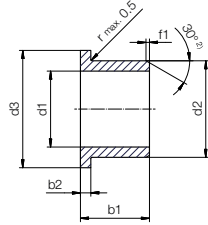


Bearing technology | Plain bearing | iglidur® A181

Flange bearing (form F)



²⁾ Thickness < 0.6mm: Chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

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



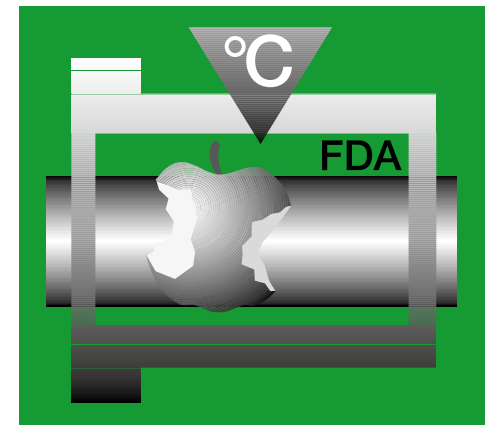
Order example: **A181FM-0608-04** – no minimum order quantity.

A181 iglidur® material **F** Flange bearing **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **04** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
6.0		8.0	12.0	4.0	1.00	A181FM-0608-04
6.0	+0.020	8.0	12.0	6.0	1.00	A181FM-0608-06
6.0	+0.068	8.0	12.0	8.0	1.00	A181FM-0608-08
8.0		10.0	15.0	5.5	1.00	A181FM-0810-05
8.0		10.0	15.0	7.5	1.00	A181FM-0810-07
8.0		10.0	15.0	9.5	1.00	A181FM-0810-09
8.0		10.0	15.0	10.0	1.00	A181FM-0810-10
10.0	+0.025	12.0	18.0	7.0	1.00	A181FM-1012-07
10.0	+0.083	12.0	18.0	9.0	1.00	A181FM-1012-09
10.0		12.0	18.0	10.0	1.00	A181FM-1012-10
10.0		12.0	18.0	12.0	1.00	A181FM-1012-12
10.0		12.0	18.0	17.0	1.00	A181FM-1012-17
12.0		14.0	20.0	7.0	1.00	A181FM-1214-07
12.0		14.0	20.0	9.0	1.00	A181FM-1214-09
12.0		14.0	20.0	12.0	1.00	A181FM-1214-12
12.0	+0.032	14.0	20.0	17.0	1.00	A181FM-1214-17
14.0	+0.102	16.0	22.0	12.0	1.00	A181FM-1416-12
14.0		16.0	22.0	17.0	1.00	A181FM-1416-17
15.0		17.0	23.0	9.0	1.00	A181FM-1517-09

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
15.0		17.0	23.0	12.0	1.00	A181FM-1517-12
15.0		17.0	23.0	17.0	1.00	A181FM-1517-17
16.0		18.0	24.0	12.0	1.00	A181FM-1618-12
16.0	+0.032	18.0	24.0	17.0	1.00	A181FM-1618-17
18.0	+0.102	20.0	26.0	12.0	1.00	A181FM-1820-12
18.0		20.0	26.0	17.0	1.00	A181FM-1820-17
18.0		20.0	26.0	22.0	1.00	A181FM-1820-22
20.0		23.0	30.0	11.5	1.50	A181FM-2023-11
20.0		23.0	30.0	16.5	1.50	A181FM-2023-16
20.0		23.0	30.0	21.5	1.50	A181FM-2023-21
25.0		28.0	35.0	11.5	1.50	A181FM-2528-11
25.0		28.0	35.0	16.5	1.50	A181FM-2528-16
25.0		28.0	35.0	21.5	1.50	A181FM-2528-21
30.0	+0.040	34.0	42.0	16.0	2.00	A181FM-3034-16
30.0	+0.124	34.0	42.0	26.0	2.00	A181FM-3034-26
35.0		39.0	47.0	16.0	2.00	A181FM-3539-16
35.0		39.0	47.0	26.0	2.00	A181FM-3539-26
40.0		44.0	52.0	30.0	2.00	A181FM-4044-30
40.0		44.0	52.0	40.0	2.00	A181FM-4044-40
45.0		50.0	58.0	50.0	2.50	A181FM-4550-50

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



The endurance runner at higher temperatures in the food sector

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

iglidur® A350



When to use it?

