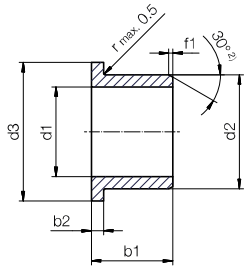
Bearing technology | Plain bearings | iglidur® H1

Flange bearing (form F)



2) Thickness < 0.6mm: Chamfer = 20°

Chamfer in relation to d1

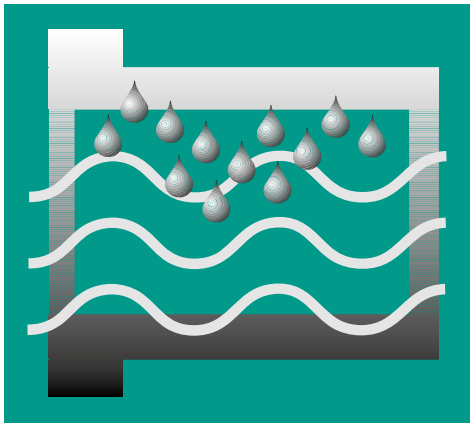
d1 [mm]	Ø 1–6	Ø 6–12	Ø 12–30	Ø > 30
f [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: H1FM-0304-05 - no minimum order quantity.
H1 iglidur® material F Flange bearing M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

d1 [mm]	d1 Tolerance3)	d2 [mm]	d3 d13 [mm]	b1 h13 [mm]	b2 –0,14 [mm]	Part No.
3.0	+0.006 +0.046	4.5	7.5	5.0	0.75	H1FM-0304-05
5.0	+0.010 +0.058	7.0	11.0	5.0	1.00	H1FM-0507-05
6.0	+0.013 +0.071	8.0	12.0	4.0	1.00	H1FM-0608-04
6.0	+0.010 +0.058	8.0	12.0	6.0	1.00	H1FM-0608-06
6.0		8.0	12.0	8.0	1.00	H1FM-0608-08
6.0		8.0	12.0	10.0	1.00	H1FM-0608-10
8.0		10.0	15.0	5.5	1.00	H1FM-0810-05
8.0		10.0	15.0	6.5	1.00	H1FM-0810-065
8.0		10.0	15.0	7.5	1.00	H1FM-0810-07
8.0		10.0	15.0	9.5	1.00	H1FM-0810-09
8.0	+0.013	10.0	15.0	10.0	1.00	H1FM-0810-10
10.0	+0.071	12.0	18.0	7.0	1.00	H1FM-1012-07
10.0		12.0	18.0	9.0	1.00	H1FM-1012-09
10.0		12.0	18.0	10.0	1.00	H1FM-1012-10
10.0		12.0	18.0	12.0	1.00	H1FM-1012-12
10.0		12.0	18.0	17.0	1.00	H1FM-1012-17
12.0		14.0	20.0	7.0	1.00	H1FM-1214-07
12.0		14.0	20.0	9.0	1.00	H1FM-1214-09
12.0	+0.016	14.0	20.0	12.0	1.00	H1FM-1214-12
12.0	+0.086	14.0	20.0	17.0	1.00	H1FM-1214-17
12.0		14.0	20.0	20.0	1.00	H1FM-1214-20
14.0		16.0	22.0	12.0	1.00	H1FM-1416-12
14.0		16.0	22.0	17.0	1.00	H1FM-1416-17
15.0		17.0	23.0	9.0	1.00	H1FM-1517-09
15.0		17.0	23.0	12.0	1.00	H1FM-1517-12
15.0		17.0	23.0	17.0	1.00	H1FM-1517-17
16.0	+0.016	18.0	24.0	12.0	1.00	H1FM-1618-12
16.0	+0.086	18.0	24.0	17.0	1.00	H1FM-1618-17
16.0		18.0	24.0	25.0	1.00	H1FM-1618-25
18.0		20.0	26.0	12.0	1.00	H1FM-1820-12
18.0		20.0	26.0	17.0	1.00	H1FM-1820-17
18.0		20.0	26.0	22.0	1.00	H1FM-1820-22
20.0		23.0	30.0	11.5	1.50	H1FM-2023-11
20.0		23.0	30.0	16.5	1.50	H1FM-2023-16
20.0		23.0	30.0	21.5	1.50	H1FM-2023-21
20.0		23.0	30.0	30.0	1.50	H1FM-2023-30
25.0	+0.020 +0.104	28.0	35.0	11.5	1.50	H1FM-2528-11
25.0		28.0	35.0	16.5	1.50	H1FM-2528-16
25.0		28.0	35.0	21.5	1.50	H1FM-2528-21
30.0		34.0	42.0	16.0	2.00	H1FM-3034-16
30.0		34.0	42.0	26.0	2.00	H1FM-3034-26
35.0		39.0	47.0	16.0	2.00	H1FM-3539-16
35.0		39.0	47.0	26.0	2.00	H1FM-3539-26
40.0	+0.025 +0.125	44.0	52.0	30.0	2.00	H1FM-4044-30
40.0		44.0	52.0	40.0	2.00	H1FM-4044-40
45.0		50.0	58.0	50.0	2.00	H1FM-4550-50

