

## Ideal for plastic shafts – iglidur® J260



Standard range from stock

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Lubrication- and maintenance-free

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Very good c.o.f. for low or medium loads

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Good liquid media resistance

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Slightly higher temperature rating than iglidur® J

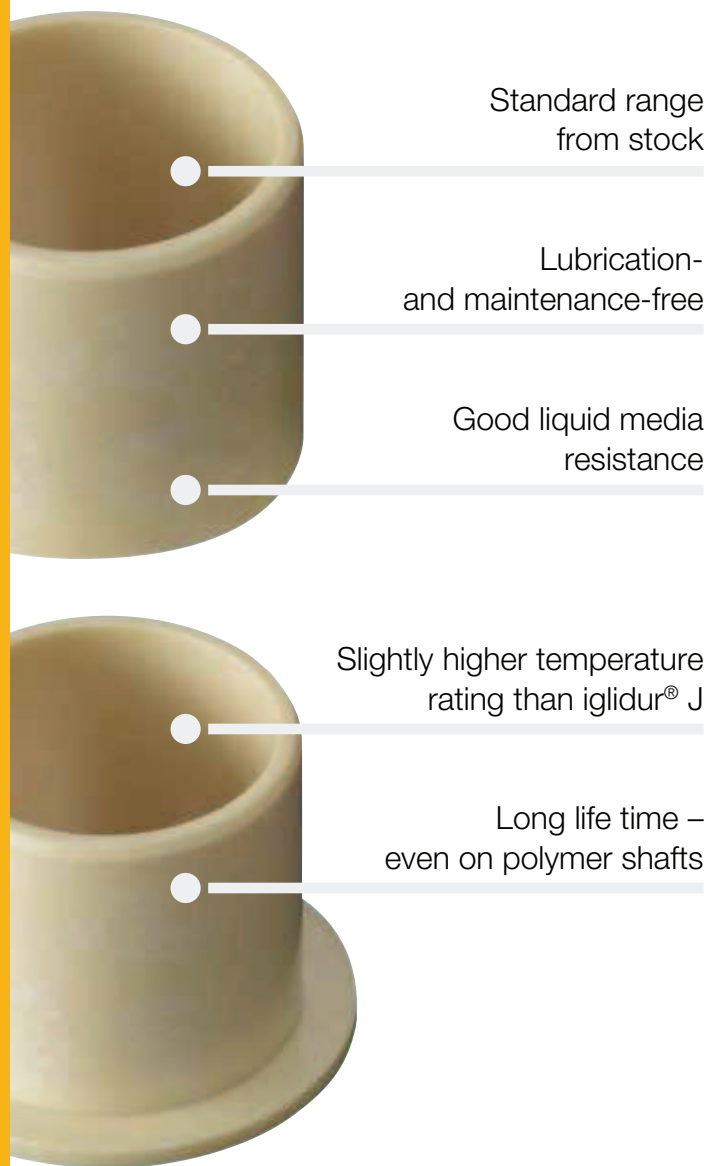
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Long life time – even on polymer shafts and other special cases

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# iglidur® J260

**Ideal for plastic shafts.** iglidur® J260 is a perfect material for long service life and best coefficient of friction with special operating conditions – first of all in contact with plastic shafts!



## When to use it?

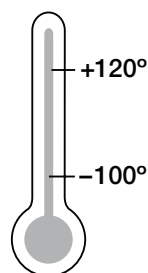
- When polymer shafts are used
- When the temperature rating of iglidur® J is not sufficient
- If bearings with low friction is required
- If good wear resistance is required at medium loads
- If good liquid media resistance is required



## When not to use?

- When high pressures occur  
▶ iglidur® Z, page 327
- When short term temperatures occur that are greater +120°C  
▶ iglidur® J350, page 257
- When a low-cost bearing for occasional movements is necessary  
▶ iglidur® J, page 109

## Temperature



## Product range

2 types  
Ø 6–20 mm  
more dimensions  
on request





## Typical sectors of industry and application areas

- Automation ● Machine design
- Test engineering and quality assurance
- Robotics ● Eletronics industry etc.