- When FDA compliance is required
- When wear resistance and FDA-compliance are necessary at high loads
- When the bearing is used in acid environments



When not to use?

- When continuous operating temperatures are higher than +180°C
iglidur® A500
- When the maximum wear resistance is necessary
iglidur® J
- When a cost-effective FDA-compliant plain bearing is required
iglidur® A200, iglidur® A180
- For high speeds
iglidur® J

Bearing technology | Plain bearing | iglidur® A350



Ø
4.0 – 50.0mm



Also available
as:



Bar stock,
round bar
Page 681



Bar stock,
plate
Page 685



tribo-tape liner
Page 691



Piston rings
Page 584



Two hole
flange
bearings
Page 603



Moulded
special parts
Page 624



iglobal®
spherical balls
Page 841

The endurance runner at higher temperatures in the food sector Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

A universal plain bearing for use in the area of food and pharmaceutical industries. Composition of FDA-compliant materials allows the use in areas where other plain bearings cannot be used due to the contact with food. With good tribological and mechanical properties, iglidur® A350 plain bearings are suitable for all-round use in and around food machinery.

- Compliant with Regulation (EU) No. 10/2011
- FDA-compliant
- Temperature-resistant up to +180°C
- Suitable for medium and high loads
- Suitable for pivoting applications
- Lubrication-free
- Standard range from stock
- Suitable for rotating applications
- Maintenance-free

Typical application areas

- Food industry
- Beverage technology
- Medical technology

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		Testing method	
Density	g/cm ³	1.42	
Colour		blue	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.6	DIN 53495
Max. moisture absorption	% weight	1.9	
Coefficient of friction, dynamic, against steel	μ	0.10 – 0.20	
pv value, max. (dry)	MPa · m/s	0.40	
Mechanical properties			
Flexural modulus	MPa	2,000	DIN 53457
Flexural strength at +20°C	MPa	110	DIN 53452
Compressive strength	MPa	78	
Max. recommended surface pressure (+20°C)	MPa	60	
Shore D hardness		76	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+180	
Max. application temperature short-term	°C	+210	
Min. application temperature	°C	-100	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	8	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	> 10 ¹¹	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

Table 01: Material properties

iglidur® A350 plain bearings are made for practically all loads in food and packaging machinery. Even high loads, often seen in lifting equipment, are taken easily and the bearings work flawlessly without any external lubrication.

Moisture absorption

The moisture absorption of iglidur® A350 is low and can be ignored when using standard plain bearings. Even when saturated with water, iglidur® A350 does not absorb more than 1.9% weight of water (by weight).

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® A350 bearings.

Radiation resistance

Plain bearings made from iglidur® A350 are resistant up to a radiation intensity of 2 · 10²Gy.

Resistance to weathering

iglidur® A350 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolorations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® A350 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® A350 at radial loads. At the maximum recommended surface pressure of 60MPa at room temperature the deformation is less than 5%.

Surface pressure, page 41



-100°C up to
+180°C



60MPa



V-0



FOOD



RoHS



ISO
35474

Permissible surface speeds

iglidur® A350 plain bearings are suitable for low and medium speeds in rotating and oscillating applications. iglidur® A350 is also excellent for linear movements. In the case of high surface speeds it should be tested whether iglidur® J or iglidur® L250 can be used, as the wear rate of these bearings is lower.

Surface speed, page 44

Temperature

Its temperature resistance makes iglidur® A350 the ideal material for plain bearing used in the food area. For temperatures over +140°C an additional securing is required. The wear rate of iglidur® A350 plain bearings rises only little with higher temperatures. Tests have shown good wear results at +100°C on all tested shaft materials.

Application temperatures, page 49

Additional securing, page 49

Friction and wear

The coefficient of friction of iglidur® A350 on a steel shaft is in the mid range (diagrams 04 and 05).

Coefficient of friction and surfaces, page 47

Wear resistance, page 50

Shaft materials

The corrosion-resistant steels are rather considered a natural choice for use in the food industry. The trials were therefore carried out especially on such materials. It has been shown that there is no clear favourite and 304 stainless steel, high grade steel and hard-chromed steel are all suitable. Hard-anodised aluminium is also well suited for both linear and rotational movements.

