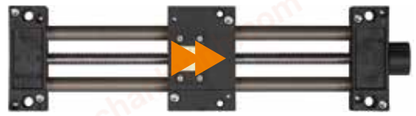




drylin® econ SLTP linear system – savings thanks to injection moulding

- Developed with 3D printing, produced cost-effectively thanks to injection moulding
- Very fast assembly due to few components
- Carriage with a lot of fastening options

▶ Page 1455



drylin® econ SHTP-FF linear module – Fast-Forward

- With quick-release mechanism
- For fast adjustment
- Self-locking
- Variable stroke lengths

▶ Page 1459



drylin® econ ZLW toothed belt axis – light and fast

- Lightweight due to use of plastic and aluminium
- Variable attachment by means of slot nuts and clamping elements
- Individual stroke lengths (sizes 0630 to 500mm, 1040 to 1,000mm)

▶ Page 1461

drylin® econ DLE-FG flat linear robot – for predefined surfaces

- Linear robot based on econ toothed belt axes
- For a workspace of 500 x 500mm
- Ready to connect with NEMA stepper motors

▶ Page 1462

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drylin® econ | Linear modules | Product range

The SLW entry-level model



- Based on drylin® W profile guides
- Clear anodised guide rails
- Torsion-resistant double shaft systems
- Self-locking due to metric or trapezoidal thread
- Fast operation without self-locking due to dryspin® high helix thread
- Available accessories

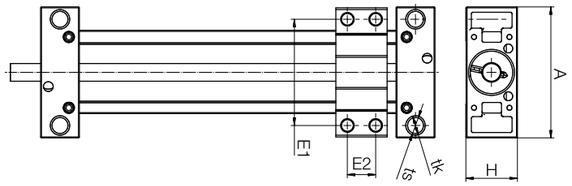
▶ Page 1503

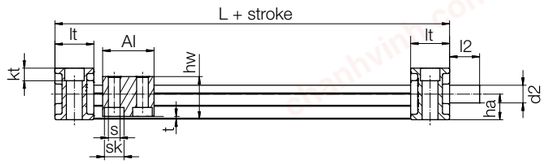
Order key

Order example

SLWP-0630-E

Compact | Dimension | econ series





Technical data

Part No.	Max. stroke length [mm]	Weight [kg]	Additional (per 100mm) [kg]	Max. stat. load capacity axial [N]	radial [N]
SLWP-0630-E	300	0.15	0.08	50	50
SLWP-1040-E	500	0.30	0.10	50	50

Dimensions [mm]

Part No.	A –0.3	Al –0.3	H	E1 ±0.2	E2 ±0.2	E3 ±0.15	l	hw	f	lt ±0.1	tk	ts
SLWP-0630-E	54	60	20	40	45	51	100	18.0	1.5	20	11	6.6
SLWP-1040-E	74	29	29	60	16	–	73	23.5	1.5	22	11	6.8

Part No.	kt ±0.1	s	sk	d	T	l2	d2 Standard	ha
SLWP-0630-E	8.0	5.0	6Kt M4	5.0	Tr8x1.5	15	Tr8x1.5[160]	9.5
SLWP-1040-E	9.0	6.3	6Kt M6	7.5	Tr10x2	17	Tr10x2[161]	14.5

[160] Alternative: M8, Tr8x1.5, Ds8x10, Ds8x15

[161] Alternative: Tr10x2, Tr10x3, Ds10x12, Ds10x25, Ds10x50

drylin® econ | Linear modules | Product range

The SLT entry-level model



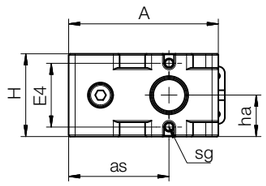
- Extremely cost-effective
- Torque-resistant due to AWMQ aluminium square profile
- Variable design
- Left or right-hand lead screw option
- Carriage with many connection options

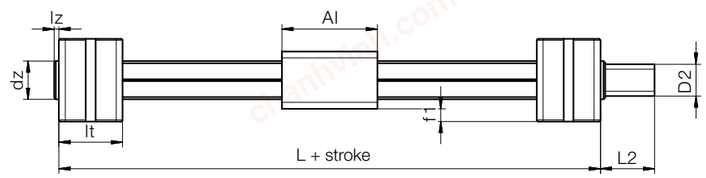
Order key

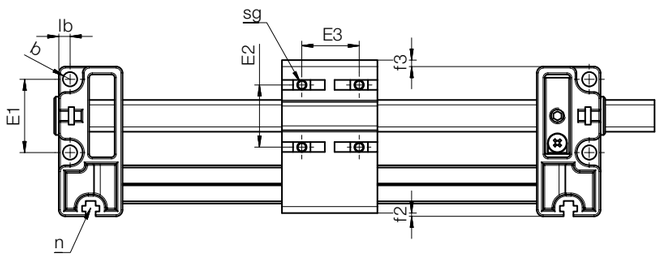
Order example

SLTP-1012-E

Compact | Dimension | econ series







Technical data

Part No.	Max. stroke length [mm]	Weight [kg]	Additional (per 100mm) [kg]	Max. stat. load capacity axial [N]	radial [N]	Max. speed [rpm]	Max. speed [m/min]
SLTP-1012-E	300	0.147	0.081	50	100	250	0.5

Dimensions [mm]

Part No.	A	H	L + stroke	Al	L2	D2	E1	E2	E3	E4	T[152]
SLTP-1012-E	47	26	70	30	17	10	23	19.5	8.5–24.5	20	Tr10x2

Part No.	lt	dz –0.05	lz	b	lb	sg[153] (DIN562)	ha	as	n	f1	f2	f3
SLTP-1012-E	20	12	1.5	4.5	3.5	M3	13	31.5	M3	4	1	2

[152] Alternative: Tr10x3, Tr10x4P2, Ds10x12, Ds10x25, Ds10x50

[153] 6 pieces of M3-DIN562 screws included in delivery

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drylin® econ | Linear modules | Product range

The SHT miniature version



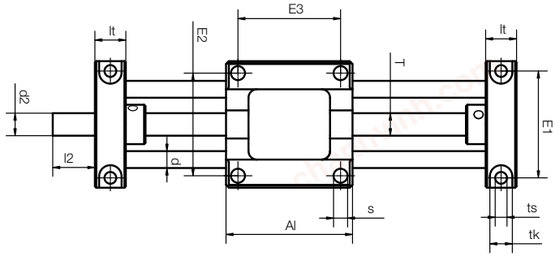
- Miniature version
- Lightweight
- Cost-effective
- Corrosion-resistant
- Carriages and shaft end supports made from high-performance polymers
- Available accessories
  ▶ **Page 1503**

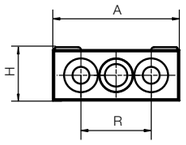
Order key

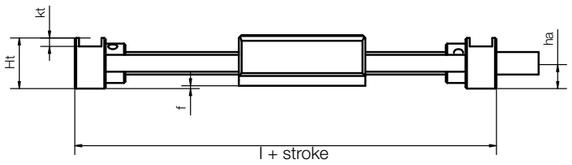
Order example

SHTP-01-06-AWM

SHT polymer	Design	Dimension	Shaft material







Technical data

Part No.	Max. stroke length [mm]	Aluminium shaft Weight [kg]	Aluminium shaft Additional [kg] (per 100mm)	Max. static load capacity axial [N]	Max. static load capacity radial [N]	More Information
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	4.2

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® econ | Linear modules | Product range

SHTP – the lightweight SHT entry-level model



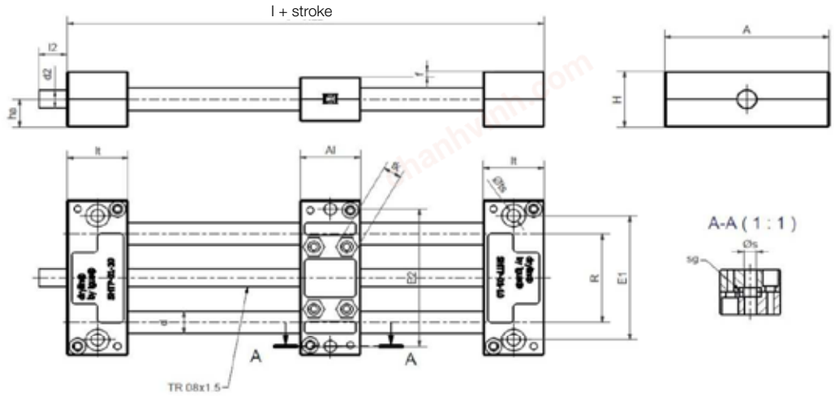
- Lightweight
- Low-profile design
- Ideal for multi-carriage solutions
- Available accessories
  ▶ **Page 1503**

Order key

Order example

SHTP-01-10

SHT polymer	Design	Dimension



Technical data

Part No.	Max. stroke length [mm]	Aluminium shaft Weight [kg]	Aluminium shaft Additional [kg] (per 100mm)	More Information
SHTP-01-10	350	0.2	0.08	Drive nut and linear bearings 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)**

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drylin® econ | Linear modules | Product range

SHTP – the cost-effective SHT version



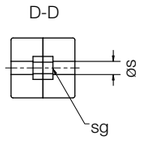
- Solid polymer design
- Lightweight
- Cost-effective
- Corrosion-resistant
- Available accessories
  ▶ **Page 1503**
- **Available with motor**

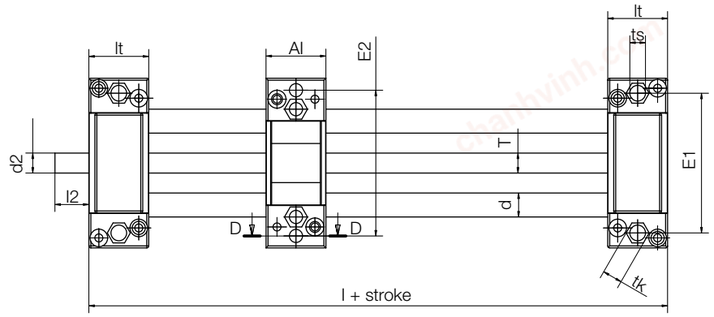
Order key

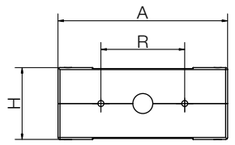
Order example

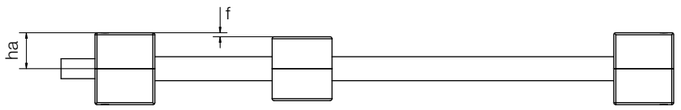
SHTP-01-12-AWM

SHT polymer	Design	Dimension	Shaft material









Technical data

Part No.	Max. stroke length [mm]	Aluminium shaft Weight [kg]	Aluminium shaft Additional [kg] (per 100mm)	More Information
SHTP-01-12	500	0.35	0.11	Drive nut and linear bearings made from iglidur® J
SHTP-02-12	500	0.35	0.11	Bearing and nut integrated into the carriage

Dimensions [mm]

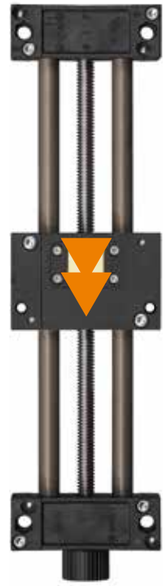
Part No.	A	Al	H	E1	E2	l	R	f	lt ±0.1	tk	ts +0.15
SHTP-01-12	85	30	36	70	73	90	42	2	30	10	6.0
SHTP-02-12	85	30	36	70	73	90	42	2	30	10	6.0

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® econ | Linear modules | Product range

With "Fast-Forward" quick release mechanism



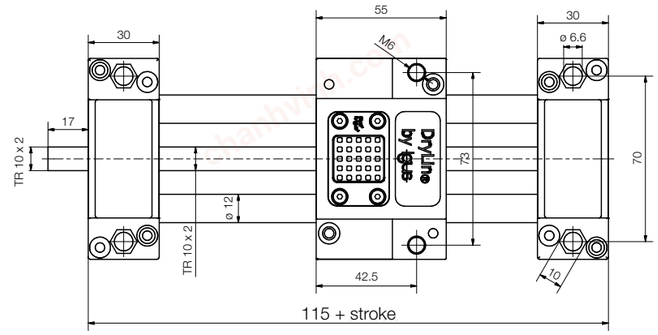
- Light solid polymer model
- For fast format adjustments
- Self-locking
- Variable stroke length
- Only recommended for horizontal applications
- Max. stat. axial load 200N
- Max. dynamic. axial load 50N
- Available accessories
  ▶ **Page 1503**

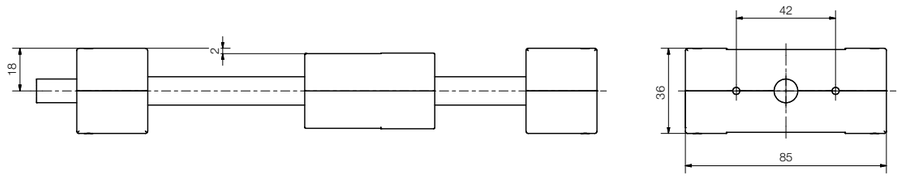
Order key

Order example

SHTP-01-12-AWM-FF

SHT polymer	Design	Dimension	Shaft material	Fast Forward



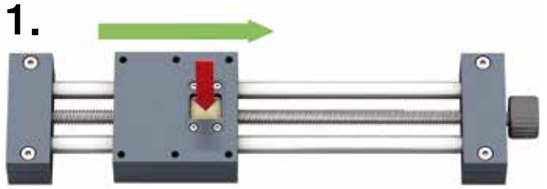


Technical data

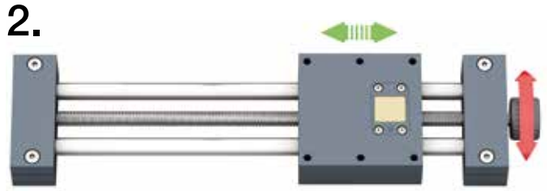
Part No.	Max. stroke length [mm]	Weight [kg]	Additional weight (per 100mm)
SHTP-01-12-AWM-FF[100]	500	0.35	0.11

[100] Liners and lead screw nuts made from iglidur® J

1.



2.



press > disengage > move manually > click into place > fine-tuning

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drylin® econ | Linear modules | Product range

Miniature linear module, basic version



- Single parts made from aluminium and plastic
- Entry-level model
- Lead screw with plain bearing support
- Retrofitting possible
- Available accessories
  ▶ **Page 1503**
- **Available with motor**

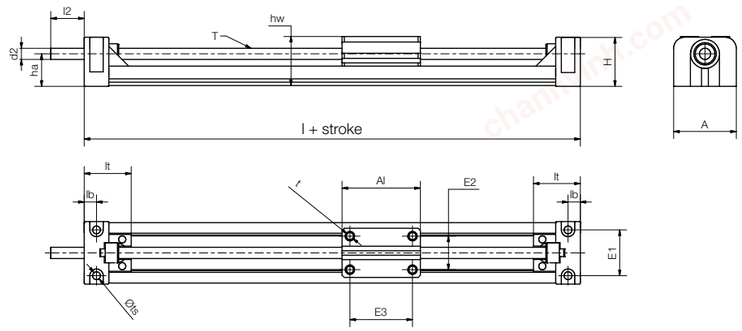
Order key

Order example

SLN-27-03-0008

Standard	Dimension	Carriage version	Pitch

Options:
Carriage version
03 = Basic



Technical data

Part No.	Max. stroke length	Weight	Additional	Max. static load capacity		Max. speed	Max. drive torque
			[kg]	Axial	radial		
	[mm]	[kg]	(per 100mm)	[N]	[N]	[rpm]	[Nm]
SLN-27-03-0008	250	0.06	0.04	10	40	100	0.10
SLN-27-03-0025	250	0.06	0.04	10	40	100	0.15
SLN-27-03-0051	250	0.06	0.04	10	40	100	0.20
SLN-27-03-0127	250	0.06	0.04	10	40	100	0.30
SLN-27-03-0254	250	0.06	0.04	10	40	100	0.40

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	4	15	14.5
SLN-27-03-0025	28	35	22	20.5	15	28	15	77	22	21	5.5	3.5	3.2	6.35x2.54	5	15	14.5
SLN-27-03-0051	28	35	22	20.5	15	28	15	77	22	21	5.5	3.5	3.2	6.35x5.08	5	15	14.5
SLN-27-03-0127	28	35	22	20.5	15	28	15	77	22	21	5.5	3.5	3.2	6.35x12.7	5	15	14.5
SLN-27-03-0254	28	35	22	20.5	15	28	15	77	22	21	5.5	3.5	3.2	6.35x25.4	5	15	14.5

[102] The dimension E11 can only be found in conjunction with the igus® motor connection

[98] Thread/remaining thread visible

With manual clamp (optional): Part No. SLN-27-HK-...

drylin® econ | Linear axes | ZLW econ

Linear axes with toothed belt



- Fast positioning of small loads
- Quiet operation and flat design
- Drive pin on one or both sides
- Plastic linear carriage
- Lightweight due to combination of plastic and aluminium
- Technical data
  ▶ **Page 1424**

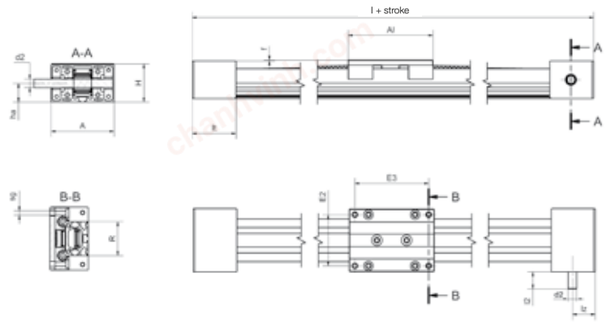
Order key

Order example

ZLW-0630-02-E

Toothed belt axis	Installation size	Type	Design

Options:
Type
02 = With deep groove ball bearings
Design
E = econ series (0630/1040)



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	20.5	20	8
ZLW-1040-02	74	100	44	60	87	204	40	1	52	M6	22	22.5	27	20	10

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[109]	variable	40	52	15	5.5	–	–	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

[109] Basic version: 6mm square, plastic adapter for pin diameter 10mm included

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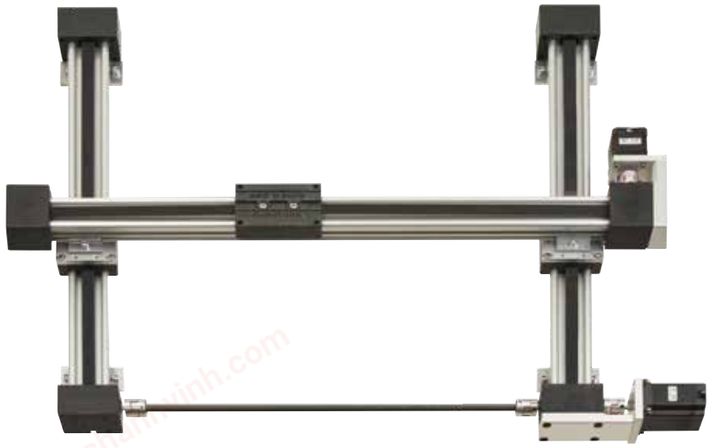
drylin® econ | Multi-axis linear robots | Product range

Flat linear robot – for predefined surfaces



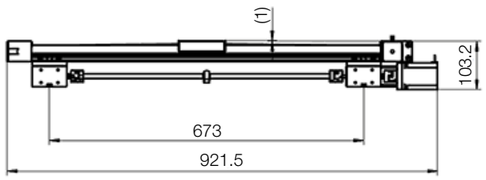
DLE-FG-0003

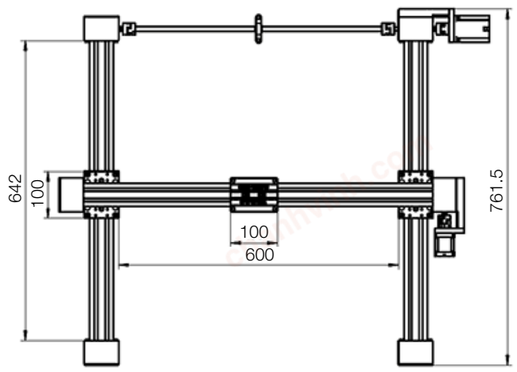
- **x-axis:** drylin® ZLW-1040 econ toothed belt axis with NEMA23 stepper motor with stranded wire
- **y-axis:** drylin® ZLW-1040 econ toothed belt axis with NEMA17 stepper motor
- Proximity switches available

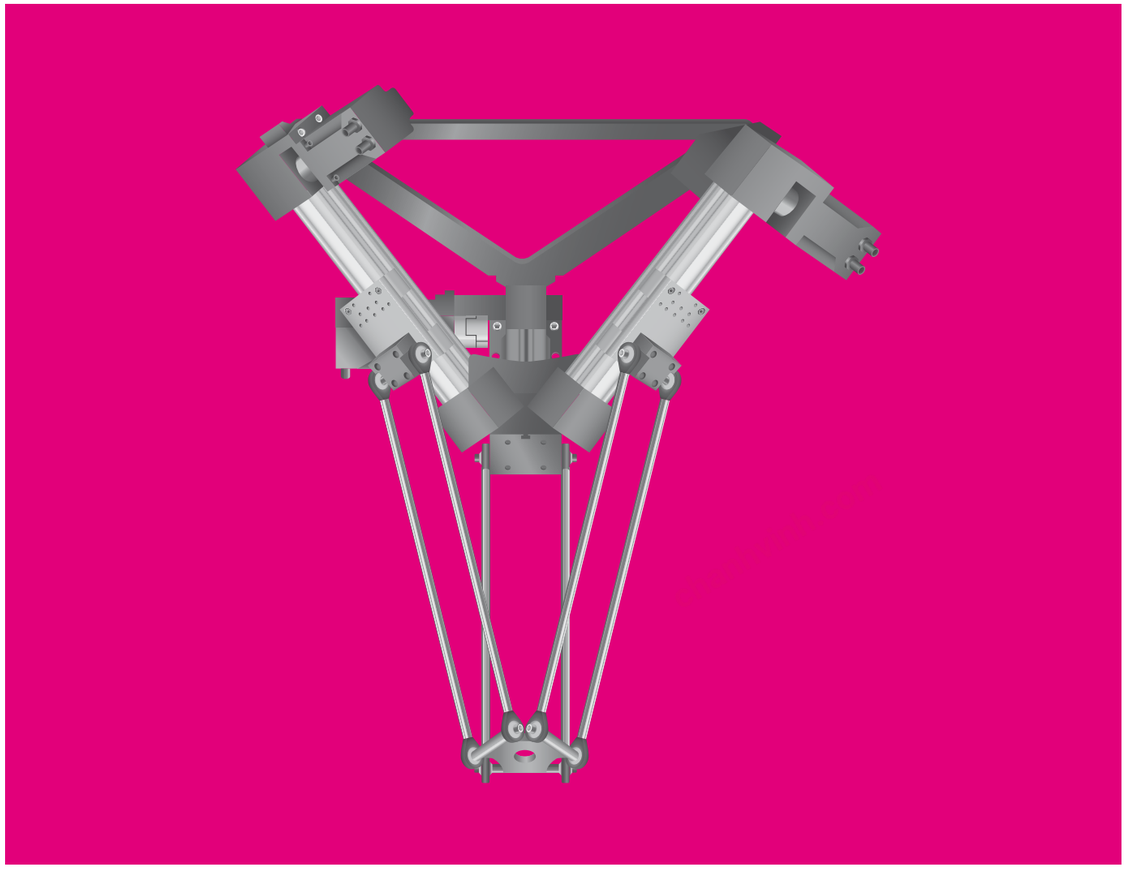
Technical data

Workspace:	500 x 500mm
Max. speed:	0.5m/s
Max. acceleration:	1m/s²
Repeatability:	1mm
Load capacity:	10N

Part No.
DLE-FG-0003 econ version







drylin® automation

- Rotary axes
- Cantilever axis
- Linear robots
- Delta robots
- Robot components

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drylin® automation | Product overview

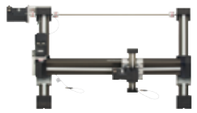
drylin® – multi-axis linear robots



Line robot:
for vertical working planes
DLE-LG
▶ Page 1470



Flat linear robot:
for predefined surfaces
DLE-FG
▶ Page 1471



Room linear robot:
for three dimensional applications – DLE-RG
▶ Page 1472

drylin® – delta robots – lift/swivel unit



Delta robots
▶ Page 1474



Lift/swivel unit, linear and rotating:
drylin® HSQ
▶ Page 1476



Torque-resistant linear module, controlled separately:
drylin® SLQ
▶ Page 1477



Linear actuator:
drylin® QLA
▶ Page 1478

robolink® – polymer-based robot arm

New



Robot arm with integrated control system:
robolink® RL-DP
▶ Page 1480

New



Robot arm available in 8 versions:
robolink® RL-DP
▶ Page 1481

robolink® – rotary axes



Rotary axis with two PRT slewing rings, with plain bearings: robolink® D
▶ Page 1484



Rotary axis with one PRT slewing rings, with plain bearings: robolink® D
▶ Page 1485



Rotary axis with two PRT slewing rings, with ball bearings: robolink® D
▶ Page 1486



Rotary axis with one PRT slewing rings, with ball bearings: robolink® D
▶ Page 1487

robolink® – rotary axes



Robot joint with direct drive:
robolink® D
▶ Page 1488



Components with DC motor:
robolink® D
▶ Page 1490



Robot joint as gear version:
robolink® D
▶ Page 1491



Calculate and configure robot arms:
robolink® designer
▶ Page 1492

robolink® – Apiro®



New

Worm gear joints:
robolink® Apiro®
▶ Page 1494



New

Cantilever axis:
robolink® Apiro®
▶ Page 1496



New

Accessories:
robolink® Apiro®
▶ Page 1497

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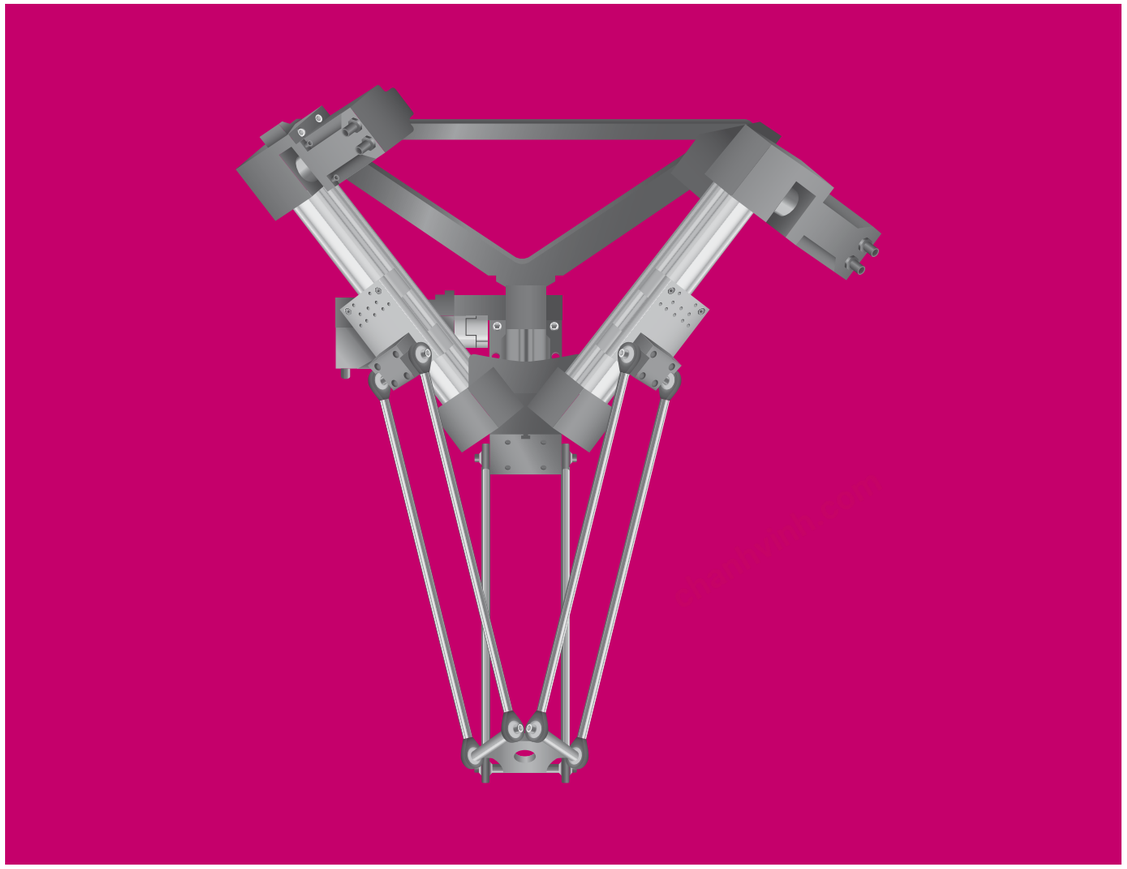
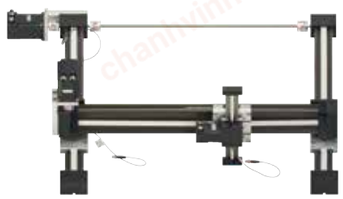
My sketches



drylin® Low Cost Automation

- Multi-axis linear robots
- Delta robots
- Articulated robots
- Rotary axes
- Motor control systems



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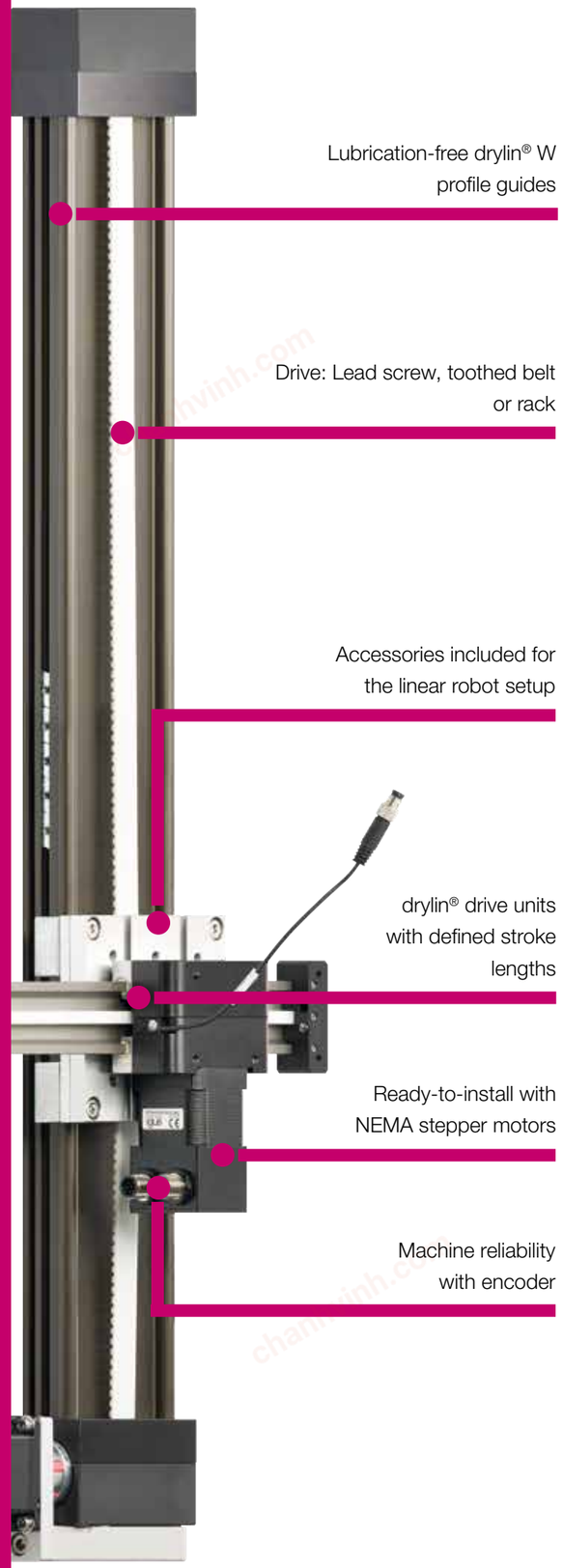


Low Cost Automation kit

Multi-axis linear robots are systems that run in predefined areas or "rooms". Our drylin® linear robots are based on proven tribo-technology, i.e. all systems use sliding self-lubricating linear units, so that a lifelong operation without external lubrication is possible. Typical application areas are automation for pick and place, measuring and test automation, assembly handling, marking devices, handling tasks in Low Cost Automation, autonomous assembly cells and everything on the subject of "end-of-the-line".

- Maintenance-free dry operation
- Quiet operation
- Resistance to dust and dirt
- Corrosion-free
- Standard product range available in within 24hrs
- Free consultation and installation at your premises

Typical application areas

- Pick & Place
- Measurement and testing
- Labelling technology
- Component marking
- Assembly cells
- Sorting machines
- Safety systems

Available from stock
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity.

Ready-to-install linear robots available from stock in 24hrs

Toolmakers and their suppliers are facing major global challenges. The competition is becoming more intense, the price pressure is becoming greater, including the demand for local production. We offer complete cost-effective systems that automate tasks in order to produce faster and more effectively.



Multi-axis linear robots

- Pre-configured assembly kits available from stock
- 3 different linear robot structures: line/flat/room
- For workspaces of up to 500 x 500 x 100mm

▶ From page 1470



Delta robots

- For a workspace of up to Ø 360 and Ø 660mm
- Kit or pre-installed kinematics
- dryve motor control system available

▶ From page 1474



Lead screw motors

- Precise and efficient
- Compact structure, variable lead screw pitches
- Stepper motors with/without encoder

▶ From page 1447



Cantilever axis

- As z-axis for linear robot structures
- For pick & place applications
- With toothed belt or rack

▶ From page 1441

igus® motor control systems



D1 dryve

- Motor control for stepper motors

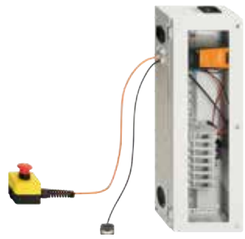
▶ From page 1544



D3 dryve

- Motor control for DC motors

▶ From page 1545



Robot Control

- Motor control system for linear robots, delta robots and robolink® robot arms

▶ From page 1544

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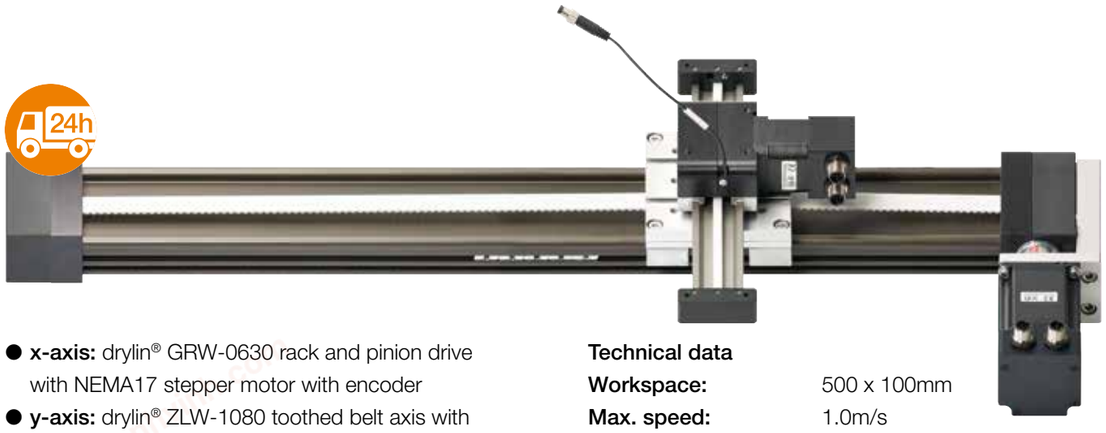
drylin® | Low Cost Automation | Product range

Line robot – for vertical working planes

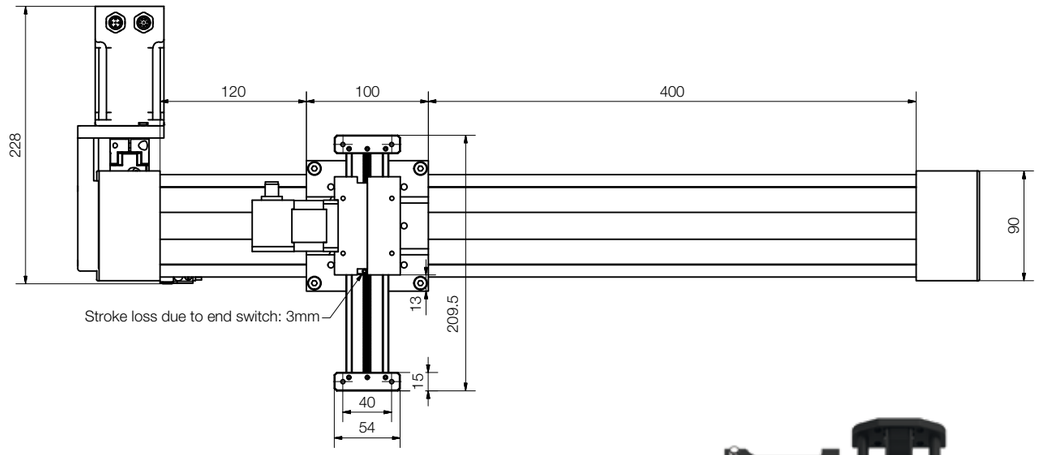


- **x-axis:** drylin® GRW-0630 rack and pinion drive with NEMA17 stepper motor with encoder
- **y-axis:** drylin® ZLW-1080 toothed belt axis with NEMA23 stepper motor with encoder
- Proximity switches available

Technical data

Workspace:	500 x 100mm
Max. speed:	1.0m/s
Max. acceleration:	3.0m/s²
Repeatability:	0.2mm
Load capacity:	25N

Part No.
DLE-LG-0001





- **y-axis:** drylin® ZLW-10120 toothed belt axis with NEMA 23 XL stepper motor with encoder
- **z-axis:** GRR-1280 rack axis with NEMA23 XL stepper motor with encoder
- Proximity switches and motor cables available

Technical data
Working space:
800 x 500mm
Max. speed:
1.0m/s
Max. acceleration:
2.0m/s²
Repeatability: 0.3mm
Load capacity: 50N

Part No.
DLE-LG-0002

drylin® automation

drylin® | Low Cost Automation | 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 300mm
Max. speed:	1.5m/s
Max. acceleration:	10m/s²
Repeatability:	0.3mm
Load capacity:	80N

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

Technical data

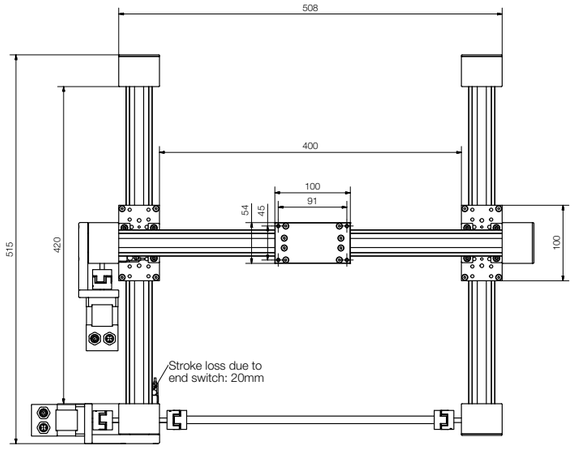
Workspace:	300 x 300mm
Max. speed:	1.5m/s
Max. acceleration:	10m/s²
Repeatability:	0.3mm
Load capacity:	80N

DLE-FG-0003

- **x-axis:** drylin® ZLW-1040 econ toothed belt axis with NEMA23 stepper motor with stranded wire
- **y-axis:** drylin® ZLW-1040 econ toothed belt axis with NEMA17 stepper motor
- Proximity switches available

Technical data

Workspace:	500 x 500mm
Max. speed:	0.5m/s
Max. acceleration:	1m/s²
Repeatability:	1mm
Load capacity:	10N



Part No.
DLE-FG-0001 version with encoder
DLE-FG-0002 version with stranded wires
DLE-FG-0003 econ version
▶ Page 1462

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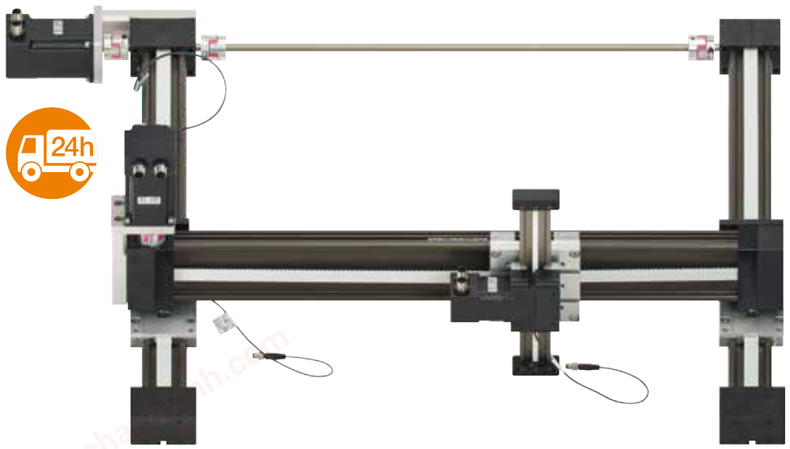
drylin® | Low Cost Automation | Product range

Room linear robot – for three dimensional applications



DLE-RG-0001

- **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 and pinion drive and NEMA17 stepper motor with encoder

Technical data

Workspace:	500 x 500 x 100mm
Max. speed:	0.5m/s
Max. acceleration:	1.5m/s²
Repeatability:	0.8mm
Load capacity:	25N

DLE-RG-0002

- **x-axis:** drylin® ZLW-0630 toothed belt axis with NEMA23XL stepper motor with encoder
- **y-axis:** drylin® ZLW-0660 toothed belt axis with NEMA23 stepper motor with encoder
- **z-axis:** drylin® GRW-0630 cantilever axis with NEMA17 stepper motor with encoder

Technical data

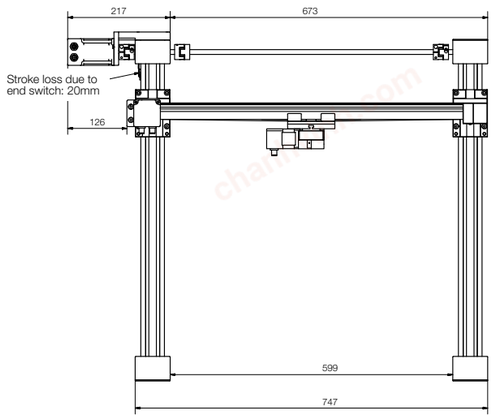
Workspace:	400 x 400 x 150mm
Max. speed:	0.5m/s
Max. acceleration:	1.5m/s²
Repeatability:	0.8mm
Load capacity:	25N

DLE-RG-0003

- **x-axis:** drylin® ZLW-1040 toothed belt axis with NEMA 23 XL stepper motor with encoder
- **y-axis:** drylin® ZLW-10120 toothed belt axis with NEMA 23 XL stepper motor with encoder
- **z-axis:** GRR-1280 rack axis with NEMA23 XL stepper motor with encoder

Technical data

Workspace:	800 x 800 x 500mm
Max. speed:	0.5m/s
Max. acceleration:	1.5m/s²
Repeatability:	0.8mm
Load capacity:	50N



Part No.
DLE-RG-0001
DLE-RG-0002
DLE-RG-0003

My sketches

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drylin® | Delta robots | Product range

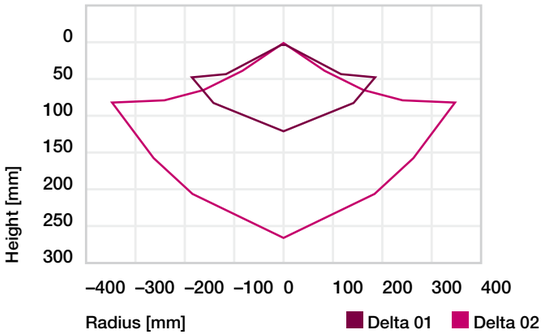
Delta robots

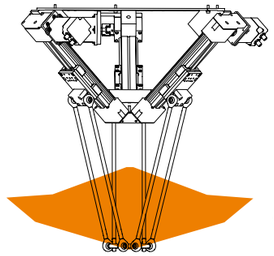


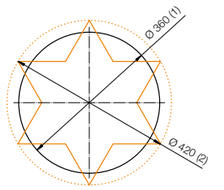
Delta robot consisting of:

- 3 drylin® toothed belt axis with NEMA23XL stepper motor with encoder
- Lightweight igubal® delta kinematics
- Mounting brackets for mounting in a frame and possibilities of adaptation for grippers/motor: with or without D1 dryve stepper motor control units.
- As a construction kit or completely pre-assembled in a transport rack.
- Optional accessories: initiator kits, motor encoders and sensor cables

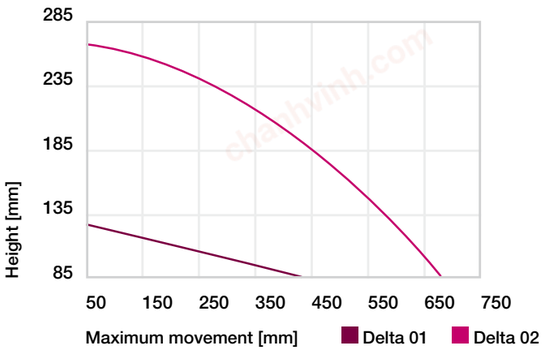
Technical data	Delta 01 DLE-DR-0001	Delta 02 DLE-DR-0050
Positioning accuracy	± 0.5mm	± 0.5mm
Working area diameter at 75mm	360mm	660mm
Max. payload	5kg	5kg
Max. process force at radius 0mm	100N	100N
Dynamics at 500g	Min. 60 picks/min	Max. 30 picks/min.
Mass	15kg	16kg
Max. track speed	3m/s	0.7m/s
Max. acceleration	60m/s²	2m/s²







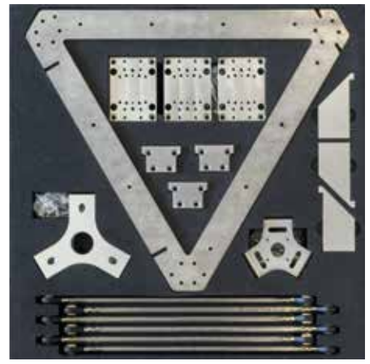
Travel at a height of 75mm

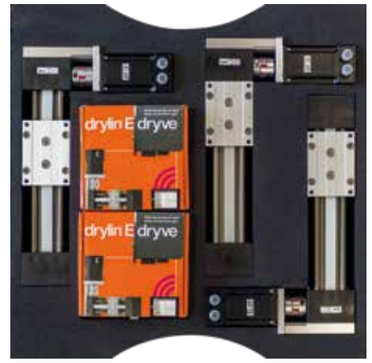


drylin® | Delta robots | Product range

Delta robot kit

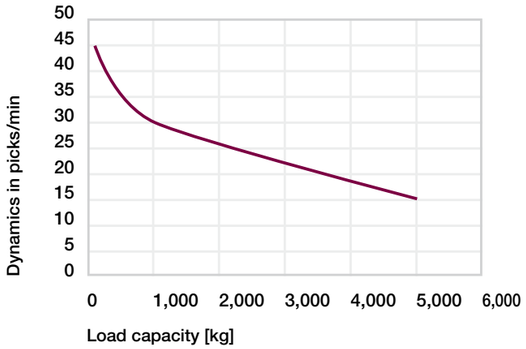




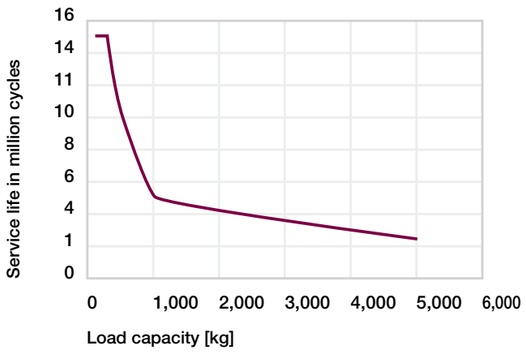


Optional accessories: initiator kits, motor encoders and sensor cables, calibrating pin, cable clip
▶ www.igus-asean.com/delta-robot

Part No. Delta 01	 Delta 02	Description
DLE-DR-0001	**DLE-DR-0050**	Delta robot, kit in compact transport box
DLE-DR-0002	**DLE-DR-0051**	Delta robot, pre-installed kinematics, in transport rack made of profiled rails
DLE-DR-0003	**DLE-DR-0052**	Delta robot, kit in compact transport box, incl. 3x D1 dryve stepper motor control units
DLE-DR-0004	**DLE-DR-0053**	Delta robot, pre-installed kinematics, in transport box made of profiled rails, incl. 3x D1 dryve stepper motor control units



You can get the highest (picks/min) by using a master control system with path planning function. (e.g. Sinus acceleration ramp and optimised motor control parameters). Graph as shown applies to a load motor voltage of 48 [V] mounted in a stable and vibration-free frame.



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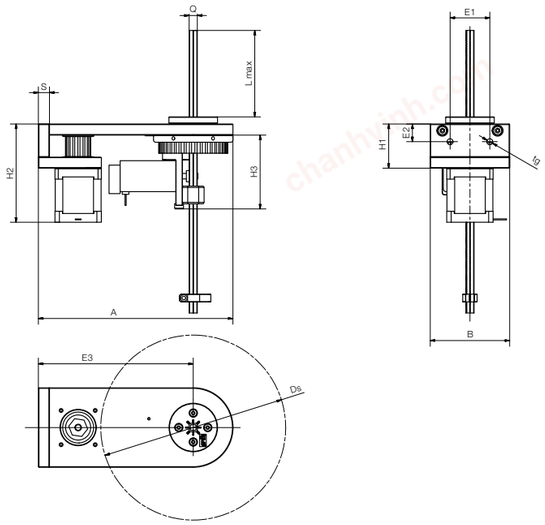
drylin® HSQ | Lift/swivel units | Product range

Compact, modular and lubrication-free



- Toothed, hard-anodised and corrosion-resistant square hollow section
- Combination with iglidur® J low friction element
- Modular design
- Drive: NEMA11 stepper motor



Further motors upon request/suitable initiators available

Dimensions [mm]

Part No.	F [g]	vL	vR	Lmax. ±0.15	(Ds) ±0.15	A	B ±0.15	H1	(H2) ±0.3	(H3)	E1	E2	E3	Q	tg h9	S
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 NEMA17/11 with stranded wire)
HSQ-10-1440-A-xxx-17-E-11-E
(incl. stepper motor NEMA17/11 with encoder)

drylin® SLQ | Linear modules | Product range

Torque-resistant, controlled separately

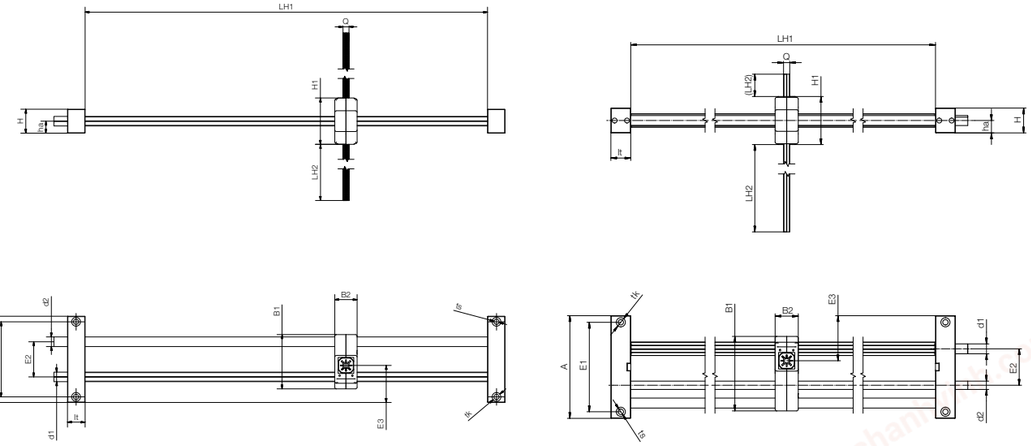


Torque-resistant, lubrication-free linear module. Low mass and compact in the working area.
One linear module with two directions of motion which can be controlled separately. This way, both drives are located outside the working area. This saves space and no unnecessary motor weight is moved. The linear guide is torque-resistant and thanks to the compact modular construction, high speeds can be reached with low power.

- Quiet and lightweight
- No electronics in the working area
- Compact structure
- Corrosion-resistant

Typical application areas:

- Medical technology
- Pick & Place
- Gripper technology



Dimensions [mm]

Part No.	Max. axial F [N]	LH1	LH2	H	H1	ha	A	E1	E2	E3	B1	B2	lt	d1	d2	ts	tk
SLQ-1210-...	200	500	200	30	58	15	108	94	44	46.5	68	28	22	12	12	6.6	–
SLQ-121012-...	2	500	200	30	58	15	124	108	44	30.0	90	28	22	12	10	6.6	11

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drylin® QLA | Linear actuator | Product range

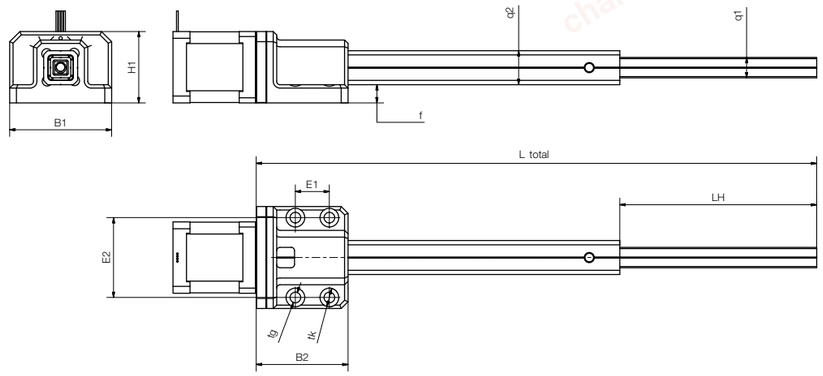
drylin® QLA linear actuator



- Extension lengths up to 300mm
- Max. compressive strength 100N
- Unsupported installation
- Accessories available (hand wheel, position indicator etc.)
- Ready-to-connect with drylin® motor kits

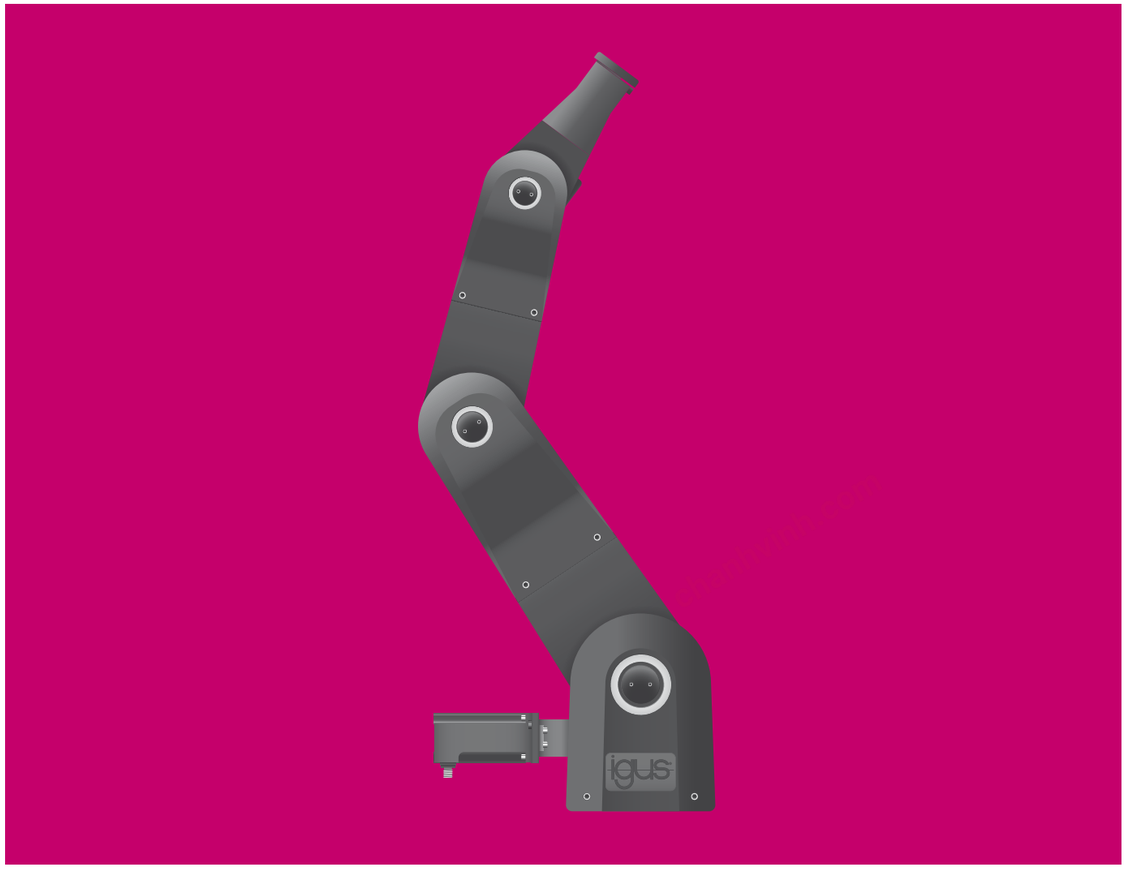
Typical application areas:

- Textile industry
- Actuators
- Windows
- Rehabilitation technologies
- Lane adjustments
- Inspection technology
- Medical and pharmaceutical technology



Dimensions [mm]

Part No.	Max. axial F [N]	LH	L Total	H1	B1	B2	E1	E2	Q1	Q2	tk	tg
QLA-2012-A	100	300	B2 + 2xLH	42	60	54	20	47	12	20	11	6.5



robolink® – polymer-based robot arm

Robot arms

Rotary axes

Apiro® joints



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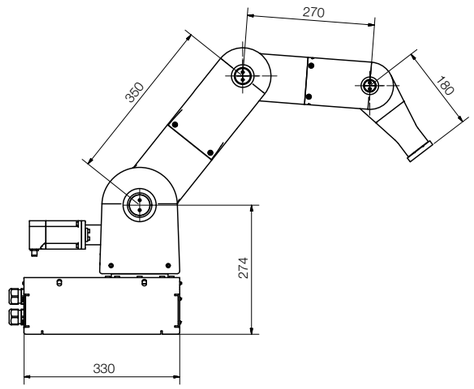
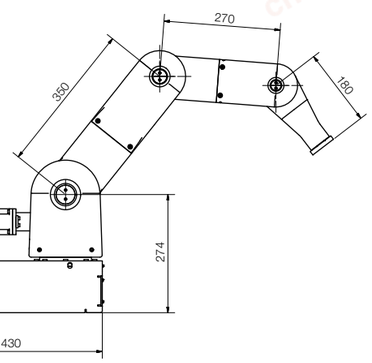
robolink® RL-DP | Polymer-based robot arm

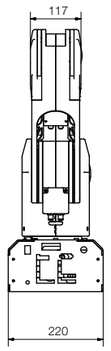
Robot arm with integrated control system



- Payload up to 30N
- Cycle times > 6s
- Reach up to 790mm
- Also available as DPI version with integrated control system
- With motor encoders upon request
- Version with drive encoders possible
- Available as 4 DOF or 5 DOF[168)]
- Optimised bearing of the single axes for low backlash







Technical data

		Small option		Large option	
		4 DOF[168)]	5 DOF[168)]	4 DOF[168)]	5 DOF[168)]
		RL-DC	RL-DC	RL-DP	RL-DP
Operating voltage	[VDC]	24	24	24	24
Nominal power (at full load)	[W]	120	120	120	120
Weight (without power supply unit, ext. display)	[kg]	11	12	22	23
Precision (WDH precision)	[mm]	±0.5	±0.5	±0.5	±0.5
Max. speed (TCP)	[mm/s]	100	100	100	100

For more information, see the technical data sheet
▶ www.igus-asean.com/DC
▶ www.igus-asean.com/DP

[168)] DOF: degree of freedom

robolink® RL-DP | Product range

Robot arm available in 8 versions



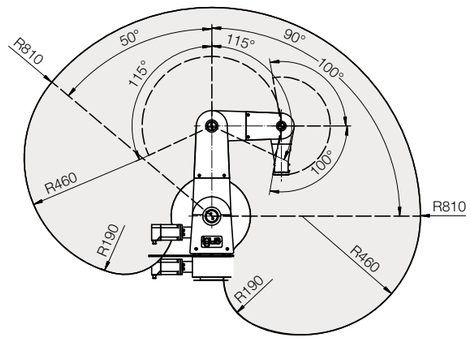
- Integrated gearbox
- High degrees of precision and high loads
- Faster
- Internal cables
- Lightweight
- More configuration options online
- ▶ **www.igus-asean.com/DP**

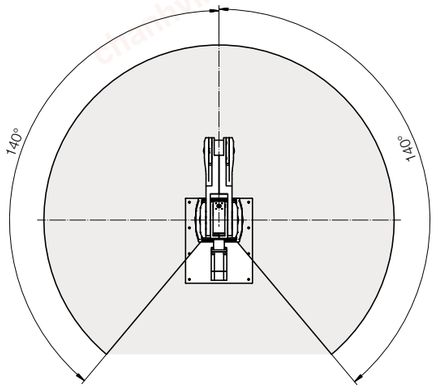


Small option



Large option





Small option – 4DOF[168)] or 5 DOF[168)]

	4 DOF[168)]	5 DOF[168)]
Part No.	RL-D-RBT-3322-BF	RL-D-RBT-3322S-BF
Reach	510mm	680mm
Load capacity	10 N	5 N

Large option – 4DOF[168)] or 5 DOF[168)]

	4 DOF[168)]	5 DOF[168)]
Part No.	RL-DP-RBT-5532	RL-DP-RBT-5532S
Reach	620mm	790mm
Load capacity	30 N	30 N

All with integrated control system

Small option	4 DOF[168)]	5 DOF[168)]
Part No.	RL-DCi-4S-M-B	RL-DCi-5S-M-B
Large option	**4 DOF[168)]**	**5 DOF[168)]**
Part No.	RL-DPI-RBT-5532	RL-DPI-RBT-5532S
With top hat (DIN) rail	RL-DP-4-0002-00-0	RL-DP-5-0002-00-0
With control cabinet	RL-DP-4-0004-00-0	RL-DP-5-0004-00-0

[168)] DOF: degree of freedom

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robolink® D | Rotary axis | Overview

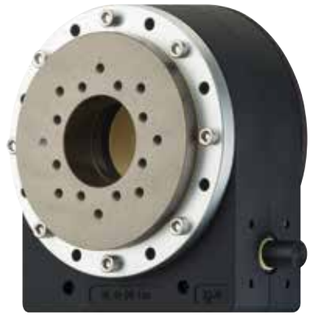
Rotary axis – with iglidur® PRT slewing rings



econ

Entry level model mounted with plain bearings for manual adjustments with light polymer slewing ring PRT-02 series.

