

The new endurance runner: specialist for pivoting and pulsating loads – iglidur® J3

Low coefficients of friction

Good media-resistance

Low humidity absorption

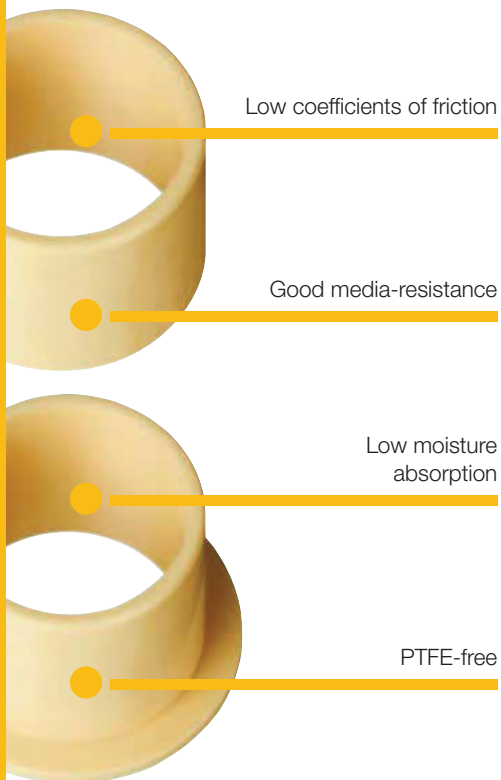
PTFE-free

Lubrication and maintenance-free

Standard range from stock



Up to 10 MPa up to three times more wear resistant than iglidur® J



iglidur® J3 is a material with improved wear resistance at low to medium loads and high speed. The lifetime is up to 300 % longer than iglidur® J – the previous iglidur® champion.



When to use it?

- If wear resistance rotating or oscillating of iglidur® J should be optimised
- When very low coefficients of friction in dry operation are required
- If high wear resistance at low loads is required
- If low moisture absorption is requested
- If good liquid media resistance is required



When not to use it?

- If you need a wear-resistant bearing for linear motion
 - ▶ iglidur® J, page 141
- If permanent temperatures exceed +90 °C
 - ▶ iglidur® J260, page 181
- If radial surface pressure is higher than 45 MPa
 - ▶ iglidur® W300, page 153

Typical application areas

- Automation
- Printing industry
- Beverage technology
- Glass industry
- Aerospace engineering



Available from stock

Detailed information about delivery time online.



Block pricing online

No minimum order value. From batch size 1.



Max. +90 °C

Min. -50 °C



Ø 2–50 mm

More dimensions upon request



Imperial dimensions available

▶ From page 1391



Online product finder

▶ www.igus.eu/iglidur-finder

Material properties

General properties	Unit	iglidur® J3	Testing method
Density	g/cm³	1.42	
Colour		yellow	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.3	DIN 53495
Max. water absorption	% weight	1.3	
Coefficient of sliding friction, dynamic, against steel	μ	0.06–0.20	
pv value, max. (dry)	MPa · m/s	0.5	
Mechanical properties			
Flexural modulus	MPa	2,700	DIN 53457
Flexural strength at +20 °C	MPa	70	DIN 53452
Compressive strength	MPa	60	
Max. recommended surface pressure (+20 °C)	MPa	45	
Shore-D hardness		73	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+90	
Max. short-term application temperature	°C	+120	
Min. long-term application temperature	°C	-50	
Heat conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23 °C)	K ⁻¹ · 10 ⁻⁵	13	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties table

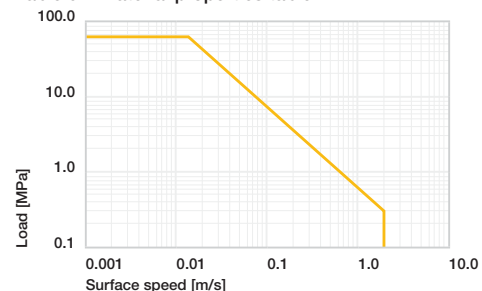


Diagram 01: Permissible pv values for iglidur® J3 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® J3 plain bearings in standard climatic conditions is approximately 0.3% weight. The saturation limit submerged in water is 1.3% weight. Due to these low values considering expansion by moisture absorption is only required in extreme cases.

