Flange bearing (form F)





²⁾ Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø1-6	Ø 6–12	Ø 12–30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: A350FM-0507-05 – no minimum order quantity.

A350 iglidur[®] material F Flange bearing M Metric 05 Inner Ø d1 07 Outer Ø d2 05 Total length b1

d1	d1 Tolerance ³⁾	d2	d3 d13 ³⁾	b1 h13	b2 h13	Part No.	d1	d1 Tolerance ³	d2	d3 d13 ³⁾	b1 h13	b2 h13	Part No.
[mm]		[mm]	[mm]	[mm]	[mm]		[mm]		[mm]	[mm]	[mm]	[mm]	
5.0		7.0	11.0	5.0	1.00	A350FM-0507-05	15.0		17.0	23.0	9.0	1.00	A350FM-1517-09
6.0	+0.010	8.0	12.0	4.0	1.00	A350FM-0608-04	15.0		17.0	23.0	12.0	1.00	A350FM-1517-12
6.0	+0.058	8.0	12.0	6.0	1.00	A350FM-0608-06	15.0	10.016	17.0	23.0	17.0	1.00	A350FM-1517-17
6.0		8.0	12.0	8.0	1.00	A350FM-0608-08	16.0	+0.010	18.0	24.0	12.0	1.00	A350FM-1618-12
8.0		10.0	15.0	5.5	1.00	A350FM-0810-05	16.0	+0.000	18.0	24.0	17.0	1.00	A350FM-1618-17
8.0		10.0	15.0	7.5	1.00	A350FM-0810-07	18.0		20.0	26.0	12.0	1.00	A350FM-1820-12
8.0		10.0	15.0	9.5	1.00	A350FM-0810-09	18.0		20.0	26.0	17.0	1.00	A350FM-1820-17
10.0	0.012	10.0	15.0	10.0	1.00	A350FM-0810-10	20.0		23.0	30.0	11.5	1.50	A350FM-2023-11
10.0	+0.013	12.0	18.0	7.0	1.00	A350FM-1012-07	20.0		23.0	30.0	16.5	1.50	A350FM-2023-16
10.0	+0.071	12.0	18.0	9.0	1.00	A350FM-1012-09	20.0		23.0	30.0	21.5	1.50	A350FM-2023-21
10.0		12.0	18.0	10.0	1.00	A350FM-1012-10	25.0	+0.020	28.0	35.0	11.5	1.50	A350FM-2528-11
10.0		12.0	18.0	12.0	1.00	A350FM-1012-12	25.0	+0.104	28.0	35.0	16.5	1.50	A350FM-2528-16
10.0		12.0	18.0	17.0	1.00	A350FM-1012-17	25.0		28.0	35.0	21.5	1.50	A350FM-2528-21
12.0		14.0	20.0	7.0	1.00	A350FM-1214-07	30.0		34.0	42.0	16.0	2.00	A350FM-3034-16
12.0		14.0	20.0	9.0	1.00	A350FM-1214-09	30.0		34.0	42.0	26.0	2.00	A350FM-3034-26
12.0	+0.016	14.0	20.0	12.0	1.00	A350FM-1214-12	35.0		39.0	47.0	16.0	2.00	A350FM-3539-16
12.0	+0.086	14.0	20.0	17.0	1.00	A350FM-1214-17	35.0	0.005	39.0	47.0	26.0	2.00	A350FM-3539-26
14.0		16.0	22.0	12.0	1.00	A350FM-1416-12	40.0	+0.025	44.0	52.0	30.0	2.00	A350FM-4044-30
14.0		16.0	22.0	17.0	1.00	A350FM-1416-17	40.0	+0.125	44.0	52.0	40.0	2.00	A350FM-4044-40
							45.0		50.0	58.0	50.0	2.00	A350FM-4550-50

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



The media and temperature specialist in the food sector Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

iglidur[®] A500

0

When to use it?

- When FDA compliance is required
- When a high chemical resistance is required
- Abrasion-resistant
- Temperature-resistant from −100°C to +250°C

C

When not to use?

