

igubal®

Polymer spherical bearings



...plastics

Improve technology ... Reduce cost.

For years the igus® motto has been "plastics for longer life®". By this we mean the production of innovative plastic products which reduce maintenance work, achieve technical improvements, at the same time as reducing costs and increasing service life, everything delivered immediately from stock. Our references from the practice show the proven employment from igubal® spherical bearings in a wide variety of applications.

Stadium panelling

igubal® spherical bearings of dimensional K series are used in the main bearing assembly of every individual slat due to their freedom from maintenance, corrosion resistance and

atmospheric resistance. Since these slats can be swivelled, this allows the air flow inside the stadium to be regulated. (LIMELIGHT BV, the Netherlands)

**Astrophysics**

Mirror adjustment of the telescope is performed virtually free of backlash with igubal® rod ends. Magnetic influences can be avoided. (Max-Planck institute for physics and astrophysics, Germany)

**Special-purpose vehicle**

Resistant to dirt and maintenance-free: the robust rod ends and spherical bearings never give in on the special-purpose municipal vehicles. (Multicar Spezialfahrzeuge GmbH, Germany)

**Packaging machine**

Long service life and, at the same time, food-safe design have been implemented in this application with igubal® rod ends. (Leeb GmbH, Germany)

**Caravan step**

Tough, resistant to dirt and vibration-dampening igubal® rod ends withstand the loads even in worst case conditions. (Hymer AG, Germany)

**Textile industry**

Concentricity errors and jolts are compensated by means of igubal® spherical rod end bearings in the support of the thread guide unit more efficiently than the alternative metal product. (Sahm GmbH & Co. KG, Germany)

**Chocolate decoration system**

Decorations without lubricants by using the maintenance-free igubal® rod ends make any sweet most relishable. (Wolf Spezialmaschinen GmbH, Germany)

igubal® bearing elements | Product overview

igubal® rod end bearings with female thread

			
Classic design KBRM/KBLM ► Page 698 	Integrated lock nut for easy assembly: KBRM-CL/KBLM-CL ► Page 700 	Selectable spherical ball material KCRM/KCLM ► Page 702 	Space-saving, selectable spherical ball material EBRM/EGLM ► Page 708 

	
For temperatures up to +200 °C EBRM-HT/EGLM-HT ► Page 712 	Classic design KARM/KALM ► Page 704 

... with male thread

			
Space-saving, selectable spherical ball material EARM/EALM ► Page 710	For temperatures up to +200 °C EARM-HT/EALM-HT ► Page 713	Angled ball and socket joints WGRM/WGLM ► Page 714	Angled ball and socket joints, low-cost WGRM-LC/WGLM-LC ► Page 715

... and socket joints

		
Easy assembly and disassembly: WGRM-DE/WGLM-DE ► Page 716	In-line ball and socket joint AGRM/AGLM ► Page 717	In-line ball and socket joints, low-cost AGRM-LC/AGLM-LC ► Page 718

igubal® clevis joint combinations

			
Clevis joints with clevis pin and circlip GERMK/GELMK ► Page 726	Clevis joints with spring-loaded fixing clip GERMF/GELMF ► Page 727	Clevis joint combination GERMKE/GELMKE ► Page 728	Clevis joints with spring-loaded fixing clip GERMFE/GELMFE ► Page 729

... and single components

		
Clevis joints, high rigidity GERM/GELM ► Page 724	Spring-loaded fixing clips GEFM ► Page 730	Clevis pins and circlips GBM/GSR ► Page 731

igubal® pillow block bearings for high radial loads

			
Easy to disassemble, split housing and ball KSTM-GT ► Page 740	Easy to fit ESTM ► Page 741	For quick assembly and low total moisture absorption ESTM-GT-GT ► Page 742	Split housings with parallel hole ESTM-GT ► Page 743

	
Extremely light, compact design ESTM-SL ► Page 744	Split pillow block bearings for square profiles ESQM ► Page 745

igubal® pillow block bearings – standard design


Compensation of misalignments errors KSTM ► Page 738 

igubal® fixed flange bearings for supporting the centre or ends of shafts

			
Easy to fit EFOM ► Page 752	For high radial loads EFSM ► Page 754	Universal and quick assembly, female thread GFSM-IG ► Page 756	Universal and quick assembly, male thread GFSM-AG ► Page 757

igubal® bearing elements | Product overview

igubal® fixed flange bearings for supporting the centre or ends of shafts



High static load,
split housing
KFSM-GT
► Page 758



For temperatures
up to +200 °C
EFOM-HT
► Page 759



For temperatures
up to +200 °C
EFSM-HT
► Page 760

igubal® spherical bearings



Standard, easy to fit
KGLM
► Page 766



Easy to fit,
cost-effective
KGLM-LC
► Page 767



For extremely narrow
installation space
KGLM-SL
► Page 768



Space-saving
EGLM
► Page 769

igubal® spherical bearings



Cost-effective, selectable
spherical ball material
EGLM-LC
► Page 770

igubal® clip bearings



Simply snap
into sheet metal
ECLM
► Page 771



For high axial and
radial loads
ECLM-HD
► Page 772



Tolerance compensation, select-
able spherical ball material
EGFM-T
► Page 773



Clip into sheet metal, can
be assembled on both sides
ZCLM
► Page 774

igubal® double joints and coupling joints



Robust plastic
EGZM
► Page 775



Selectable materials,
individual dimensions
WDGM
► Page 777



Removable,
selectable materials
WDGM-DE
► Page 778



Selectable materials,
individual dimensions
KDGM
► Page 776

igubal® spherical thrust bearings



Resistant to edge loads
SAM
► Page 782



Standard, low coefficient
of friction
WKM/WEM
► Page 787



Cost-effective, good wear
resistance
RKM/REM
► Page 788

igubal® spherical balls – different material options



For temperatures
up to +250 °C
XKM/XEM
► Page 789



Low moisture absorption
JKM/JEM
► Page 790



Cost-effective and low
total moisture absorption
J4KM/J4EM
► Page 793



For underwater
applications
UWEM
► Page 794

igubal® spherical balls – different material options



Pre-loaded
J4VEM
► Page 795



Detectable
RN248KM/RN248EM
► Page 796



Interchangeable spherical balls
for metallic bearing housings
JEM/A180EM/A350EM
► Page 797



New!
Cost-effective alternative
to machined options
JEM-SP
► Page 798

igubal® accessories



Ball studs,
female thread
GZRM-IG
► Page 800



Ball studs,
male thread
GZRM-AG
► Page 801



Adapter screws
with circlip
PKRM/PKLM
► Page 802



Adapter for pillow block be-
arings, dimensional E series
AD-01-ESTM
► Page 803

igubal® detectable



Rod end bearings
► Page 808



Clevis joints and spring-
loaded fixing clip
► Page 810



Spherical balls
► Page 796

Self-aligning maintenance-free spherical bearings made from high-performance polymers

igubal® is a system of self-aligning bearing elements completely made from plastic. igubal® puts a complete system of self-aligning bearings – rod end bearings, clevis joints, fixed flange bearings, spherical bearings and pillow block bearings – at the developer's fingertips.

Self-aligning bearings are easy to fit, adapt to all angular deviations and replace special housings in many cases.

With igubal®, the user can take advantage of all the benefits of high performance polymers. They can be used in dry operation and have excellent vibration dampening properties. They are resistant to dirt, can operate in liquids and even in chemicals and are completely resistant to corrosion. The weight of the igubal® parts is approximately 80 % lighter than comparable steel parts. Additional savings are cost-savings at the time of purchasing and during operation. igubal® bearings are also extremely cost-effective due to the elimination of maintenance and installation costs. The installation space can also be reduced due to their small dimensions. igubal® self-aligning spherical bearings are made from a polymer housing for high strengths and a spherical ball made from maintenance-free self-lubricating high-performance polymers allowing low wear and long service life.

The benefits of igubal®

- Extremely cost-effective
- Maintenance-free
- Lubrication-free
- Resistant to dust and dirt
- Corrosion-free
- Can be used in liquid media
- Vibration-dampening
- Spherical ball set in housings with very low clearance
- No ingress of dirt
- Lightweight
- Temperature resistance up to +200 °C, depending on the material

igubal® spherical balls

In standard spherical bearings, the spherical ball is made of iglidur® W300 material, which is known for its low coefficient of friction in dry operation and extremely low tendency to stickslip. This is especially important for low loads and very slow movements.

► More information about iglidur® W300, [page 171](#)

Taking advantage of its long experience in polymers and based on several tests, igus® decided in the last years to respond more precisely to the different applications and customer requests by developing spherical balls in other materials.

Loads

The load capacity of the maintenance-free igubal® bearing element parts is very high at normal ambient temperatures. igubal® bearings absorb high forces and weigh only one fifth of traditional, metal bearing housings. The excellent dampening properties are based on the fact that the polymer material of the two part bearing can absorb vibrations differently than steel.

However, plastic specific properties, such as dependence on temperature and behaviour under long-term stress, must be taken into consideration when using igubal® bearings. The load capacity of the rod end should therefore be checked in a practical test, particularly if it will be used under continuous high loads and at elevated temperatures.

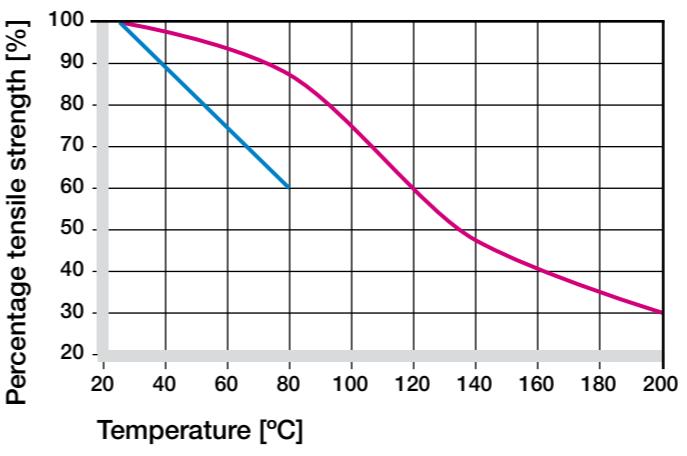


Diagram 01: Trends indicate the effect of temperature on the max. tensile strength of igubal® rod end bearings.

Coefficient of sliding friction and speed

One important advantage of igubal® spherical bearings is that rapid, rotary movements of a mounted shaft take place directly in the spherical portion, made of iglidur® W300. The advantage therefore lies in the plastic vs. steel relationship which permits high speeds, even in dry operation. Taking the radial loads into account, maximum surface speeds up to 0.5m/s rotating can be attained.

By contrast, rotations of the shaft are supported directly in the inner diameter of the spherical portion.

The maintenance-free igubal® bearing elements also permit linear movements of the shaft.

Application temperatures

igubal® standard bearing elements can be used in temperatures from -30 °C to +80 °C. The high temperatures versions can be used at continuous temperatures up

to +200 °C. Diagram 01 trends indicate the effect of temperature on the maximum tensile strength of igubal® rod end bearings.

igubal®	Application temperature	
	Standard	HT version
Minimum	-30 °C	-40 °C
Max. long-term	+80 °C	+200 °C
Maximum, short-term	+120 °C	+240 °C

Table 01: Temperature limits of igubal® bearing elements

Thread type	Pitch [mm]
M2	0.40
M3	0.50
M4	0.70
M5	0.80
M6	1.00
M8	1.25
M10	1.50
M10 F	1.25
M12	1.75
M12 F	1.25
M14	2.00
M16	2.00
M16 F	1.50
M18	1.50
M20	1.50
M20 M20	2.50
M22	1.50
M24	2.00
M27	2.00
M30	2.00

Table 02: Thread pitches of igubal® rod ends and clevis joints

Chemical resistance of igubal® bearing elements

The spherical balls made from iglidur® W300 and the housing made from igumid G are resistant to weak alkalines, weak acids and fuels, as well as all types of lubricants. The HT versions can be used for applications with a higher chemical demand. The moisture absorption of igubal® spherical bearings is approximately 1.3 % weight in standard climatic conditions. The saturation limit in water is 6.5 %. This must be taken into evaluation for applications. If a lower moisture absorption is essential, a look on to the different materials is helpful.

► Chemical table, [page 1542](#)

Medium	Resistance	
	Standard	HT version
Alcohols	+ up to 0	+
Hydrocarbons	+	+
Greases, oils without additives	+	+
Fuels	+	+
Diluted acids	0 to -	+ up to 0
Strong acids	-	+ to -
Diluted alkalines	+	+
Strong alkalines	0	+

Table 03: Chemical resistance of igubal® bearing elements

+ resistant 0 conditionally resistant – not resistant

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

Radiation resistance

Self-aligning igubal® bearings are resistant to radiation up to an intensity of $3 \cdot 10^2$ Gy.

UV resistance

The corrosion resistance of igubal® bearings gives them special value for outside applications.

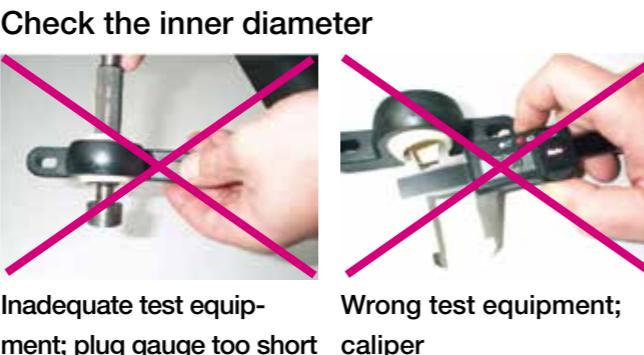
igubal® bearings are permanently resistant to UV radiation. A small change in colour (dark coloration) of the spherical ball due to UV radiation does not affect the mechanical, electrical or thermal properties.

Tolerances

igubal® spherical bearings can be used with different tolerances according to each application. They are designed with a large bearing clearance in the standard product, which enables a secure operation even under high peripheral speeds. The hole of the spherical ball is produced to a standard tolerance range E10. Shafts should also meet recommended tolerances h6 and h9. The tolerances are provided in the table below. Please contact us in case you require lower or other bearing tolerances.