▶ Diagram, www.igus.eu/j3-moisture

Vacuum

In vacuum, any absorbed moisture content is outgassed. Only dehumidified iglidur® J3 bearings are suitable for vacuum.

Radiation resistance

Resistant to radiation up to an intensity of 1 · 10⁴ Gy.

UV resistance

iglidur® J3 plain bearings become discoloured under UV radiation. However, hardness, compressive strength and the wear resistance of the material do not change.

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

+ resistant 0 conditionally resistant – not resistant

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

Table 02: Chemical resistance

▶ Chemical table, page 1478

With respect to its general mechanical and thermal specifications, iglidur® J3 is directly comparable to our classic, iglidur® J.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® J3 plain bearings decreases. The diagram O2 shows this inverse relationship. The recommended maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

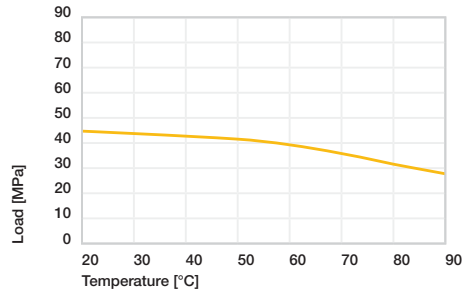


Diagram O2: Permissible maximum surface pressure of as a function of temperature (45 MPa at +20 °C)

Diagram O3 shows the elastic deformation of iglidur® J3 at radial loads. At the maximum recommended surface pressure of 45 MPa 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

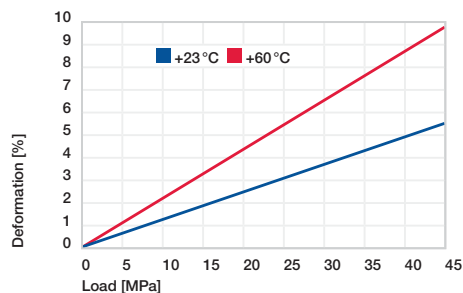


Diagram O3: Deformation under pressure and temperature

Permissible surface speeds

iglidur® J3 is also suitable for medium to high surface speeds. The maximum values shown in table O3 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 44

m/s	Rotating	Oscillating	Linear
Continuous	1.5	1.1	8
Short-term	3	2.1	10

Table O3: Maximum surface speeds

Temperatures

The temperatures prevailing in the bearing system also have an influence on the bearing wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +90 °C. At 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 load (diagram O4 and O5).

► Coefficients of friction and surfaces, page 47

► Wear resistance, page 50

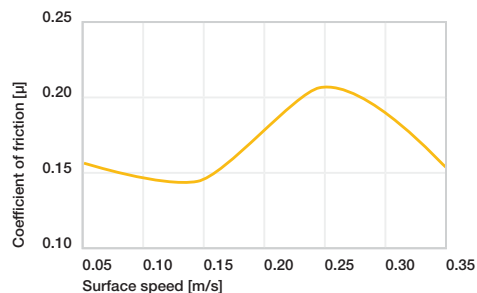


Diagram O4: Coefficient of friction as a function of the surface speed, $p = 0.75$ MPa

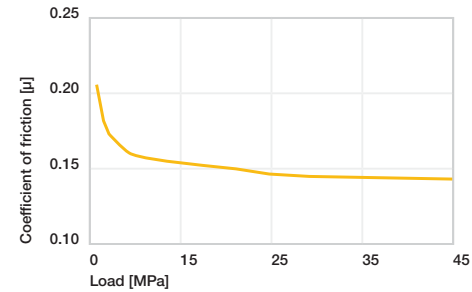


Diagram O5: Coefficient of friction as a function of the pressure, $v = 0.01$ m/s

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® J3 a ground surface with an average roughness $R_a = 0.1-0.3 \mu\text{m}$ is recommended. The diagram O6 shows that iglidur® J3 can be combined with various shaft materials. Diagram O7 shows rotating and oscillating tests in comparison. With higher load, the wear increases more for rotating than for oscillating movements.