Improve technology and reduce costs –  
310 exciting examples for iglidur® plain bearings online

► [www.igus.eu/iglidur-applications](http://www.igus.eu/iglidur-applications)



► [www.igus.eu/packaging-machines](http://www.igus.eu/packaging-machines)



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## Material properties table

General properties	Unit	iglidur® J260	Testing method
Density	g/cm <sup>3</sup>	1.35	
Colour		yellow	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.2	DIN 53495
Max. water absorption	% weight	0.4	
Coefficient of sliding friction, dynamic against steel	μ	0.06–0.20	
pv value, max. (dry)	MPa · m/s	0.35	
Mechanical properties			
Modulus of elasticity	MPa	2,200	DIN 53457
Tensile 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. long term application temperature	°C	+120	
Max. short term application temperature	°C	+140	
Min. application temperature	°C	–100	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23 °C)	K <sup>–1</sup> · 10 <sup>–5</sup>	13	DIN 53752
Electrical properties			
Specific volume resistance	Ωcm	> 10 <sup>12</sup>	DIN IEC 93
Surface resistance	Ω	> 10 <sup>10</sup>	DIN 53482

Table 01: Material properties table

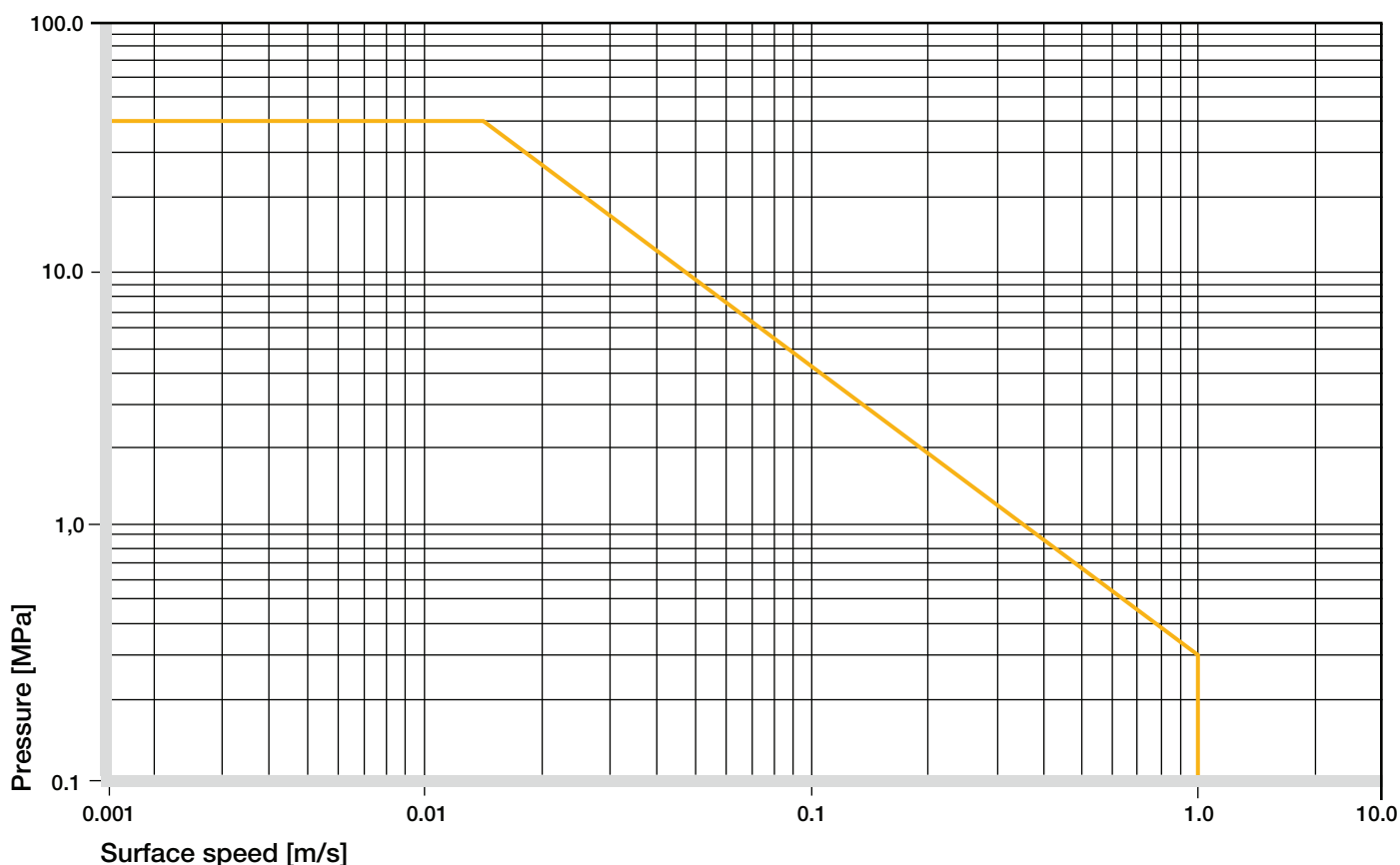
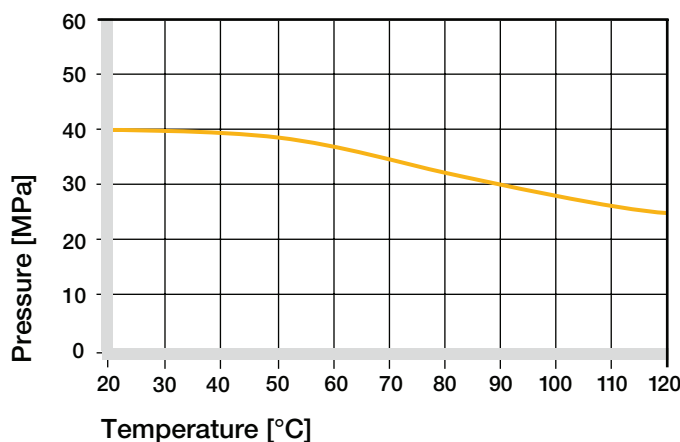