Basic size [mm]	Tolerance	
	Plug gauge falls	Plug gauge sticks
up to 3	x,01	x,05
> 3 to 6	x,02	x,07
> 6 to 10	x,02	x,08
> 10 to 18	x,03	x,10
> 18 to 30	x,04	x,12
> 30 to 50	x,05	x,15

Table 04: Tolerances of inner diameter (spherical balls)



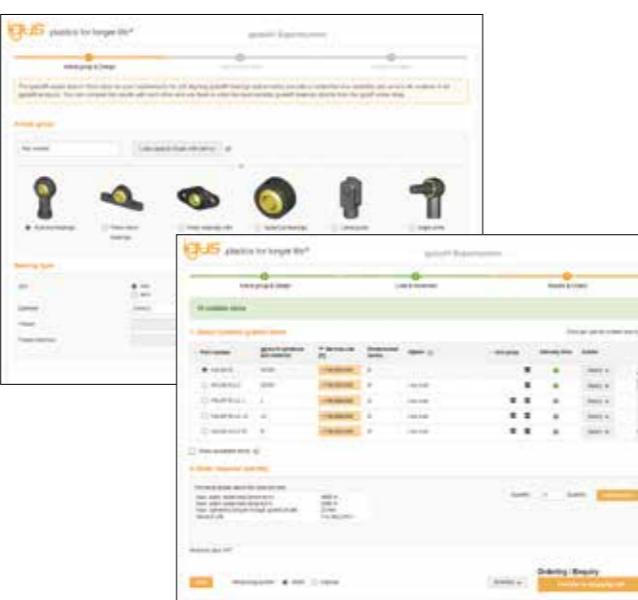
Tolerance test with plug gauge

Service life calculation

The igubal® expert allows to check the suitability of igubal® bearings for every application. You can choose from different igubal® bearings and specific load (radial, axial or static, cyclic and dynamic).

The expert system will calculate from these input data:

- The bearing wear
- The theoretical service life



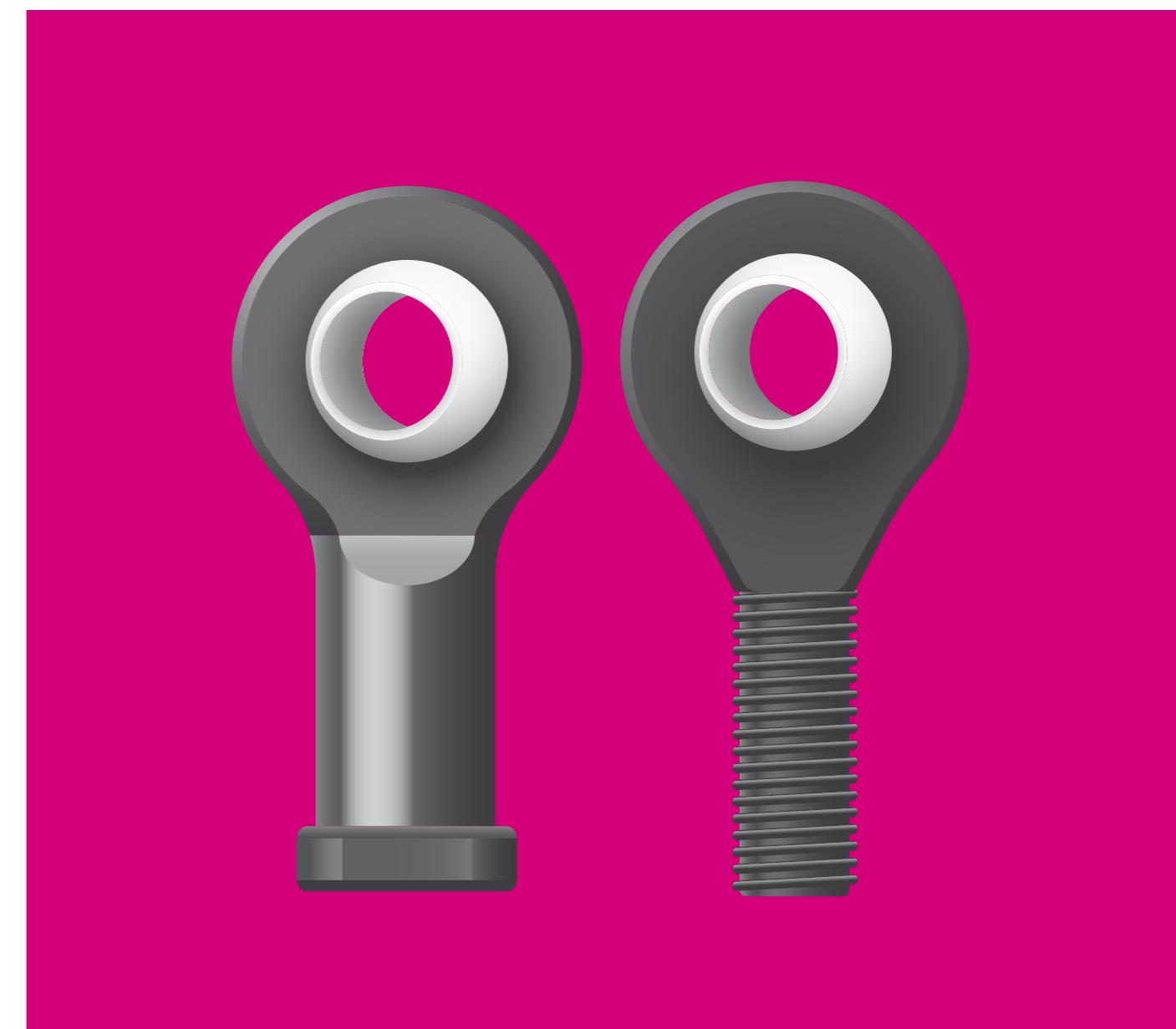
igubal® expert system

► www.igus.eu/igubal-expert



igubal® product finder

► www.igus.eu/igubal-finder



igubal® rod end bearings

Maintenance-free dry operation

Robust

Durable

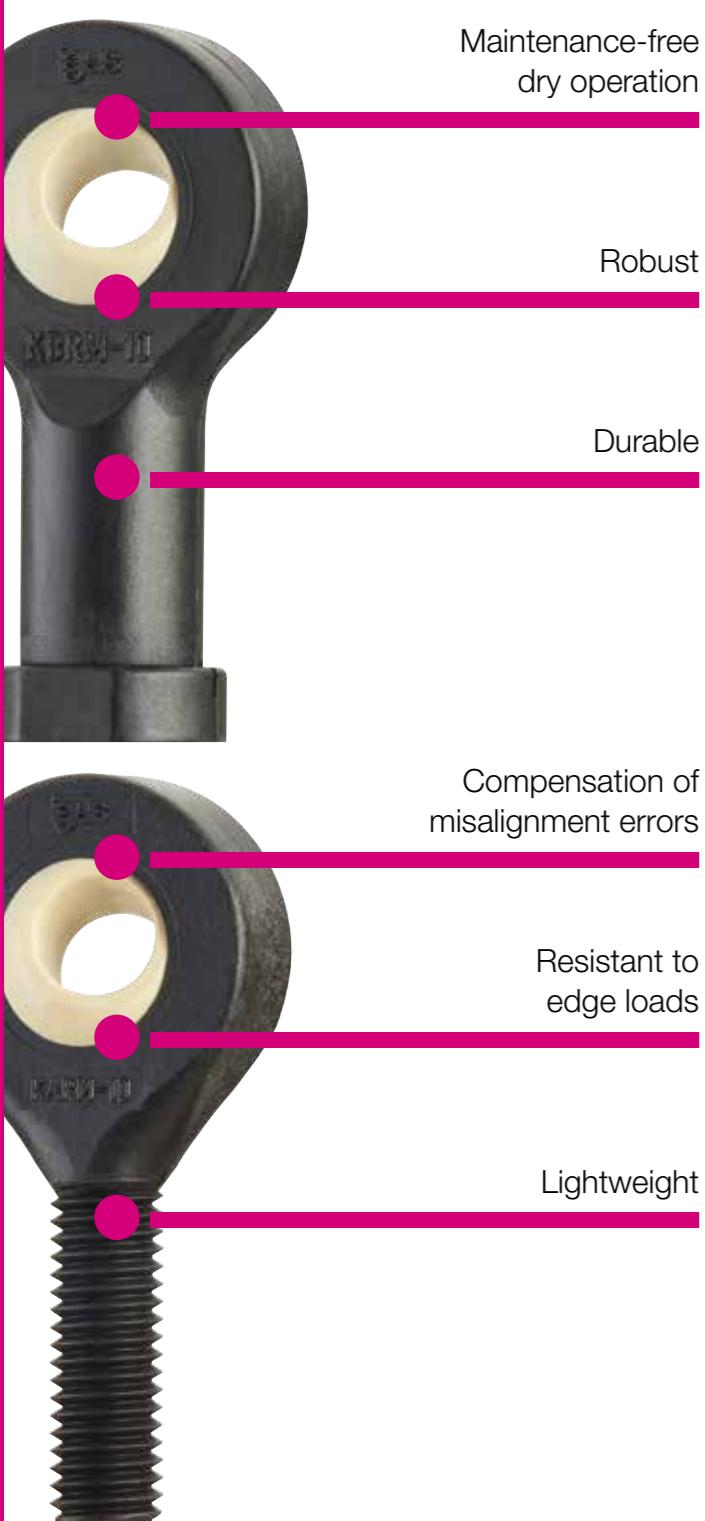
Compensation of misalignment errors

Resistant to edge loads

Lightweight



igubal® rod ends can also be used in rough environments. They are corrosion-resistant in humid environments and resistant to weak acids and media. Depending on the version (HT) the operation temperature is from –40 °C to +200 °C. Rod ends are also resistant to dirt and dust, they are also available as detectable version.



When to use it?

- If you want to save weight
- For rotating, oscillating and linear movements
- If high-frequency oscillations/vibrations occur
- If silent operation is required
- If you need an electrically insulating part
- If corrosion resistance is required
- In combination with pneumatic cylinders and gas struts
- If chemical resistance is required
- If high rigidity is required
- If they should be detectable



When not to use it?

- When temperatures are higher than +80 °C
► HT version, page 712–713
- When rotation speeds higher than 0.5m/s are required
- When really high tensile and axial forces occur
- With a hydraulic cylinder
- When dimensions above 30mm are required



Max. +200 °C
Min. –40 °C

(depending on material: standard from –30 °C to +80 °C; HT from –40 °C to +200 °C)



18 types
Ø 2–30mm



Imperial dimensions available
► From page 1512



Online product finder
► www.igus.eu/igubal-finder



Available from stock

Detailed information about delivery time online.



Price breaks online

No minimum order value. No minimum order quantity

Typical sectors of industry and application areas

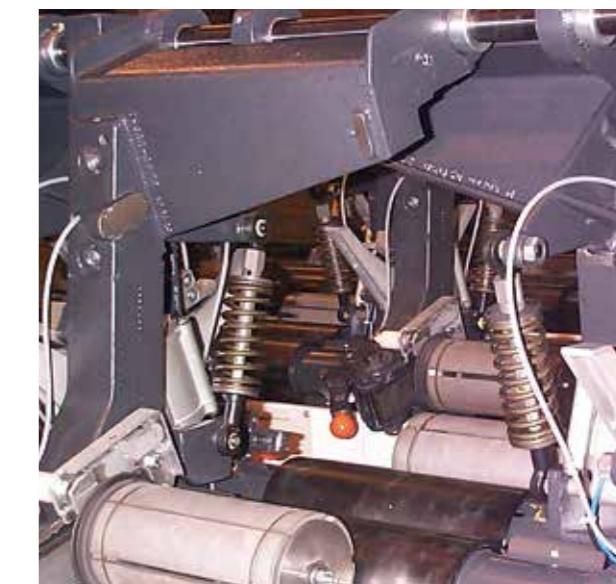
- Bicycle manufacturing ● Plant design
- Packaging ● Offshore etc.



► www.igus.eu/special-bikes



► www.igus.eu/textile



► www.igus.eu/offshore



► www.igus.eu/rod-end

Advantages

- Maintenance-free dry operation
- Robust
- Durable in varying loads
- Compensation of misalignment errors
- Resistant to edge loads
- Resistant to dirt, dust and lint
- Resistant to corrosion and chemicals
- Vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional K and E series, according to standard DIN ISO 12240
- Available with stainless steel sleeve for higher tightening torque

Product range

igubal® rod ends are available in the dimensional K and E series for shaft diameters of 2 to 30mm according to standard DIN ISO 12240

- Form A – with male thread and
- Form B – with female thread

Stainless steel sleeve

The dimensional K and partially E series are available in imperial dimensions, as well as a special version containing a stainless steel sleeve in the spherical ball. This allows a significantly higher tightening torque than for the standard polymer race. Please ask us for more dimensions.

Loads

igubal® rod ends handle high loads at ambient temperatures, have excellent dampening properties and weigh only a fifth of traditional metallic bearing housings. In applications with high continuous loads and high temperatures, the load capacity of igubal® rod ends should be tested in an experiment that simulates the application.

[► www.igus.eu/igubal-finder](http://www.igus.eu/igubal-finder)

Coefficient of sliding friction and speed

Rotary movements of a mounted shaft take place directly in the spherical portion, made from iglidur® W300. The advantage therefore lies in the polymer vs. steel relationship. Polymer produces lower friction and permits high speeds, even in dry operation. Taking the radial loads into account, maximum surface speeds up to 0.5m/s rotating can be attained.

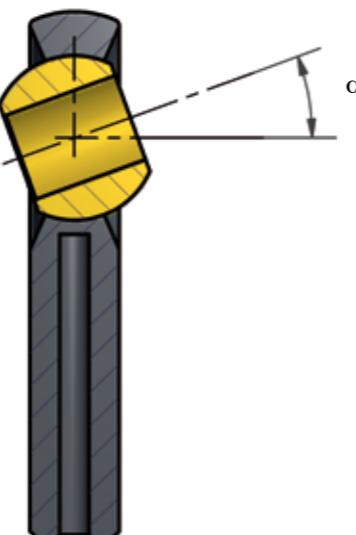
The maintenance-free igubal® rod end bearings permit linear and oscillating movements of the shaft.

Temperatures

The igubal® rod ends can be used in temperatures from -30 °C up to +80 °C. The igubal® rod ends made from HT material are suitable for temperatures up to +200 °C (E series, female and male threads).

Tolerances

igubal® rod ends can be used at different tolerances depending on the individual application. They are designed with a large clearance in the standard product, which enables a secure operation even under high peripheral speeds. The hole of the spherical ball is produced to a standard tolerance range E10. Shafts should also meet recommended tolerances h6 and h9. Please contact us in case you require lower or other bearing tolerances.