► Shaft materials, page 52

iglidur® J3	Dry	Greases	Oil	Water
C. o. f. μ	0.06 – 0.20	0.09	0.04	0.04

Table O4: Coefficient of friction against steel ($R_a = 1 \mu\text{m}$, 50 HRC)

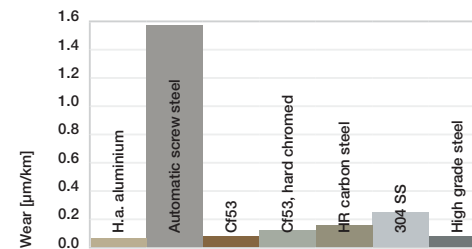


Diagram O6: Wear, rotating with different shaft materials, $p = 1$ MPa, $v = 0.3$ m/s

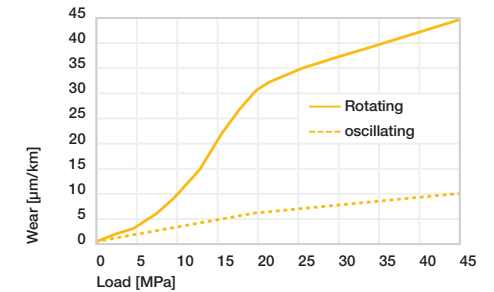


Diagram O7: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

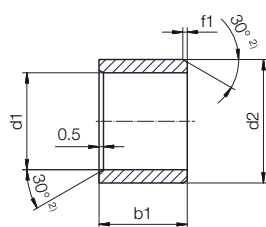
Installation tolerances

iglidur® J3 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, 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

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® J3 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

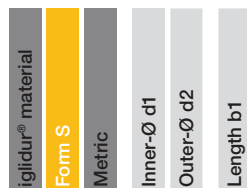
Table O5: Important tolerances for plain bearings according to ISO 3547-1 after pressfit



Order key

Type Dimensions [mm]

J3 S M-0304-05



Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available

► From page 1409

d1	d1- Tolerance ³⁾	d2	b1 h13	Part No.
15.0		17.0	25.0	J3SM-1517-25
15.0		17.0	30.0	J3SM-1517-30
16.0		18.0	15.0	J3SM-1618-15
16.0		18.0	20.0	J3SM-1618-20
16.0	+0.032	18.0	25.0	J3SM-1618-25
16.0	+0.102	18.0	25.0	J3SM-1618-25
18.0		20.0	15.0	J3SM-1820-15
18.0		20.0	20.0	J3SM-1820-20
18.0		20.0	25.0	J3SM-1820-25
18.0		21.0	25.0	J3SM-1821-25
20.0		23.0	10.0	J3SM-2023-10
20.0		23.0	15.0	J3SM-2023-15
20.0		23.0	20.0	J3SM-2023-20
20.0		23.0	25.0	J3SM-2023-25
20.0		23.0	30.0	J3SM-2023-30
22.0		25.0	15.0	J3SM-2225-15
22.0		25.0	20.0	J3SM-2225-20
22.0		25.0	25.0	J3SM-2225-25
22.0		25.0	30.0	J3SM-2225-30
24.0	+0.040	27.0	15.0	J3SM-2427-15
24.0	+0.124	27.0	20.0	J3SM-2427-20
24.0		27.0	25.0	J3SM-2427-25
24.0		27.0	30.0	J3SM-2427-30
25.0		28.0	15.0	J3SM-2528-15
25.0		28.0	20.0	J3SM-2528-20
25.0		28.0	25.0	J3SM-2528-25
25.0		28.0	30.0	J3SM-2528-30
28.0		32.0	20.0	J3SM-2832-20
28.0		32.0	25.0	J3SM-2832-25

²⁾ 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]

d1	d1- Tolerance ³⁾	d2	b1 h13	Part No.
3.0	+0.014 +0.054	4.5	5.0	J3SM-0304-05
4.0		5.5	4.0	J3SM-0405-04
4.0		5.5	6.0	J3SM-0405-06
5.0	+0.020	7.0	5.0	J3SM-0507-05
5.0	+0.068	7.0	10.0	J3SM-0507-10
6.0		8.0	6.0	J3SM-0608-06
6.0		8.0	8.0	J3SM-0608-08
6.0		8.0	10.0	J3SM-0608-10
8.0		10.0	8.0	J3SM-0810-08
8.0		10.0	10.0	J3SM-0810-10
8.0		10.0	12.0	J3SM-0810-12
10.0	+0.025	12.0	8.0	J3SM-1012-08
10.0	+0.083	12.0	10.0	J3SM-1012-10
10.0		12.0	12.0	J3SM-1012-12
10.0		12.0	15.0	J3SM-1012-15
10.0		12.0	10.0	J3SM-1012-20
12.0		14.0	10.0	J3SM-1214-10
12.0		14.0	12.0	J3SM-1214-12
12.0		14.0	15.0	J3SM-1214-15
12.0		14.0	20.0	J3SM-1214-20
13.0	+0.032	15.0	10.0	J3SM-1315-10
13.0	+0.102	15.0	20.0	J3SM-1315-20
14.0		16.0	15.0	J3SM-1416-15
14.0		16.0	20.0	J3SM-1416-20
14.0		16.0	25.0	J3SM-1416-25
15.0		17.0	15.0	J3SM-1517-15
15.0		17.0	20.0	J3SM-1517-20