Shaft materials, page 52

Installation tolerances

iglidur® A350 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	+ up to 0
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 1.0	0.8	2.5
short-term	m/s 1.2	0.9	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.10 – 0.20	0.09	0.04	0.04

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

\varnothing d1 [mm]	Housing		Plain bearing		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]	h9 [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: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

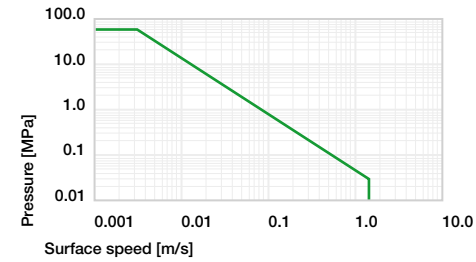


Diagram 01: Permissible pv values for iglidur® A350 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

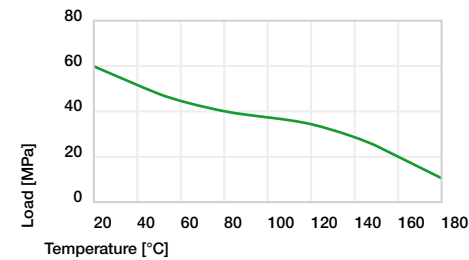


Diagram 02: Maximum recommended surface pressure as a function of temperature (60MPa at +20°C)

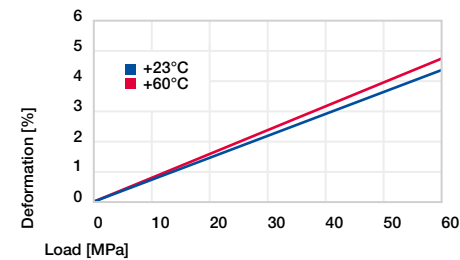


Diagram 03: Deformation under pressure and temperature

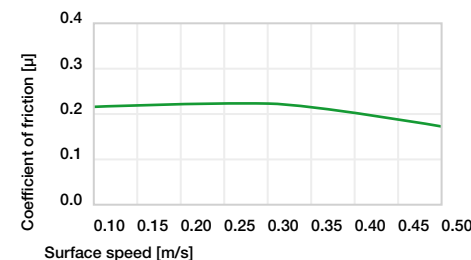


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

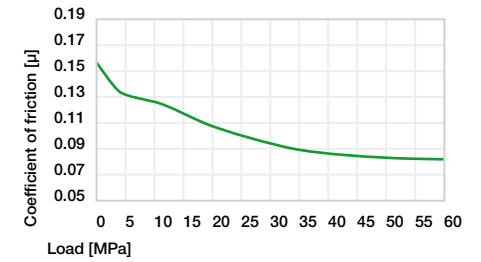


Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

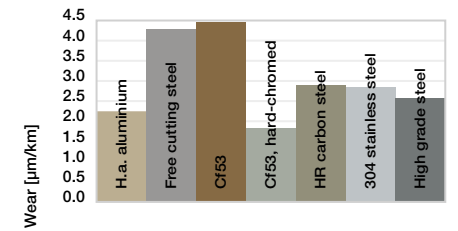


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

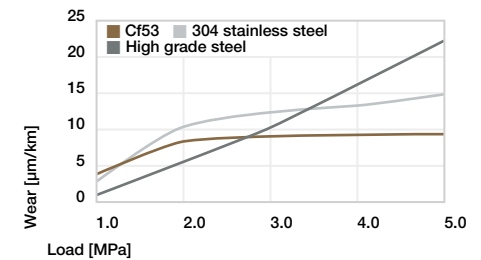
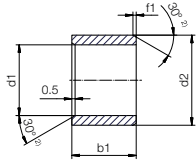


Diagram 07: Wear, rotating with different shaft materials, as a function of the load

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
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



Order example: **A350SM-0405-04** – no minimum order quantity.