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



Long service life under water

High media resistance

iglidur® H370

When to use it?

- For underwater applications
- When high temperature resistance is required
- When high mechanical loading and wear resistance is required
- When good chemical resistance is required

When not to use?

- When mechanical reaming of the bore is necessary
  iglidur® M250
- When high wear resistance in temperatures is required
  iglidur® H1
- For use in dirty surroundings
  iglidur® Z
- When a cost-effective, large-volume solution is required
  iglidur® H2

Bearing technology | Plain bearings | iglidur® H370

Ø 3.0 – 75.0 mm

Also available as:

Bar stock, round bar: Page 629

Bar stock, plate: Page 651

tribo-tape liner: Page 657

Piston rings: Page 562

Two hole flange bearing: Page 581

Moulded special parts: Page 602

igubal® spherical balls: Page 783

Long service life under water: High media resistance

iglidur® H370 is the right solution for underwater applications. The bearings absorb extremely high loads, are resistant to chemicals and can be used at temperatures up to +200°C.

- Suitable for underwater applications
- Temperature-resistant from –40°C to +200°C
- High chemical resistance
- Lubrication-free
- Maintenance-free

Typical application areas

- Offshore
- Ship building
- Fluid technology
- Packaging
- Plant construction

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

iglidur® H370 +200°C 75MPa

Technical data

General properties			Testing method
Density	g/cm³	1.66	
Colour		grey	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.1	
Coefficient of friction, dynamic, against steel	µ	0.07 – 0.17	
pv value, max. (dry)	MPa · m/s	0.74	
Mechanical properties			
Flexural modulus	MPa	11,100	DIN 53457
Flexural strength at +20°C	MPa	135	DIN 53452
Compressive strength	MPa	79	
Max. recommended surface pressure (+20°C)	MPa	75	
Shore D hardness		82	DIN 53505
Physical and thermal properties			
Max. application temperature long–term	°C	+200	
Max. application temperature short–term	°C	+240	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.50	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	5	DIN 53752
Electrical properties[5]			
Specific contact resistance	Ωcm	$< 10^5$	DIN IEC 93
Surface resistance	Ω	$< 10^5$	DIN 53482

[5] The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

Table 01: Material properties table

–40°C up to +200°C

75MPa

V-0

RoHS-II

ISO 3547-1

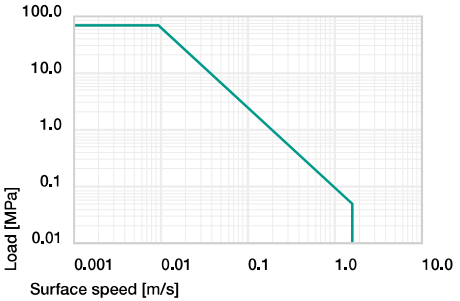


Diagram 01: Permissible pv values for iglidur® H370 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® H370 plain bearings is below 0.1% weight. The saturation limit in water is also below 0.1% weight. For this reason, iglidur® H370 plain bearings are often used for underwater applications.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

iglidur® H370 withstands neutron and gamma particle radiation. Plain bearings made from iglidur® H370 are resistant up to a radiation intensity of $2 \cdot 10^2$Gy.