Pivot angle**igubal® rod end bearings with female thread**

Classic design	Easy assembly	Selectable spherical ball material	Space-saving	For temperatures up to +200 °C	Classic design, imperial dimensions	Space-saving, imperial dimensions
K series ► From page 698	K series ► Page 700	K series ► Page 702	E series ► Page 708	E series ► Page 712	K series ► Page 1514	E series ► Page 1512

igubal® rod end bearings with male thread

Classic design	Higher forces	Space-saving	For temperatures up to +200 °C	Classic design, imperial dimensions
K series ► From page 704	K series ► Page 706	E series ► From page 710	E series ► Page 713	K series ► From page 1513

igubal® angled and in-line ball and socket joints

Angled ball and socket joints ► Page 714	Angled ball and socket joints, low-cost ► Page 715	Easy assembly and disassembly ► Page 716	In-line ball and socket joints ► Page 717	In-line ball and socket joints, low-cost ► Page 718

igubal® accessories for rod ends

Clevis joints with clevis pin and circlip E series ► Page 726	Clevis joints with spring-loaded fixing clip E series ► Page 727	Detectable rod ends and clevis joints ► From page 805

Rod ends with female thread: KBRM and KBLM



Standard design

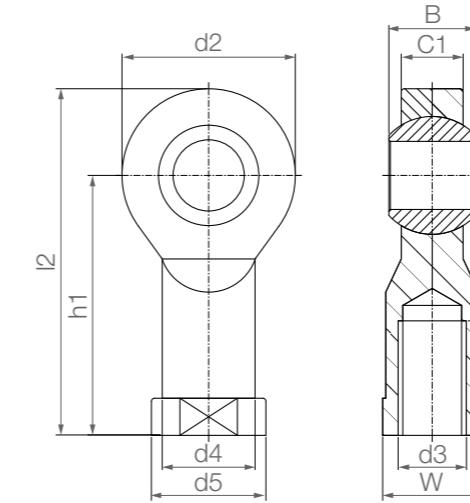
Stainless steel sleeve
version (MH)

- Maintenance-free dry operation
 - Robust
 - Durable in varying loads
 - Compensation of misalignment errors
 - Resistant to edge loads
 - Resistant to dirt, dust and lint
 - Resistant to corrosion and chemicals
 - Vibration-dampening
 - Suitable for rotating, oscillating and linear movements
 - Lightweight
 - Dimensional K series according to DIN ISO 12240
 - Available with stainless steel sleeve for higher tightening torque
 - Adapter screw with circlip available
- Accessories, page 802

Service life calculation online
► www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial load		Min. thread depth	Max. tightening torque	Max. tightening torque through ball		Weight
	Short-term	Long-term	Short-term	Long-term			Thread	Female thread	
	[N]	[N]	[N]	[N]			[mm]	[Nm]	
KB□M-02	200	100	50	25	4	0.30	1	–	0.4
KB□M-03	800	400	100	50	5	0.50	2	4	2.7
KB□M-05 M4	1,000	500	250	125	7	0.75	5	12	3.5
KB□M-05	1,000	500	250	125	7	1.00	5	12	3.4
KB□M-06	1,400	700	400	200	8	1.50	10	15	4.7
KB□M-08	2,100	1,050	700	350	11	5.00	12	40	8.6
KB□M-10	3,100	1,550	800	400	13	15.00	20	50	14.6
KB□M-10 F	3,100	1,550	800	400	13	6.00	20	50	14.6
KB□M-12 ²⁹⁾	3,600	1,800	900	450	15	20.00	30	70	22.0
KB□M-12 F	3,600	1,800	900	450	15	15.00	30	70	22.0
KB□M-14	4,000	2,000	1,000	500	17	25.00	35	75	30.9
KB□M-16	4,200	2,100	1,300	650	19	30.00	40	110	39.6
KB□M-16 F	4,200	2,100	1,300	650	19	27.50	40	110	39.6
KB□M-18	4,600	2,300	1,600	800	21	45.00	45	150	55.0
KB□M-20	5,400	2,700	2,100	1,050	22	60.00	55	200	73.5
KB□M-20 M20	5,400	2,700	2,100	1,050	22	60.00	55	200	73.5
KB□M-22	7,000	3,500	2,200	1,100	25	75.00	60	–	94.8
KB□M-25	8,500	4,250	2,300	1,150	28	120.00	60	–	119.8
KB□M-30	10,500	5,250	2,500	1,250	34	135.00	60	–	177.0
KB□M-30 M27x2	10,500	5,250	2,500	1,250	34	135.00	60	–	189.6

²⁹⁾ Integrated lock nut. Drawing as for KCRM, page 703Rod ends with female thread:
KBRM and KBLM

Type	Size [mm]	Options
K B ... M - 02	MH	

Thread
L = Left-hand thread
R = Right-hand thread

MH =
With stainless steel sleeve

Material:
Housing: igumid G ► Page 1560
Spherical ball: iglidur® W300 ► Page 171

Imperial dimensions available
► Page 1514

Dimensions [mm]

Part No.	d1 E10	d2	d3	d4	d5	C1	B		h1	I1	I2	W	Max. pivot angle
							without stainless steel sleeve	with stainless steel sleeve					
+0.2													
KB□M-02	2	9	M2	4.0	4.6	3.0	4	–	12.5	6	17	SW4	30°
KB□M-03	3	13	M3	6.5	8.0	4.5	6	6.2	18.5	8	25	SW6	30°
KB□M-05 M4	5	18	M4	9.0	12.0	6.0	8	8.2	27	10	36	SW9	30°
KB□M-05	5	18	M5	9.0	12.0	6.0	8	8.2	27	10	36	SW9	30°
KB□M-06	6	20	M6	10.0	13.0	7.0	9	9.2	30	12	40	SW11	29°
KB□M-08	8	24	M8	13.0	16.0	9.0	12	12.2	36	16	48	SW14	25°
KB□M-10	10	30	M10	15.0	19.0	10.5	14	14.2	43	20	58	SW17	25°
KB□M-10 F	10	30	M10 x 1.25	15.0	19.0	10.5	14	14.2	43	20	58	SW17	25°
KB□M-12	12	34	M12	–	–	12.0	16	16.2	50	25	67	SW17	25°
KB□M-12 F	12	34	M12 x 1.25	18.0	22.0	12.0	16	16.2	50	22	67	SW19	25°
KB□M-14	14	38	M14	20.0	25.0	13.5	19	19.2	57	25	76	SW22	25°
KB□M-16	16	42	M16	22.0	27.0	15.0	21	21.2	64	28	85	SW22	23°
KB□M-16 F	16	42	M16 x 1.5	22.0	27.0	15.0	21	21.2	64	28	85	SW22	23°
KB□M-18	18	46	M18 x 1.5	25.0	31.0	16.5	23	23.2	71	32	94	SW27	23°
KB□M-20	20	50	M20 x 1.5	28.0	34.0	18.0	25	25.2	77	33	102	SW30	23°
KB□M-20 M20	20	50	M20 x 2.5	28.0	34.0	18.0	25	25.2	77	33	102	SW30	23°
KB□M-22	22	56	M22 x 1.5	30.0	37.0	20.0	28	–	84	37	112	SW32	22°
KB□M-25	25	60	M24 x 2.0	32.0	41.0	22.0	31	–	94	42	124	SW36	22°
KB□M-30	30	70	M30 x 2.0	37.0	50.0	25.0	37	–	110	50	145	SW41	22°
KB□M-30 M27x2	30	70	M27 x 2.0	37.0	50.0	25.0	37	–	110	50	145	SW41	22°

Rod ends can be ordered in metric dimensions with stainless steel sleeve with the addition of MH after the part numbers listed here. Example: KBRM-10 MH (Inner Ø: 10mm).

Rod ends, female thread; 2nd generation:
KBRM CL and KBLM CL



Service life calculation online
► www.igus.eu/igubal-expert

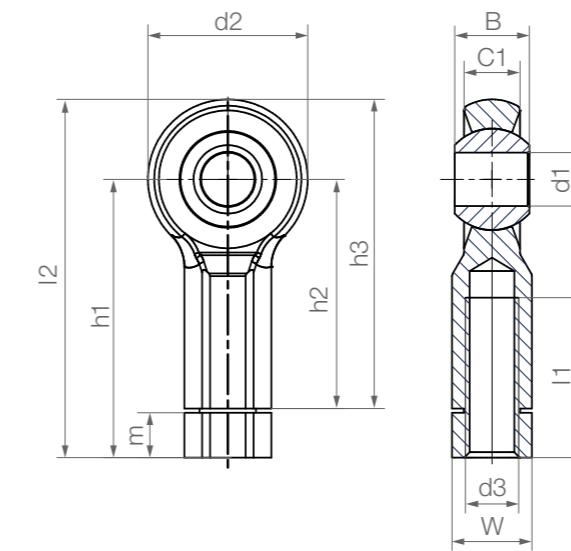
- Available with stainless steel sleeve for higher tightening torque
- Dimensional K series according to DIN ISO 12240
- Adapter screw with circlip available
- ▶ Accessories, [page 802](#)



Simple assembly due to the hexagonal body and the integrated lock nut

Rod ends, female thread; 2nd generation:
KBRM CL and KBLM CL

Order key



Type	Size [mm]	Version
K	B ... M-	06
	Housing (female thread)	
	Thread	
	Metric	
	Inner Ø	2nd generation

Options:
Thread
L = Left-hand thread
R = Right-hand thread

Add-on:
MH =
With stainless steel sleeve

Material:
Housing: igumid G ▶ [Page 1560](#)
Spherical ball: iglidur® W300 ▶ [Page 171](#)
Other spherical ball materials upon request
▶ [Page 783](#)

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball		Weight
	Short-term	Long-term	Short-term	Long-term			Thread	Female thread	
	[N]	[N]	[N]	[N]			[mm]	[Nm]	
KB□M-06 CL	1,400	700	300	150	8	0.75	10	15	4.5
KB□M-08 CL	2,100	1,050	500	250	11	2	12	40	8.6
KB□M-10 CL	3,100	1,550	800	400	13	3	20	50	14.1

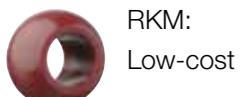
Dimensions [mm]

Part No.	d1	d2	d3	W	B		C1	h3	h1	h2	l1	l2	m	Max. pivot angle	
					E10										
					without stainless steel sleeve	with stainless steel sleeve									
+0.2															
KB□M-06 CL	6	20	M6	SW10	9	9.2	7	40	36.5	30	20	46.5	5.7	40°	
KB□M-08 CL	8	24	M8	SW13	12	12.2	9	48	44.3	36	25	56.3	7.5	35°	
KB□M-10 CL	10	30	M10	SW15	14	14.2	10.5	58	52.2	43	30	67.2	8.4	35°	

Rod ends can be ordered in metric dimensions with stainless steel sleeve with the addition of **MH** after the part numbers listed here. Example: KBRM-10 CL **MH** (**Inner Ø: 10mm**).

For another spherical bearing material than iglidur® W300, please add "J" to the part number, for example. Example: KBRM-10 CL **J**.

Alternative spherical ball materials ▶ [Page 783](#)



RKM:
Low-cost



JKM: Low
moisture
absorption



WKM-MH:
Standard spherical
ball with stainless
steel sleeve



J4KM:
Low-cost and low
moisture absorption

Rod ends with female thread:
KCRM and KCLM



- Smooth design no dirt traps
- Spherical ball is clipped in
- Choice of iglidur® spherical ball materials
- Compensation of misalignment errors
- Lightweight
- Absolute corrosion resistance
- Available with stainless steel sleeve for higher tightening torque
- Dimensional K series according to DIN ISO 12240
- Adapter screw with circlip available
- Accessories, [page 802](#)

Service life calculation online
► www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball		Weight
	Short-term	Long-term	Short-term	Long-term			without stainless steel sleeve	with stainless steel sleeve	
	[N]	[N]	[N]	[N]	[Nm]	[Nm]	[Nm]	[g]	
KC□M-05	1,200	600	180	90	7	1.00	5	12	4.0
KC□M-06	1,400	700	300	150	8	0.75	10	15	4.2
KC□M-08	2,100	1,050	500	250	11	2.00	12	40	7.6
KC□M-10	3,100	1,550	800	400	13	3.00	20	50	12.8
KC□M-10-F	3,100	1,550	800	400	13	3.00	20	50	12.8
KC□M-12	3,560	1,780	750	375	15	15.0	30	70	19.0
KC□M-12-F	3,560	1,780	750	375	15	15.0	30	70	19.0
KC□M-16	3,800	1,900	800	400	19	15.0	40	110	34.0
KC□M-16-F	3,800	1,900	800	400	19	15.0	40	110	34.0
KC□M-20	4,550	2,275	400	200	22	20.0	55	200	55.0
KC□M-20-M20	4,550	2,275	400	200	22	20.0	55	200	55.0

Alternative spherical ball materials ► [Page 783](#)



RKM:
Low-cost



JKM: Low
moisture
absorption



WKM-MH:
Standard spherical
ball with stainless
steel sleeve

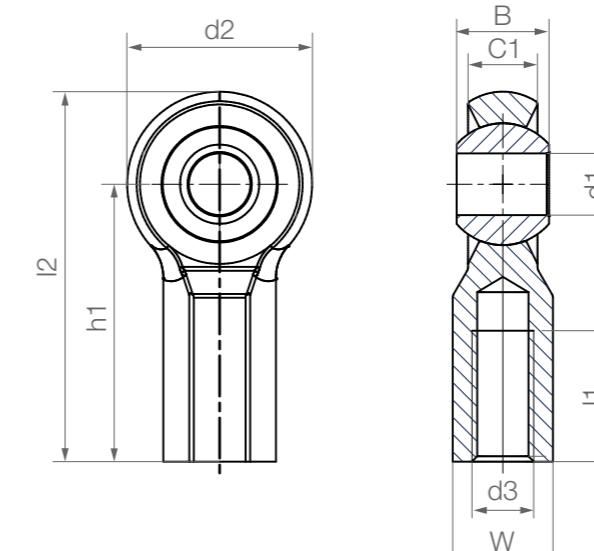


J4KM:
Low-cost and low
moisture absorption

Rod ends with female thread:
KCRM and KCLM



Order key



Type	Size [mm]	Options
K C ... M - 06	MH	

Material:
Housing: igumid G ► [Page 1560](#)
Spherical ball: iglidur® W300 ► [Page 171](#)
Other spherical ball materials upon request
► [Page 783](#)

Dimensions [mm]

Part No.	d1 E10	d2	d3	W	B		C1	h1	l1	l2	Max. pivot angle	
					without stainless steel sleeve	with stainless steel sleeve						
KC□M-05	5	18	M5	SW9	8	+0.2	8.2	6.0	27	12.0	36	43°
KC□M-06	6	20	M6	SW10	9		9.2	7.0	30	13.5	40	40°
KC□M-08	8	24	M8	SW13	12		12.2	9.0	36	17.0	48	35°
KC□M-10	10	30	M10	SW15	14		14.2	10.5	43	22.0	58	35°
KC□M-10-F	10	30	M10 x 1.25	SW15	14		14.2	10.5	43	22.0	58	35°
KC□M-12	12	34	M12	SW17	16		16.2	12.0	50	25.0	67	35°
KC□M-12-F	12	34	M12 x 1.25	SW17	16		16.2	12.0	50	25.0	67	35°
KC□M-16	16	42	M16	SW20	21		21.2	15.0	64	30.0	85	35°
KC□M-16-F	16	42	M16 x 1.5	SW20	21		21.2	15.0	64	30.0	85	35°
KC□M-20	20	50	M20 x 1.5	SW24	25		25.2	18.0	77	35.0	102	35°
KC□M-20-M20	20	50	M20 x 2.5	SW24	25		25.2	18.0	77	35.0	102	35°

Rod ends can be ordered in metric dimensions **with stainless steel** sleeve with the addition of **MH** after the part numbers listed here. Example: KCRM-10 **MH (Inner Ø: 10mm)**.