A350 iglidur® material **S** Sleeve bearing **M** Metric **04** Inner Ø d1 **05** Outer Ø d2 **04** Total length b1

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
4.0		5.5	4.0	A350SM-0405-04
4.0		5.5	6.0	A350SM-0405-06
5.0	+0.010	7.0	5.0	A350SM-0507-05
5.0	+0.058	7.0	10.0	A350SM-0507-10
6.0		8.0	6.0	A350SM-0608-06
6.0		8.0	8.0	A350SM-0608-08
6.0		8.0	10.0	A350SM-0608-10
8.0		10.0	8.0	A350SM-0810-08
8.0		10.0	10.0	A350SM-0810-10
8.0		10.0	12.0	A350SM-0810-12
10.0	+0.013	12.0	8.0	A350SM-1012-08
10.0	+0.071	12.0	10.0	A350SM-1012-10
10.0		12.0	12.0	A350SM-1012-12
10.0		12.0	15.0	A350SM-1012-15
10.0		12.0	20.0	A350SM-1012-20
12.0		14.0	10.0	A350SM-1214-10
12.0		14.0	12.0	A350SM-1214-12
12.0		14.0	15.0	A350SM-1214-15
12.0		14.0	20.0	A350SM-1214-20
13.0		15.0	10.0	A350SM-1315-10
13.0		15.0	20.0	A350SM-1315-20
14.0	+0.016	16.0	15.0	A350SM-1416-15
14.0	+0.086	16.0	20.0	A350SM-1416-20
14.0		16.0	25.0	A350SM-1416-25
15.0		17.0	15.0	A350SM-1517-15
15.0		17.0	20.0	A350SM-1517-20
15.0		17.0	25.0	A350SM-1517-25
16.0		18.0	15.0	A350SM-1618-15
16.0		18.0	20.0	A350SM-1618-20

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
16.0		18.0	25.0	A350SM-1618-25
18.0	+0.016	20.0	15.0	A350SM-1820-15
18.0	+0.086	20.0	20.0	A350SM-1820-20
18.0		20.0	25.0	A350SM-1820-25
20.0		23.0	10.0	A350SM-2023-10
20.0		23.0	15.0	A350SM-2023-15
20.0		23.0	20.0	A350SM-2023-20
20.0		23.0	25.0	A350SM-2023-25
20.0		23.0	30.0	A350SM-2023-30
22.0		25.0	15.0	A350SM-2225-15
22.0		25.0	20.0	A350SM-2225-20
22.0		25.0	25.0	A350SM-2225-25
22.0		25.0	30.0	A350SM-2225-30
24.0		27.0	15.0	A350SM-2427-15
24.0		27.0	20.0	A350SM-2427-20
24.0	+0.020	27.0	25.0	A350SM-2427-25
24.0	+0.104	27.0	30.0	A350SM-2427-30
24.0		28.0	30.0	A350SM-2428-30
25.0		28.0	15.0	A350SM-2528-15
25.0		28.0	20.0	A350SM-2528-20
25.0		28.0	25.0	A350SM-2528-25
25.0		28.0	30.0	A350SM-2528-30
28.0		32.0	20.0	A350SM-2832-20
28.0		32.0	25.0	A350SM-2832-25
28.0		32.0	30.0	A350SM-2832-30
30.0		34.0	20.0	A350SM-3034-20
30.0		34.0	25.0	A350SM-3034-25
30.0		34.0	30.0	A350SM-3034-30
30.0		34.0	40.0	A350SM-3034-40

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

Product range

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
32.0		36.0	20.0	A350SM-3236-20
32.0		36.0	30.0	A350SM-3236-30
32.0		36.0	40.0	A350SM-3236-40
35.0		39.0	20.0	A350SM-3539-20
35.0	+0.025	39.0	30.0	A350SM-3539-30
35.0	+0.125	39.0	40.0	A350SM-3539-40
35.0		39.0	50.0	A350SM-3539-50
40.0		44.0	20.0	A350SM-4044-20
40.0		44.0	30.0	A350SM-4044-30
40.0		44.0	40.0	A350SM-4044-40

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
40.0		44.0	50.0	A350SM-4044-50
45.0		50.0	20.0	A350SM-4550-20
45.0		50.0	30.0	A350SM-4550-30
45.0		50.0	40.0	A350SM-4550-40
45.0	+0.025	50.0	50.0	A350SM-4550-50
50.0	+0.125	55.0	20.0	A350SM-5055-20
50.0		55.0	30.0	A350SM-5055-30
50.0		55.0	40.0	A350SM-5055-40
50.0		55.0	50.0	A350SM-5055-50
50.0		55.0	60.0	A350SM-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/A350