- When the highest wear resistance is required iglidur[®] X6, iglidur[®] Z
- When no resistance to temperature or chemicals is required iglidur[®] A180, iglidur[®] A200
- When a cost-effective universal plain bearing is required iglidur[®] G, iglidur[®] P



Bearing technology | Plain bearing | iglidur[®] A500



4.0 - 50.0mm



Also available as:



The media and temperature specialist in the food sector Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

Plain bearings made from iglidur® A500 can be exposed to extremely high temperatures and are suitable for direct contact with food (FDA-compliant).

- Bar stock. plate Page 683
- Compliant with Regulation (EU) No. 10/2011 FDA-compliant Temperature-resistant from –100°C to +250°C
- High chemical resistance
- Lubrication-free
- Maintenance-free

tribo-tape liner Page 691

Typical application areas

- Food industry
- Beverage technology
- Medical technology



	Descriptive technical specifications		
	Wear resistance at +23°C	- +	
	Wear resistance at +90°C	- +	
Two hole flange	Wear resistance at +150°C	- +	
bearings Page 603	Low coefficient of friction	- +	
	Low moisture absorption	- +	
	Wear resistance under water	- +	
Moulded	High media resistance	- +	
Page 624	Resistant to edge pressures	- +	
	Suitable for shock and impact loads	- +	
	Resistant to dirt	- +	
igubal® spherical balls	Online product finder	Online service life calculation	

Technical data

General properties			Testing method	
Density	g/cm ³	1.28		-100°C up
Colour		brown		+250°C
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.3	DIN 53495	
Max. moisture absorption	% weight	0.5		
Coefficient of friction, dynamic, against steel	μ	0.26 - 0.41		120MPa
pv value, max. (dry)	MPa · m/s	0.28		
Mechanical properties				N.
Flexural modulus	MPa	3,600	DIN 53457	V-1
Flexural strength at +20°C	MPa	140	DIN 53452	
Compressive strength	MPa	118		
Max. recommended surface pressure (+20°C)	MPa	120		
Shore D hardness		83	DIN 53505	
Physical and thermal properties				
Max. application temperature long-term	°C	+250		(St)
Max. application temperature short-term	°C	+300		FOOD
Min. application temperature	°C	-100		
Thermal conductivity	W/m ⋅ K	0.24	ASTM C 177	BoHS-
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	9	DIN 53752	
Electrical properties				
Specific contact resistance	Ωcm	> 1014	DIN IEC 93	ISO
Surface resistance	Ω	> 1013	DIN 53482	3547-1

Table 01: Material properties

Plain bearings made from iglidur® A500 can be used at high temperatures and are permitted for use in direct contact with food (FDA-compliant). They exhibit an exceptionally good chemical resistance and are suitable for heavy-duty use in and around machinery for the food industry. Though iglidur® A500 is a soft material, it possesses an excellent compressive strength even at high temperatures.

Moisture absorption

The moisture absorption of iglidur® A500 plain bearings is only 0.5% weight after saturation in water.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® A500 are resistant up to a radiation intensity of 2 · 10⁵Gy.

Resistance to weathering

iglidur® A500 plain bearings are not resistant to weathering. The material properties are significantly affected. Discoloration occurs. Practical tests under real application conditions are strongly recommended.

iglidur[®] A500

+250°C

120MPa

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® A500 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 02 shows the maximum recommended surface pressure of the bearing as a function of the temperature. The combination of high stability and high flexibility acts very positively during vibrations and edge loads. As the wear of the plain bearing rapidly escalates from pressures of 10 to 20MPa, we recommend a particularly accurate testing of the application above these limits. Surface pressure, page 41

iguba sphe Page

iqus



Permissible surface speeds

iglidur® A500 also permits high surface speeds due to the high temperature resistance. The coefficient of friction rises however by these high speeds leading to a higher heating up of the bearing. Tests show that plain bearings made from iglidur® A500 are more wear-resistant in pivoting movements, and the permitted pv values are also higher in pivoting applications.

Surface speed, page 44

Temperature

The iglidur® A500 plain bearings can be used in short-term temperatures up to +300°C. With increasing temperatures, the compressive strength of iglidur® A500 plain bearings decreases. Diagram 02 shows this inverse relationship. The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +130°C an additional securing is required.