For another spherical bearing material than iglidur® W300, please add "J" to the part number, for example. Example: KCRM-05 **J**.

Rod ends with male thread:
KARM and KALM



Standard design

Stainless steel sleeve
version (MH)

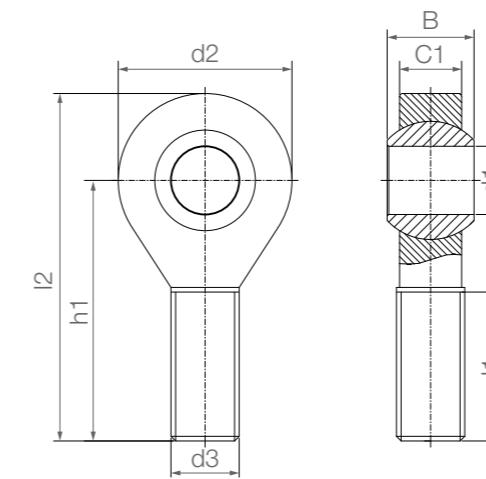
- Maintenance-free dry operation
 - Robust
 - Durable in varying loads
 - Compensation of misalignment errors
 - Resistant to edge loads
 - Resistant to dirt, dust and lint
 - Resistant to corrosion and chemicals
 - Vibration-dampening
 - Suitable for rotating, oscillating and linear movements
 - Lightweight
 - Dimensional K series according to DIN ISO 12240
 - Available with stainless steel sleeve for higher tightening torque
 - Adapter screw with circlip available
- Accessories, [page 802](#)

Service life calculation online
► www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball		Weight
	Short-term	Long-term	Short-term	Long-term			Thread	Male thread	
	[N]	[N]	[N]	[N]			[mm]	[Nm]	
KA□M-05	800	400	80	40	13	0.4	5	12	2.7
KA□M-06	1,000	500	100	50	15	0.5	10	15	3.9
KA□M-08	1,700	850	200	100	18	2.0	12	40	7.1
KA□M-10	2,500	1,250	300	150	20	5.0	20	50	12.5
KA□M-10 F	2,500	1,250	300	150	20	3.0	20	50	12.5
KA□M-12	2,700	1,350	400	200	22	6.0	30	70	18.0
KA□M-12 F	2,700	1,350	400	200	22	6.0	30	70	18.0
KA□M-14	3,400	1,700	700	350	25	12.0	35	75	25.0
KA□M-16	3,900	1,950	800	400	26	17.0	40	110	34.0
KA□M-16 F	3,900	1,950	800	400	26	17.0	40	110	34.0
KA□M-18	4,200	2,100	1,000	500	29	20.0	45	150	45.9
KA□M-20	6,000	3,000	1,300	650	32	25.0	55	200	58.0
KA□M-20 M20	6,000	3,000	1,300	650	32	25.0	55	200	58.0
KA□M-22	7,200	3,600	1,500	750	34	25.0	60	—	86.2
KA□M-25	7,500	3,750	1,900	950	39	45.0	65	—	99.1
KA□M-30	8,800	4,400	2,300	1,150	46	85.0	70	—	160.4

Rod ends with male thread:
KARM and KALM



Type	Size [mm]	Options
K A ... M - 05	MH	
K series	Housing (male thread)	
	Thread	
	Metric	
	Inner Ø	

Thread
L = Left-hand thread
R = Right-hand thread

Add-on:
MH =
With stainless steel sleeve

Material:
Housing: igumid G ► [Page 1560](#)
Spherical ball: iglidur® W300 ► [Page 171](#)

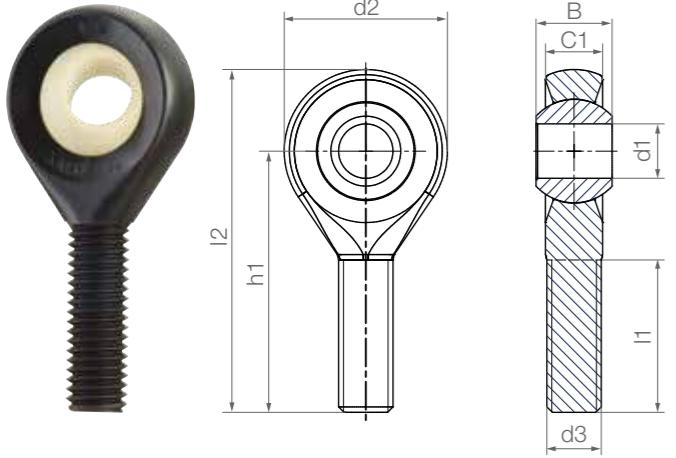
Imperial dimensions available
► [Page 1513](#)

Dimensions [mm]

Part No.	d1 E10	d2	d3	C1	B		h1	I1	I2	Max. pivot angle
					without stainless steel sleeve	with stainless steel sleeve				
+0.2										
KA□M-05	5	18	M5	6.0	8	8.2	33	19	42	30°
KA□M-06	6	20	M6	7.0	9	9.2	36	21	46	29°
KA□M-08	8	24	M8	9.0	12	12.2	42	25	55	25°
KA□M-10	10	30	M10	10.5	14	14.2	48	28	63	25°
KA□M-10 F	10	30	M10 x 1.25	10.5	14	14.2	48	28	63	25°
KA□M-12	12	34	M12	12.0	16	16.2	54	32	71	25°
KA□M-12 F	12	34	M12 x 1.25	12.0	16	16.2	54	32	71	25°
KA□M-14	14	38	M14	13.5	19	19.2	61	36	79	25°
KA□M-16	16	42	M16	15.0	21	21.2	66	37	88	23°
KA□M-16 F	16	42	M16 x 1.5	15.0	21	21.2	66	37	88	23°
KA□M-18	18	46	M18 x 1.5	16.5	23	23.2	72	41	96	23°
KA□M-20	20	50	M20 x 1.5	18.0	25	25.2	78	45	104	23°
KA□M-20 M20	20	50	M20 x 2.5	18.0	25	25.2	78	45	104	23°
KA□M-22	22	56	M22 x 1.5	20.0	28	—	84	48	112	22°
KA□M-25	25	61	M24 x 2.0	22.0	31	—	95	55	126	22°
KA□M-30	30	71	M30 x 2.0	25.0	37	—	112	66	147	22°

Rod ends can be ordered in metric dimensions **with stainless steel** sleeve with the addition of **MH** after the part numbers listed here. Example: KARM-10 **MH** (**Inner Ø**: 10mm).

Rod ends, male thread; 2nd generation:
KARM CL



Order key

Type	Size [mm]	Version
K A R M -	06	CL MH
K series	Housing (male thread)	Thread
	Right-hand thread	L = Left-hand thread
	Metric	R = Right-hand thread
	Inner Ø	Add-on:
	2nd generation	MH = With stainless steel sleeve

- Smooth design no dirt traps
- Compensation of misalignment errors
- Lightweight
- Absolute corrosion resistance
- Available with stainless steel sleeve for higher tightening torque
- Dimensional K series according to DIN ISO 12240
- Adapter screw with circlip available
- Accessories, [page 802](#)

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth [mm]	Max. tightening torque Male thread [Nm]	Max. tightening torque through ball		Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]			without stainless steel sleeve	with stainless steel sleeve	
	Thread	Male thread	[Nm]	[Nm]			[Nm]	[Nm]	
KA□M-06 CL	1,000	500	100	50	15	0.5	10	15	3.5
KA□M-08 CL	1,700	850	200	100	18	2.0	12	40	6.2
KA□M-10 CL	2,500	1,250	300	150	20	5.0	20	50	11.2
KA□M-12 CL	2,700	1,350	400	200	22	6.0	30	70	15.6

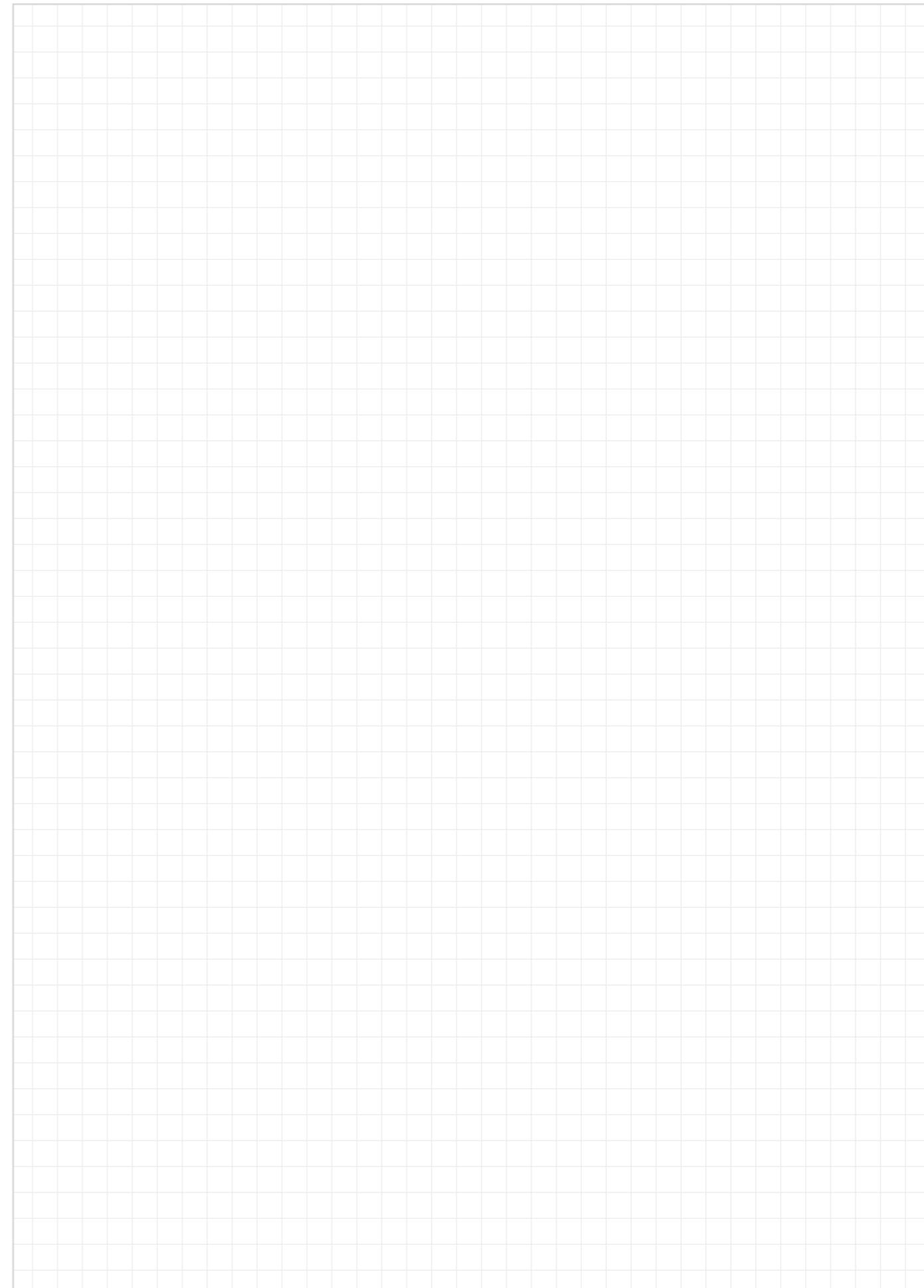
Dimensions [mm]

Part No.	d1	d2	d3	C1	B	without stainless steel sleeve	with stainless steel sleeve	h1	l1	l2	Max. pivot angle
	E10	+0.2									
KA□M-06 CL	6	20	M6	7.0	9	9.2	36	21	46	40°	
KA□M-08 CL	8	24	M8	9.0	12	12.2	42	25	55	35°	
KA□M-10 CL	10	30	M10	10.5	14	14.2	48	28	63	35°	
KA□M-12 CL	12	34	M12	12.0	16	16.2	54	32	71	35°	

Rod ends can be ordered in metric dimensions with stainless steel sleeve with the addition of **MH** after the part numbers listed here. Example: KARM-10 CL **MH** (**Inner Ø: 10mm**).

For another spherical bearing material than iglidur® W300, please add "J" to the part number, for example. Example: KARM-10 CL **J**.

