

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**

Bearing technology | Plain bearings | iglidur® J



Also available as:
Ø 1,5 – 120,0mm



Bar stock, round bar: Page 638



Bar stock, plate: Page 652



Tribo-tape liner: Page 657



Piston rings: Page 662



Two hole flange bearing: Page 581



Modified special parts: Page 602



iglobal® spherical balls: Page 790



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 stick-slip 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.eu/iglidur-finder

Online service life calculation

www.igus.eu/iglidur-expert

Technical data

General properties

Density	g/cm ³	1.49	Testing method
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 · 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 table

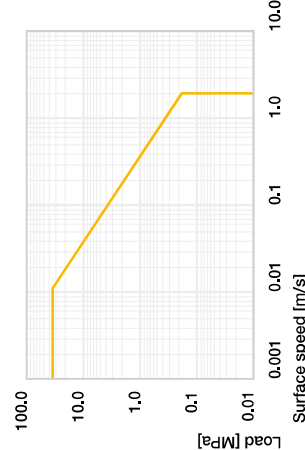


Diagram 01: Permissible pv values for iglidur® J plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

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.



-50°C up to +90°C



35MPa



HB



Radiation resistance

Plain bearings made from iglidur® J are resistant up to a radiation intensity of 3 · 10⁶Gy.

UV resistance

iglidur® J plain bearings become discoloured when exposed to UV radiation. However, the material properties are not affected.

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

+ resistant 0 conditionally resistant - not resistant
All information given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1542

Bearing technology | Plain bearings | iglidur® J

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

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.

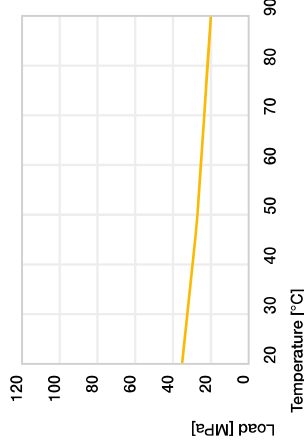


Diagram 02: Maximum recommended surface pressure as a function of temperature (35MPa at +20°C)

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

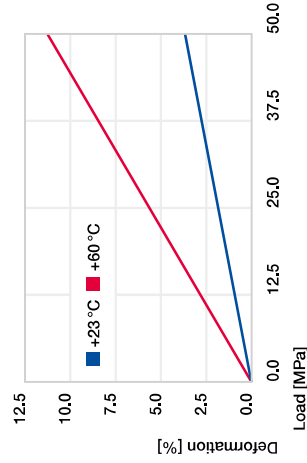


Diagram 03: Deformation under pressure and temperature

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

	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

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

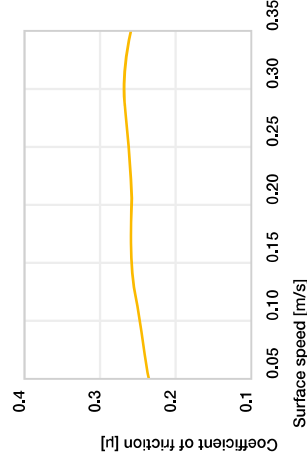


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

Technical data

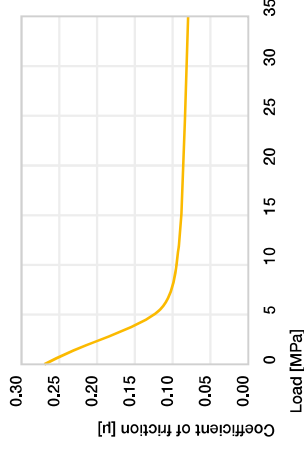


Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

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

Dry	Greases	Oil	Water
Coeff. of friction [μ]	0.06 – 0.18	0.09	0.04

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



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

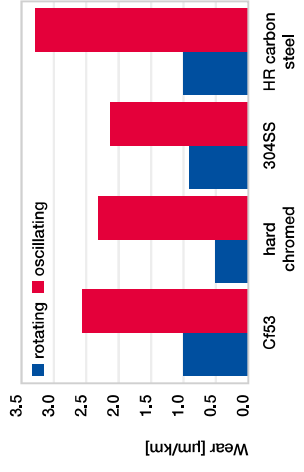


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

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).