Diagram 01: Permissible pv values for iglidur® J260 with a wall thickness of 1 mm dry running against a steel shaft at +20 °C, mounted in a steel housing

Similar to the classic, iglidur® J, iglidur® J260 is an endurance runner with outstanding wear behavior, but provides increased reserves at its longterm application temperature of 120 °C.

## Mechanical Properties

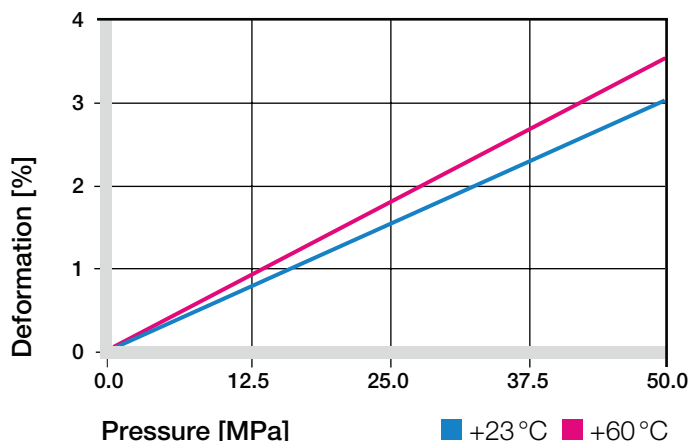
With increasing temperatures, the compressive strength of iglidur® J260 plain bearings decreases. The Diagram 02 shows this inverse relationship. However, at the longterm maximum temperature of +120 °C the permissible surface pressure is 24 MPa. The recommended maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.



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

Diagram 03 shows the elastic deformation of iglidur® J260 at radial loads. At the maximum recommended surface pressure of 40 MPa at room temperature the deformation is less than 2,5 %. A possible deformation could be, among others, dependant on the duty cycle of the load.

## ► Surface Pressure, page 63



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

## Permissible Surface Speeds

iglidur® J260 has been developed for low to medium surface speeds.

The maximum values shown in table 02 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this temperature level is rarely reached, due to varying application conditions.

## ► Surface Speed, page 65

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

**Table 02: Maximum running speed**

## Temperatures

iglidur® J260 plain bearings can be used at temperatures from -100 °C up to +120 °C. The short term maximum temperature is +140 °C. The temperature in an application also has an effect on the bearing wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +80 °C.

## ► Application Temperatures, page 66

iglidur® J260	Application temperature
Minimum	-100 °C
Max. long term	+120 °C
Max. short term	+140 °C
Add. securing is required from	+80 °C

**Table 03: Temperature limits**

## Friction and Wear

Similar to wear resistance, the coefficient of friction  $\mu$  also changes with the load. The coefficient of friction decreases with increasing loads, whereas an increase in surface speed causes an increase of the coefficient of friction.