More information on iglidur® PRT-02 slewing rings
▶ Page 640



Standard

Robust type with plain bearings for high loads. Manual and electrical operation. With robust aluminium slewing ring of the PRT-01 series.

More information on iglidur® PRT-01 slewing rings
▶ Page 638



Dynamics

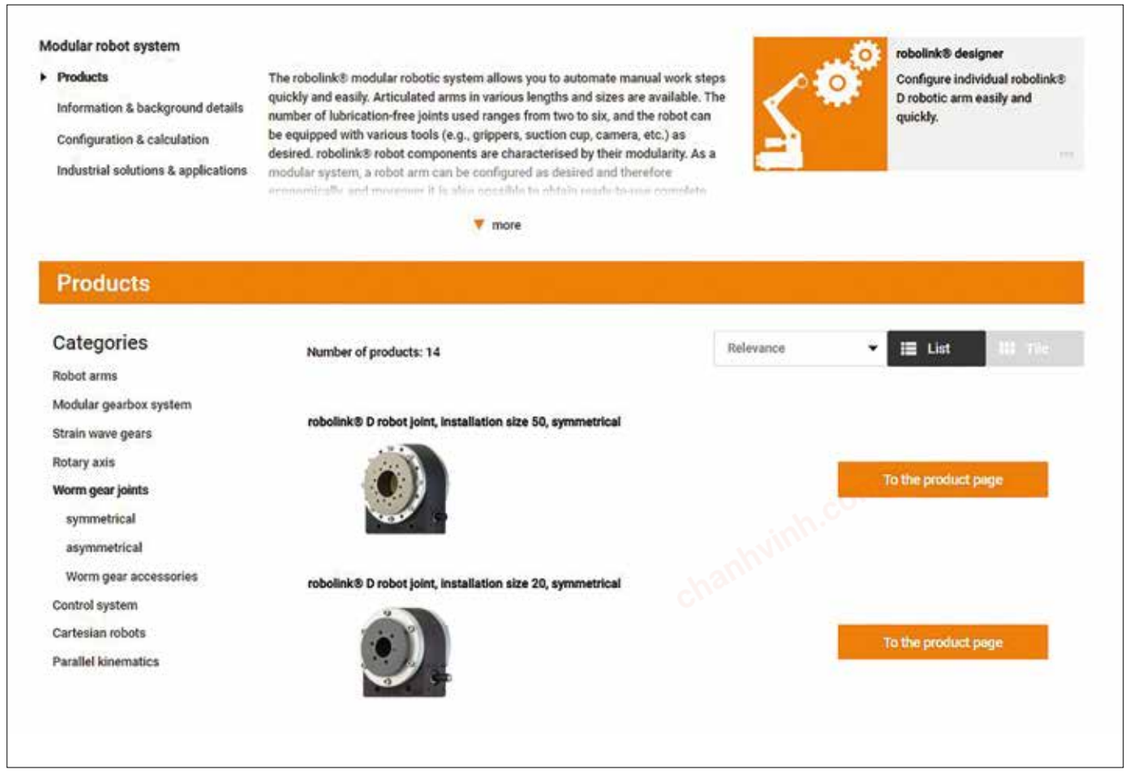
Dynamic design with ball bearings. Manual or electrical adjustments with slewing ring with ball bearings.





Delivery time
2–3 days

robolink® D | Rotary axes shop



Order robolink® D rotary axes with proven iglidur® slewing rings quickly and easily in the rotary axis shop.
The extensive modular robotic system allows you to automate manual work steps quickly and easily.

More information and prices online
▶ www.igus-asean.com/rotary-axes-shop

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robolink® D | Rotary axis | Technical data

Rotary axis with two PRT slewing rings, with plain bearings



Order key

Type	Options
RL - D - 20 - 101 - 38 - 01033	

robolink®	Direct drive	Installation size	Design	Gear ratio	Variation
RL	D	20	101	38	01033

Technical data

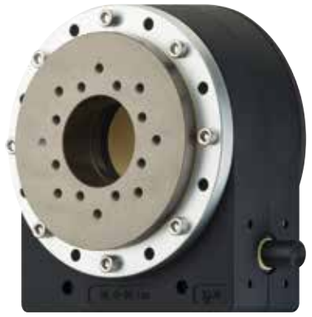
Part No.	Size (H x W x D)	Shaft Ø	Trans-mission	Axis distance	Backlash	Breakaway torque	Max. axial dyn. load on output
	[mm]	[mm]	[mm/rev]	[mm]	[°]	[cNm]	[N]
RL-D-20-101-38-01033	90 x 80 x 67	8	1:38	31	< 0.5°	< 5	> 500
RL-D-20-101-70-01033	90 x 80 x 67	8	1:70	31	< 0.5°	< 5	> 500
RL-D-30-101-5-01033	110 x 100 x 94	10	1:5	40	< 0.5°	< 7	> 700
RL-D-30-101-50-01033	110 x 100 x 94	10	1:50	40	< 0.5°	< 7	> 700
RL-D-30-101-70-01033	110 x 100 x 94	10	1:70	40	< 0.5°	< 7	> 700
RL-D-50-101-48-01033	170 x 150 x 103	15	1:48	63	< 0.5°	< 10	> 1,200
RL-D-50-101-70-01033	170 x 150 x 103	15	1:70	63	< 0.5°	< 10	> 1,200

Part No.	Speed at max. load	Weight	Efficiency	Moment of breakage (static)	Max. output Dynamic torque 12rpm	
					Periodic use (<30%)	Continuous use
	[rpm]	[g]		[Nm]	[Nm]	[Nm]
RL-D-20-101-38-01033	20	610	0.45	30	10	5
RL-D-20-101-70-01033	20	610	0.35	20	5	2.5 (9rpm)
RL-D-30-101-5-01033	12	1,180	0.65	40	10	5
RL-D-30-101-50-01033	12	1,180	0.40	60	20	10
RL-D-30-101-70-01033	12	1,180	0.30	30	12	7.5 (6rpm)
RL-D-50-101-48-01033	8	3,050	0.40	180	50	25
RL-D-50-101-70-01033	8	3,050	0.30	140	40	20

drylin® drive technology

robolink® D | Rotary axis | Technical data

Rotary axis with one PRT slewing rings, with plain bearings



Order key

Type	Options
RL - D - 20 - 102 - 38 - 01035	

robolink®	Direct drive	Installation size	Design	Gear ratio	Variation
RL	D	20	102	38	01035

Technical data

Part No.	Size (H x W x D)	Shaft Ø	Trans-mission	Axis distance	Backlash	Breakaway torque	Max. axial dyn. load on output
	[mm]	[mm]	[mm/rev]	[mm]	[°]	[cNm]	[N]
RL-D-20-102-38-01035	90 x 80 x 67	8	1:38	31	< 0.5°	< 5	> 500
RL-D-20-102-70-01035	90 x 80 x 67	8	1:70	31	< 0.5°	< 5	> 500
RL-D-30-102-5-01035	110 x 100 x 94	10	1:5	40	< 0.5°	< 7	> 700
RL-D-30-102-50-01035	110 x 100 x 94	10	1:50	40	< 0.5°	< 7	> 700
RL-D-30-102-70-01035	110 x 100 x 94	10	1:70	40	< 0.5°	< 7	> 700
RL-D-50-102-48-01035	170 x 150 x 103	15	1:48	63	< 0.5°	< 10	> 1,200
RL-D-50-102-70-01035	170 x 150 x 103	15	1:70	63	< 0.5°	< 10	> 1,200

Part No.	Speed at max. load	Weight	Efficiency	Moment of breakage (static)	Max. output Dynamic torque 12rpm	
					Periodic use (<30%)	Continuous use
	[rpm]	[g]		[Nm]	[Nm]	[Nm]
RL-D-20-102-38-01035	20	470	0.45	30	10	5
RL-D-20-102-70-01035	20	470	0.35	20	5	2.5 (9rpm)
RL-D-30-102-5-01035	12	890	0.65	40	10	5
RL-D-30-102-50-01035	12	890	0.40	60	20	10
RL-D-30-102-70-01035	12	890	0.30	30	12	7.5 (6rpm)
RL-D-50-102-48-01035	8	2,300	0.40	180	50	25
RL-D-50-102-70-01035	8	2,300	0.30	140	40	20

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robolink® D | Rotary axis | Technical data

Rotary axis with two PRT slewing rings, with ball bearings



Order key

Type	Options
RL - D - 20 - 105 - 38 - 010BB	

robolink®	Direct drive	Installation size	Design	Gear ratio	Variation
RL	D	20	105	38	010BB

Technical data

Part No.	Size (H x W x D)	Shaft Ø	Trans-mission	Axis distance	Backlash	Breakaway torque	Max. axial dyn. load on output
	[mm]	[mm]	[mm/rev]	[mm]	[°]	[cNm]	[N]
RL-D-20-105-38-010BB	90 x 80 x 67	8	1:38	31	< 0.5°	< 5	> 250
RL-D-20-105-70-010BB	90 x 80 x 67	8	1:70	31	< 0.5°	< 5	> 250
RL-D-30-105-5-010BB	110 x 100 x 94	10	1:5	40	< 0.5°	< 7	> 450
RL-D-30-105-50-010BB	110 x 100 x 94	10	1:50	40	< 0.5°	< 7	> 450
RL-D-30-105-70-010BB	110 x 100 x 94	10	1:70	40	< 0.5°	< 7	> 450
RL-D-50-105-48-010BB	170 x 150 x 103	15	1:48	63	< 0.5°	< 10	> 1,000
RL-D-50-105-70-010BB	170 x 150 x 103	15	1:70	63	< 0.5°	< 10	> 1,000

Part No.	Speed at max. load	Weight	Efficiency	Moment of breakage (static)	Max. output Dynamic torque 12rpm	
					Periodic use (<30%)	Continuous use
	[rpm]	[g]		[Nm]	[Nm]	[Nm]
RL-D-20-105-38-010BB	20	320	0.45	30	10	5
RL-D-20-105-70-010BB	20	320	0.35	20	5	2.5 (9rpm)
RL-D-30-105-5-010BB	12	620	0.65	40	10	5
RL-D-30-105-50-010BB	12	620	0.40	60	20	10
RL-D-30-105-70-010BB	12	620	0.30	30	12	7.5 (6rpm)
RL-D-50-105-48-010BB	8	2,730	0.40	180	50	25
RL-D-50-105-70-010BB	8	2,730	0.30	140	40	20

drylin® drive technology

robolink® D | Rotary axis | Technical data

Rotary axis with one PRT slewing rings, with ball bearings



Order key

Type	Options
RL - D - 20 - 106 - 38 - 010B5	

robolink®	Direct drive	Installation size	Design	Gear ratio	Variation
RL	D	20	106	38	010B5

Technical data

Part No.	Size (H x W x D)	Shaft Ø	Trans-mission	Axis distance	Backlash	Breakaway torque	Max. axial dyn. load on output
	[mm]	[mm]	[mm/rev]	[mm]	[°]	[cNm]	[N]
RL-D-20-106-38-010B5	90 x 80 x 67	8	1:38	31	< 0.5°	< 5	> 250
RL-D-20-106-70-010B5	90 x 80 x 67	8	1:70	31	< 0.5°	< 5	> 250
RL-D-30-106-5-010B5	110 x 100 x 94	10	1:5	40	< 0.5°	< 7	> 450
RL-D-30-106-50-010B5	110 x 100 x 94	10	1:50	40	< 0.5°	< 7	> 450
RL-D-30-106-70-010B5	110 x 100 x 94	10	1:70	40	< 0.5°	< 7	> 450
RL-D-50-106-48-010B5	170 x 150 x 103	15	1:48	63	< 0.5°	< 10	> 1,000
RL-D-50-106-70-010B5	170 x 150 x 103	15	1:70	63	< 0.5°	< 10	> 1,000

Part No.	Speed at max. load	Weight	Efficiency	Moment of breakage (static)	Max. output Dynamic torque 12rpm	
					Periodic use (<30%)	Continuous use
	[rpm]	[g]		[Nm]	[Nm]	[Nm]
RL-D-20-106-38-010B5	20	280	0.45	30	10	5
RL-D-20-106-70-010B5	20	280	0.35	20	5	2.5 (9rpm)
RL-D-30-106-5-010B5	12	520	0.65	40	10	5
RL-D-30-106-50-010B5	12	520	0.40	60	20	10
RL-D-30-106-70-010B5	12	520	0.30	30	12	7.5 (6rpm)
RL-D-50-106-48-010B5	8	2,140	0.40	180	50	25
RL-D-50-106-70-010B5	8	2,140	0.30	140	40	20

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robolink® D | Rotary axis | 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

Motor kit

Motor type igus® stepper motor	Distance over hubs [mm]	Versions
NEMA17, NEMA23, NEMA23XL	42, 56, 60	-00: with strand wires -01: with stepper motor without encoder -02: with motor encoder -NM: version without motor

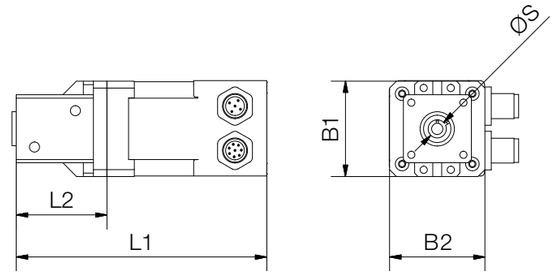
Technical data

Joint		Installation size 20 RL-D-20-101-38-xxxxx	Installation size 30 RL-D-30-101-50-xxxxx		Installation size 50 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

Delivery time
2–3 days

robolink® D | Rotary axis | Product range

drylin® drive technology



Dimensions [mm]

Part No.	ØS	L1	L2	B1	B2
NEMA17					
RL-D-20-MK-C-N17-00	8	99.4	40	42.0	42.0
RL-D-20-MK-C-N17-01	8	110.4	40	42.0	42.0
RL-D-20-MK-C-N17-02	8	110.4	40	42.0	42.0
RL-D-20-MK-C-N17-NM	8	–	40	42.0	42.0
RL-D-30-MK-C-N17-00	10	99.4	40	42.0	42.0
RL-D-30-MK-C-N17-01	10	110.4	40	42.0	42.0
RL-D-30-MK-C-N17-02	10	110.4	40	42.0	42.0
RL-D-30-MK-C-N17-NM	10	–	40	42.0	42.0
NEMA23					
RL-D-30-MK-C-N23-00	10	118	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	10	140	42	56.4	56.4
RL-D-30-MK-C-N23-NM	10	–	42	56.4	56.4
RL-D-50-MK-C-N23-00	15	124	48	60.0	60.0
RL-D-50-MK-C-N23-01	15	146	48	60.0	60.0
RL-D-50-MK-C-N23-02	15	146	48	60.0	60.0
RL-D-50-MK-C-N23-NM	15	–	48	60.0	60.0
NEMA23XL					
RL-D-50-MK-C-N23XL-00	15	136.5	48	60.0	60.0
RL-D-50-MK-C-N23XL-01	15	158.5	48	60.0	60.0
RL-D-50-MK-C-N23XL-02	15	158.5	48	60.0	60.0
RL-D-50-MK-C-N23XL-NM	15	–	48	60.0	60.0
RL-D-MONT-MOT-01			Motor assembly		

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robolink® D | Rotary axis | Product range

robolink® D – components with DC motor



RL-D-20-A0202



RL-D-30-A0203



RL-D-50-A0204

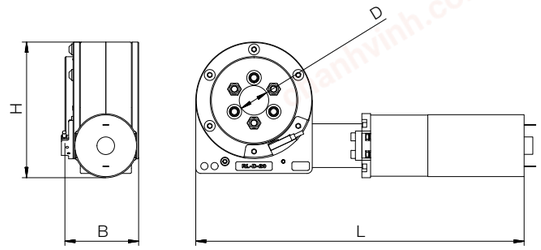
- Assembly of robot joint, motor kit, INI kit
- Also available with cables ▶ **Page 1530** and motor control system ▶ **Page 1544**

Order key

Type	Options

RL-D-20-A0202

robolink®	Direct drive	Installation size	Variation



Technical data

	Weight	Max. output torque	Max. speed	Service life
Installation size 20	[kg]	[Nm]	[rpm]	
RL-D-20-A0202	1.06	7	12	Min. 1,000,000 cycles[169)]
Installation size 30				
RL-D-30-A0203	1.50	20	9	Min. 1,000,000 cycles[169)]
Installation size 50				
RL-D-50-A0204	4.8	50	6	Min. 1,000,000 cycles[169)]

[169)] At a rated torque of 2.5Nm and a rated speed of 30rpm

Dimensions [mm]

Part No.	D	B	L	H
Installation size 20				
RL-D-20-A0202	20	50.5	233.7	90.0
Installation size 30				
RL-D-30-A0203	30	63.5	253.7	110.0
Installation size 50				
RL-D-50-A0204	50	87.5	303.77	170.5

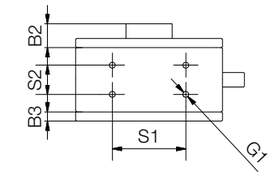
Delivery time
2–3 days

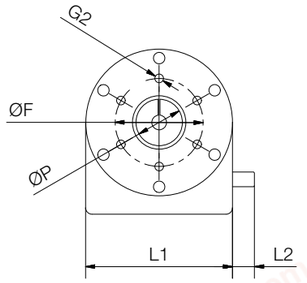
drylin® drive technology

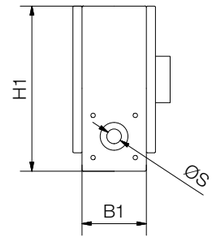
robolink® D | Rotary axis | Product range

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	ØP	ØF	ØT	L1	L2	B1	B2	B3	H1	G1	S1	S2	Part No.
8	25	48	20	80.5	12	35	13	5	90.5	M4	40	16	**RL-D-20-103-...**
10	32	64	30	100.5	12	45	16.3	6	110.5	M4	55	20	**RL-D-30-103-...**
15	42	100	50	150.5	13	60	22.8	6	170.5	M6	80	30	**RL-D-50-103-...**

Order example: RL-D-20-103-38-010K5-08
robolink® robot joint installation size 20, gear ratio 1:38, gearbox, motor pin 8mm

More information and prices online
▶ www.igus-asean.com/rotary-axes-shop

Delivery time
2–3 days

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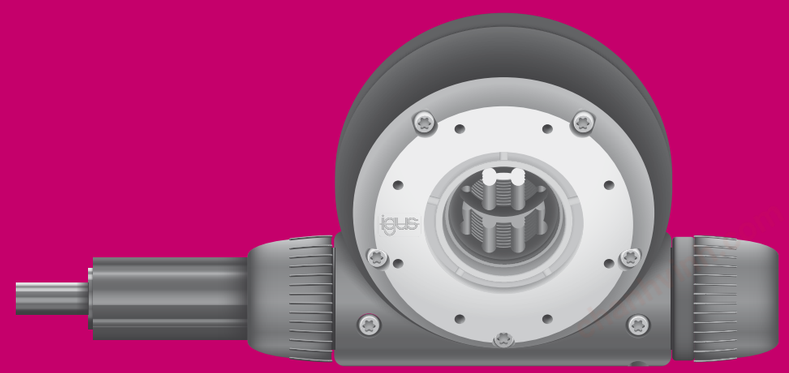
robolink® | Online tools | robolink® designer

Calculate and configure robot arms



With the robolink® designer, you can quickly and easily configure online in an intuitive CAD interface your individual robolink® D robot arm online. Select individual robolink® components step by step to configure the robot arm individually, from the first axis to the tool. Simulation of the solution thanks to output of max. range and max. payload, teach function and inverse kinematics.

▶ **www.igus-asean.com/robolink-designer**



robolink® Apiro®

Joints

Motor kits

INI kits

Accessories



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robolink® Apiro® | Product range

Apiro® worm gear joints, basic shapes



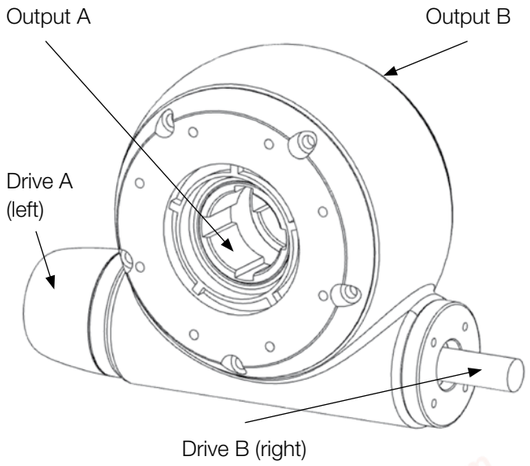
Joint



Joint with turntable



Joint with coupling



Technical data

Designation	Transmission	Self-locking	Drive torque	Moment of breakage	F stat. axial	Backlash
			[Nm]	[Nm]	[N]	[°]
Joint	1:4	–	2.5	15	250	< 0.5
Joint with turntable	1:32	–	2.5	20	250	< 0.5
Joint with coupling	1:64	Yes	1.5	10	250	< 0.5

Technical data

Designation Joint Drive A	Output A	Drive B
HR	–	Drive pin
HK/PA/HR	–	Drive pin
HR	–	Profile
HK/PA/HR	–	Profile
Profile	–	Profile
Joint with turntable		
HR	Turntable	Drive pin
HK/PA/HR	Turntable	HR
HR	Turntable	Profile
HK/PA/HR	Turntable	Profile
Profile	Turntable	Profile
Joint with coupling Ø 4–12mm		
HR	Coupling	Drive pin
HK/PA/HR	Coupling	Drive pin
HR	Coupling	Profile
HK/PA/HR	Coupling	Profile
Profile	Coupling	Profile

Delivery time
2–3 days

drylin® automation

robolink® Apiro® | Product range

Apiro® combination options



RL-A10.0105

Order example
RL-A10.0105
Apiro® joint with drive pin
and hand wheel (HR)



RL-A10.0148.100

Order example
RL-A10.0148.100
Apiro® joint with 100mm profile, manual clamp (HK), position indicator (PA) and hand wheel (HR)



RL-A10.0160.100.100

Order example
RL-A10.0148.100
Apiro® joint with profile 100mm left,
profile 100mm right

Transmission 1:4	Transmission 1:32	Transmission 1:64
RL-A10.0105	RL-A10.0106	RL-A10.107
RL-A10.0111	RL-A10.0112	RL-A10.113
RL-A10.108.☐	RL-A10.0109.☐	RL-A10.0110.☐
RL-A10.0148.☐	RL-A10.0149.☐	RL-A10.0161.☐
RL-A10.0160.☐.☐	RL-A10.0115.☐.☐	RL-A10.0161.☐.☐
RL-A10.0138	RL-A10.0114	RL-A10.0139
RL-A10.0132	RL-A10.0133	RL-A10.0134
RL-A10.0145.☐	RL-A10.0146.☐	RL-A10.0147.☐
RL-A10.0151.☐	RL-A10.0152.☐	RL-A10.0153.☐
RL-A10.0157.☐.☐	RL-A10.0158.☐.☐	RL-A10.0159.☐.☐
RL-A10.0117	RL-A10.0118	RL-A10.0119
RL-A10.0129	RL-A10.0130	RL-A10.0131
RL-A10.0123.☐	RL-A10.0124.☐	RL-A10.0125.☐
RL-A10.0154.☐	RL-A10.0155.☐	RL-A10.0156.☐
RL-A10.0120.☐.☐	RL-A10.0121.☐.☐	RL-A10.0122.☐.☐

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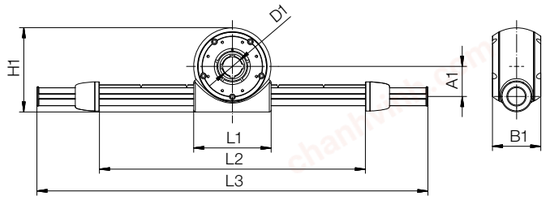
robolink® Apiro® | Product range

Cantilever axis



RL-A14.0100

- Inverted gearbox available
- Gearbox linear guide available
- 6 DOF[168] can also be designed
- Modules can be switched consecutively, side by side
- Standard ratios 1:4, 1:32 and 1:64
- For format adjustments and easy automation tasks



Technical data

Part No.	Designation	Transmission	Backlash	Length profile to middle L2	Weight
			[°]	[mm]	[g]
RL-A14.0100	Basic cantilever axis with 100mm stroke	125mm/rev	< 0.5	194.74	from 330

Dimensions [mm]

Part No.	L1	L2	L3	H1	B1	D1	A1
RL-A14.0100	80	133 –1,122	250 – 1,300	87	50	20	31

[168] DOF: degree of freedom

Delivery time
2–3 days

drylin® automation

robolink® Apiro® | Product range

Accessories



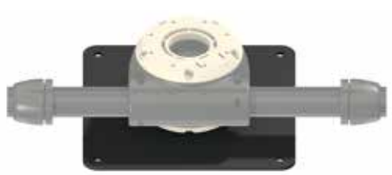
RL-A54.0102



RL-A54.0101



RL-A54.0100



RL-A54.0103



RL-A51.0101



RL-A55.0100

Images exemplary

Part No.	Designation
RL-A51.0101	Motor kit with stepper motor NEMA17, version with stranded wire
RL-A51.0102	Motor kit with stepper motor NEMA17, version with connector
RL-A51.0103	Motor kit with NEMA17 stepper motor, version with connector and encoder
RL-A51.0104	Motor kit with NEMA17 stepper motor, version with connector, encoder and brake
RL-A51.0105	Motor kit with stepper motor NEMA23, version with connector
RL-A52.0100	INI kit available for: worm gear RL-A10
RL-A52.0101	INI kit available for: cantilever axis RL-A14
RL-A220.0106	Spacer element
RL-A320.0100	Slot nut M2.5
RL-A320.0101	Slot nut M3
RL-A320.0102	Slot nut M4
RL-A55.0100	Assembly tool, tightening tool, open
RL-A55.0101	Assembly tool, tightening tool, closed

Connecting cables for NEMA stepper motors
▶ **Page 1518**

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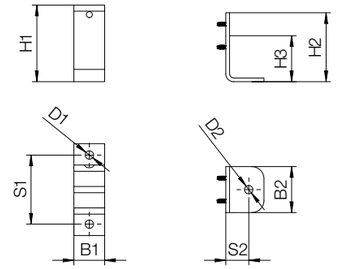
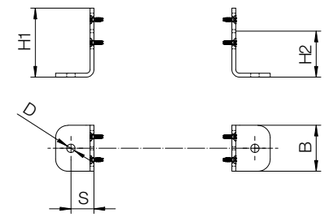
Dimensions [mm]

Part No.	Short designation	D1	D2	D3	D4	B1	B2	S1	S2	S3	H1	H2	H3	Weight [g]
RL-A54.0100	Front mounting	62	38	–	–	25	–	30	40	–	92	61	–	100.1
RL-A54.0101	Axial angle set, lateral attachment	5.5	–	–	–	30	–	15	–	–	45	30	–	32
RL-A54.0102	Axial lead screw support block, lateral attachment	5.5	5.5	–	–	20	30	45	15	–	50	45	30	109
RL-A54.0103	Mounting plate vertical, flat mounting	30.5	5.5	–	–	140	–	120	–	–	–	–	–	370
RL-A50.0100	Profile stop	30	20	25	2	25	–	–	–	–	–	–	–	8
RL-A50.0101	Profile flange	30	12	2	–	25	–	15	–	–	–	–	–	8
RL-A200.0103	Profile end cap	20	–	–	–	–	–	–	–	–	–	–	–	1
RL-A220.0104	Parallel connector	62	46	–	–	5	–	–	–	–	–	–	–	4
RL-A220.0105	Feather key element, Apiro® feather key	50	–	–	–	–	–	–	–	–	–	–	–	–
RL-A400.0100.X	Multi-functional profile 20mm	20	10	–	–	–	–	8.2	5.2	6	–	–	–	320/m

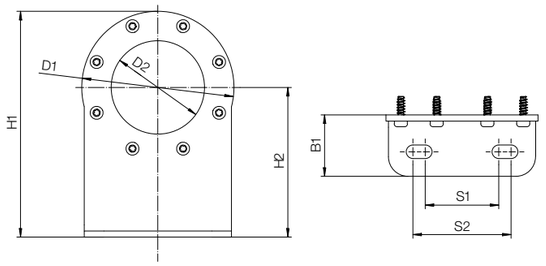
robolink® Apiro® | Product range



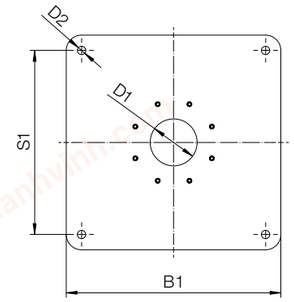
RL-A54.0102



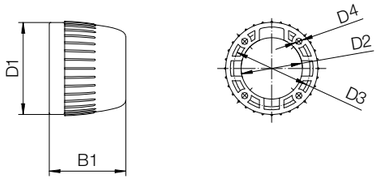
RL-A54.0101



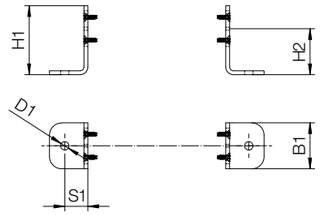
RL-A54.0100



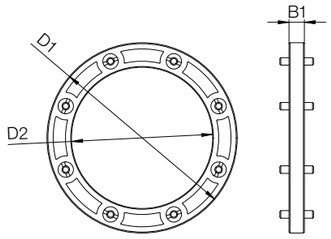
RL-A54.0103



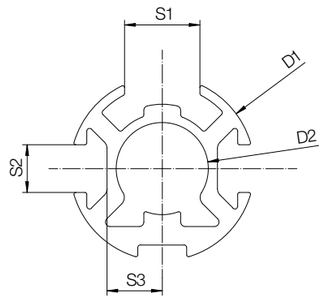
RL-A50.0100



RL-A50.0101



RL-A220.0104



RL-A400.0100

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drylin® drive technology accessories | Product overview

drylin® accessories – control elements



Angular drives, flexible positioning

▶ Page 1506



Angular drive for heavy duty

▶ Page 1507



Hygienic design angular drive

▶ Page 1507



Position indicator

▶ Page 1508



Lead screw clamps

▶ Page 1510



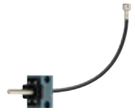
Hand wheel

▶ Page 1511



Flexshafts

▶ Page 1512



Flexshaft incl. remote control unit:
SHT-ROU

▶ Page 1513

drylin® accessories – electrical



Stepper motors

▶ Page 1518



EC motors with Hall sensor and encoder

▶ Page 1522

New



Planetary gear for stepper motors

▶ Page 1523



DC motors with spur gear

▶ Page 1524



Protective cover for DC motors

▶ Page 1525



Couplings

▶ Page 1528



Motor flanges

▶ Page 1529



Cables for stepper motors

▶ Page 1530

drylin® accessories – electrical



Proximity switches: Limit and reference switches

▶ Page 1531

New



Proximity switches – kit with support

▶ Page 1532



Spacer for height adjustment:
SLW/SHT linear modules

▶ Page 1534



Mounting bracket

▶ Page 1535



Adapter kit for linear robot setup

▶ Page 1536



T-slot plate

▶ Page 1537



Slot nuts for mounting

▶ Page 1538



Clamps

▶ Page 1539

drylin® accessories – electrical



Adapter plate

▶ Page 1540



Stainless steel angle kit

▶ Page 1541



Accessories for linear robot drives

▶ Page 1542

New



Modular control and software

▶ Page 1543



Motor control:

D1 dryve

▶ Page 1544



Motor control:

D3 dryve

▶ Page 1545

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My sketches



drylin® accessories – Control elements

Accessories for manual positioning and format adjustment

Stepper and DC motors for electrical drive

Couplings and motor flanges

Cables and proximity switches

Assembly and fastening options



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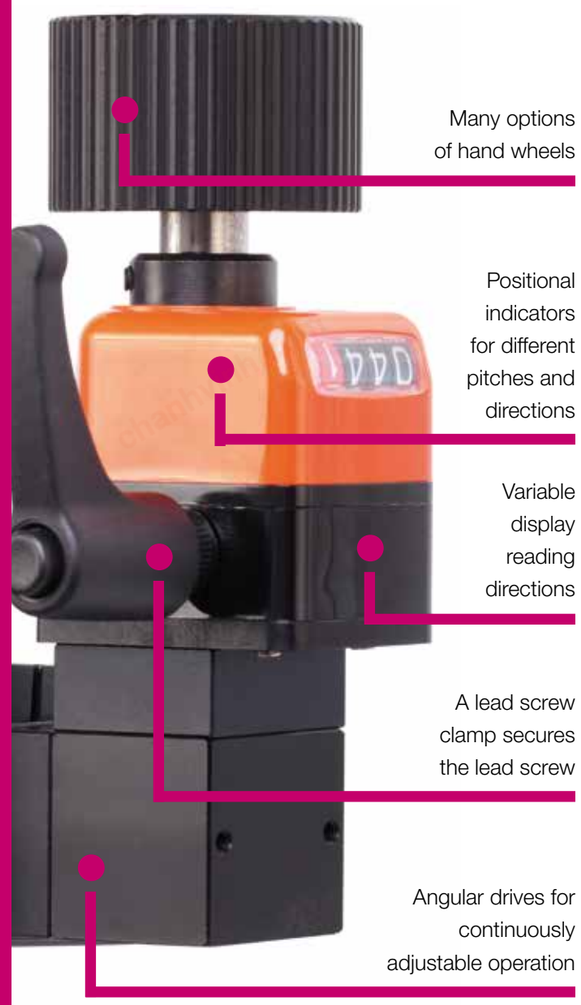
Secure, reproduce and turn



Accessories for drylin® drive technology – manual positioning

An extensive range 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.

Price breaks online
No minimum order value. No minimum order quantity.

Manual operation, manual positioning



Angular drive
- 360° continuously adjustable
- Fixing of setting angle with clamp
- Small flange saves installation space

▶ Page 1506



Position indicator
- Direct read-out of the carriage position for the lead screw drive
- Bore reducers included to enable fitting to the entire product

▶ Page 1508



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 1510



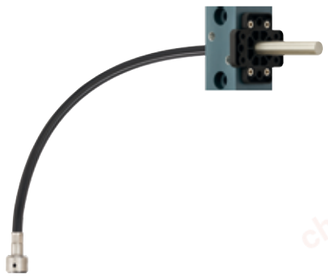
Adapter plate
- Position indicator and/or lead screw clamp
- Suitable for linear modules of SHT/SLW/SHTP series
- Material: plastic igumid G

▶ Page 1540



Hand wheels
- Rotary knob: Defined standard for complete units
- Different outer diameters available
- Different handles available

▶ Page 1511



Flexshaft incl. remote control unit
- Optional offset operation of the drylin® linear modules
- Controls can be positioned independently
- Available in length 300, 500 and 1,000mm
- Can be combined with other accessories

▶ Page 1513

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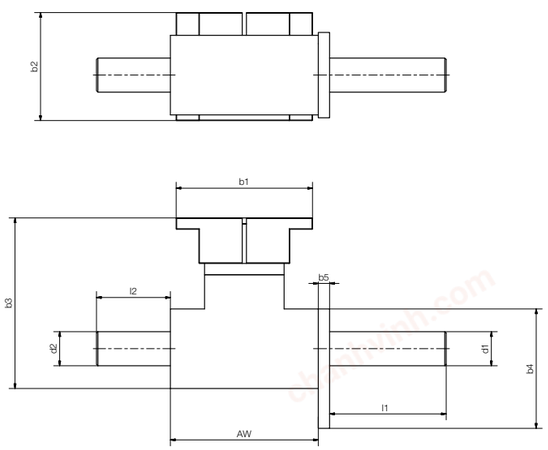
drylin® drive technology | Accessories | Product range

Angular drives – flexible and adjustable

In addition to safety technology aspects, limited operating space requires drylin® drives to be operated with flexibility and ease. We provide a product range 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 angular 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 and hand wheel available ▶ **Page 1508**

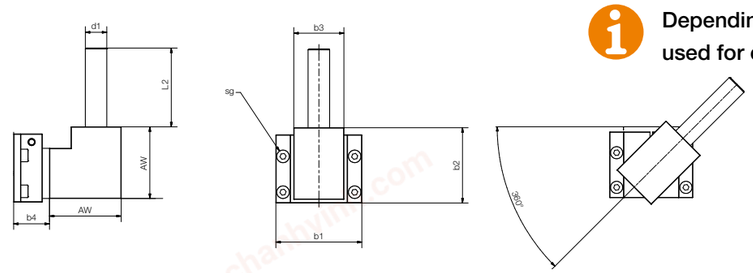
Dimensions [mm]

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 with continuously variable adjustment (can be oscillated 360°)
- Max. drive torque 3Nm
- Clamping using set screw
- Ø 12mm 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

Angular 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 6Nm.

- Flexible adjusting to your installation with continuously variable adjustment (can be oscillated 360°)
- Max. drive torque 6Nm through coupling
- Fixed using feather key groove
- Input shaft Ø 14mm h7 with size
- Compatible with drylin® SHT/SHTC/SLW (sizes 16, 20 and 30)
- Position indicator, lead screw clamp and hand wheel available ▶ **Page 1508**

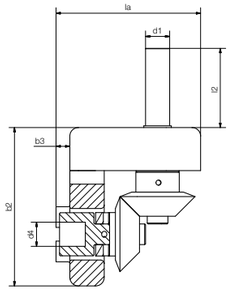
Dimensions [mm]

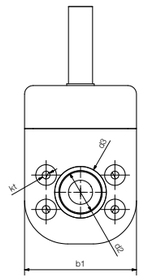
Part No.	l[105]	AW	b1	b2	b3	b4	L2	d1	sg
WT-4000 | 4100 | 4200 | 4700	1:1	60	52	51	40	23	26	14	M4
WT-4600	1:1	60	52	51	40	33	26	14	M4

[105] Gear ratio



Angular drive with hand wheel (optional)





Following the idea of "Hygienic Design" the angular drive is available as maintenance-free and washable stainless steel/polymer system.

- Max. drive torque 3Nm
- Single parts made of stainless steel
- Easy to clean/rinse with water
- Compatible with drylin® SHTC-20-EWM-HYD ▶ **Page 1379**
- Position indicator, lead screw clamp and hand wheel available ▶ **Page 1508**

Dimensions [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

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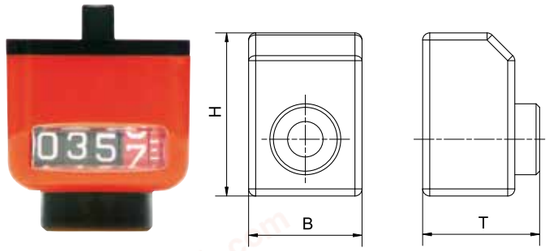
drylin® drive technology | Accessories | Product range

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 carriage position
- 3- (P1), 4- (P3) or 5- (P6) digit counter (red digit indicates tenths)
- Can be combined with manual clamps and hand wheels
- Reduction sleeves included
- Suitable adapter plate available ▶ **Page 1540**

Installation options



0 degrees | **90 degrees** | **180 degrees** | **270 degrees**

Display orientation



A
Standard

B (optional)
for vertical fitting position: display turned 180°

Order key

Order example

SHT-P3-A-1.50-1-DX-O-F-ES

Standard	Installation size	Display orientation	Pitch	Decimal places	Direction of rotation	Housing colour	Material	Material

Options:

Display orientation
A = Display orientation 0°
B = Display orientation 180° (optional)

Pitch
< 10.00 = One decimal place
> 10.00 = No decimal place

Decimal places
1 = One decimal place (red digit)
0 = No decimal place (red digit)

Direction of rotation
DX = Clockwise
SX = Anti clockwise

Housing colour
O = Orange

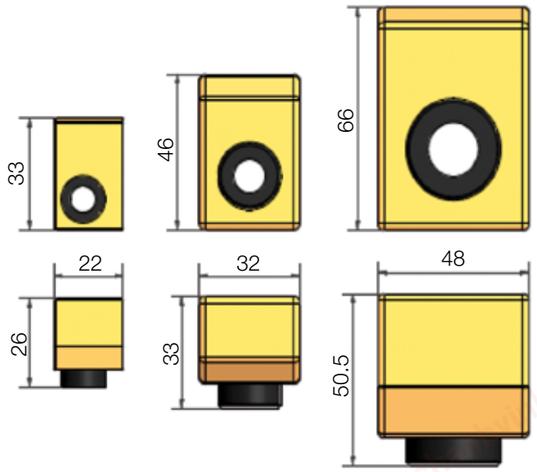
Material
ES = Hollow stainless steel shaft (optional)

Technical data [mm]

Position indicator	Digits	Decimal places	ID hollow shaft ø	Reduction sleeves ø
SHT-P1	3	1	8	6 + 6.35
SHT-P3	4	1	14	10 + 12.00
SHT-P6	5	1	20	14 + 16.00

Dimensions [mm]

Position indicator	H	B	T
SHT-P1	33	22	26.0
SHT-P3	46	32	33.0
SHT-P6	66	48	50.5



P1
SLW-0630
SHTP-01-06

P3
all other linear systems

P6
SHTC-40
SHTC-50

drylin® drive technology | Accessories | Product range

Digital position indicator for even more exact settings



The electronic position indicator (battery operated) for drylin® linear modules can be programmed by the factory for the individual thread pitch. Ideal for use with dryspin® high helix lead screws. LCD display with 5 digits and special characters, long battery life and easy battery change without removal of the device.

- Electronic digital display
- 5-digit LCD display
- Features such as incremental adjustment, offset and reset, operated via keys on the position indicator
- Battery life 8 years
- Battery change without any tools
- Increase counting in either direction, clockwise or anti-clockwise
- Display orientation standard or through 180°

Note: reduction sleeves included in delivery

Order key

Order example

SHT-P3-E02-2.00-1-DX-O-S

Standard	Installation size	Display orientation	Pitch	Decimal places	Direction of rotation	Housing colour	Material

Options:

Display orientation
E02 = Standard: Display orientation 0°
E04 = Display orientation rotated by 180°

Technical data

Part No.	Speed [rpm]	Weight [g]	Temperature [°C]	Protection class
SHT-P3-E02-2.00-1-DX-O-S	600	60	–10 ... +60	IP51

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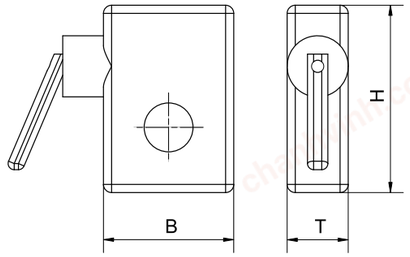
drylin® drive technology | Accessories | Product range

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.



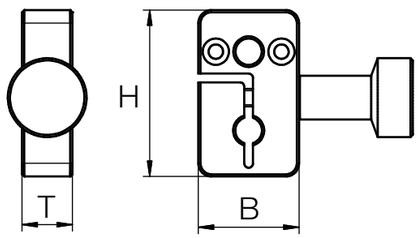
- Shaft clamping flange for attachment to the position indicator and subsequent mounting on the lead screw
- Provides a mechanical brake to the lead screw
- Material: plastic housing with aluminium shaft clamp
- Reduction sleeves for further diameters available



Assembly and positioning with adapter plate
▶ **Page 1540**

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.

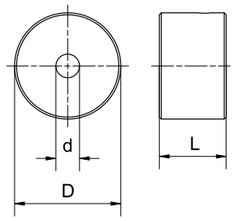


Standard



With handle (optional)

- Rotary knob: Defined standard for complete units
- Different outer diameters available
- Different handles available



Order key

Order example

SHT-HR- 8 -27-17-OG

Standard	Hand wheel	Inner diameter	Outer diameter	Length	Handle (optional)

Options:

Handle (optional)

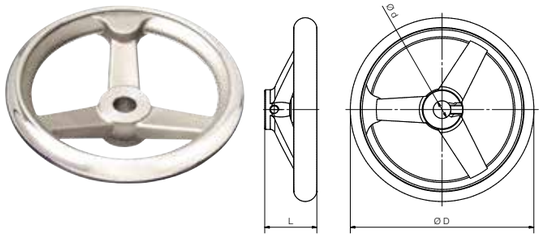
OG = Without handle
FG = Fixed handle
UG = Folding handle
SG = Security handle

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

- Designed for application in food and pharmaceutical industries
- Corrosion-free stainless steel

Dimensions [mm]

Part No.	d	D	L	OG	Weight [g]
SHT-HR-12-125-36-OG-ES	12	125	36	●	625

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drylin® drive technology | Accessories | Product range

Flexshaft – separately located control of linear modules

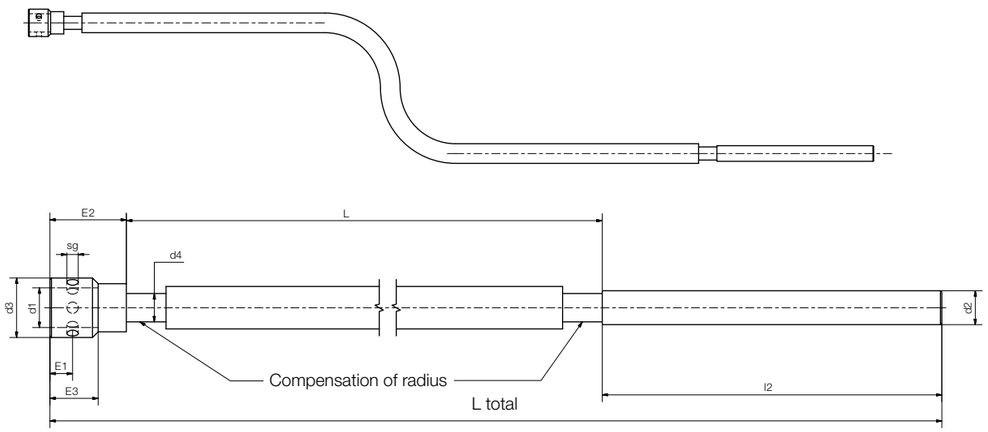


The ideal complement to drylin® linear modules. The flexshaft enables the positioning of the hand wheel independent of the installation position of the linear unit. Distance up to 500mm and offset by 85°.

- Lengths: 300mm, 500mm und 1,000mm (flexible area)
- Flexible shaft: Burnished steel
- Plastic coated: Rilsan
- Connection piece: Stainless steel AISI 303
- For all journal diameters (10, 12 and 14mm)
- Flexible installation
- Space-saving
- Can be combined with a lead screw support block ▶ **Page 1342**
- Position indicator, lead screw clamp and hand wheel available ▶ **Page 1508**



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 upon request

drylin® | Linear axes with motor | SHT-ROU

With the drylin® Remote Operation Unit ROU, linear modules can be controlled remotely

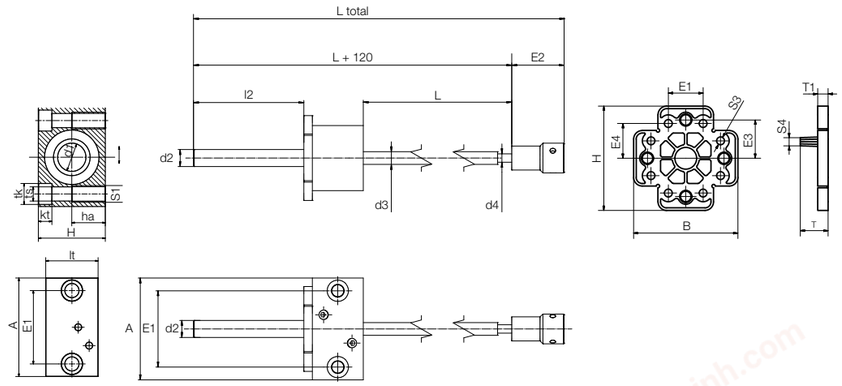
With the Remote Operation Unit, hazards such as chemicals or heat can be avoided. Thanks to the flexshaft, they can also be easily manipulated.

- Use e.g. of chemicals, heat, places that are hazardous for people working in them
- Enables manual remote control of linear modules
- Ergonomic operation via flexshaft
- Safe control of linear modules outside the work area
- Available with flexshaft with Ø 6 and 8mm in different lengths
- Thanks to the adapter plate, position indicators as well as lead screw clamps can be fitted in 4 operating directions (0°, 90°,180°, 270°)
- Reduction sleeves for quick and simple connection to lead screw size Ø 8/10/12 available AK-0047 (Ø 14 -> 8mm); AK-0048 (Ø 14 -> 10mm), AK-0049 (Ø 14 -> 12mm)



Typical application areas:

- Format adjustment
- Cabin construction
- Hazard areas



Dimensions [mm]

Part No.	L	L Total	l2	d2	d3	d4	E1	E2	E3	E4	S3	H
SHT-ROU-06-300	300	457	78	12	9	6	20	37	22	20	4.5	60
SHT-ROU-06-500	500	657	78	12	9	6	20	37	22	20	4.5	60
SHT-ROU-08-500	500	657	78	12	11	8	20	37	22	20	4.5	60
SHT-ROU-08-1000	1,000	1157	78	12	11	8	20	37	22	20	4.5	60

Part No.	B	T1	A	E5	lt	tk	ts	kt	ha	S1	d1
SHT-ROU-06-300	60	6	72	54	36	15	9	8.6	23	M10	14H7
SHT-ROU-06-500	60	6	72	54	36	15	9	8.6	23	M11	14H7
SHT-ROU-08-500	60	6	72	54	36	15	9	8.6	23	M12	14H7
SHT-ROU-08-1000	60	6	72	54	36	15	9	8.6	23	M13	14H7

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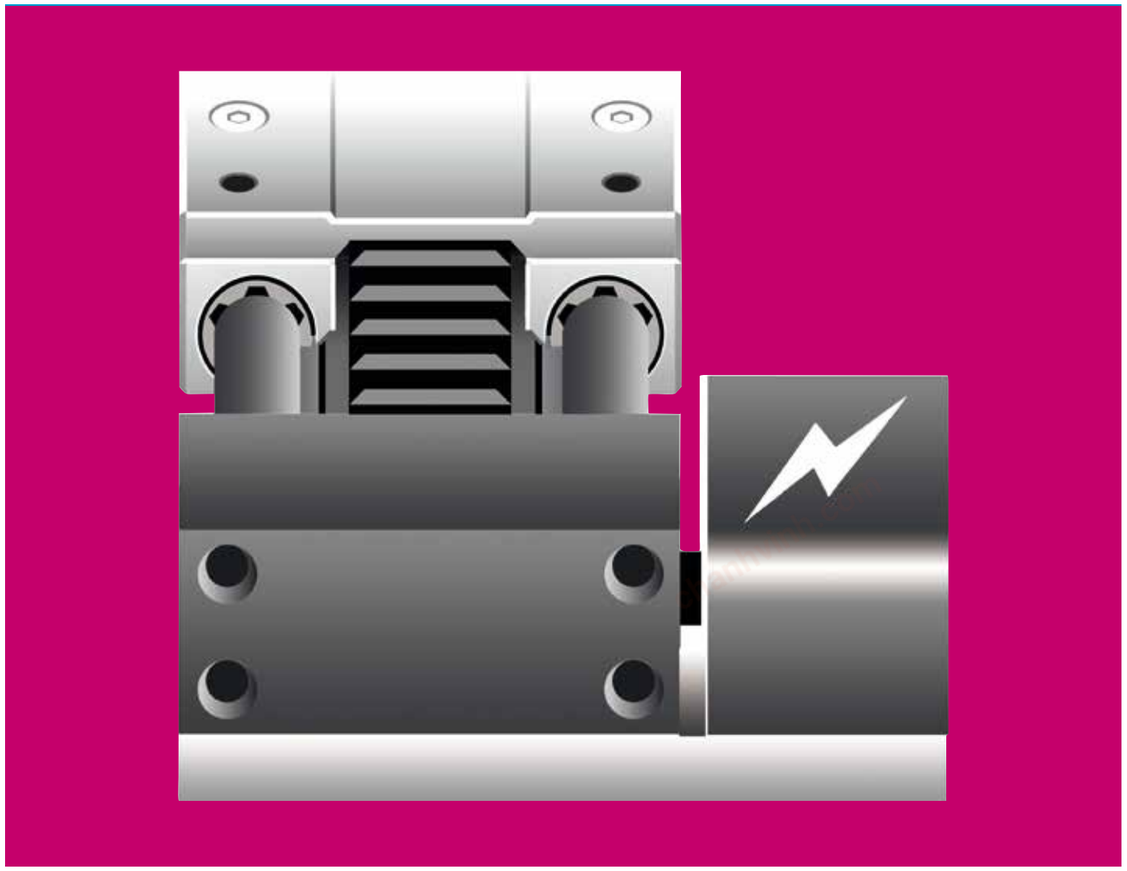
My sketches



drylin® accessories – electrical

- Motor control systems
- Stepper motors
- DC motors
- Motor flanges
- Cables and proximity switches
- Mounting accessories



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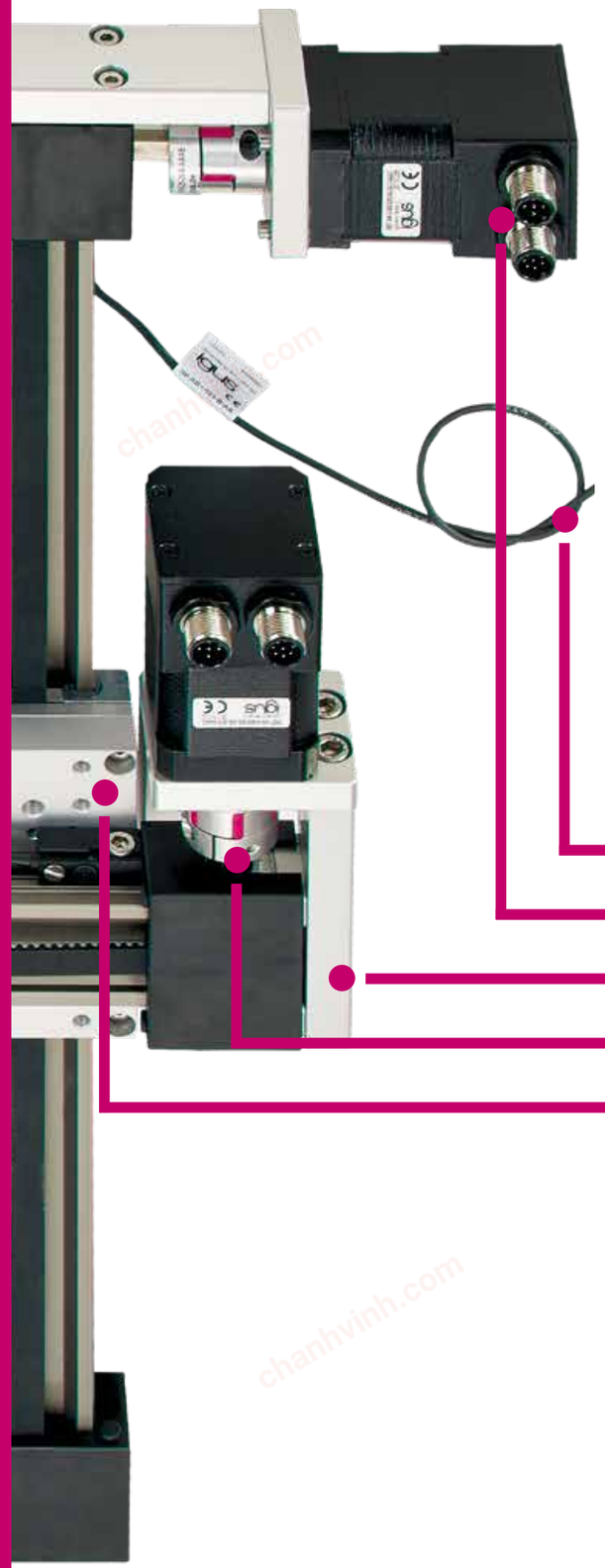
Automation from stock



Accessories for drylin® 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® 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 5 installation sizes
- Motors with connector or stranded wire
- With encoder and brake
- Increased torque resistance due to machined flat motor shaft (D-cut)

▶ Page 1518



DC motors

- 3 sizes
- Torque from 0.1 – 1.8Nm
- Up to 440rpm
- Increased torque resistance due to machined flat motor shaft (D-cut)

▶ Page 1524



Motor flanges

- Motor connection for drylin® linear axes
- For stepper and DC motors
- Suitable for igus® couplings

▶ Page 1529



Cables and proximity switches

- chainflex® connection cables with straight or angled connectors
- Proximity switches: Limit and reference switches
- For drylin® linear modules and toothed belt axes

▶ Page 1530



Mounting accessories

- Adapter plates for linear robot structures
- Spacer for height adjustment of SHT/SLW linear modules
- Mounting material

▶ Page 1534



Motor control systems

- For DC, EC and stepper motors
- Intuitive user interface
- Quick and easy set up
- Compatible with many industrial control systems
- For all drylin® linear axes

▶ Page 1544

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drylin® | 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 30cm) for this type 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.

