



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            | - | <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> | + |
| Wear resistance at +90°C            | - | <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> | + |
| Wear resistance at +150°C           | - | <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> | + |
| Low coefficient of friction         | - | <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> | + |
| Low moisture absorption             | - | <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> | + |
| Wear resistance under water         | - | <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> | + |
| High media resistance               | - | <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> | + |
| Resistant to edge pressures         | - | <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> | + |
| Suitable for shock and impact loads | - | <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> | + |
| Resistant to dirt                   | - | <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> | + |

 **Online product finder**  
[www.igus.sk/igidur-finder](http://www.igus.sk/igidur-finder)

 **Online service life calculation**  
[www.igus.sk/igidur-expert](http://www.igus.sk/igidur-expert)

| 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 · 10⁻⁵ | 12.7           | DIN 53752  |
| Electrical properties                           |            |                |            |
| Specific contact resistance                     | Ωcm        | > 10¹²         | DIN IEC 93 |
| Surface resistance                              | Ω          | > 10¹²         | DIN 53482  |

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

igidur® 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**



-50°C up to  
+90°C



44MPa



HB



RoHS



ISO 35474

### 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  $\mu$  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  $R_a = 0.1 - 0.3 \mu\text{m}$  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 $\mu$ | 0.08 – 0.17 | 0.09    | 0.04 | 0.04  |

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

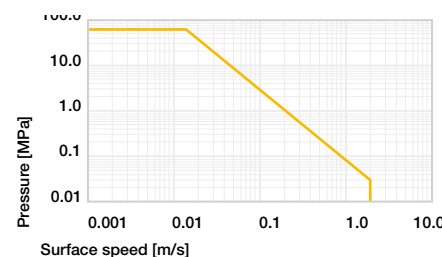


Diagram 01: Permissible pv values for iglidur® J3B plain bearings with a wall thickness of 1 mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

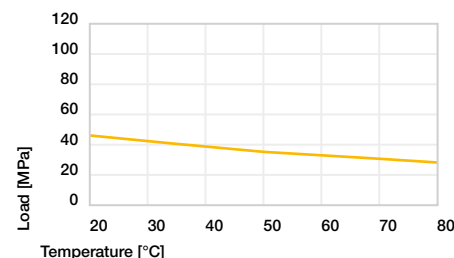


Diagram 02: Maximum recommended surface pressure as a function of temperature (44 MPa at +20°C)

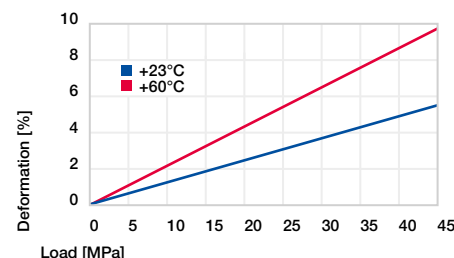


Diagram 03: Deformation under pressure and temperature

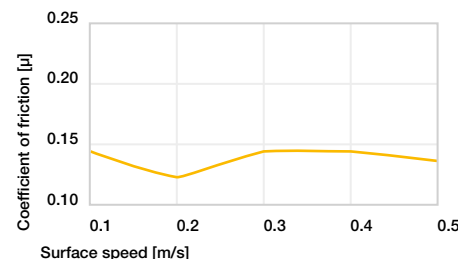


Diagram 04: Coefficient of friction as a function of the surface speed,  $p = 0.75 \text{ MPa}$

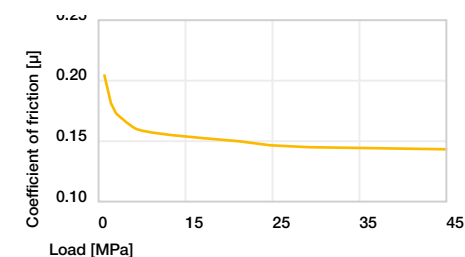


Diagram 05: Coefficient of friction as a function of the pressure,  $v = 0.01 \text{ m/s}$