UV resistance

iglidur® H370 plain bearings are resistant to UV radiation.

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

+ 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® H370

iglidur® H370 is an advanced development of the iglidur® H series. The material is characterised by particularly low moisture absorption and clearly enhanced wear resistance. With regard to the mechanical and thermal characteristic values, iglidur® H370 shows the same features as iglidur® H.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H370 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.

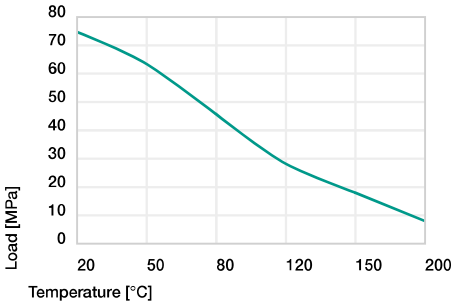


Diagram 02: Maximum recommended surface pressure as a function of temperature (75MPa at +20°C)

Diagram 03 shows the elastic deformation of iglidur® H370 at radial loads. At the maximum recommended surface pressure of 75MPa at room temperature the deformation is less than 2.5%.

Surface pressure, page 41

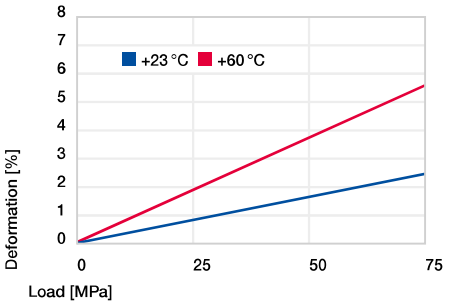


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

The maximum permitted surface speed is dependent on whether the temperature at the bearing point becomes too high or not. iglidur® H370 is suitable for surface speeds of 1.2m/s (rotating) and 4.0m/s (linear) respectively. The maximum values stated in table 03 are valid only with minimum pressure loads and are often not attained in practice.

Surface speed, page 44

		rotating	oscillating	linear
long-term	m/s	1.2	0.8	4.0
short-term	m/s	1.5	1.1	5.0

Table 03: Maximum surface speeds

Temperature

With increasing temperatures, the compressive strength of iglidur® H370 plain bearings decreases. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +100°C an additional securing is required.

Application temperatures, page 49
Additional securing, page 49

Friction and wear

The coefficient of friction alters only little, like the wear resistance with increasing load and surface speed (diagrams 04 and 05).

Coefficient of friction and surfaces, page 47
Wear resistance, page 50

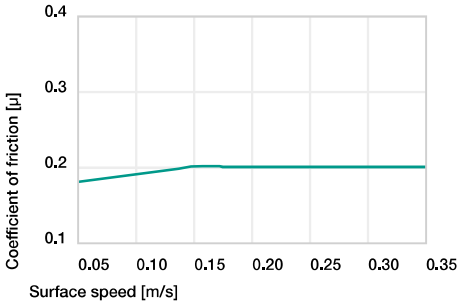


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

Technical data

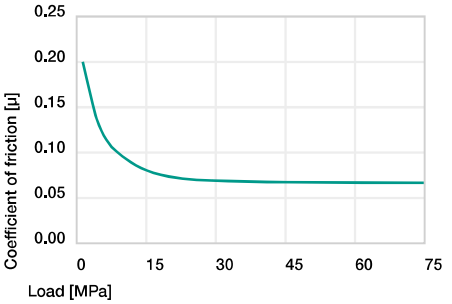


Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s

Shaft materials

Diagrams 06 and 07 show the test results of iglidur® H370 plain bearings running against various shaft materials. For loads up to 2MPa in rotating applications, the hard-chromed shaft is the best material for the iglidur® H370 plain bearings. The high coefficient of wear with 304 stainless steel shafts, which due to their extremely ground surfaces are prone to the stick-slip effect, is striking. Despite same values in the lowest range, the HR carbon steel shaft shows already better values than Cf53 with loads of 2MPa. On the other hand, the 304 stainless steel shaft shows a clear advantage in pivoting movements.