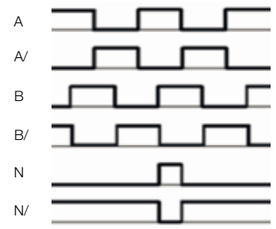
NEMA34: The power pack in the large installation size

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.

drylin® | Stepper motors | Technical data

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		500
Zero signal/index		yes
Line driver		RS422 Protocol
Signal shape (Clockwise motor rotation)	[CW]	

Technical data

Plate size brake		28	42	56	60	86
		NEMA11	**NEMA17**	**NEMA23**	**NEMA23XL**	**NEMA34**
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

Mass moment of inertia		28	42	56	60	86
		NEMA11	**NEMA17**	**NEMA23**	**NEMA23XL**	**NEMA34**
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 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		EMC directive

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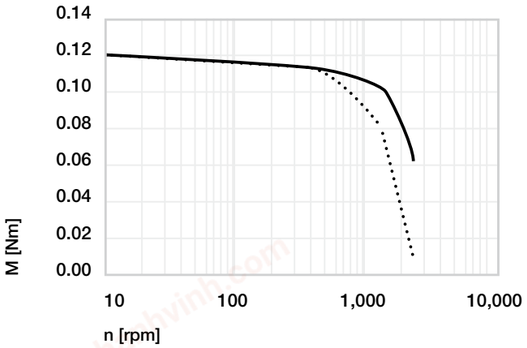
Characteristic curves

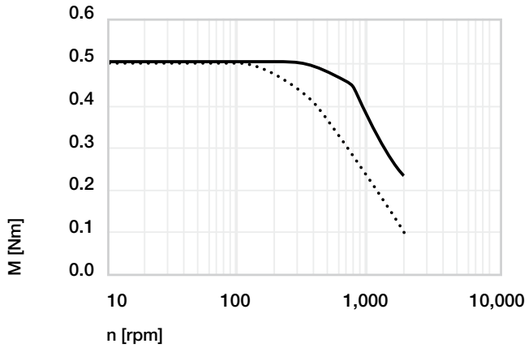
Flange size 28 (NEMA11)

MOT-AN-S-060-001-028-…



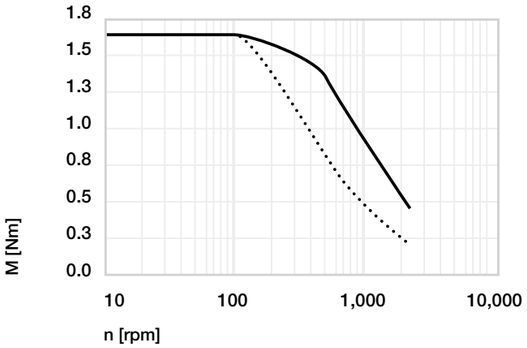
Flange size 42 (NEMA17)

MOT-AN-S-060-005-042-…



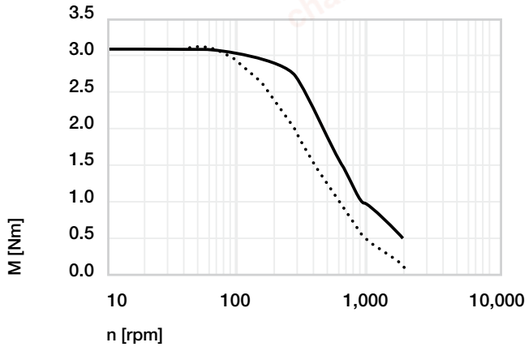
Flange size 56 (NEMA23)

MOT-AN-S-060-020-056-...



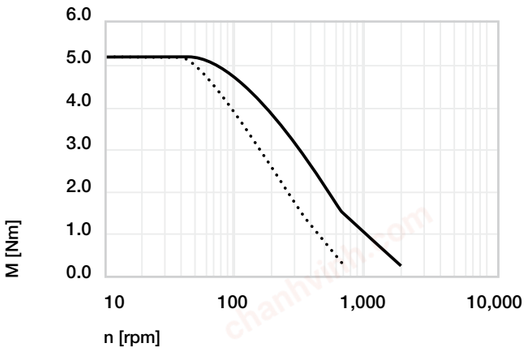
Flange size 60 (NEMA23XL)

MOT-AN-S-060-035-060-…



Flange size 86 (NEMA34)

MOT-AN-S-060-059-086-…



------- 24VDC ——— 48VDC

The characteristic curves are determined in quarter step mode

Order key

Order example

MOT - AN - S - 060 - 020 - 056 - M - A - AAAA

Product type	Type	Motor type	Maximum voltage	Holding torque	Distance over hubs	Motor connection	Options	Specification
MOT	AN	S	060	020	056	M	A	AAAA

Options:

Product type
MOT = Motor

Type
AN = Design

Motor type
S = Stepper motor

Maximum voltage
060 = 60V/DC

Holding torque
001 = 0.1Nm
005 = 0.5Nm
020 = 2.0Nm
035 = 3.5Nm
059 = 5.9Nm

Distance over hubs
028 = 28mm (NEMA11)
042 = 42mm (NEMA17)
056 = 56mm (NEMA23)
060 = 60mm (NEMA23XL)
086 = 86mm (NEMA34)

Motor connection
M = Metric connector
L = Stranded wires

Options
A = Without
C = Incremental encoder
D = Incremental encoder & brake

Specification
AAAA = Standard
AAAC = Encoder
AAAD = Encoder & brake

More information ▶ www.igus-asean.com/drylinE

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drylin® | Stepper motors | Product range

EC motors with Hall and encoder



The brushless DC motors have a high speed and allow quick positioning. The motor encoder enables precise positioning.

- Lubrication and maintenance-free
- More cost-effective than conventional servomotors
- Installation sizes NEMA 17, 23, 24, 34 are available
- Improved performance for drylin® E single axes, linear robots and delta robots

Technical data

Part No.	Number of phases	Number of poles	Nominal voltage [VDC]	Nominal speed [rpm]	Rated torque [Nm]	Nominal power [W]	Nominal current [A]	Peak current [A]	Maximum torque [Nm]
MOT-EC-42-C-H-A	3	8	48	3,000	0.3	90	2.61	7.8	0.9
MOT-EC-56-C-H-A	3	8	48	3,000	0.6	188	5.00	15.0	1.8
MOT-EC-60-C-H-A	3	8	48	3,000	0.8	250	7.50	22.5	2.4
MOT-EC-86-C-H-A	3	8	48	3,000	1.0	314	8.70	26.1	3.0
MOT-EC-42-C-I-A	3	8	48	3,000	0.3	90	2.61	7.8	0.9
MOT-EC-56-C-I-A	3	8	48	3,000	0.6	188	5.00	15.0	1.8
MOT-EC-60-C-I-A	3	8	48	3,000	0.8	250	7.50	22.5	2.4
MOT-EC-86-C-I-A	3	8	48	3,000	1.0	314	8.70	26.1	3.0

Part No.	Resistance [Ω]	Inductivity [mH]	Torque constant [Nm/A]	Voltage constant [V/krpm]	Weight [kg]	Distance over hubs [mm]	Encoder [Pulse/rotation]	Encoder voltage [V]	Index [VDC]
MOT-EC-42-C-H-A	1.65	1.00	0.115	12.0	0.75	42	–	–	No
MOT-EC-56-C-H-A	0.50	0.70	0.120	12.0	1.30	56	–	–	No
MOT-EC-60-C-H-A	0.47	0.65	0.110	11.0	1.35	60	–	–	No
MOT-EC-86-C-H-A	1.08	1.27	0.115	11.5	2.30	86	–	–	No
MOT-EC-42-C-I-A	1.65	1.00	0.115	12.0	0.75	42	1,000	5	Yes
MOT-EC-56-C-I-A	0.50	0.70	0.120	12.0	1.30	56	1,000	5	Yes
MOT-EC-60-C-I-A	0.47	0.65	0.110	11.0	1.35	60	1,000	5	Yes
MOT-EC-86-C-I-A	1.08	1.27	0.115	11.5	2.30	86	1,000	5	Yes

drylin® | Gearboxes | Product range

Planetary gear for stepper motors



Suitable for stepper motors and EC/BLDC motors with flange sizes 56, 60, 86, new gearboxes with a gear reduction of 10 and 15 can be supplied. In the case of slow rotating stepper motors, torque of up to 44Nm can be generated permanently. In the case of EC/BLDC, up to 35Nm at 200rpm (short-term).

- For igus® stepper motors with flange sizes NEMA 23, 23XL, 34
- Available gear reductions: 3, 5, 10, 15
- Higher motor torque for heavy loads

Order key

Order example

GEA-60-3-60-ST-063

Gearbox | Distance over hubs | Gear reduction | Width B1 | Stepper motor | Shaft [mm]

Technical data and dimensions [mm]

Part No.	Motor size	B1	B2	D1 Ø h7	D2 Ø h7	D3 Ø	L1 ±1.0	L2	L3
GEA-60-3-60-ST-063	NEMA23	60.0	36.7	14.0	40.0	M5	35.0	71.0	3.0
GEA-60-3-60-ST-080	NEMA23XL	60.0	36.7	14.0	40.0	M5	35.0	71.0	3.0
GEA-60-3-90-ST-140	NEMA34	90.0	36.7	14.0	40.0	M5	35.0	86.0	3.0
GEA-60-5-60-ST-063	NEMA23	60.0	36.7	14.0	40.0	M5	35.0	71.0	3.0
GEA-60-5-60-ST-080	NEMA23XL	60.0	36.7	14.0	40.0	M5	35.0	71.0	3.0
GEA-60-5-90-ST-140	NEMA34	90.0	36.7	14.0	40.0	M5	35.0	86.0	3.0
GEA-60-10-60-ST-063	NEMA23	60.0	36.7	14.0	40.0	M5	35.0	71.0	3.0
GEA-60-10-60-ST-080	NEMA23XL	60.0	36.7	14.0	40.0	M5	35.0	71.0	3.0
GEA-60-10-90-ST-140	NEMA34	90.0	36.7	14.0	40.0	M5	35.0	86.0	3.0
GEA-60-15-60-ST-063	NEMA23	60.0	36.7	14.0	40.0	M5	35.0	71.0	3.0
GEA-60-15-60-ST-080	NEMA23XL	60.0	36.7	14.0	40.0	M5	35.0	71.0	3.0
GEA-60-15-90-ST-140	NEMA34	90.0	36.7	14.0	40.0	M5	35.0	86.0	3.0

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drylin® | DC motors | Product range

DC motors 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 0.1Nm to 1.5Nm
- Up to 440rpm
- Can be operated at 12 & 24VDC

1. MOT-AE-B-024-001-037-F-A-AAAA
2. MOT-AE-B-024-003-037-F-A-AAAA
3. MOT-AE-B-024-005-036-F-A-AAAA
4. MOT-AE-B-024-007-037-F-A-AAAA
5. MOT-AE-B-024-010-042-F-A-AAAA
6. MOT-AE-B-024-015-037-F-A-AAAA
7. MOT-AE-B-024-018-042-F-A-AAAA

Technical data

Motor		1	2	3	4	5	6	7
Maximum voltage	[VDC]	24	24	24	24	24	24	24
Nominal voltage	[VDC]	24	24	24	24	24	24	24
Nominal current	[A]	0.5	0.5	0.9	0.5	2.3	0.5	2.0
Nominal torque	[Nm]	0.1	0.3	0.5	0.7	1.0	1.5	1.8
Start up torque	[Nm]	0.3	0.5	1.0	1.0	3.0	1.8	6.0
Idling speed	[1/min]	440	146	223	58	290	22	115
Rated speed	[1/min]	350	112	190	47	252	17	101
Shaft load, axial	[N]	6.8	6.8	25	6.8	30	6.8	30
Shaft load, radial	[N]	9.8	9.8	30	9.8	50	9.8	50
Reduction gearing	[N]	10	30	27	75	24	200	61
Product weight								
MOT-AE	[kg]	0.207	0.213	0.450	0.221	0.650	0.270	0.690
MOT-DC	[kg]	0.280	0.280	0.420	0.280	0.580	0.280	0.580
Operating data		MOT-AE | MOT-DC						
Ambient temperature	[°C]	–10 to +60 | –10 to +50						
Max. allowable temperature increase	[°C]	60						
Air humidity (non condensing)	[%]	85						
IP rating – motor housing		IP30|IP41	IP30|IP41	IP20|IP41	IP30|IP41	IP20|IP41	IP30|IP41	IP20|IP41
Operating mode		S2 (short-term operation)						
Motor connection low-profile connector								
Length	[mm]	6.5	6.5	6.0	6.5	9.0	6.5	9.0
Width	[mm]	4.0	4.0	3.8	4.0	4.8	4.0	4.8
Strength	[mm]	0.4	0.4	0.5	0.4	0.5	0.4	0.5
Can be combined with motor flange		–	–	–	–	MF-1040	–	MF-1040

drylin® | DC motors | Product range

DC motors with spur gear and "protect" protection housing



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® linear axes

1. MOT-DC-37-M-A-A
2. MOT-DC-37-M-A-B
3. MOT-DC-36-M-A-D
4. MOT-DC-37-M-A-D
5. MOT-DC-42-M-A-D
6. MOT-DC-37-M-A-H
7. MOT-DC-42-M-A-F

Technical data ▶ Page 1526

Dimensions [mm]

Part No.	B1 ±0.3	B2 ±0.2	B3 ±0.1	D1 –0.013	D2 ±0.025	D3 Ø	L1 ±1	L2 ±1	L3	L4
MOT-AE-B-024-001-037-F-A-AAAA	37.0	31.0	7.0	6.0	12.0	M3	21.0	59.5	6.0	92.5
MOT-AE-B-024-003-037-F-A-AAAA	37.0	31.0	7.0	6.0	12.0	M3	21.0	62.0	6.0	95.0
MOT-AE-B-024-005-036-F-A-AAAA	36.0	26.0	6.0	6.0	20.0	M3	19.3	85.6	3.0	104.9
MOT-AE-B-024-007-037-F-A-AAAA	37.0	31.0	7.0	6.0	12.0	M3	21.0	64.5	6.0	97.5
MOT-AE-B-024-010-042-F-A-AAAA	42.4	35.0	0	8.0	25.0	M4	22.0	105.2	2.0	127.2
MOT-AE-B-024-015-037-F-A-AAAA	37.0	31.0	7.0	6.0	12.0	M3	21.0	67.0	6.0	100.0
MOT-AE-B-024-018-042-F-A-AAAA	42.4	35.0	0	8.0	25.0	M4	22.0	111.9	2.0	142.4
MOT-DC-37-M-A-A	42.0	31.0	7.0	6.0	12.0	M3	21.0	100.0	6.0	134.0
MOT-DC-37-M-A-B	42.0	31.0	7.0	6.0	12.0	M3	21.0	100.0	6.0	134.0
MOT-DC-36-M-A-D	41.0	26.0	0	6.0	20.0	M3	19.3	126.0	3.0	158.3
MOT-DC-37-M-A-D	42.0	31.0	7.0	6.0	12.0	M3	21.0	100.0	6.0	134.0
MOT-DC-42-M-A-D	47.3	35.0	0	8.0	25.0	M4	22.0	146.0	2.0	181.0
MOT-DC-37-M-A-H	42.0	31.0	7.0	6.0	12.0	M3	21.0	100.0	6.0	134.0
MOT-DC-42-M-A-F	47.3	35.0	0	8.0	25.0	M4	22.0	146.0	2.0	181.0

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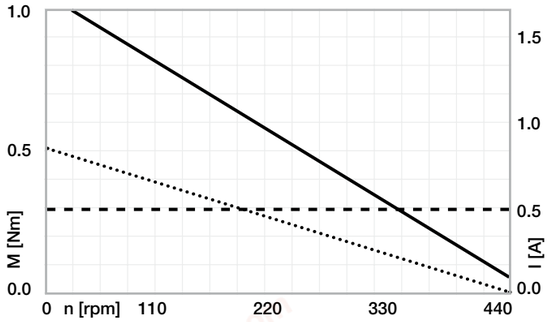
drylin® | DC motors | Characteristic curves

Characteristic curves 24VDC

MOT-AE-B-024-001-037-F-A-AAAA / MOT-DC-37-M-A-A



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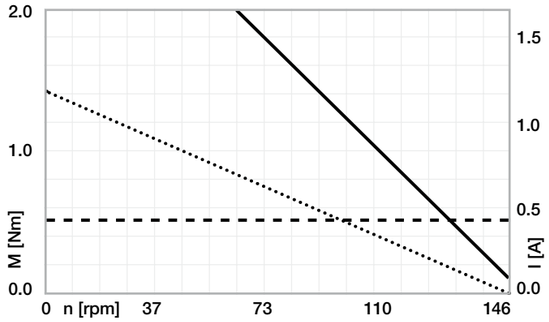
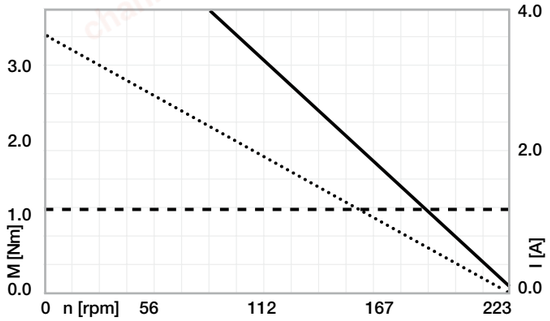


MOT-AE-B-024-005-036-F-A-AAAA / MOT-DC-36-M-A-D



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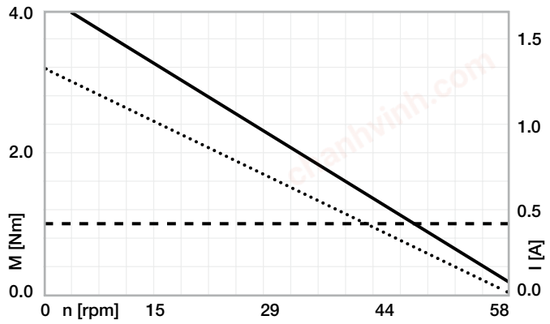

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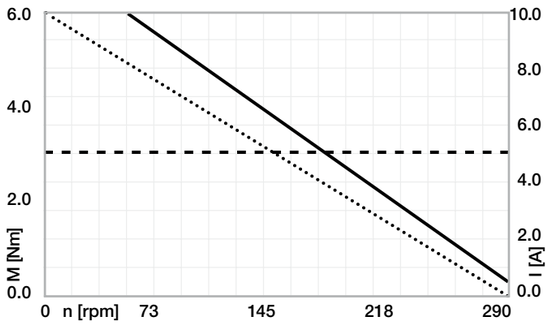
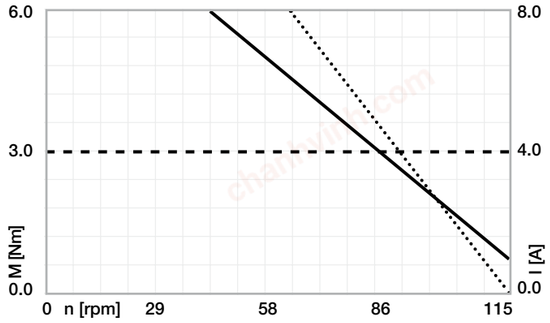


MOT-AE-B-024-015-037-F-A-AAAA / MOT-DC-37-M-A-H



MOT-AE-B-024-018-042-F-A-AAAA / MOT-DC-42-M-A-F



Order key

Order example

MOT-AE-B-024-015-037-F-A-AAAA

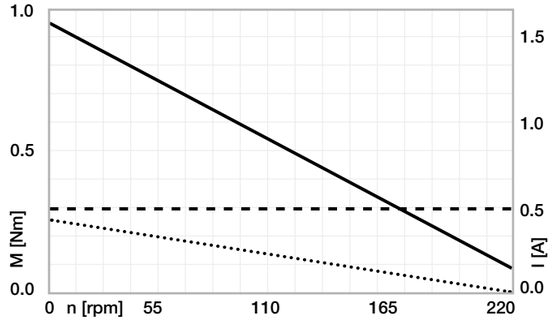
Product type: Motor	AE: Design	Motor type B: DC motor	Operating voltage: 24VDC	Nominal torque [Nm]	Outer diameter [mm]	F = Low-profile connector	Options: A: Without	AAAA: Standard

------- Torque ------- Max. continuous torque —— Motor current

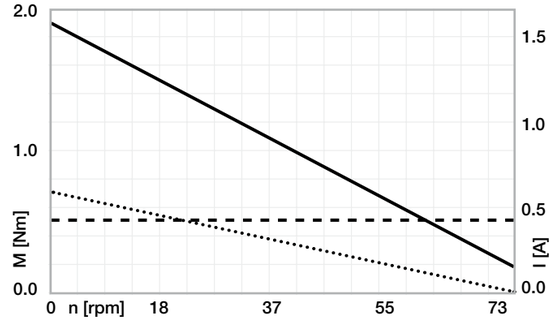
drylin® | DC motors | Characteristic curves

Characteristic curves 12VDC

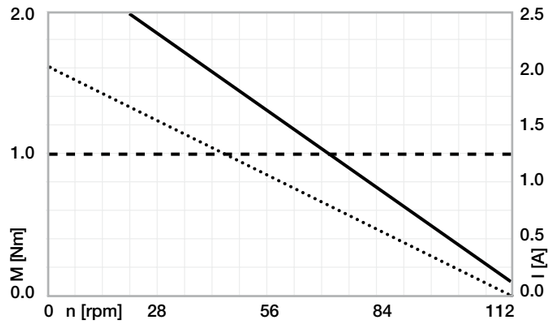
MOT-AE-B-024-001-037-F-A-AAAA / MOT-DC-37-M-A-A



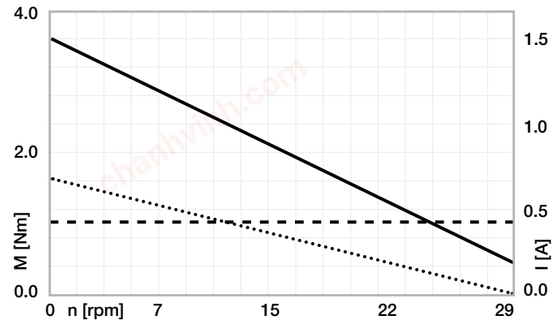
MOT-AE-B-024-003-037-F-A-AAAA / MOT-DC-37-M-A-B



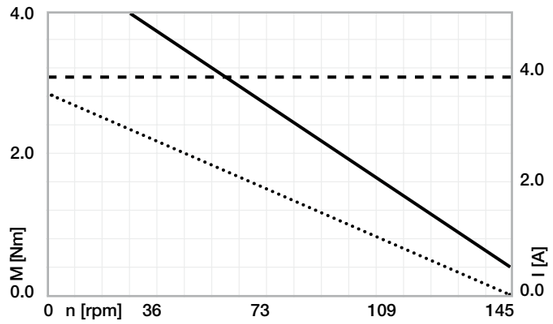
MOT-AE-B-024-005-036-F-A-AAAA / MOT-DC-36-M-A-D



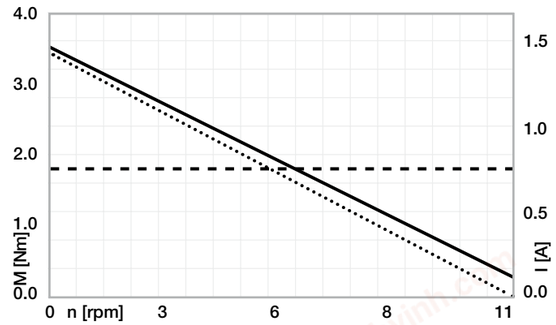
MOT-AE-B-024-007-037-F-A-AAAA / MOT-DC-37-M-A-D



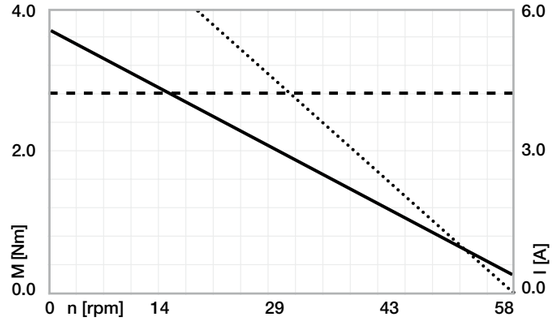
MOT-AE-B-024-010-042-F-A-AAAA / MOT-DC-42-M-A-D



MOT-AE-B-024-015-037-F-A-AAAA / MOT-DC-37-M-A-H



MOT-AE-B-024-018-042-F-A-AAAA / MOT-DC-42-M-A-F



Order key

Order example

MOT-DC-36-M-A-D

Product type: Motor	Motor type B: DC motor	Outer diameter [mm]	M: Metric connectors M12	Options: A: Without	Rated speed [rpm]

Rated speeds
A: Ø 37 = 350
B: Ø 37 = 112
D: Ø 36 = 190
Ø 37 = 47
Ø 42 = 252
F: Ø 42 = 96
H: Ø 37 = 17

------- Torque ------- Max. continuous torque —— Motor current

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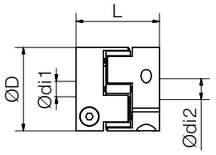
drylin® | Accessories | Product range

Coupling – vibration dampening and easy fitting





The coupling connects the drive pin 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.

Toothed belt axis	Motor type	Coupling	Techn. data – coupling D [mm]	di1 [mm]	di2 [mm]	L [mm]	Weight [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 type	Coupling	D [mm]	di1 [mm]	di2 [mm]	L [mm]	Weight [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

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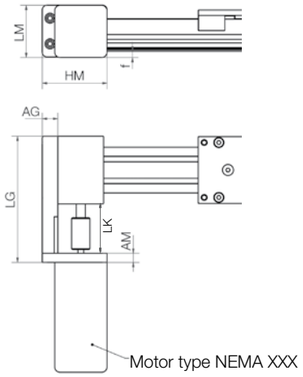
Using motor flange for stepper and DC motors



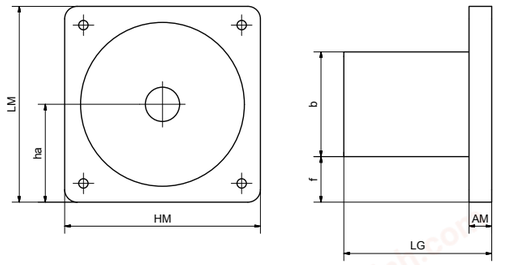


- 2 base plate lengths for each NEMA motor flange; others upon request
- Matches the drylin® coupling ▶ **Page 1528**

Dimensions [mm]

Part No.	Matching linear modules	Base plate AG	LG	LK	AM	Motor flange 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	15	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	–
MF-1040-DC0350	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 1528**

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
MF-2040-DC0350	SAW/SLW-1040-AL, SHT12	47	12	43	43	43	–	21.5

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Connecting cables for NEMA stepper motors



The ideal complement to the drylin® product range provides chainflex® connection 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 (harnessed)				
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

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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® range. The plastic housing makes the proximity switches, which can be used as limit, position or reference switches, particularly light and tough.

Technical data

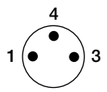
Proximity switches	Unit	
Operating voltage	[VDC]	10...30
Max. trigger current	[mA]	100
Ambient temperature	[°C]	–25...+70
Trigger distance	[SN]	2.5
Protection class		IP67
Connectors		M8

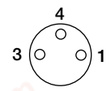
20–30mm of extra stroke length is required for each limit reference switch.

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

Pin assignment

Proximity switch	M8 3-pin	Proximity switch cable	
PIN	**Signal**	**PIN**	**Colour**
1	+	1	brown
3	–	3	blue
4	Load	4	black





Matching cables are added by including the following attachments:

Order key

Order example

IK-0010-BG-3

Proximity switch kit	Assignment number	Connector description	Cable length

Options:
Connector description
BG = Straight socket
Cable length
3m, 5m, 10m



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.

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Proximity switches – kit with support





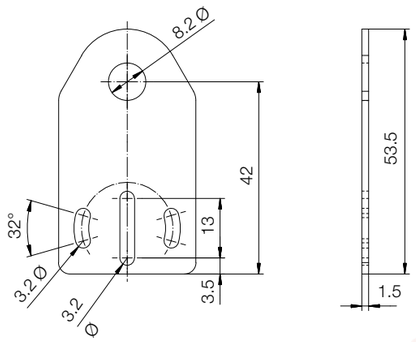
Part No.
IK-0201-2
Proximity PNP NC kit with straight support

Part No.
IK-0200-2
Proximity PNP NC kit with angled support

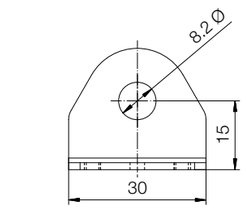
Reposition and adjustment is possible using a bracket with the proximity switch

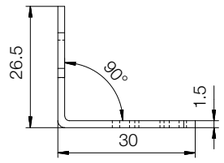
- Cable length: 2m
- Material holder: steel

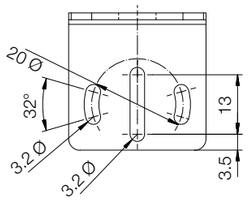
ZSY-INI-AS-B



ZSY-INI-AS-A







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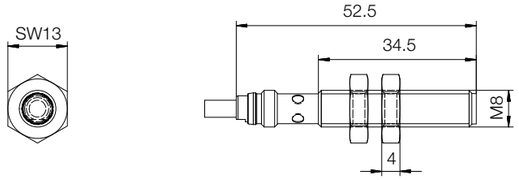

My sketches

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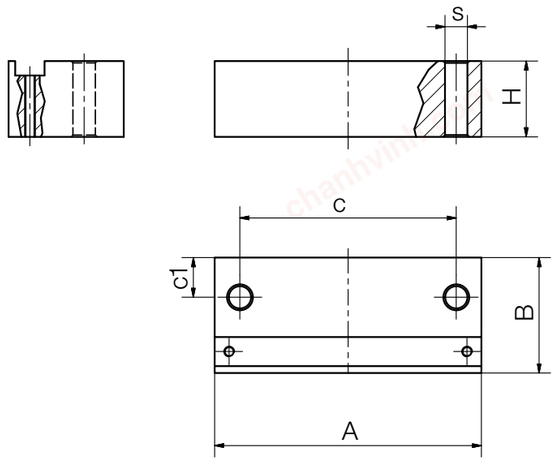
Spacer – height compensation for SLW/SHT linear modules



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]

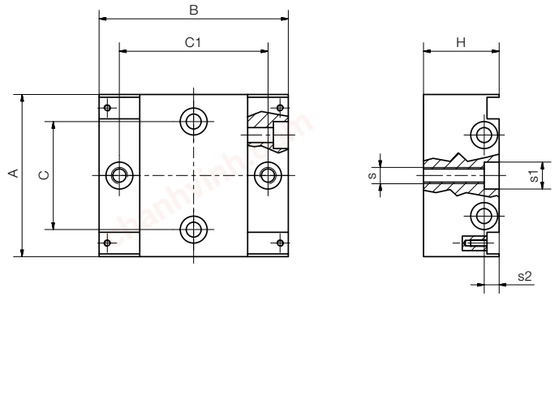
Part No.	A	B	H	c ±0.1	c1	Ø s +0.2
AK-0001	74	32.0	21.0	60	11.0	6.2
AK-0002	108	32.0	21.0	94	11.0	6.2
AK-0003	104 –0.2	35.0	24.5	84	12.5	8.1
AK-0004	134	38.0	20.0	116	14.0	9.0
AK-0027	65	25.5	13.0	52	7.75	5.5
AK-0006	85	40.0	17.5	70	15.0	6.2
AK-0007	130	46.0	22.0	108	18.0	10.5
AK-0008	180	60.0	10.0	150 ±0.2	25.0	13.5
AK-0009	200	45.0	16.0	173 ±0.2	17.5	13.5

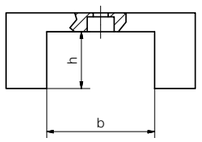
Mounting bracket for SAW linear modules and ZLW toothed belt axes



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 holes
- Including roll-in slot nuts and screws for fastening





Part No.	Suitable for		
	Rail profile	Linear module	Toothed belt axis
AK-0037	WSX-06-30	SAW(C)-0630	ZLW-0630
AK-0038	WSX-10-40	SAW(C)-1040	ZLW-1040
AK-0039	WSX-10-80	SAW-1080	ZLW-1080
AK-0040	WSX-16-60	SAW-1660	ZLW-1660

Dimensions [mm]

Part No.	A	B	H	h	b	C	C1	s	s1	s2
AK-0037	60	70	20	12	30	40	50	M6	Ø 10	5.5
AK-0038	60	70	28	21	40	40	55	M6	Ø 10	5.5
AK-0039	60	104	28	21	74	40	90	M6	Ø 10	5.5
AK-0040	60	98	47	37	62	40	80	M8	Ø 11	27

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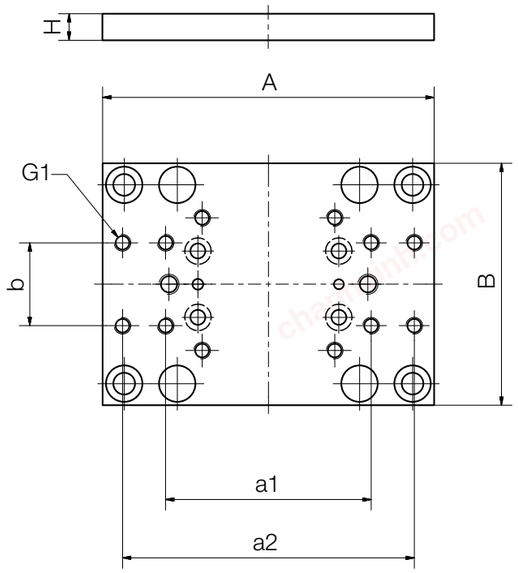
Adapter kit for linear robot setup





- Simple and fast multi-axes linear robot setup
- For lead screw and toothed belt axes
- Energy chain assembly preparation
- Anodised aluminium
- Space and weight-saving
- Mounting of y-axis on 2 x-axes

Mounting of y-axis on two x-axes

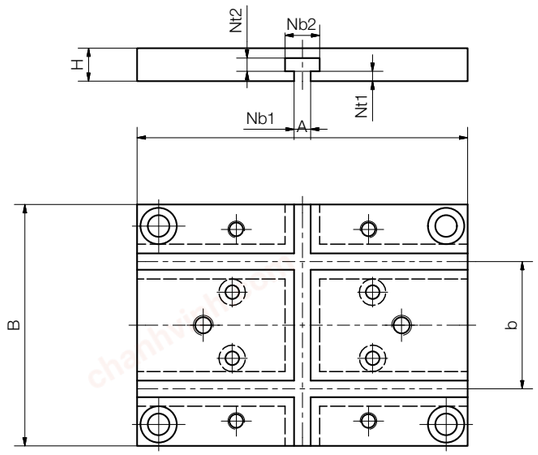
Part No.	x-axis	y-axis	Function linear robot setup
AK-0011	ZLW-0630, 100mm carriage	ZLW-0630, ZLW-1040	Assembly y-axis
AK-0012	ZLW-1040, 100mm carriage	ZLW-0630, ZLW-1040	Assembly y-axis
AK-0013	ZLW-1040, 150mm carriage	ZLW-0630, ZLW-1040, ZLW-1080	Assembly y-axis
AK-0014	ZLW-1660, 250mm carriage	ZLW-1040, ZLW-1080	Assembly y-axis
AK-0024	ZLW-1040, 200mm carriage	ZLW-0630, ZLW-1040, ZLW-1080	Assembly y-axis
AK-0025	ZLW-1080, 150mm carriage	ZLW-0630, ZLW-1040, GRW-0630	Assembly y-axis

Dimensions [mm]

Part No.	A –0.3	B –0.3	G1	H	a1	a2 +0.2	b
AK-0011	100	54	M5	13	62	88	25
AK-0012	100	73	M5	8	62	88	25
AK-0013	150	73	M5	8	112	138	25
AK-0014	250	104	M5	10	–	232	35
AK-0024	200	73	M5	8	162	188	25
AK-0025	150	107	M5	8	112	138	25

T-slot plate





- Anodised aluminium
- Various fixing options
- Can be retrofitted
- For XY linear robot structures
- Suitable igus® slot nuts available ▶ **Page 1538**

Variable T-slot mounting plates

Part No.	Base axis	Axis to be mounted
AK-0021	SAW-1080, 100mm carriage	ZLW/SAW-0630, ZLW/SAW-1040, GRW-0630
AK-0022	SAW-1040, 100mm carriage	ZLW/SAW-0630, ZLW/SAW-1040, GRW-0630
AK-0023	SAW-1660, 150mm 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

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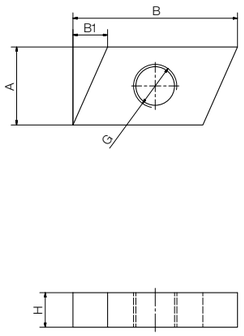
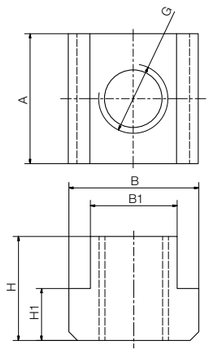
Slot nuts for mounting

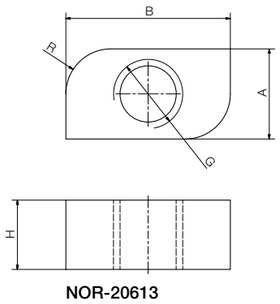




NOR-20602



NOR-20605



NOR-20613

For the drylin® W high-profile rail, slot nuts offer variable ways of fastening sensors and proximity switches, 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® limit and reference switches
- Suitable for T-slots of the drylin® WSX high-profile rail
- Secure retention
- Can be retrofitted

Part No.	Suitable for rail profile	Linear module
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)

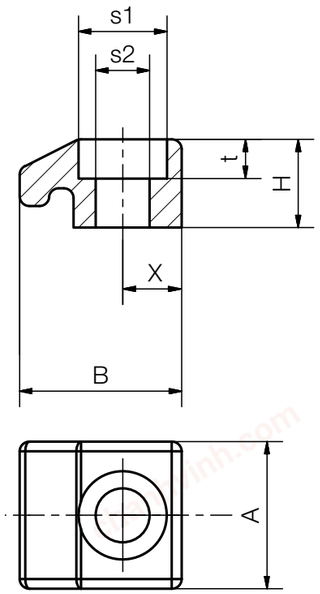
Dimensions [mm]

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**

Clamps for linear modules and toothed belt axes





Fixing clamps offer a safe fastening 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	–

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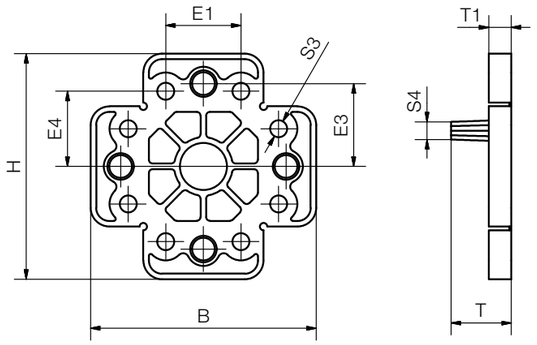
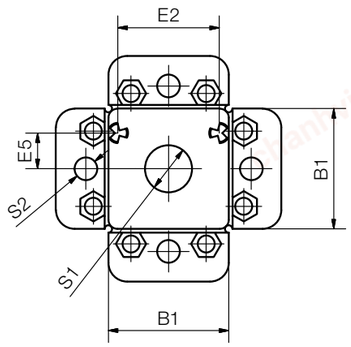
Adapter plate – variable arrangement of accessories



- Adapter plate for manual orientation of position indicators and manual clamps
- Suitable for drylin® linear modules of the SLW/SHT/SHTP series
- Material: Plastic

Installation note: Unused sections can be easily separated.



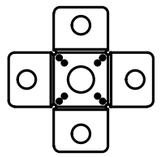


Part No.	Suitable for linear module
STZ-063008	SLW-0630/SHTP-06
STZ-104001	SLW-1040/SHT-12 SHT-20,SHTP-01/02-12
STZ-166001	SLW-1660
STZ-208001	SLW-2080, SLW-25120
STZ-302403	SHT-30

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	–	Ø 1.5
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	Ø 11
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

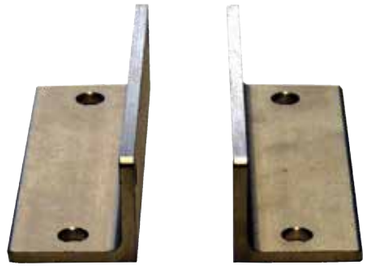
[106)] Adapter plate with 8 pins





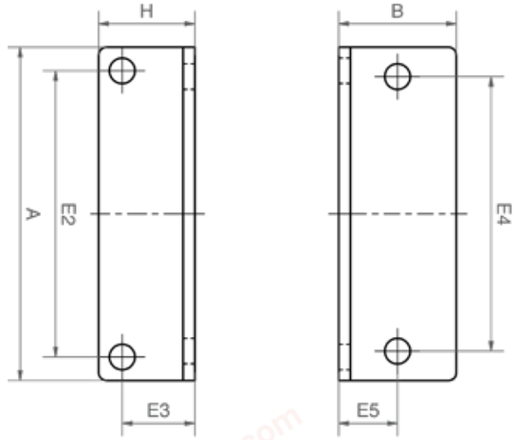
Position indicators and lead screw clamps available ▶ Page 1508

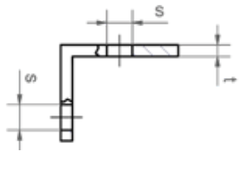
Stainless steel angle bracket kit for SHT XZ structure



drylin® SHT-WS is an angle kit for the SHT linear modules series. Stainless steel angle brackets make any XY table 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

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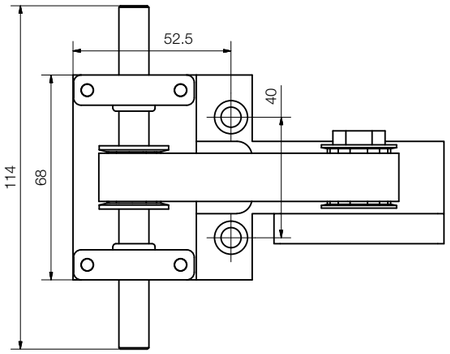
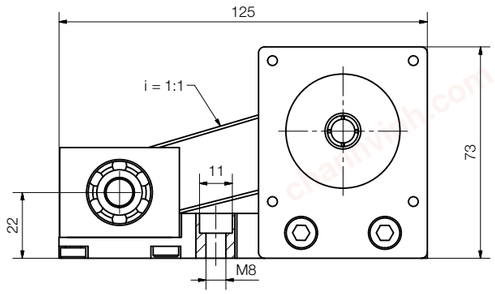
drylin® drive technology | Accessories | Product range

Linear robot drives







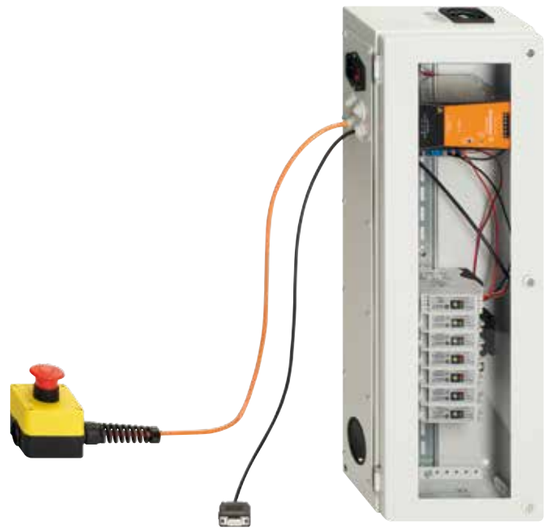
- Connection of NEMA stepper motors in linear robot structures
- Space-saving
- More safety due to encoder and brake

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

robolink® | igus® Robot Control system

Modular control and software



First robotics control software by igus®

- Programming and integration of robots for everyone
- Available in control cabinet or on top-hat (DIN) rail assembly
- For linear robots, delta robots and robot arms
- Digital Twin feature
- Simple intuitive operation even for non-system integrators
- Save integration effort; order complete bundle including grippers and vision components via robotics platform www.rbtx.com

Part No.

Control system

RL-MAT0196

DIN rail version

RL-DRI-DP-0001

RL-DRI-DP-0002

Control cabinet version

RL-DRI-DP-003

RL-DRI-0004

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drylin® | Motor control system | D1 dryve

For stepper motors



Travel distances, positions, speeds, operating times – easily defined in the new web-based control system from igus®.

A simple and intuitive browser-based user interface, extensive functionality with the option of "remote control" via Ethernet (Intranet) or bus system – "dryve" is the simple motor control method from igus® for your linear guide system.

- Control via laptop, tablet or smartphone possible
- Suitable for all drylin® axes
- For DC, EC and stepper motors
- Communication by means of CANopen, Ethernet and digital inputs and outputs
- Compatible with many industrial control systems
- Cost-effective



Connections and displays

1	Voltage supply
2	Digital inputs
3	Digital outputs
4	Analogue inputs
5	Motor & brake connection
6	Angular encoder
7	CANopen
8	Ethernet
9	Display

Brake resistors

Part No.	Motor size
DLE-BR-50-18R	NEMA17 EC
DLE-BR-75-4R7	NEMA23 EC
DLE-BR-100-2R7	NEMA24 EC
DLE-BR-100-3R3	NEMA34 EC

Available from stock
Detailed information about delivery time online.

Technical data and further options
▶ www.igus-asean.com/dryve

drylin® | Motor control system | D3 dryve

For DC motors

drylin® automation

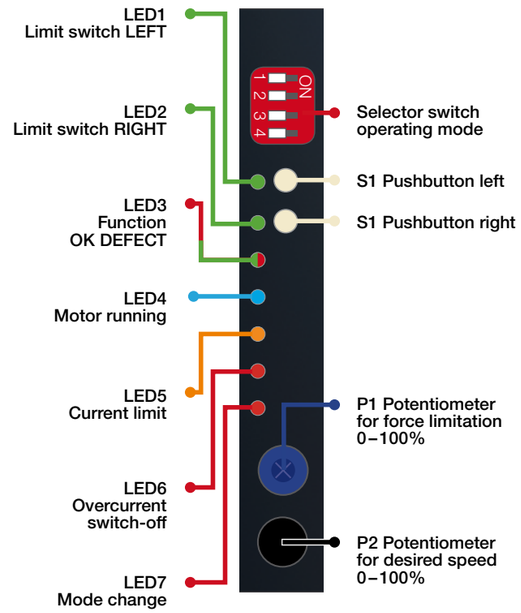


D3 dryve motor control unit makes it possible to easily control linear systems

The D3 dryve is a cost-effective control unit for direct-current motors and is ready to use immediately. It can be connected quickly and is very easy to use – without any additional connection work. Buttons and rotary controls on the housing make it possible to control linear carriages without a PC, laptop or tablet. Different speeds as well as starting modes can be set.

- Easy to use, quick to connect
- Controls on the device make it possible to activate linear carriages, for example (anticlockwise/clockwise operation, speed, step mode or continuous operation)
- Different speeds and starting modes possible
- Can be combined with switches or joysticks
- Cost-effective, everything necessary and immediately ready for use for e.g. control on a camera slider

D3 dryve motor control system for all igus® DC motors



Available from stock
Detailed information about delivery time online.

Technical data and further options
▶ www.igus-asean.com/D3

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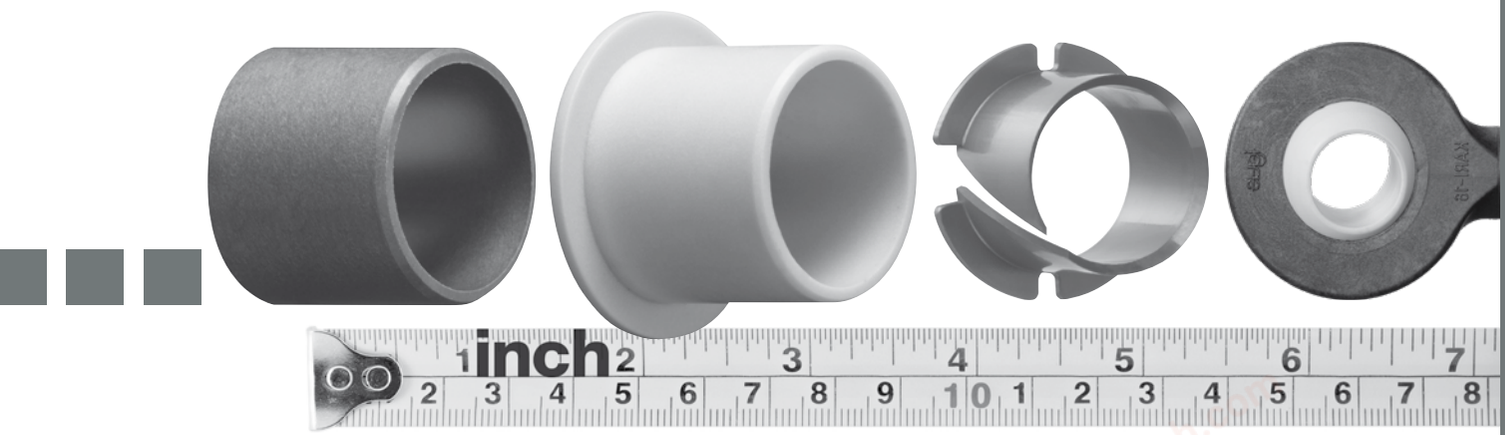
Inch ...