³⁾ After press-fit. Testing methods ► Page 57

Dimensions [mm]

d1	d1- Tolerance ³⁾	d2	b1 h13	Part No.
28.0		32.0	30.0	J3SM-2832-30
30.0	+0.040	34.0	20.0	J3SM-3034-20
30.0	+0.124	34.0	25.0	J3SM-3034-25
30.0		34.0	30.0	J3SM-3034-30
30.0		34.0	40.0	J3SM-3034-40
32.0		36.0	20.0	J3SM-3236-20
32.0		36.0	30.0	J3SM-3236-30
32.0		36.0	40.0	J3SM-3236-40
35.0	+0.050	39.0	20.0	J3SM-3539-20
35.0	+0.150	39.0	30.0	J3SM-3539-30
35.0		39.0	40.0	J3SM-3539-40
35.0		39.0	50.0	J3SM-3539-50
40.0		44.0	20.0	J3SM-4044-20

³⁾ After press-fit. Testing methods ► Page 57

d1	d1- Tolerance ³⁾	d2	b1 h13	Part No.
40.0		44.0	30.0	J3SM-4044-30
40.0		44.0	40.0	J3SM-4044-40
40.0		44.0	50.0	J3SM-4044-50
45.0		50.0	20.0	J3SM-4550-20
45.0		50.0	30.0	J3SM-4550-30
45.0	+0.050	50.0	40.0	J3SM-4550-40
45.0	+0.150	50.0	50.0	J3SM-4550-50
50.0		55.0	20.0	J3SM-5055-20
50.0		55.0	30.0	J3SM-5055-30
50.0		55.0	40.0	J3SM-5055-40
50.0		55.0	50.0	J3SM-5055-50
50.0		55.0	60.0	J3SM-5055-60

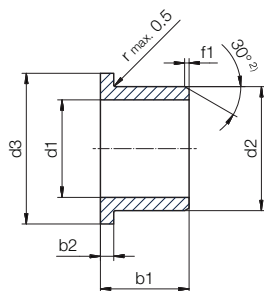
Couldn't find your size?

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 very quickly.

Even more dimensions from stock

More than 300 dimensions are now available. Search online for your required bearing.

► www.igus.eu/iglidur-specialbearings



Order key

Type Dimensions [mm]

J3 F M-03 04-05

iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1
-------------------	--------	--------	------------	------------	-----------

Dimensions according to ISO 3547-1 and special dimensions

 Imperial dimensions available
 ▶ From page 1433

²⁾ 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]