My sketches



Rod ends with female thread:
EBRM and EBLM



- Maintenance-free dry operation
- Robust
- Durable in varying loads
- Compensation of misalignment errors
- Resistant to edge loads
- Resistant to dirt, dust and lint
- Resistant to corrosion and chemicals
- Vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional E series according to DIN ISO 12240
- For temperatures up to +200°C we recommend EARM-HT and EALM-HT ► Page 712
- Detectable version ► Page 809

Service life calculation online
► www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth	Max. tightening torque	Max. tightening torque	Weight
	Short-term	Long-term	Short-term	Long-term				
	[N]	[N]	[N]	[N]				
EB□M-04	800	400	100	50	7	0.4	2.0	1.8
EB□M-05	1,300	650	150	75	8	0.5	2.0	3.2
EB□M-06	1,500	750	200	100	8	1.5	2.5	4.0
EB□M-08	2,000	1,000	450	225	11	5.0	7.0	6.9
EB□M-10	2,300	1,150	500	250	13	15.0	14.0	11.2
EB□M-10 F	2,300	1,150	500	250	13	6.0	14.0	11.2
EB□M-12	3,300	1,650	550	275	14	20.0	25.0	17.1
EB□M-12 F	3,300	1,650	550	275	14	15.0	25.0	17.1
EB□M-15	4,800	2,400	800	400	18	25.0	30.0	28.9
EB□M-16	5,000	2,500	850	425	18	20.0	32.0	32.6
EB□M-16 F	5,000	2,500	850	425	18	15.0	32.0	32.6
EB□M-17	5,300	2,650	1,100	550	19	30.0	35.0	42.4
EB□M-17 F	5,300	2,650	1,100	550	19	27.5	35.0	42.4
EB□M-20	7,200	3,600	1,800	900	22	60.0	40.0	65.8
EB□M-20 M20	7,200	3,600	1,800	900	22	60.0	40.0	65.8
EB□M-25	10,000	5,000	2,600	1,300	27	115.0	55.0	125.9
EB□M-30	10,500	5,250	3,000	1,500	33	130.0	70.0	184.1

Alternative spherical ball materials ► Page 783



J4VEM:
Clearance-free,
preloaded



JEM: Low
moisture
absorption



REM:
Low-cost



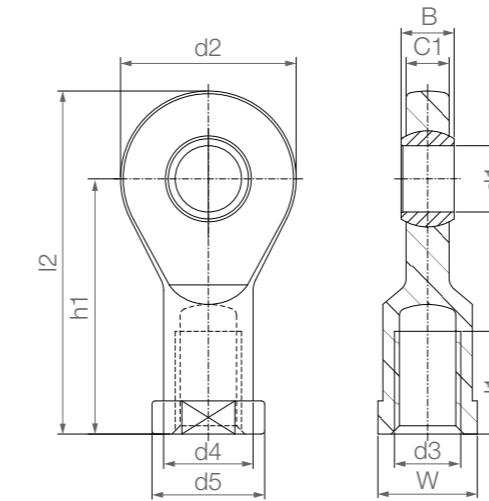
J4EM:
Low-cost and low
moisture absorption

Rod ends with female thread:
EBRM and EBLM



Type	Size [mm]	Options
E B ... M - 04		

Thread
L = Left-hand thread
R = Right-hand thread



Dimensions [mm]

Part No.	d1 E10	d2	d3	d4	d5	C1	B	h1	I1	I2	W	Max. pivot angle
EB□M-04 ¹⁷⁾	4	15	M4	—	—	3.5	5	22.5	9.5	30.0	SW8	33°
EB□M-05	5	19	M5	9.0	11	4.4	6	30	12.0	39.5	SW9	33°
EB□M-06	6	21	M6	11.0	13	4.4	6	30	12.0	40.5	SW11	27°
EB□M-08	8	24	M8	13.0	16	6.0	8	36	14.0	48.0	SW14	24°
EB□M-10	10	29	M10	15.0	19	7.0	9	43	18.0	57.5	SW17	24°
EB□M-10 F	10	29	M10 x 1.25	15.0	19	7.0	9	43	18.0	57.5	SW17	24°
EB□M-12	12	34	M12	18.0	22	8.0	10	50	20.0	67.0	SW19	21°
EB□M-12 F	12	34	M12 x 1.25	18.0	22	8.0	10	50	20.0	67.0	SW19	21°
EB□M-15	15	40	M14	21.0	26	10.0	12	61	26.0	81.0	SW22	21°
EB□M-16 ¹⁷⁾	16	43	M16	—	—	10.5	13	64.5	26.5	86.0	SW22	21°
EB□M-16 F ¹⁷⁾	16	43	M16 x 1.5	—	—	10.5	13	64.5	26.5	86.0	SW22	21°
EB□M-17	17	46	M16	24.0	30	11.0	14	67	27.0	90.0	SW27	18°
EB□M-17 F	17	46	M16 x 1.5	24.0	30	11.0	14	67	27.0	90.0	SW27	18°
EB□M-20	20	53	M20 x 1.5	27.0	34	13.0	16	77	31.0	103.5	SW30	16°
EB□M-20 M20	20	53	M20 x 2.5	27.0	34	13.0	16	77	31.0	103.5	SW30	16°
EB□M-25	25	64	M24 x 2.0	34.0	41	17.0	20	94	38.0	126.5	SW36	16°
EB□M-30	30	73	M30 x 2.0	41.0	48	19.0	22	110	47.0	146.5	SW41	13°

¹⁷⁾ Special design with hexagonal foot

For another spherical bearing material than iglidur® W300, please add "J" to the part number, for example: EBRM-05 J.

Imperial dimensions available
► Page 1512

Rod ends with male thread:
EARM and EALM



- Maintenance-free dry operation
 - Robust
 - Durable in varying loads
 - Compensation of misalignment errors
 - Resistant to edge loads
 - Resistant to dirt, dust and lint
 - Resistant to corrosion and chemicals
 - Vibration-dampening
 - Suitable for rotating, oscillating and linear movements
 - Lightweight
 - Dimensional E series according to DIN ISO 12240
- For temperatures up to +200 °C we recommend
EARM-HT and EALM-HT ► Page 713

Service life calculation online
► www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight
	Short-term	Long-term	Short-term	Long-term				
	[N]	[N]	[N]	[N]				
EAM-05	550	275	50	25	14	0.4	2.0	2.2
EAM-06	850	425	80	40	14	0.5	2.5	2.7
EAM-08	1,600	800	160	80	17	2.0	7.0	5.1
EAM-10	2,600	1,300	250	125	19	5.0	14.0	8.4
EAM-10 F	2,600	1,300	250	125	19	3.0	14.0	8.4
EAM-12	3,100	1,550	300	150	20	6.0	25.0	14.3
EAM-12 F	3,100	1,550	300	150	20	6.0	25.0	14.3
EAM-15	3,400	1,700	600	300	24	12.5	30.0	21.1
EAM-17	3,600	1,800	900	450	26	17.5	35.0	30.2
EAM-17 F	3,600	1,800	900	450	26	21.0	35.0	30.2
EAM-20	6,800	3,400	1,700	850	30	25.0	40.0	57.3
EAM-20 M20	6,800	3,400	1,700	850	30	25.0	40.0	57.3
EAM-25	7,000	3,500	1,000	500	37	45.0	55.0	94.8
EAM-30	7,000	3,500	2,000	1,000	46	85.0	70.0	156.4

Alternative spherical ball materials ► Page 783



J4VEM:
Clearance-free, preloaded



JEM: Low moisture absorption

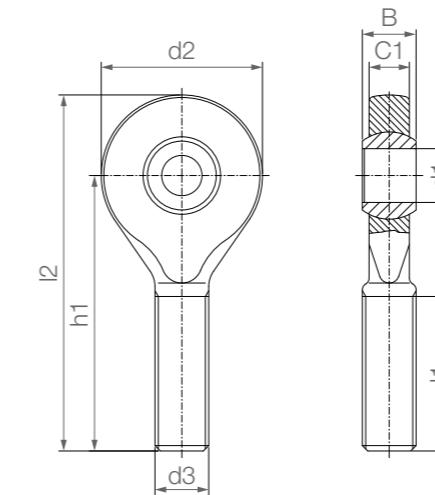


REM:
Low-cost



J4EM:
Low-cost and low moisture absorption

Rod ends with male thread:
EARM and EALM



Type	Size [mm]	Options
E A ... M - 05		

E series Housing (male thread) Thread Metric Inner Ø

Thread
L = Left-hand thread
R = Right-hand thread

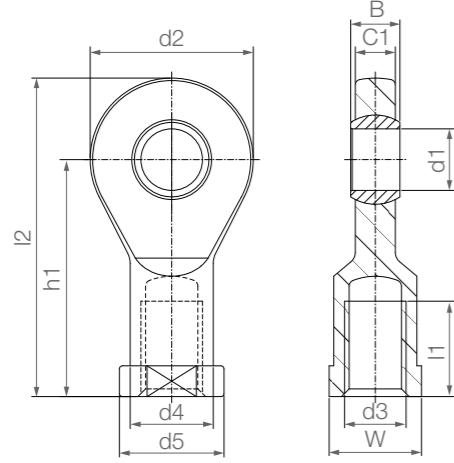
Material:
Housing: igumid G ► Page 1560
Spherical ball: iglidur® W300 ► Page 171
Other spherical ball materials upon request
► Page 783

Dimensions [mm]

Part No.	d1 E10	d2	d3	C1	B	h1	I1	I2	Max. pivot angle
EAM-05	5	19	M5	4.4	6	36.0	20	45.5	33°
EAM-06	6	21	M6	4.4	6	36.0	20	46.5	27°
EAM-08	8	24	M8	6.0	8	41.0	24	53.0	24°
EAM-10	10	29	M10	7.0	9	47.5	27	62.0	24°
EAM-10 F	10	29	M10 x 1.25	7.0	9	47.5	27	62.0	24°
EAM-12	12	34	M12	8.0	10	54.0	29	71.0	21°
EAM-12 F	12	34	M12 x 1.25	8.0	10	54.0	29	71.0	21°
EAM-15	15	40	M14	10.0	12	63.0	34	83.0	21°
EAM-17	17	46	M16	11.0	14	69.0	37	92.0	18°
EAM-17 F	17	46	M16 x 1.5	11.0	14	69.0	37	92.0	18°
EAM-20	20	53	M20 x 1.5	13.0	16	80.0	43	106.5	16°
EAM-20 M20	20	53	M20 x 2.5	13.0	16	80.0	43	106.5	16°
EAM-25	25	64	M24 x 2.0	17.0	20	97.0	53	129.0	16°
EAM-30	30	73	M30 x 2.0	19.0	22	113.0	65	149.5	13°

For another spherical bearing material than iglidur® W300, please add "J" to the part number, for example: EARM-05 J.

High temperature rod ends with female thread: EBRM-HT and EBLM-HT



Order key

Type	Size [mm]	Version
E B ... M - 05 HT		
E series	Housing (female thread)	
	Thread	
	Metric	
	Inner Ø	
	High temperature	

- Applicable up to +200 °C
- Robust
- Durable in varying loads
- Compensation of misalignment and edge loads
- Corrosion- and chemical-resistant (chemical table ▶ Page 1542)
- For underwater applications
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional E series according to DIN ISO 12240

Technical data

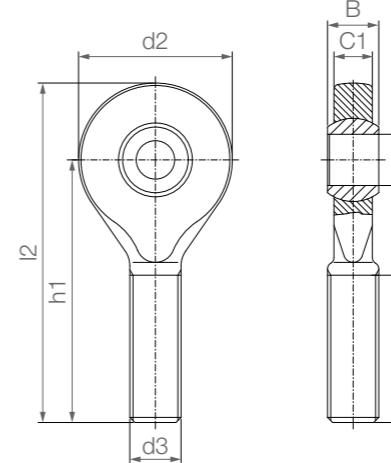
Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight
	Short-term	Long-term	Short-term	Long-term				
	[N]	[N]	[N]	[N]				
EB□M-05-HT	625	313	140	70	14	0.4	2.0	3.8
EB□M-06-HT	832	416	172	86	14	0.5	2.5	5.0
EB□M-08-HT	1,317	658	175	88	17	2.0	7.0	8.5
EB□M-10-HT	1,470	735	253	126	19	5.0	14.0	13.7
EB□M-12-HT	1,600	800	279	139	20	6.0	25.0	21.4

Dimensions [mm]

Part No.	d1	d2	d3	d4	d5	C1	B	h1	I1	I2	W	Max. pivot angle
	E10											
EB□M-05-HT	5	19	M5	9.0	11	4.4	6	30	12	39.5	SW9	33°
EB□M-06-HT	6	21	M6	11.0	13	4.4	6	30	12	40.5	SW11	27°
EB□M-08-HT	8	24	M8	13.0	16	6.0	8	36	16	48.0	SW14	24°
EB□M-10-HT	10	29	M10	15.0	19	7.0	9	43	18	57.5	SW17	24°
EB□M-12-HT	12	34	M12	18.0	22	8.0	10	50	20	67.0	SW19	21°

Other dimensions available upon request

High temperature rod ends with male thread: EARM-HT and EALM-HT



Order key

Type	Size [mm]	Version
E A ... M - 05 HT		
E series	Housing (male thread)	
	Thread	
	Metric	
	Inner Ø	
	High temperature	

- Applicable up to +200 °C
- Robust
- Durable in varying loads
- Compensation of misalignment and edge loads
- Corrosion- and chemical-resistant (chemical table ▶ Page 1542)
- For underwater applications
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional E series according to DIN ISO 12240

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight
	Short-term	Long-term	Short-term	Long-term				
	[N]	[N]	[N]	[N]				
EA□M-05-HT	380	190	20	10	14	0.4	2.0	2.8
EA□M-06-HT	600	300	30	15	14	0.5	2.5	3.4
EA□M-08-HT	931	465	48	24	17	2.0	7.0	6.1
EA□M-10-HT	1,125	563	57	28	19	5.0	14.0	10.2
EA□M-12-HT	1,200	600	65	33	20	6.0	25.0	15.7

Dimensions [mm]

Part No.	d1	d2	d3	C1	B	h1	I1	I2	Max. pivot angle
	E10								
EA□M-05-HT	5	19	M5	4.4	6	36.0	20	45.5	33°
EA□M-06-HT	6	21	M6	4.4	6	36.0	20	46.5	27°
EA□M-08-HT	8	24	M8	6.0	8	41.0	24	53.0	24°
EA□M-10-HT	10	29	M10	7.0	9	47.5	27	62.0	24°
EA□M-12-HT	12	34	M12	8.0	10	54.0	29	71.0	21°

Other dimensions available upon request

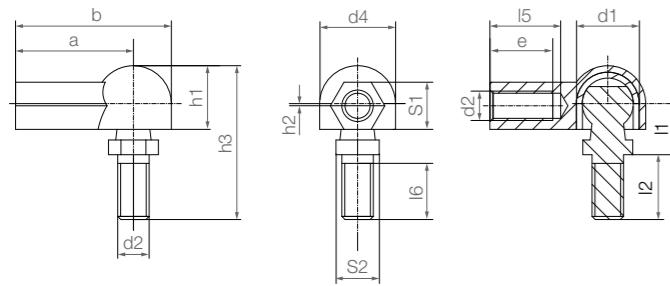
igubal® angled ball and socket joints | Product range

Angled ball and socket joints:
WGRM and WGLM



- Connection for rotating and pivoting movements
- Lightweight
- Easy and quick assembly
- Vibration-dampening
- Resistance to dust and dirt
- Ball studs made of plastic, galvanised steel and stainless steel¹⁹⁾