Shaft materials, page 52

	Dry	Greases	Oil	Water
Coeff. of friction [µ]	0.07 – 0.17	0.09	0.04	0.04

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

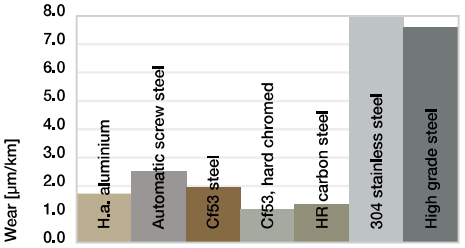


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

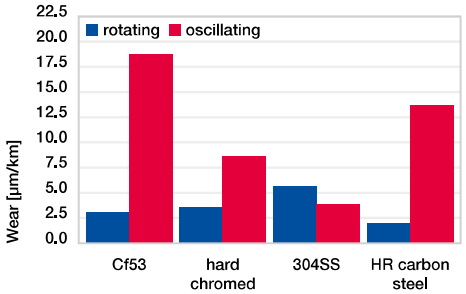


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

Installation tolerances

iglidur® H370 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).

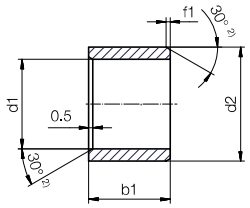
Testing methods, page 57

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

Bearing technology | Plain bearings | iglidur® H370

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: H370SM-0304-03 - no minimum order quantity.
H370 iglidur® material S Sleeve bearing M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
3.0	+0.006 +0.046	4.5	3.0	H370SM-0304-03
4.0		5.5	4.0	H370SM-0405-04
4.0		5.5	6.0	H370SM-0405-06
4.0		5.5	12.0	H370SM-0405-12
5.0	+0.010 +0.058	7.0	5.0	H370SM-0507-05
5.0		7.0	10.0	H370SM-0507-10
6.0		8.0	6.0	H370SM-0608-06
6.0		8.0	8.0	H370SM-0608-08
6.0		8.0	10.0	H370SM-0608-10
8.0		10.0	8.0	H370SM-0810-08
8.0		10.0	10.0	H370SM-0810-10
8.0		10.0	12.0	H370SM-0810-12
8.0		10.0	15.0	H370SM-0810-15
10.0	+0.013 +0.071	12.0	8.0	H370SM-1012-08
10.0		12.0	10.0	H370SM-1012-10
10.0		12.0	12.0	H370SM-1012-12
10.0		12.0	15.0	H370SM-1012-15
10.0		12.0	20.0	H370SM-1012-20
12.0		14.0	10.0	H370SM-1214-10
12.0		14.0	12.0	H370SM-1214-12
12.0		14.0	15.0	H370SM-1214-15
12.0		14.0	20.0	H370SM-1214-20
13.0	+0.016 +0.086	15.0	10.0	H370SM-1315-10
13.0		15.0	20.0	H370SM-1315-20
14.0		16.0	15.0	H370SM-1416-15
14.0		16.0	20.0	H370SM-1416-20
14.0		16.0	25.0	H370SM-1416-25
15.0		17.0	15.0	H370SM-1517-15
15.0		17.0	20.0	H370SM-1517-20
15.0		17.0	25.0	H370SM-1517-25
16.0		18.0	15.0	H370SM-1618-15
16.0	+0.016 +0.086	18.0	20.0	H370SM-1618-20
16.0		18.0	25.0	H370SM-1618-25
18.0		20.0	15.0	H370SM-1820-15
18.0		20.0	20.0	H370SM-1820-20
18.0		20.0	25.0	H370SM-1820-25
20.0		23.0	10.0	H370SM-2023-10
20.0		23.0	15.0	H370SM-2023-15
20.0		23.0	20.0	H370SM-2023-20
20.0		23.0	25.0	H370SM-2023-25
20.0		23.0	30.0	H370SM-2023-30
22.0		25.0	15.0	H370SM-2225-15
22.0		25.0	20.0	H370SM-2225-20
22.0		25.0	25.0	H370SM-2225-25
22.0		25.0	30.0	H370SM-2225-30
24.0	+0.020 +0.104	27.0	15.0	H370SM-2427-15
24.0		27.0	20.0	H370SM-2427-20
24.0		27.0	25.0	H370SM-2427-25
24.0		27.0	30.0	H370SM-2427-30
25.0		28.0	15.0	H370SM-2528-15
25.0		28.0	20.0	H370SM-2528-20
25.0		28.0	25.0	H370SM-2528-25
25.0		28.0	30.0	H370SM-2528-30
28.0		32.0	20.0	H370SM-2832-20
28.0		32.0	25.0	H370SM-2832-25
28.0		32.0	30.0	H370SM-2832-30
30.0		34.0	20.0	H370SM-3034-20