Application temperatures, page 49 Additional securing, page 49

Friction and wear The coefficient of friction is dependent on the load that acts on the bearing (diagrams 04 and 05). Coefficient of friction and surfaces, page 47

Wear resistance, page 50

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® A500. The combination "iglidur® A500/hard-chromed shaft" clearly stands out in rotating application. Up to about 2.0MPa, the wear of this combination remains largely independent of load. In pivoting applications with Cf53 shafts, the wear resistance is better than in rotations under equal load. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 52

Installation tolerances

iglidur® A500 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 F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table). Testing methods, page 57

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+
Strong alkalines	+

All information given at room temperature [+20°C] Table 02: Chemical resistance Chemical table, page 1636

Rotating Oscillating linear long-term m/s 0.6 0.4 1.0 short-term m/s 1.0 0.7 2.0 Table 03: Maximum surface speeds

Greases Oil Water Dry Coefficient of friction µ 0.26 - 0.41 0.09 0.04 0.04

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

	Housi	ng	Plain b	bearing	Sh	Shaft			
Ø d1 [mm]	H7 [m	m]	F10	[mm]	h9 [mm]			
0-3	+0.000 +0	.010	+0.006	+0.046	-0.025	+0.000			
>3-6	+0.000 +0	.012	+0.010	+0.058	-0.030	+0.000			
> 6 - 10	+0.000 +0	.015	+0.013	+0.071	-0.036	+0.000			
> 10 - 18	+0.000 +0	.018	+0.016	+0.086	-0.043	+0.000			
> 18 - 30	+0.000 +0	.021	+0.020	+0.104	-0.052	+0.000			
> 30 - 50	+0.000 +0	.025	+0.025	+0.125	-0.062	+0.000			
> 50 - 80	+0.000 +0	.030	+0.030	+0.150	-0.074	+0.000			
> 80 - 120	+0.000 +0	.035	+0.036	+0.176	-0.087	+0.000			
> 120 - 180	+0.000 +0	.040	+0.043	+0.203	+0.000	+0.100			
Table 05: Imp	ortant tole	ances	s for pla	in beariı	ngs acco	ording			
to ISO 3547-1	after pres	s-fit							

Technical data





glidur® A500

+250°C

120MPa

Diagram 01: Permissible pv values for iglidur® A500 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, $v = 0.01 \, \text{m/s}$



Diagram 02: Maximum recommended surface pressure as a

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





Diagram 03: Deformation under pressure and temperature

function of temperature (120MPa at +20°C)



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

with shaft material Cf53 hardened and ground steel, as a function of the load

Sleeve bearing (form S)





²⁾ Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø1-6	Ø 6–12	Ø 12–30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: A500SM-0405-04 - no minimum order quantity.