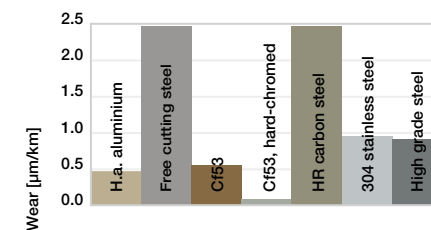


Diagram 06: Wear, rotating with different shaft materials, pressure,  $p = 1 \text{ MPa}$ ,  $v = 0.3 \text{ m/s}$

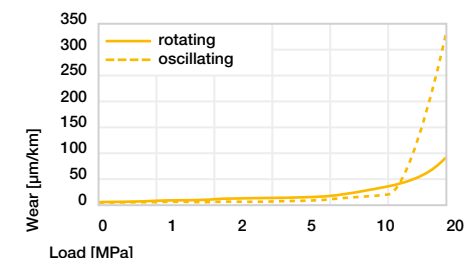
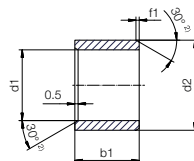


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load



<sup>2)</sup> 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     |

**i** 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   | d1                      | d2   | b1          | Part No.             |
|------|-------------------------|------|-------------|----------------------|
| [mm] | Tolerance <sup>3)</sup> | [mm] | h13<br>[mm] |                      |
| 6.0  | +0.020 +0.068           | 8.0  | 6.0         | <b>J3BSM-0608-06</b> |
| 8.0  | +0.025 +0.083           | 10.0 | 10.0        | <b>J3BSM-0810-10</b> |
| 10.0 |                         | 12.0 | 10.0        | <b>J3BSM-1012-10</b> |
| 12.0 | +0.032 +0.102           | 14.0 | 12.0        | <b>J3BSM-1214-12</b> |
| 16.0 |                         | 18.0 | 15.0        | <b>J3BSM-1618-15</b> |
| 20.0 | +0.040 +0.124           | 23.0 | 20.0        | <b>J3BSM-2023-20</b> |

<sup>3)</sup> After press-fit. Testing methods, page 57



**Available from stock**

Detailed information about delivery time online.

[www.igus.sk/24](http://www.igus.sk/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.

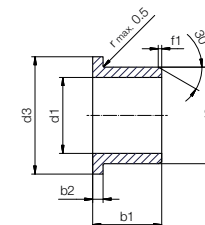
#### Discount scaling

|         |           |               |
|---------|-----------|---------------|
| 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 Germany for orders above €150.



<sup>2)</sup> 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     |

**i** 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   | d1                      | d2   | d3                        | b1          | b2          | Part No.             |
|------|-------------------------|------|---------------------------|-------------|-------------|----------------------|
| [mm] | Tolerance <sup>3)</sup> | [mm] | d13 <sup>3)</sup><br>[mm] | h13<br>[mm] | h13<br>[mm] |                      |
| 6.0  | +0.020 +0.068           | 8.0  | 12.0                      | 8.0         | 1.00        | <b>J3BFM-0608-06</b> |
| 8.0  | +0.025 +0.083           | 10.0 | 15.0                      | 9.5         | 1.00        | <b>J3BFM-0810-10</b> |
| 10.0 |                         | 12.0 | 18.0                      | 9.0         | 1.00        | <b>J3BFM-1012-10</b> |
| 12.0 | +0.032 +0.102           | 14.0 | 20.0                      | 12.0        | 1.00        | <b>J3BFM-1214-12</b> |
| 16.0 |                         | 18.0 | 24.0                      | 17.0        | 1.00        | <b>J3BFM-1618-17</b> |
| 20.0 | +0.040 +0.124           | 23.0 | 30.0                      | 21.5        | 1.50        | <b>J3BFM-2023-21</b> |

<sup>3)</sup> After press-fit. Testing methods, page 57



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