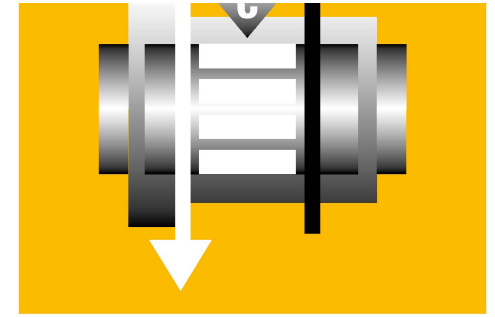




Ideal for plastic shafts

Wear-resistant at medium temperatures and loads

igidur® J260



When to use it?

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

When not to use it?

- When high surface pressures occur
igidur® Z
- When permanent temperatures exceed +120°C
igidur® J350
- When universal wear resistance is required
igidur® J

EN 09/2023



Ø
6.0-20.0mm



Also available
as:



Bar stock,
round bar
Page 743



Bar stock,
plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696



igubal®
spherical balls
Page 993

Ideal for plastic shafts Wear-resistant at medium temperatures and loads

Time and again the iglidur® J260 material proves its worth where the maximum service life and best coefficient of friction are required under special application conditions - particularly in connection with plastic shafts!

- For low and medium loads
- High media resistance
- Slightly higher temperature rating than iglidur® J
- Long service life - even on polymer shafts and other special cases

Typical application areas

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

Descriptive technical specifications

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

Online product finder
www.igus.sk/igidur-finder

Online service life calculation
www.igus.sk/igidur-expert

212 3D-CAD, finder and service life calculation ... www.igus.sk/J260

igus

EN 09/2023

General properties

Density	g/cm³	1.35	
Colour		yellow	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	0.4	
Coefficient of friction, dynamic, against steel	μ	0.06-0.20	
pv value, max. (dry)	MPa · m/s	0.35	

Mechanical properties

Flexural modulus	MPa	2,200	DIN 53457
Flexural strength at +20°C	MPa	60	DIN 53452
Compressive strength	MPa	50	
Max. permissible surface pressure (+20°C)	MPa	40	
Shore D hardness		77	DIN 53505

Physical and thermal properties

Max. application temperature long-term	°C	+120	
Max. application temperature short-term	°C	+140	
Min. application temperature	°C	-100	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K⁻¹ · 10⁻⁵	13	DIN 53752

Electrical properties

Specific transitional resistance	Ωcm	> 10¹²	DIN IEC 93
Surface resistance	Ω	> 10¹⁰	DIN 53482

Table 01: Material properties

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

Moisture absorption

The moisture absorption of iglidur® J260 plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 0.4% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® J260 bearings.

Radiation resistance

They are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

Resistance to weathering

igidur® J260 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® J260 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

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

Surface pressure, page 45



-100 °C up to
+120 °C



40MPa



V-2



V-2



V-2



V-2



V-2



V-2

Lubrication-free made easy ... from stock ... no minimum order quantity 213

Permissible surface speeds

iglidur® J260 has been developed for low to medium surface speeds. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

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

Application temperatures, page 53

Additional securing, page 53

Friction and wear

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

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® J260 a ground surface with an average surface finish $R_a = 0.8 \mu\text{m}$ is recommended. Diagram 06 shows a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® J260. It is important to notice that with increasing loads, the recommended hardness of the shaft increases. The "soft" shafts tend to wear more easily and thus increase the wear of the overall system, if the loads exceed 2MPa. The comparison of rotating and pivoting movements in diagram 07 makes it very clear that iglidur® J260 plain bearings are most suited for rotating operation.

Shaft materials, page 56

Installation tolerances

iglidur® J260 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

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

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

Table 02: Chemical resistance

Chemical table, page 1170

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

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.06-0.20	0.09	0.04	0.04

Table 04: Coefficient of friction against steel ($R_a = 1 \mu\text{m}$, 50HRC)

	Housing	Plain bearings	Shaft
$\varnothing d1$ [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

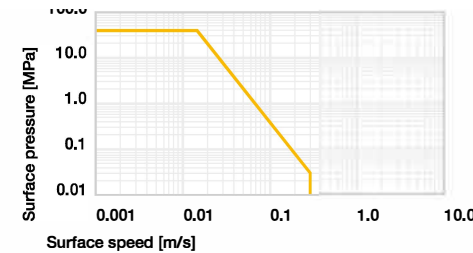


Diagram 01: Permissible pv values for iglidur® J260 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

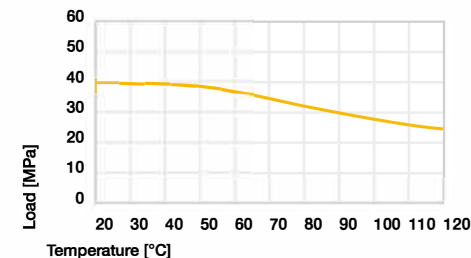


Diagram 02: Maximum recommended surface pressure as a function of temperature (40MPa at +20°C)