► Coefficients of Friction and Surfaces, **page 68**

► Wear Resistance, **page 69**

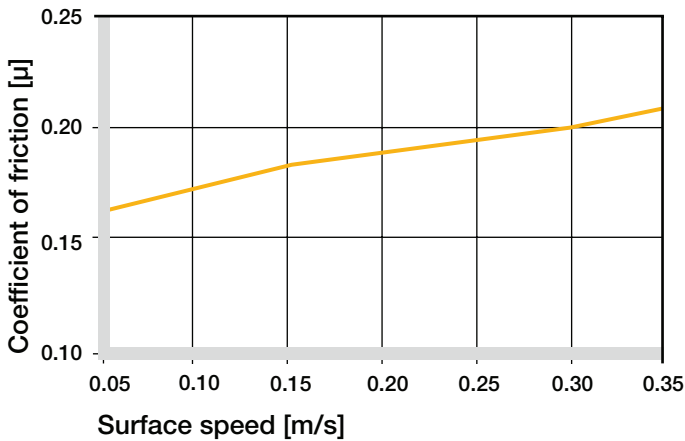


Diagram 04: Coefficient of friction as a function of the running speed,  $p = 0.75 \text{ MPa}$

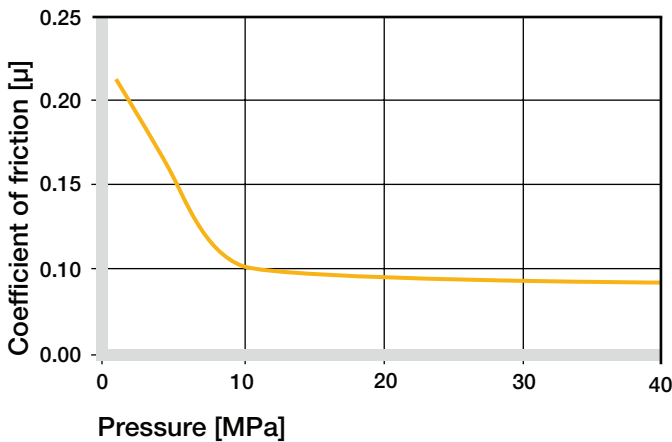


Diagram 05: Coefficient of friction as a function of the pressure,  $v = 0.01 \text{ m/s}$

## Shaft Materials

The friction and wear are also dependent, to a large degree, on the shaft material. Shafts that are too smooth, increase both the coefficient of friction and the wear of the bearing. For iglidur® J260 a ground surface with an average roughness  $R_a = 0.8 \text{ μm}$  is recommended (Diagram 06). Diagrams 07 to 09 shows results of testing different shaft materials with plain bearings made of iglidur® J260. In Diagram 07 it shows that iglidur® J260 can be combined with various shaft materials. The hard anodized aluminum shafts came out best at low loads, but iglidur® J260 bearings show good service life even on simple Cf53, stainless steel and hard-chromed shafts. In this connection it is important to note that with increasing loads, the recommended hardness of the shaft increases. The “soft” shafts tend to wear more easily and thus increase the wear of the overall system, if the loads exceed 2 MPa. Diagram 08 shows that with increasing load the wear on hard-chromed shafts and V2A shafts rises less strongly than on Cf53 and St37 shafts. The comparison of rotation and oscillating in Diagram 09 makes it very clear where iglidur® J260 bearings are best used, especially in rotary operations.

► Shaft Materials, **page 71**

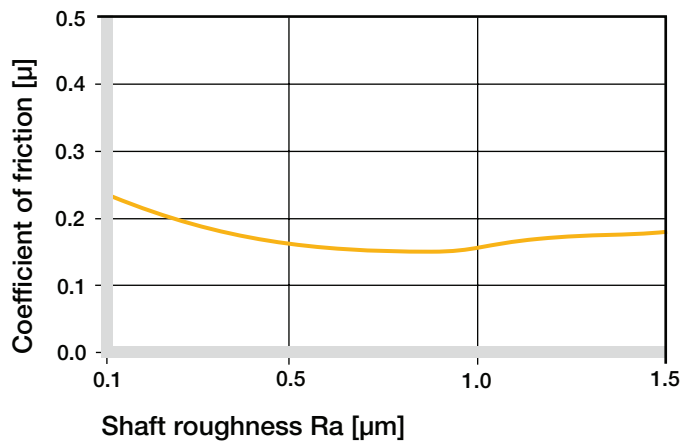


Diagram 06: Coefficient of friction as function of the shaft surface (Cf53 hardened and ground steel)