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

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
30.0	+0.020 +0.104	34.0	25.0	H370SM-3034-25
30.0		34.0	30.0	H370SM-3034-30
30.0		34.0	40.0	H370SM-3034-40
32.0	+0.025 +0.125	36.0	20.0	H370SM-3236-20
32.0		36.0	30.0	H370SM-3236-30
32.0		36.0	40.0	H370SM-3236-40
35.0		39.0	20.0	H370SM-3539-20
35.0		39.0	30.0	H370SM-3539-30
35.0		39.0	40.0	H370SM-3539-40
35.0		39.0	50.0	H370SM-3539-50
40.0		44.0	20.0	H370SM-4044-20
40.0		44.0	30.0	H370SM-4044-30
40.0		44.0	40.0	H370SM-4044-40
40.0	+0.025 +0.125	44.0	50.0	H370SM-4044-50
45.0		50.0	20.0	H370SM-4550-20
45.0		50.0	30.0	H370SM-4550-30
45.0		50.0	40.0	H370SM-4550-40
45.0		50.0	50.0	H370SM-4550-50
50.0	+0.000 +0.100	55.0	20.0	H370SM-5055-20
50.0		55.0	30.0	H370SM-5055-30
50.0		55.0	40.0	H370SM-5055-40
50.0		55.0	50.0	H370SM-5055-50
50.0		55.0	60.0	H370SM-5055-60
55.0	+0.030 +0.150	60.0	26.0	H370SM-5560-26
60.0		65.0	60.0	H370SM-6065-60
75.0		80.0	60.0	H370SM-7580-60

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/H370

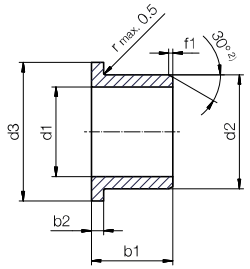
Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