Catalogue products in imperial sizes





...plastics

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Imperial product range | Index

Inch product range

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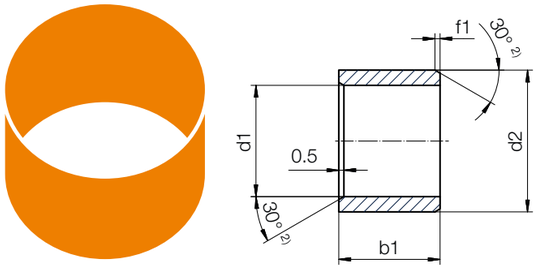
Inch product range | Standards overview

Sleeve bearings (form S)



[2] Thickness < 1mm: chamfer = 20°

Chamfer in relation to d1

d1 [inch]	f [inch]
Ø .040–.236	.012
Ø .236–.472	.019
Ø .472–1.18	.031
Ø > 1.18	.047

Order key

Type	Dimensions [inch]
☐ S	I -0203-03

iglidur® material	Form S	Inch	Inner Ø d1	Outer Ø d2	Total length b1

Choose the suitable material and dimensions for your application

Dimensions according to ISO 3547-1

Dimensions [inch]

d1	d2	b1	Part No.
1/8	3/16	3/16	☐SI-0203-03
3/16	1/4	1/4	☐SI-0304-04
3/16	1/4	3/8	☐SI-0304-06
1/4	5/16	3/8	☐SI-0405-06
1/4	5/16	1/2	☐SI-0405-08
5/16	3/8	1/4	☐SI-0506-04
5/16	3/8	3/8	☐SI-0506-06
5/16	3/8	1/2	☐SI-0506-08
3/8	15/32	1/4	☐SI-0607-04
3/8	15/32	3/8	☐SI-0607-06
3/8	15/32	1/2	☐SI-0607-08
3/8	15/32	5/8	☐SI-0607-10
3/8	15/32	3/4	☐SI-0607-12

d1	d2	b1	Part No.
7/16	17/32	1/2	☐SI-0708-08
7/16	17/32	3/7	☐SI-0708-12
1/2	19/32	1/4	☐SI-0809-04
1/2	19/32	3/8	☐SI-0809-06
1/2	19/32	1/2	☐SI-0809-08
1/2	19/32	5/8	☐SI-0809-10
1/2	19/32	3/4	☐SI-0809-12
1/2	19/32	1	☐SI-0809-16
9/16	21/32	1/2	☐SI-0910-08
9/16	21/32	5/8	☐SI-0910-10
9/16	21/32	3/4	☐SI-0910-12
5/8	23/32	1/2	☐SI-1011-08
5/8	23/32	3/4	☐SI-1011-12

Inch product range | Standards overview

Absolute flexibility: all iglidur® standard sizes available from stock

Inch iglidur® standards

G	The classic all-rounder
P210	Specialist for pivoting, rolling applications and more
P	The cost-effective outdoor all-rounder
J	The versatile endurance runner
W(300)	The classic endurance runner up to 30MPa
J3	The new endurance runner: specialist for pivoting 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

Dimensions [inch]

d1	d2	b1	Part No.
5/8	23/32	1	☐SI-1011-16
3/4	7/8	1/2	☐SI-1214-08
3/4	7/8	3/4	☐SI-1214-12
3/4	7/8	1	☐SI-1214-16
7/8	1	1/2	☐SI-1416-08
7/8	1	3/4	☐SI-1416-12
7/8	1	1	☐SI-1416-16
1	1 1/8	1/2	☐SI-1618-08
1	1 1/8	3/4	☐SI-1618-12
1	1 1/8	1	☐SI-1618-16
1 1/8	1 9/32	3/4	☐SI-1820-12
1 1/8	1 9/32	1	☐SI-1820-16
1 1/8	1 9/32	1 1/4	☐SI-1820-20

d1	d2	b1	Part No.
1 1/4	1 13/32	3/4	☐SI-2022-12
1 1/4	1 13/32	1	☐SI-2022-16
1 1/4	1 13/32	1 1/4	☐SI-2022-20
1 1/2	1 21/32	1	☐SI-2426-16
1 1/2	1 21/32	1 1/2	☐SI-2426-24
1 5/8	1 25/32	1	☐SI-2629-16
1 5/8	1 25/32	1 1/2	☐SI-2629-24
1 3/4	1 15/16	1	☐SI-2831-16
1 3/4	1 15/16	2	☐SI-2831-32
1 7/8	2 1/16	1	☐SI-3033-16
1 7/8	2 1/16	2	☐SI-3033-32
2	2 3/16	1	☐SI-3235-16
2	2 3/16	2	☐SI-3235-32

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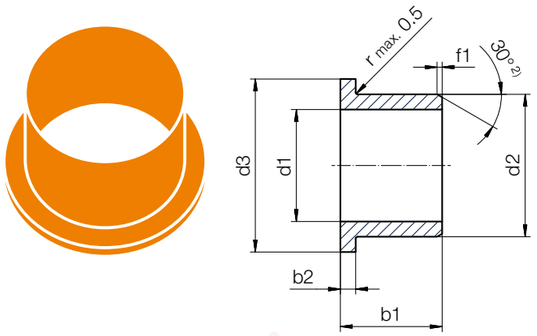
Inch product range | Standards overview

Flanged bearing (form F)



[2] Thickness < 1mm: chamfer = 20°

Chamfer in relation to d1

d1 [inch]	f [inch]
Ø .040–.236	.012
Ø .236–.472	.019
Ø .472–1.18	.031
Ø > 1.18	.047

Order key

Type	Dimensions [inch]
☐ F I	-0203-03

- iglidur® material
- Form F
- Inch
- Inner Ø d1
- Outer Ø d2
- Total length b1

Choose the suitable material and dimensions for your application

Dimensions according to ISO 3547-1

Dimensions [inch]

d1	d2	b1	d3	b2 h13	Part No.
1/8	3/16	3/16	.312	.0320	☐FI-0203-03
3/16	1/4	1/4	.375	.0320	☐FI-0304-04
1/4	5/16	3/8	.430	.0320	☐FI-0405-06
1/4	5/16	1/2	.500	.0320	☐FI-0405-08
5/16	3/8	1/4	.500	.0320	☐FI-0506-04
5/16	3/8	3/8	.500	.0320	☐FI-0506-06
5/16	3/8	1/2	.500	.0320	☐FI-0506-08
3/8	15/32	1/4	.687	.0460	☐FI-0607-04
3/8	15/32	3/8	.687	.0460	☐FI-0607-06
3/8	15/32	1/2	.687	.0460	☐FI-0607-08
3/8	15/32	3/4	.687	.0460	☐FI-0607-12
7/16	17/32	1/2	.750	.0460	☐FI-0708-08
1/2	19/32	1/4	.875	.0460	☐FI-0809-04
1/2	19/32	3/8	.875	.0460	☐FI-0809-06
1/2	19/32	1/2	.875	.0460	☐FI-0809-08
1/2	19/32	3/4	.875	.0460	☐FI-0809-12
1/2	19/32	1	.875	.0460	☐FI-0809-16
5/8	23/32	1/2	.937	.0460	☐FI-1011-08

Inch iglidur® standards

Inch product range | Standards overview

Absolute flexibility: all iglidur® standard sizes available from stock

G	The classic all-rounder
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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 [inch]

d1	d2	b1	d3	b2 h13	Part No.
5/8	23/32	3/4	.937	.0460	☐FI-1011-12
5/8	23/32	1	.937	.0460	☐FI-1011-16
3/4	7/8	1/2	1.125	.0620	☐FI-1214-08
3/4	7/8	3/4	1.125	.0620	☐FI-1214-12
3/4	7/8	1	1.125	.0620	☐FI-1214-16
7/8	1	1/2	1.250	.0620	☐FI-1416-08
7/8	1	3/4	1.250	.0620	☐FI-1416-12
7/8	1	1	1.250	.0620	☐FI-1416-16
1	1 1/8	1/2	1.375	.0620	☐FI-1618-08
1	1 1/8	3/4	1.375	.0620	☐FI-1618-12
1	1 1/8	1	1.375	.0620	☐FI-1618-16
1 1/4	1 13/32	1	1.687	.0780	☐FI-2022-16
1 1/4	1 13/32	1 1/4	1.687	.0780	☐FI-2022-20
1 1/2	1 21/32	1	2.000	.0780	☐FI-2426-16
1 1/2	1 21/32	1 1/2	2.000	.0780	☐FI-2426-24
1 3/4	1 15/16	2	2.375	.0930	☐FI-2831-32
2	2 3/16	2	2.625	.0930	☐FI-3235-32

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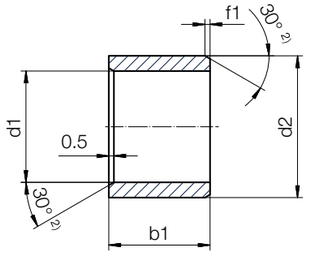
Sleeve bearings (form S)



Image exemplary



Chamfer in relation to d1

d1 [inch]	f [inch]
Ø 0.040–0.236	0.012
Ø 0.236–0.472	0.019
Ø 0.472–1.18	0.031
Ø > 1.18	0.047

iglidur® A181 Chapter ▶ Page 377

d1	d2	b1	d1 3)		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.1269	.1251	.1878	.1873	.1243	.1236	**A181SI-0203-03**
3/16	1/4	1/4	.1892	.1873	.2503	.2497	.1865	.1858	**A181SI-0304-04**
3/16	1/4	3/8	.1892	.1873	.2503	.2497	.1865	.1858	**A181SI-0304-06**
1/4	5/16	3/8	.2521	.2498	.3128	.3122	.2490	.2481	**A181SI-0405-06**
1/4	5/16	1/2	.2521	.2498	.3128	.3122	.2490	.2481	**A181SI-0405-08**
5/16	3/8	1/4	.3148	.3125	.3753	.3747	.3115	.3106	**A181SI-0506-04**
5/16	3/8	3/8	.3148	.3125	.3753	.3747	.3115	.3106	**A181SI-0506-06**
5/16	3/8	1/2	.3148	.3125	.3753	.3747	.3115	.3106	**A181SI-0506-08**
3/8	15/32	1/4	.3773	.3750	.4691	.4684	.3740	.3731	**A181SI-0607-04**
3/8	15/32	3/8	.3773	.3750	.4691	.4684	.3740	.3731	**A181SI-0607-06**
3/8	15/32	1/2	.3773	.3750	.4691	.4684	.3740	.3731	**A181SI-0607-08**
3/8	15/32	5/8	.3773	.3750	.4691	.4684	.3740	.3731	**A181SI-0607-10**
3/8	15/32	3/4	.3773	.3750	.4691	.4684	.3740	.3731	**A181SI-0607-12**
7/16	17/32	1/2	.4406	.4379	.5316	.5309	.4365	.4355	**A181SI-0708-08**
7/16	17/32	3/4	.4406	.4379	.5316	.5309	.4365	.4355	**A181SI-0708-12**
1/2	19/32	1/4	.5030	.5003	.5941	.5934	.4990	.4980	**A181SI-0809-04**
1/2	19/32	3/8	.5030	.5003	.5941	.5934	.4990	.4980	**A181SI-0809-06**
1/2	19/32	1/2	.5030	.5003	.5941	.5934	.4990	.4980	**A181SI-0809-08**
1/2	19/32	5/8	.5030	.5003	.5941	.5934	.4990	.4980	**A181SI-0809-10**
1/2	19/32	3/4	.5030	.5003	.5941	.5934	.4990	.4980	**A181SI-0809-12**
1/2	19/32	1	.5030	.5003	.5941	.5934	.4990	.4980	**A181SI-0809-16**
9/16	21/32	1/2	.5655	.5627	.6566	.6559	.5615	.5605	**A181SI-0910-08**
9/16	21/32	5/8	.5655	.5627	.6566	.6559	.5615	.5605	**A181SI-0910-10**
9/16	21/32	3/4	.5655	.5627	.6566	.6559	.5615	.5605	**A181SI-0910-12**
5/8	23/32	1/2	.6280	.6253	.7192	.7184	.6240	.6230	**A181SI-1011-08**
5/8	23/32	3/4	.6280	.6253	.7192	.7184	.6240	.6230	**A181SI-1011-12**
5/8	23/32	1	.6280	.6253	.7192	.7184	.6240	.6230	**A181SI-1011-16**
3/4	7/8	1/2	.7541	.7505	.8755	.8747	.7491	.7479	**A181SI-1214-08**
3/4	7/8	3/4	.7541	.7505	.8755	.8747	.7491	.7479	**A181SI-1214-12**
3/4	7/8	1	.7541	.7505	.8755	.8747	.7491	.7479	**A181SI-1214-16**
7/8	1	1/2	.8791	.8757	1.0005	.9997	.8741	.8729	**A181SI-1416-08**

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Inch iglidur® form S

d1	d2	b1	d1 3)		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
7/8	1	3/4	.8791	.8757	1.0005	.9997	.8741	.8729	**A181SI-1416-12**
7/8	1	1	.8791	.8757	1.0005	.9997	.8741	.8729	**A181SI-1416-16**
1	1 1/8	1/2	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**A181SI-1618-08**
1	1 1/8	3/4	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**A181SI-1618-12**
1	1 1/8	1	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**A181SI-1618-16**
1 1/8	1 9/32	3/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**A181SI-1820-12**
1 1/8	1 9/32	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**A181SI-1820-16**
1 1/8	1 9/32	1 1/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**A181SI-1820-20**
1 1/4	1 13/32	3/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**A181SI-2022-12**
1 1/4	1 13/32	1	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**A181SI-2022-16**
1 1/4	1 13/32	1 1/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**A181SI-2022-20**
1 1/2	1 21/32	1	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**A181SI-2426-16**
1 1/2	1 21/32	1 1/2	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**A181SI-2426-24**
1 5/8	1 25/32	1	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	**A181SI-2629-16**
1 5/8	1 25/32	1 1/2	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	**A181SI-2629-24**
1 3/4	1 15/16	1	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**A181SI-2831-16**
1 3/4	1 15/16	2	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**A181SI-2831-32**
1 7/8	2 1/16	1	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	**A181SI-3033-16**
1 7/8	2 1/16	2	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	**A181SI-3033-32**
2	2 3/16	1	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**A181SI-3235-16**
2	2 3/16	2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**A181SI-3235-32**

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d1	d2	b1	d1 3)		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1/8	1/4	1/4	.1280	.1262	.2515	.2510	.1250	.1241	**ASI-0204-04**
3/16	5/16	1/4	.1905	.1887	.3140	.3135	.1875	.1866	**ASI-0305-04**
1/4	3/8	1/4	.2539	.2516	.3765	.3760	.2500	.2491	**ASI-0406-04**
1/4	3/8	3/8	.2539	.2516	.3765	.3760	.2500	.2491	**ASI-0406-06**
1/4	3/8	1/2	.2539	.2516	.3765	.3760	.2500	.2491	**ASI-0406-08**
5/16	15/32	1/2	.3164	.3141	.4390	.4385	.3125	.3116	**ASI-0507-08**
3/8	1/2	1/4	.3789	.3766	.5015	.5010	.3750	.3741	**ASI-0608-04**
3/8	1/2	1/2	.3789	.3766	.5015	.5010	.3750	.3741	**ASI-0608-08**
1/2	5/8	1/2	.5047	.5020	.6260	.6250	.5000	.4990	**ASI-0810-08**
1/2	5/8	3/4	.5047	.5020	.6260	.6250	.5000	.4990	**ASI-0810-12**
5/8	13/16	5/16	.6297	.6270	.8135	.8125	.6250	.6240	**ASI-1013-05**
5/8	13/16	3/4	.6297	.6270	.8135	.8125	.6250	.6240	**ASI-1013-12**
3/4	1	3/4	.7559	.7525	1.0010	1.0000	.7500	.7490	**ASI-1216-12**
3/4	1	1	.7559	.7525	1.0010	1.0000	.7500	.7490	**ASI-1216-16**
7/8	1 1/8	1	.8809	.8775	1.1260	1.1250	.8750	.8740	**ASI-1418-16**
1	1 9/32	3/4	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	**ASI-1620-12**
1	1 9/32	1	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	**ASI-1620-16**
1 1/4	1 17/32	1	1.2600	1.2531	1.5005	1.4995	1.2500	1.249	**ASI-2024-16**
1 1/2	1 3/4	1 1/2	1.5100	1.5032	1.7505	1.7495	1.5000	1.499	**ASI-2428-24**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.1266	.1247	.1878	.1873	.1243	.1236	**A350SI-0203-03**
3/16	1/4	1/4	.1888	.1869	.2503	.2497	.1865	.1858	**A350SI-0304-04**
3/16	1/4	3/8	.1888	.1869	.2503	.2497	.1865	.1858	**A350SI-0304-06**
1/4	5/16	3/8	.2518	.2495	.3128	.3122	.2490	.2481	**A350SI-0405-06**
1/4	5/16	1/2	.2518	.2495	.3128	.3122	.2490	.2481	**A350SI-0405-08**
5/16	3/8	1/4	.3143	.3120	.3753	.3747	.3115	.3106	**A350SI-0506-04**
5/16	3/8	3/8	.3143	.3120	.3753	.3747	.3115	.3106	**A350SI-0506-06**
5/16	3/8	1/2	.3143	.3120	.3753	.3747	.3115	.3106	**A350SI-0506-08**
3/8	15/32	1/4	.3768	.3745	.4691	.4684	.3740	.3731	**A350SI-0607-04**
3/8	15/32	3/8	.3768	.3745	.4691	.4684	.3740	.3731	**A350SI-0607-06**
3/8	15/32	1/2	.3768	.3745	.4691	.4684	.3740	.3731	**A350SI-0607-08**
3/8	15/32	5/8	.3768	.3745	.4691	.4684	.3740	.3731	**A350SI-0607-10**
3/8	15/32	3/4	.3768	.3745	.4691	.4684	.3740	.3731	**A350SI-0607-12**
7/16	17/32	1/2	.4399	.4371	.5316	.5309	.4365	.4355	**A350SI-0708-08**
7/16	17/32	3/4	.4399	.4371	.5316	.5309	.4365	.4355	**A350SI-0708-12**
1/2	19/32	1/4	.5024	.4996	.5941	.5934	.4990	.4980	**A350SI-0809-04**
1/2	19/32	3/8	.5024	.4996	.5941	.5934	.4990	.4980	**A350SI-0809-06**
1/2	19/32	1/2	.5024	.4996	.5941	.5934	.4990	.4980	**A350SI-0809-08**
1/2	19/32	5/8	.5024	.4996	.5941	.5934	.4990	.4980	**A350SI-0809-10**
1/2	19/32	3/4	.5024	.4996	.5941	.5934	.4990	.4980	**A350SI-0809-12**
1/2	19/32	1	.5024	.4996	.5941	.5934	.4990	.4980	**A350SI-0809-16**
9/16	21/32	1/2	.5649	.5620	.6566	.6559	.5615	.5605	**A350SI-0910-08**
9/16	21/32	5/8	.5649	.5620	.6566	.6559	.5615	.5605	**A350SI-0910-10**
9/16	21/32	3/4	.5649	.5620	.6566	.6559	.5615	.5605	**A350SI-0910-12**
5/8	23/32	1/2	.6274	.6246	.7192	.7184	.6240	.6230	**A350SI-1011-08**
5/8	23/32	3/4	.6274	.6246	.7192	.7184	.6240	.6230	**A350SI-1011-12**
5/8	23/32	1	.6274	.6246	.7192	.7184	.6240	.6230	**A350SI-1011-16**
3/4	7/8	1/2	.7532	.7499	.8755	.8747	.7491	.7479	**A350SI-1214-08**
3/4	7/8	3/4	.7532	.7499	.8755	.8747	.7491	.7479	**A350SI-1214-12**
3/4	7/8	1	.7532	.7499	.8755	.8747	.7491	.7479	**A350SI-1214-16**
7/8	1	1/2	.8782	.8749	1.0005	.9997	.8741	.8729	**A350SI-1416-08**
7/8	1	3/4	.8782	.8749	1.0005	.9997	.8741	.8729	**A350SI-1416-12**
7/8	1	1	.8782	.8749	1.0005	.9997	.8741	.8729	**A350SI-1416-16**
1	1 1/8	1/2	1.0032	.9999	1.1255	1.1247	.9991	.9979	**A350SI-1618-08**
1	1 1/8	3/4	1.0032	.9999	1.1255	1.1247	.9991	.9979	**A350SI-1618-12**
1	1 1/8	1	1.0032	.9999	1.1255	1.1247	.9991	.9979	**A350SI-1618-16**
1 1/8	1 9/32	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**A350SI-1820-12**
1 1/8	1 9/32	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**A350SI-1820-16**
1 1/8	1 9/32	1 1/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**A350SI-1820-20**
1 1/4	1 13/32	3/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**A350SI-2022-12**
1 1/4	1 13/32	1	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**A350SI-2022-16**
1 1/4	1 13/32	1 1/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**A350SI-2022-20**
1 1/2	1 21/32	1	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**A350SI-2426-16**
1 1/2	1 21/32	1 1/2	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**A350SI-2426-24**

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Inch iglidur® form S

d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1 5/8	1 25/32	1	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	**A350SI-2629-16**
1 5/8	1 25/32	1 1/2	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	**A350SI-2629-24**
1 3/4	1 15/16	1	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**A350SI-2831-16**
1 3/4	1 15/16	2	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**A350SI-2831-32**
1 7/8	2 1/16	1	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**A350SI-3033-16**
1 7/8	2 1/16	2	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**A350SI-3033-32**
2	2 3/16	1	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**A350SI-3235-16**
2	2 3/16	2	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**A350SI-3235-32**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.1266	.1247	.1878	.1873	.1243	.1236	**A500SI-0203-03**
3/16	1/4	1/4	.1888	.1869	.2503	.2497	.1865	.1858	**A500SI-0304-04**
3/16	1/4	3/8	.1888	.1869	.2503	.2497	.1865	.1858	**A500SI-0304-06**
1/4	5/16	3/8	.2518	.2495	.3128	.3122	.2490	.2481	**A500SI-0405-06**
1/4	5/16	1/2	.2518	.2495	.3128	.3122	.2490	.2481	**A500SI-0405-08**
5/16	3/8	1/4	.3143	.3120	.3753	.3747	.3115	.3106	**A500SI-0506-04**
5/16	3/8	3/8	.3143	.3120	.3753	.3747	.3115	.3106	**A500SI-0506-06**
5/16	3/8	1/2	.3143	.3120	.3753	.3747	.3115	.3106	**A500SI-0506-08**
3/8	15/32	1/4	.3768	.3745	.4691	.4684	.3740	.3731	**A500SI-0607-04**
3/8	15/32	3/8	.3768	.3745	.4691	.4684	.3740	.3731	**A500SI-0607-06**
3/8	15/32	1/2	.3768	.3745	.4691	.4684	.3740	.3731	**A500SI-0607-08**
3/8	15/32	5/8	.3768	.3745	.4691	.4684	.3740	.3731	**A500SI-0607-10**
3/8	15/32	3/4	.3768	.3745	.4691	.4684	.3740	.3731	**A500SI-0607-12**
7/16	17/32	1/2	.4399	.4371	.5316	.5309	.4365	.4355	**A500SI-0708-08**
7/16	17/32	3/4	.4399	.4371	.5316	.5309	.4365	.4355	**A500SI-0708-12**
1/2	19/32	1/4	.5024	.4996	.5941	.5934	.4990	.4980	**A500SI-0809-04**
1/2	19/32	3/8	.5024	.4996	.5941	.5934	.4990	.4980	**A500SI-0809-06**
1/2	19/32	1/2	.5024	.4996	.5941	.5934	.4990	.4980	**A500SI-0809-08**
1/2	19/32	5/8	.5024	.4996	.5941	.5934	.4990	.4980	**A500SI-0809-10**
1/2	19/32	3/4	.5024	.4996	.5941	.5934	.4990	.4980	**A500SI-0809-12**
1/2	19/32	1	.5024	.4996	.5941	.5934	.4990	.4980	**A500SI-0809-16**
9/16	21/32	1/2	.5649	.5620	.6566	.6559	.5615	.5605	**A500SI-0910-08**
9/16	21/32	5/8	.5649	.5620	.6566	.6559	.5615	.5605	**A500SI-0910-10**
9/16	21/32	3/4	.5649	.5620	.6566	.6559	.5615	.5605	**A500SI-0910-12**
5/8	23/32	1/2	.6274	.6246	.7192	.7184	.6240	.6230	**A500SI-1011-08**
5/8	23/32	3/4	.6274	.6246	.7192	.7184	.6240	.6230	**A500SI-1011-12**
5/8	23/32	1	.6274	.6246	.7192	.7184	.6240	.6230	**A500SI-1011-16**
3/4	7/8	1/2	.7532	.7499	.8755	.8747	.7491	.7479	**A500SI-1214-08**
3/4	7/8	3/4	.7532	.7499	.8755	.8747	.7491	.7479	**A500SI-1214-12**
3/4	7/8	1	.7532	.7499	.8755	.8747	.7491	.7479	**A500SI-1214-16**
7/8	1	1/2	.8782	.8749	1.0005	.9997	.8741	.8729	**A500SI-1416-08**
7/8	1	3/4	.8782	.8749	1.0005	.9997	.8741	.8729	**A500SI-1416-12**
7/8	1	1	.8782	.8749	1.0005	.9997	.8741	.8729	**A500SI-1416-16**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1	1 1/8	1/2	1.0032	.9999	1.1255	1.1247	.9991	.9979	**A500SI-1618-08**
1	1 1/8	3/4	1.0032	.9999	1.1255	1.1247	.9991	.9979	**A500SI-1618-12**
1	1 1/8	1	1.0032	.9999	1.1255	1.1247	.9991	.9979	**A500SI-1618-16**
1 1/8	1 9/32	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**A500SI-1820-12**
1 1/8	1 9/32	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**A500SI-1820-16**
1 1/8	1 9/32	1 1/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**A500SI-1820-20**
1 1/4	1 13/32	3/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**A500SI-2022-12**
1 1/4	1 13/32	1	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**A500SI-2022-16**
1 1/4	1 13/32	1 1/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**A500SI-2022-20**
1 1/2	1 21/32	1	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**A500SI-2426-16**
1 1/2	1 21/32	1 1/2	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**A500SI-2426-24**
1 5/8	1 25/32	1	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	**A500SI-2629-16**
1 5/8	1 25/32	1 1/2	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	**A500SI-2629-24**
1 3/4	1 15/16	1	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**A500SI-2831-16**
1 3/4	1 15/16	2	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**A500SI-2831-32**
1 7/8	2 1/16	1	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**A500SI-3033-16**
1 7/8	2 1/16	2	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**A500SI-3033-32**
2	2 3/16	1	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**A500SI-3235-16**
2	2 3/16	2	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**A500SI-3235-32**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.1269	.1251	.1878	.1873	.1243	.1236	**GSI-0203-03**
1/8	3/16	1/4	.1269	.1251	.1878	.1873	.1243	.1236	**GSI-0203-04**
1/8	3/16	3/8	.1269	.1251	.1878	.1873	.1243	.1236	**GSI-0203-06**
3/16	1/4	1/4	.1892	.1873	.2503	.2497	.1865	.1858	**GSI-0304-04**
3/16	1/4	3/8	.1892	.1873	.2503	.2497	.1865	.1858	**GSI-0304-06**
3/16	1/4	1/2	.1892	.1873	.2503	.2497	.1865	.1858	**GSI-0304-08**
1/4	5/16	1/4	.2521	.2498	.3128	.3122	.2490	.2481	**GSI-0405-04**
1/4	5/16	5/16	.2521	.2498	.3128	.3122	.2490	.2481	**GSI-0405-05**
1/4	5/16	3/8	.2521	.2498	.3128	.3122	.2490	.2481	**GSI-0405-06**
1/4	5/16	1/2	.2521	.2498	.3128	.3122	.2490	.2481	**GSI-0405-08**
1/4	5/16	5/8	.2521	.2498	.3128	.3122	.2490	.2481	**GSI-0405-10**
1/4	5/16	3/4	.2521	.2498	.3128	.3122	.2490	.2481	**GSI-0405-12**
5/16	3/8	1/4	.3148	.3125	.3753	.3747	.3115	.3106	**GSI-0506-04**
5/16	3/8	3/8	.3148	.3125	.3753	.3747	.3115	.3106	**GSI-0506-06**
5/16	3/8	1/2	.3148	.3125	.3753	.3747	.3115	.3106	**GSI-0506-08**
5/16	3/8	3/4	.3148	.3125	.3753	.3747	.3115	.3106	**GSI-0506-12**
3/8	15/32	1/4	.3773	.3750	.4691	.4684	.3740	.3731	**GSI-0607-04**
3/8	15/32	3/8	.3773	.3750	.4691	.4684	.3740	.3731	**GSI-0607-06**
3/8	15/32	1/2	.3773	.3750	.4691	.4684	.3740	.3731	**GSI-0607-08**
3/8	15/32	5/8	.3773	.3750	.4691	.4684	.3740	.3731	**GSI-0607-10**
3/8	15/32	3/4	.3773	.3750	.4691	.4684	.3740	.3731	**GSI-0607-12**
3/8	8/16	1/2	.3783	.3760	.5015	.5010	.3750	.3741	**GSI-0608-08**

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Inch iglidur® form S

d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
3/8	8/16	3/4	.3773	.3750	.5015	.5010	.3750	.3741	**GSI-0608-12**
7/16	17/32	1/4	.4406	.4379	.5316	.5309	.4365	.4355	**GSI-0708-04**
7/16	17/32	1/2	.4406	.4379	.5316	.5309	.4365	.4355	**GSI-0708-08**
7/16	17/32	3/4	.4406	.4379	.5316	.5309	.4365	.4355	**GSI-0708-12**
1/2	19/32	3/16	.5030	.5003	.5941	.5934	.4990	.4980	**GSI-0809-03**
1/2	19/32	1/4	.5030	.5003	.5941	.5934	.4990	.4980	**GSI-0809-04**
1/2	19/32	3/8	.5030	.5003	.5941	.5934	.4990	.4980	**GSI-0809-06**
1/2	19/32	1/2	.5030	.5003	.5941	.5934	.4990	.4980	**GSI-0809-08**
1/2	19/32	5/8	.5030	.5003	.5941	.5934	.4990	.4980	**GSI-0809-10**
1/2	19/32	3/4	.5030	.5003	.5941	.5934	.4990	.4980	**GSI-0809-12**
1/2	19/32	1	.5030	.5003	.5941	.5934	.4990	.4980	**GSI-0809-16**
1/2	5/8	3/4	.5040	.5013	.6260	.6250	.5000	.4990	**GSI-0810-12**
9/16	21/32	3/8	.5655	.5627	.6566	.6559	.5615	.5605	**GSI-0910-06**
9/16	21/32	1/2	.5655	.5627	.6566	.6559	.5615	.5605	**GSI-0910-08**
9/16	21/32	5/8	.5655	.5627	.6566	.6559	.5615	.5605	**GSI-0910-10**
9/16	21/32	3/4	.5655	.5627	.6566	.6559	.5615	.5605	**GSI-0910-12**
5/8	23/32	3/8	.6280	.6253	.7192	.7184	.6240	.6230	**GSI-1011-06**
5/8	23/32	1/2	.6280	.6253	.7192	.7184	.6240	.6230	**GSI-1011-08**
5/8	23/32	5/8	.6280	.6253	.7192	.7184	.6240	.6230	**GSI-1011-10**
5/8	23/32	3/4	.6280	.6253	.7192	.7184	.6240	.6230	**GSI-1011-12**
5/8	23/32	1	.6280	.6253	.7192	.7184	.6240	.6230	**GSI-1011-16**
5/8	23/32	1 1/4	.6280	.6253	.7192	.7184	.6240	.6230	**GSI-1011-20**
5/8	23/32	1 7/8	.6280	.6253	.7192	.7184	.6240	.6230	**GSI-1011-30**
5/8	3/4	1/2	.6290	.6263	.7510	.7500	.6250	.6240	**GSI-1012-08**
5/8	3/4	1	.6290	.6263	.7510	.7500	.6250	.6240	**GSI-1012-16**
11/16	25/32	7/8	.6906	.6879	.7817	.7809	.6865	.6855	**GSI-1112-14**
3/4	7/8	1/8	.7541	.7505	.8755	.8747	.7491	.7479	**GSI-1214-02**
3/4	7/8	3/8	.7541	.7505	.8755	.8747	.7491	.7479	**GSI-1214-06**
3/4	7/8	1/2	.7541	.7505	.8755	.8747	.7491	.7479	**GSI-1214-08**
3/4	7/8	3/4	.7541	.7505	.8755	.8747	.7491	.7479	**GSI-1214-12**
3/4	7/8	1	.7541	.7505	.8755	.8747	.7491	.7479	**GSI-1214-16**
3/4	7/8	1 1/4	.7541	.7505	.8755	.8747	.7491	.7479	**GSI-1214-20**
3/4	7/8	1 1/2	.7541	.7505	.8755	.8747	.7491	.7479	**GSI-1214-24**
7/8	1	3/8	.8791	.8757	1.0005	.9997	.8741	.8729	**GSI-1416-06**
7/8	1	1/2	.8791	.8757	1.0005	.9997	.8741	.8729	**GSI-1416-08**
7/8	1	5/8	.8791	.8757	1.0005	.9997	.8741	.8729	**GSI-1416-10**
7/8	1	3/4	.8791	.8757	1.0005	.9997	.8741	.8729	**GSI-1416-12**
7/8	1	1	.8791	.8757	1.0005	.9997	.8741	.8729	**GSI-1416-16**
7/8	1	1 1/2	.8791	.8757	1.0005	.9997	.8741	.8729	**GSI-1416-24**
1	1 1/8	1/2	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**GSI-1618-08**
1	1 1/8	3/4	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**GSI-1618-12**
1	1 1/8	1	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**GSI-1618-16**
1	1 1/8	1 1/4	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**GSI-1618-20**
1	1 1/8	1 1/2	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**GSI-1618-24**
1	1 1/8	2 1/16	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**GSI-1618-33**
1 1/8	1 9/32	3/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**GSI-1820-12**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1 1/8	1 9/32	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**GSI-1820-16**
1 1/8	1 9/32	1 1/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**GSI-1820-20**
1 1/8	1 9/32	1 1/2	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**GSI-1820-24**
1 1/4	1 13/32	3/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**GSI-2022-12**
1 1/4	1 13/32	7/8	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**GSI-2022-14**
1 1/4	1 13/32	1	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**GSI-2022-16**
1 1/4	1 13/32	1 1/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**GSI-2022-20**
1 1/4	1 13/32	1 1/2	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**GSI-2022-24**
1 3/8	1 17/32	1	1.3798	1.3758	1.5318	1.5308	1.3738	1.3722	**GSI-2224-16**
1 3/8	1 17/32	1 1/2	1.3798	1.3758	1.5318	1.5308	1.3738	1.3722	**GSI-2224-24**
1 3/8	1 17/32	1 5/8	1.3798	1.3758	1.5318	1.5308	1.3738	1.3722	**GSI-2224-26**
1 1/2	1 21/32	3/8	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**GSI-2426-06**
1 1/2	1 21/32	7/16	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**GSI-2426-07**
1 1/2	1 21/32	1/2	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**GSI-2426-08**
1 1/2	1 21/32	3/4	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**GSI-2426-12**
1 1/2	1 21/32	1	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**GSI-2426-16**
1 1/2	1 21/32	1 1/2	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**GSI-2426-24**
1 5/8	1 25/32	1	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	**GSI-2629-16**
1 5/8	1 25/32	1 1/4	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	**GSI-2629-20**
1 5/8	1 25/32	1 1/2	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	**GSI-2629-24**
1 3/4	1 15/16	1	1.7547	1.7505	1.9381	1.9371	1.7487	1.7471	**GSI-2831-16**
1 3/4	1 15/16	1 1/2	1.7547	1.7505	1.9381	1.9371	1.7487	1.7471	**GSI-2831-24**
1 3/4	1 15/16	2	1.7547	1.7505	1.9381	1.9371	1.7487	1.7471	**GSI-2831-32**
1 3/4	1 15/16	2 1/2	1.7547	1.7505	1.9381	1.9371	1.7487	1.7471	**GSI-2831-40**
1 3/4	1 15/16	3	1.7547	1.7505	1.9381	1.9371	1.7487	1.7471	**GSI-2831-48**
1 7/8	2 1/16	1	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	**GSI-3033-16**
1 7/8	2 1/16	2	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	**GSI-3033-32**
2	2 3/16	1	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**GSI-3235-16**
2	2 3/16	1 1/2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**GSI-3235-24**
2	2 3/16	2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**GSI-3235-32**
2 1/4	2 7/16	2	2.2577	2.2531	2.4377	2.4365	2.2507	2.2489	**GSI-3639-32**
2 2/4	2 11/16	2	2.5082	2.5035	2.6881	2.6869	2.5000	2.4999	**GSI-4043-32**
2 3/4	2 15/16	2	2.7570	2.7523	2.9370	2.9358	2.7500	2.7490	**GSI-4447-32**
3	3 3/16	2	3.0070	3.0023	3.1870	3.1858	3.0000	2.9990	**GSI-4851-32**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
		h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.1266	.1247	.1878	.1873	.1243	.1236	**H1SI-0203-03**
3/16	1/4	1/4	.1888	.1869	.2503	.2497	.1865	.1858	**H1SI-0304-04**
3/16	1/4	3/8	.1888	.1869	.2503	.2497	.1865	.1858	**H1SI-0304-06**
1/4	5/16	3/8	.2518	.2495	.3128	.3122	.2490	.2481	**H1SI-0405-06**
1/4	5/16	1/2	.2518	.2495	.3128	.3122	.2490	.2481	**H1SI-0405-08**
5/16	3/8	1/4	.3143	.3120	.3753	.3747	.3115	.3106	**H1SI-0506-04**

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Inch iglidur® form S

d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
		h13	Max.	Min.	Max.	Min.	Max.	Min.	
5/16	3/8	3/8	.3143	.3120	.3753	.3747	.3115	.3106	**H1SI-0506-06**
5/16	3/8	1/2	.3143	.3120	.3753	.3747	.3115	.3106	**H1SI-0506-08**
3/8	15/32	1/4	.3768	.3745	.4691	.4684	.3740	.3731	**H1SI-0607-04**
3/8	15/32	3/8	.3768	.3745	.4691	.4684	.3740	.3731	**H1SI-0607-06**
3/8	15/32	1/2	.3768	.3745	.4691	.4684	.3740	.3731	**H1SI-0607-08**
3/8	15/32	5/8	.3768	.3745	.4691	.4684	.3740	.3731	**H1SI-0607-10**
3/8	15/32	3/4	.3768	.3745	.4691	.4684	.3740	.3731	**H1SI-0607-12**
7/16	17/32	1/2	.4399	.4371	.5316	.5309	.4365	.4355	**H1SI-0708-08**
7/16	17/32	3/4	.4399	.4371	.5316	.5309	.4365	.4355	**H1SI-0708-12**
1/2	19/32	1/4	.5024	.4996	.5941	.5934	.4990	.4980	**H1SI-0809-04**
1/2	19/32	3/8	.5024	.4996	.5941	.5934	.4990	.4980	**H1SI-0809-06**
1/2	19/32	1/2	.5024	.4996	.5941	.5934	.4990	.4980	**H1SI-0809-08**
1/2	19/32	5/8	.5024	.4996	.5941	.5934	.4990	.4980	**H1SI-0809-10**
1/2	19/32	3/4	.5024	.4996	.5941	.5934	.4990	.4980	**H1SI-0809-12**
1/2	19/32	1	.5024	.4996	.5941	.5934	.4990	.4980	**H1SI-0809-16**
9/16	21/32	1/2	.5649	.5620	.6566	.6559	.5615	.5605	**H1SI-0910-08**
9/16	21/32	5/8	.5649	.5620	.6566	.6559	.5615	.5605	**H1SI-0910-10**
9/16	21/32	3/4	.5649	.5620	.6566	.6559	.5615	.5605	**H1SI-0910-12**
5/8	23/32	1/2	.6274	.6246	.7192	.7184	.6240	.6230	**H1SI-1011-08**
5/8	23/32	3/4	.6274	.6246	.7192	.7184	.6240	.6230	**H1SI-1011-12**
5/8	23/32	1	.6274	.6246	.7192	.7184	.6240	.6230	**H1SI-1011-16**
3/4	7/8	1/2	.7532	.7499	.8755	.8747	.7491	.7479	**H1SI-1214-08**
3/4	7/8	3/4	.7532	.7499	.8755	.8747	.7491	.7479	**H1SI-1214-12**
3/4	7/8	1	.7532	.7499	.8755	.8747	.7491	.7479	**H1SI-1214-16**
7/8	1	1/2	.8782	.8749	1.0005	.9997	.8741	.8729	**H1SI-1416-08**
7/8	1	3/4	.8782	.8749	1.0005	.9997	.8741	.8729	**H1SI-1416-12**
7/8	1	1	.8782	.8749	1.0005	.9997	.8741	.8729	**H1SI-1416-16**
1	1 1/8	1/2	1.0032	.9999	1.1255	1.1247	.9991	.9979	**H1SI-1618-08**
1	1 1/8	3/4	1.0032	.9999	1.1255	1.1247	.9991	.9979	**H1SI-1618-12**
1	1 1/8	1	1.0032	.9999	1.1255	1.1247	.9991	.9979	**H1SI-1618-16**
1 1/8	1 9/32	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**H1SI-1820-12**
1 1/8	1 9/32	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**H1SI-1820-16**
1 1/8	1 9/32	1 1/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**H1SI-1820-20**
1 1/4	1 13/32	3/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**H1SI-2022-12**
1 1/4	1 13/32	1	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**H1SI-2022-16**
1 1/4	1 13/32	1 1/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**H1SI-2022-20**
1 1/2	1 21/32	1	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**H1SI-2426-16**
1 1/2	1 21/32	1 1/2	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**H1SI-2426-24**
1 5/8	1 25/32	1	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	**H1SI-2629-16**
1 5/8	1 25/32	1 1/2	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	**H1SI-2629-24**
1 3/4	1 15/16	1	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**H1SI-2831-16**
1 3/4	1 15/16	2	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**H1SI-2831-32**
1 7/8	2 1/16	1	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**H1SI-3033-16**
1 7/8	2 1/16	2	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**H1SI-3033-32**
2	2 3/16	1	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**H1SI-3235-16**
2	2 3/16	2	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**H1SI-3235-32**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
		h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.1266	.1247	.1878	.1873	.1243	.1236	**H370SI-0203-03**
3/16	1/4	1/4	.1888	.1869	.2503	.2497	.1865	.1858	**H370SI-0304-04**
3/16	1/4	3/8	.1888	.1869	.2503	.2497	.1865	.1858	**H370SI-0304-06**
1/4	5/16	1/4	.2521	.2498	.3128	.3122	.2490	.2481	**H370SI-0405-04**
1/4	5/16	3/8	.2518	.2495	.3128	.3122	.2490	.2481	**H370SI-0405-06**
1/4	5/16	1/2	.2518	.2495	.3128	.3122	.2490	.2481	**H370SI-0405-08**
5/16	3/8	1/4	.3143	.3120	.3753	.3747	.3115	.3106	**H370SI-0506-04**
5/16	3/8	3/8	.3143	.3120	.3753	.3747	.3115	.3106	**H370SI-0506-06**
5/16	3/8	1/2	.3143	.3120	.3753	.3747	.3115	.3106	**H370SI-0506-08**
3/8	15/32	1/4	.3768	.3745	.4691	.4684	.3740	.3731	**H370SI-0607-04**
3/8	15/32	3/8	.3768	.3745	.4691	.4684	.3740	.3731	**H370SI-0607-06**
3/8	15/32	1/2	.3768	.3745	.4691	.4684	.3740	.3731	**H370SI-0607-08**
3/8	15/32	5/8	.3768	.3745	.4691	.4684	.3740	.3731	**H370SI-0607-10**
3/8	15/32	3/4	.3768	.3745	.4691	.4684	.3740	.3731	**H370SI-0607-12**
7/16	17/32	1/2	.4399	.4371	.5316	.5309	.4365	.4355	**H370SI-0708-08**
7/16	17/32	3/4	.4399	.4371	.5316	.5309	.4365	.4355	**H370SI-0708-12**
1/2	19/32	1/4	.5024	.4996	.5941	.5934	.4990	.4980	**H370SI-0809-04**
1/2	19/32	3/8	.5024	.4996	.5941	.5934	.4990	.4980	**H370SI-0809-06**
1/2	19/32	1/2	.5024	.4996	.5941	.5934	.4990	.4980	**H370SI-0809-08**
1/2	19/32	5/8	.5024	.4996	.5941	.5934	.4990	.4980	**H370SI-0809-10**
1/2	19/32	3/4	.5024	.4996	.5941	.5934	.4990	.4980	**H370SI-0809-12**
1/2	19/32	1	.5024	.4996	.5941	.5934	.4990	.4980	**H370SI-0809-16**
9/16	21/32	1/2	.5649	.5620	.6566	.6559	.5615	.5605	**H370SI-0910-08**
9/16	21/32	5/8	.5649	.5620	.6566	.6559	.5615	.5605	**H370SI-0910-10**
9/16	21/32	3/4	.5649	.5620	.6566	.6559	.5615	.5605	**H370SI-0910-12**
5/8	23/32	1/2	.6274	.6246	.7192	.7184	.6240	.6230	**H370SI-1011-08**
5/8	23/32	3/4	.6274	.6246	.7192	.7184	.6240	.6230	**H370SI-1011-12**
5/8	23/32	1	.6274	.6246	.7192	.7184	.6240	.6230	**H370SI-1011-16**
3/4	7/8	1/2	.7532	.7499	.8755	.8747	.7491	.7479	**H370SI-1214-08**
3/4	7/8	3/4	.7532	.7499	.8755	.8747	.7491	.7479	**H370SI-1214-12**
3/4	7/8	1	.7532	.7499	.8755	.8747	.7491	.7479	**H370SI-1214-16**
7/8	1	1/2	.8782	.8749	1.0005	.9997	.8741	.8729	**H370SI-1416-08**
7/8	1	3/4	.8782	.8749	1.0005	.9997	.8741	.8729	**H370SI-1416-12**
7/8	1	1	.8782	.8749	1.0005	.9997	.8741	.8729	**H370SI-1416-16**
1	1 1/8	1/2	1.0032	.9999	1.1255	1.1247	.9991	.9979	**H370SI-1618-08**
1	1 1/8	3/4	1.0032	.9999	1.1255	1.1247	.9991	.9979	**H370SI-1618-12**
1	1 1/8	1	1.0032	.9999	1.1255	1.1247	.9991	.9979	**H370SI-1618-16**
1 1/8	1 9/32	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**H370SI-1820-12**
1 1/8	1 9/32	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**H370SI-1820-16**
1 1/8	1 9/32	1 1/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**H370SI-1820-20**
1 1/4	1 13/32	3/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**H370SI-2022-12**
1 1/4	1 13/32	1	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**H370SI-2022-16**
1 1/4	1 13/32	1 1/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**H370SI-2022-20**
1 1/2	1 21/32	1	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**H370SI-2426-16**
1 1/2	1 21/32	1 1/2	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**H370SI-2426-24**
1 5/8	1 25/32	1	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	**H370SI-2629-16**
1 5/8	1 25/32	1 1/2	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	**H370SI-2629-24**
1 3/4	1 15/16	1	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**H370SI-2831-16**
1 3/4	1 15/16	2	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**H370SI-2831-32**
1 7/8	2 1/16	1	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**H370SI-3033-16**
1 7/8	2 1/16	2	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**H370SI-3033-32**
2	2 3/16	1	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**H370SI-3235-16**
2	2 3/16	2	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**H370SI-3235-32**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.1269	.1251	.1878	.1873	.1243	.1236	**JSI-0203-03**
1/8	1/4	1/4	.1280	.1262	.2515	.2510	.1250	.1241	**JSI-0204-04**
1/8	1/4	3/8	.1280	.1262	.2515	.2510	.1250	.1241	**JSI-0204-06**
3/16	1/4	1/4	.1892	.1873	.2503	.2497	.1865	.1858	**JSI-0304-04**
3/16	1/4	3/8	.1892	.1873	.2503	.2497	.1865	.1858	**JSI-0304-06**
3/16	1/4	1/2	.1892	.1873	.2503	.2497	.1865	.1858	**JSI-0304-08**
3/16	5/16	5/16	.1905	.1887	.3140	.3135	.1875	.1866	**JSI-0305-05**
3/16	5/16	3/8	.1905	.1887	.3140	.3135	.1875	.1866	**JSI-0305-06**
3/16	5/16	1/2	.1905	.1887	.3140	.3135	.1875	.1866	**JSI-0305-08**
1/4	5/16	1/4	.2521	.2498	.3140	.3135	.2490	.2481	**JSI-0405-04**
1/4	5/16	3/8	.2521	.2498	.3128	.3122	.2490	.2481	**JSI-0405-06**
1/4	5/16	1/2	.2521	.2498	.3128	.3122	.2490	.2481	**JSI-0405-08**
1/4	3/8	1/4	.2539	.2516	.3765	.3760	.2500	.2491	**JSI-0406-04**
1/4	3/8	1/2	.2539	.2516	.3765	.3760	.2500	.2491	**JSI-0406-08**
1/4	3/8	3/4	.2539	.2516	.3765	.3760	.2500	.2491	**JSI-0406-12**
1/4	3/8	1	.2539	.2516	.3765	.3760	.2500	.2491	**JSI-0406-16**
5/16	3/8	1/4	.3148	.3125	.3753	.3747	.3115	.3106	**JSI-0506-04**
5/16	3/8	3/8	.3148	.3125	.3753	.3747	.3115	.3106	**JSI-0506-06**
5/16	3/8	1/2	.3148	.3125	.3753	.3747	.3115	.3106	**JSI-0506-08**
5/16	3/8	3/4	.3148	.3125	.3753	.3747	.3115	.3106	**JSI-0506-12**
5/16	7/16	3/8	.3164	.3141	.4390	.4385	.3125	.3116	**JSI-0507-06**
5/16	7/16	1/2	.3164	.3141	.4390	.4385	.3125	.3116	**JSI-0507-08**
5/16	7/16	5/8	.3164	.3141	.4390	.4385	.3125	.3116	**JSI-0507-10**
3/8	15/32	1/4	.3773	.3750	.4691	.4684	.3740	.3731	**JSI-0607-04**
3/8	15/32	3/8	.3773	.3750	.4691	.4684	.3740	.3731	**JSI-0607-06**
3/8	15/32	1/2	.3773	.3750	.4691	.4684	.3740	.3731	**JSI-0607-08**
3/8	15/32	5/8	.3773	.3750	.4691	.4684	.3740	.3731	**JSI-0607-10**
3/8	15/32	3/4	.3773	.3750	.4691	.4684	.3740	.3731	**JSI-0607-12**
3/8	1/2	3/16	.3773	.3750	.4691	.4684	.3740	.3731	**JSI-0608-03**
3/8	1/2	3/8	.3773	.3750	.4691	.4684	.3740	.3731	**JSI-0608-06**
3/8	1/2	1/2	.3773	.3750	.4691	.4684	.3740	.3731	**JSI-0608-08**
3/8	1/2	5/8	.3773	.3750	.4691	.4684	.3740	.3731	**JSI-0608-10**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
7/16	17/32	1/2	.4406	.4379	.5316	.5309	.4365	.4355	**JSI-0708-08**
7/16	17/32	3/4	.4406	.4379	.5316	.5309	.4365	.4355	**JSI-0708-12**
1/2	19/32	1/4	.5030	.5003	.5941	.5934	.4990	.4980	**JSI-0809-04**
1/2	19/32	3/8	.5030	.5003	.5941	.5934	.4990	.4980	**JSI-0809-06**
1/2	19/32	1/2	.5030	.5003	.5941	.5934	.4990	.4980	**JSI-0809-08**
1/2	19/32	5/8	.5030	.5003	.5941	.5934	.4990	.4980	**JSI-0809-10**
1/2	19/32	3/4	.5030	.5003	.5941	.5934	.4990	.4980	**JSI-0809-12**
1/2	19/32	1	.5030	.5003	.5941	.5934	.4990	.4980	**JSI-0809-16**
1/2	5/8	1/2	.5040	.5013	.6260	.6250	.5000	.4990	**JSI-0810-08**
1/2	5/8	3/4	.5040	.5013	.6260	.6250	.5000	.4990	**JSI-0810-12**
9/16	21/32	1/2	.5655	.5627	.6566	.6559	.5615	.5605	**JSI-0910-08**
9/16	21/32	5/8	.5655	.5627	.6566	.6559	.5615	.5605	**JSI-0910-10**
9/16	21/32	3/4	.5655	.5627	.6566	.6559	.5615	.5605	**JSI-0910-12**
5/8	23/32	1/2	.6280	.6253	.7192	.7184	.6240	.6230	**JSI-1011-08**
5/8	23/32	3/4	.6280	.6253	.7192	.7184	.6240	.6230	**JSI-1011-12**
5/8	23/32	1	.6280	.6253	.7192	.7184	.6240	.6230	**JSI-1011-16**
5/8	3/4	1/4	.6297	.6270	.7510	.7500	.6250	.6240	**JSI-1012-04**
5/8	3/4	3/8	.6297	.6270	.7510	.7500	.6250	.6240	**JSI-1012-06**
5/8	3/4	1/2	.6297	.6270	.7510	.7500	.6250	.6240	**JSI-1012-08**
5/8	3/4	3/4	.6297	.6270	.7510	.7500	.6250	.6240	**JSI-1012-12**
5/8	3/4	1	.6297	.6270	.7510	.7500	.6250	.6240	**JSI-1012-16**
3/4	7/8	1/2	.7541	.7505	.8755	.8747	.7491	.7479	**JSI-1214-08**
3/4	7/8	3/4	.7541	.7505	.8755	.8747	.7491	.7479	**JSI-1214-12**
3/4	7/8	1	.7541	.7505	.8755	.8747	.7491	.7479	**JSI-1214-16**
3/4	1	3/4	.7559	.7525	1.0010	1.0000	.7500	.7490	**JSI-1216-12**
3/4	1	1	.7559	.7525	1.0010	1.0000	.7500	.7490	**JSI-1216-16**
7/8	1	1/2	.8791	.8757	1.0005	.9997	.8741	.8729	**JSI-1416-08**
7/8	1	3/4	.8791	.8757	1.0005	.9997	.8741	.8729	**JSI-1416-12**
7/8	1	1	.8791	.8757	1.0005	.9997	.8741	.8729	**JSI-1416-16**
7/8	1 1/8	3/4	.8809	.8775	1.1260	1.1250	.8750	.8740	**JSI-1418-12**
7/8	1 1/8	1 1/2	.8809	.8775	1.1260	1.1250	.8750	.8740	**JSI-1418-24**
1	1 1/8	1/2	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**JSI-1618-08**
1	1 1/8	3/4	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**JSI-1618-12**
1	1 1/8	1	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**JSI-1618-16**
1	1 1/4	1	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	**JSI-1620-16**
1	1 1/4	1 1/2	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	**JSI-1620-24**
1 1/8	1 9/32	3/4	1.1288	1.2808	1.2818	1.2808	1.1238	1.1226	**JSI-1820-12**
1 1/8	1 9/32	1	1.1288	1.2808	1.2818	1.2808	1.1238	1.1226	**JSI-1820-16**
1 1/8	1 9/32	1 1/4	1.1288	1.2808	1.2818	1.2808	1.1238	1.1226	**JSI-1820-20**
1 1/8	1 13/8	1	1.1327	1.1276	1.3760	1.3750	1.1250	1.1240	**JSI-1822-16**
1 1/4	1 13/32	3/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**JSI-2022-12**
1 1/4	1 13/32	7/8	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**JSI-2022-14**
1 1/4	1 13/32	1	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**JSI-2022-16**
1 1/4	1 13/32	1 1/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**JSI-2022-20**
1 1/4	1 1/2	1 1/2	1.2600	1.2532	1.5005	1.4995	1.2500	1.2490	**JSI-2024-24**
1 1/2	1 21/32	1	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**JSI-2426-16**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1 1/2	1 21/32	1 1/2	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**JSI-2426-24**
1 1/2	1 3/4	1 1/2	1.5100	1.5032	1.7505	1.7495	1.50	1.499	**JSI-2428-24**
1 5/8	1 25/32	1	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	**JSI-2629-16**
1 5/8	1 25/32	1 1/2	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	**JSI-2629-24**
1 5/8	1 25/32	1 1/2	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	**JSI-2629-24**
1 3/4	1 15/16	1	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**JSI-2831-16**
1 3/4	1 15/16	2	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**JSI-2831-32**
1 7/8	2 1/16	1	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	**JSI-3033-16**
1 7/8	2 1/16	2	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	**JSI-3033-32**
2	2 3/16	1	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**JSI-3235-16**
2	2 3/16	2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**JSI-3235-32**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	0.1269	0.1251	0.1878	0.1873	0.1243	0.1236	**J3SI-0203-03**
3/16	1/4	1/4	0.1892	0.1873	0.2503	0.2497	0.1865	0.1858	**J3SI-0304-04**
3/16	1/4	3/8	0.1892	0.1873	0.2503	0.2497	0.1865	0.1858	**J3SI-0304-06**
1/4	5/16	3/8	0.2521	0.2498	0.3128	0.3122	0.2490	0.2481	**J3SI-0405-06**
1/4	5/16	1/2	0.2521	0.2498	0.3128	0.3122	0.2490	0.2481	**J3SI-0405-08**
5/16	3/8	1/4	0.3148	0.3125	0.3753	0.3747	0.3115	0.3106	**J3SI-0506-04**
5/16	3/8	3/8	0.3148	0.3125	0.3753	0.3747	0.3115	0.3106	**J3SI-0506-06**
5/16	3/8	1/2	0.3148	0.3125	0.3753	0.3747	0.3115	0.3106	**J3SI-0506-08**
3/8	15/32	1/4	0.3773	0.3750	0.4691	0.4684	0.3740	0.3731	**J3SI-0607-04**
3/8	15/32	3/8	0.3773	0.3750	0.4691	0.4684	0.3740	0.3731	**J3SI-0607-06**
3/8	15/32	1/2	0.3773	0.3750	0.4691	0.4684	0.3740	0.3731	**J3SI-0607-08**
3/8	15/32	5/8	0.3773	0.3750	0.4691	0.4684	0.3740	0.3731	**J3SI-0607-10**
3/8	15/32	3/4	0.3773	0.3750	0.4691	0.4684	0.3740	0.3731	**J3SI-0607-12**
7/16	17/32	1/2	0.4406	0.4379	0.5316	0.5309	0.4365	0.4355	**J3SI-0708-08**
7/16	17/32	3/4	0.4406	0.4379	0.5316	0.5309	0.4365	0.4355	**J3SI-0708-12**
1/2	19/32	1/4	0.5030	0.5003	0.5941	0.5934	0.4990	0.4980	**J3SI-0809-04**
1/2	19/32	3/8	0.5030	0.5003	0.5941	0.5934	0.4990	0.4980	**J3SI-0809-06**
1/2	19/32	1/2	0.5030	0.5003	0.5941	0.5934	0.4990	0.4980	**J3SI-0809-08**
1/2	19/32	5/8	0.5030	0.5003	0.5941	0.5934	0.4990	0.4980	**J3SI-0809-10**
1/2	19/32	3/4	0.5030	0.5003	0.5941	0.5934	0.4990	0.4980	**J3SI-0809-12**
1/2	19/32	1	0.5030	0.5003	0.5941	0.5934	0.4990	0.4980	**J3SI-0809-16**
9/16	21/32	1/2	0.5655	0.5627	0.6566	0.6559	0.5615	0.5605	**J3SI-0910-08**
9/16	21/32	5/8	0.5655	0.5627	0.6566	0.6559	0.5615	0.5605	**J3SI-0910-10**
9/16	21/32	3/4	0.5655	0.5627	0.6566	0.6559	0.5615	0.5605	**J3SI-0910-12**
5/8	23/32	1/2	0.6280	0.6253	0.7192	0.7184	0.6240	0.6230	**J3SI-1011-08**
5/8	23/32	3/4	0.6280	0.6253	0.7192	0.7184	0.6240	0.6230	**J3SI-1011-12**
5/8	23/32	1	0.6280	0.6253	0.7192	0.7184	0.6240	0.6230	**J3SI-1011-16**
3/4	7/8	1/2	0.7541	0.7505	0.8755	0.8747	0.7491	0.7479	**J3SI-1214-08**
3/4	7/8	3/4	0.7541	0.7505	0.8755	0.8747	0.7491	0.7479	**J3SI-1214-12**
3/4	7/8	1	0.7541	0.7505	0.8755	0.8747	0.7491	0.7479	**J3SI-1214-16**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
7/8	1	1/2	0.8791	0.8757	1.0005	0.9997	0.8741	0.8729	**J3SI-1416-08**
7/8	1	3/4	0.8791	0.8757	1.0005	0.9997	0.8741	0.8729	**J3SI-1416-12**
7/8	1	1	0.8791	0.8757	1.0005	0.9997	0.8741	0.8729	**J3SI-1416-16**
1	1 1/8	1/2	1.0041	1.0007	1.1255	1.1247	0.9991	0.9979	**J3SI-1618-08**
1	1 1/8	3/4	1.0041	1.0007	1.1255	1.1247	0.9991	0.9979	**J3SI-1618-12**
1	1 1/8	1	1.0041	1.0007	1.1255	1.1247	0.9991	0.9979	**J3SI-1618-16**
1 1/8	1 9/32	3/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**J3SI-1820-12**
1 1/8	1 9/32	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**J3SI-1820-16**
1 1/8	1 9/32	1 1/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**J3SI-1820-20**
1 1/4	1 13/32	3/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**J3SI-2022-12**
1 1/4	1 13/32	1	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**J3SI-2022-16**
1 1/4	1 13/32	1 1/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**J3SI-2022-20**
1 1/2	1 21/32	1	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**J3SI-2426-16**
1 1/2	1 21/32	1 1/2	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**J3SI-2426-24**
1 5/8	1 25/32	1	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	**J3SI-2629-16**
1 5/8	1 25/32	1 1/2	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	**J3SI-2629-24**
1 3/4	1 15/16	1	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**J3SI-2831-16**
1 3/4	1 15/16	2	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**J3SI-2831-32**
1 7/8	2 1/16	1	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	**J3SI-3033-16**
1 7/8	2 1/16	2	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	**J3SI-3033-32**
2	2 3/16	1	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**J3SI-3235-16**
2	2 3/16	2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**J3SI-3235-32**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.1266	.1247	.1878	.1873	.1243	.1236	**J350SI-0203-03**
3/16	1/4	1/4	.1888	.1869	.2503	.2497	.1865	.1858	**J350SI-0304-04**
3/16	1/4	3/8	.1888	.1869	.2503	.2497	.1865	.1858	**J350SI-0304-06**
1/4	5/16	3/8	.2518	.2495	.3128	.3122	.2490	.2481	**J350SI-0405-06**
1/4	5/16	1/2	.2518	.2495	.3128	.3122	.2490	.2481	**J350SI-0405-08**
5/16	3/8	1/4	.3143	.3120	.3753	.3747	.3115	.3106	**J350SI-0506-04**
5/16	3/8	3/8	.3143	.3120	.3753	.3747	.3115	.3106	**J350SI-0506-06**
5/16	3/8	1/2	.3143	.3120	.3753	.3747	.3115	.3106	**J350SI-0506-08**
3/8	15/32	1/4	.3768	.3745	.4691	.4684	.3740	.3731	**J350SI-0607-04**
3/8	15/32	3/8	.3768	.3745	.4691	.4684	.3740	.3731	**J350SI-0607-06**
3/8	15/32	1/2	.3768	.3745	.4691	.4684	.3740	.3731	**J350SI-0607-08**
3/8	15/32	5/8	.3768	.3745	.4691	.4684	.3740	.3731	**J350SI-0607-10**
3/8	15/32	3/4	.3768	.3745	.4691	.4684	.3740	.3731	**J350SI-0607-12**
7/16	17/32	1/2	.4399	.4371	.5316	.5309	.4365	.4355	**J350SI-0708-08**
7/16	17/32	3/4	.4399	.4371	.5316	.5309	.4365	.4355	**J350SI-0708-12**
1/2	19/32	1/4	.5024	.4996	.5941	.5934	.4990	.4980	**J350SI-0809-04**
1/2	19/32	3/8	.5024	.4996	.5941	.5934	.4990	.4980	**J350SI-0809-06**
1/2	19/32	1/2	.5024	.4996	.5941	.5934	.4990	.4980	**J350SI-0809-08**
1/2	19/32	5/8	.5024	.4996	.5941	.5934	.4990	.4980	**J350SI-0809-10**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1/2	19/32	3/4	.5024	.4996	.5941	.5934	.4990	.4980	**J350SI-0809-12**
1/2	19/32	1	.5024	.4996	.5941	.5934	.4990	.4980	**J350SI-0809-16**
9/16	21/32	1/2	.5649	.5620	.6566	.6559	.5615	.5605	**J350SI-0910-08**
9/16	21/32	5/8	.5649	.5620	.6566	.6559	.5615	.5605	**J350SI-0910-10**
9/16	21/32	3/4	.5649	.5620	.6566	.6559	.5615	.5605	**J350SI-0910-12**
5/8	23/32	1/2	.6274	.6246	.7192	.7184	.6240	.6230	**J350SI-1011-08**
5/8	23/32	3/4	.6274	.6246	.7192	.7184	.6240	.6230	**J350SI-1011-12**
5/8	23/32	1	.6274	.6246	.7192	.7184	.6240	.6230	**J350SI-1011-16**
3/4	7/8	1/2	.7532	.7499	.8755	.8747	.7491	.7479	**J350SI-1214-08**
3/4	7/8	3/4	.7532	.7499	.8755	.8747	.7491	.7479	**J350SI-1214-12**
3/4	7/8	1	.7532	.7499	.8755	.8747	.7491	.7479	**J350SI-1214-16**
7/8	1	1/2	.8782	.8749	1.0005	.9997	.8741	.8729	**J350SI-1416-08**
7/8	1	3/4	.8782	.8749	1.0005	.9997	.8741	.8729	**J350SI-1416-12**
7/8	1	1	.8782	.8749	1.0005	.9997	.8741	.8729	**J350SI-1416-16**
1	1 1/8	1/2	1.0032	.9999	1.1255	1.1247	.9991	.9979	**J350SI-1618-08**
1	1 1/8	3/4	1.0032	.9999	1.1255	1.1247	.9991	.9979	**J350SI-1618-12**
1	1 1/8	1	1.0032	.9999	1.1255	1.1247	.9991	.9979	**J350SI-1618-16**
1 1/8	1 9/32	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**J350SI-1820-12**
1 1/8	1 9/32	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**J350SI-1820-16**
1 1/8	1 9/32	1 1/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**J350SI-1820-20**
1 1/4	1 13/32	3/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**J350SI-2022-12**
1 1/4	1 13/32	1	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**J350SI-2022-16**
1 1/4	1 13/32	1 1/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**J350SI-2022-20**
1 1/2	1 21/32	1	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**J350SI-2426-16**
1 1/2	1 21/32	1 1/2	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**J350SI-2426-24**
1 5/8	1 25/32	1	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	**J350SI-2629-16**
1 5/8	1 25/32	1 1/2	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	**J350SI-2629-24**
1 3/4	1 15/16	1	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**J350SI-2831-16**
1 3/4	1 15/16	2	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**J350SI-2831-32**
1 7/8	2 1/16	1	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**J350SI-3033-16**
1 7/8	2 1/16	2	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**J350SI-3033-32**
2	2 3/16	1	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**J350SI-3235-16**
2	2 3/16	2	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**J350SI-3235-32**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	1/8	.1280	.1262	.1990	.1985	.1250	.1241	**MSI-0203-02**
1/8	3/16	1/4	.1280	.1262	.1990	.1985	.1250	.1241	**MSI-0203-04**
1/8	1/4	1/8	.1280	.1262	.2515	.2510	.1250	.1241	**MSI-0204-02**
1/8	1/4	3/16	.1280	.1262	.2515	.2510	.1250	.1241	**MSI-0204-03**
1/8	1/4	1/4	.1280	.1262	.2515	.2510	.1250	.1241	**MSI-0204-04**
1/8	1/4	3/8	.1280	.1262	.2515	.2510	.1250	.1241	**MSI-0204-06**
3/16	1/4	1/4	.1905	.1887	.2515	.2510	.1875	.1866	**MSI-0304-04**
3/16	1/4	3/8	.1905	.1887	.2515	.2510	.1875	.1866	**MSI-0304-06**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
3/16	1/4	1/2	.1905	.1887	.2515	.2510	.1875	.1866	**MSI-0304-08**
3/16	5/16	1/8	.1905	.1887	.3140	.3135	.1875	.1866	**MSI-0305-02**
3/16	5/16	3/16	.1905	.1887	.3140	.3135	.1875	.1866	**MSI-0305-03**
3/16	5/16	1/4	.1905	.1887	.3140	.3135	.1875	.1866	**MSI-0305-04**
3/16	5/16	5/16	.1905	.1887	.3140	.3135	.1875	.1866	**MSI-0305-05**
3/16	5/16	3/8	.1905	.1887	.3140	.3135	.1875	.1866	**MSI-0305-06**
3/16	5/16	1/2	.1905	.1887	.3140	.3135	.1875	.1866	**MSI-0305-08**
1/4	5/16	3/16	.2539	.2516	.3140	.3135	.2500	.2491	**MSI-0405-03**
1/4	5/16	3/8	.2539	.2516	.3140	.3135	.2500	.2491	**MSI-0405-06**
1/4	5/16	1/2	.2539	.2516	.3140	.3135	.2500	.2491	**MSI-0405-08**
1/4	3/8	1/8	.2539	.2516	.3765	.3760	.2500	.2491	**MSI-0406-02**
1/4	3/8	3/16	.2539	.2516	.3765	.3760	.2500	.2491	**MSI-0406-03**
1/4	3/8	1/4	.2539	.2516	.3765	.3760	.2500	.2491	**MSI-0406-04**
1/4	3/8	5/16	.2539	.2516	.3765	.3760	.2500	.2491	**MSI-0406-05**
1/4	3/8	3/8	.2539	.2516	.3765	.3760	.2500	.2491	**MSI-0406-06**
1/4	3/8	1/2	.2539	.2516	.3765	.3760	.2500	.2491	**MSI-0406-08**
1/4	3/8	5/8	.2539	.2516	.3765	.3760	.2500	.2491	**MSI-0406-10**
1/4	3/8	3/4	.2539	.2516	.3765	.3760	.2500	.2491	**MSI-0406-12**
5/16	3/8	1/4	.3164	.3141	.3765	.3760	.3125	.3116	**MSI-0506-04**
5/16	3/8	3/8	.3164	.3141	.3765	.3760	.3125	.3116	**MSI-0506-06**
5/16	3/8	1/2	.3164	.3141	.3765	.3760	.3125	.3116	**MSI-0506-08**
5/16	7/16	3/16	.3164	.3141	.4390	.4385	.3125	.3116	**MSI-0507-03**
5/16	7/16	1/4	.3164	.3141	.4390	.4385	.3125	.3116	**MSI-0507-04**
5/16	7/16	5/16	.3164	.3141	.4390	.4385	.3125	.3116	**MSI-0507-05**
5/16	7/16	3/8	.3164	.3141	.4390	.4385	.3125	.3116	**MSI-0507-06**
5/16	7/16	1/2	.3164	.3141	.4390	.4385	.3125	.3116	**MSI-0507-08**
5/16	7/16	5/8	.3164	.3141	.4390	.4385	.3125	.3116	**MSI-0507-10**
5/16	7/16	3/4	.3164	.3141	.4390	.4385	.3125	.3116	**MSI-0507-12**
3/8	7/16	1/4	.3789	.3766	.4390	.4385	.3750	.3741	**MSI-0607-04**
3/8	7/16	3/8	.3789	.3766	.4390	.4385	.3750	.3741	**MSI-0607-06**
3/8	7/16	1/2	.3789	.3766	.4390	.4385	.3750	.3741	**MSI-0607-08**
3/8	1/2	1/4	.3789	.3766	.5015	.5010	.3750	.3741	**MSI-0608-04**
3/8	1/2	5/16	.3789	.3766	.5015	.5010	.3750	.3741	**MSI-0608-05**
3/8	1/2	3/8	.3789	.3766	.5015	.5010	.3750	.3741	**MSI-0608-06**
3/8	1/2	1/2	.3789	.3766	.5015	.5010	.3750	.3741	**MSI-0608-08**
3/8	1/2	5/8	.3789	.3766	.5015	.5010	.3750	.3741	**MSI-0608-10**
3/8	1/2	3/4	.3789	.3766	.5015	.5010	.3750	.3741	**MSI-0608-12**
3/8	1/2	1	.3789	.3766	.5015	.5010	.3750	.3741	**MSI-0608-16**
7/16	9/16	3/8	.4422	.4395	.5941	.5934	.4375	.4365	**MSI-0709-06**
7/16	9/16	1/2	.4422	.4395	.5941	.5934	.4375	.4365	**MSI-0709-08**
1/2	5/8	1/4	.5047	.5020	.6260	.6250	.5000	.4990	**MSI-0810-04**
1/2	5/8	5/16	.5047	.5020	.6260	.6250	.5000	.4990	**MSI-0810-05**
1/2	5/8	3/8	.5047	.5020	.6260	.6250	.5000	.4990	**MSI-0810-06**
1/2	5/8	1/2	.5047	.5020	.6260	.6250	.5000	.4990	**MSI-0810-08**
1/2	5/8	5/8	.5047	.5020	.6260	.6250	.5000	.4990	**MSI-0810-10**
1/2	5/8	3/4	.5047	.5020	.6260	.6250	.5000	.4990	**MSI-0810-12**