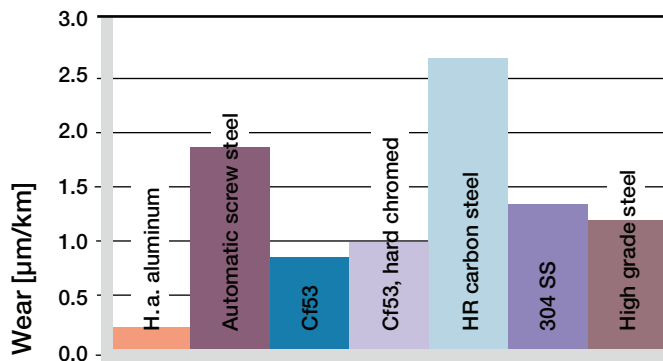


Diagram 07: Wear, rotating with different shaft materials, pressure  $p = 1$  MPa,  $v = 0.3$  m/s

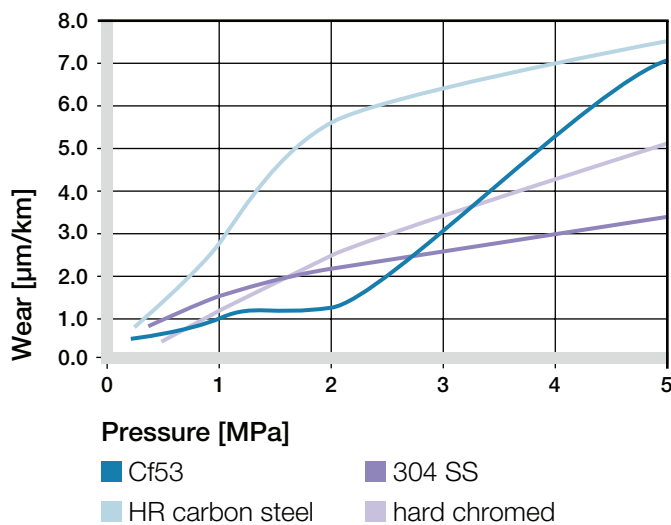


Diagram 08: Wear with different shaft materials in rotational operation, as a function of the pressure

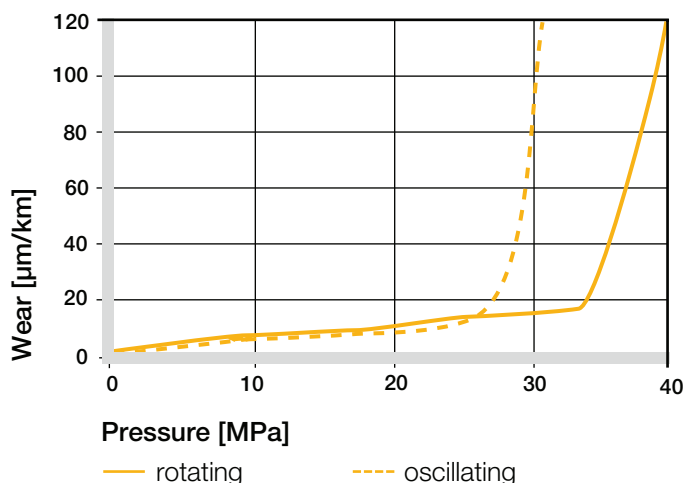


Diagram 09: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

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

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

## Additional Properties

### Chemical Resistance

iglidur® J260 plain bearings are resistant to diluted alkalis, hydrocarbons and alcohols. The very low moisture absorption also permits use in wet or damp environments.

► Chemical Table, [page 1258](#)

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

**+ resistant 0 conditionally resistant – not resistant**  
All data given at room temperature [+20 °C]

Table 05: Chemical resistance

### Radiation Resistance

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

### UV Resistance

Partially resistant against UV rays.

### Vacuum

In a vacuum, any moisture absorbed in the material would be outgassed. For this reason only dehumidified iglidur® J260 bearings are suitable for vacuum.



## Electrical Properties

iglidur® J260 plain bearings are electrically insulating.

Volume resistance	$> 10^{12} \Omega \text{cm}$
Surface resistance	$> 10^{10} \Omega$

## Moisture Absorption

The moisture absorption of iglidur® J260 plain bearings is approximately 0.2 % in standard atmosphere. The saturation limit submerged in water is 0.4 %. These values are so low that design changes due to absorption can be ignored in most cases.