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 bearings | iglidur® H370

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: H370FM-0405-04 - no minimum order quantity.
H370 iglidur® material F Flange bearing M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance3)	d2 [mm]	d3 d13 [mm]	b1 h13 [mm]	b2 –0,14 [mm]	Part No.
4.0		5.5	9.5	4.0	0.75	H370FM-0405-04
5.0	+0.010	7.0	11.0	5.0	1.00	H370FM-0507-05
6.0	+0.058	8.0	12.0	4.0	1.00	H370FM-0608-04
6.0		8.0	12.0	6.0	1.00	H370FM-0608-06
6.0		8.0	12.0	8.0	1.00	H370FM-0608-08
8.0		10.0	15.0	5.5	1.00	H370FM-0810-05
8.0		10.0	15.0	6.0	1.00	H370FM-0810-06
8.0		10.0	15.0	7.5	1.00	H370FM-0810-07
8.0		10.0	15.0	9.5	1.00	H370FM-0810-09
8.0		10.0	15.0	10.0	1.00	H370FM-0810-10
8.0		10.0	15.0	15.0	1.00	H370FM-0810-15
10.0	+0.013	12.0	18.0	7.0	1.00	H370FM-1012-07
10.0	+0.071	12.0	18.0	9.0	1.00	H370FM-1012-09
10.0		12.0	18.0	10.0	1.00	H370FM-1012-10
10.0		12.0	18.0	12.0	1.00	H370FM-1012-12
10.0		12.0	18.0	14.5	1.00	H370FM-1012-145
10.0		12.0	18.0	17.0	1.00	H370FM-1012-17
10.0		12.0	18.0	20.0	1.00	H370FM-1012-20
12.0		14.0	20.0	7.0	1.00	H370FM-1214-07
12.0		14.0	20.0	9.0	1.00	H370FM-1214-09
12.0		14.0	20.0	12.0	1.00	H370FM-1214-12
12.0	+0.016	14.0	20.0	15.0	1.00	H370FM-1214-15
12.0	+0.086	14.0	20.0	17.0	1.00	H370FM-1214-17
12.0		14.0	20.0	20.0	1.00	H370FM-1214-20
14.0		16.0	22.0	12.0	1.00	H370FM-1416-12
14.0		16.0	22.0	17.0	1.00	H370FM-1416-17
15.0		17.0	23.0	9.0	1.00	H370FM-1517-09
15.0		17.0	23.0	12.0	1.00	H370FM-1517-12
15.0		17.0	23.0	17.0	1.00	H370FM-1517-17
16.0		18.0	24.0	10.0	1.00	H370FM-1618-10
16.0		18.0	22.0	10.0	1.00	H370FM-161822-10
16.0	+0.016	18.0	24.0	12.0	1.00	H370FM-1618-12
16.0	+0.086	18.0	24.0	17.0	1.00	H370FM-1618-17
16.0		18.0	24.0	25.0	1.00	H370FM-1618-25
18.0		20.0	26.0	12.0	1.00	H370FM-1820-12
18.0		20.0	26.0	17.0	1.00	H370FM-1820-17
18.0		20.0	26.0	22.0	1.00	H370FM-1820-22
20.0		23.0	30.0	11.5	1.50	H370FM-2023-11
20.0		23.0	30.0	16.5	1.50	H370FM-2023-16
20.0		23.0	30.0	21.5	1.50	H370FM-2023-21
20.0		23.0	30.0	30.0	1.50	H370FM-2023-30
22.0		25.0	32.0	21.5	1.50	H370FM-222532-215
25.0	+0.020	28.0	35.0	11.5	1.50	H370FM-2528-11
25.0	+0.104	28.0	35.0	16.5	1.50	H370FM-2528-16
25.0		28.0	35.0	21.5	1.50	H370FM-2528-21
25.0		28.0	35.0	30.0	1.50	H370FM-2528-30
30.0		34.0	42.0	16.0	2.00	H370FM-3034-16
30.0		34.0	42.0	26.0	2.00	H370FM-3034-26
30.0		34.0	42.0	40.0	2.00	H370FM-3034-40
35.0	+0.025	39.0	47.0	16.0	2.00	H370FM-3539-16
35.0	+0.125	39.0	47.0	26.0	2.00	H370FM-3539-26
40.0		44.0	52.0	30.0	2.00	H370FM-4044-30

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

Product range

d1 [mm]	d1 Tolerance3)	d2 [mm]	d3 d13 [mm]	b1 h13 [mm]	b2 –0,14 [mm]	Part No.
40.0		44.0	52.0	40.0	2.00	H370FM-4044-40
45.0	+0.025	50.0	58.0	50.0	2.00	H370FM-4550-50
50.0	+0.125	55.0	63.0	50.0	2.00	H370FM-5055-50
60.0	+0.030	65.0	73.0	50.0	2.00	H370FM-6065-50
70.0	+0.150	75.0	83.0	50.0	2.00	H370FM-7075-50

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/H370

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.