► Accessories, page 799



Service life calculation online
► www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile force		Max. static compressive strength		Max. axial tensile force		Max. axial tensile force steel stud		Weight [g]	
	(Ball stud axis)		(Ball stud axis)		(Housing axis)		(Housing axis)			
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]		
WG□M-05	30	15	200	100	100	50	600	300	2.6	
WG□M-06	35	17.5	300	150	140	70	800	400	3.8	
WG□M-08	250	125	500	250	200	100	1,500	750	8.0	
WG□M-10	250	125	900	450	400	200	1,900	950	13.7	

Dimensions [mm]

Part No.	d1	d2	d4	l1	l2	l5	l6	h1	h2	h3	a	b	e	S1	S2	Max. pivot
	+0.1	+0.5	+0.2	+0.3				+0.4	+0.5	+0.5	+0.3	+0.5	+1.0			angle
	-0.1	-0.5	-0.2	-0.3				Min. -0.4	-0.5	-0.5	-0.3	-0.5	-1.0			
WG□M-05	8	M5	12.8	9	10.2	14	8.2	10.8	0.65	25.6	22	28.4	11	SW8	SW7	25°
WG□M-06	10	M6	14.8	11	12.5	16	10.5	12.3	0.70	30.9	25	32.4	13	SW9	SW8	25°
WG□M-08	13	M8	19.3	13	16.5	18	13.5	16.2	1.15	38.8	30	39.7	16	SW12	SW11	25°
WG□M-10	16	M10	24.0	16	20.0	20	16.0	20.0	1.15	47.0	35	47.0	18	SW14	SW13	25°

¹⁹⁾ Ball stud with right-hand thread; left-hand thread upon request

²⁸⁾ Stainless steel ball stud upon request

igubal® angled ball and socket joints | Product range

Angled ball and socket joint (low-cost):
WGRM LC and WGLM LC

Order key



Type	Size [mm]	Version
WG ... M - 05	LC	MS

- Housing with ball stud
- Lightweight
- Maintenance-free

- Ball studs made of plastic, galvanised steel and stainless steel¹⁹⁾ ► Accessories, page 799

- Thread (housing)

L = Left-hand thread

R = Right-hand thread

Ball stud¹⁹⁾

Blank = Made of plastic

MS = Made of galvanised steel

ES = Made of stainless steel²⁸⁾

Service life calculation online
► www.igus.eu/igubal-expert

Material:
Housing: igumid G ► Page 1560

Technical data

Part No.	Max. static tensile force		Max. static compressive strength		Max. axial tensile force		Max. axial tensile force steel stud		Weight [g]	
	(Ball stud axis)		(Ball stud axis)		(Housing axis)		(Housing axis)			
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]		
WG□M-04 LC-MS ²⁰⁾	100	50	150	75	—	—	500	250	2.4	
WG□M-05 LC	30	15	200	100	100	50	600	300	2.6	
WG□M-06 LC	35	17.5	300	150	140	70	800	400	4.0	
WG□M-08 LC	250	125	500	250	200	100	1,500	750	8.2	
WG□M-10 LC	250	125	900	450	400	200	1,900	950	13.8	

Dimensions [mm] – technical drawing ► Page 714

Part No.	d1	d2	d4	l1	l2	l5	l6	h1	h2	h3	a	b	e	S1	S2	Max. pivot
	+0.1	+0.5	+0.2	+0.3				+0.4	+0.5	+0.5	+0.3	+0.5	+1.0			angle
	-0.1	-0.5	-0.2	-0.3				Min. -0.4	-0.5	-0.5	-0.3	-0.5	-1.0			
WG□M-04 LC-MS ²⁰⁾	6	M4	10.6	8.5	8.0	12.5	6.8	9.0	0.20	21.8	18	23.3	10.5	SW7	SW7	20°
WG□M-05 LC	8	M5	12.8	9.0	10.2	14.0	8.2	10.8	0.65	25.6	22	28.4	11.0	SW8	SW7	25°
WG□M-06 LC	10	M6	14.8	11.0	12.5	16.0	10.5	12.3	0.70	30.9	25	32.4	13.0	SW9	SW8	25°
WG□M-08 LC	13	M8	19.3	13.0	16.5	18.0	13.5	16.2	1.15	38.8	30	39.7	16.0	SW12	SW11	25°
WG□M-10 LC	16	M10	24.0	16.0	20.0	20.0	16.0	20.0	1.15	47.0	35	47.0	18.0	SW14	SW13	25°

¹⁹⁾ Ball stud with right-hand thread; left-hand thread upon request

²⁰⁾ Only available with galvanised steel stud

²⁸⁾ Stainless steel ball stud upon request

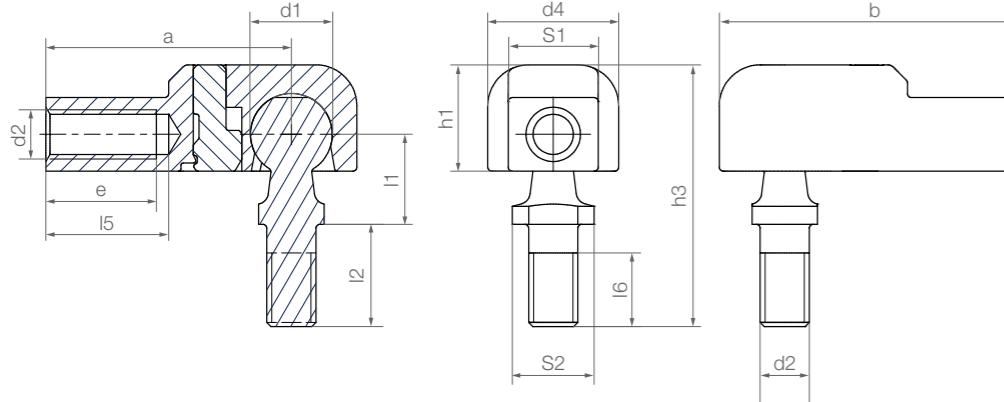
igubal® angled ball and socket joints | Product range

Ball joints, removable:
WGRM-DE and WGLM-DE



- Cost-effective ball joint
- Lightweight
- Absolute corrosion resistance
- Easy assembly and disassembly
- High holding strength when assembled (260N)
- Ball studs made of plastic, galvanised steel and stainless steel¹⁹⁾ ► Accessories, page 799

Material:
Housing: igumid G ► Page 1560



Technical data and dimensions [mm]

Part No.	Assembly force [N]	Disassembly force [N]	d1 +0.1	d2 -0.1	d4 +0.5	l1 +0.2	l2 +0.5	l5 Min.	Weight [g]
WG□M-05-DE	35	200	8.0	M5	12.8	9	10.2	13.0	3.4
WG□M-06-DE	50	275	10.0	M6	16.0	11	12.5	14.5	5.5

Dimensions [mm]

Part No.	l6	h1	h3	S1	S2	a	b	e	Pivot angle
		+0.4	+0.5			+0.3	+0.5	+1.0	
	Min.	-0.4	-0.5			-0.3	-0.5	-1.0	Recom. Max.
WG□M-05-DE	8.2	10.8	25.6	SW9	SW7	25.0	31.4	11	18° 25°
WG□M-06-DE	10.5	13.0	32.0	SW11	SW8	30.0	38.0	12	18° 25°

¹⁹⁾ Ball stud with right-hand thread; left-hand thread upon request

²⁸⁾ Stainless steel ball stud upon request

igubal® in-line ball and socket joints | Product range

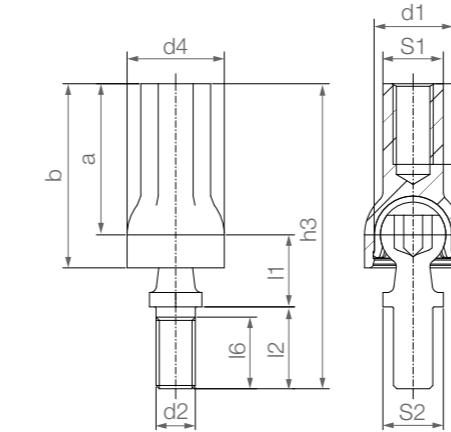
In-line ball and socket joints:
AGRM and AGLM



Order key

Type	Size [mm]
AG ... M - 08 MS	

- Options:**
Thread (housing)
L = Left-hand thread
R = Right-hand thread
Ball stud¹⁹⁾
Blank = Made of plastic
MS = Made of galvanised steel
ES = Made of stainless steel²⁸⁾



Technical data

Part No.	Max. static axial tensile force				Max. static axial compressive strength				Max. assembly force		Weight [g]
	Short-term		Long-term		Short-term		Long-term				
	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[g]
AG□M-08	250		125		1,000		500		110		7.8

Dimensions [mm]

Part No.	d1 +0.1	d2 -0.1	d4 +0.5	l1 +0.2	l2 +0.3	l6 +0.5	h3 +0.5	S1	S2	a +0.3	b +0.5	e	Pivot angle
AG□M-08	-0.1		-0.5	-0.2	-0.3	Min.	-0.5			-0.3	-0.5	Min.	18° 25°
	13.0	M8	19.3	13	16.5	13.5	59	SW12	SW11	29.5	36.5	16	

¹⁹⁾ Ball stud with right-hand thread; left-hand thread upon request

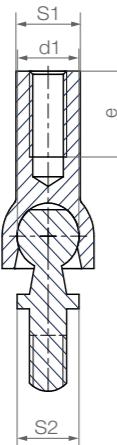
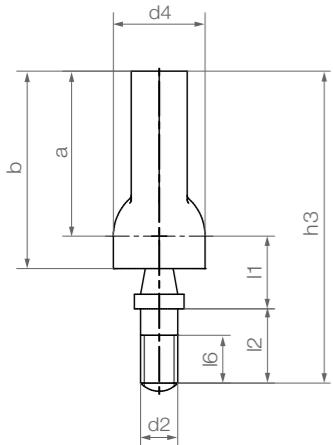
²⁸⁾ Stainless steel ball stud upon request

igubal® in-line ball and socket joints | Product range

In-line ball and socket joints (low-cost):
AGRM LC and AGLM LC



Order key



Type	Size [mm]	Version
AG ... M -	06	LC MS
In-line ball and socket joint		
Thread (housing)		
Metric		
Inner Ø		
Low-cost		

Options:

Thread (housing)

L = Left-hand thread

R = Right-hand thread

Ball stud¹⁹⁾

Blank = Made of plastic

MS = Made of galvanised steel

ES = Made of stainless steel²⁸⁾



Material:

Housing: igumid G ► Page 1560

- Housing with ball stud
- Lightweight
- Maintenance-free
- Ball studs made of plastic, galvanised steel and stainless steel¹⁹⁾ ► Accessories, page 799

Technical data

Part No.	max. static tensile strain				Max. static compressive force		Weight
	Short-term		Long-term		Short-term	Long-term	
	[N]	[N]	[N]	[N]	[N]	[N]	[g]
AG□M-06 LC	100	50	2,000	1,000	10.8		

Dimensions [mm]

Part No.	d1	d2	d4	l1	l2	l6	h3	S1	S2	a	b	e	Max. pivot angle
	+0.1	+0.5	+0.2	+0.3		+0.5		+0.3	+0.5				
AG□M-06 LC	-0.1	-0.5	-0.2	-0.3	Min.	-0.5		-0.3	-0.5	Min.	Recom.	Max.	25°

¹⁹⁾ Ball stud with right-hand thread; left-hand thread upon request

²⁸⁾ Stainless steel ball stud upon request



igubal® clevis joints

High tensile force



Vibration-dampening

Noise-dampening

Can be combined with E series rod end

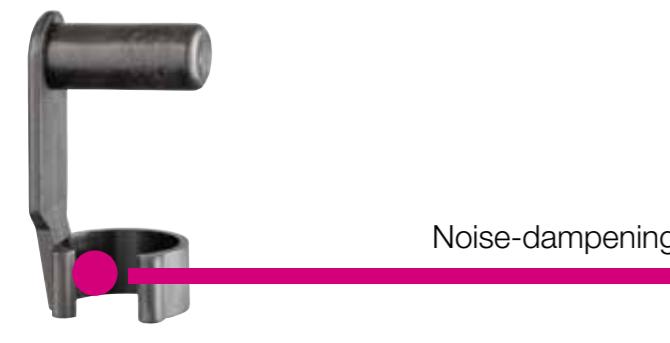
Lightweight

igubal® clevis joints

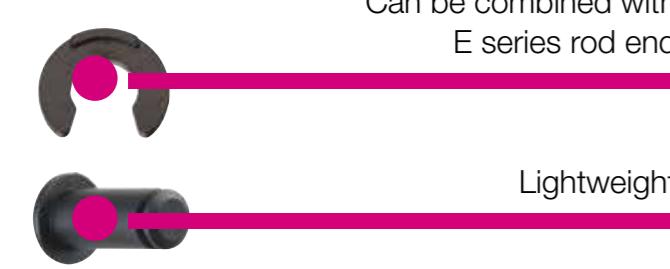
igubal® clevis joints are all made from solid plastic igumid G to DIN 71752, which can be combined with E series rod ends. Available components are clevis joint, clevis pin and circlip or as an alternative, spring-loaded fixing clip. Detectable version available.



High tensile force

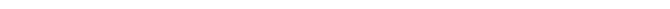


Vibration-dampening



Noise-dampening

Can be combined with
E series rod end



Lightweight

Available from stock

Detailed information about delivery time online.

Price breaks online

No minimum order value. No minimum order quantity

Max. +80 °C
Min. -30 °C

4 types
Ø 4–20mm

Online product finder
[► www.igus.eu/igubal-finder](http://www.igus.eu/igubal-finder)

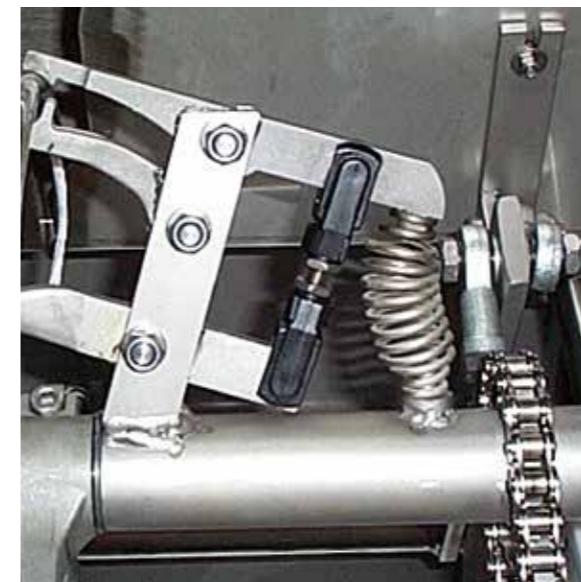
igubal® clevis joints | Application examples



Typical sectors of industry and application areas

- Food industry ● Packaging
- Heavy Duty ● Automotive
- Renewable energy ● Automation etc.