### Maximum moisture absorption

At +23 °C/50 % r.h.	0.2 % weight
Max. water absorption	0.4 % weight

Table 06: Moisture absorption

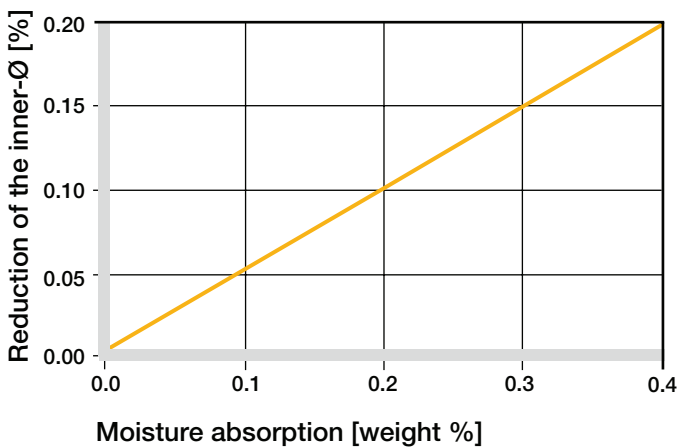


Diagram 10: Effect of moisture absorption on plain bearings

## Installation Tolerances

iglidur® J260 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, 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.

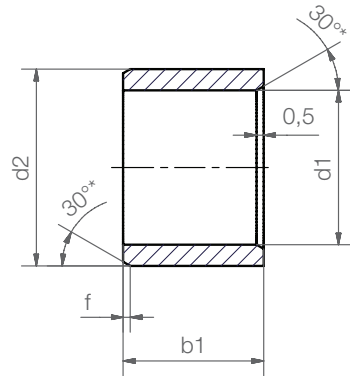
► Testing Methods, page 75

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

Table 07: Important tolerances for plain bearings according to ISO 3547-1 after pressfit



## Sleeve bearing



### Order key

**J260SM-0608-06**



- Length b1
- Outer diameter d2
- Inner diameter d1
- Metric
- Type (Form S)
- Material iglidur® J260

Dimensions according to ISO 3547-1 and special dimensions

\* thickness < 1 mm, chamfer = 20°

Chamfer in relation to the d1

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

### Dimensions [mm]

Part number	d1	d1-Tolerance*	d2	b1 h13
J260SM-0608-06	6.0	+0.020 +0.068	8.0	6.0
J260SM-0810-06	8.0	+0.025 +0.083	10.0	6.0
J260SM-0810-10	8.0	+0.025 +0.083	10.0	10.0
J260SM-1012-10	10.0	+0.025 +0.083	12.0	10.0
J260SM-1214-12	12.0	+0.032 +0.102	14.0	12.0
J260SM-1214-15	12.0	+0.032 +0.102	14.0	15.0
J260SM-1618-15	16.0	+0.032 +0.102	18.0	15.0
J260SM-1820-12	18.0	+0.032 +0.102	20.0	12.0
J260SM-2023-20	20.0	+0.040 +0.124	23.0	20.0

\* after pressfit. Testing methods ► page 75

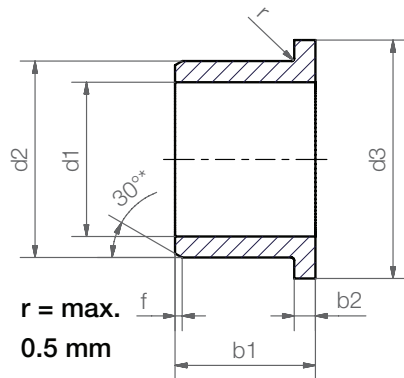


**delivery** from stock  
**time**



**prices** price list online  
[www.igus.eu/eu/j260](http://www.igus.eu/eu/j260)

## Flange bearing



### Order key

**J260FM-0608-06**



- Length b1
- Outer diameter d2
- Inner diameter d1
- Metric
- Type (Form F)
- Material iglidur® J260

Dimensions according to ISO 3547-1 and special dimensions

\* thickness < 1 mm, chamfer = 20°

Chamfer in relation to the d1

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

## Dimensions [mm]

Part number	d1	d1-Tolerance*	d2	d3 d13	b1 h13	b2 -0.14
J260FM-0608-06	6.0	+0.020 +0.068	8.0	12.0	6.0	1.0
J260FM-0810-10	8.0	+0.025 +0.083	10.0	15.0	10.0	1.0
J260FM-1012-10	10.0	+0.025 +0.083	12.0	18.0	10.0	1.0
J260FM-1214-12	12.0	+0.032 +0.102	14.0	20.0	12.0	1.0
J260FM-1618-17	16.0	+0.032 +0.102	18.0	24.0	17.0	1.0
J260FM-2023-21	20.0	+0.040 +0.124	23.0	30.0	21.5	1.5

\* after pressfit. Testing methods ► page 75



### Don't find your size?

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



**delivery** from stock  
**time**



**prices** price list online  
[www.igus.eu/eu/j260](http://www.igus.eu/eu/j260)