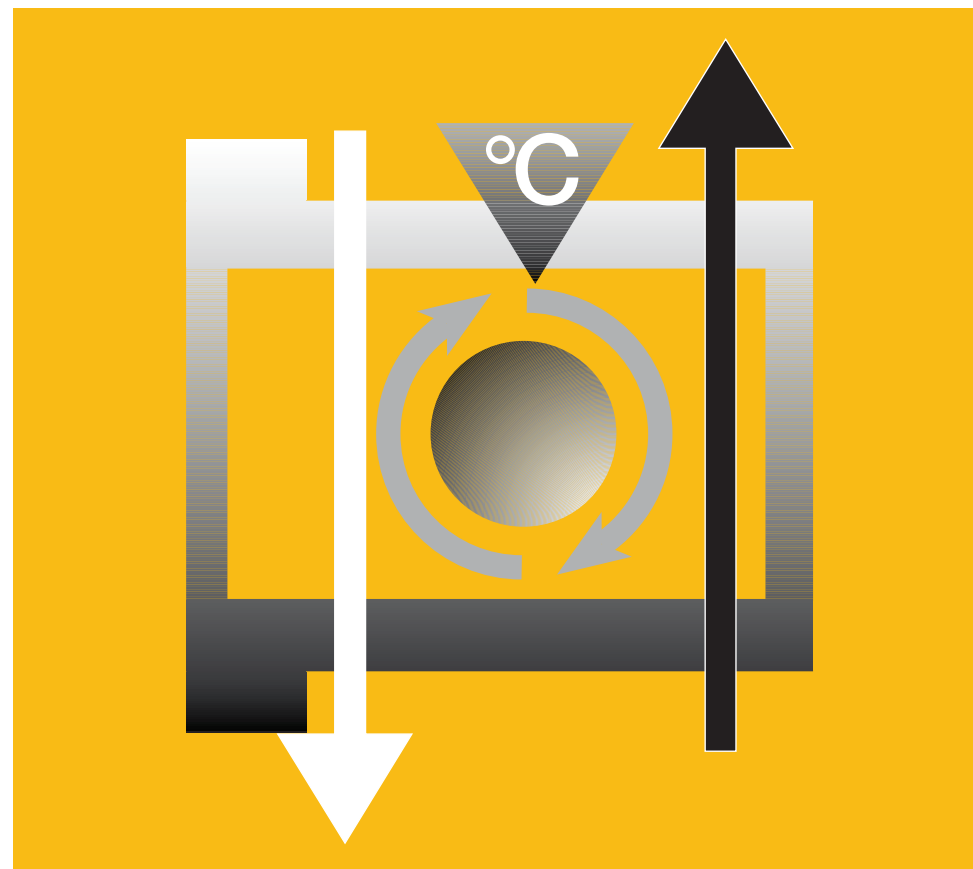
d1	d1- Tolerance ³⁾	d2	d3	b1	b2	Part No.
		d13	h13	-0.14		
2.0	+0.014	3.5	5.0	5.0	0.75	J3FM-0203505-05
3.0	+0.054	4.5	7.5	5.0	0.75	J3FM-0304-05
5.0		7.0	11.0	5.0	1.0	J3FM-0507-05
6.0	+0.020	8.0	12.0	4.0	1.0	J3FM-0608-04
6.0	+0.068	8.0	12.0	6.0	1.0	J3FM-0608-06
6.0		8.0	12.0	8.0	1.0	J3FM-0608-08
8.0		10.0	15.0	5.5	1.0	J3FM-0810-05
8.0		10.0	15.0	7.5	1.0	J3FM-0810-07
8.0		10.0	15.0	9.5	1.0	J3FM-0810-09
8.0		10.0	15.0	10.0	1.0	J3FM-0810-10
10.0	+0.025	12.0	18.0	7.0	1.0	J3FM-1012-07
10.0	+0.083	12.0	18.0	9.0	1.0	J3FM-1012-09
10.0		12.0	18.0	10.0	1.0	J3FM-1012-10
10.0		12.0	18.0	12.0	1.0	J3FM-1012-12
10.0		12.0	18.0	17.0	1.0	J3FM-1012-17
12.0		14.0	20.0	7.0	1.0	J3FM-1214-07
12.0		14.0	20.0	9.0	1.0	J3FM-1214-09
12.0		14.0	20.0	12.0	1.0	J3FM-1214-12
12.0	+0.032	14.0	20.0	17.0	1.0	J3FM-1214-17
14.0	+0.102	16.0	22.0	12.0	1.0	J3FM-1416-12
14.0		16.0	22.0	17.0	1.0	J3FM-1416-17
15.0		17.0	23.0	9.0	1.0	J3FM-1517-09