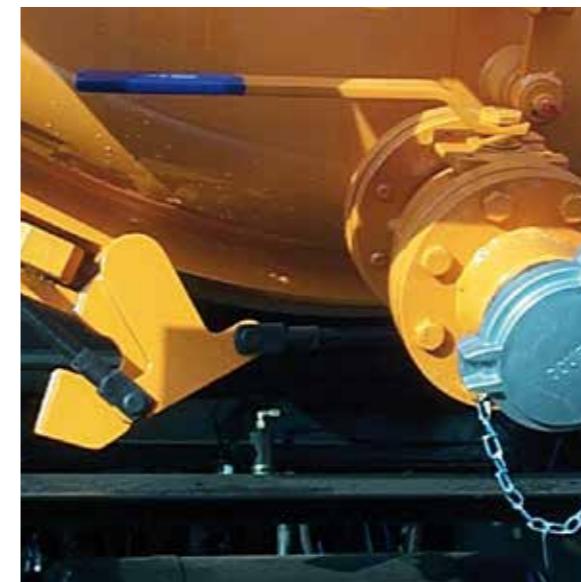
Improve technology and reduce costs –
110 exciting examples online
► www.igus.eu/igubal-applications



► www.igus.eu/food



► www.igus.eu/packaging



► www.igus.eu/traffic



Pneumatic cylinder

igubal® clevis joints | Product overview

igubal® – Clevis joint combinations



Clevis joints with clevis pin and circlip

E series

► Page 726

Clevis joints with spring-loaded fixing clip

E series

► Page 727

Combination, easy to fit

E series

► Page 728

Combination, easy to fit

E series

► Page 729

igubal® component parts



Clevis joint, high rigidity:

E series

► From page 724

Spring-loaded fixing clip

► Page 730

Clevis pin and circlip

GBM – Clevis pin
GSR – Circlip

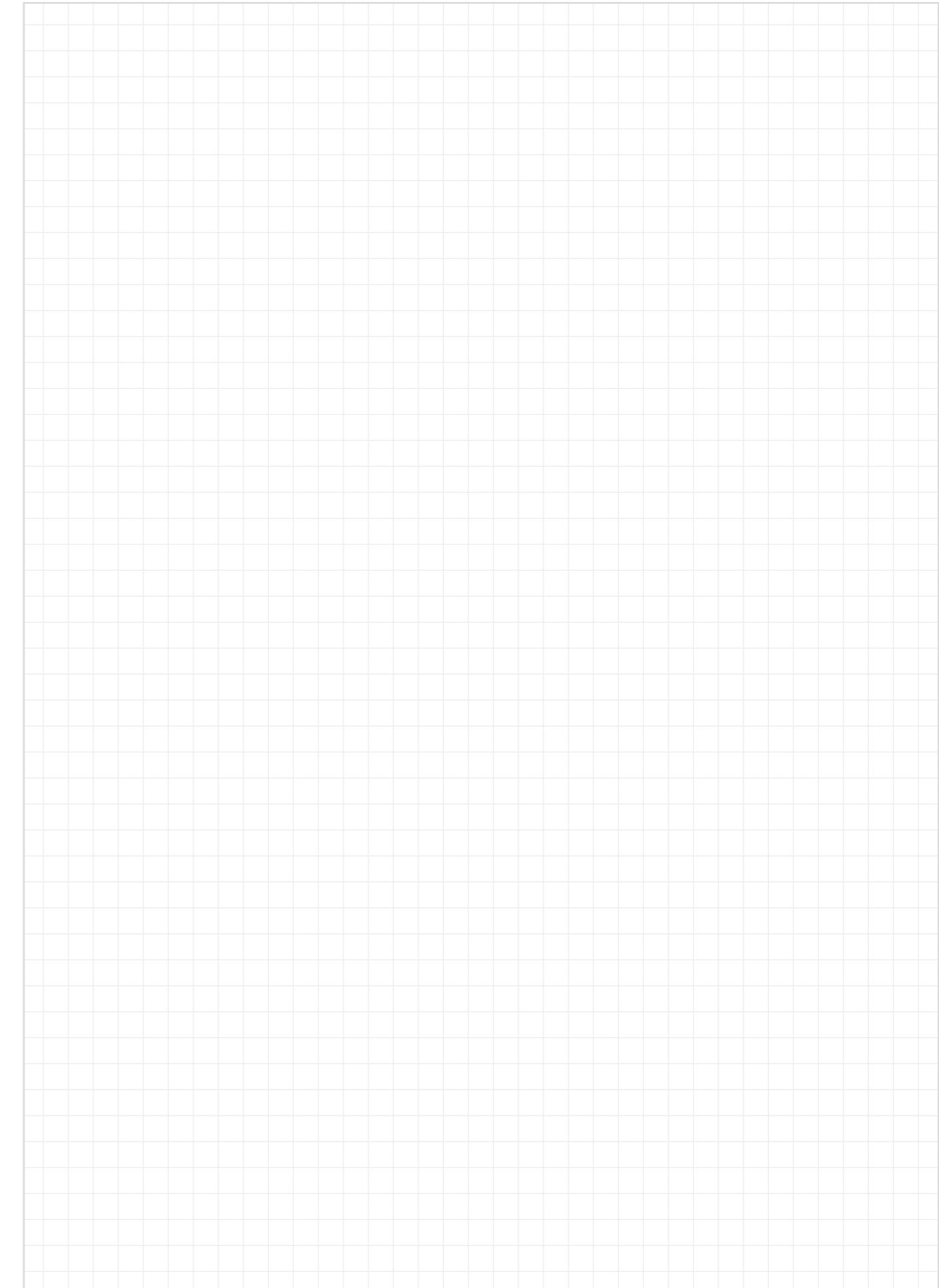
► Page 731



Detectable clevis joints and rod end bearings

► From page 805

My sketches



Clevis joints: GERM and GELM



- Lightweight
- Robust
- Absolute corrosion resistance
- High tensile force
- Can be combined with E series rod end
- Vibration-dampening
- Noise-dampening
- Available with left- (GELM) and right-hand-thread (GERM)



Service life calculation online
► www.igus.eu/igubal-expert

Technical data

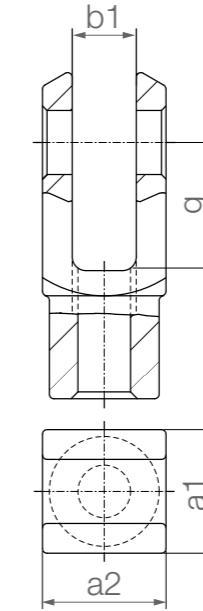
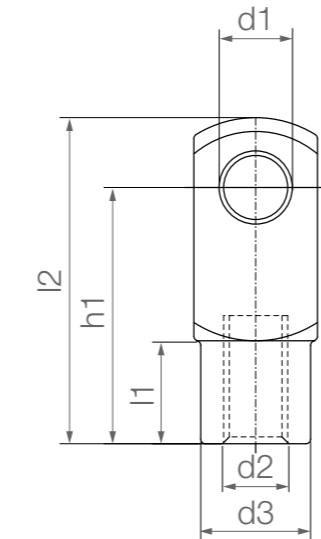
Part No.	max. static tensile strain		Max. static axial force		Max. tightening torque	Weight
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]		
GE□M-04 M3.5	650	325	250	125	0.4	0.9
GE□M-04	650	325	250	125	0.4	0.9
GE□M-05 DIN M4	1,000	500	250	125	0.4	1.5
GE□M-05 DIN M5	1,000	500	250	125	0.5	1.5
GE□M-05	1,200	600	250	125	0.5	2.7
GE□M-05 DIN M5 LS ²²⁾	1,000	500	130	65	0.5	2.3
GE□M-06	1,400	700	300	150	1.5	2.5
GE□M-06 LS ²²⁾	1,400	700	130	65	1.5	3.6
GE□M-08	2,700	1,350	650	325	5.0	6.3
GE□M-10	4,700	2,350	800	400	15.0	13.2
GE□M-10 F	4,700	2,350	800	400	6.0	13.2
GE□M-12	5,700	2,850	900	450	20.0	20.2
GE□M-12 F	5,700	2,850	900	450	15.0	20.2
GE□M-14	6,600	3,300	1,000	500	25.0	29.9
GE□M-14 F	6,600	3,300	1,000	500	20.0	29.9
GE□M-15	3,200	1,600	1,000	500	25.0	30.0
GE□M-16	7,500	3,750	1,200	600	30.0	49.9
GE□M-16 F	7,500	3,750	1,200	600	27.5	49.9
GE□M-17	3,600	1,800	1,200	600	30.0	50.0
GE□M-17 F	3,600	1,800	1,200	600	27.5	50.0
GE□M-20	9,500	4,750	3,000	1,500	60.0	105.0
GE□M-20 M20	9,500	4,750	3,000	1,500	80.0	105.0

²²⁾ LS = longer shank

Clevis joints: GERM and GELM



Order key



Type	Size [mm]	Options
G	E ... M -	04
Clevis joint	E series	Thread
		Metric
		Inner Ø

Thread
L = Left-hand thread
R = Right-hand thread

Add-on:
LS = Longer shank

Material:
igumid G ► Page 1560

Dimensions [mm]

Part No.	d1	g	a1	a2	b1	d2	d3	I2	h1	I1
	+0.1	h11	+0.3	+0.3	B13	+0.3	-0.3	+0.5	+0.3	+0.2
GE□M-04 M3.5	4	8	8	8	4	M3.5	8	21.0	16	6.0
GE□M-04	4	8	8	8	4	M4	8	21.0	16	6.0
GE□M-05 DIN M4	5	10	10	10	5	M4	9	24.5	20	7.5
GE□M-05 DIN M5	5	10	10	10	5	M5	9	24.5	20	7.5
GE□M-05	5	12	12	12	6	M5	10	31.0	24	9.0
GE□M-05 DIN M5 LS ²²⁾	5	20	10	10	5	M5	9	36.0	30	7.5
GE□M-06	6	12	12	12	6	M6	10	31.0	24	9.0
GE□M-06 LS ²²⁾	6	24	12	12	6	M6	10	43.0	36	9.0
GE□M-08	8	16	16	16	8	M8	14	42.0	32	12.0
GE□M-10	10	20	20	20	10	M10	18	52.0	40	15.0
GE□M-10 F	10	20	20	20	10	M10 x 1.25	18	51.3	40	15.0
GE□M-12	12	24	24	24	12	M12	20	61.3	48	18.0
GE□M-12 F	12	24	24	24	12	M12 x 1.25	20	61.3	48	18.0
GE□M-14	14	28	27	27	14	M14	24	71.3	56	22.5
GE□M-14 F	14	28	27	27	14	M14 x 1.5	24	71.3	56	22.5
GE□M-15	15	28	27	27	14	M14	24	71.3	56	22.5
GE□M-16	16	32	32	32	16	M16	26	81.9	64	24.0
GE□M-16 F	16	32	32	32	16	M16 x 1.5	26	81.9	64	24.0
GE□M-17	17	32	32	32	16	M16	26	83.0	64	24.0
GE□M-17 F	17	32	32	32	16	M16 x 1.5	26	83.0	64	24.0
GE□M-20	20	40	40	40	20	M20 x 1.5	34	105.0	80	30.0
GE□M-20 M20	20	40	40	40	20	M20 x 2.5	34	105.0	80	30.0

²²⁾ LS = longer shank

Clevis joints with clevis pin and circlip:
GERMK and GELMK



Order key

Type	Size [mm]				Options	
G E ... M K -	04	LS				
Clevis joint	E series	Thread	Metric	Clevis pin and circlip		
					Inner Ø	

- Lightweight
- Absolute corrosion resistance
- High tensile force
- Can be combined with E series rod end



Material:
igumid G ► Page 1560



Service life calculation online
► www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
GE□MK-04 M3.5	500	250	250	125	1.3
GE□MK-04	500	250	250	125	1.3
GE□MK-05 DIN M4	800	400	250	125	2.1
GE□MK-05 DIN M5	800	400	250	125	2.1
GE□MK-05	900	450	250	125	3.3
GE□MK-05 DIN M5 LS ²²⁾	800	400	130	65	2.9
GE□MK-06	1,300	650	300	150	3.3
GE□MK-06 LS ²²⁾	1,300	650	130	65	4.4
GE□MK-08	2,100	1,050	650	325	7.9
GE□MK-10	3,000	1,500	800	400	16.4
GE□MK-10 F	3,000	1,500	800	400	16.4
GE□MK-12	3,500	1,750	900	450	25.3
GE□MK-12 F	3,500	1,750	900	450	25.3
GE□MK-14	6,100	3,050	1,000	500	31.2
GE□MK-15	2,800	1,400	1,000	500	38.9
GE□MK-16	7,000	3,500	1,200	600	60.8
GE□MK-16 F	7,000	3,500	1,200	600	60.8
GE□MK-17	3,600	1,800	1,200	600	62.3
GE□MK-17 F	3,600	1,800	1,200	600	62.3
GE□MK-20	9,000	4,500	3,000	1,500	125.2
GE□MK-20 M20	9,000	4,500	3,000	1,500	125.2

²²⁾ LS = longer shank



Single components: clevis pin
GBM and circlip GSR
► Page 731

Clevis joints with clevis pin and circlip:
GERMK and GELMK



Order key

Type	Size [mm]				Options	
G E ... M K -	04	LS				
Clevis joint	E series	Thread	Metric	Clevis pin and circlip	Inner Ø	

- One-piece design
- Easy assembly/disassembly
- Easy assembly also for use in hard to reach locations
- Can be combined with E series rod end
- Corrosion-resistant and lightweight



Material:
igumid G ► Page 1560



Service life calculation online
► www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
GE□MF-04 M3.5	500	250	250	125	1.3
GE□MF-04	500	250	250	125	1.3
GE□MF-05 DIN M4	800	400	250	125	2.3
GE□MF-05 DIN M5	800	400	250	125	2.3
GE□MF-05 DIN M5 LS ²²⁾	800	400	130	65	2.3
GE□MF-05	900	450	250	125	3.8
GE□MF-06	1,300	650	300	150	3.9
GE□MF-06 LS ²²⁾	1,300	650	130	65	3.9
GE□MF-08	2,100	1,050	650	325	9.1
GE□MF-10	3,000	1,500	800	400	18.2
GE□MF-10 F	3,000	1,500	800	400	18.2
GE□MF-12	3,500	1,750	900	450	28.6
GE□MF-12 F	3,500	1,750	900	450	28.6
GE□MF-16	7,000	3,500	1,200	600	61.8
GE□MF-16 F	7,000	3,500	1,200	600	61.8