A500 iglidur® material S Sleeve bearing M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1	d1 Telerence ³	d2	b1	Part No.	d1	d1 Talaranaa3	d2	b1	Part No.
[mm]	Tolerance	[mm]	[mm]		[mm]	Tolerance ⁴	[mm]	[mm]	
4.0		5.5	4.0	A500SM-0405-04	15.0		17.0	25.0	A500SM-1517-25
4.0		5.5	6.0	A500SM-0405-06	16.0		18.0	15.0	A500SM-1618-15
5.0		7.0	5.0	A500SM-0507-05	16.0	0.010	18.0	20.0	A500SM-1618-20
5.0	+0.010	7.0	10.0	A500SM-0507-10	16.0	+0.016	18.0	25.0	A500SM-1618-25
6.0	860.0+	8.0	6.0	A500SM-0608-06	18.0	+0.086	20.0	15.0	A500SM-1820-15
6.0		8.0	8.0	A500SM-0608-08	18.0		20.0	20.0	A500SM-1820-20
6.0		8.0	10.0	A500SM-0608-10	18.0		20.0	25.0	A500SM-1820-25
8.0		10.0	6.0	A500SM-0810-06	20.0		23.0	10.0	A500SM-2023-10
8.0		10.0	8.0	A500SM-0810-08	20.0		23.0	15.0	A500SM-2023-15
8.0		10.0	10.0	A500SM-0810-10	20.0		23.0	20.0	A500SM-2023-20
8.0	0.012	10.0	12.0	A500SM-0810-12	20.0		23.0	25.0	A500SM-2023-25
10.0	+0.013	12.0	8.0	A500SM-1012-08	20.0		23.0	30.0	A500SM-2023-30
10.0	+0.071	12.0	10.0	A500SM-1012-10	22.0		25.0	15.0	A500SM-2225-15
10.0		12.0	12.0	A500SM-1012-12	22.0		25.0	20.0	A500SM-2225-20
10.0		12.0	15.0	A500SM-1012-15	22.0		25.0	25.0	A500SM-2225-25
10.0		12.0	20.0	A500SM-1012-20	22.0		25.0	30.0	A500SM-2225-30
12.0		14.0	10.0	A500SM-1214-10	24.0		27.0	15.0	A500SM-2427-15
12.0		14.0	12.0	A500SM-1214-12	24.0	+0.020	27.0	20.0	A500SM-2427-20
12.0		14.0	15.0	A500SM-1214-15	24.0	+0.104	27.0	25.0	A500SM-2427-25
12.0		14.0	20.0	A500SM-1214-20	24.0		27.0	30.0	A500SM-2427-30
12.0		15.0	15.0	A500SM-1215-15	25.0		28.0	15.0	A500SM-2528-15
13.0	+0.016	15.0	10.0	A500SM-1315-10	25.0		28.0	20.0	A500SM-2528-20
13.0	+0.086	15.0	20.0	A500SM-1315-20	25.0		28.0	25.0	A500SM-2528-25
14.0	10.000	16.0	15.0	A500SM-1416-15	25.0		28.0	30.0	A500SM-2528-30
14.0	-	16.0	16.0	A500SM-1416-16	28.0		32.0	20.0	A500SM-2832-20
14.0		16.0	20.0	A500SM-1416-20	28.0		32.0	25.0	A500SM-2832-25
14.0		16.0	25.0	A500SM-1416-25	28.0		32.0	30.0	A500SM-2832-30
15.0		17.0	15.0	A500SM-1517-15	30.0		34.0	20.0	A500SM-3034-20
15.0		17.0	20.0	A500SM-1517-20	30.0		34.0	25.0	A500SM-3034-25

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



Product range

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.	d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]		[mm]		[mm]	[mm]	
30.0	+0.020	34.0	30.0	A500SM-3034-30	40.0		44.0	40.0	A500SM-4044-40
30.0	+0.104	34.0	40.0	A500SM-3034-40	40.0	+0.025	44.0	50.0	A500SM-4044-50
32.0		36.0	20.0	A500SM-3236-20	45.0		50.0	20.0	A500SM-4550-20
32.0		36.0	30.0	A500SM-3236-30	45.0		50.0	30.0	A500SM-4550-30
32.0		36.0	40.0	A500SM-3236-40	45.0		50.0	40.0	A500SM-4550-40
35.0	.0.005	39.0	20.0	A500SM-3539-20	45.0		50.0	50.0	A500SM-4550-50
35.0	+0.025	39.0	30.0	A500SM-3539-30	50.0	+0.125	55.0	20.0	A500SM-5055-20
35.0	+0.125	39.0	40.0	A500SM-3539-40	50.0		55.0	30.0	A500SM-5055-30
35.0		39.0	50.0	A500SM-3539-50	50.0		55.0	40.0	A500SM-5055-40
40.0		44.0	20.0	A500SM-4044-20	50.0		55.0	50.0	A500SM-5055-50
40.0		44.0	30.0	A500SM-4044-30	50.0		55.0	60.0	A500SM-5055-60

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

Available from stock

Detailed information about delivery time online. www.igus.eu/24

Online ordering Including delivery times, prices, online tools www.igus.eu/A500

Ordering note N.

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

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1 - 9	50 - 99

	5	
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.

iqus



Flange bearing (form F)





²⁾ Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

d1 [mm] Ø1-6 Ø6-12 Ø12-30 Ø>30 f1 [mm] 0.3 0.5 0.8 1.2 Dimensions according to ISO 3547-1 and special dimensions

Order example: A500FM-0405-04 – no minimum order quantity.