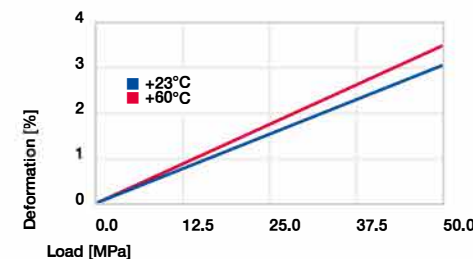


Diagram 03: Deformation under pressure and temperature

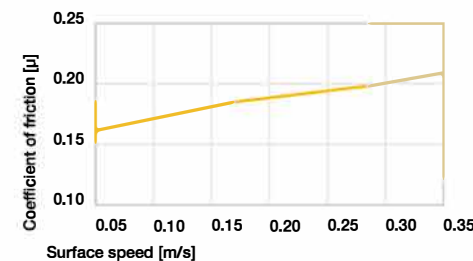


Diagram 04: Coefficient of friction as a function of the surface speed, $p = 0.75 \text{ MPa}$

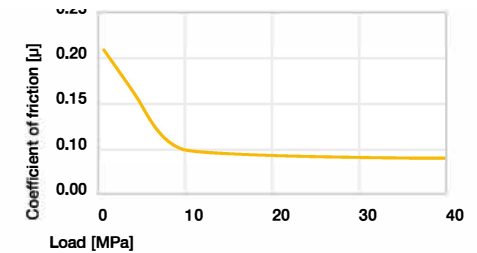


Diagram 05: Coefficient of friction as a function of the pressure, $v = 0.01 \text{ m/s}$

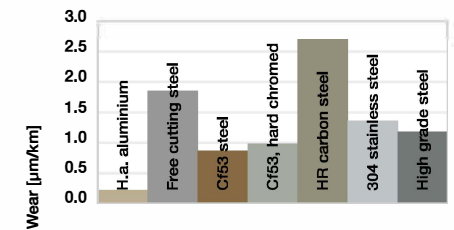


Diagram 06: Wear, rotating with different shaft materials, pressure, $p = 1 \text{ MPa}$, $v = 0.3 \text{ m/s}$

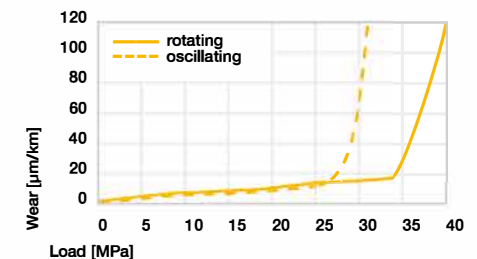
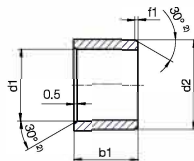


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1			
d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8

Order example: J260SM-0608-06 – no minimum order quantity.
J260 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
6.0	+0.020 +0.068	8.0	6.0	J260SM-0608-06
8.0		10.0	6.0	J260SM-0810-06
8.0	+0.025 +0.083	10.0	10.0	J260SM-0810-10
10.0		12.0	10.0	J260SM-1012-10
12.0		14.0	12.0	J260SM-1214-12
12.0		14.0	15.0	J260SM-1214-15
16.0	+0.032 +0.102	18.0	13.5	J260SM-1618-135
16.0		18.0	15.0	J260SM-1618-15
18.0		20.0	12.0	J260SM-1820-12
18.0		20.0	20.0	J260SM-1820-20
20.0	+0.040 +0.124	23.0	20.0	J260SM-2023-20

³⁾ After press-fit. Testing methods, page 61

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

Order online
including delivery times, prices, online tools
www.igus.sk/J260

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

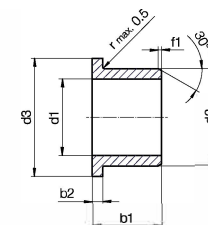
Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

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

216 3D-CAD, finder and service life calculation ... www.igus.sk/J260



EN 09/2023



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1			
d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8

Order example: J260FM-0608-06 – no minimum order quantity.
J260 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1	d1 Tolerance ³⁾	d2	d3 d13 ³⁾	b1 h13	b2 h13	Part No.
[mm]		[mm]	[mm]	[mm]	[mm]	
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	J260FM-0608-06
8.0		10.0	15.0	10.0	1.00	J260FM-0810-10
10.0	+0.025 +0.083	12.0	18.0	10.0	1.00	J260FM-1012-10
12.0		14.0	20.0	12.0	1.00	J260FM-1214-12
16.0	+0.032 +0.102	18.0	24.0	17.0	1.00	J260FM-1618-17
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	J260FM-2023-21

³⁾ After press-fit. Testing methods, page 61

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

Order online
including delivery times, prices, online tools
www.igus.sk/J260

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

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

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

Lubrication-free made easy ... from stock ... no minimum order quantity 217



EN 09/2023