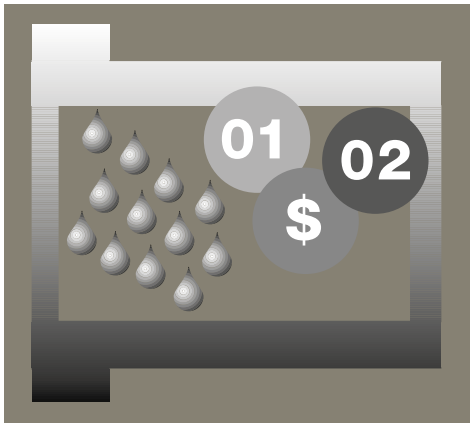



# Versatile and cost-effective

## 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***

# 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 | – | | + |

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

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





# 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***

# 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

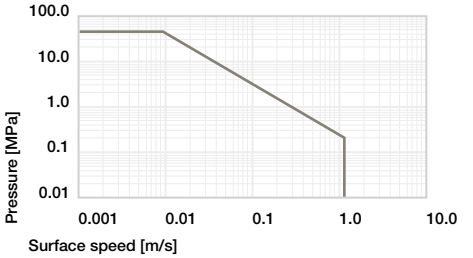



Diagram 01: Permissible pv values for iglidur® J2 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

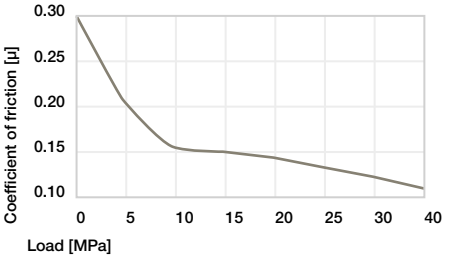



Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

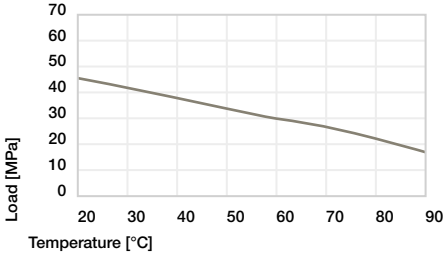



Diagram 02: Maximum recommended surface pressure as a function of temperature (46MPa at +20°C)

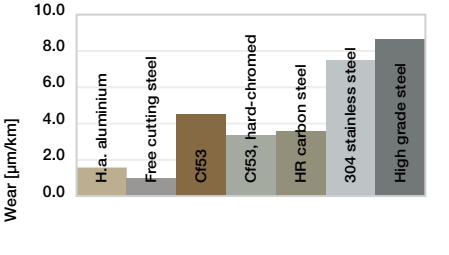



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

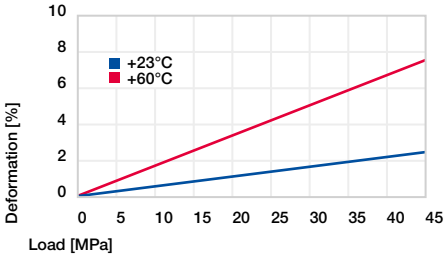



Diagram 03: Deformation under pressure and temperature

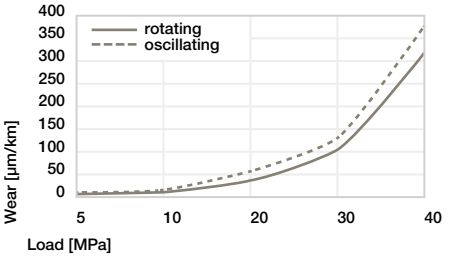



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

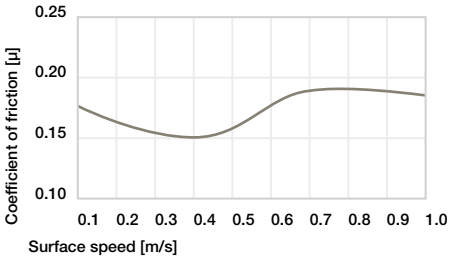
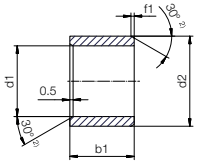



Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

# 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.
www.igus.sk/24

**Online ordering**
Including delivery times, prices, online tools
www.igus.sk/J2

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

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

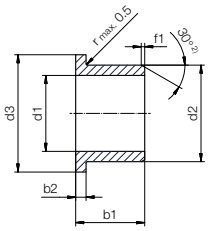
**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**



iglidur® J2
+90°C
46MPa

# Bearing technology | Plain 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*

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

**Online ordering**
Including delivery times, prices, online tools
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| Discount scaling | | |
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**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**