d1	d1- Tolerance ³⁾	d2	d3	b1	b2	Part No.
		d13	h13	-0.14		
15.0		17.0	23.0	12.0	1.0	J3FM-1517-12
15.0	+0.032	17.0	23.0	17.0	1.0	J3FM-1517-17
16.0	+0.102	18.0	24.0	12.0	1.0	J3FM-1618-12
16.0		18.0	24.0	17.0	1.0	J3FM-1618-17
18.0		20.0	26.0	12.0	1.0	J3FM-1820-12
18.0		20.0	26.0	17.0	1.0	J3FM-1820-17
18.0		20.0	26.0	22.0	1.0	J3FM-1820-22
18.0		21.0	25.0	12.0	1.0	J3FM-1821-12
20.0		23.0	30.0	11.5	1.5	J3FM-2023-11
20.0	+0.040	23.0	30.0	16.5	1.5	J3FM-2023-16
20.0	+0.124	23.0	30.0	21.5	1.5	J3FM-2023-21
25.0		28.0	35.0	11.5	1.5	J3FM-2528-11
25.0		28.0	35.0	16.5	1.5	J3FM-2528-16
25.0		28.0	35.0	21.0	1.5	J3FM-2528-21
30.0		34.0	42.0	16.0	2.0	J3FM-3034-16
30.0		34.0	42.0	26.0	2.0	J3FM-3034-26
35.0		39.0	47.0	16.0	2.0	J3FM-3539-16
35.0		39.0	47.0	26.0	2.0	J3FM-3539-26
40.0	+0.050	44.0	52.0	30.0	2.0	J3FM-4044-30
40.0	+0.150	44.0	52.0	40.0	2.0	J3FM-4044-40
45.0		50.0	58.0	50.0	2.0	J3FM-4550-50

³⁾ After press-fit. Testing methods ▶ Page 57

Couldn'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 very quickly.



Endurance runner with high dimensional stability at high temperature – iglidur® J350

Excellent coefficient of friction against steel

Continuous service temperature up to +180 °C

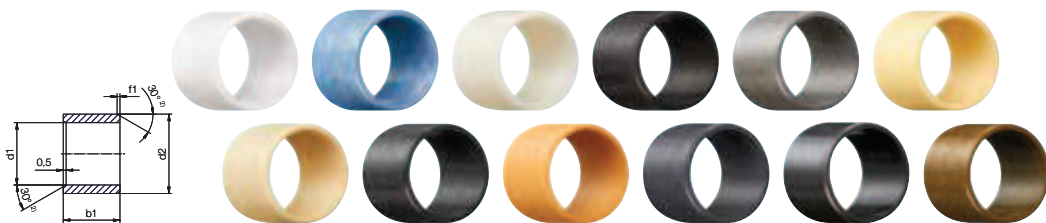
For medium and high loads

Particularly well suited to rotating movement

Lubrication and maintenance-free

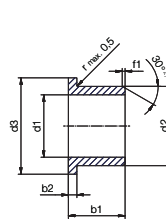
Standard range from stock





Dimensions sleeve Abmessungen zylindrisch [mm]

Part No. Art.-Nr.	d1	d1 tolerance d1-Toleranz	d2	b1 h13
A180SM-0810-15	8.0	+0.025 +0.083	10.0	15.0
A350SM-1416-12	14.0	+0.016 +0.068	16.0	12.0
C500SM-3034-30	30.0	+0.020 +0.104	34.0	30.0
F2SM-1214-15	12.0	+0.032 +0.102	14.0	15.0
F2SM-1618-20	16.0	+0.032 +0.102	18.0	20.0
GSM-0406-06	4.0	+0.020 +0.068	6.0	6.0
GSM-0810-36	8.0	+0.025 +0.083	10.0	36.0
GSM-120125-78	120.0	+0.072 +0.212	125.0	78.0
GSM-1214-45	12.0	+0.032 +0.102	14.0	45.0
GSM-1820-30	18.0	+0.032 +0.102	20.0	30.0
GSM-1822-15	18.0	+0.032 +0.102	22.0	15.0
GSM-2021-095	20.0	+0.020 +0.072	21.0	9.5
JSM-0814-08	8.0	+0.040 +0.130	14.0	8.0
JSM-1216-06	12.0	+0.050 +0.0160	16.0	6.0
JSM-1218-10	12.0	+0.050 +0.0160	18.0	10.0
JSM-1315-06	13.0	+0.050 +0.0160	15.0	6.0
JSM-1620-20	16.0	+0.050 +0.0160	20.0	20.0
JSM-6065-100	60.0	+0.060 +0.180	65.0	100.0
MSM-1620-10	16.0	+0.050 +0.0160	20.0	10.0
P210SM-1214-04	12.0	+0.032 +0.102	14.0	4.0
PSM-0608-05	6.0	+0.020 +0.068	8.0	5.0
PSM-0812-10	8.0	+0.040 +0.130	12.0	10.0
PSM-3236-15	32.0	+0.050 +0.150	36.0	15.0
Q2SM-1012-04	10.0	+0.025 +0.083	12.0	4.0
Q2SM-4246-52	42.0	+0.050 +0.150	46.0	52.0
X6SM-1416-22	14.0	+0.016 +0.086	16.0	22.0
X6SM-1618-12	16.0	+0.016 +0.086	18.0	12.0
X6SM-2023-15	20.0	+0.020 +0.104	23.0	15.0
ZSM-2225-35	22.0	+0.020 +0.104	25.0	35.0
ZSM-6065-25	60.0	+0.030 +0.150	65.0	25.0
ZSM-9095-100	90.0	+0.036 +0.176	95.0	100.0