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Inch iglidur® form S

d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1/2	5/8	1	.5047	.5020	.6260	.6250	.5000	.4990	**MSI-0810-16**
5/8	3/4	1/4	.6297	.6270	.7510	.7500	.6250	.6240	**MSI-1012-04**
5/8	3/4	3/8	.6297	.6270	.7510	.7500	.6250	.6240	**MSI-1012-06**
5/8	3/4	1/2	.6297	.6270	.7510	.7500	.6250	.6240	**MSI-1012-08**
5/8	3/4	5/8	.6297	.6270	.7510	.7500	.6250	.6240	**MSI-1012-10**
5/8	3/4	3/4	.6297	.6270	.7510	.7500	.6250	.6240	**MSI-1012-12**
5/8	3/4	1	.6297	.6270	.7510	.7500	.6250	.6240	**MSI-1012-16**
5/8	3/4	1 5/8	.6297	.6270	.7510	.7500	.6250	.6240	**MSI-1012-26**
5/8	13/16	3/8	.6297	.6270	.8135	.8125	.6250	.6240	**MSI-1013-06**
5/8	13/16	1/2	.6297	.6270	.8135	.8125	.6250	.6240	**MSI-1013-08**
5/8	13/16	5/8	.6297	.6270	.8135	.8125	.6250	.6240	**MSI-1013-10**
5/8	13/16	3/4	.6297	.6270	.8135	.8125	.6250	.6240	**MSI-1013-12**
5/8	13/16	1	.6297	.6270	.8135	.8125	.6250	.6240	**MSI-1013-16**
11/16	13/16	3/4	.6921	.6893	.8135	.8125	.6875	.6865	**MSI-1113-12**
11/16	13/16	7/8	.6921	.6893	.8135	.8125	.6875	.6865	**MSI-1113-14**
11/16	13/16	1	.6922	.6900	.8135	.8125	.6875	.6865	**MSI-1113-16**
3/4	7/8	3/8	.7559	.7525	.8760	.8750	.7500	.7490	**MSI-1214-06**
3/4	7/8	3/4	.7559	.7525	.8760	.8750	.7500	.7490	**MSI-1214-12**
3/4	7/8	1	.7559	.7525	.8760	.8750	.7500	.7490	**MSI-1214-16**
3/4	7/8	11/2	.7559	.7525	.8760	.8750	.7500	.7490	**MSI-1214-24**
3/4	1	3/8	.7559	.7525	1.0010	1.0000	.7500	.7490	**MSI-1216-06**
3/4	1	1/2	.7559	.7525	1.0010	1.0000	.7500	.7490	**MSI-1216-08**
3/4	1	5/8	.7559	.7525	1.0010	1.0000	.7500	.7490	**MSI-1216-10**
3/4	1	3/4	.7559	.7525	1.0010	1.0000	.7500	.7490	**MSI-1216-12**
3/4	1	1	.7559	.7525	1.0010	1.0000	.7500	.7490	**MSI-1216-16**
3/4	1	1 1/4	.7559	.7525	1.0010	1.0000	.7500	.7490	**MSI-1216-20**
3/4	1	1 1/2	.7559	.7525	1.0010	1.0000	.7500	.7490	**MSI-1216-24**
13/16	1	1/2	.8184	.8151	1.0010	1.0000	.8126	.8116	**MSI-1316-08**
7/8	1	3/4	.8809	.8775	1.0010	1.0000	.8750	.8740	**MSI-1416-12**
7/8	1	1	.8809	.8775	1.0010	1.0000	.8750	.8740	**MSI-1416-16**
7/8	1	1 1/2	.8809	.8775	1.0010	1.0000	.8750	.8740	**MSI-1416-24**
7/8	1 1/8	1/2	.8809	.8775	1.1260	1.1250	.8750	.8740	**MSI-1418-08**
7/8	1 1/8	3/4	.8809	.8775	1.1260	1.1250	.8750	.8740	**MSI-1418-12**
7/8	1 1/8	1	.8809	.8775	1.1260	1.1250	.8750	.8740	**MSI-1418-16**
7/8	1 1/8	1 1/2	.8809	.8775	1.1260	1.1250	.8750	.8740	**MSI-1418-24**
1	1 1/8	3/4	1.0059	1.0025	1.1260	1.1250	1.0000	.9990	**MSI-1618-12**
1	1 1/8	1	1.0059	1.0025	1.1260	1.1250	1.0000	.9990	**MSI-1618-16**
1	1 1/8	1 1/2	1.0059	1.0025	1.1260	1.1250	1.0000	.9990	**MSI-1618-24**
1	1 1/4	1/2	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	**MSI-1620-08**
1	1 1/4	5/8	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	**MSI-1620-10**
1	1 1/4	3/4	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	**MSI-1620-12**
1	1 1/4	1	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	**MSI-1620-16**
1	1 1/4	1 1/2	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	**MSI-1620-24**
1	1 1/4	2	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	**MSI-1620-32**
1 1/8	1 3/8	1	1.1309	1.1275	1.3760	1.3750	1.1250	1.1240	**MSI-1822-16**
1 1/8	1 3/8	1 1/2	1.1309	1.1275	1.3760	1.3750	1.1250	1.1240	**MSI-1822-24**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1 1/4	1 1/2	3/4	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	**MSI-2024-12**
1 1/4	1 1/2	1	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	**MSI-2024-16**
1 1/4	1 1/2	1 3/8	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	**MSI-2024-22**
1 1/4	1 1/2	1 1/2	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	**MSI-2024-24**
1 1/4	1 1/2	2 1/2	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	**MSI-2024-40**
1 3/8	1 5/8	1	1.3850	1.3182	1.6255	1.6245	1.3750	1.3740	**MSI-2226-16**
1 1/2	1 3/4	3/4	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	**MSI-2428-12**
1 1/2	1 3/4	1	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	**MSI-2428-16**
1 1/2	1 3/4	1 1/2	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	**MSI-2428-24**
1 1/2	1 3/4	2 /2	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	**MSI-2428-40**
1 5/8	1 7/8	1	1.6350	1.6282	1.8755	1.8745	1.6250	1.6240	**MSI-2630-16**
1 3/4	2	1/2	1.7560	1.7532	2.0005	1.9995	1.7500	1.7490	**MSI-2832-08**
1 3/4	2	3/4	1.7560	1.7532	2.0005	1.9995	1.7500	1.7490	**MSI-2832-12**
1 3/4	2	1	1.7560	1.7532	2.0005	1.9995	1.7500	1.7490	**MSI-2832-16**
1 3/4	2	1 1/2	1.7560	1.7532	2.0005	1.9995	1.7500	1.7490	**MSI-2832-24**
1 3/4	2	2 1/2	1.7560	1.7532	2.0005	1.9995	1.7500	1.7490	**MSI-2832-40**
2	2 1/4	1	2.0100	2.0032	2.2505	2.2495	2.0000	1.9990	**MSI-3236-16**
2	2 1/4	1 1/2	2.0100	2.0032	2.2505	2.2495	2.0000	1.9990	**MSI-3236-24**
2	2 1/4	2	2.0100	2.0032	2.2505	2.2495	2.0000	1.9990	**MSI-3236-32**
2	2 1/4	2 1/2	2.0100	2.0032	2.2505	2.2495	2.0000	1.9990	**MSI-3236-40**
3	3 1/4	1	3.0114	3.0039	3.2505	3.2495	3.0000	2.9990	**MSI-4852-16**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.1269	.1251	.1878	.1873	.1243	.1236	**PSI-0203-03**
3/16	1/4	1/4	.1892	.1873	.2503	.2497	.1865	.1858	**PSI-0304-04**
3/16	1/4	3/8	.1892	.1873	.2503	.2497	.1865	.1858	**PSI-0304-06**
1/4	5/16	3/8	.2521	.2498	.3128	.3122	.2490	.2481	**PSI-0405-06**
1/4	5/16	1/2	.2521	.2498	.3128	.3122	.2490	.2481	**PSI-0405-08**
5/16	3/8	1/4	.3148	.3125	.3753	.3747	.3115	.3106	**PSI-0506-04**
5/16	3/8	3/8	.3148	.3125	.3753	.3747	.3115	.3106	**PSI-0506-06**
5/16	3/8	1/2	.3148	.3125	.3753	.3747	.3115	.3106	**PSI-0506-08**
3/8	15/32	1/4	.3773	.3750	.4691	.4684	.3740	.3731	**PSI-0607-04**
3/8	15/32	3/8	.3773	.3750	.4691	.4684	.3740	.3731	**PSI-0607-06**
3/8	15/32	1/2	.3773	.3750	.4691	.4684	.3740	.3731	**PSI-0607-08**
3/8	15/32	5/8	.3773	.3750	.4691	.4684	.3740	.3731	**PSI-0607-10**
3/8	15/32	3/4	.3773	.3750	.4691	.4684	.3740	.3731	**PSI-0607-12**
7/16	17/32	1/2	.4406	.4379	.5316	.5309	.4365	.4355	**PSI-0708-08**
7/16	17/32	3/4	.4406	.4379	.5316	.5309	.4365	.4355	**PSI-0708-12**
1/2	19/32	1/4	.5030	.5003	.5941	.5934	.4990	.4980	**PSI-0809-04**
1/2	19/32	3/8	.5030	.5003	.5941	.5934	.4990	.4980	**PSI-0809-06**
1/2	19/32	1/2	.5030	.5003	.5941	.5934	.4990	.4980	**PSI-0809-08**
1/2	19/32	5/8	.5030	.5003	.5941	.5934	.4990	.4980	**PSI-0809-10**
1/2	19/32	3/4	.5030	.5003	.5941	.5934	.4990	.4980	**PSI-0809-12**

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Inch iglidur® form S

d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1/2	19/32	1	.5030	.5003	.5941	.5934	.4990	.4980	**PSI-0809-16**
9/16	21/32	1/2	.5655	.5627	.6566	.6559	.5615	.5605	**PSI-0910-08**
9/16	21/32	5/8	.5655	.5627	.6566	.6559	.5615	.5605	**PSI-0910-10**
9/16	21/32	3/4	.5655	.5627	.6566	.6559	.5615	.5605	**PSI-0910-12**
5/8	23/32	1/2	.6280	.6253	.7192	.7184	.6240	.6230	**PSI-1011-08**
5/8	23/32	3/4	.6280	.6253	.7192	.7184	.6240	.6230	**PSI-1011-12**
5/8	23/32	1	.6280	.6253	.7192	.7184	.6240	.6230	**PSI-1011-16**
3/4	7/8	1/2	.7541	.7505	.8755	.8747	.7491	.7479	**PSI-1214-08**
3/4	7/8	3/4	.7541	.7505	.8755	.8747	.7491	.7479	**PSI-1214-12**
3/4	7/8	1	.7541	.7505	.8755	.8747	.7491	.7479	**PSI-1214-16**
7/8	1	1/2	.8791	.8757	1.0005	.9997	.8741	.8729	**PSI-1416-08**
7/8	1	3/4	.8791	.8757	1.0005	.9997	.8741	.8729	**PSI-1416-12**
7/8	1	1	.8791	.8757	1.0005	.9997	.8741	.8729	**PSI-1416-16**
1	1 1/8	1/2	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**PSI-1618-08**
1	1 1/8	3/4	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**PSI-1618-12**
1	1 1/8	1	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**PSI-1618-16**
1 1/8	1 9/32	3/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**PSI-1820-12**
1 1/8	1 9/32	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**PSI-1820-16**
1 1/8	1 9/32	1 1/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**PSI-1820-20**
1 1/4	1 13/32	3/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**PSI-2022-12**
1 1/4	1 13/32	1	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**PSI-2022-16**
1 1/4	1 13/32	1 1/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**PSI-2022-20**
1 1/2	1 21/32	1	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**PSI-2426-16**
1 1/2	1 21/32	1 1/2	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**PSI-2426-24**
1 5/8	1 25/32	1	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	**PSI-2629-16**
1 5/8	1 25/32	1 1/2	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	**PSI-2629-24**
1 3/4	1 15/16	1	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**PSI-2831-16**
1 3/4	1 15/16	2	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**PSI-2831-32**
1 7/8	2 1/16	1	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	**PSI-3033-16**
1 7/8	2 1/16	2	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	**PSI-3033-32**
2	2 3/16	1	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**PSI-3235-16**
2	2 3/16	2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**PSI-3235-32**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.1269	.1251	.1878	.1873	.1243	.1236	**P210SI-0203-03**
3/16	1/4	1/4	.1892	.1873	.2503	.2497	.1865	.1858	**P210SI-0304-04**
3/16	1/4	3/8	.1892	.1873	.2503	.2497	.1865	.1858	**P210SI-0304-06**
1/4	5/16	3/8	.2521	.2498	.3128	.3122	.2490	.2481	**P210SI-0405-06**
1/4	5/16	1/2	.2521	.2498	.3128	.3122	.2490	.2481	**P210SI-0405-08**
5/16	3/8	1/4	.3148	.3125	.3753	.3747	.3115	.3106	**P210SI-0506-04**
5/16	3/8	3/8	.3148	.3125	.3753	.3747	.3115	.3106	**P210SI-0506-06**
5/16	3/8	1/2	.3148	.3125	.3753	.3747	.3115	.3106	**P210SI-0506-08**
3/8	15/32	1/4	.3773	.3750	.4691	.4684	.3740	.3731	**P210SI-0607-04**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
3/8	15/32	3/8	.3773	.3750	.4691	.4684	.3740	.3731	**P210SI-0607-06**
3/8	15/32	1/2	.3773	.3750	.4691	.4684	.3740	.3731	**P210SI-0607-08**
3/8	15/32	5/8	.3773	.3750	.4691	.4684	.3740	.3731	**P210SI-0607-10**
3/8	15/32	3/4	.3773	.3750	.4691	.4684	.3740	.3731	**P210SI-0607-12**
7/16	17/32	1/2	.4406	.4379	.5316	.5309	.4365	.4355	**P210SI-0708-08**
7/16	17/32	3/4	.4406	.4379	.5316	.5309	.4365	.4355	**P210SI-0708-12**
1/2	19/32	1/4	.5030	.5003	.5941	.5934	.4990	.4980	**P210SI-0809-04**
1/2	19/32	3/8	.5030	.5003	.5941	.5934	.4990	.4980	**P210SI-0809-06**
1/2	19/32	1/2	.5030	.5003	.5941	.5934	.4990	.4980	**P210SI-0809-08**
1/2	19/32	5/8	.5030	.5003	.5941	.5934	.4990	.4980	**P210SI-0809-10**
1/2	19/32	3/4	.5030	.5003	.5941	.5934	.4990	.4980	**P210SI-0809-12**
1/2	19/32	1	.5030	.5003	.5941	.5934	.4990	.4980	**P210SI-0809-16**
9/16	21/32	1/2	.5655	.5627	.6566	.6559	.5615	.5605	**P210SI-0910-08**
9/16	21/32	5/8	.5655	.5627	.6566	.6559	.5615	.5605	**P210SI-0910-10**
9/16	21/32	3/4	.5655	.5627	.6566	.6559	.5615	.5605	**P210SI-0910-12**
5/8	23/32	1/2	.6280	.6253	.7192	.7184	.6240	.6230	**P210SI-1011-08**
5/8	23/32	3/4	.6280	.6253	.7192	.7184	.6240	.6230	**P210SI-1011-12**
5/8	23/32	1	.6280	.6253	.7192	.7184	.6240	.6230	**P210SI-1011-16**
3/4	7/8	1/2	.7541	.7505	.8755	.8747	.7491	.7479	**P210SI-1214-08**
3/4	7/8	3/4	.7541	.7505	.8755	.8747	.7491	.7479	**P210SI-1214-12**
3/4	7/8	1	.7541	.7505	.8755	.8747	.7491	.7479	**P210SI-1214-16**
7/8	1	1/2	.8791	.8757	1.0005	.9997	.8741	.8729	**P210SI-1416-08**
7/8	1	3/4	.8791	.8757	1.0005	.9997	.8741	.8729	**P210SI-1416-12**
7/8	1	1	.8791	.8757	1.0005	.9997	.8741	.8729	**P210SI-1416-16**
1	1 1/8	1/2	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**P210SI-1618-08**
1	1 1/8	3/4	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**P210SI-1618-12**
1	1 1/8	1	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**P210SI-1618-16**
1 1/8	1 9/32	3/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**P210SI-1820-12**
1 1/8	1 9/32	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**P210SI-1820-16**
1 1/8	1 9/32	1 1/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**P210SI-1820-20**
1 1/4	1 13/32	3/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**P210SI-2022-12**
1 1/4	1 13/32	1	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**P210SI-2022-16**
1 1/4	1 13/32	1 1/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**P210SI-2022-20**
1 1/2	1 21/32	1	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**P210SI-2426-16**
1 1/2	1 21/32	1 1/2	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**P210SI-2426-24**
1 5/8	1 25/32	1	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	**P210SI-2629-16**
1 5/8	1 25/32	1 1/2	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	**P210SI-2629-24**
1 3/4	1 15/16	1	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**P210SI-2831-16**
1 3/4	1 15/16	2	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**P210SI-2831-32**
1 7/8	2 1/16	1	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	**P210SI-3033-16**
1 7/8	2 1/16	2	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	**P210SI-3033-32**
2	2 3/16	1	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**P210SI-3235-16**
2	2 3/16	2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**P210SI-3235-32**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
3/8	15/32	1/4	.3773	.3750	.4691	.4684	.3740	.3731	**QSI-0607-04**
3/8	15/32	3/8	.3773	.3750	.4691	.4684	.3740	.3731	**QSI-0607-06**
3/8	15/32	1/2	.3773	.3750	.4691	.4684	.3740	.3731	**QSI-0607-08**
7/16	17/32	1/2	.4406	.4379	.5316	.5309	.4365	.4355	**QSI-0708-08**
1/2	19/32	3/4	.5030	.5003	.5941	.5934	.4990	.4980	**QSI-0809-12**
5/8	23/32	3/4	.6280	.6253	.7192	.7184	.6240	.6230	**QSI-1011-12**
3/4	7/8	1/2	.7541	.7507	.8755	.8747	.7491	.7479	**QSI-1214-08**
3/4	7/8	3/4	.7541	.7507	.8755	.8747	.7491	.7479	**QSI-1214-12**
3/4	7/8	1	.7541	.7507	.8755	.8747	.7491	.7479	**QSI-1214-16**
7/8	1	1	.8791	.8757	1.0005	.9997	.8741	.8729	**QSI-1416-16**
1	1 1/8	1	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**QSI-1618-16**
1	1 1/8	1 1/2	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**QSI-1618-24**
1 1/8	1 9/32	1 1/2	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**QSI-1820-24**
1 1/4	1 13/32	1 1/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**QSI-2022-20**
1 1/4	1 13/32	1 1/2	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**QSI-2022-24**
1 1/2	1 21/32	1 1/2	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**QSI-2426-24**
1 5/8	1 25/32	1 1/4	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	**QSI-2629-20**
1 3/4	1 15/16	2	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**QSI-2831-32**
2	2 3/16	3/4	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**QSI-3235-12**
2	2 3/16	1	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**QSI-3235-16**
2	2 3/16	1 1/2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**QSI-3235-24**
2	2 3/16	2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**QSI-3235-32**
2	2 3/16	2 1/2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**QSI-3235-40**
2 1/4	2 7/16	2	2.2577	2.2531	2.4377	2.4365	2.2507	2.2489	**QSI-3639-32**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.1269	.1251	.1878	.1873	.1243	.1236	**Q2SI-0203-03**
3/16	1/4	1/4	.1892	.1873	.2503	.2497	.1865	.1858	**Q2SI-0304-04**
3/16	1/4	3/8	.1892	.1873	.2503	.2497	.1865	.1858	**Q2SI-0304-06**
1/4	5/16	3/8	.2521	.2498	.3128	.3122	.2490	.2481	**Q2SI-0405-06**
1/4	5/16	1/2	.2521	.2498	.3128	.3122	.2490	.2481	**Q2SI-0405-08**
5/16	3/8	1/4	.3148	.3125	.3753	.3747	.3115	.3106	**Q2SI-0506-04**
5/16	3/8	3/8	.3148	.3125	.3753	.3747	.3115	.3106	**Q2SI-0506-06**
5/16	3/8	1/2	.3148	.3125	.3753	.3747	.3115	.3106	**Q2SI-0506-08**
3/8	15/32	1/4	.3773	.3750	.4691	.4684	.3740	.3731	**Q2SI-0607-04**
3/8	15/32	3/8	.3773	.3750	.4691	.4684	.3740	.3731	**Q2SI-0607-06**
3/8	15/32	1/2	.3773	.3750	.4691	.4684	.3740	.3731	**Q2SI-0607-08**
3/8	15/32	5/8	.3773	.3750	.4691	.4684	.3740	.3731	**Q2SI-0607-10**
3/8	15/32	3/4	.3773	.3750	.4691	.4684	.3740	.3731	**Q2SI-0607-12**
7/16	17/32	1/2	.4406	.4379	.5316	.5309	.4365	.4355	**Q2SI-0708-08**
7/16	17/32	3/4	.4406	.4379	.5316	.5309	.4365	.4355	**Q2SI-0708-12**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1/2	19/32	1/4	.5030	.5003	.5941	.5934	.4990	.4980	**Q2SI-0809-04**
1/2	19/32	3/8	.5030	.5003	.5941	.5934	.4990	.4980	**Q2SI-0809-06**
1/2	19/32	1/2	.5030	.5003	.5941	.5934	.4990	.4980	**Q2SI-0809-08**
1/2	19/32	5/8	.5030	.5003	.5941	.5934	.4990	.4980	**Q2SI-0809-10**
1/2	19/32	3/4	.5030	.5003	.5941	.5934	.4990	.4980	**Q2SI-0809-12**
1/2	19/32	1	.5030	.5003	.5941	.5934	.4990	.4980	**Q2SI-0809-16**
9/16	21/32	1/2	.5655	.5627	.6566	.6559	.5615	.5605	**Q2SI-0910-08**
9/16	21/32	5/8	.5655	.5627	.6566	.6559	.5615	.5605	**Q2SI-0910-10**
9/16	21/32	3/4	.5655	.5627	.6566	.6559	.5615	.5605	**Q2SI-0910-12**
5/8	23/32	1/2	.6280	.6253	.7192	.7184	.6240	.6230	**Q2SI-1011-08**
5/8	23/32	3/4	.6280	.6253	.7192	.7184	.6240	.6230	**Q2SI-1011-12**
5/8	23/32	1	.6280	.6253	.7192	.7184	.6240	.6230	**Q2SI-1011-16**
3/4	7/8	1/2	.7541	.7505	.8755	.8747	.7491	.7479	**Q2SI-1214-08**
3/4	7/8	3/4	.7541	.7505	.8755	.8747	.7491	.7479	**Q2SI-1214-12**
3/4	7/8	1	.7541	.7505	.8755	.8747	.7491	.7479	**Q2SI-1214-16**
3/4	1	3/4	.7541	.7508	1.0010	1.0000	.7491	.7479	**Q2SI-1216-16**
7/8	1	1/2	.8791	.8757	1.0005	.9997	.8741	.8729	**Q2SI-1416-08**
7/8	1	3/4	.8791	.8757	1.0005	.9997	.8741	.8729	**Q2SI-1416-12**
7/8	1	1	.8791	.8757	1.0005	.9997	.8741	.8729	**Q2SI-1416-16**
1	1 1/8	1/2	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**Q2SI-1618-08**
1	1 1/8	3/4	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**Q2SI-1618-12**
1	1 1/8	1	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**Q2SI-1618-16**
1	1 1/4	1 1/2	1.0041	1.0007	1.2510	1.2500	.9991	.9979	**Q2SI-1620-24**
1 1/8	1 9/32	3/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**Q2SI-1820-12**
1 1/8	1 9/32	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**Q2SI-1820-16**
1 1/8	1 9/32	1 1/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**Q2SI-1820-20**
1 1/4	1 13/32	3/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**Q2SI-2022-12**
1 1/4	1 13/32	1	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**Q2SI-2022-16**
1 1/4	1 13/32	1 1/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**Q2SI-2022-20**
1 1/4	1 13/32	1 1/2	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**Q2SI-2022-24**
1 1/4	1 1/2	1 1/2	1.2548	1.2508	1.501	1.500	1.2488	1.2472	**Q2SI-2024-24**
1 1/2	1 21/32	1	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**Q2SI-2426-16**
1 1/2	1 21/32	1 1/2	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**Q2SI-2426-24**
1 1/2	1 3/4	1 1/2	1.5048	1.5008	1.7505	1.7495	1.4988	1.4972	**Q2SI-2428-24**
1 5/8	1 25/32	1	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	**Q2SI-2629-16**
1 5/8	1 25/32	1 1/2	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	**Q2SI-2629-24**
1 3/4	1 15/16	1	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**Q2SI-2831-16**
1 3/4	1 15/16	2	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**Q2SI-2831-32**
1 7/8	2 1/16	1	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	**Q2SI-3033-16**
1 7/8	2 1/16	2	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	**Q2SI-3033-32**
2	2 3/16	1	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**Q2SI-3235-16**
2	2 3/16	2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**Q2SI-3235-32**
2	2 1/4	2 1/4	2.0059	2.0012	2.2505	2.2495	1.9981	1.9969	**Q2SI-3236-36**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.1269	.1251	.1878	.1873	.1243	.1236	**WSI-0203-03**
1/8	3/16	1/4	.1269	.1251	.1878	.1873	.1243	.1236	**WSI-0203-04**
1/8	3/16	3/8	.1269	.1251	.1878	.1873	.1243	.1236	**WSI-0203-06**
3/16	1/4	1/4	.1892	.1873	.2503	.2497	.1865	.1858	**WSI-0304-04**
3/16	1/4	3/8	.1892	.1873	.2503	.2497	.1865	.1858	**WSI-0304-06**
3/16	1/4	1/2	.1892	.1873	.2503	.2497	.1865	.1858	**WSI-0304-08**
1/4	5/16	3/16	.2521	.2498	.3128	.3122	.2490	.2481	**WSI-0405-03**
1/4	5/16	1/4	.2521	.2498	.3128	.3122	.2490	.2481	**WSI-0405-04**
1/4	5/16	5/16	.2521	.2498	.3128	.3122	.2490	.2481	**WSI-0405-05**
1/4	5/16	3/8	.2521	.2498	.3128	.3122	.2490	.2481	**WSI-0405-06**
1/4	5/16	1/2	.2521	.2498	.3128	.3122	.2490	.2481	**WSI-0405-08**
5/16	3/8	1/4	.3148	.3125	.3753	.3747	.3115	.3106	**WSI-0506-04**
5/16	3/8	3/8	.3148	.3125	.3753	.3747	.3115	.3106	**WSI-0506-06**
5/16	3/8	1/2	.3148	.3125	.3753	.3747	.3115	.3106	**WSI-0506-08**
5/16	3/8	3/4	.3148	.3125	.3753	.3747	.3115	.3106	**WSI-0506-12**
3/8	15/32	1/4	.3773	.3750	.4691	.4684	.3740	.3731	**WSI-0607-04**
3/8	15/32	3/8	.3773	.3750	.4691	.4684	.3740	.3731	**WSI-0607-06**
3/8	15/32	7/16	.3773	.3750	.4691	.4684	.3740	.3731	**WSI-0607-07**
3/8	15/32	1/2	.3773	.3750	.4691	.4684	.3740	.3731	**WSI-0607-08**
3/8	15/32	5/8	.3773	.3750	.4691	.4684	.3740	.3731	**WSI-0607-10**
3/8	15/32	3/4	.3773	.3750	.4691	.4684	.3740	.3731	**WSI-0607-12**
3/8	17/32	3/4	.3773	.3750	.5316	.5309	.3740	.3731	**WSI-0608-12**
7/16	17/32	1/4	.4406	.4379	.5316	.5309	.4365	.4355	**WSI-0708-04**
7/16	17/32	1/2	.4406	.4379	.5316	.5309	.4365	.4355	**WSI-0708-08**
7/16	17/32	3/4	.4406	.4379	.5316	.5309	.4365	.4355	**WSI-0708-12**
1/2	19/32	3/16	.5030	.5003	.5941	.5934	.4990	.4980	**WSI-0809-03**
1/2	19/32	1/4	.5030	.5003	.5941	.5934	.4990	.4980	**WSI-0809-04**
1/2	19/32	3/8	.5030	.5003	.5941	.5934	.4990	.4980	**WSI-0809-06**
1/2	19/32	1/2	.5030	.5003	.5941	.5934	.4990	.4980	**WSI-0809-08**
1/2	19/32	5/8	.5030	.5003	.5941	.5934	.4990	.4980	**WSI-0809-10**
1/2	19/32	3/4	.5030	.5003	.5941	.5934	.4990	.4980	**WSI-0809-12**
1/2	19/32	1	.5030	.5003	.5941	.5934	.4990	.4980	**WSI-0809-16**
1/2	5/8	1/2	.5040	.5013	.6260	.6250	.5000	.4990	**WSI-0810-08**
1/2	5/8	5/8	.5040	.5013	.6260	.6250	.5000	.4990	**WSI-0810-10**
1/2	5/8	3/4	.5040	.5013	.6260	.6250	.5000	.4990	**WSI-0810-12**
1/2	5/8	1	.5040	.5013	.6260	.6250	.5000	.4990	**WSI-0810-16**
9/16	21/32	1/2	.5655	.5627	.6566	.6559	.5615	.5605	**WSI-0910-08**
9/16	21/32	5/8	.5655	.5627	.6566	.6559	.5615	.5605	**WSI-0910-10**
9/16	21/32	3/4	.5655	.5627	.6566	.6559	.5615	.5605	**WSI-0910-12**
5/8	23/32	1/4	.6280	.6253	.7192	.7184	.6240	.6230	**WSI-1011-04**
5/8	23/32	3/8	.6280	.6253	.7192	.7184	.6240	.6230	**WSI-1011-06**
5/8	23/32	1/2	.6280	.6253	.7192	.7184	.6240	.6230	**WSI-1011-08**
5/8	23/32	5/8	.6280	.6253	.7192	.7184	.6240	.6230	**WSI-1011-10**
5/8	23/32	3/4	.6280	.6253	.7192	.7184	.6240	.6230	**WSI-1011-12**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
5/8	23/32	1	.6280	.6253	.7192	.7184	.6240	.6230	**WSI-1011-16**
11/16	25/32	3/4	.6906	.6879	.7817	.7809	.6865	.6855	**WSI-1112-12**
3/4	7/8	1/2	.7541	.7507	.8755	.8747	.7491	.7479	**WSI-1214-08**
3/4	7/8	3/4	.7541	.7507	.8755	.8747	.7491	.7479	**WSI-1214-12**
3/4	7/8	1	.7541	.7507	.8755	.8747	.7491	.7479	**WSI-1214-16**
3/4	7/8	1 1/2	.7541	.7507	.8755	.8747	.7491	.7479	**WSI-1214-24**
7/8	1	1/4	.8791	.8757	1.0005	.9997	.8741	.8729	**WSI-1416-04**
7/8	1	3/8	.8791	.8757	1.0005	.9997	.8741	.8729	**WSI-1416-06**
7/8	1	1/2	.8791	.8757	1.0005	.9997	.8741	.8729	**WSI-1416-08**
7/8	1	5/8	.8791	.8757	1.0005	.9997	.8741	.8729	**WSI-1416-10**
7/8	1	3/4	.8791	.8757	1.0005	.9997	.8741	.8729	**WSI-1416-12**
7/8	1	1	.8791	.8757	1.0005	.9997	.8741	.8729	**WSI-1416-16**
7/8	1	1 1/2	.8791	.8757	1.0005	.9997	.8741	.8729	**WSI-1416-24**
1	1 1/8	3/8	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**WSI-1618-06**
1	1 1/8	1/2	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**WSI-1618-08**
1	1 1/8	3/4	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**WSI-1618-12**
1	1 1/8	1	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**WSI-1618-16**
1	1 1/8	1 5/16	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**WSI-1618-20**
1	1 1/8	1 3/8	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**WSI-1618-22**
1	1 1/8	1 1/2	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**WSI-1618-24**
1 1/8	1 9/32	3/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**WSI-1820-12**
1 1/8	1 9/32	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**WSI-1820-16**
1 1/8	1 9/32	1 1/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**WSI-1820-20**
1 1/4	1 13/32	3/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**WSI-2022-12**
1 1/4	1 13/32	7/8	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**WSI-2022-14**
1 1/4	1 13/32	1	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**WSI-2022-16**
1 1/4	1 13/32	1 1/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**WSI-2022-20**
1 1/4	1 13/32	1 1/2	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**WSI-2022-24**
1 3/8	1 17/32	1	1.3798	1.3758	1.5318	1.5308	1.3738	1.3722	**WSI-2224-16**
1 3/8	1 17/32	1 1/2	1.3798	1.3758	1.5318	1.5308	1.3738	1.3722	**WSI-2224-24**
1 1/2	1 21/32	3/4	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**WSI-2426-12**
1 1/2	1 21/32	1	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**WSI-2426-16**
1 1/2	1 21/32	1 1/2	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**WSI-2426-24**
1 1/2	1 21/32	2 3/4	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**WSI-2426-44**
1 5/8	1 25/32	1	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	**WSI-2629-16**
1 5/8	1 25/32	1 1/4	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	**WSI-2629-20**
1 5/8	1 25/32	1 1/2	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	**WSI-2629-24**
1 3/4	1 15/16	1	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**WSI-2831-16**
1 3/4	1 15/16	1 1/2	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**WSI-2831-24**
1 3/4	1 15/16	2	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**WSI-2831-32**
1 3/4	1 15/16	3	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**WSI-2831-48**
1 7/8	2 1/16	1	1.8796	1.8757	2.0621	2.0633	1.8721	1.8737	**WSI-3033-16**
1 7/8	2 1/16	2	1.8796	1.8757	2.0621	2.0633	1.8721	1.8737	**WSI-3033-32**
2	2 3/16	1	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**WSI-3235-16**
2	2 3/16	1 1/2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**WSI-3235-24**
2	2 3/16	2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**WSI-3235-32**

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Inch iglidur® form S

d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
2 1/4	2 7/16	2	2.2577	2.2531	2.4377	2.4365	2.2507	2.2489	**WSI-3639-32**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.1266	.1247	.1878	.1873	.1243	.1236	**XSI-0203-03**
1/8	3/16	5/16	.1266	.1247	.1878	.1873	.1243	.1236	**XSI-0203-05**
1/8	3/16	3/8	.1266	.1247	.1878	.1873	.1243	.1236	**XSI-0203-06**
3/16	1/4	3/16	.1888	.1869	.2503	.2497	.1865	.1858	**XSI-0304-03**
3/16	1/4	1/4	.1888	.1869	.2503	.2497	.1865	.1858	**XSI-0304-04**
3/16	1/4	3/8	.1888	.1869	.2503	.2497	.1865	.1858	**XSI-0304-06**
3/16	1/4	1/2	.1888	.1869	.2503	.2497	.1865	.1858	**XSI-0304-08**
1/4	5/16	1/4	.2518	.2495	.3128	.3122	.2490	.2481	**XSI-0405-04**
1/4	5/16	3/8	.2518	.2495	.3128	.3122	.2490	.2481	**XSI-0405-06**
1/4	5/16	1/2	.2518	.2495	.3128	.3122	.2490	.2481	**XSI-0405-08**
5/16	3/8	1/4	.3143	.3120	.3753	.3747	.3115	.3106	**XSI-0506-04**
5/16	3/8	3/8	.3143	.3120	.3753	.3747	.3115	.3106	**XSI-0506-06**
5/16	3/8	1/2	.3143	.3120	.3753	.3747	.3115	.3106	**XSI-0506-08**
3/8	15/32	1/4	.3768	.3745	.4691	.4684	.3740	.3731	**XSI-0607-04**
3/8	15/32	5/16	.3768	.3745	.4691	.4684	.3740	.3731	**XSI-0607-05**
3/8	15/32	3/8	.3768	.3745	.4691	.4684	.3740	.3731	**XSI-0607-06**
3/8	15/32	1/2	.3768	.3745	.4691	.4684	.3740	.3731	**XSI-0607-08**
3/8	15/32	5/8	.3768	.3745	.4691	.4684	.3740	.3731	**XSI-0607-10**
3/8	15/32	3/4	.3768	.3745	.4691	.4684	.3740	.3731	**XSI-0607-12**
7/16	17/32	1/4	.4399	.4371	.5316	.5309	.4365	.4355	**XSI-0708-04**
7/16	17/32	1/2	.4399	.4371	.5316	.5309	.4365	.4355	**XSI-0708-08**
7/16	17/32	5/8	.4399	.4371	.5316	.5309	.4365	.4355	**XSI-0708-10**
7/16	17/32	3/4	.4399	.4371	.5316	.5309	.4365	.4355	**XSI-0708-12**
1/2	19/32	1/4	.5030	.5003	.5941	.5934	.4990	.4980	**XSI-0809-04**
1/2	19/32	3/8	.5024	.4996	.5941	.5934	.4990	.4980	**XSI-0809-06**
1/2	19/32	1/2	.5024	.4996	.5941	.5934	.4990	.4980	**XSI-0809-08**
1/2	19/32	5/8	.5024	.4996	.5941	.5934	.4990	.4980	**XSI-0809-10**
1/2	19/32	3/4	.5024	.4996	.5941	.5934	.4990	.4980	**XSI-0809-12**
1/2	19/32	1	.5024	.4996	.5941	.5934	.4990	.4980	**XSI-0809-16**
9/16	21/32	1/2	.5649	.5620	.6566	.6559	.5615	.5605	**XSI-0910-08**
9/16	21/32	5/8	.5649	.5620	.6566	.6559	.5615	.5605	**XSI-0910-10**
9/16	21/32	3/4	.5649	.5620	.6566	.6559	.5615	.5605	**XSI-0910-12**
5/8	23/32	1/4	.6274	.6246	.7192	.7184	.6240	.6230	**XSI-1011-04**
5/8	23/32	3/8	.6274	.6246	.7192	.7184	.6240	.6230	**XSI-1011-06**
5/8	23/32	1/2	.6274	.6246	.7192	.7184	.6240	.6230	**XSI-1011-08**
5/8	23/32	5/8	.6274	.6246	.7192	.7184	.6240	.6230	**XSI-1011-10**
5/8	23/32	3/4	.6274	.6246	.7192	.7184	.6240	.6230	**XSI-1011-12**
5/8	23/32	1	.6274	.6246	.7192	.7184	.6240	.6230	**XSI-1011-16**
11/16	25/32	7/8	.6906	.6879	.7817	.7809	.6865	.6855	**XSI-1112-14**
3/4	7/8	3/8	.7532	.7499	.8755	.8747	.7491	.7479	**XSI-1214-06**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
3/4	7/8	1/2	.7532	.7499	.8755	.8747	.7491	.7479	**XSI-1214-08**
3/4	7/8	3/4	.7532	.7499	.8755	.8747	.7491	.7479	**XSI-1214-12**
3/4	7/8	1	.7532	.7499	.8755	.8747	.7491	.7479	**XSI-1214-16**
7/8	1	1/2	.8782	.8749	1.0005	.9997	.8741	.8729	**XSI-1416-08**
7/8	1	3/4	.8782	.8749	1.0005	.9997	.8741	.8729	**XSI-1416-12**
7/8	1	1	.8782	.8749	1.0005	.9997	.8741	.8729	**XSI-1416-16**
1	1 1/8	1/2	1.0032	.9999	1.1255	1.1247	.9991	.9979	**XSI-1618-08**
1	1 1/8	3/4	1.0032	.9999	1.1255	1.1247	.9991	.9979	**XSI-1618-12**
1	1 1/8	1	1.0032	.9999	1.1255	1.1247	.9991	.9979	**XSI-1618-16**
1	1 1/8	1 1/2	1.0032	.9999	1.1255	1.1247	.9991	.9979	**XSI-1618-24**
1 1/8	1 9/32	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**XSI-1820-12**
1 1/8	1 9/32	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**XSI-1820-16**
1 1/8	1 9/32	1 1/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**XSI-1820-20**
1 1/4	1 13/32	5/8	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**XSI-2022-10**
1 1/4	1 13/32	3/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**XSI-2022-12**
1 1/4	1 13/32	1	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**XSI-2022-16**
1 1/4	1 13/32	1 1/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**XSI-2022-20**
1 1/2	1 21/32	3/4	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**XSI-2426-12**
1 1/2	1 21/32	1	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**XSI-2426-16**
1 1/2	1 21/32	1 1/2	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**XSI-2426-24**
1 5/8	1 25/32	1	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	**XSI-2629-16**
1 5/8	1 25/32	1 1/4	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	**XSI-2629-20**
1 5/8	1 25/32	1 1/2	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	**XSI-2629-24**
1 3/4	1 15/16	1	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**XSI-2831-16**
1 3/4	1 15/16	2	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**XSI-2831-32**
1 7/8	2 1/16	1	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**XSI-3033-16**
1 7/8	2 1/16	2	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**XSI-3033-32**
2	2 3/16	1	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**XSI-3235-16**
2	2 3/16	1 1/2	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**XSI-3235-24**
2	2 3/16	2	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**XSI-3235-32**
2 1/4	2 7/16	2	2.2577	2.2531	2.4377	2.4365	2.2507	2.2489	**XSI-3639-32**
2 3/4	2 15/16	2	2.7570	2.7523	2.9370	2.9358	2.7500	2.7490	**XSI-4447-32**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.1266	.1247	.1878	.1873	.1243	.1236	**ZSI-0203-03**
3/16	1/4	1/4	.1888	.1869	.2503	.2497	.1865	.1858	**ZSI-0304-04**
3/16	1/4	3/8	.1888	.1869	.2503	.2497	.1865	.1858	**ZSI-0304-06**
1/4	5/16	3/8	.2518	.2495	.3128	.3122	.2490	.2481	**ZSI-0405-06**
1/4	5/16	1/2	.2518	.2495	.3128	.3122	.2490	.2481	**ZSI-0405-08**
5/16	3/8	1/4	.3143	.3120	.3753	.3747	.3115	.3106	**ZSI-0506-04**
5/16	3/8	3/8	.3143	.3120	.3753	.3747	.3115	.3106	**ZSI-0506-06**
5/16	3/8	1/2	.3143	.3120	.3753	.3747	.3115	.3106	**ZSI-0506-08**
3/8	15/32	1/4	.3768	.3745	.4691	.4684	.3740	.3731	**ZSI-0607-04**
3/8	15/32	3/8	.3768	.3745	.4691	.4684	.3740	.3731	**ZSI-0607-06**
3/8	15/32	1/2	.3768	.3745	.4691	.4684	.3740	.3731	**ZSI-0607-08**
3/8	15/32	5/8	.3768	.3745	.4691	.4684	.3740	.3731	**ZSI-0607-10**
3/8	15/32	3/4	.3768	.3745	.4691	.4684	.3740	.3731	**ZSI-0607-12**
7/16	17/32	1/2	.4399	.4371	.5316	.5309	.4365	.4355	**ZSI-0708-08**
7/16	17/32	3/4	.4399	.4371	.5316	.5309	.4365	.4355	**ZSI-0708-12**
1/2	19/32	1/4	.5024	.4996	.5941	.5934	.4990	.4980	**ZSI-0809-04**
1/2	19/32	3/8	.5024	.4996	.5941	.5934	.4990	.4980	**ZSI-0809-06**
1/2	19/32	1/2	.5024	.4996	.5941	.5934	.4990	.4980	**ZSI-0809-08**
1/2	19/32	5/8	.5024	.4996	.5941	.5934	.4990	.4980	**ZSI-0809-10**
1/2	19/32	3/4	.5024	.4996	.5941	.5934	.4990	.4980	**ZSI-0809-12**
1/2	19/32	1	.5024	.4996	.5941	.5934	.4990	.4980	**ZSI-0809-16**
1/2	5/8	3/4	.5034	.5006	.6260	.6250	.5000	.4990	**ZSI-0810-12**
9/16	21/32	1/2	.5649	.5620	.6566	.6559	.5615	.5605	**ZSI-0910-08**
9/16	21/32	5/8	.5649	.5620	.6566	.6559	.5615	.5605	**ZSI-0910-10**
9/16	21/32	3/4	.5649	.5620	.6566	.6559	.5615	.5605	**ZSI-0910-12**
5/8	23/32	1/2	.6274	.6246	.7192	.7184	.6240	.6230	**ZSI-1011-08**
5/8	23/32	3/4	.6274	.6246	.7192	.7184	.6240	.6230	**ZSI-1011-12**
5/8	23/32	1	.6274	.6246	.7192	.7184	.6240	.6230	**ZSI-1011-16**
3/4	7/8	1/2	.7532	.7499	.8755	.8747	.7491	.7479	**ZSI-1214-08**
3/4	7/8	3/4	.7532	.7499	.8755	.8747	.7491	.7479	**ZSI-1214-12**
3/4	7/8	1	.7532	.7499	.8755	.8747	.7491	.7479	**ZSI-1214-16**
7/8	1	1/2	.8782	.8749	1.0005	.9997	.8741	.8729	**ZSI-1416-08**
7/8	1	3/4	.8782	.8749	1.0005	.9997	.8741	.8729	**ZSI-1416-12**
7/8	1	1	.8782	.8749	1.0005	.9997	.8741	.8729	**ZSI-1416-16**
1	1 1/8	1/2	1.0032	.9999	1.1255	1.1247	.9991	.9979	**ZSI-1618-08**
1	1 1/8	3/4	1.0032	.9999	1.1255	1.1247	.9991	.9979	**ZSI-1618-12**
1	1 1/8	1	1.0032	.9999	1.1255	1.1247	.9991	.9979	**ZSI-1618-16**
1	11/8	11/2	1.0032	.9999	1.1255	1.1247	.9991	.9979	**ZSI-1618-24**
1 1/8	1 9/32	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**ZSI-1820-12**
1 1/8	1 9/32	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**ZSI-1820-16**
1 1/8	1 9/32	1 1/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**ZSI-1820-20**
1 1/8	1 9/32	11/2	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**ZSI-1820-24**
1 1/4	1 13/32	3/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**ZSI-2022-12**
1 1/4	1 13/32	1	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**ZSI-2022-16**

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d1	d2	b1	d1[3]		Housing hole		Shaft size		Part No.
			Max.	Min.	Max.	Min.	Max.	Min.	
1 1/4	1 13/32	1 1/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**ZSI-2022-20**
1 1/2	1 21/32	1	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**ZSI-2426-16**
1 1/2	1 21/32	1 1/2	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**ZSI-2426-24**
1 5/8	1 25/32	1	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	**ZSI-2629-16**
1 5/8	1 25/32	1 1/2	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	**ZSI-2629-24**
1 3/4	1 15/16	1	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**ZSI-2831-16**
1 3/4	1 15/16	2	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**ZSI-2831-32**
1 7/8	2 1/16	1	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**ZSI-3033-16**
1 7/8	2 1/16	2	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**ZSI-3033-32**
2	2 3/16	1	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**ZSI-3235-16**
2	2 3/16	2	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**ZSI-3235-32**
2 1/4	27/16	2	2.2556	2.2519	2.4377	2.4365	2.2507	2.2489	**ZSI-3639-32**

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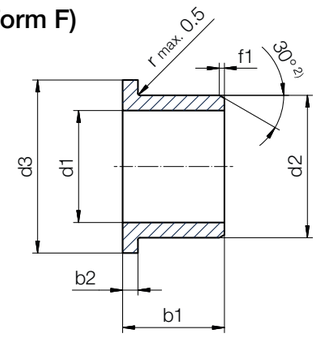
Flanged bearing (form F)



Image exemplary



Chamfer in relation to d1

d1 [inch]	f [inch]
Ø 0.040–0.236	0.012
Ø 0.236–0.472	0.019
Ø 0.472–1.18	0.031
Ø > 1.18	0.047