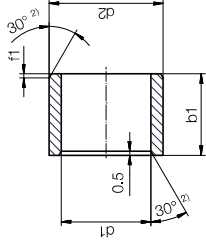
Testing methods, page 57

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

Bearing technology | Plain bearings | iglidur® J

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
f [mm] 0.3 | 0.5 | 0.8 | 1.2

i Dimensions according to ISO 3547-1 and special dimensions

P 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⁾ [mm]	d2 [mm]	b1 [mm]	h13 [mm]	Part No.
1.5	+0.014	4.0	2.0	JSM-0104-02	
2.0	+0.054	3.5	7.0	JSM-0203-07	
2.0	+0.020	5.0	2.5	JSM-0205-02	
2.5	+0.080	6.0	2.5	JSM-0206-02	
3.0	+0.014	4.5	5.0	JSM-0304-05	
3.0	+0.054	4.5	9.0	JSM-0304-09	
3.0	+0.020	7.0	14.0	JSM-0305-04	
3.0	+0.080	8.0	4.0	JSM-0308-04	
3.0	+0.080	8.0	5.0	JSM-0308-05	
4.0	+0.014	5.5	4.0	JSM-0405-04	
4.0	+0.054	5.5	6.0	JSM-0405-06	
4.0	+0.020	7.0	4.6	JSM-0405-08	
5.0	+0.068	7.0	5.0	JSM-0507-046	
5.0	+0.068	7.0	5.0	JSM-0507-05	
5.0	+0.020	7.0	10.0	JSM-0507-10	
5.0	+0.080	7.0	14.0	JSM-0507-14	
5.0	+0.020	7.0	15.0	JSM-0507-15	
5.0	+0.030	8.0	5.0	JSM-0508-05	
6.0	+0.105	7.0	3.0	JSM-0607-03	
6.0	+0.010	7.0	5.0	JSM-0607-05	
6.0	+0.058	7.0	8.0	JSM-0607-08	
6.0	+0.058	7.0	12.5	JSM-0607-12.5	
6.0	+0.058	7.0	14.0	JSM-0607-14	

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

Product range

d1 [mm]	d1 Tolerance ³⁾ [mm]	d2 [mm]	b1 [mm]	h13 [mm]	Part No.
10.0	+0.025	12.0	12.0	JSM-1012-12	
10.0	+0.083	12.0	15.0	JSM-1012-15	
10.0	+0.040	14.0	10.0	JSM-1014-10	
10.0	+0.130	14.0	16.0	JSM-1014-16	
12.0		14.0	6.0	JSM-1214-06	
12.0		14.0	8.0	JSM-1214-08	
12.0	+0.032	14.0	9.0	JSM-1214-09	
12.0	+0.102	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	16.0	12.0	JSM-1216-12	
12.0	+0.160	16.0	17.0	JSM-1216-17	
13.0		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	+0.032	16.0	8.0	JSM-1416-08	
14.0	+0.102	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	+0.050	18.0	18.0	JSM-1418-18	
14.0	+0.160	20.0	20.0	JSM-1420-20	
15.0		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	+0.032	17.0	25.0	JSM-1517-25	
15.0	+0.102	18.0	10.0	JSM-1518-10	
16.0		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	20.0	16.0	JSM-1620-16	
16.0	+0.160	22.0	20.0	JSM-1622-20	
17.0		19.0	6.0	JSM-1719-06	
18.0		20.0	10.0	JSM-1820-10	
18.0	+0.032	20.0	15.0	JSM-1820-15	
18.0	+0.102	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	