A500 iglidur[®] material F Flange bearing M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1	d1	d2	d3	b1	b2	Part No.	d1	d1	d2	d3	b1	b2	Part No.
	Tolerance ³⁾		d13 ³⁾	h13	h13			Tolerance ³⁾		d13 ³⁾	h13	h13	
[mm]		[mm]	[mm]	[mm]	[mm]		[mm]		[mm]	[mm]	[mm]	[mm]	
4.0		5.5	9.5	4.0	2.00	A500FM-0405-04	15.0		17.0	23.0	12.0	1.00	A500FM-1517-12
4.0	+0.010	8.0	12.0	6.0	2.00	A500FM-0408-06	15.0		17.0	23.0	17.0	1.00	A500FM-1517-17
6.0	- 10.058	8.0	12.0	4.0	1.00	A500FM-0608-04	16.0	- +0.016	18.0	24.0	12.0	1.00	A500FM-1618-12
6.0	+0.000	8.0	12.0	6.0	1.00	A500FM-0608-06	16.0	- 10.086	18.0	24.0	17.0	1.00	A500FM-1618-17
6.0		8.0	12.0	8.0	1.00	A500FM-0608-08	18.0	+0.000	20.0	26.0	12.0	1.00	A500FM-1820-12
8.0		10.0	15.0	5.5	1.00	A500FM-0810-05	18.0	_	20.0	26.0	17.0	1.00	A500FM-1820-17
8.0	_	10.0	15.0	7.5	1.00	A500FM-0810-07	18.0		20.0	26.0	22.0	1.00	A500FM-1820-22
8.0		10.0	15.0	9.5	1.00	A500FM-0810-09	20.0		23.0	30.0	11.5	1.50	A500FM-2023-11
8.0	10.012	10.0	15.0	10.0	1.00	A500FM-0810-10	20.0	_	23.0	30.0	16.5	1.50	A500FM-2023-16
10.0	+0.013	12.0	18.0	7.0	1.00	A500FM-1012-07	20.0	_	23.0	30.0	21.5	1.50	A500FM-2023-21
10.0	+0.071	12.0	18.0	9.0	1.00	A500FM-1012-09	25.0	- 10.020	28.0	35.0	11.5	1.50	A500FM-2528-11
10.0		12.0	18.0	12.0	1.00	A500FM-1012-12	25.0	+0.020	28.0	35.0	16.5	1.50	A500FM-2528-16
10.0	_	12.0	18.0	15.0	1.00	A500FM-1012-15	25.0	+0.104	28.0	35.0	21.5	1.50	A500FM-2528-21
10.0		12.0	18.0	17.0	1.00	A500FM-1012-17	30.0		34.0	42.0	16.0	2.00	A500FM-3034-16
12.0		14.0	20.0	7.0	1.00	A500FM-1214-07	30.0		34.0	42.0	26.0	2.00	A500FM-3034-26
12.0	_	14.0	20.0	9.0	1.00	A500FM-1214-09	30.0		34.0	42.0	40.0	2.00	A500FM-3034-40
12.0		14.0	20.0	12.0	1.00	A500FM-1214-12	35.0	_	39.0	47.0	16.0	2.00	A500FM-3539-16
12.0	10.016	14.0	20.0	13.0	1.00	A500FM-1214-13	35.0		39.0	47.0	26.0	2.00	A500FM-3539-26
12.0	+0.010	14.0	20.0	15.0	1.00	A500FM-1214-15	35.0	+0.025	39.0	47.0	40.0	2.00	A500FM-3539-40
12.0	+0.086	14.0	20.0	17.0	1.00	A500FM-1214-17	40.0	+0.125	44.0	52.0	30.0	2.00	A500FM-4044-30
14.0		16.0	22.0	12.0	1.00	A500FM-1416-12	40.0	_	44.0	52.0	40.0	2.00	A500FM-4044-40
14.0		16.0	22.0	17.0	1.00	A500FM-1416-17	45.0		50.0	58.0	50.0	2.00	A500FM-4550-50
15.0		17.0	23.0	9.0	1.00	A500FM-1517-09							

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





The all-rounder for food FDA-compliant iglidur[®] A180

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When to use it?

- When the bearings have direct contact with food
- When FDA compliance is required
- When a low noise level is required
- When low moisture absorption is fundamental

C

When not to use?

- When the maximum wear resistance is necessary *iglidur*[®] J
- When continuous operating temperatures are higher than +80°C iglidur[®] A350, iglidur[®] A500
- When a cost-effective universal plain bearing is required *iglidur[®] G, iglidur[®] P*