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	**A181FI-0203-03**
3/16	1/4	1/4	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	**A181FI-0304-04**
1/4	5/16	3/8	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**A181FI-0405-06**
1/4	5/16	1/2	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**A181FI-0405-08**
5/16	3/8	1/4	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**A181FI-0506-04**
5/16	3/8	3/8	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**A181FI-0506-06**
5/16	3/8	1/2	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**A181FI-0506-08**
3/8	15/32	1/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**A181FI-0607-04**
3/8	15/32	3/8	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**A181FI-0607-06**
3/8	15/32	1/2	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**A181FI-0607-08**
3/8	15/32	3/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**A181FI-0607-12**
7/16	17/32	1/2	.7500	.0460	.4406	.4379	.5316	.5309	.4365	.4355	**A181FI-0708-08**
1/2	19/32	1/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**A181FI-0809-04**
1/2	19/32	3/8	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**A181FI-0809-06**
1/2	19/32	1/2	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**A181FI-0809-08**
1/2	19/32	3/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**A181FI-0809-12**
1/2	19/32	1	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**A181FI-0809-16**
5/8	23/32	1/2	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**A181FI-1011-08**
5/8	23/32	3/4	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**A181FI-1011-12**
5/8	23/32	1	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**A181FI-1011-16**
3/4	7/8	1/2	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**A181FI-1214-08**
3/4	7/8	3/4	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**A181FI-1214-12**
3/4	7/8	1	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**A181FI-1214-16**
7/8	1	1/2	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**A181FI-1416-08**
7/8	1	3/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**A181FI-1416-12**
7/8	1	1	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**A181FI-1416-16**
1	1 1/8	1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**A181FI-1618-08**
1	1 1/8	3/4	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**A181FI-1618-12**
1	1 1/8	1	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**A181FI-1618-16**
1 1/4	1 13/32	1	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**A181FI-2022-16**
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**A181FI-2022-20**
1 1/2	1 21/32	1	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**A181FI-2426-16**
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**A181FI-2426-24**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1 3/4	1 15/16	2	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**A181FI-2831-32**
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**A181FI-3235-32**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/8	1/4	1/4	.3600	.0470	.1280	.1262	.2515	.2510	.1250	.1241	**AFI-0204-04**
3/16	5/16	1/4	.3700	.0470	.1905	.1887	.3140	.3135	.1875	.1866	**AFI-0305-04**
1/4	3/8	1/4	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	**AFI-0406-04**
1/4	3/8	3/8	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	**AFI-0406-06**
5/16	7/16	1/2	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	**AFI-0507-08**
3/8	1/2	1/4	.6250	.0620	.3164	.3141	.4390	.4385	.3125	.3116	**AFI-0608-04**
3/8	1/2	1/2	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**AFI-0608-08**
1/2	5/8	1/2	.8750	.0620	.5047	.5020	.6257	.6250	.5000	.4983	**AFI-0810-08**
1/2	5/8	3/4	.8750	.0620	.5047	.5020	.6257	.6250	.5000	.4983	**AFI-0810-12**
5/8	13/16	1	1.0630	.1560	.6297	.6270	.8135	.8125	.6250	.6240	**AFI-1013-16**
3/4	1	3/4	1.2500	.1560	.7559	.7525	1.0010	1.0000	.7500	.7490	**AFI-1216-12**
3/4	1	1	1.2500	.1560	.7559	.7525	1.0010	1.0000	.7500	.7490	**AFI-1216-16**
7/8	1 1/8	1 1/2	1.3750	.1560	.8809	.8775	1.1260	1.1250	.8750	.8740	**AFI-1418-24**
1	1 9/32	1	1.5000	.1880	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	**AFI-1620-16**
1	1 9/32	1 1/2	1.5000	.1880	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	**AFI-1620-24**
1 1/4	1 17/32	1	1.7500	.2000	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	**AFI-2024-16**
1 1/4	1 17/32	1 1/2	1.7500	.2000	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	**AFI-2024-24**
1 1/2	1 3/4	1	2.0000	.1250	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	**AFI-2428-16**
1 1/2	1 3/4	1 1/2	2.0000	.1250	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	**AFI-2428-24**
1 3/4	2	1	2.2500	.1250	1.7560	1.7532	2.0005	1.9995	1.7500	1.7490	**AFI-2832-16**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.3120	.0320	.1266	.1247	.1878	.1873	.1243	.1236	**A350FI-0203-03**
3/16	1/4	1/4	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	**A350FI-0304-04**
1/4	5/16	3/8	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**A350FI-0405-06**
1/4	5/16	1/2	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**A350FI-0405-08**
5/16	3/8	1/4	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**A350FI-0506-04**
5/16	3/8	3/8	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**A350FI-0506-06**
5/16	3/8	1/2	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**A350FI-0506-08**
3/8	15/32	1/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**A350FI-0607-04**
3/8	15/32	3/8	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**A350FI-0607-06**
3/8	15/32	1/2	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**A350FI-0607-08**
3/8	15/32	3/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**A350FI-0607-12**
7/16	17/32	1/2	.7500	.0460	.4399	.4371	.5316	.5309	.4365	.4355	**A350FI-0708-08**
1/2	19/32	1/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**A350FI-0809-04**
1/2	19/32	3/8	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**A350FI-0809-06**

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Inch iglidur® form F

d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/2	19/32	1/2	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**A350FI-0809-08**
1/2	19/32	3/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**A350FI-0809-12**
1/2	19/32	1	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**A350FI-0809-16**
5/8	23/32	1/2	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**A350FI-1011-08**
5/8	23/32	3/4	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**A350FI-1011-12**
5/8	23/32	1	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**A350FI-1011-16**
3/4	7/8	1/2	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**A350FI-1214-08**
3/4	7/8	3/4	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**A350FI-1214-12**
3/4	7/8	1	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**A350FI-1214-16**
7/8	1	1/2	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**A350FI-1416-08**
7/8	1	3/4	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**A350FI-1416-12**
7/8	1	1	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**A350FI-1416-16**
1	1 1/8	1/2	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**A350FI-1618-08**
1	1 1/8	3/4	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**A350FI-1618-12**
1	1 1/8	1	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**A350FI-1618-16**
1 1/4	1 13/32	1	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**A350FI-2022-16**
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**A350FI-2022-20**
1 1/2	1 21/32	1	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**A350FI-2426-16**
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**A350FI-2426-24**
1 3/4	1 15/16	2	2.3750	.0930	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**A350FI-2831-32**
2	2 3/16	2	2.6250	.0930	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**A350FI-3235-32**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.3120	.0320	.1266	.1247	.1878	.1873	.1243	.1236	**A500FI-0203-03**
3/16	1/4	1/4	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	**A500FI-0304-04**
1/4	5/16	3/8	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**A500FI-0405-06**
1/4	5/16	1/2	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**A500FI-0405-08**
5/16	3/8	1/4	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**A500FI-0506-04**
5/16	3/8	3/8	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**A500FI-0506-06**
5/16	3/8	1/2	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**A500FI-0506-08**
3/8	15/32	1/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**A500FI-0607-04**
3/8	15/32	3/8	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**A500FI-0607-06**
3/8	15/32	1/2	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**A500FI-0607-08**
3/8	15/32	3/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**A500FI-0607-12**
7/16	17/32	1/2	.7500	.0460	.4399	.4371	.5316	.5309	.4365	.4355	**A500FI-0708-08**
1/2	19/32	1/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**A500FI-0809-04**
1/2	19/32	3/8	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**A500FI-0809-06**
1/2	19/32	1/2	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**A500FI-0809-08**
1/2	19/32	3/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**A500FI-0809-12**
1/2	19/32	1	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**A500FI-0809-16**
5/8	23/32	1/2	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**A500FI-1011-08**
5/8	23/32	3/4	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**A500FI-1011-12**
5/8	23/32	1	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**A500FI-1011-16**

[3] After press-fit. Testing methods ▶ Page 57

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
3/4	7/8	1/2	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**A500FI-1214-08**
3/4	7/8	3/4	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**A500FI-1214-12**
3/4	7/8	1	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**A500FI-1214-16**
7/8	1	1/2	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**A500FI-1416-08**
7/8	1	3/4	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**A500FI-1416-12**
7/8	1	1	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**A500FI-1416-16**
1	1 1/8	1/2	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**A500FI-1618-08**
1	1 1/8	3/4	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**A500FI-1618-12**
1	1 1/8	1	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**A500FI-1618-16**
1 1/4	1 13/32	1	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**A500FI-2022-16**
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**A500FI-2022-20**
1 1/2	1 21/32	1	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**A500FI-2426-16**
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**A500FI-2426-24**
1 3/4	1 15/16	2	2.3750	.0930	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**A500FI-2831-32**
2	2 3/16	2	2.6250	.0930	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**A500FI-3235-32**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	1/8	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	**GFI-0203-02**
1/8	3/16	3/16	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	**GFI-0203-03**
1/8	3/16	1/4	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	**GFI-0203-04**
1/8	3/16	3/8	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	**GFI-0203-06**
3/16	1/4	1/4	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	**GFI-0304-04**
3/16	1/4	3/8	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	**GFI-0304-06**
3/16	1/4	1/2	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	**GFI-0304-08**
1/4	5/16	1/4	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**GFI-0405-04**
1/4	5/16	5/16	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**GFI-0405-05**
1/4	5/16	3/8	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**GFI-0405-06**
1/4	5/16	1/2	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**GFI-0405-08**
1/4	5/16	3/4	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**GFI-0405-12**
5/16	3/8	1/4	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**GFI-0506-04**
5/16	3/8	3/8	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**GFI-0506-06**
5/16	3/8	1/2	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**GFI-0506-08**
5/16	3/8	3/4	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**GFI-0506-12**
3/8	15/32	1/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**GFI-0607-04**
3/8	15/32	5/16	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**GFI-0607-05**
3/8	15/32	3/8	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**GFI-0607-06**
3/8	15/32	1/2	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**GFI-0607-08**
3/8	15/32	3/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**GFI-0607-12**
3/8	15/32	7/8	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**GFI-0607-14**
7/16	17/32	1/4	.7500	.0460	.4406	.4379	.5316	.5309	.4365	.4355	**GFI-0708-04**
7/16	17/32	1/2	.7500	.0460	.4406	.4379	.5316	.5309	.4365	.4355	**GFI-0708-08**
1/2	19/32	1/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**GFI-0809-04**
1/2	19/32	5/16	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**GFI-0809-05**

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Inch iglidur® form F

d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/2	19/32	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 hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
2 1/2	2 11/16	2	3.1250	.0930	2.5082	2.5035	2.6881	2.6869	2.5000	2.4999	**GFI-4043-32**
2 3/4	2 15/16	2	3.3750	.0930	2.7570	2.7523	2.9370	2.9358	2.7500	2.7490	**GFI-4447-32**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
		h13		h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.3120	.0320	.1266	.1247	.1878	.1873	.1243	.1236	**H1FI-0203-03**
3/16	1/4	1/4	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	**H1FI-0304-04**
1/4	5/16	3/8	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**H1FI-0405-06**
1/4	5/16	1/2	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**H1FI-0405-08**
5/16	3/8	1/4	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**H1FI-0506-04**
5/16	3/8	3/8	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**H1FI-0506-06**
5/16	3/8	1/2	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**H1FI-0506-08**
3/8	15/32	1/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**H1FI-0607-04**
3/8	15/32	3/8	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**H1FI-0607-06**
3/8	15/32	1/2	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**H1FI-0607-08**
3/8	15/32	3/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**H1FI-0607-12**
7/16	17/32	1/2	.7500	.0460	.4399	.4371	.5316	.5309	.4365	.4355	**H1FI-0708-08**
1/2	19/32	1/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**H1FI-0809-04**
1/2	19/32	3/8	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**H1FI-0809-06**
1/2	19/32	1/2	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**H1FI-0809-08**
1/2	19/32	3/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**H1FI-0809-12**
1/2	19/32	1	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**H1FI-0809-16**
5/8	23/32	1/2	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**H1FI-1011-08**
5/8	23/32	3/4	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**H1FI-1011-12**
5/8	23/32	1	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**H1FI-1011-16**
3/4	7/8	1/2	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**H1FI-1214-08**
3/4	7/8	3/4	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**H1FI-1214-12**
3/4	7/8	1	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**H1FI-1214-16**
7/8	1	1/2	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**H1FI-1416-08**
7/8	1	3/4	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**H1FI-1416-12**
7/8	1	1	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**H1FI-1416-16**
1	1 1/8	1/2	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**H1FI-1618-08**
1	1 1/8	3/4	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**H1FI-1618-12**
1	1 1/8	1	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**H1FI-1618-16**
1 1/4	1 13/32	1	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**H1FI-2022-16**
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**H1FI-2022-20**
1 1/2	1 21/32	1	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**H1FI-2426-16**
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**H1FI-2426-24**
1 3/4	1 15/16	2	2.3750	.0930	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**H1FI-2831-32**
2	2 3/16	2	2.6250	.0930	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**H1FI-3235-32**

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Inch iglidur® form F

iglidur® H370

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
		h13		h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.3120	.0320	.1266	.1247	.1878	.1873	.1243	.1236	**H370FI-0203-03**
3/16	1/4	1/4	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	**H370FI-0304-04**
1/4	5/16	1/4	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**H370FI-0405-04**
1/4	5/16	3/8	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**H370FI-0405-06**
1/4	5/16	1/2	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**H370FI-0405-08**
5/16	3/8	1/4	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**H370FI-0506-04**
5/16	3/8	3/8	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**H370FI-0506-06**
5/16	3/8	1/2	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**H370FI-0506-08**
3/8	15/32	1/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**H370FI-0607-04**
3/8	15/32	3/8	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**H370FI-0607-06**
3/8	15/32	1/2	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**H370FI-0607-08**
3/8	15/32	3/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**H370FI-0607-12**
7/16	17/32	1/2	.7500	.0460	.4399	.4371	.5316	.5309	.4365	.4355	**H370FI-0708-08**
1/2	19/32	1/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**H370FI-0809-04**
1/2	19/32	3/8	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**H370FI-0809-06**
1/2	19/32	1/2	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**H370FI-0809-08**
1/2	19/32	3/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**H370FI-0809-12**
1/2	19/32	1	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**H370FI-0809-16**
5/8	23/32	1/2	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**H370FI-1011-08**
5/8	23/32	3/4	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**H370FI-1011-12**
5/8	23/32	1	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**H370FI-1011-16**
3/4	7/8	1/2	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**H370FI-1214-08**
3/4	7/8	3/4	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**H370FI-1214-12**
3/4	7/8	1	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**H370FI-1214-16**
7/8	1	1/2	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**H370FI-1416-08**
7/8	1	3/4	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**H370FI-1416-12**
7/8	1	1	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**H370FI-1416-16**
1	1 1/8	1/2	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**H370FI-1618-08**
1	1 1/8	3/4	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**H370FI-1618-12**
1	1 1/8	1	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**H370FI-1618-16**
1 1/4	1 13/32	1	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**H370FI-2022-16**
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**H370FI-2022-20**
1 1/2	1 21/32	1	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**H370FI-2426-16**
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**H370FI-2426-24**
1 3/4	1 15/16	2	2.3750	.0930	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**H370FI-2831-32**
2	2 3/16	2	2.6250	.0930	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**H370FI-3235-32**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	**JFI-0203-03**
1/8	1/4	3/8	.3600	.0470	.1280	.1262	.2515	.2510	.1250	.1241	**JFI-0204-06**
3/16	1/4	1/8	.3750	.0320	.1905	.1887	.2515	.2510	.1875	.1866	**JFI-0304-02**
3/16	1/4	1/4	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	**JFI-0304-04**
3/16	1/4	3/8	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	**JFI-0304-06**
3/16	1/4	1/2	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	**JFI-0304-08**
3/16	5/16	3/8	.3700	.0470	.1905	.1887	.3140	.3135	.1875	.1866	**JFI-0305-06**
3/16	5/16	1/2	.3700	.0470	.1905	.1887	.3140	.3135	.1875	.1866	**JFI-0305-08**
1/4	5/16	1/4	.4370	.0320	.2521	.2498	.3140	.3135	.2490	.2481	**JFI-0405-04**
1/4	5/16	1/2	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**JFI-0405-06**
1/4	5/16	3/8	.4370	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**JFI-0405-08**
1/4	5/16	3/4	.4370	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**JFI-0405-12**
1/4	3/8	3/16	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	**JFI-0406-03**
1/4	3/8	1/4	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	**JFI-0406-04**
1/4	3/8	1/2	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	**JFI-0406-08**
5/16	3/8	1/4	.5000	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**JFI-0506-04**
5/16	3/8	3/8	.5000	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**JFI-0506-06**
5/16	3/8	1/2	.5000	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**JFI-0506-08**
5/16	7/16	1/2	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	**JFI-0507-08**
3/8	15/32	1/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**JFI-0607-04**
3/8	15/32	3/8	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**JFI-0607-06**
3/8	15/32	1/2	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**JFI-0607-08**
3/8	15/32	3/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**JFI-0607-12**
3/8	1/2	3/16	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**JFI-0608-03**
3/8	1/2	3/8	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**JFI-0608-06**
3/8	1/2	1/2	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**JFI-0608-08**
7/16	17/32	1/2	.7500	.0460	.4406	.4379	.5316	.5309	.4365	.4355	**JFI-0708-08**
1/2	19/32	1/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**JFI-0809-04**
1/2	19/32	3/8	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**JFI-0809-06**
1/2	19/32	1/2	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**JFI-0809-08**
1/2	19/32	3/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**JFI-0809-12**
1/2	19/32	1	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**JFI-0809-16**
1/2	5/8	1/4	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	**JFI-0810-04**
1/2	5/8	1/2	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	**JFI-0810-08**
1/2	5/8	5/8	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	**JFI-0810-10**
1/2	5/8	3/4	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	**JFI-0810-12**
5/8	23/32	1/2	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**JFI-1011-08**
5/8	23/32	3/4	.9370	.0460	.6280	.6253	.7192	.7184	.6250	.6240	**JFI-1011-12**
5/8	23/32	1	.9370	.0460	.6280	.6253	.7192	.7184	.6250	.6240	**JFI-1011-16**
5/8	3/4	1/2	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	**JFI-1012-08**
5/8	3/4	3/4	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	**JFI-1012-12**
5/8	3/4	1	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	**JFI-1012-16**
3/4	7/8	1/2	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**JFI-1214-08**
3/4	7/8	5/8	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**JFI-1214-10**
3/4	7/8	3/4	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**JFI-1214-12**
3/4	7/8	1	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**JFI-1214-16**
3/4	1	3/4	1.2500	.1560	.7559	.7525	1.0010	1.00	.7500	.7490	**JFI-1216-12**
3/4	1	1	1.2500	.1560	.7559	.7525	1.0010	1.00	.7500	.7490	**JFI-1216-16**
7/8	1	1/2	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**JFI-1416-08**
7/8	1	3/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**JFI-1416-12**
7/8	1	1	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**JFI-1416-16**
7/8	1	1 1/16	1.1250	.0620	.8809	.8776	1.0010	1.00	.8750	.8740	**JFI-141618-11**
1	1 1/8	1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**JFI-1618-08**
1	1 1/8	3/4	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**JFI-1618-12**
1	1 1/8	1	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**JFI-1618-16**
1	1 1/4	3/4	1.5000	.1880	1.0059	1.0025	1.2510	1.250	1.0000	.9990	**JFI-1620-12**
1	1 1/4	1	1.5000	.1880	1.0059	1.0025	1.2510	1.250	1.0000	.9990	**JFI-1620-16**
1	1 1/4	1 1/2	1.5000	.1880	1.0059	1.0025	1.2510	1.250	1.0000	.9990	**JFI-1620-24**
1 1/4	1 13/32	1	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**JFI-2022-16**
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**JFI-2022-20**
1 1/4	1 1/2	1	1.7500	.1880	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	**JFI-2024-16**
1 1/4	1 1/2	1 1/2	1.7500	.1880	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	**JFI-2024-24**
1 1/2	1 21/32	1	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**JFI-2426-16**
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**JFI-2426-24**
1 1/2	1 3/4	1	2.0000	.1250	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	**JFI-2428-16**
1 1/2	1 3/4	1 1/2	2.0000	.1250	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	**JFI-2428-24**
1 5/8	1 7/8	1	2.1250	.1250	1.6350	1.6882	1.8755	1.8745	1.6250	1.6240	**JFI-2630-16**
1 3/4	1 15/16	2	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**JFI-2831-32**
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**JFI-3235-32**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	**J3FI-0203-03**
3/16	1/4	1/4	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	**J3FI-0304-04**
1/4	5/16	3/8	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**J3FI-0405-06**
1/4	5/16	1/2	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**J3FI-0405-08**
5/16	3/8	1/4	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**J3FI-0506-04**
5/16	3/8	3/8	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**J3FI-0506-06**
5/16	3/8	1/2	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**J3FI-0506-08**
3/8	15/32	1/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**J3FI-0607-04**
3/8	15/32	3/8	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**J3FI-0607-06**
3/8	15/32	1/2	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**J3FI-0607-08**
3/8	15/32	3/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**J3FI-0607-12**
7/16	17/32	1/2	.7500	.0460	.4406	.4379	.5316	.5309	.4365	.4355	**J3FI-0708-08**
1/2	19/32	1/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**J3FI-0809-04**
1/2	19/32	3/8	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**J3FI-0809-06**
1/2	19/32	1/2	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**J3FI-0809-08**
1/2	19/32	3/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**J3FI-0809-12**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/2	19/32	1	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**J3FI-0809-16**
5/8	23/32	1/2	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**J3FI-1011-08**
5/8	23/32	3/4	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**J3FI-1011-12**
5/8	23/32	1	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**J3FI-1011-16**
3/4	7/8	1/2	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**J3FI-1214-08**
3/4	7/8	3/4	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**J3FI-1214-12**
3/4	7/8	1	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**J3FI-1214-16**
7/8	1	1/2	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**J3FI-1416-08**
7/8	1	3/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**J3FI-1416-12**
7/8	1	1	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**J3FI-1416-16**
1	1 1/8	1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**J3FI-1618-08**
1	1 1/8	3/4	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**J3FI-1618-12**
1	1 1/8	1	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**J3FI-1618-16**
1 1/4	1 13/32	1	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**J3FI-2022-16**
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**J3FI-2022-20**
1 1/2	1 21/32	1	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**J3FI-2426-16**
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**J3FI-2426-24**
1 3/4	1 15/16	2	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**J3FI-2831-32**
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**J3FI-3235-32**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.3120	.0320	.1266	.1247	.1878	.1873	.1243	.1236	**J350FI-0203-03**
3/16	1/4	1/4	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	**J350FI-0304-04**
1/4	5/16	3/8	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**J350FI-0405-06**
1/4	5/16	1/2	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**J350FI-0405-08**
5/16	3/8	1/4	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**J350FI-0506-04**
5/16	3/8	3/8	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**J350FI-0506-06**
5/16	3/8	1/2	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**J350FI-0506-08**
3/8	15/32	1/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**J350FI-0607-04**
3/8	15/32	3/8	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**J350FI-0607-06**
3/8	15/32	1/2	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**J350FI-0607-08**
3/8	15/32	3/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**J350FI-0607-12**
7/16	17/32	1/2	.7500	.0460	.4399	.4371	.5316	.5309	.4365	.4355	**J350FI-0708-08**
1/2	19/32	1/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**J350FI-0809-04**
1/2	19/32	3/8	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**J350FI-0809-06**
1/2	19/32	1/2	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**J350FI-0809-08**
1/2	19/32	3/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**J350FI-0809-12**
1/2	19/32	1	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**J350FI-0809-16**
5/8	23/32	1/2	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**J350FI-1011-08**
5/8	23/32	3/4	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**J350FI-1011-12**
5/8	23/32	1	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**J350FI-1011-16**
3/4	7/8	1/2	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**J350FI-1214-08**
3/4	7/8	3/4	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**J350FI-1214-12**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
3/4	7/8	1	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**J350FI-1214-16**
7/8	1	1/2	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**J350FI-1416-08**
7/8	1	3/4	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**J350FI-1416-12**
7/8	1	1	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**J350FI-1416-16**
1	1 1/8	1/2	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**J350FI-1618-08**
1	1 1/8	3/4	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**J350FI-1618-12**
1	1 1/8	1	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**J350FI-1618-16**
1 1/4	1 13/32	1	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**J350FI-2022-16**
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**J350FI-2022-20**
1 1/2	1 21/32	1	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**J350FI-2426-16**
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**J350FI-2426-24**
1 3/4	1 15/16	2	2.3750	.0930	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**J350FI-2831-32**
2	2 3/16	2	2.6250	.0930	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**J350FI-3235-32**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	1/8	.3125	.0320	.1280	.1262	.1885	.1880	.1250	.1241	**MFI-0203-02**
1/8	3/16	1/4	.3125	.0320	.1280	.1262	.1885	.1880	.1250	.1241	**MFI-0203-04**
1/8	1/4	1/8	.3600	.0470	.1280	.1262	.2515	.2510	.1250	.1241	**MFI-0204-02**
1/8	1/4	3/16	.3600	.0470	.1280	.1262	.2515	.2510	.1250	.1241	**MFI-0204-03**
1/8	1/4	1/4	.3600	.0470	.1280	.1262	.2515	.2510	.1250	.1241	**MFI-0204-04**
1/8	1/4	3/8	.3600	.0470	.1280	.1262	.2515	.2510	.1250	.1241	**MFI-0204-06**
1/8	1/4	3/4	.3600	.0470	.1280	.1262	.2515	.2510	.1250	.1241	**MFI-0204-12**
3/16	1/4	1/4	.3750	.0320	.1905	.1887	.2515	.2510	.1875	.1866	**MFI-0304-04**
3/16	1/4	3/8	.3750	.0320	.1905	.1887	.2515	.2510	.1875	.1866	**MFI-0304-06**
3/16	1/4	1/2	.3750	.0320	.1905	.1887	.2515	.2510	.1875	.1866	**MFI-0304-08**
3/16	5/16	3/16	.3700	.0470	.1905	.1887	.3140	.3135	.1875	.1866	**MFI-0305-03**
3/16	5/16	1/4	.3700	.0470	.1905	.1887	.3140	.3135	.1875	.1866	**MFI-0305-04**
3/16	5/16	5/16	.3700	.0470	.1905	.1887	.3140	.3135	.1875	.1866	**MFI-0305-05**
3/16	5/16	3/8	.3700	.0470	.1905	.1887	.3140	.3135	.1875	.1866	**MFI-0305-06**
3/16	5/16	1/2	.3700	.0470	.1905	.1887	.3140	.3135	.1875	.1866	**MFI-0305-08**
1/4	5/16	3/16	.4375	.0470	.2539	.2516	.3140	.3135	.2500	.2491	**MFI-0405-03**
1/4	5/16	1/4	.4375	.0320	.2539	.2516	.3140	.3135	.2500	.2491	**MFI-0405-04**
1/4	5/16	3/8	.4375	.0320	.2539	.2516	.3140	.3135	.2500	.2491	**MFI-0405-06**
1/4	5/16	7/16	.4375	.0470	.2539	.2516	.3140	.3135	.2500	.2491	**MFI-0405-07**
1/4	5/16	1/2	.4375	.0320	.2539	.2516	.3140	.3135	.2500	.2491	**MFI-0405-08**
1/4	5/16	3/4	.4375	.0470	.2539	.2516	.3140	.3135	.2500	.2491	**MFI-0405-12**
1/4	3/8	1/8	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	**MFI-0406-02**
1/4	3/8	3/16	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	**MFI-0406-03**
1/4	3/8	1/4	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	**MFI-0406-04**
1/4	3/8	3/8	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	**MFI-0406-06**
1/4	3/8	1/2	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	**MFI-0406-08**
1/4	3/8	5/8	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	**MFI-0406-10**
1/4	3/8	3/4	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	**MFI-0406-12**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
5/16	3/8	1/4	.5000	.0320	.3164	.3141	.3765	.3760	.3125	.3116	**MFI-0506-04**
5/16	3/8	3/8	.5000	.0320	.3164	.3141	.3765	.3760	.3125	.3116	**MFI-0506-06**
5/16	3/8	1/2	.5000	.0320	.3164	.3141	.3765	.3760	.3125	.3116	**MFI-0506-08**
5/16	3/8	15/16	.5000	.0320	.3164	.3141	.3765	.3760	.3125	.3116	**MFI-0506-15**
5/16	7/16	3/16	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	**MFI-0507-03**
5/16	7/16	1/4	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	**MFI-0507-04**
5/16	7/16	5/16	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	**MFI-0507-05**
5/16	7/16	3/8	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	**MFI-0507-06**
5/16	7/16	1/2	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	**MFI-0507-08**
5/16	7/16	5/8	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	**MFI-0507-10**
5/16	7/16	3/4	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	**MFI-0507-12**
3/8	7/16	1/4	.5625	.0320	.3789	.3766	.4390	.4385	.3750	.3741	**MFI-0607-04**
3/8	7/16	3/8	.5625	.0320	.3789	.3766	.4390	.4385	.3750	.3741	**MFI-0607-06**
3/8	7/16	1/2	.5625	.0320	.3789	.3766	.4390	.4385	.3750	.3741	**MFI-0607-08**
3/8	1/2	1/8	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**MFI-0608-02**
3/8	1/2	3/16	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**MFI-0608-03**
3/8	1/2	1/4	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**MFI-0608-04**
3/8	1/2	5/16	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**MFI-0608-05**
3/8	1/2	3/8	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**MFI-0608-06**
3/8	1/2	1/2	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**MFI-0608-08**
3/8	1/2	5/8	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**MFI-0608-10**
3/8	1/2	3/4	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**MFI-0608-12**
3/8	1/2	1	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**MFI-0608-16**
7/16	9/16	3/8	.6870	.0620	.4422	.4395	.5941	.5934	.4375	.4365	**MFI-0709-06**
7/16	9/16	1/2	.6870	.0620	.4422	.4395	.5941	.5934	.4375	.4365	**MFI-0709-08**
1/2	5/8	1/8	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	**MFI-0810-02**
1/2	5/8	1/4	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	**MFI-0810-04**
1/2	5/8	5/16	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	**MFI-0810-05**
1/2	5/8	3/8	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	**MFI-0810-06**
1/2	5/8	1/2	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	**MFI-0810-08**
1/2	5/8	5/8	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	**MFI-0810-10**
1/2	5/8	3/4	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	**MFI-0810-12**
1/2	5/8	1	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	**MFI-0810-16**
5/8	3/4	3/8	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	**MFI-1012-06**
5/8	3/4	1/2	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	**MFI-1012-08**
5/8	3/4	5/8	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	**MFI-1012-10**
5/8	3/4	3/4	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	**MFI-1012-12**
5/8	3/4	1	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	**MFI-1012-16**
5/8	3/4	1 1/2	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	**MFI-1012-24**
5/8	13/16	1/2	1.0630	.0620	.6297	.6270	.8135	.8125	.6250	.6240	**MFI-1013-08**
5/8	13/16	5/8	1.0630	.0620	.6297	.6270	.8135	.8125	.6250	.6240	**MFI-1013-10**
5/8	13/16	3/4	1.0630	.0620	.6297	.6270	.8135	.8125	.6250	.6240	**MFI-1013-12**
5/8	13/16	1	1.0630	.0620	.6297	.6270	.8135	.8125	.6250	.6240	**MFI-1013-16**
3/4	7/8	3/8	1.1250	.0620	.7559	.7525	.8760	.8750	.6250	.6240	**MFI-1214-06**
3/4	7/8	1/2	1.1250	.0620	.7559	.7525	.8760	.8750	.6250	.6240	**MFI-1214-08**
3/4	7/8	3/4	1.1250	.0620	.7559	.7525	.8760	.8750	.7500	.7490	**MFI-1214-12**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
3/4	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 hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	**PFI-0203-03**
3/16	1/4	1/4	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	**PFI-0304-04**
1/4	5/16	3/8	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**PFI-0405-06**
1/4	5/16	1/2	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**PFI-0405-08**
5/16	3/8	1/4	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**PFI-0506-04**
5/16	3/8	3/8	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**PFI-0506-06**
5/16	3/8	1/2	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**PFI-0506-08**
3/8	15/32	1/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**PFI-0607-04**
3/8	15/32	3/8	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**PFI-0607-06**
3/8	15/32	1/2	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**PFI-0607-08**
3/8	15/32	3/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**PFI-0607-12**
7/16	17/32	1/2	.7500	.0460	.4406	.4379	.5316	.5309	.4365	.4355	**PFI-0708-08**
1/2	19/32	1/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**PFI-0809-04**
1/2	19/32	3/8	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**PFI-0809-06**
1/2	19/32	1/2	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**PFI-0809-08**
1/2	19/32	3/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**PFI-0809-12**
1/2	19/32	1	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**PFI-0809-16**
5/8	23/32	1/2	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**PFI-1011-08**
5/8	23/32	3/4	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**PFI-1011-12**
5/8	23/32	1	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**PFI-1011-16**
3/4	7/8	1/2	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**PFI-1214-08**
3/4	7/8	3/4	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**PFI-1214-12**
3/4	7/8	1	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**PFI-1214-16**
7/8	1	1/2	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**PFI-1416-08**
7/8	1	3/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**PFI-1416-12**
7/8	1	1	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**PFI-1416-16**
1	1 1/8	1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**PFI-1618-08**
1	1 1/8	3/4	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**PFI-1618-12**
1	1 1/8	1	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**PFI-1618-16**
1 1/4	1 13/32	1	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**PFI-2022-16**
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**PFI-2022-20**
1 1/2	1 21/32	1	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**PFI-2426-16**
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**PFI-2426-24**
1 3/4	1 15/16	2	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**PFI-2831-32**
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**PFI-3235-32**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	**P210FI-0203-03**
3/16	1/4	1/4	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	**P210FI-0304-04**
1/4	5/16	3/8	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**P210FI-0405-06**
1/4	5/16	1/2	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**P210FI-0405-08**
5/16	3/8	1/4	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**P210FI-0506-04**
5/16	3/8	3/8	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**P210FI-0506-06**
5/16	3/8	1/2	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**P210FI-0506-08**
3/8	15/32	1/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**P210FI-0607-04**
3/8	15/32	3/8	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**P210FI-0607-06**
3/8	15/32	1/2	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**P210FI-0607-08**
3/8	15/32	3/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**P210FI-0607-12**
7/16	17/32	1/2	.7500	.0460	.4406	.4379	.5316	.5309	.4365	.4355	**P210FI-0708-08**
1/2	19/32	1/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**P210FI-0809-04**
1/2	19/32	3/8	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**P210FI-0809-06**
1/2	19/32	1/2	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**P210FI-0809-08**
1/2	19/32	3/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**P210FI-0809-12**
1/2	19/32	1	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**P210FI-0809-16**
5/8	23/32	1/2	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**P210FI-1011-08**
5/8	23/32	3/4	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**P210FI-1011-12**
5/8	23/32	1	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**P210FI-1011-16**
3/4	7/8	1/2	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**P210FI-1214-08**
3/4	7/8	3/4	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**P210FI-1214-12**
3/4	7/8	1	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**P210FI-1214-16**
7/8	1	1/2	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**P210FI-1416-08**
7/8	1	3/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**P210FI-1416-12**
7/8	1	1	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**P210FI-1416-16**
1	1 1/8	1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**P210FI-1618-08**
1	1 1/8	3/4	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**P210FI-1618-12**
1	1 1/8	1	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**P210FI-1618-16**
1 1/4	1 13/32	1	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**P210FI-2022-16**
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**P210FI-2022-20**
1 1/2	1 21/32	1	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**P210FI-2426-16**
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**P210FI-2426-24**
1 3/4	1 15/16	2	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**P210FI-2831-32**
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**P210FI-3235-32**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
5/16	3/8	1/4	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**P210FI-0506-04**
5/16	3/8	3/8	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**P210FI-0506-06**
5/16	3/8	1/2	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**P210FI-0506-08**
3/8	15/32	1/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**P210FI-0607-04**
3/8	15/32	3/8	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**P210FI-0607-06**
3/8	15/32	1/2	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**P210FI-0607-08**
3/8	15/32	3/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**P210FI-0607-12**
7/16	17/32	1/2	.7500	.0460	.4406	.4379	.5316	.5309	.4365	.4355	**P210FI-0708-08**
1/2	19/32	1/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**P210FI-0809-04**
1/2	19/32	3/8	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**P210FI-0809-06**
1/2	19/32	1/2	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**P210FI-0809-08**
1/2	19/32	3/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**P210FI-0809-12**
1/2	19/32	1	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**P210FI-0809-16**
5/8	23/32	1/2	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**P210FI-1011-08**
5/8	23/32	3/4	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**P210FI-1011-12**
5/8	23/32	1	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**P210FI-1011-16**
3/4	7/8	1/2	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**P210FI-1214-08**
3/4	7/8	3/4	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**P210FI-1214-12**
3/4	7/8	1	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**P210FI-1214-16**
7/8	1	1/2	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**P210FI-1416-08**
7/8	1	3/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**P210FI-1416-12**
7/8	1	1	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**P210FI-1416-16**
1	1 1/8	1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**P210FI-1618-08**
1	1 1/8	3/4	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**P210FI-1618-12**
1	1 1/8	1	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**P210FI-1618-16**
1 1/4	1 13/32	1	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**P210FI-2022-16**
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**P210FI-2022-20**
1 1/2	1 21/32	1	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**P210FI-2426-16**
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**P210FI-2426-24**
1 3/4	1 15/16	2	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**P210FI-2831-32**
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**P210FI-3235-32**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
3/8	15/32	1/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**QFI-0607-04**
3/8	15/32	1/2	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**QFI-0607-08**
1/2	19/32	1/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**QFI-0809-04**
1/2	19/32	1/2	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**QFI-0809-08**
1/2	19/32	3/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**QFI-0809-12**
5/8	23/32	3/4	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**QFI-1011-12**
5/8	3/4	1/2	1.0000	.0620	.6290	.6263	.7510	.7500	.6250	.6240	**QFI-1012-08**
3/4	7/8	1/2	1.1250	.0620	.7541	.7507	.8755	.8747	.7491	.7479	**QFI-1214-08**
3/4	7/8	3/4	1.1250	.0620	.7541	.7507	.8755	.8747	.7491	.7479	**QFI-1214-12**
3/4	7/8	1	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**QFI-1214-16**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
7/8	1	3/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**QFI-1416-12**
7/8	1	1	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**QFI-1416-16**
1	1 1/8	1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**QFI-1618-08**
1	1 1/8	1	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**QFI-1618-16**
1	1 1/8	1 1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**QFI-1618-24**
1 1/8	1 9/32	3/4	1.5620	.0780	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**QFI-1820-12**
1 1/8	1 9/32	1 1/2	1.5620	.0780	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**QFI-1820-24**
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**QFI-2022-20**
1 1/4	1 13/32	1 1/2	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**QFI-2022-24**
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**QFI-2426-24**
1 3/4	1 15/16	2	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**QFI-2831-32**
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**QFI-3235-32**
2 1/4	2 7/16	2	2.7500	.0930	2.2577	2.2531	2.4377	2.4365	2.2507	2.2489	**QFI-3639-32**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	**Q2FI-0203-03**
3/16	1/4	1/4	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	**Q2FI-0304-04**
1/4	5/16	3/8	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**Q2FI-0405-06**
1/4	5/16	1/2	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**Q2FI-0405-08**
5/16	3/8	1/4	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**Q2FI-0506-04**
5/16	3/8	3/8	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**Q2FI-0506-06**
5/16	3/8	1/2	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**Q2FI-0506-08**
3/8	15/32	1/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**Q2FI-0607-04**
3/8	15/32	3/8	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**Q2FI-0607-06**
3/8	15/32	1/2	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**Q2FI-0607-08**
3/8	15/32	3/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**Q2FI-0607-12**
7/16	17/32	1/2	.7500	.0460	.4406	.4379	.5316	.5309	.4365	.4355	**Q2FI-0708-08**
1/2	19/32	1/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**Q2FI-0809-04**
1/2	19/32	3/8	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**Q2FI-0809-06**
1/2	19/32	1/2	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**Q2FI-0809-08**
1/2	19/32	3/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**Q2FI-0809-12**
1/2	19/32	1	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**Q2FI-0809-16**
5/8	23/32	1/2	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**Q2FI-1011-08**
5/8	23/32	3/4	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**Q2FI-1011-12**
5/8	23/32	1	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**Q2FI-1011-16**
3/4	7/8	1/2	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**Q2FI-1214-08**
3/4	7/8	3/4	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**Q2FI-1214-12**
3/4	7/8	1	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	**Q2FI-1214-16**
7/8	1	1/2	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**Q2FI-1416-08**
7/8	1	3/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**Q2FI-1416-12**
7/8	1	1	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**Q2FI-1416-16**
1	1 1/8	1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**Q2FI-1618-08**
1	1 1/8	3/4	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**Q2FI-1618-12**

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Inch iglidur® form F

d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1	1 1/8	1	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**Q2FI-1618-16**
1 1/4	1 13/32	1	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**Q2FI-2022-16**
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**Q2FI-2022-20**
1 1/2	1 21/32	1	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**Q2FI-2426-16**
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**Q2FI-2426-24**
1 3/4	1 15/16	2	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**Q2FI-2831-32**
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**Q2FI-3235-32**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	**WFI-0203-03**
1/8	3/16	1/4	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	**WFI-0203-04**
1/8	3/16	3/8	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	**WFI-0203-06**
3/16	1/4	1/8	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	**WFI-0304-02**
3/16	1/4	1/4	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	**WFI-0304-04**
3/16	1/4	3/8	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	**WFI-0304-06**
3/16	1/4	1/2	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	**WFI-0304-08**
1/4	5/16	1/4	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**WFI-0405-04**
1/4	5/16	5/16	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**WFI-0405-05**
1/4	5/16	3/8	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**WFI-0405-06**
1/4	5/16	1/2	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**WFI-0405-08**
1/4	5/16	3/4	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	**WFI-0405-12**
5/16	3/8	1/4	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**WFI-0506-04**
5/16	3/8	3/8	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**WFI-0506-06**
5/16	3/8	1/2	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**WFI-0506-08**
5/16	3/8	3/4	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	**WFI-0506-12**
3/8	15/32	1/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**WFI-0607-04**
3/8	15/32	3/8	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**WFI-0607-06**
3/8	15/32	1/2	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**WFI-0607-08**
3/8	15/32	3/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	**WFI-0607-12**
7/16	17/32	1/2	.7500	.0460	.4406	.4379	.5316	.5309	.4365	.4355	**WFI-0708-08**
1/2	19/32	1/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**WFI-0809-04**
1/2	19/32	3/8	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**WFI-0809-06**
1/2	19/32	1/2	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**WFI-0809-08**
1/2	19/32	3/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**WFI-0809-12**
1/2	19/32	1	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	**WFI-0809-16**
5/8	23/32	9/32	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**WFI-1011-045**
5/8	23/32	1/2	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**WFI-1011-08**
5/8	23/32	3/4	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**WFI-1011-12**
5/8	23/32	1	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**WFI-1011-16**
5/8	23/32	1 1/2	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	**WFI-1011-24**
3/4	7/8	1/2	1.1250	.0620	.7541	.7507	.8755	.8747	.7491	.7479	**WFI-1214-08**
3/4	7/8	5/8	1.1250	.0620	.7541	.7507	.8755	.8747	.7491	.7479	**WFI-1214-10**
3/4	7/8	3/4	1.1250	.0620	.7541	.7507	.8755	.8747	.7491	.7479	**WFI-1214-12**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
3/4	7/8	1	1.1250	.0620	.7541	.7507	.8755	.8747	.7491	.7479	**WFI-1214-16**
3/4	7/8	1 1/2	1.1250	.0620	.7541	.7507	.8755	.8747	.7491	.7479	**WFI-1214-24**
7/8	1	1/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**WFI-1416-04**
7/8	1	15/32	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**WFI-1416-075**
7/8	1	1/2	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**WFI-1416-08**
7/8	1	23/32	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**WFI-1416-115**
7/8	1	3/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**WFI-1416-12**
7/8	1	1	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**WFI-1416-16**
7/8	1	1 1/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**WFI-1416-20**
7/8	1	1 1/2	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**WFI-1416-24**
7/8	1	5/8	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**WFI-141618-10**
7/8	1	11/16	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	**WFI-141620-11**
1	1 1/8	1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**WFI-1618-08**
1	1 1/8	3/4	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**WFI-1618-12**
1	1 1/8	1	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**WFI-1618-16**
1	1 1/8	1 1/4	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**WFI-1618-20**
1	1 1/8	1 1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	**WFI-1618-24**
1 1/8	1 9/32	1/2	1.5620	.0780	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**WFI-1820-08**
1 1/8	1 9/32	3/4	1.5620	.0780	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**WFI-1820-12**
1 1/8	1 9/32	1 1/2	1.5620	.0780	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**WFI-1820-24**
1 1/4	1 13/32	3/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**WFI-2022-12**
1 1/4	1 13/32	1	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**WFI-2022-16**
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**WFI-2022-20**
1 1/4	1 13/32	1 1/2	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**WFI-2022-24**
1 3/8	1 17/32	1	1.8750	.0780	1.3798	1.3758	1.5318	1.5308	1.3738	1.3722	**WFI-2224-16**
1 1/2	1 21/32	3/4	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**WFI-2426-12**
1 1/2	1 21/32	1	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**WFI-2426-16**
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**WFI-2426-24**
1 3/4	1 15/16	1	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**WFI-2831-16**
1 3/4	1 15/16	1 1/2	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**WFI-2831-24**
1 3/4	1 15/16	2	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**WFI-2831-32**
2	2 3/16	1	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**WFI-3235-16**
2	2 3/16	1 1/2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**WFI-3235-24**
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**WFI-3235-32**

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d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.3120	.0320	.1266	.1247	.1878	.1873	.1243	.1236	**XFI-0203-03**
1/8	3/16	3/8	.3120	.0320	.1266	.1247	.1878	.1873	.1243	.1236	**XFI-0203-06**
3/16	1/4	1/4	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	**XFI-0304-04**
3/16	1/4	3/8	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	**XFI-0304-06**
3/16	1/4	1/2	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	**XFI-0304-08**
1/4	5/16	3/16	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**XFI-0405-03**
1/4	5/16	1/4	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**XFI-0405-04**

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Inch iglidur® form F

d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/4	5/16	3/8	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**XFI-0405-06**
1/4	5/16	1/2	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**XFI-0405-08**
1/4	5/16	3/4	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**XFI-0405-12**
5/16	3/8	1/4	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**XFI-0506-04**
5/16	3/8	3/8	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**XFI-0506-06**
5/16	3/8	1/2	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**XFI-0506-08**
3/8	15/32	1/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**XFI-0607-04**
3/8	15/32	3/8	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**XFI-0607-06**
3/8	15/32	1/2	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**XFI-0607-08**
3/8	15/32	3/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**XFI-0607-12**
7/16	17/32	1/2	.7500	.0460	.4399	.4371	.5316	.5309	.4365	.4355	**XFI-0708-08**
1/2	19/32	1/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**XFI-0809-04**
1/2	19/32	3/8	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**XFI-0809-06**
1/2	19/32	1/2	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**XFI-0809-08**
1/2	19/32	3/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**XFI-0809-12**
1/2	19/32	1	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**XFI-0809-16**
5/8	23/32	1/2	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**XFI-1011-08**
5/8	23/32	3/4	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**XFI-1011-12**
5/8	23/32	1	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**XFI-1011-16**
5/8	23/32	1 1/2	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**XFI-1011-24**
3/4	7/8	1/2	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**XFI-1214-08**
3/4	7/8	3/4	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**XFI-1214-12**
3/4	7/8	1	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**XFI-1214-16**
3/4	7/8	1 3/4	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**XFI-1214-28**
7/8	1	1/2	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**XFI-1416-08**
7/8	1	3/4	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**XFI-1416-12**
7/8	1	1	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**XFI-1416-16**
1	1 1/8	1/2	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**XFI-1618-08**
1	1 1/8	3/4	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**XFI-1618-12**
1	1 1/8	1	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**XFI-1618-16**
1	1 1/8	1 1/2	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**XFI-1618-24**
1 1/8	1 9/32	3/4	1.5620	.0780	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**XFI-1820-12**
1 1/4	1 13/32	1	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**XFI-2022-16**
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**XFI-2022-20**
1 1/4	1 13/32	2	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**XFI-2022-32**
1 1/2	1 21/32	3/4	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**XFI-2426-12**
1 1/2	1 21/32	1	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**XFI-2426-16**
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**XFI-2426-24**
1 1/2	1 21/32	1 5/8	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	**XFI-2426-26**
1 3/4	1 15/16	1	2.3750	.0930	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**XFI-2831-16**
1 3/4	1 15/16	2	2.3750	.0930	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**XFI-2831-32**
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**XFI-3235-32**
2 3/4	2 15/16	2	3.3750	.0930	2.7570	2.7523	2.9370	2.9358	2.7500	2.7490	**XFI-4447-32**

[3] After press-fit. Testing methods ▶ Page 57

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iglidur® Z Chapter ▶ Page 289

d1	d2	b1	d3	b2	d1[3]		Housing hole		Shaft size		Part No.
				h13	Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.3120	.0320	.1266	.1247	.1878	.1873	.1243	.1236	**ZFI-0203-03**
3/16	1/4	1/4	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	**ZFI-0304-04**
1/4	5/16	3/8	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**ZFI-0405-06**
1/4	5/16	1/2	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**ZFI-0405-08**
5/16	3/8	1/4	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**ZFI-0506-04**
5/16	3/8	3/8	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**ZFI-0506-06**
5/16	3/8	1/2	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**ZFI-0506-08**
3/8	15/32	1/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**ZFI-0607-04**
3/8	15/32	3/8	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**ZFI-0607-06**
3/8	15/32	1/2	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**ZFI-0607-08**
3/8	15/32	3/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**ZFI-0607-12**
7/16	17/32	1/2	.7500	.0460	.4399	.4371	.5316	.5309	.4365	.4355	**ZFI-0708-08**
1/2	19/32	1/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**ZFI-0809-04**
1/2	19/32	3/8	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**ZFI-0809-06**
1/2	19/32	1/2	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**ZFI-0809-08**
1/2	19/32	3/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**ZFI-0809-12**
1/2	19/32	1	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**ZFI-0809-16**
5/8	23/32	1/2	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**ZFI-1011-08**
5/8	23/32	3/4	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**ZFI-1011-12**
5/8	23/32	1	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**ZFI-1011-16**
5/8	3/4	3/4	1.0000	.0460	.6284	.6256	.7510	.7500	.6250	.6240	**ZFI-1012-08**
3/4	7/8	1/2	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**ZFI-1214-08**
3/4	7/8	3/4	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**ZFI-1214-12**
3/4	7/8	1	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**ZFI-1214-16**
7/8	1	1/2	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**ZFI-1416-08**
7/8	1	3/4	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**ZFI-1416-12**
7/8	1	1	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**ZFI-1416-16**
1	1 1/8	1/2	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**ZFI-1618-08**
1	1 1/8	3/4	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**ZFI-1618-12**
1	1 1/8	1	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**ZFI-1618-16**
1 1/8	1 9/32	11/2	1.5620	.0780	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**ZFI-1820-12**
1 1/8	1 9/32	11/2	1.5620	.0780	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**ZFI-1820-24**
1 1/4	1 13/32	1	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**ZFI-2022-16**
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**ZFI-2022-20**
1 1/4	1 13/32	11/4	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**ZFI-2022-24**
1 1/2	1 21/32	1	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**ZFI-2426-16**
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**ZFI-2426-24**
1 3/4	1 15/16	2	2.3750	.0930	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**ZFI-2831-32**
2	2 3/16	2	2.6250	.0930	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**ZFI-3235-32**

[3] After press-fit. Testing methods ▶ Page 57

Imperial product range | iglidur® | Thrust washers

Thrust washer (form T)



Image exemplary

iglidur® A200 Chapter ▶ Page 409

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 Chapter ▶ Page 81

d1	d2	s	d4	d5	h	d6	Part No.
+.010	-.010	-.0020	±.005	.015 + .005	+.008	+.005	
.5000	.8750	.0585	.6920	.0670	.0400	.8750	**GTI-0814-01**
.6250	1.1250	.0585	.8800	.0990	.0400	1.125	**GTI-1018-01**
.7500	1.2500	.0585	1.005	.0990	.0400	1.250	**GTI-1220-01**
.8750	1.5000	.0585	1.192	.1300	.0400	1.500	**GTI-1424-01**
1.0000	1.7500	.0585	1.380	.1300	.0400	1.750	**GTI-1628-01**
1.2500	2.1250	.0585	1.692	.1610	.0400	2.125	**GTI-2034-01**
1.5000	2.5000	.0585	2.005	.1920	.0400	2.500	**GTI-2440-01**
1.7500	2.7500	.0585	2.255	.1920	.0400	2.750	**GTI-2844-01**
2.0000	3.0000	.0895	2.505	.1920	.0700	3.000	**GTI-3248-01**

iglidur® M250 Chapter ▶ Page 107

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

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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

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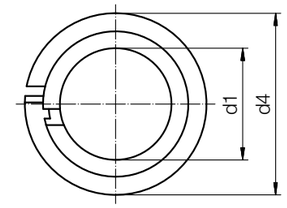
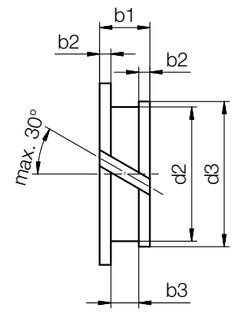
Clip bearings



Image exemplary





Clip bearings

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d1	d2	d3	d4	b1	b2	b3	Part No.
D11[7]				+0.20	–0.10		
3/16	0.2343	1/4	5/16	0.138	0.032	0.074	**MCI-03-01**
3/16	0.2343	1/4	5/16	0.200	0.032	0.136	**MCI-03-02**
1/4	0.3125	11/32	7/16	0.138	0.032	0.074	**MCI-04-01**
1/4	0.3125	11/32	7/16	0.200	0.032	0.136	**MCI-04-02**
5/16	0.3750	13/32	1/2	0.138	0.032	0.074	**MCI-05-01**
5/16	0.3750	13/32	1/2	0.200	0.032	0.136	**MCI-05-02**
3/8	0.4375	15/32	9/16	0.138	0.032	0.074	**MCI-06-01**
3/8	0.4375	15/32	9/16	0.200	0.032	0.136	**MCI-06-02**
7/16	0.5000	17/32	5/8	0.138	0.032	0.074	**MCI-07-01**
7/16	0.5000	17/32	5/8	0.200	0.032	0.136	**MCI-07-02**
1/2	0.5625	19/32	11/16	0.138	0.032	0.074	**MCI-08-01**
1/2	0.5625	19/32	11/16	0.200	0.032	0.136	**MCI-08-02**

[7] d1 value is measured with a plug gauge after fitting into a reference housing d2 (+0.005).
Please see D11 tolerances table ▶ Page 589

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Split bearings, low bearing clearance



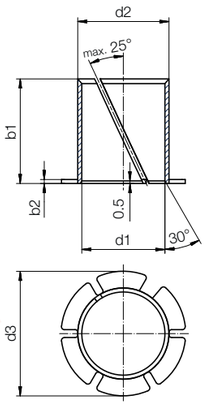

Image exemplary

Split bearings with anti-rotation feature



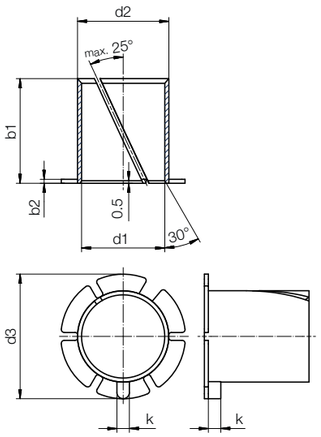

Image exemplary

Split bearings, low bearing clearance

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d1	Shaft diameter		d2	Housing hole		d3	b1	b1	b2	Part No.
	Min.	Max.		Min.	Max.			tolerance		
3/16	.1875	.1865	0.2339	.2351	.2339	19/61	3/16	–0.016	0.0252	**MYI-03-03**
1/4	.0025	.2490	0.2965	.2979	.2965	13/32	1/4	–0.016	0.0252	**MYI-04-04**
5/16	.3125	.3115	0.3744	.3758	.3744	1/2	5/16	–0.017	0.0299	**MYI-05-05**
3/8	.3750	.3740	0.4370	.4387	.4370	19/32	3/8	–0.017	0.0299	**MYI-06-06**
7/16	.4375	.4365	0.4996	.5013	.4996	21/32	7/16	–0.017	0.0299	**MYI-07-07**
1/2	.5000	.4990	0.5618	.5635	.5618	3/4	3/8	–0.018	0.0299	**MYI-08-06**
1/2	.5000	.4990	0.5618	.5635	.5618	3/4	1/2	–0.018	0.0299	**MYI-08-08**
5/8	.6250	.6240	0.6870	.6887	.6870	15/16	7/16	–0.018	0.0299	**MYI-10-07**
5/8	.6250	.6240	0.6870	.6887	.6870	15/16	5/8	–0.018	0.0299	**MYI-10-10**
5/8	.6250	.6240	0.6870	.6887	.6870	15/16	1 1/8	–0.018	0.0299	**MYI-10-18**
3/4	.7500	.7490	0.8118	.8139	.8118	1 1/8	3/4	–0.019	0.0299	**MYI-12-12**
3/4	.7500	.7490	0.8118	.8139	.8118	1 1/8	1 1/8	–0.019	0.0299	**MYI-12-18**
7/8	.8750	.8740	0.9370	.9391	.9370	1 5/16	15/32	–0.019	0.0299	**MYI-14-7.5**
7/8	.8750	.8740	0.9370	.9391	.9370	1 5/16	7/8	–0.019	0.0299	**MYI-14-14**
1	1.00	.9985	1.0933	1.0954	1.0933	1 1/2	7/8	–0.020	0.0449	**MYI-16-14**
1	1.00	.9985	1.0933	1.0954	1.0933	1 1/2	1	–0.020	0.0449	**MYI-16-16**

Split bearings with anti-rotation feature

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d1	Shaft diameter		d2	Housing hole		d3	b1	b1	b2	k	Part No.
	Min.	Max.		Min.	Max.			tolerance			
1/4	.0025	.2490	0.2965	.2979	.2965	13/32	1/4	–0.016	0.0252	1/16	**MYI-04-04-K**
5/16	.3125	.3115	0.3744	.3758	.3744	1/2	5/16	–0.017	0.0299	3/32	**MYI-05-05-K**
1/2	.5000	.4990	0.5618	.5635	.5618	3/4	1/2	–0.018	0.0299	3/32	**MYI-08-08-K**
5/8	.6250	.6240	0.6870	.6887	.6870	15/16	7/16	–0.018	0.0299	1/8	**MYI-10-07-K**
5/8	.6250	.6240	0.6870	.6887	.6870	15/16	5/8	–0.018	0.0299	1/8	**MYI-10-10-K**
3/4	.7500	.7490	0.8118	.8139	.8118	1 1/8	3/4	–0.019	0.0299	1/8	**MYI-12-12-K**
1	1.00	.9985	1.0933	1.0954	1.0933	1 1/2	1	–0.020	0.0449	5/32	**MYI-16-16-K**

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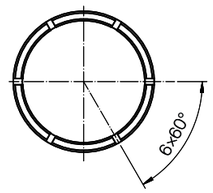
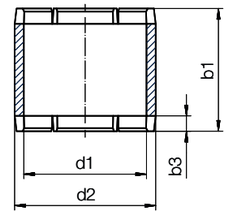
Inch iglidur® – other designs

Clearance-free, pre-loaded sleeve plain bearings







JVSI – clearance-free pre-loaded plain bearings

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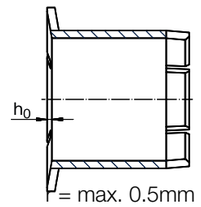
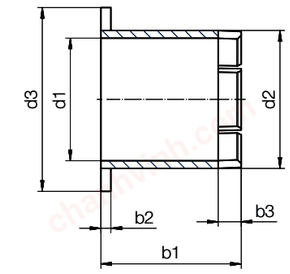
d1	d1[14]		d2	b1	b1 tolerance	Part No.
	Max.	Min.		h13		
3/8	.3773	.3750	1/2	3/8	0.075	**JVSI-0608-06**
1/2	.5040	.5013	5/8	1/2	0.075	**JVSI-0810-08**
5/8	.6297	.6270	3/4	5/8	0.075	**JVSI-1012-10**
3/4	.7541	.7505	1 1/8	3/4	0.075	**JVSI-1214-12**
1	1.0041	1.0007	28.58	1	0.100	**JVSI-1618-16**

[14] d1 measured after press-fit in housing hole. d2 H7 within the measurement plane

Sleeve bearings for all shaft surfaces







PEPSI – for all shaft surfaces

Chapter ▶ Page 615

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**

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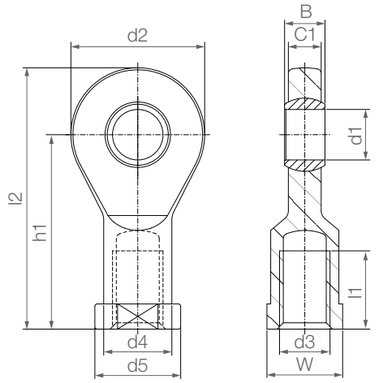
Rod ends with female thread: EBRI and EBLI





EBRI/EBLI Chapter ▶ Page 756

Part No.		d1	d2	d3	d4	d5	C1	B
Right-hand thread	Left-hand thread	E10						
EBRI-03	EBLI-03	0.1900	0.748	10–32	0.3543	0.4331	0.1732	0.1900
EBRI-04	EBLI-04	0.2500	0.827	1/4–28	0.4331	0.5118	0.1732	0.2500
EBRI-05	EBLI-05	0.3125	0.945	5/16–24	0.5118	0.6299	0.2362	0.3125
EBRI-06	EBLI-06	0.3750	1.142	3/8–24	0.5906	0.7480	0.2756	0.3750
EBRI-07	EBLI-07	0.4375	1.339	7/16–20	0.7087	0.8661	0.3150	0.4063
EBRI-08	EBLI-08	0.5000	1.339	1/2–20	0.7087	0.8661	0.3150	0.4063
EBRI-10[17]	EBLI-10[17]	0.6250	1.693	5/8–18	–	–	0.4134	0.5000
EBRI-12	EBLI-12	0.7500	2.087	3/4–16	1.0630	1.3386	0.5118	0.6250

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

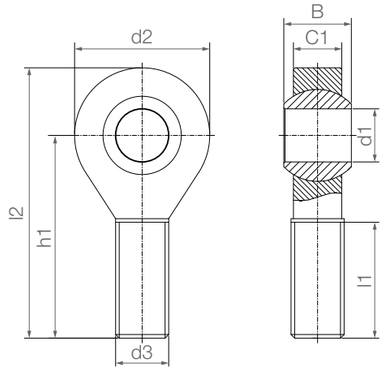
Part No.		Max. static tensile strain		Max. axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight
Right-hand thread	Left-hand thread	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Thread [inch]	Female thread [Nm]	[Nm]	[g]
EBRI-03	EBLI-03	1.300	650	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

Inch igubal®

Inch product range | igubal® | Rod end bearings

Rod ends with male thread: KARI and KALI





KARI/KALI Chapter ▶ Page 752

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 strain		Max. axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight
Right-hand thread	Left-hand thread	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	[inch]	Male thread [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

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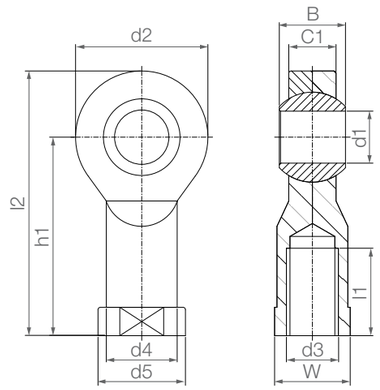
Inch product range | igubal® | Rod end bearings

Rod ends with female thread: KBRI and KBLI





KBRI/KBLI Chapter ▶ Page 746

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°

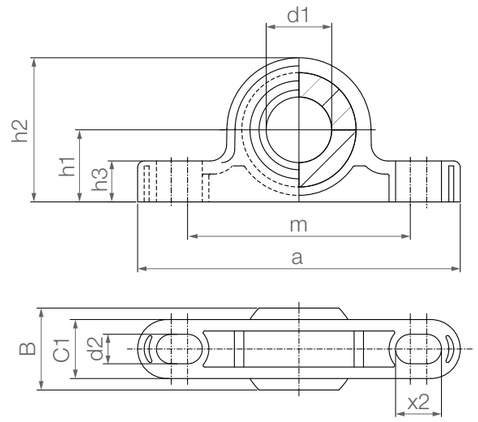
[18)] Spanner flat design

Part No.		Max. static tensile strain		Max. axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight
Right-hand thread	Left-hand thread	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Thread [inch]	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

Inch product range | igubal® | Pillow block bearings

Pillow block bearings: KSTI





KSTI Chapter ▶ Page 792

Part No.	d1 E10	B	C1	h1	h2	m	a	h3	d2	X2	Max. pivot angle
KSTI-03	.1900	.312	.234	.290	.566	1.00	1.40	.165	.137	.200	25°
KSTI-04	.2500	.375	.250	.390	.705	1.25	1.75	.205	.137	.250	25°
KSTI-05	3125	.437	.312	.430	.824	1.35	1.95	.236	.150	.280	25°
KSTI-06	.3750	.500	.359	.550	1.022	1.80	2.40	.376	.180	.300	22°
KSTI-07	.4375	.562	.406	.570	1.082	1.85	2.50	.315	.205	.330	22°
KSTI-08	.5000	.625	.453	.600	1.191	2.00	2.80	.354	.205	.380	22°
KSTI-10	.6250	.750	.484	.700	1.409	2.30	3.35	.413	.205	.470	22°
KSTI-12	.7500	.875	.593	.860	1.687	2.70	3.75	.472	.270	.530	22°
KSTI-16	1.00	1.375	1.005	1.10	2.163	3.50	5.00	.630	.520	.680	20°

Part No.	Max. static tensile strain		Max. axial static compressive force	Max. tightening torque for longitudinal holes	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 tightening torques for elongated holes correspond to the permissible tightening torque of the fixing screws (fixing category 5.8).