Dimensions with flange Abmessungen mit Bund [mm]

Part No. Art.-Nr.	d1	d1 tolerance d1-Toleranz	d2	d3	b1 h13	b2
GFM-060710-06	6.0	+0.010 +0.040	7.0	10.0	6.0	0.5
GFM-0812-16	8.0	+0.040 +0.130	12.0	16.0	16.0	2.0
GFM-101115-03	10.0	+0.013 +0.046	11.0	15.0	3.0	1.0
GFM-1012-11	10.0	+0.025 +0.083	12.0	18.0	11.0	1.0
GFM-1012-25	10.0	+0.025 +0.083	12.0	18.0	25.0	1.0
GFM-1719-07	17.0	+0.032 +0.102	19.0	25.0	7.0	1.0
GFM-2527-12	25.0	+0.040 +0.124	27.0	32.0	12.0	1.0
GFM-2527-15	25.0	+0.040 +0.124	27.0	32.0	15.0	1.0
GFM-3034-12	30.0	+0.040 +0.124	34.0	42.0	12.0	2.0
GFM-303440-07	30.0	+0.040 +0.124	34.0	40.0	7.0	2.0
H1FM-0405-06	4.0	+0.010 +0.058	5.5	9.5	6.0	0.8
J350FM-6065-50	60.0	+0.030 +0.150	65.0	73.0	50.0	2.0
J3FM-081418-15	8.0	+0.025 +0.083	14.0	18.0	15.0	2.0
JFM-040810-15	4.0	+0.020 +0.068	8.0	10.0	15.0	2.0
JFM-0810-03	8.0	+0.025 +0.083	10.0	15.0	3.0	1.0
JFM-121419-06	12.0	+0.032 +0.102	14.0	19.0	6.0	1.0
JFM-121622-20	12.0	+0.050 +0.0160	16.0	22.0	20.0	2.0
JFM-2023-07	20.0	+0.040 +0.124	23.0	30.0	7.0	1.5
PFM-1214-08	12.0	+0.032 +0.102	14.0	8.0	20.0	1.0
PFM-1618-08	16.0	+0.032 +0.102	18.0	8.0	24.0	1.0
P210FM-0405-06	4.0	+0.020 +0.068	5.5	9.5	6.0	0.8
Q290FM-8085-100	80.0	+0.060 +0.180	85.0	93.0	100.0	2.5
Q2FM-101219-13	10.0	+0.025 +0.083	12.0	19.0	13.0	1.0
Q2FM-1013-05	10.0	+0.025 +0.083	13.0	20.0	5.0	1.0
Q2FM-2023-07	20.0	+0.040 +0.124	23.0	30.0	7.0	1.5
QFM-101215-04	10.0	+0.025 +0.083	12.0	15.0	4.0	1.0
QFM-121418-06	12.0	+0.032 +0.102	14.0	18.0	6.0	1.0
WFM-2023-08	20.0	+0.040 +0.124	23.0	30.0	8.0	1.5
XFM-1214-50	12.0	+0.016 +0.086	14.0	50.0	20.0	1.0
X6FM-0608-04	6.0	+0.010 +0.058	8.0	12.0	4.0	1.0
ZFM-1012-25	10.0	+0.013 +0.071	12.0	18.0	25.0	1.0
ZFM-2023-075	20.0	+0.020 +0.104	23.0	30.0	7.5	1.5

Calculate online Online berechenbar

www.igus.eu/iglidur-experte

www.igus.de/iglidur-expert

Available Lieferbar
from stock ab Lager

www.igus.de/iglidur
www.igus.eu/iglidur

Calculate online Online berechenbar

www.igus.eu/iglidur-experte

www.igus.de/iglidur-expert

Available Lieferbar
from stock ab Lager

www.igus.de/iglidur
www.igus.eu/iglidur