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

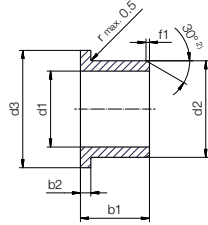
No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Bearing technology | Plain bearing | iglidur® A350

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
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



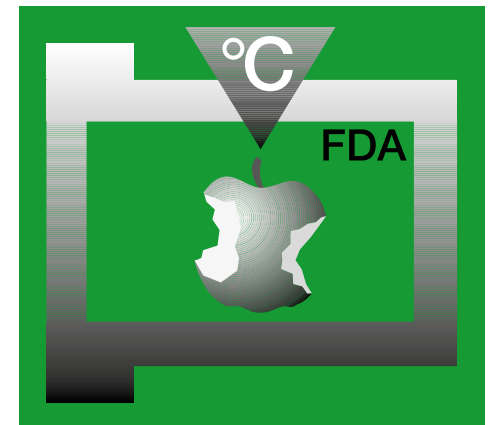
Order example: **A350FM-0507-05** – no minimum order quantity.

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

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
5.0		7.0	11.0	5.0	1.00	A350FM-0507-05
6.0	+0.010	8.0	12.0	4.0	1.00	A350FM-0608-04
6.0	+0.058	8.0	12.0	6.0	1.00	A350FM-0608-06
6.0		8.0	12.0	8.0	1.00	A350FM-0608-08
8.0		10.0	15.0	5.5	1.00	A350FM-0810-05
8.0		10.0	15.0	7.5	1.00	A350FM-0810-07
8.0		10.0	15.0	9.5	1.00	A350FM-0810-09
10.0		10.0	15.0	10.0	1.00	A350FM-0810-10
10.0	+0.013	12.0	18.0	7.0	1.00	A350FM-1012-07
10.0	+0.071	12.0	18.0	9.0	1.00	A350FM-1012-09
10.0		12.0	18.0	10.0	1.00	A350FM-1012-10
10.0		12.0	18.0	12.0	1.00	A350FM-1012-12
10.0		12.0	18.0	17.0	1.00	A350FM-1012-17
12.0		14.0	20.0	7.0	1.00	A350FM-1214-07
12.0		14.0	20.0	9.0	1.00	A350FM-1214-09
12.0	+0.016	14.0	20.0	12.0	1.00	A350FM-1214-12
12.0	+0.086	14.0	20.0	17.0	1.00	A350FM-1214-17
14.0		16.0	22.0	12.0	1.00	A350FM-1416-12
14.0		16.0	22.0	17.0	1.00	A350FM-1416-17

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
15.0		17.0	23.0	9.0	1.00	A350FM-1517-09
15.0		17.0	23.0	12.0	1.00	A350FM-1517-12
15.0		17.0	23.0	17.0	1.00	A350FM-1517-17
16.0	+0.016	18.0	24.0	12.0	1.00	A350FM-1618-12
16.0	+0.086	18.0	24.0	17.0	1.00	A350FM-1618-17
18.0		20.0	26.0	12.0	1.00	A350FM-1820-12
18.0		20.0	26.0	17.0	1.00	A350FM-1820-17
20.0		23.0	30.0	11.5	1.50	A350FM-2023-11
20.0		23.0	30.0	16.5	1.50	A350FM-2023-16
20.0		23.0	30.0	21.5	1.50	A350FM-2023-21
25.0	+0.020	28.0	35.0	11.5	1.50	A350FM-2528-11
25.0	+0.104	28.0	35.0	16.5	1.50	A350FM-2528-16
25.0		28.0	35.0	21.5	1.50	A350FM-2528-21
30.0		34.0	42.0	16.0	2.00	A350FM-3034-16
30.0		34.0	42.0	26.0	2.00	A350FM-3034-26
35.0		39.0	47.0	16.0	2.00	A350FM-3539-16
35.0		39.0	47.0	26.0	2.00	A350FM-3539-26
40.0	+0.025	44.0	52.0	30.0	2.00	A350FM-4044-30
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



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



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