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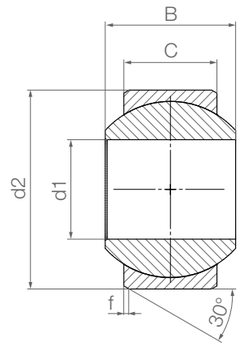
Spherical bearings: KGLI





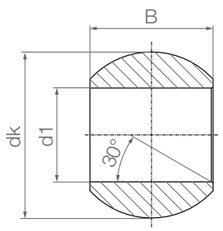
KGLI Chapter ▶ Page 822

Part No.	Max. static load		Max. tightening torque through ball	d1	d2	B	C	f	Max. pivot angle	Weight
	radial	axial[29]		E10						
	[N]	[N]	[Nm]							[g]
KGLI-03	1.000	150	5	.1900	.5625	.312	.218	0.3	34°	1.2
KGLI-04	1.500	250	10	.2500	.6562	.375	.250	0.3	30°	1.7
KGLI-05	2.000	350	12	.3125	.7500	.437	.281	0.3	29°	2.6
KGLI-06	2.800	400	20	.3750	.8125	.500	.312	0.5	25°	3.3
KGLI-07	3.750	450	30	.4375	.9375	.562	.343	0.5	25°	4.9
KGLI-08	4.250	500	35	.5000	1.0625	.625	.390	0.5	25°	7.1
KGLI-10	5.300	750	40	.6250	1.1875	.750	.500	0.5	23°	10.2
KGLI-12	8.500	850	55	.7500	1.4375	.875	.593	0.5	23°	17.5
KGLI-16	13.600	2.500	65	1.00	2.125	1.375	1.005	0.5	23°	62.7

[29] The maximum static axial load is determined when fitted into a blind housing

Standard spherical balls: WKI and WEI

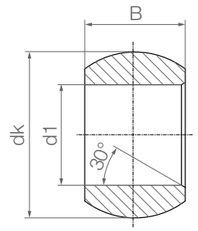




WKI Chapter ▶ Page 845

Part No.	d1	dK	B	Weight
	E10			[g]
WKI-03	.1900	.444	.312	0.6
WKI-04	.2500	.516	.375	1.0
WKI-05	.3125	.625	.437	1.7
WKI-06	.3750	.718	.500	2.3
WKI-07	.4375	.828	.562	3.5
WKI-08	.5000	.938	.625	5.0
WKI-10	.6250	1.125	.750	8.2
WKI-12	.7500	1.312	.875	12.5
WKI-16	1.00	1.75	1.375	31.7



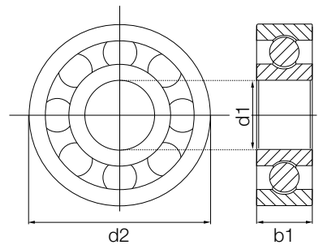


WEI Chapter ▶ Page 845

Part No.	d1	dK	B	Weight
	H10			[g]
WEI-03	.1900	.402	.1900	0.3
WEI-04	.2500	.402	.2500	0.3
WEI-05	.3125	.520	.3125	0.7
WEI-06	.3750	.630	.3750	1.3
WEI-07	.4375	.709	.4063	1.6
WEI-08	.5000	.709	.4063	2.6
WEI-10	.6250	.945	.5000	3.1
WEI-12	.7500	1.138	.6250	5.9
WEI-16	1.00	1.398	.7500	9.2

Radial deep groove ball bearings, up to +80°C





xirodur® B180 Chapter ▶ Page 886

Part No.	Race	Cage	Balls		Inner Ø	Outer Ø	Width
			ES	GL	d1	d2	b1
BB-I-0620-06-B180-10-☐[142]	B180	PA	1.4401	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-1228-09-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 ball bearings with stainless steel balls please add suffix"-ES", for glass balls please add suffix "-GL".

Part No.	Max. stat. axial load capacity	Load capacity stat.	Load capacity dyn.	Max. speed	Weight ES	Weight GL
	[N]	[N]	[N]	[rpm]	[g]	[g]
BB-I-0620-06-B180-ES/-GL	35	45	49	3.700	1.6	1.0
BB-I-0820-06-B180-ES	40	47	51	3.500	1.3	–
BB-I-0824-07-B180-ES/-GL	50	60	75	3.200	1.6	1.0
BB-I-1228-09-B180-ES	55	70	89	2.200	3.9	–
BB-I-1236-12-B180-ES/-GL	75	134	150	1.050	4.9	2.9
BB-I-1636-12-B180-ES/-GL	75	134	150	2.000	7.6	5.2
BB-I-2044-12-B180-ES/-GL	78	170	193	1.600	11.0	7.9
BB-I-2452-16-B180-ES/-GL	81	260	290	1.400	20.1	13.6
BB-I-3264-12-B180-ES/-GL	85	275	320	1.050	27.3	21.3

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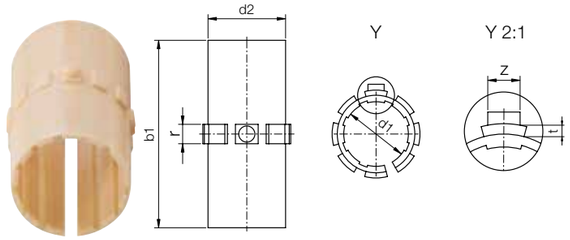
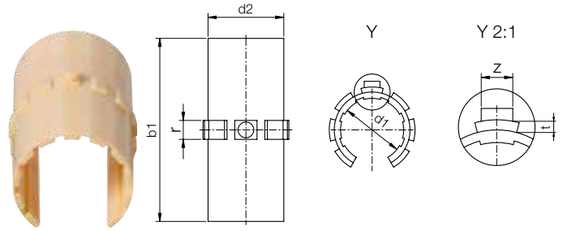
Inch product range | drylin® R | Liners

Closed, long design: JUI



Open, long design: JUIO



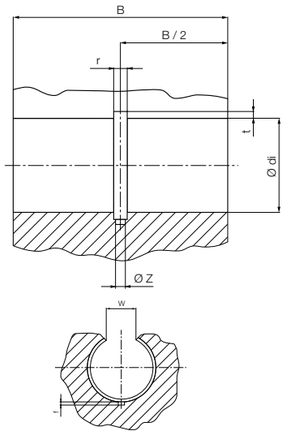
JUI-01/JUIO-01 Chapter ▶ Page 1080

Part No.		Shaft	Tolerance[78)]	d2	b1	r	t	z
Closed	Open	Ø					–0.004	–0.020
JUI-01-06	–	3/8	+0.0016 +0.0024	0.4684	0.846	0.1250	0.024	0.0866
JUI-01-08	JUIO-01-08	1/2	+0.0016 +0.0024	0.5934	1.220	0.1250	0.032	0.1024
JUI-01-10	JUIO-01-10	5/8	+0.0016 +0.0024	0.7184	1.460	0.1406	0.032	0.1181
JUI-01-12	JUIO-01-12	3/4	+0.0016 +0.0024	0.8747	1.575	0.1875	0.032	0.1339
JUI-01-16	JUIO-01-16	1	+0.0016 +0.0024	1.1247	2.205	0.1875	0.032	0.1496
JUI-01-20	JUIO-01-20	1 1/4	+0.0020 +0.0032	1.4058	2.579	0.1875	0.032	0.1496
JUI-01-24	JUIO-01-24	1 1/2	+0.0020 +0.0032	1.6558	2.953	0.2500	0.052	0.1811
JUI-01-32	JUIO-01-32	2	+0.0024 +0.0040	2.1871	3.937	0.2813	0.052	0.2280

Housing hole 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	0.0311	.039	.102
JUI-01-08	JUIO-01-08	.5940	.5934	1.25	0.394	.1250	0.0391	.059	.122
JUI-01-10	JUIO-01-10	.7190	.7184	1.5	0.433	.1406	0.0391	.067	.142
JUI-01-12	JUIO-01-12	.8755	.8747	1.625	0.492	.1875	0.0391	.079	.142
JUI-01-16	JUIO-01-16	1.1255	1.1247	2.25	0.63	.1875	0.0391	.079	.161
JUI-01-20	JUIO-01-20	1.4068	1.4058	2.625	0.709	.1875	0.0391	.079	.161
JUI-01-24	JUIO-01-24	1.6568	1.6558	3	0.866	.2500	0.0652	.089	.200
JUI-01-32	JUIO-01-32	2.1881	2.1871	4	1.181	.2813	0.0652	.098	.240

[78)] According to igus® testing method ▶ Page 1146
Please note: Installation instructions ▶ Page 1079



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 1615 and 1616

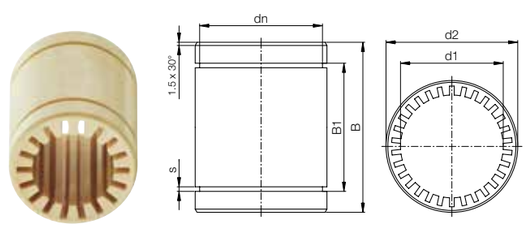
JUIO can be combined with:



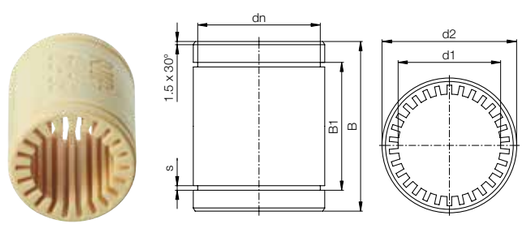
OJUI-01, OJUI-03
▶ Page 1614

Inch product range | drylin® R | Solid plastic bearings

Standard design: RJI



Precise: RJIP



RJI-01/RJIP-01 Chapter ▶ Page 1102

Part No.		Shaft	Tolerance[78)]	Tolerance[78)]	F max.	F max.
		Ø	Bearing inner diameter	Bearing inner diameter	dynamic[82)]	static[82)]
Standard	Precise		– RJI	– RJIP	P = 2.5MPa	P = 17.5MPa
–	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

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	0.6250	0.87500	0.6890	0.0410	0.5870
RJI-01-08	RJIP-01-08	1/2	0.8750	1.25000	1.0125	0.0480	0.8200
RJI-01-10	RJIP-01-10	5/8	1.1250	1.50000	1.0950	0.0580	1.0600
RJI-01-12	RJIP-01-12	3/4	1.2500	1.62500	1.2500	0.0580	1.1770
RJI-01-16	RJIP-01-16	1	1.5625	2.25000	1.8640	0.0700	1.4710
RJI-01-20	RJIP-01-20	1 1/4	2.0000	2.62500	1.9840	0.0700	1.8890

[78)] According to igus® testing method ▶ Page 1146, [82)] Design tips ▶ Page 1078
Please note: Installation instructions ▶ Page 1079

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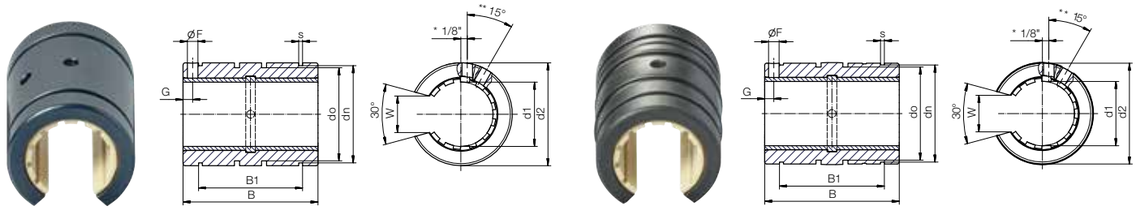
Imperial product range | drylin® R | Adapters

Open, anodised aluminium adapters – 01 version (standard)



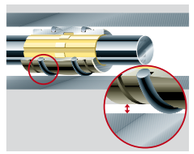
Open, anodised aluminium adapters – 03 version (floating bearing)

OJUI-01/OJUI-03 Chapter ▶ Page 1115

Part No.	Shaft Ø	Tolerance[78)]	d2	B	W ±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 h10	B1	F +0.004	G +0.004	do
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





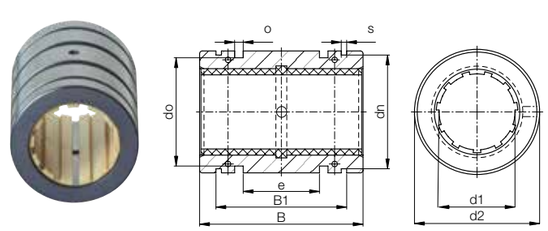
[78)] According to igus® testing method ▶ Page 1146

Please note: Installation instructions ▶ Page 1079

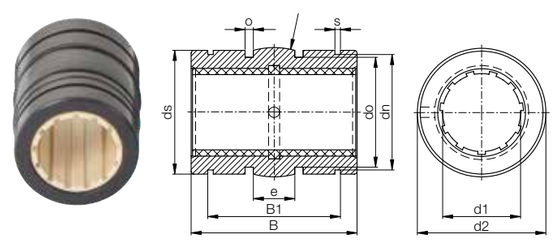
Imperial product range | drylin® R | Adapters

Inch drylin® R

Closed, anodised aluminium adapters – 01 version (standard)



Closed, anodised aluminium adapters – 03 version (floating bearing)

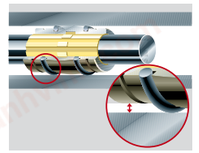


RJUI-01/RJUI-03 Chapter ▶ Page 1106

Part No.	Shaft Ø	Tolerance[78)]	d2	B	B1
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 H10	dn h10	ds h10	do	e	o –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 1146

[110)] Nominal width smaller than 3/8" are delivered with sleeve bearings

Please note: Installation instructions ▶ Page 1079

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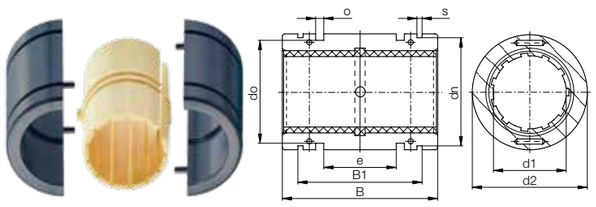
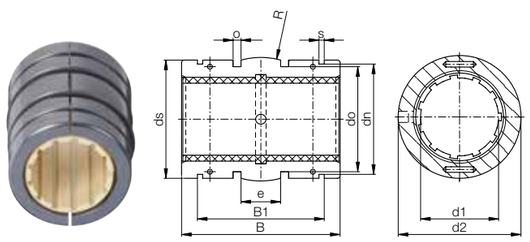
Imperial product range | drylin® R | Adapters

Split aluminium adapters – 01 version (standard)



Split aluminium adapters – 03 version (floating bearing)

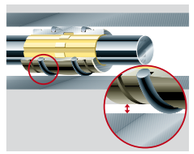


TJUI-01/TJUI-03 Chapter ▶ Page 1113

Part No.	Shaft Ø	Tolerance[78)]	d2	d2 Tolerance[78)]	B	B1 H10
TJUI-01-08/-03-08	1/2	+0.0016 +0.0036	.8750	–0.0008 –0.0016	1.25/1.242	.9790
TJUI-01-10/-03-10	5/8	+0.0016 +0.0036	1.125	–0.0008 –0.0016	1.50/1.492	1.124
TJUI-01-12/-03-12	3/4	+0.0016 +0.0036	1.25	–0.0008 –0,0018	1.625/1.617	1.186
TJUI-01-16/-03-16	1	+0.0016 +0.0036	1.5625	–0.0012 –0.0022	2.25/2.2382	1.773
TJUI-01-20/-03-20	1 1/4	+0.0020 +0.0039	2.00	–0.0012 –0.0022	2.625/2.6134	2.0230
TJUI-01-24/-03-24	1 1/2	+0.0020 +0.0047	2.375	–0.0012 –0.0024	3.00/2.9843	2.44
TJUI-01-32/-03-32	2	+0.0024 +0.0057	3.00	–0.0012 –0.0024	4.00/3.9803	3.222

Part No.	s H10	dn h10	ds h10	do	e	o +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 1146

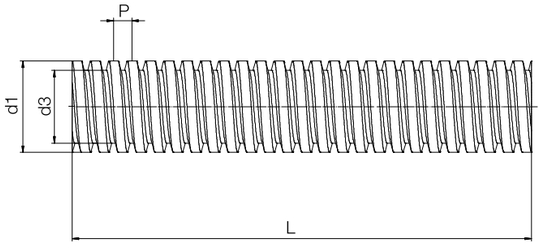
Please note: Installation instructions ▶ Page 1079

Inch product range | drylin® lead screw technology

Lead screws – "ACME" USA standard



Stainless steel, rolled, AISI 304



Technical data

Pitch variation	0.25mm to 300mm
Straightness (standard)	0.625mm to 300mm
Aligned	<0.1mm to 300mm
Tolerance (ANSI/ASME B1.5)	Class 2C

Technical data

Thread	Hand of rotation right	Pitch P [mm]	Number of thread pitches 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	20	2.43°	0.56	**ACME-3/8-20-R-ES**
3/8-12	●	2.12	12	4.03°	0.56	**ACME-3/8-12-R-ES**
3/8-10	●	2.54	10	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	●	2.54	10	4.04°	2.25	**ACME-3/4-10-R-ES**
3/4-6	●	4.23	6	2.43°	2.25	**ACME-3/4-6-R-ES**
1-10	●	2.54	10	3.64°	4.00	**ACME-1-10-R-ES**
1-5	●	3.08	5	1.82°	4.00	**ACME-1-5-R-ES**

Dimensions

Outer Ø d1 [mm]	Outer Ø d1 [inch]	Core Ø d3 [mm]	Core Ø d3 [inch]	Max. length [mm]	Part No.
6.35	0.250	4.80	0.187	1.829	**ACME-1/4-16-R-ES**
9.52	0.375	8.30	0.325	1.829	**ACME-3/8-20-R-ES**
9.52	0.375	7.40	0.292	1.829	**ACME-3/8-12-R-ES**
9.52	0.375	7.00	0.275	1.829	**ACME-3/8-10-R-ES**
12.70	0.500	10.2	0.400	1.829	**ACME-1/2-10-R-ES**
15.87	0.625	12.7	0.500	1.829	**ACME-5/8-8-R-ES**
19.05	0.750	14.9	0.585	1.829	**ACME-3/4-10-R-ES**
19.05	0.750	16.5	0.650	1.829	**ACME-3/4-6-R-ES**
25.40	1.000	20.3	0.800	1.829	**ACME-1-10-R-ES**
25.40	1.000	22.9	0.900	1.829	**ACME-1-5-R-ES**

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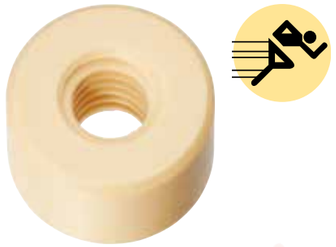
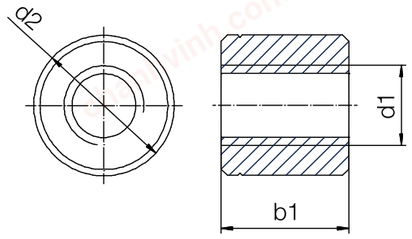
Lead screw nuts – "ACME" USA standard, iglidur® J (standard)





Technical data – iglidur® J

Thread	Efficiency	Idling torque[118)]	Coefficient of friction
	η	[Nm]	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 coefficient of friction at a 5N load

Technical data and dimensions – cylindrical lead screw nuts

Thread	Hand of rotation right	Effective support surface [mm²]	Max. stat. axial F [N] J/W300/J350/A180/R	d1 [inch]	d2 [inch]	b1 [inch]	Weight [lb] J/A180/R/J350/W300	Part No.
1/4-16	●	111	200	0.250	0.625	0.500	0.006–0.007	**JSRI-01-1/4-16**
3/8-20	●	256	1.024	0.380	0.875	0.750	0.016–0.020	**JSRI-01-3/8-20**
3/8-12	●	254	1.018	0.380	0.875	0.750	0.016–0.020	**JSRI-01-3/8-12**
3/8-10	●	245	980	0.380	0.875	0.750	0.016–0.020	**JSRI-01-3/8-10**
1/2-10	●	449	1.796	0.500	1.000	1.000	0.026–0.032	**JSRI-01-1/2-10**
5/8-8	●	568	2.272	0.630	1.375	1.000	0.053–0.063	**JSRI-01-5/8-8**
3/4-10	●	913	3.652	0.750	1.500	1.375	0.080–0.096	**JSRI-01-3/4-10**
3/4-6	●	978	3.912	0.750	1.500	1.375	0.080–0.096	**JSRI-01-3/4-6**
1-10	●	1.830	7.320	1.000	2.000	2.000	0.212–0.255	**JSRI-01-1-10**
1-5	●	1.896	7.584	1.000	2.000	2.000	0.212–0.255	**JSRI-01-1-5**

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Split lead screw nuts made from 5 iglidur® materials
▶ **www.igus-asean.com/ACME-thread**

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High efficiency at all speeds



iglidur® W300:
Highly resilient and wear-resistant



iglidur® J350:
For temperatures up to +150°C



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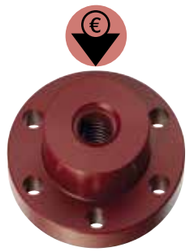
The cost-effective option for high volume



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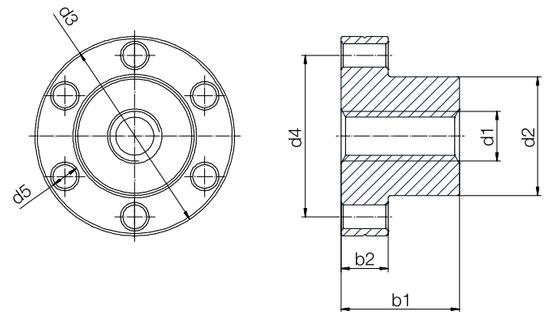
High efficiency at all speeds





Technical data – with flange

Thread	Hand of rotation right	Effective support surface [mm²]	Max. stat. axial F [N] J/A180/R/J350/W300	Part No.
1/4-16	●	111	111	**JFRI-01-1/4-16**
3/8-20	●	341	1.364	**JFRI-01-3/8-20**
3/8-12	●	327	1.320	**JFRI-01-3/8-12**
3/8-10	●	326	1.304	**JFRI-01-3/8-10**
1/2-10	●	618	2.472	**JFRI-01-1/2-10**
5/8-8	●	781	3.124	**JFRI-01-5/8-8**
3/4-10	●	913	3.652	**JFRI-01-3/4-10**
3/4-6	●	978	3.912	**JFRI-01-3/4-6**
1-10	●	1.601	6.404	**JFRI-01-1-10**
1-5	●	1.659	6.636	**JFRI-01-1-5**

Dimensions – with flange

d1 [inch]	d2 [inch]	d3 [inch]	d4 [inch]	d5 [inch]	b1 [inch]	b2 [inch]	Weight [lb] J/A180/R/J350/W300	Part No.
0.250	0.500	1.000	0.750	0.130	0.500	0.200	0.008 – 0010	**JFRI-01-1/4-16**
0.380	1.000	1.630	1.310	1.200	1.000	0.380	0.052–0.062	**JFRI-01-3/8-20**
0.380	1.000	1.630	1.310	0.200	1.000	0.380	0.052–0.062	**JFRI-01-3/8-12**
0.380	1.000	1.630	1.310	0.200	1.000	0.380	0.052–0.062	**JFRI-01-3/8-10**
0.500	1.125	1.880	1.000	0.240	1.380	0.500	0.080–0.097	**JFRI-01-1/2-10**
0.630	1.125	1.880	1.000	0.240	1.380	0.500	0.082–0.098	**JFRI-01-5/8-8**
0.750	1.125	1.880	1.500	0.240	1.380	0.500	0.072–0.087	**JFRI-01-3/4-10**
0.750	1.125	1.880	1.500	0.240	1.380	0.500	0.072–0.087	**JFRI-01-3/4-6**
1.000	1.500	2.500	2.000	0.280	1.750	0.590	0.160–0.192	**JFRI-01-1-10**
1.000	1.500	2.500	2.000	0.280	1.750	0.590	0.160–0.192	**JFRI-01-1-5**

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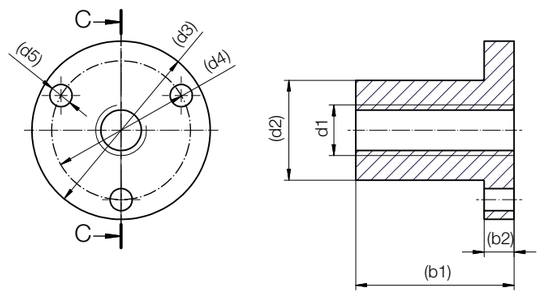
Inch product range | drylin® lead screw technology

High efficiency at all speeds





Technical data – with flange

Thread	Hand of rotation right	Effective support surface [mm²]	Max. stat. axial F [N] J4	Part No.
1/4-16	●	111	175	**J4FRI-C-01-1/4-16**
3/8-10	●	341	1.352	**J4FRI-C-01-3/8-10**
3/8-12	●	327	1.318	**J4FRI-C-01-3/8-12**
3/8-20	●	326	1.320	**J4FRI-C-01-3/8-20**
1/2-10	●	674	3.136	**J4FRI-C-01-1/2-10**
5/8-8	●	852	3.902	**J4FRI-C-01-5/8-8**
3/4-6	●	1.328	6.739	**J4FRI-C-01-3/4-6**
3/4-10	●	1.423	6.385	**J4FRI-C-01-3/4-10**
1-5	●	1.830	6.385	**J4FRI-C-01-1-5**
1-10	●	1.896	6.385	**J4FRI-C-01-1-10**

Dimensions – with flange

d1 [inch]	d2 [mm²]	d3 [mm²]	d4 [mm²]	d5 [mm²]	b1 [mm²]	b2 [mm²]	Weight [lb]	Part No.
0.250	0.50	1.00	0.750	0.140	1.0	0.19	6.90	**J4FRI-C-01-1/4-16**
0.380	0.63	1.125	0.876	0.140	1.0	0.19	9.24	**J4FRI-C-01-3/8-10**
0.380	0.63	1.125	0.876	0.140	1.0	0.19	9.24	**J4FRI-C-01-3/8-12**
0.500	0.63	1.125	0.876	0.140	1.0	0.19	9.24	**J4FRI-C-01-3/8-20**
0.630	0.75	1.50	1.126	0.140	1.5	0.19	19.5	**J4FRI-C-01-1/2-10**
0.750	0.875	1.50	1.188	0.203	1.5	0.188	21.3	**J4FRI-C-01-5/8-8**
0.630	1.13	1.75	1.438	0.203	2.0	0.25	48.1	**J4FRI-C-01-3/4-6**
0.750	1.13	1.75	1.438	0.203	2.0	0.25	48.1	**J4FRI-C-01-3/4-10**
1.000	1/1.5	2.25	1.876	0.203	2.0	0.25	83.4	**J4FRI-C-01-1-5**
1.000	1/1.5	2.25	1.876	0.203	2.0	0.25	83.4	**J4FRI-C-01-1-10**

My sketches

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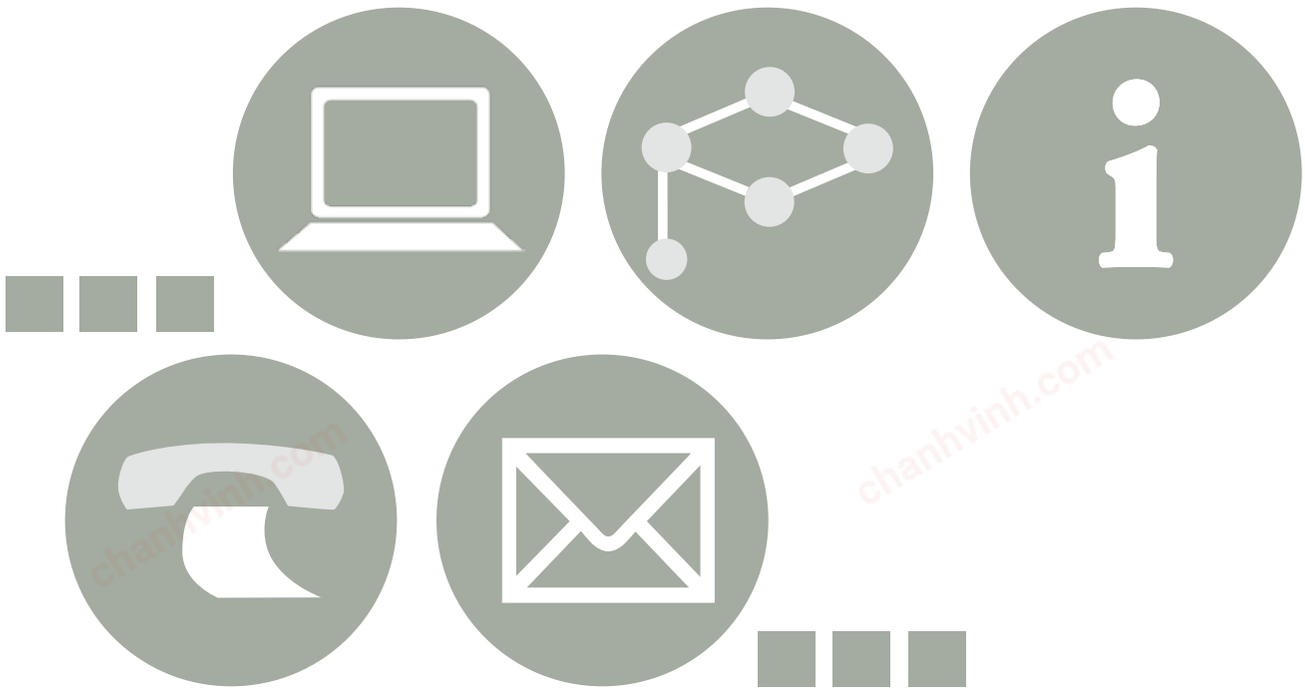
Service

Online tools, chemicals table, material data, forms, addresses



...plastics

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iglidur® Product finder & experts

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 service life calculation. Now also available for the 3D printing materials.

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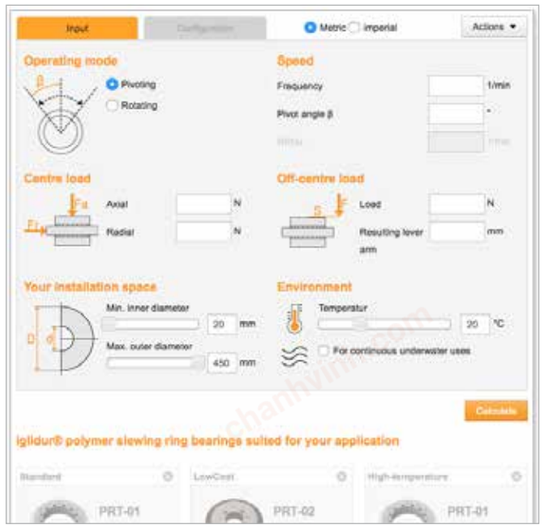
Expert for slewing rings

Find the right solution quickly



With just a few clicks, you can reach the iglidur® PRT expert showing slewing ring 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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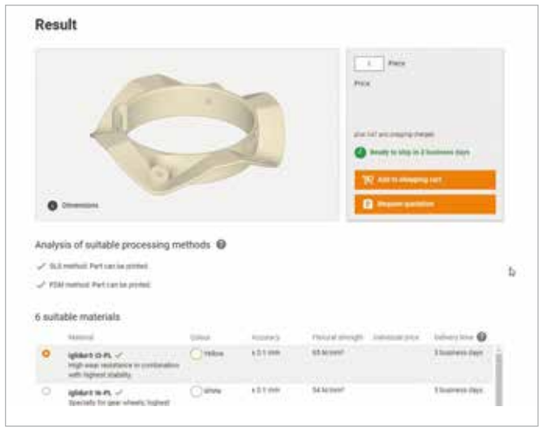
iglidur® slewing ring bearings expert and stock bar finder

3D printing service

For wear-resistant parts made of tribo-plastics



We produce custom components using lubrication-free, abrasion-resistant iglidur® high-performance plastics. Easy to order and quick to install: everything you need from prototypes to complex special parts. Upload individual component as CAD model and receive price and delivery time immediately for over 60 iglidur® materials with several manufacturing methods. Simple and fast with full cost transparency. Depending on the complexity of your product, we will then deliver it in as little as 24 hours.

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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.

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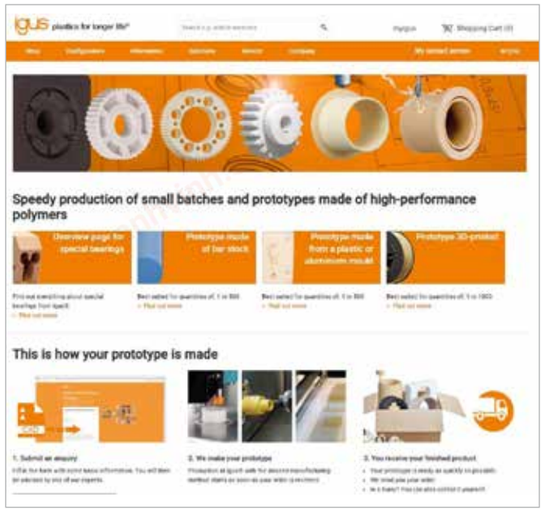
Special parts according to customer request

igus® production service for customer-specific parts



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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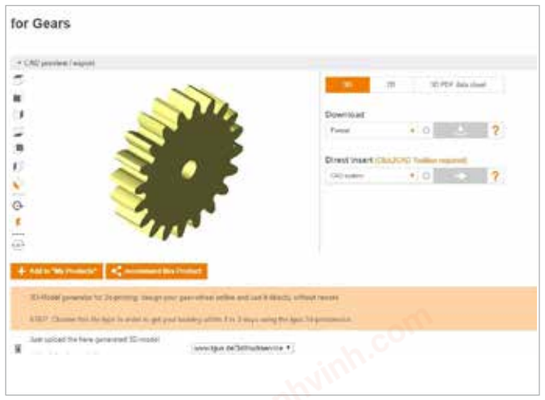
Gear configurator

Wear-resistant gears in 60 seconds using the new igus® gear configurator

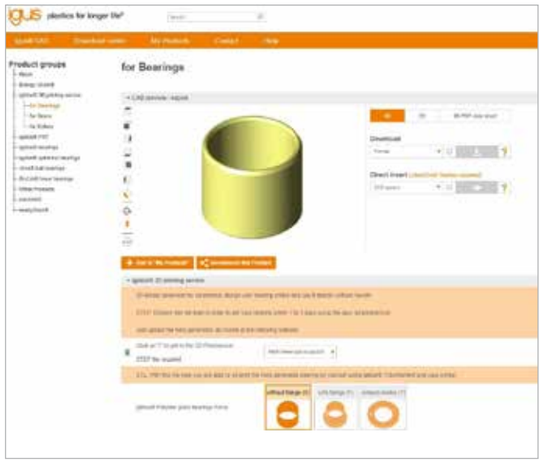


For design engineers, it has never been easier to configure a gear or a rack: with the igus® online configurator, you can create a CAD model for the 3D printing service. In a matter of seconds. Within three days after order receipt, the robust gears or racks are ready for shipment – made of high-performance plastics that are optimised for friction and wear and that exceed classic plastics by far. You can manufacture any gear with a minimum wall thickness of 0.7mm.

► **www.igus-asean.com/gear**

Plain bearings configurator

Configure your custom iglidur® plain bearing for 3D printing

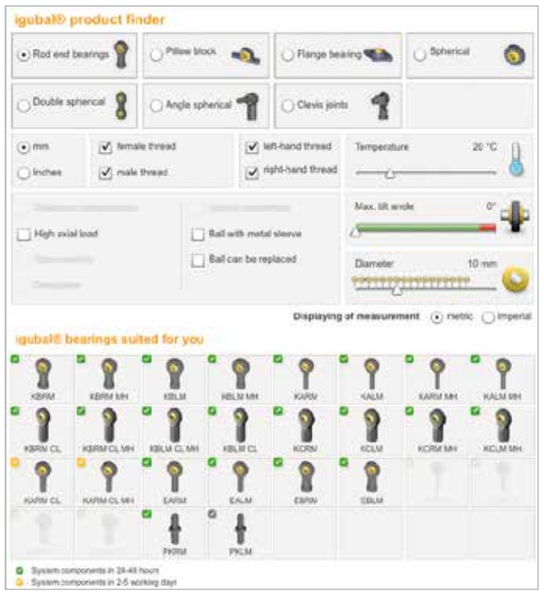


Quickly and easily configure your own thrust washer and plain bearing with or without flange for 3D printing. Use plain bearings immediately without any rework. With a minimum wall thickness of 0.7mm you can choose among any dimension between 1 and 170mm. The clearance amounts 0.03–0.23mm after press-fit.

► **www.igus-asean.com/3d-model**

Product finder for spherical bearings

The quick path to the right igubal® spherical bearing



The igubal® product finder shows you the right spherical 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.

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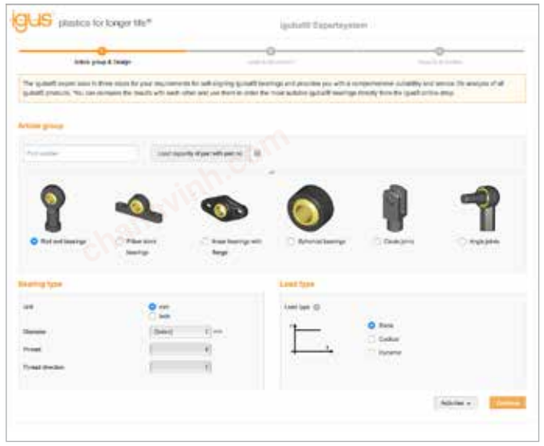
Expert for spherical bearings

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 service life information.

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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 calculator for plastic ball bearings

Service life calculation of polymer ball bearings



You can use the xiros® service life calculator to quickly and easily calculate the anticipated service life of xiros® plastic ball bearings specially for your application. This xiros® service life calculator is continually being supplemented with new values and xirodur® materials.

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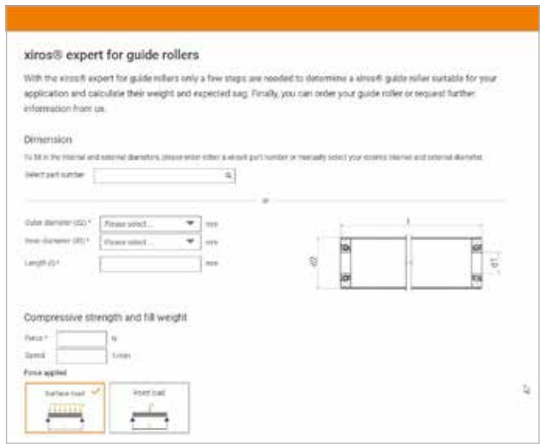
Expert for guide rollers

Find the right guide roller quickly



Based on your required dimensions and specified application parameters, the xiros® expert tool selects suitable guide rollers quickly and easily. It also calculates the expected deflection as well as the weight.

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drylin® expert and camera slider configurator

Expert for linear guides

System selection & service life calculation with CAD



With the help of the drylin® linear guide expert, you can configure your complete system quickly and easily with some basic information about your application the results are displayed immediately.

- With just a few clicks to your complete individually configured system
- Output on suitability
- Submit enquiry directly or simply transfer articles(s) to the shopping cart; no minimum order quantity
- Order your free sample
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- Save, download or reset your individual configuration
- Also suitable for iPad

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Special configurator for camera slider

Configure and order products online



Assemble double rail and carriage to your requirements. You receive the systems without a hole or already machined. drylin® W profile rails with standard holes or without holes can be delivered in one piece up to 4,000mm long – Your required length is individually cut to size. drylin® W profiles with 3/8" threaded holes are available, also available in fixed lengths of 1,000mm/1,500mm.

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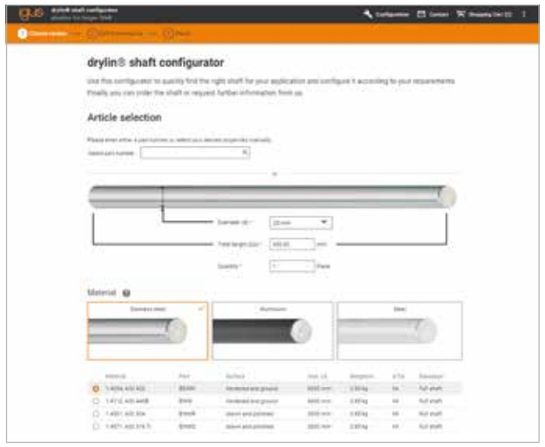
drylin® shafts and lead screw drive configurator

Shaft configurator

Configure shafts

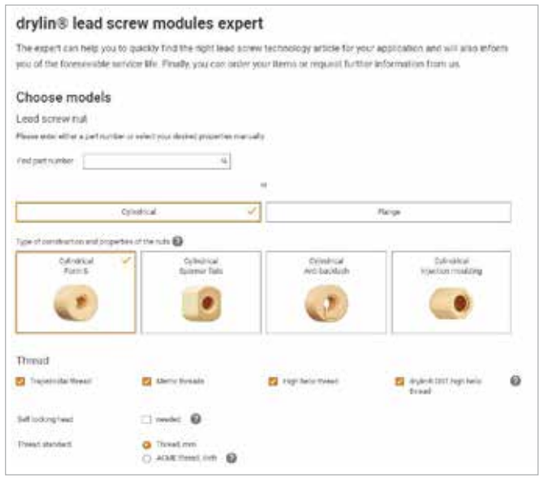


Configure easily with or without machining and you will receive a technical drawing. You can submit a request or order your configuration online.

► **www.igus-asean.com/shaft-configurator**

Expert for lead screw drives

Find and calculate suitable lead screw drives



Our drylin® expert systems for lead screw drives 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.

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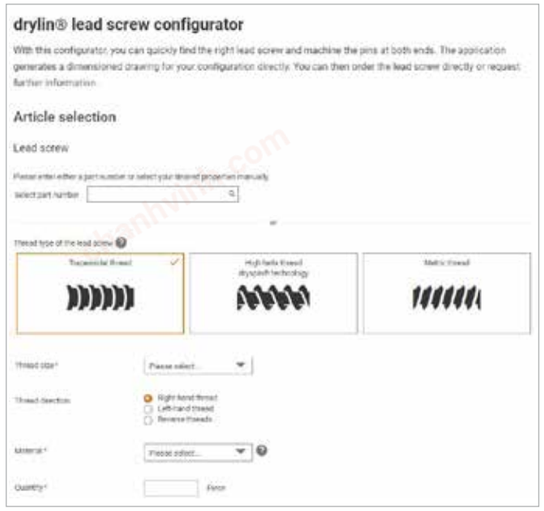
Lead screw configurator

Configure required dimensions



Quickly and easily configure lead screws and machined ends – from concept to technical drawing in seconds.

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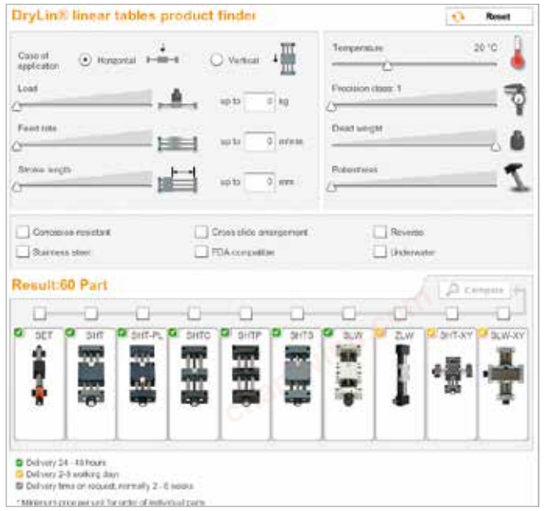
Configurator for drive technology

Complete drive technology configurable with or without motor

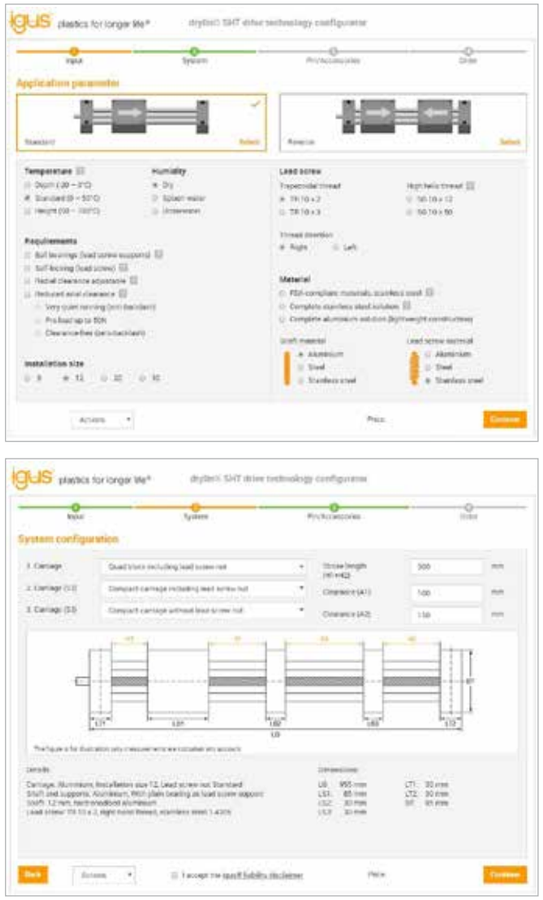


After you have selected your application parameters, the product finder shows an overview of the linear tables and the motors that are suitable. The product finder calculates the individual price of the linear axis as well as the utilisation rate of the motors and the service life in strokes. With just a few clicks, you can put together a complete linear axis incl. motor, connection cables and built-on parts.

► **www.igus-asean.com/linearmodule-configurator**

Configurator for SHT drive technology

Configure the complete drylin® SHT lead screw linear system



With the new drylin® SHT drive technology configurator, you can quickly and easily configure your individual drylin® SHT lead screw linear system. The appropriate module is put together according to installation size, lead screw thread and material requirements.