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

Bearing technology | Plain bearings | iglidur® J

d1	d1 Tolerance ³⁾ [mm]	d2 [mm]	b1 [mm]	h13 [mm]	Part No.
32.0	+0.025	37.0	25.0	JSM-3237-25	
32.0	+0.125	38.0	50.0	JSM-3238-50	
35.0	+0.125	39.0	20.0	JSM-3539-20	
35.0	+0.050	39.0	30.0	JSM-3539-30	
35.0	+0.050	39.0	40.0	JSM-3539-40	
35.0	+0.150	39.0	50.0	JSM-3539-50	
36.0	+0.150	40.0	45.0	JSM-3640-45	
40.0		44.0	20.0	JSM-4044-20	
40.0		44.0	30.0	JSM-4044-30	
40.0	+0.060	44.0	35.0	JSM-4044-35	
40.0	+0.180	44.0	40.0	JSM-4044-40	
40.0		44.0	50.0	JSM-4044-50	
42.0	+0.080	46.0	73.0	JSM-4246-73	
45.0	+0.025	50.0	20.0	JSM-4550-20	
45.0	+0.125	50.0	30.0	JSM-4550-30	

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

d1	d1 Tolerance ³⁾ [mm]	d2 [mm]	b1 [mm]	h13 [mm]	Part No.
45.0	+0.025	50.0	40.0	JSM-4550-40	
45.0	+0.125	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	



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Online ordering

including delivery times, prices, online tools

www.igus.eu/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.

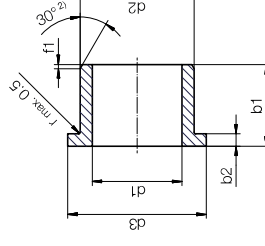
No low-quantity surcharges.

Free shipping within Germany for orders

above €150.

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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
f [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions

i Order example: JFM-0306-10 - no minimum order quantity.

J iglidur® material F Flange bearing M Metric 03 Inner Ø d1 06 Outer Ø d2 10 Total length b1

d1	d1 Tolerance ³⁾ [mm]	d2 [mm]	d3 [mm]	b1 [mm]	b2 [mm]	h13 [mm]	Part No.
3.0	+0.014	4.5	7.5	3.0	0.75	JFM-0304-03	
3.0	+0.054	4.5	7.5	4.5	0.75	JFM-0304-045	
3.0	+0.020	6.0	9.0	10.0	1.50	JFM-0306-10	
4.0	+0.080	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	+0.020	7.0	11.0	3.0	1.00	JFM-0507-03	
5.0	+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	+0.030	8.0	12.0	10.0	1.00	JFM-0608-10	
6.0	+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	7.5	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	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	15.0	10.0	1.00	JFM-0810-10	
8.0		10.0	16.0	11.0	2.00	JFM-081016-11	
8.0		10.0	12.0	16.0	1.00	JFM-081012-16	
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	

³⁾ After press-fit. Testing methods page 57

Bearing technology | Plain bearings | iglidur® J

d1	d2	d3	b1	b2	Part No.	
Tolerance [§]		d13	h13	h14		
[mm]	[mm]	[mm]	[mm]	[mm]		
14,0	18,0	25,0	4,0	2,00	JFM-141825-24	
15,0	17,0	23,0	4,0	1,00	JFM-1517-04	
15,0	+0,032	17,0	23,0	5,5	1,00	JFM-1517-055
15,0	+0,102	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	21,0	27,0	20,0	3,00	JFM-1521-20
15,0	+0,160					
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		20,0	26,0	12,0	1,00	JFM-1820-12
18,0	+0,032	20,0	26,0	17,0	1,00	JFM-1820-17
18,0	+0,102	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		30,0	36,0	3,00	3,00	JFM-2430-30
25,0	+0,040	28,0	39,0	5,0	1,50	JFM-252839-05
25,0	+0,124	28,0	35,0	6,0	1,50	JFM-2528-06
25,0		28,0	39,0	7,5	1,50	JFM-252839-075
25,0		28,0	35,0	11,5	1,50	JFM-2528-11

[§] After press-fit, Testing methods page 57



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Ordering note
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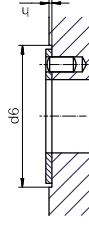
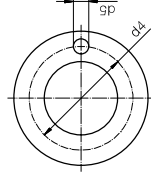
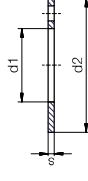
Discount scaling

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

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

Bearing technology | Plain bearings | 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	d2	d4	d5	h	d6	s	Part No.
+0,25	-0,25	-0,12	+0,375	+0,2/-0,2	+0,12	-0,05	
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
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



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