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robolink® designer

Configurator for robot arms

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With the robolink® designer, you can quickly and easily configure online using our intuitive CAD interface. Select individual robolink® components step by step to configure the robot arm individually, from the first axis to the tool. Simulation of the solution thanks to output of max. range and max. payload, teach function and inverse kinematics

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Chemical resistance

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

Chemicals, igliduR®	A180 A181 J200 R UW xirodur® B180 xirodur® S180 xirodur® F180 xirodur® M180 FC180	A200, G GLW G V0 M250 N54, Q2 W300, C L250, L100 igumid G xirodur® G220 igumid FC	A350	A500 C500 UW500 X X6 xirodur® A500 L500	A290 F Q290 W360 G1	J J2 J3 J4 JB	J260	J350	H H1 H2 H370 H4 HLW iguton G	F2 K P P210 P4	Q
Acetaldehyde (aq.), 40%	+	o	x	+	o	+	–	x	x	–	o
Acetamide (aq.), 50%	+	4	x	+	4	+	–	x	x	x	4
Acetic acid, 10%	+	–	+	+	–	+	+	+	+	+	+
Acetic acid, 2%	+	–	+	+	–	+	+	+	+	+	o
Acetic acid, 90%	–	–	+	o	–	–	–	x	+	–	–
Acetone	+	+	–	+	o	+	–	–	+	–	+
Acetyl chloride	–	–	x	x	–	–	x	x	x	x	–
Acrylnitrile	o	+	x	+	+	o	–	x	x	–	+
Air, liquid	o	o	x	x	o	o	x	x	x	o	o
Allyl alcohol	+	o	x	+	o	+	x	x	+	+	+
Aluminium chloride (aqueous), 10%	o	o	x	+	o	o	o	x	+	o	o
Aluminium cleaner	–	–	x	o	–	–	x	x	o	x	–
Aluminium salts of mineral acids, 20%	o	o	x	x	o	o	x	x	x	o	o
Aluminium sulphate (aqueous), 10%	o	o	x	+	o	o	+	x	+	o	o
Ammonium carbonate (aq.), 10%	+	+	x	+	+	+	x	x	+	x	x
Ammonium carbonate (aqueous), 10%	+	4	x	+	4	+	o	x	+	+	4
Ammonium chloride (aqueous), 10%	+	4	x	+	4	+	+	x	+	+	4
Amyl acetate, 100%	–	–	x	+	–	–	–	x	+	o	+
Amyl alcohol	+	+	x	+	+	+	+	x	+	o	+
Aniline (aq.), saturated solution	o	o	x	+	o	o	–	x	+	o	o
Anodic solutions (HNO3-30%/H2SO4-10%)	–	o	x	x	o	–	x	x	x	o	o
Aqua regia HCl/HNO3 (75/50 Vol.)	o	+	x	+	+	o	–	x	x	–	+
Aromatic compounds	+	+	+	x	+	+	x	x	x	o	x
Barium chloride (aq.), 10%	+	o	x	+	o	+	+	x	+	+	4
Barium salts of mineral acids	+	o	x	x	o	o	x	x	x	o	o
Barium sulphate (aq.), 10%	+	o	x	+	o	+	o	x	+	+	4
Benzaldehyde	+	o	x	+	o	o	–	x	o	–	o
Benzoic acid (aq.), 20%	o	o	x	+	o	o	–	x	x	+	o
Benzyl alcohol	+	+	+	+	+	o	–	+	x	x	o
Biphenyl	+	+	x	x	+	+	x	x	x	–	x
Bitumen, DIN 51567	+	o	–	+	o	o	+	x	x	o	o
Bleaching solution	–	–	x	+	–	–	x	x	x	–	o
Bleaching solution (aq.), 10%	–	–	x	+	–	–	x	x	+	o	o
Boric acid (aq.), 10%	+	o	+	+	o	+	+	x	x	–	4
Brandy vinegar	o	o	x	+	o	o	x	x	+	o	o
Bromhydric acid (aq.), 10%	–	–	x	+	–	–	–	x	o	–	–
Bromine (aq.), 25%	–	–	x	+	–	–	–	x	–	–	–
Bromine vapours	–	–	x	x	–	–	x	x	x	–	–

Chemical resistance

"4" swelling, softening due to the water

V400	Z	B	D	T220	K230	PEP	A160 B160 UW160 xirodur® C160	E7	I170	I180 I180-BL	xirodur® D180	xiros® ball bearings with PEEK cage	 PP cage PE cage	 PA cage	I150	C210 P230	I3 I6 AB
x	x	o	+	–	x	o	+	x	x	–	x	+	+	o	–	x	+
x	x	x	+	x	x	4	x	x	+	–	x	+	x	+	x	x	+
+	+	–	+	+	x	o	+	x	+	+	x	+	+	–	+	+	+
+	+	–	+	+	o	o	+	x	+	+	–	x	x	o	+	+	+
+	+	–	–	–	x	–	+	x	–	–	x	+	+	–	–	–	–
+	+	o	o	–	o	+	+	o	–	–	x	+	+	+	–	+	+
x	x	x	–	x	x	–	x	x	x	x	x	x	x	–	–	x	–
x	x	–	o	–	x	+	+	x	x	–	x	+	+	+	–	x	+
x	x	x	o	o	x	x	x	x	x	x	x	x	x	–	x	o	o
x	+	–	o	o	x	+	+	x	–	–	x	+	+	o	+	+	+
x	x	o	o	o	x	o	+	x	+	o	x	+	+	o	+	x	o
x	+	o	o	o	x	o	+	+	+	+	x	+	+	o	+	x	o
x	+	x	+	x	x	+	x	x	x	x	x	+	+	+	x	x	+
x	+	o	+	+	x	4	+	+	+	o	x	+	+	+	+	x	x
x	+	o	+	+	x	4	+	+	x	+	o	+	+	+	+	x	–
x	+	–	o	o	x	o	o	x	–	–	x	+	o	–	+	+	–
x	o	o	+	+	x	+	+	x	+	+	x	+	+	+	+	+	+
x	x	–	o	o	x	o	+	o	–	–	x	+	+	o	x	x	o
x	x	x	–	o	x	⁻	x	x	x	x	x	x	+	o	x	o	o
x	x	–	o	–	x	+	+	+	o	–	x	+	x	+	–	–	–
x	x	x	x	o	x	x	x	x	x	x	x	x	x	+	x	o	+
x	+	–	+	+	x	4	+	–	+	+	x	+	+	o	+	x	o
x	x	x	o	o	x	x	x	x	x	x	x	x	x	o	x	+	+
x	+	o	+	+	x	4	+	x	x	o	x	+	+	o	x	x	o
x	x	–	o	–	x	o	+	x	–	–	x	+	+	o	–	x	o
x	+	o	o	+	x	o	+	x	+	+	x	+	+	o	+	+	o
x	o	o	o	x	x	o	+	+	–	–	x	+	+	+	x	x	+
x	x	x	x	–	x	x	x	x	x	x	x	x	x	+	–	–	+
x	+	–	o	o	x	o	o	+	x	+	x	+	o	o	+	x	o
x	+	–	–	–	x	–	x	x	x	x	x	+	x	–	x	x	–
x	+	–	–	o	x	–	x	x	+	+	x	+	x	–	x	x	–
x	+	–	–	+	x	4	+	+	+	+	o	+	+	o	+	+	o
x	+	o	o	o	x	o	+	x	x	x	x	+	+	o	x	x	o
x	+	–	–	–	x	–	+	+	x	–	x	+	+	–	x	o	–
x	o	–	–	–	x	–	–	x	–	–	x	+	–	–	x	x	–
x	x	x	–	–	x	–	o	x	x	x	x	x	o	–	–	–	–

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Chemical resistance

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

Chemicals, iglidur®	A180 A181 J200 R UW xirodur® B180 xirodur® S180 xirodur® F180 xirodur® M180 FC180	A200, G GLW G V0 M250 N54, Q2 W300, C L250, L100 igumid G xirodur® G220 igumid FC	A350	A500 C500 UW500 X X6 xirodur® A500 L500	A290 F Q290 W360 G1	J J2 J3 J4 JB	J260	J350	H H1 H2 H370 H4 HLW iguton G	F2 K P P210 P4	Q
Butanol	+	+	+	+	+	+	o	x	+	+	+
Butter	+	+	x	+	+	+	+	x	+	+	+
Butyl acetate	+	+	o	+	o	o	x	x	+	o	o
Butyl glycol	+	+	–	+	+	+	o	x	+	+	+
Butyl glycolate	+	+	x	x	+	+	x	x	x	+	x
Butyl phthalate	+	+	x	x	+	+	x	x	x	+	x
Butyric acid	o	o	x	+	o	–	–	x	+	o	–
Calcium chloride, saturated solution	+	4	x	+	4	+	+	x	+	+	4
Calcium hydroxide (aq.)	+	+	+	x	+	+	x	x	x	+	x
Calcium hypochlorite	+	+	x	x	+	+	x	x	x	o	x
Camphor	+	+	x	+	+	+	o	x	+	x	+
Carbon bisulphide	+	+	x	+	+	+	x	x	+	x	+
Carbon dioxide gas	+	+	x	+	+	+	+	x	+	+	x
Casein	+	+	x	x	+	+	x	x	x	+	x
Caustic potash lye (aq.), 40%	+	+	x	+	+	+	x	x	x	x	x
Caustic potash, 10%	o	4	+	x	4	o	x	x	x	–	x
Caustic potash, 20%	–	o	+	+	o	–	–	x	+	–	x
Caustic potash, 50%	–	o	+	x	o	–	x	x	x	–	o
Caustic sodium bicarb. (aq.), 50%	o	o	x	+	o	o	x	x	x	x	x
Cellulose paints	+	+	x	x	x	+	x	x	x	x	x
Chloramine	x	–	x	x	–	–	x	x	x	–	–
Chlorethanal	–	–	x	x	–	–	x	x	x	–	–
Chlorinated water, saturated solution	–	–	x	+	–	–	o	x	x	–	o
Chlorine	–	–	x	x	–	–	x	x	x	–	–
Chlorine gas	–	–	x	–	–	–	–	x	–	–	–
Chloroacetic acid (aq.), 10%	–	–	x	+	–	–	–	x	x	–	–
Chlorobromomethane, 98%	x	o	x	+	o	x	x	x	x	o	o
Chloroform	–	–	–	+	o	–	–	–	o	–	–
Chlorsulphonic acid (aq.)	–	–	x	–	o	–	–	x	–	–	–
Chromic acid (aq.), 1%	o	–	x	+	–	o	o	x	–	o	o
Chromic acid (aq.), 10%	–	–	x	+	–	–	–	x	–	–	–
Citric acid (aq.), 10%	+	4	+	+	4	+	+	x	+	+	o
Citric acid, concentrated solution	o	o	x	+	o	o	+	x	o	x	–
Citrus fruits	+	+	x	x	+	+	x	x	x	+	x
Cobalt salts (aq.)	+	+	x	x	+	+	x	x	x	+	x
Copper sulphate, 0.5%	+	o	+	+	o	+	x	x	+	x	o
Copper sulphate, saturated solution	o	o	+	+	o	o	x	x	+	x	o
Cresol	–	–	x	+	–	–	–	x	+	–	–
Cyclohexane	+	+	+	+	+	+	o	x	+	–	+

Chemical resistance

"4" swelling, softening due to the water

V400	Z	B	D	T220	K230	PEP	A160 B160 UW160 xirodur® C160	E7	I170	I180 I180-BL	xirodur® D180	xiros® ball bearings with PEEK cage	 PP cage PE cage	 PA cage	I150	C210 P230	I3 I6 AB
x	o	–	o	+	x	+	+	+	+	o	x	+	+	+	+	o	+
x	+	o	+	+	x	+	+	x	+	+	x	+	+	+	+	+	+
x	+	x	o	o	+	o	+	o	–	–	x	+	+	+	x	o	+
x	+	o	+	+	x	+	+	x	x	o	x	+	+	+	+	+	+
x	x	x	x	x	x	x	x	x	x	x	x	x	x	+	x	+	+
x	x	x	x	x	x	x	+	x	x	x	x	x	+	+	x	+	+
x	+	–	–	o	x	–	+	+	–	–	x	+	+	o	x	+	o
x	+	+	+	+	x	4	+	x	+	+	o	+	+	+	x	+	+
x	x	x	x	x	x	x	+	+	x	x	x	x	+	+	+	+	+
x	x	x	x	o	x	x	o	+	+	+	x	x	o	+	x	o	+
x	+	o	+	x	x	+	+	x	+	o	x	+	+	+	x	x	+
x	x	x	–	–	x	–	+	x	+	+	x	+	+	o	–	–	+
x	+	o	o	x	x	o	x	x	x	x	x	+	x	+	x	x	o
x	x	x	+	+	x	x	x	x	x	x	x	x	x	+	x	+	+
x	x	x	–	–	x	–	+	+	x	x	x	x	+	–	–	–	–
x	x	x	–	–	x	–	x	x	x	x	x	x	x	–	x	x	–
+	o	–	–	–	x	–	o	x	o	o	x	+	o	–	–	x	–
x	x	x	–	–	x	–	–	–	–	–	x	x	–	–	–	–	–
o	–	–	–	–	x	–	–	x	–	–	x	–	–	–	–	x	–
x	–	–	–	–	x	–	+	+	o	–	x	+	+	–	–	–	–
x	x	o	x	o	x	x	–	x	x	x	x	+	–	o	+	+	o
x	o	–	–	–	x	–	o	x	–	–	x	+	o	–	–	–	o
x	+	–	–	–	x	–	–	x	–	–	x	–	–	–	–	–	–
+	o	–	o	o	x	o	+	x	o	o	x	+	+	–	x	+	–
+	o	–	–	–	x	–	+	x	o	–	x	+	+	–	o	o	–
x	+	x	+	+	x	o	+	+	+	+	o	+	+	+	+	+	+
x	+	o	o	x	x	–	+	x	x	+	x	+	+	+	x	x	o
x	x	x	x	x	x	x	+	x	x	x	x	+	+	o	x	+	+
x	x	x	x	x	x	x	x	x	x	x	x	x	+	–	x	+	+
x	+	o	+	x	x	o	x	x	x	x	x	+	x	o	x	+	o
x	+	o	o	x	x	o	x	x	+	+	x	+	+	–	x	x	o
x	+	–	–	–	x	–	+	+	o	–	x	x	–	–	–	–	–
x	+	–	–	–	x	+	+	+	+	o	x	x	+	+	+	+	+

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Chemical resistance

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

Chemicals, igliduR®	A180 A181 J200 R UW xirodur® B180 xirodur® S180 xirodur® F180 xirodur® M180 FC180	A200, G GLW G V0 M250 N54, Q2 W300, C L250, L100 igumid G xirodur® G220 igumid FC	A350	A500 C500 UW500 X X6 xirodur® A500 L500	A290 F Q290 W360 G1	J J2 J3 J4 JB	J260	J350	H H1 H2 H370 H4 HLW iguton G	F2 K P P210 P4	Q
Decahydronaphthalene	+	+	–	+	+	+	x	x	+	–	+
Dibutylether	+	+	x	x	+	+	x	x	x	+	x
Dibutylphthalate	+	+	x	+	+	+	–	x	+	+	+
Dichlorethylene	–	–	x	+	–	–	–	x	+	–	–
Dichlorobenzene	–	+	x	+	+	–	x	x	+	–	+
Dichloroethene	–	+	x	+	+	–	x	x	+	–	+
Diethyl ether	o	o	+	+	+	+	–	x	x	+	+
Dimethylformamide	o	+	+	+	+	+	–	x	+	+	+
Dioctylphthalate	+	+	+	+	+	+	x	x	+	o	+
Dioxane	o	+	x	+	+	o	–	x	+	+	+
Drilling oils	+	+	+	x	+	+	x	x	x	+	x
Edible fat, 100%	+	+	+	+	+	+	x	x	+	+	+
Edible oils	+	+	+	+	+	+	x	x	+	+	+
Ethanal (aq.), 40%	+	o	x	x	o	o	x	x	x	o	o
Ethanol (aq.), 96%	+	o	+	+	o	o	+	x	+	–	o
Ethyl acetate	+	+	–	+	+	+	–	x	+	–	+
Ethyl chloride	+	+	–	+	+	+	–	x	+	–	+
Ethylene	+	+	x	x	+	+	x	x	x	+	x
Ethylene diamine (1.2-ethylene diamine)	+	+	x	+	+	+	o	x	o	+	+
Ethylene glycol (aq.), 95%	+	o	x	+	o	+	o	x	+	+	o
Ethylene oxide (1.2-epoxyethane)	+	o	+	x	o	o	x	x	x	o	o
Ferric chloride, 2.5%	+	o	x	x	o	+	x	x	+	x	o
Ferric chloride, 5%	–	o	x	o	o	–	o	x	+	x	o
Ferric chloride, saturated solution	+	o	x	x	o	+	x	x	+	x	o
Fluor	–	–	+	x	–	–	x	x	x	–	–
Fluorinated hydrocarbons	o	+	x	+	o	+	o	x	+	o	+
Formaldehyde (aq.), 30%	+	o	+	+	o	+	+	+	+	+	4
Formamide	+	o	–	+	o	+	o	x	x	x	o
Formic acid (aq.), 2%	o	–	x	o	–	–	+	x	+	o	–
Formic acid, 10%	–	–	x	–	–	–	x	x	o	–	–
Formic acid, 90%	–	–	x	–	–	–	–	x	o	–	–
Fruit juices	+	+	–	x	+	+	x	x	x	+	x
Furfurol	+	o	x	+	o	+	o	x	+	+	+
Glycerine	–	+	+	+	+	+	o	x	+	+	+
Glycol	+	o	+	+	o	o	x	x	+	+	o
Greases, cooking fat	+	+	x	+	+	+	o	x	+	+	+
Heptane	+	+	+	+	+	+	+	x	+	o	+
Hexachlorobenzene	+	–	x	+	–	–	x	x	x	x	–
Hexachloroethane	+	+	x	+	+	+	x	x	x	x	+

Chemical resistance

"4" swelling, softening due to the water

V400	Z	B	D	T220	K230	PEP	A160 B160 UW160 xirodur® C160	E7	I170	I180 I180-BL	xirodur® D180	xiros® ball bearings with PEEK cage	 PP cage PE cage	 PA cage	I150	C210 P230	I3 I6 AB
x	+	–	–	–	x	+	–	x	+	+	x	+	+	+	o	o	+
x	x	x	x	x	x	x	o	o	x	x	x	+	–	+	+	+	+
x	+	o	+	+	x	+	+	x	x	–	x	x	o	+	x	+	+
x	+	–	–	–	x	–	x	x	x	–	x	+	+	+	–	x	–
x	o	x	–	–	x	–	o	o	–	–	x	+	+	+	x	x	+
x	o	x	–	–	x	–	+	x	x	x	x	+	o	+	–	–	+
x	+	o	o	+	x	+	o	o	–	–	x	+	x	–	x	+	+
+	+	o	+	+	o	+	+	+	–	–	x	+	o	o	+	+	+
x	+	x	o	o	x	+	+	–	x	x	x	+	+	+	+	+	+
x	+	x	o	+	x	o	+	+	–	–	x	+	+	+	+	+	+
x	x	x	x	x	x	x	x	x	x	x	x	x	x	+	x	+	+
x	x	x	x	x	x	–	x	x	x	x	x	+	+	+	x	+	+
+	+	o	o	x	x	+	+	+	x	o	x	+	+	+	o	x	+
+	+	–	+	+	+	o	+	+	x	o	x	+	+	+	+	+	o
x	x	x	o	o	x	x	–	x	x	x	x	+	+	o	+	+	o
x	+	o	+	x	x	o	x	x	x	x	x	o	+	+	x	x	o
x	+	o	–	x	x	–	x	x	x	o	x	+	+	–	x	x	o
x	+	o	+	x	x	o	+	x	x	x	x	x	x	+	x	x	o
x	x	x	–	–	x	–	–	–	x	x	x	+	+	+	–	–	–
x	o	x	o	o	x	+	x	x	x	o	x	x	–	–	+	+	+
x	+	o	+	+	x	4	+	+	+	+	x	+	+	–	+	+	o
x	+	–	o	x	x	o	+	x	x	o	x	+	+	o	x	x	o
x	o	–	–	o	x	–	+	x	+	+	x	o	+	–	+	+	+
x	–	–	–	–	x	–	+	x	+	+	x	–	+	–	x	+	+
x	–	–	–	–	x	–	+	x	+	–	x	–	+	–	x	x	–
x	x	x	x	x	x	x	+	x	x	x	x	+	+	o	+	+	+
x	+	o	+	+	x	+	o	+	–	–	x	x	+	+	+	+	o
x	+	x	+	+	x	+	+	x	+	o	x	+	+	o	+	+	+
x	+	o	o	+	x	o	+	x	+	+	x	+	o	o	+	+	+
x	+	o	+	+	x	+	+	x	x	o	x	x	–	o	+	+	+
x	+	–	–	o	+	+	+	+	+	+	x	+	+	+	+	+	+
x	o	x	–	–	x	–	x	x	+	+	x	+	+	+	x	x	–
x	o	x	–	–	x	–	–	x	x	x	x	+	x	–	x	x	+

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Chemical resistance

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Chemicals, igliduR®	A180 A181 J200 R UW xirodur® B180 xirodur® S180 xirodur® F180 xirodur® M180 FC180	A200, G GLW G V0 M250 N54, Q2 W300, C L250, L100 igumid G xirodur® G220 igumid FC	A350	A500 C500 UW500 X X6 xirodur® A500 L500	A290 F Q290 W360 G1	J J2 J3 J4 JB	J260	J350	H H1 H2 H370 H4 HLW iguton G	F2 K P P210 P4	Q
Hexamethylphosphoric acid triamide	+	–	x	x	–	–	x	x	x	–	–
Hexane	+	+	+	+	+	+	+	x	+	–	+
Humic acids	o	o	x	x	o	o	x	x	x	o	o
Hydrochinone (aq.), 5%	o	–	x	+	–	o	o	x	x	o	–
Hydrochloric acid, 10%	–	–	+	+	–	–	–	o	–	–	–
Hydrochloric acid, 2%	–	–	+	+	–	–	+	x	–	–	o
Hydrofluoric acid (aq.), 4%	–	–	–	+	–	–	–	x	–	–	–
Hydrofluorosilicic acid (aq.),30%	x	–	x	x	–	–	x	x	x	–	–
Hydrogen chloride gas	–	–	x	x	–	–	x	x	x	–	–
Hydrogen peroxide, 0.5%	+	+	–	+	+	+	+	o	+	+	+
Hydrogen peroxide, 30%	–	–	–	+	–	–	–	–	–	–	–
Hydrogen sulphide (aq.)	+	o	x	x	o	+	x	x	x	o	o
Hydrogen sulphide (dry)	+	+	+	+	o	x	+	x	+	+	+
India Ink	+	4	x	+	4	+	+	x	+	x	4
Inert gases (argon, helium, neon)	+	+	x	x	+	+	x	x	x	+	x
Ink, printing ink	+	4	–	+	4	+	+	x	+	+	4
Iodine tincture, 3%	o	–	–	+	–	o	–	x	+	x	o
Iron(III) chloride (aqueous), acidic, 10%	–	–	x	+	+	–	–	x	+	–	o
Iron(III) chloride (aqueous), neutral, 10%	o	4	x	o	o	o	+	x	+	x	o
Isooctane, 80%	+	+	+	+	+	+	+	x	+	o	+
Isopropyl alcohol = isopropanol	+	+	+	+	+	+	+	x	+	+	o
Isopropylether	+	+	x	+	+	+	–	x	x	o	+
Ketones (aliphatic)	+	o	+	x	o	o	x	x	x	–	o
Lactic acid, 10%	+	+	+	+	+	+	+	x	+	+	o
Lactic acid, 90%	+	o	o	+	o	o	+	x	+	o	o
Lead acetate (aq.), 10%	+	o	x	+	o	+	+	x	x	o	o
Lead stearate	+	+	x	+	+	+	+	x	+	+	+
Linseed oil	+	+	+	+	+	+	+	x	+	+	+
Lithium bromide/ -chloride/ -salts (aq.), 50%	+	o	x	+	o	+	+	x	x	o	o
Lithium chloride in alcohol, 20%	+	–	x	x	–	–	x	x	x	x	–
Lubricating oil, mineral	+	+	+	+	+	+	+	x	+	o	+
Lubricating oil, synthetic	o	o	x	+	o	o	o	x	+	–	+
Magnesium chloride (aq.), 10%	+	4	x	+	4	+	+	x	+	+	4
Magnesium hydroxide (aq.)	+	4	x	+	4	+	+	x	+	+	+
Maleic acid (aq.), 10%	–	o	x	x	o	–	x	x	x	–	o
Maleic acid, concentrated solution	o	–	x	+	–	o	o	x	+	x	o
Malt	+	+	x	x	+	+	x	x	x	+	x
Manganese sulphate (aqueous), 10%	+	o	x	+	o	+	x	x	+	x	+

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x	x	x	–	–	x	–	x	x	x	x	x	+	–	+	x	+	–
+	+	–	–	–	x	+	+	x	+	+	x	x	x	–	x	x	+
x	x	x	o	o	x	x	+	x	x	x	x	+	+	+	x	+	o
x	+	–	o	o	x	–	+	x	+	o	x	x	+	o	+	+	–
+	+	–	–	–	o	–	+	x	x	–	x	+	+	–	o	o	–
+	+	–	–	–	x	–	+	x	x	+	–	+	+	–	+	+	–
–	–	–	–	–	x	–	+	–	+	–	x	+	x	+		–	–
x	x	x	–	–	x	–	+	+	x	x	x	x	x	o	–	–	–
x	x	x	–	–	x	–	+	x	x	x	x	x	+	–	–	–	–
+	+	+	+	+	x	+	+	x	+	+	x	+	+	+	+	+	+
x	–	–	–	–	x	–	+	x	x	–	o	+	+	+	+	+	–
x	x	x	–	o	x	o	+	x	x	x	x	x	+	o	x	+	o
x	+	x	x	+	x	x	+	+	+	+	x	o	+	–	x	+	+
x	+	x	+	x	x	4	x	x	x	+	x	+	x	+	x	+	+
x	x	x	x	x	x	x	x	x	x	x	x	+	+	+	x	+	+
+	+	+	+	+	x	4	+	+	+	+	x	+	–	o	x	+	+
x	+	–	o	x	x	o	+	+	o	–	x	+	o	+	x	x	–
x	+	–	–	x	x	–	+	x	x	–	x	o	x	o	x	x	–
x	+	o	o	x	x	–	+	x	x	+	x	x	x	o	x	x	+
x	+	–	–	o	x	+	+	x	+	+	x	+	+	–	+	+	+
x	o	o	+	+	x	o	+	x	+	+	o	+	+	+	+	+	+
x	+	o	+	o	x	+	o	+	x	–	x	+	+	+	+	x	+
x	x	x	o	–	x	x	x	x	x	x	x	+	x	o	–	–	o
x	+	o	o	o	x	o	+	+	+	+	–	+	+	+	x	+	+
x	+	o	o	o	x	o	+	+	+	+	x	+	+	+	x	+	o
x	+	–	+	o	x	o	+	+	+	+	x	+	+	o	+	x	o
x	+	o	+	+	x	+	x	x	+	+	x	+	x	+	+	x	+
+	+	–	+	+	x	+	+	+	+	+	x	+	x	o	+	+	+
x	+	–	+	o	x	o	x	x	x	+	x	+	+	+	+	+	o
x	x	x	–	x	x	–	x	x	x	x	x	+	x	o	x	x	–
+	+	–	+	o	x	o	x	x	x	+	x	+	+	+	x	x	+
+	+	–	o	–	x	o	x	x	x	o	x	+	x	+	x	x	o
+	+	+	+	+	x	4	x	x	x	+	x	x	x	o	+	+	+
+	+	+	+	+	x	+	+	x	x	+	x	+	+	+	+	x	–
x	x	x	–	–	x	–	+	x	x	x	x	x	+	o	x	x	o
x	+	–	o	x	x	–	+	x	x	o	x	+	+	+	x	x	–
x	x	x	x	x	x	x	x	x	x	x	x	+	+	–	x	+	+
x	+	o	+	x	x	+	x	x	x	x	x	x	x	+	x	x	o

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Chemical resistance

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

Chemicals, igliduR®	A180 A181 J200 R UW xirodur® B180 xirodur® S180 xirodur® F180 xirodur® M180 FC180	A200, G GLW G V0 M250 N54, Q2 W300, C L250, L100 igumid G xirodur® G220 igumid FC	A350	A500 C500 UW500 X X6 xirodur® A500 L500	A290 F Q290 W360 G1	J J2 J3 J4 JB	J260	J350	H H1 H2 H370 H4 HLW iguton G	F2 K P P210 P4	Q
Mercury	+	+	x	+	+	+	+	x	+	+	+
Mercury chloride, 6%	–	–	x	+	–	–	+	x	o	o	–
Methane	+	+	+	+	+	+	+	+	+	+	x
Methanol	+	+	+	x	+	+	x	+	x	+	x
Methanol +20% CaCl2 or LiCl	+	–	x	o	o	o	–	x	o	+	o
Methyl acetate	o	+	x	+	+	o	x	x	+	o	+
Methyl ethyl ketone	o	+	–	+	+	o	–	–	+	–	+
Methylamine	+	+	x	x	+	+	x	x	x	+	x
Methylene chloride	o	–	–	x	–	–	x	–	+	–	–
Milk	+	4	+	+	4	+	+	x	+	+	4
Molasses	+	+	+	x	+	+	x	+	x	+	x
Molykote-lubrication grease	+	+	x	+	+	+	x	x	+	x	+
Mortar, cement, lime	+	+	x	x	+	+	x	x	x	+	x
Naphthalene	+	+	x	+	+	+	o	x	+	+	+
Naphthalenesulfonic acid	–	–	x	x	–	–	x	x	x	x	–
Nickel salts (aq.), 10%	+	o	x	x	o	+	x	x	x	x	o
Nitric acid (aq.), 2%	–	–	+	+	–	–	o	+	–	–	–
Nitric acid (aq.), 5%	–	–	x	+	–	–	–	x	–	–	–
Nitriloacetic acid	+	+	x	x	+	+	x	x	x	+	x
Nitro paint, hazard class A I	+	o	x	x	o	+	x	x	x	o	o
Nitro paint, hazard class A II	+	+	x	x	+	+	x	x	x	o	x
Nitrobenzene	o	–	–	+	–	o	–	x	o	–	o
Nitrogen oxides (dry)	–	o	x	x	o	–	x	x	x	o	o
Nitromethane	–	o	x	+	o	–	x	x	o	–	x
Nitrotoluene	o	o	x	x	o	o	x	x	x	–	o
Nitrous gases	–	o	x	x	o	–	x	x	x	x	o
Octane	x	+	x	x	+	+	x	x	x	+	x
Oil, cooking	+	+	+	+	+	+	+	+	+	+	+
Oleic acid	+	+	x	+	+	+	+	x	+	+	+
Oleum	–	–	–	–	–	–	–	–	–	–	–
Oxalic acid (aq.), 10%	x	o	+	+	o	x	+	x	x	+	o
Oxygen gas +23°C, without pressure	+	+	x	+	+	+	+	x	+	+	x
Ozone	–	–	–	+	–	–	+	x	–	–	–
Palmitic acid	+	+	x	x	+	+	x	x	x	+	x
Paraffin	+	+	x	x	+	+	x	x	x	+	x
Paraffin oil	+	+	+	+	+	+	+	x	+	–	+
Perchlorethene	–	–	–	+	–	–	–	–	x	–	–
Perchloric acid, 10%	–	–	x	+	–	–	–	x	x	–	–
Perfume	+	+	x	x	+	+	x	x	x	+	x

Chemical resistance

"4" swelling, softening due to the water

V400	Z	B	D	T220	K230	PEP	A160 B160 UW160 xirodur® C160	E7	I170	I180 I180-BL	xirodur® D180	xiros® ball bearings with PEEK cage	 PP cage PE cage	 PA cage	I150	C210 P230	I3 I6 AB
+	+	+	+	+	x	+	+	+	+	+	x	+	o	+	+	+	+
x	x	–	–	o	x	–	+	x	+	+	x	+	+	+	+	x	–
x	x	–	+	+	x	x	+	x	x	x	x	x	+	+	+	+	+
x	x	x	x	x	o	x	+	+	o	o	–	+	+	+	+	+	+
+	o	+	+	+	x	o	x	x	–	–	x	x	+	+	x	x	–
x	+	x	o	o	x	o	+	x	x	x	x	o	x	–	+	o	+
x	+	–	o	–	o	o	+	x	x	–	x	x	–	–	–	–	+
x	x	x	x	x	x	x	+	x	x	x	x	+	+	+	x	x	+
+	o	o	–	–	x	–	–	o	–	–	x	x	+	+	x	–	–
+	+	+	+	+	x	4	+	+	+	+	x	+	+	+	+	+	+
x	x	x	x	x	x	x	+	+	x	x	x	x	+	+	+	+	+
x	+	x	+	x	x	+	x	x	x	x	x	+	+	o	x	x	+
x	+	x	+	+	x	+	+	+	x	o	x	x	x	+	x	+	+
x	x	x	–	x	x	–	x	x	x	x	x	+	+	+	x	x	–
x	x	x	–	x	x	o	x	x	x	x	x	x	+	+	–	–	x
+	+	–	–	–	x	–	+	+	x	o	–	+	+	–	+	+	–
+	+	–	–	–	x	–	+	–	x	–	x	+	+	–	+	x	–
x	x	x	x	x	x	x	x	x	x	x	x	x	x	o	x	+	+
x	x	x	–	o	x	o	x	x	x	x	x	x	x	o	x	o	o
x	x	x	x	o	x	x	x	x	x	x	x	x	x	o	x	o	+
+	–	–	–	–	x	–	+	+	–	–	x	x	x	+	+	+	o
x	x	x	–	o	x	–	–	x	x	x	x	+	+	+	x	+	o
x	+	o	–	–	x	–	+	x	x	x	x	x	x	+	x	o	o
x	x	x	o	–	x	x	+	x	x	x	x	+	+	o	+	+	o
x	x	x	–	x	x	–	x	x	x	x	x	+	+	–	x	x	o
x	x	x	x	x	x	x	+	x	x	x	x	x	+	o	x	+	+
+	+	o	+	+	x	+	+	x	x	+	x	x	+	+	+	+	+
+	+	o	+	+	x	+	+	+	+	+	x	–	–	–	+	+	+
–	–	–	–	–	x	–	–	+	x	–	x	+	+	+	–	–	–
x	+	–	x	+	x	x	+	x	x	+	x	+	+	+	+	+	o
x	x	–	+	+	x	x	+	x	x	+	x	x	x	–	x	+	+
x	+	–	–	–	x	–	o	x	+	+	x	+	+	o	x	–	–
x	x	x	x	x	x	x	+	+	+	+	x	+	o	–	+	+	+
x	x	x	x	x	x	x	+	+	x	x	x	x	+	+	+	+	+
x	+	–	–	–	x	+	+	+	+	+	x	x	+	+	x	+	+
x	+	–	–	–	x	–	o	x	o	–	x	x	+	+	o	o	–
x	+	–	–	–	x	–	+	+	x	–	x	+	o	–	x	x	–
x	x	x	x	x	x	x	+	x	x	x	x	+	+	+	+	+	+

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Chemical resistance

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

Chemicals, igliduR®	A180 A181 J200 R UW xirodur® B180 xirodur® S180 xirodur® F180 xirodur® M180 FC180	A200, G GLW G V0 M250 N54, Q2 W300, C L250, L100 igumid G xirodur® G220 igumid FC	A350	A500 C500 UW500 X X6 xirodur® A500 L500	A290 F Q290 W360 G1	J J2 J3 J4 JB	J260	J350	H H1 H2 H370 H4 HLW iguton G	F2 K P P210 P4	Q
Phenol (aq.), 6%	–	–	–	x	–	–	–	x	+	–	–
Phenol (aq.), 88%	+	–	–	x	–	–	x	x	x	x	–
Phenol (spirituous), 70%	–	–	x	o	–	–	–	x	+	–	–
Phosphoric acid (aq.), 0.3%	+	o	x	+	o	+	+	x	o	–	o
Phosphoric acid (aq.), 10%	–	–	–	+	–	–	o	x	–	–	–
Phosphoric acid (aq.), 3%	–	o	x	+	–	o	+	x	o	–	o
Phthalic acid, saturated solution	+	o	x	+	o	+	o	x	o	+	o
Polyester resins (with styrene)	o	+	x	+	+	+	–	x	+	o	+
Potassium bromide (aq.), 10%	+	o	x	+	o	o	+	x	+	o	4
Potassium carbonate (aq.), 60%	+	4	x	+	4	+	+	x	+	o	4
Potassium chloride (aq.), 10%	+	4	x	x	4	+	x	x	x	+	x
Potassium chloride (aq.), 90%	+	4	x	+	4	+	+	x	+	+	4
Potassium dichromate (aq.) 5%	+	o	–	+	o	o	+	x	+	o	o
Potassium nitrate (aq.), 10%	+	4	x	+	4	+	+	x	+	+	4
Potassium permanganate (aqueous), 1%	+	–	–	+	–	+	+	x	–	+	o
Potassium sulphate, saturated solution	+	4	x	+	4	+	+	x	+	o	4
Propane, propene	+	+	x	+	+	+	–	x	+	+	+
Propanol	+	+	–	+	+	+	+	x	o	+	+
Propenoic acid	o	–	x	x	–	–	x	x	x	–	–
Pyridine	o	+	–	+	+	o	–	x	+	x	+
Pyrocatechol (aq.), 6%	–	–	x	+	–	–	–	x	x	–	o
Pyruvic acid (aq.), 10%	x	o	x	x	o	x	x	x	x	o	o
Resorcinol (1.3-Dihydroxybenzene), 50%	x	–	x	x	–	–	x	x	x	–	–
Salicylic acid	–	+	–	+	+	–	+	x	+	–	+
Seawater	+	+	+	+	+	+	+	+	+	+	+
Silicone oils	+	+	+	+	+	+	+	x	+	+	+
Silver nitrate	+	4	x	+	4	+	+	x	+	o	4
Soap suds	+	4	+	+	4	+	+	x	+	+	4
Soda lye (aq.), 10%	+	+	+	+	+	o	x	x	+	–	o
Soda lye (aq.), 50%	o	o	x	+	o	o	x	x	x	x	x
Soda solution, 10%	+	4	+	+	4	+	x	x	+	+	4
Sodium acetate (aq.), 10%	+	–	x	+	4	+	+	x	+	o	+
Sodium bisulphite (aq.), 10%	+	4	–	+	4	+	o	x	+	+	4
Sodium bromide (aq.), 10%	+	4	x	+	4	+	+	x	+	+	4
Sodium carbonate (aq.), 50%	+	4	–	+	4	+	+	x	+	+	4
Sodium carbonate (aqueous), 21.5%	+	4	–	+	4	+	+	x	+	+	4
Sodium carbonate, 5%	+	4	–	+	4	+	+	x	+	+	4
Sodium chlorate (aq.), 10%	+	o	x	x	o	o	x	x	x	o	o
Sodium chloride, saturated solution	+	4	x	+	4	+	+	x	+	+	4

Chemical resistance

"4" swelling, softening due to the water

V400	Z	B	D	T220	K230	PEP	A160 B160 UW160 xirodur® C160	E7	I170	I180 I180-BL	xirodur® D180	xiros® ball bearings with PEEK cage	 PP cage PE cage	 PA cage	I150	C210 P230	I3 I6 AB
x	+	–	–	–	x	–	x	x	x	–	x	x	+	–	–	x	–
x	x	x	–	x	x	–	+	x	x	x	x	x	+	–	–	x	–
x	+	–	–	–	x	–	+	x	x	–	x	+	+	–	–	x	–
x	+	o	–	+	x	o	+	+	+	+	x	o	x	–	+	+	o
x	+	–	–	–	x	–	+	+	x	o	x	+	+	–	x	+	–
x	+	o	–	–	x	o	+	+	x	+	o	+	+	o	+	+	o
x	+	o	+	+	x	o	+	x	+	+	x	+	+	o	+	+	o
x	+	–	o	o	x	+	x	x	x	–	x	+	+	o	+	+	+
x	+	–	+	o	x	+	+	+	+	+	x	x	+	o	+	+	+
x	+	o	+	o	x	+	+	x	x	+	x	+	+	o	+	x	–
x	x	x	x	x	x	x	+	+	+	+	x	+	+	+	+	x	+
+	+	+	+	+	x	+	+	+	x	+	x	x	+	+	x	x	–
x	+	–	+	o	x	o	+	x	+	+	x	+	+	o	+	+	+
x	+	o	+	o	x	+	+	+	+	+	x	+	+	–	x	x	–
x	+	o	+	+	x	+	+	x	+	–	x	+	x	+	+	+	+
+	o	o	+	+	x	+	+	+	+	+	x	+	+	+	+	x	+
x	x	x	–	–	x	–	x	x	x	x	x	+	+	+	x	x	–
x	+	x	o	x	x	o	o	+	–	–	x	x	x	–	x	x	+
x	o	–	–	–	x	–	x	x	x	–	x	+	x	–	x	x	–
x	x	x	–	o	x	x	x	x	x	x	x	x	x	o	x	+	o
x	x	x	–	–	x	–	x	x	o	o	x	+	+	–	–	–	–
x	+	x	–	–	x	–	+	+	+	+	x	x	x	–	x	+	+
+	+	+	+	+	x	x	+	x	+	+	x	+	+	o	x	+	+
+	+	+	+	+	x	+	+	+	+	+	+	+	+	+	+	+	+
x	+	x	+	o	x	4	+	+	+	+	x	+	+	+	+	x	x
+	+	+	+	+	x	4	+	+	x	+	x	+	+	+	+	+	+
+	+	+	+	–	x	o	+	–	+	x	x	+	x	+	–	–	+
x	+	o	o	x	x	o	x	x	+	x	x	+	+	–	–	–	+
x	+	x	+	+	x	4	+	x	+	+	o	+	+	+	x	+	+
x	+	o	+	o	x	+	+	x	+	+	x	x	x	–	+	+	+
x	+	x	+	+	x	4	+	x	+	o	x	+	+	–	+	+	x
x	+	+	+	+	x	4	+	x	+	+	x	+	+	+	+	x	+
x	+	o	+	+	x	+	+	x	x	+	x	+	+	+	x	x	x
x	+	x	+	+	x	+	+	x	x	+	x	+	+	+	x	x	x
x	+	x	+	+	x	+	+	x	+	+	x	+	+	+	x	+	+
x	x	x	o	o	+	x	+	o	x	x	x	+	+	+	x	+	o
x	+	+	+	+	x	4	+	+	+	+	x	x	+	o	+	x	x

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Chemical resistance

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

Chemicals, igliduR®	A180 A181 J200 R UW xirodur® B180 xirodur® S180 xirodur® F180 xirodur® M180 FC180	A200, G GLW G V0 M250 N54, Q2 W300, C L250, L100 igumid G xirodur® G220 igumid FC	A350	A500 C500 UW500 X X6 xirodur® A500 L500	A290 F Q290 W360 G1	J J2 J3 J4 JB	J260	J350	H H1 H2 H370 H4 HLW iguton G	F2 K P P210 P4	Q
Sodium dichromate (aq.), 10%	x	o	x	x	o	x	x	x	x	o	o
Sodium dodecyl benzenesulfonate	+	+	x	x	+	+	x	x	x	+	x
Sodium hypochlorite (aq.), 10%	–	–	x	+	–	–	o	x	o	o	o
Sodium hypophosphite (aqueous), 10%	+	+	x	x	+	+	x	x	x	+	x
Sodium nitrate (aq.), 10%	+	4	–	+	4	+	+	x	+	+	4
Sodium nitrilotriacetate (aqueous), 10%	+	+	x	x	+	+	x	x	x	+	x
Sodium oleate	+	+	x	x	⁺	+	x	x	x	+	ˣ
Sodium salts, 10%	+	+	x	x	+	+	x	x	x	+	x
Sodium sulphate, 10%	+	4	x	+	4	+	+	x	+	+	4
Sodium sulphite, neutral, 2%	o	4	x	+	⁴	o	o	x	+	o	⁴
Sodium thiosulphate, 10%	+	4	–	+	4	+	+	x	+	+	4
Soldering fluid	–	–	x	x	–	–	x	x	x	–	–
Steam	x	–	o	+	–	x	o	x	+	–	o
Styrol	o	+	x	+	+	o	–	x	+	–	+
Sulphur	+	+	x	+	+	+	+	x	+	+	+
Sulphuric acid, 10%	–	–	+	o	–	–	o	o	–	–	–
Sulphuric acid, 2%	–	–	+	o	–	–	o	+	o	–	–
Sulphuric acid, concentrated, 98%	–	–	–	–	–	–	–	x	–	–	–
Tallow	+	+	x	+	+	+	+	x	+	+	+
Tar	+	+	+	+	⁺	+	o	x	+	+	⁺
Tartaric acid	o	o	+	+	o	+	+	x	+	x	4
Tetrahydrofuran (solvent)	o	+	–	+	+	o	–	x	+	+	+
Tetralin	+	+	x	+	+	+	x	x	+	–	+
Thionyl chloride	o	o	–	+	o	o	–	x	x	x	o
Toluol	o	+	o	+	+	o	–	o	+	–	+
Transformer oil	+	+	+	+	+	+	o	x	+	+	+
Trichlorethylene	–	–	–	+	–	–	–	–	o	–	–
Trichloroacetic acid (aq.), 50%	–	–	x	x	⁻	–	x	x	x	–	⁻
Trichloroethane	–	o	x	+	o	–	x	x	+	–	o
Triethanolamine, 90%	+	4	–	+	4	+	+	x	+	+	4
Trisodium phosphate, 90%	+	+	x	+	+	+	+	x	+	+	+
Uranium fluorides	–	–	x	x	–	–	x	x	x	–	–
Urea	+	+	x	+	+	+	+	x	+	+	+
Uric acid (aq.), 10%	+	+	+	x	+	+	x	x	x	+	x
Urine	+	+	+	+	+	+	+	+	+	+	+
Vaseline	o	o	+	+	⁺	+	o	x	+	o	⁺
Violet oil	+	+	x	+	+	+	x	x	+	x	+
Wash machine cleaner (phosphoric and nitric acids)	+	o	x	+	o	–	x	x	+	+	o

Chemical resistance

"4" swelling, softening due to the water

V400	Z	B	D	T220	K230	PEP	A160 B160 UW160 xirodur® C160	E7	I170	I180 I180-BL	xirodur® D180	xiros® ball bearings with PEEK cage	 PP cage PE cage	 PA cage	I150	C210 P230	I3 I6 AB
x	x	x	–	o	x	x	x	x	x	x	x	+	+	+	o	o	o
x	x	x	x	x	x	x	+	x	x	x	x	x	x	o	+	+	+
x	x	o	o	o	x	o	+	+	+	o	o	x	+	+	o	o	o
x	x	x	x	x	x	x	x	x	x	x	x	+	+	–	x	+	+
x	+	+	+	+	x	4	+	+	+	+	o	x	x	+	+	+	+
x	x	x	x	x	x	x	x	x	x	x	x	+	+	+	x	+	+
x	x	x	x	x	x	ˣ	x	x	x	x	x	x	x	+	x	+	+
x	x	x	x	x	x	x	x	x	x	x	x	x	x	+	x	x	+
x	+	+	+	+	x	4	+	x	+	+	x	x	x	+	+	x	+
x	+	x	o	o	x	°	+	x	+	+	x	+	+	+	+	x	+
x	+	x	+	+	x	4	x	+	x	+	x	+	+	+	+	+	+
+	+	–	–	–	o	–	+	–	+	o	x	–	o	–	x	+	–
+	+	–	–	–	o	–	+	–	x	o	–	+	+	+	x	+	–
–	o	–	–	–	x	–	o	x	–	–	x	o	+	–	–	x	–
+	+	+	+	+	x	+	+	+	x	+	x	+	o	+	+	+	+
x	+	x	+	+	x	⁺	+	+	x	o	x	+	+	+	+	+	+
x	+	o	o	x	x	4	+	x	+	+	x	+	+	–	x	x	o
+	+	x	o	+	x	o	o	o	–	–	x	+	+	+	+	+	+
x	+	x	–	–	x	+	–	x	–	–	x	+	o	+	+	+	+
x	x	o	o	x	x	o	–	–	–	–	x	+	–	+	x	x	o
+	+	–	–	–	+	+	o	o	–	–	x	+	+	+	x	o	+
x	+	–	+	+	x	+	o	x	+	o	x	+	o	+	+	+	+
x	+	–	–	–	x	–	o	x	–	–	x	x	+	–	–	–	–
x	x	x	–	–	x	⁻	+	+	x	x	x	+	o	+	–	–	–
x	o	x	–	–	+	–	x	x	–	–	x	+	x	o	–	–	o
x	+	x	+	+	x	4	x	x	+	+	o	+	o	–	+	x	+
x	+	x	+	+	x	+	x	x	x	+	x	+	x	+	+	x	+
x	x	x	–	–	x	–	x	x	x	x	x	+	x	+	–	–	–
x	+	o	+	+	x	+	+	+	+	+	o	x	+	+	+	+	+
x	x	x	x	x	x	x	+	x	x	x	x	+	+	+	+	+	+
+	+	+	+	+	x	+	+	x	x	+	x	x	x	–	+	+	+
x	+	o	o	+	x	⁺	+	+	+	o	x	+	+	+	+	+	+
x	+	x	+	x	x	+	x	x	x	x	x	+	+	o	x	x	+
x	+	o	–	+	x	–	+	x	x	x	x	+	o	+	x	x	o

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Chemical resistance

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

Chemicals, iglidur®	A180 A181 J200 R UW xirodur® B180 xirodur® S180 xirodur® F180 xirodur® M180 FC180	A200, G GLW G V0 M250 N54, Q2 W300, C L250, L100 igumid G xirodur® G220 igumid FC	A350	A500 C500 UW500 X X6 xirodur® A500 L500	A290 F Q290 W360 G1	J J2 J3 J4 JB	J260	J350	H H1 H2 H370 H4 HLW iguton G	F2 K P P210 P4	Q
Water glass (sodium silicate)	+	4	x	+	4	+	+	x	+	+	[4]
Wax, melted	+	+	+	+	+	+	+	+	+	+	+
White spirit	+	+	x	+	+	+	o	x	+	+	+
Xylol	o	o	+	+	+	o	–	x	+	–	+
Zinc chloride (aq.), 10%	–	–	x	+	+	–	–	x	+	–	o
Zinc oxide	+	+	x	+	+	+	+	x	+	+	+
Zinc sulphate (aq.), 10%	+	4	x	+	4	+	+	x	+	+	4

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

[4] The plain bearings are not chemically attacked by these substances. However, there may be a dimensional change due to total moisture absorption.

Chemical resistance

"4" swelling, softening due to the water

V400	Z	B	D	T220	K230	PEP	A160 B160 UW160 xirodur® C160	E7	I170	I180 I180-BL	xirodur® D180	xiros® ball bearings with PEEK cage	 PP cage PE cage	 PA cage	I150	C210 P230	I3 I6 AB
x	+	+	+	+	x	[4]	+	x	+	+	x	+	+	–	+	x	x
+	+	+	+	+	x	+	o	x	+	+	x	+	x	+	x	+	+
x	+	x	+	+	x	+	x	x	x	o	x	+	+	o	x	x	+
x	+	o	–	–	+	+	–	o	–	–	x	+	x	+	x	o	+
x	+	–	–	x	o	–	+	+	+	–	x	+	–	o	x	x	–
+	+	+	+	+	x	+	x	x	+	+	x	+	+	o	+	x	+
x	+	+	+	+	x	4	+	x	+	+	x	+	x	+	+	x	x

The data was determined using laboratory specimens or based on comparisons with similar chemicals. Therefore, this data can only act as a reference. No interaction is also considered between the single chemicals / media which can lead to a change of the resistance of iglidur® plain bearings. The chemical resistance of actual parts should be tested under application conditions. All data given concerns the chemical resistance at room temperature. Other temperatures may lead to different classifications of the chemical resistance. The data is based on our current knowledge. We therefore recommend custom-designed tests under real application conditions.

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Material properties

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. total moisture absorption	% weight	1.3	
Coefficient of sliding friction, dynamic, against steel	µ	0.06–0.20	
pv value, max. (dry)	MPa · m/s	0.3	
Mechanical properties			
Flexural modulus	MPa	2,350	DIN 53457
Flexural strength at +20°C	MPa	70	DIN 53452
Compressive strength	MPa	55	
Max. recommended surface pressure (+20°C)	MPa	35	
Shore D hardness		74	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+90	
Max. short-term application temperature	°C	+120	
Min. continuous 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 contact resistance	Ωcm	> 10^{13}	DIN IEC 93
Surface resistance	Ω	> 10^{12}	DIN 53482

iglidur® FC180

General properties	Unit	iglidur® FC180	Testing method
Density	g/cm³	1.73	
Colour		blue	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.7	DIN 53495
Max. total moisture absorption	% weight	1.3	
Mechanical properties			
Flexural modulus	MPa	2,600	DIN 53457
Flexural strength at +20°C	MPa	68	DIN 53452
Max. recommended surface pressure (+20°C)	MPa	31	
Shore D hardness		69	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+90	
Max. short-term application temperature	°C	+120	
Min. continuous application temperature	°C	–40	
Electrical properties			
Specific contact resistance	Ωcm	> 10^{12}	DIN IEC 93
Surface resistance	Ω	> 10^{12}	DIN 53482

Material properties

iglidur® I3

General properties	Unit	iglidur® I3	Testing method
Density	g/cm³	1.05	
Colour		yellow	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.8	DIN 53495
Max. total moisture absorption	% weight	1.9	
Mechanical properties			
Flexural modulus	MPa	1,400	DIN 53457
Flexural strength at +20°C	MPa	68/61[130)]	DIN 53452
Shore D hardness		70	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+80	
Max. short-term application temperature	°C	+140	
Min. continuous application temperature	°C	–40	
Electrical properties			
Specific contact resistance	Ωcm	> 10^{12}	DIN IEC 93
Surface resistance	Ω	> 10^{11}	DIN 53482

[130)] **Printed flat/upright**

iglidur® K230

General properties	Unit	iglidur® K230	Testing method
Density	g/cm³	1.36	
Colour		dark grey	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.8	DIN 53495
Max. total moisture absorption	% weight	2.9	
Mechanical properties			
Flexural modulus	MPa	1,600	DIN 53457
Flexural strength at +20°C	MPa	40	DIN 53452
Max. recommended surface pressure (+20°C)	MPa	38	
Shore D hardness		68	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+110	
Max. short-term application temperature	°C	+130	
Min. continuous application temperature	°C	–30	
Electrical properties			
Specific contact resistance	Ωcm	> 10^{12}	DIN IEC 93
Surface resistance	Ω	> 10^{12}	DIN 53482

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Material properties

iglidur® L100

General properties	Unit	iglidur® L100	Testing method
Density	g/cm³	1.35	
Colour		yellow	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.7	DIN 53495
Max. total moisture absorption	% weight	5.2	
Mechanical properties			
Flexural modulus	MPa	5,500	DIN 53457
Flexural strength at +20°C	MPa	150	DIN 53452
Max. recommended surface pressure (+20°C)	MPa	70	
Shore D hardness		79	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+100	
Max. short-term application temperature	°C	+190	
Max. short-term ambient temperature	°C	+200	
Min. continuous application temperature	°C	–40	
Electrical properties			
Specific contact resistance	Ωcm	> 10^{13}	DIN IEC 93
Surface resistance	Ω	> 10^{11}	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. total moisture absorption	% weight	5.6	
Mechanical properties			
Flexural modulus	MPa	7,800	DIN 53457
Flexural strength at 20°C	MPa	240	DIN 53452
Shore D hardness		79	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+120	
Max. short-term application temperature	°C	+180	
Min. continuous application temperature	°C	–40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	17	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	> 10^{11}	DIN IEC 93
Surface resistance	Ω	> 10^{11}	DIN 53482

Material properties

igumid FC

General properties	Unit	igumid FC	Testing method
Density	g/cm³	1.47	
Colour		dark blue	
Max. moisture absorption at +23°C/50% r.h.	% weight	2.3	DIN 53495
Max. total moisture absorption	% weight	5.2	
Mechanical properties			
Flexural modulus	MPa	7,083	DIN 53457
Flexural strength at 20°C	MPa	193	DIN 53452
Shore D hardness		83	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+100	
Max. short-term application temperature	°C	+140	
Min. continuous application temperature	°C	–30	
Electrical properties			
Specific contact resistance	Ωcm	> 10^{12}	DIN IEC 93
Surface resistance	Ω	> 10^{12}	DIN 53482

iguton G

General properties	Unit	iguton G	Testing method
Density	g/cm³	1.69	
Colour		brown	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. total moisture absorption	% weight	0.2	
Mechanical properties			
Flexural modulus	MPa	10,200	DIN 53457
Flexural strength at +20°C	MPa	140	DIN 53452
Max. recommended surface pressure (+20°C)	MPa	65	
Shore D hardness		85	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+200	
Max. short-term application temperature	°C	+240	
Max. short-term ambient temperature	°C	+260	
Min. continuous application temperature	°C	–40	
Electrical properties			
Specific contact resistance	Ωcm	> 10^{15}	DIN IEC 93
Surface resistance	Ω	> 10^{14}	DIN 53482

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Material properties

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. total moisture absorption	% weight	1.1	
Mechanical properties			
Flexural modulus	MPa	1,900	DIN 53457
Flexural strength at +20°C	MPa	68	DIN 53452
Max. recommended surface pressure (+20°C)	MPa	23	
Shore D hardness		78	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+90	
Max. short-term application temperature	°C	+120	
Min. continuous application temperature	°C	–50	
Electrical properties			
Specific contact resistance	Ωcm	> 10^{12}	DIN IEC 93
Surface resistance	Ω	> 10^{12}	DIN 53482

Material properties

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. total moisture absorption	% weight	6.0	3.9	
Mechanical properties				
Flexural modulus	MPa	3,200	5,900	DIN 53457
Flexural strength at +20°C	MPa	80	150	DIN 53452
Max. recommended surface pressure (+20°C)	MPa	60	45	
Shore D hardness		77	79	DIN 53505
Physical and thermal properties				
Max. long-term application temperature	°C	+90	+90	
Max. short-term application temperature	°C	+120	+170	
Min. continuous application temperature	°C	–40	–40	
Electrical properties				
Specific contact resistance	Ωcm	~ 10^{11}	10^{4} – 10^{9}	DIN IEC 93
Surface resistance	Ω	~ 10^{11}	10^{4} – 10^{9}	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. total moisture absorption	% weight	6.0	7.6	
Mechanical properties				
Flexural modulus	MPa	6,000	2,700	DIN 53457
Flexural strength at +20°C	MPa	180	99	DIN 53452
Max. recommended surface pressure (+20°C)	MPa	65	50	
Shore D hardness		85	–	DIN 53505
Physical and thermal properties				
Max. long-term application temperature	°C	+80	+90	
Max. short-term application temperature[1)]	°C	+120	+180	
Min. continuous application temperature	°C	–40	–40	
Electrical properties				
Specific contact resistance	Ωcm	> 10^{11}	> 10^{3}	DIN IEC 93
Surface resistance	Ω	> 10^{11}	> 10^{9}	DIN 53482

[1)] Without fill weight; no gliding movement; relaxation not excluded

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My sketches

Date:	Phone: +65 6487 1411 Fax: +65 6487 1511
From: Phone: Fax:	To: **igus® Singapore Pte Ltd** iglidur® plain bearings 84 Genting Lane #06-03 Axxel Innovation Centre Singapore 349584

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: +65 6487 1411).

Dimensions:

Shaft diameter [mm]: .....
Bearing width [mm]: .....
Bearing wall thickness [mm]: .....
Bearing flange diameter [mm]: .....
Bearing flange wall thickness [mm]: .....
Bearing load [N]: .....
Surface speed [m/s]: .....
Type of motion:
☐ Rotating with ..... rpm
☐ Oscillating with ..... degrees
☐ Linear with .....mm stroke length
Speed [1/min]: .....

Lubrication:

☐ Dry
☐ Oil
☐ Grease
☐ Water

Ambient temperature [°C] .....
Surrounding media (e.g. acids, water, alkalines etc.): .....
.....
Shaft material (e.g. steel, plastic): .....
.....
Average surface finish [Ra]: .....
Housing material: .....
Intermittent rating: .....
Run time [s]: .....
Down time [s]: .....
Target service life: .....

What type of bearing are you currently using?

☐ iglidur®
☐ Wrapped bushing
☐ Sinter
☐ Rolling bearing
☐ Other

Which problem can iglidur® solve for you?

☐ Dry operation
☐ 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-asean.com/iglidur-expert

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igubal® | Analysis

Date:	Phone: +65 6487 1411 Fax: +65 6487 1511
From: Phone: Fax:	To: **igus® Singapore Pte Ltd** igubal® spherical bearings 84 Genting Lane #06-03 Axxel Innovation Centre Singapore 349584

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: +65 6487 1411).

Rod end, Type A ☐ (male thread)
Rod end, Type B ☐ (female thread)
Pillow block bearing ☐
Spherical bearing ☐
Fixed flange bearing ☐ 2-hole ☐ 4-hole
Clevis joint ☐ with pin and clip ☐ with spring-loaded fixing clip
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, VA, plastic): .....
.....

Average surface finish [Ra]: .....
Target service life (hrs): .....
Current bearing type: .....
.....
Surrounding media (e.g. acids, water, alkalines etc.): .....
.....

Which problem can igubal® solve for you?

☐ Dry operation ☐ Chemicals
☐ Corrosion ☐ Dirt
☐ Vibration dampening ☐ Dust
☐ Cost reduction ☐ Weight

Other load characteristics: .....
.....

Sketch:

All calculations easily and quickly also online with our expert system
▶ www.igus-asean.com/igubal-expert

drylin® | Analysis

Date:	Phone: +65 6487 1411 Fax: +65 6487 1511
From: Phone: Fax:	To: **igus® Singapore Pte Ltd** drylin® linear technology 84 Genting Lane #06-03 Axxel Innovation Centre Singapore 349584

Application: .....
.....
Current guide system: .....
System orientation (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: .....
Stroke: ..... Expected service life: .....
Operating time: .....
Ambient temperature: ..... Maximum temperature: .....
Surrounding medium: ..... Lubrication: .....
Static load: ..... Dynamic load: .....

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-asean.com/drylin-expert

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My sketches

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My sketches

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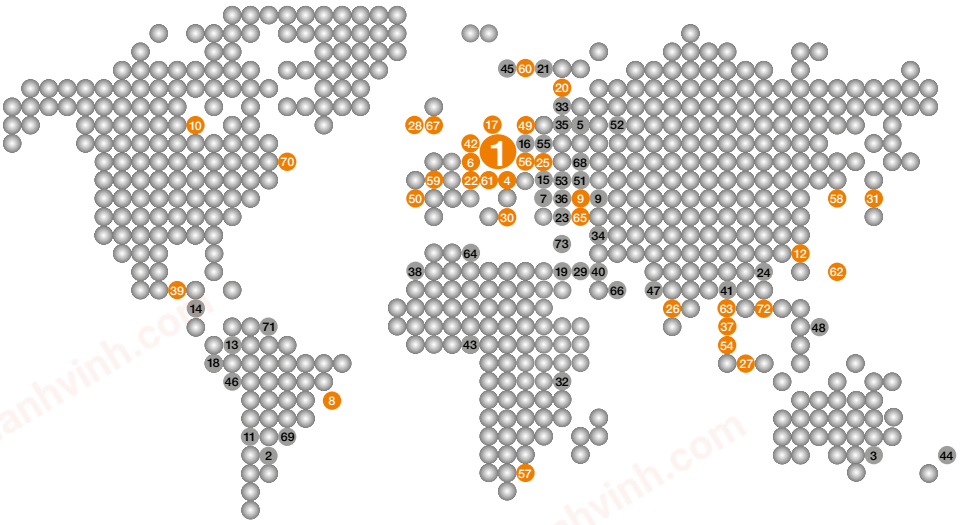

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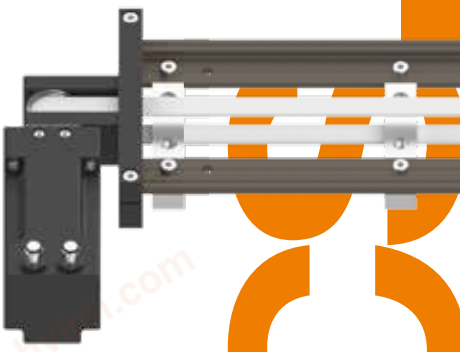

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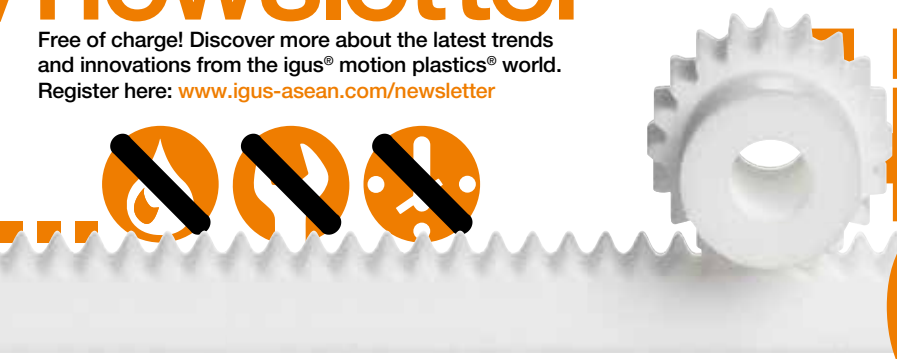

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