²²⁾ LS = longer shank



Single components: Spring-loaded fixing clip GEFM
► Page 730

Clevis joint combination:
GERMKE and GELMKE



Order key

Type	Size [mm]				Options
G E ... M KE - 05					
Clevis joint					
E series					
Thread					
Metric					
With clevis pin, circlip and rod end					
Inner Ø					

Thread
L =
Left-hand
thread
R = Right-hand
thread

- Lightweight
- Absolute corrosion resistance
- High tensile force
- Can be combined with E series rod end



Material:
igumid G ► Page 1560



Service life calculation online
► www.igus.eu/igubal-expert

Technical data

Part No.	max. static tensile strain		Max. static axial force		Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	
GE□MKE-05	900	450	150	75	6.4
GE□MKE-06	1,300	650	200	100	7.3
GE□MKE-08	2,000	1,000	450	225	14.6
GE□MKE-10	2,300	1,150	500	250	27.1
GE□MKE-10 F	2,300	1,150	500	250	27.1
GE□MKE-12	3,300	1,650	550	275	42.7
GE□MKE-12 F	3,300	1,650	550	275	42.7
GE□MKE-15	2,800	1,400	800	400	68.4
GE□MKE-16	5,000	2,500	850	425	86.9
GE□MKE-16 F	5,000	2,500	850	425	86.9
GE□MKE-17	3,600	1,800	1,100	550	98.3
GE□MKE-17 F	3,600	1,800	1,100	550	98.3
GE□MKE-20	7,200	3,600	1,800	900	175.2
GE□MKE-20 M20	7,200	3,600	1,800	900	175.2

Clevis joints with spring-loaded fixing clip in combination with E series rod ends,
EBRM and EARM ► Page 708–711

Clevis joint combination:
GERMFE and GELMFE



Order key



Type	Size [mm]				Options
G E ... M FE - 05					
Clevis joint					
E series					
Thread					
Metric					
With spring-loaded fixing clip and rod end					
Inner Ø					

Thread
L =
Left-hand
thread
R = Right-hand
thread



Material:
igumid G ► Page 1560



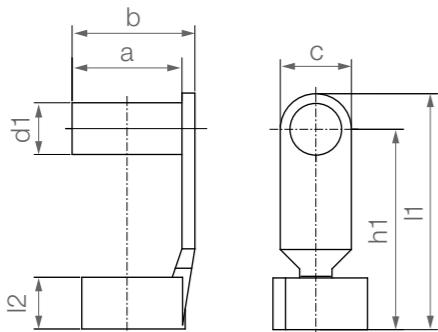
Service life calculation online
► www.igus.eu/igubal-expert

Technical data

Part No.	max. static tensile strain		Max. static axial force		Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	
GE□MFE-05	900	450	150	75	7.0
GE□MFE-06	1,300	650	200	100	7.9
GE□MFE-08	2,000	1,000	450	225	15.9
GE□MFE-10	2,300	1,150	500	250	29.2
GE□MFE-10 F	2,300	1,150	500	250	29.2
GE□MFE-12	3,300	1,650	550	275	46.0
GE□MFE-12 F	3,300	1,650	550	275	46.0
GE□MFE-16	5,000	2,500	850	425	94.4
GE□MFE-16 F	5,000	2,500	850	425	94.4

Clevis joints with spring-loaded fixing clip in combination with E series rod ends,
EBRM and EARM ► Page 708–711

Spring-loaded fixing clips: GEFM



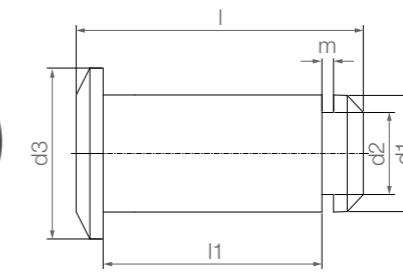
Material:
igumid G ► Page 1560

Dimensions [mm]

Part No.	d1	d2	a	b	c	l1	h1	l2	Weight [g]
	d1	d2	a	b	c	l1	h1	l2	Weight [g]
GEFM-04	4	8	9.5	10.5	8	19.0	15	4.5	0.5
GEFM-05 DIN	5	9	12	13.5	8	23.0	19	5.5	0.8
GEFM-05 DIN M5 LS ²²⁾	5	9	12	13.5	8	33.0	29	5.5	1.0
GEFM-05	5	10	14	15.5	8	27.0	23	6.5	1.1
GEFM-06 LS ²²⁾	6	10	14	15.5	8	39.0	35	6.5	1.0
GEFM-06	6	10	14	15.5	8	27.0	23	6.5	1.2
GEFM-08	8	14	19	21.0	11	35.5	30	8.0	2.8
GEFM-10	10	18	23	25.5	14	45.0	38	10.0	5.0
GEFM-12	12	20	28	31.0	16	53.0	45	12.0	8.3
GEFM-16	16	26	36	40.0	22	73.0	62	16.0	18.3

²²⁾ LS = longer shank

Clevis pins: GBM

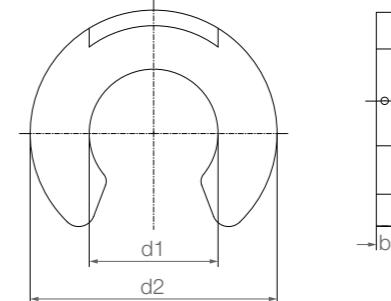


Material:
igumid G ► Page 1560

Dimensions [mm]

Part No.	d1 h11	d2	d3	l	l1	m	Clip	Weight [g]
GBM-04	4	3.2	7	12.5	8	1.05	GSR-04	0.3
GBM-05	5	4.0	8	16.5	12	1.15	GSR-06	0.5
GBM-05 DIN	5	4.0	8	14.5	10	1.15	GSR-06	0.5
GBM-06	6	4.0	9	16.5	12	1.15	GSR-06	0.7
GBM-08	8	5.0	12	21.5	16	1.15	GSR-08	1.5
GBM-10	10	7.0	15	27.0	20	1.35	GSR-10	3.0
GBM-12	12	9.0	18	31.5	24	1.50	GSR-12	4.8
GBM-14	14	12.0	22	36.0	27	1.70	GSR-16	5.7
GBM-15	15	12.0	23	36.0	27	1.70	GSR-16	8.3
GBM-16	16	12.0	24	42.0	32	1.70	GSR-16	10.4
GBM-17	17	12.0	25	42.0	32	1.70	GSR-16	12.3
GBM-20	20	15.0	30	51.0	40	2.00	GSR-20	19.2

Circlips: GSR

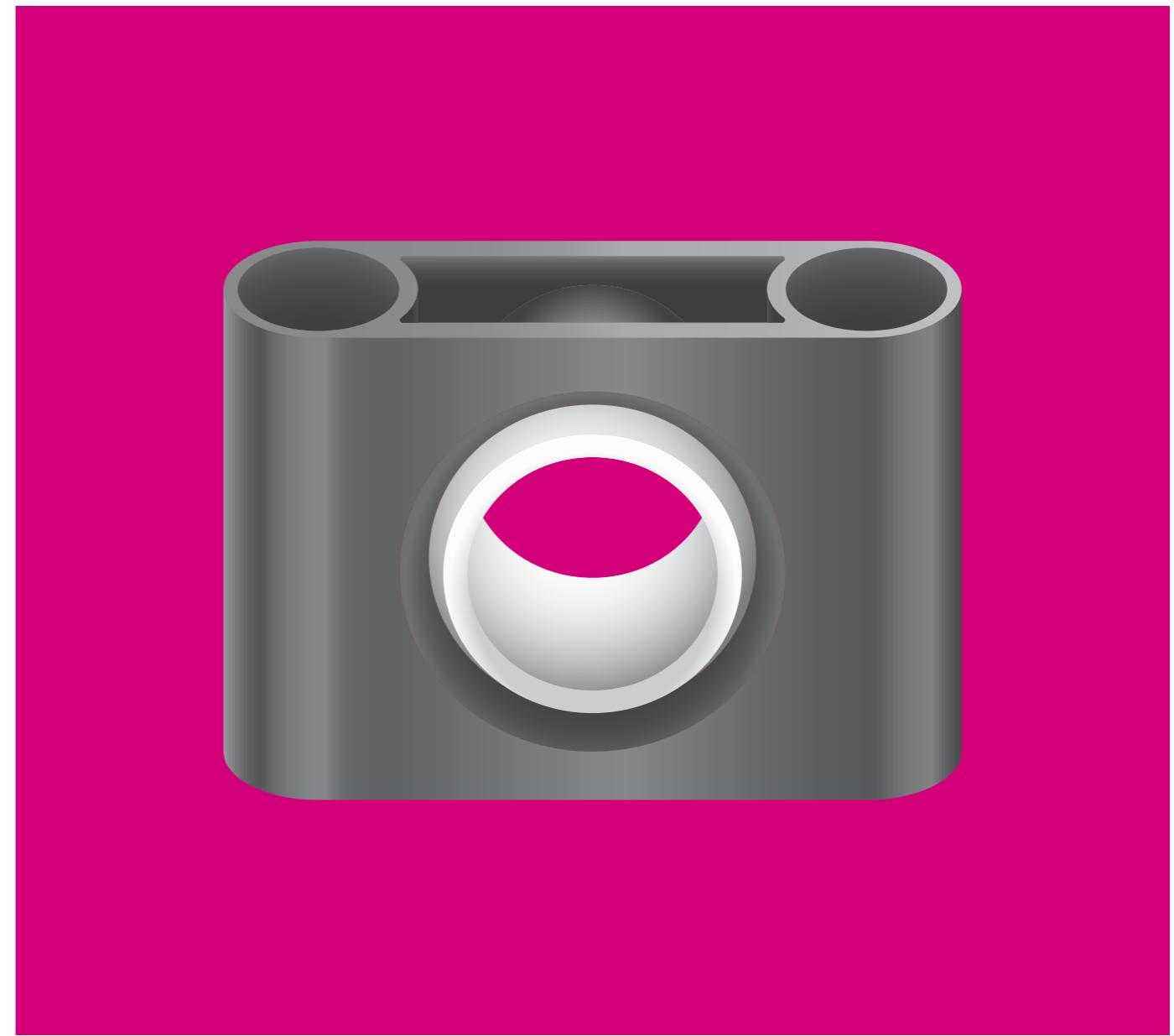
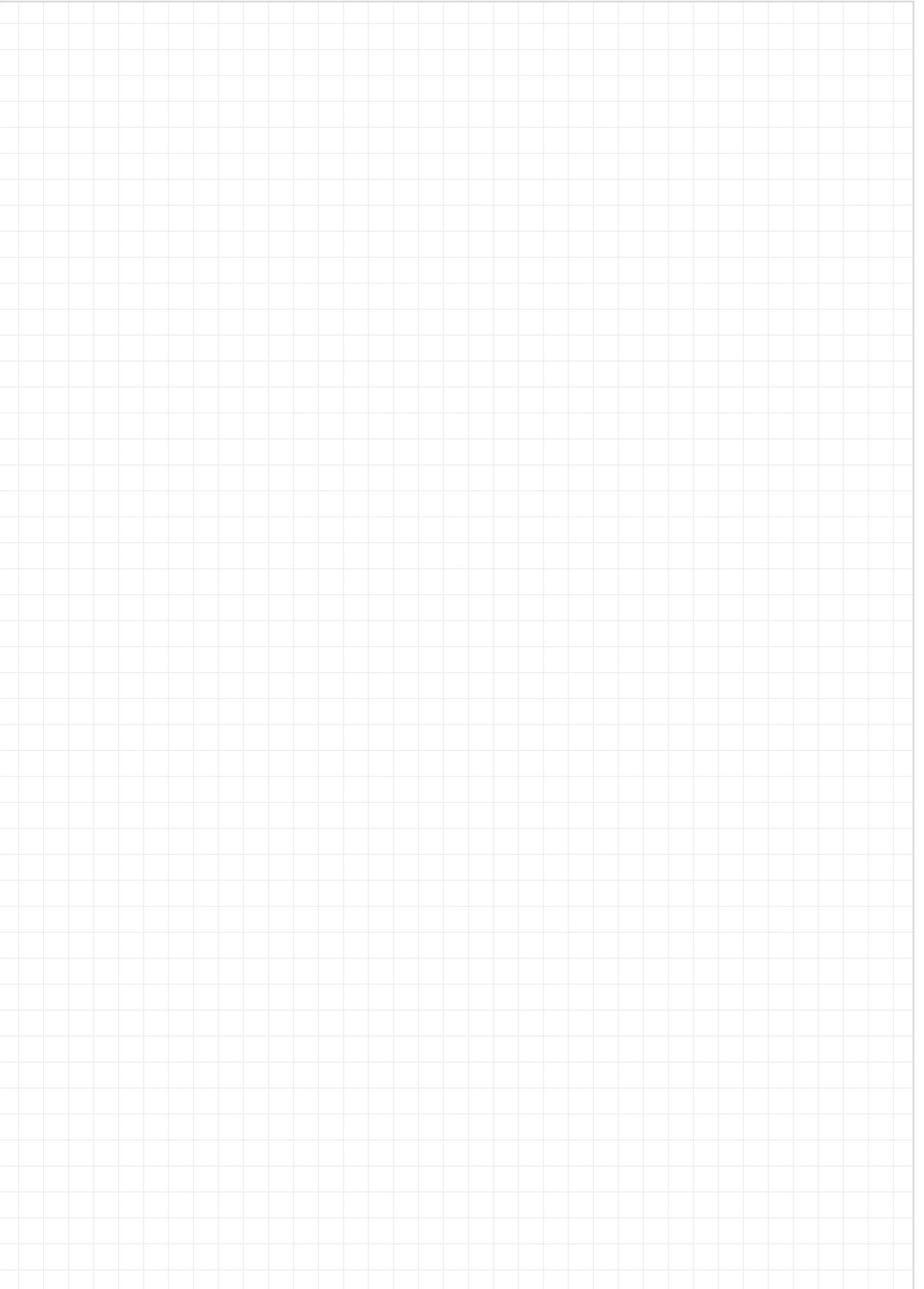


Material:
POM ► Page 1561

Dimensions [mm]

Part No.	d1	d2	b	Weight [g]
GSR-04	3.2	7.0	1.0	0.05
GSR-06	4.0	9.0	1.1	0.06
GSR-08	5.0	11.0	1.1	0.12
GSR-10	7.0	14.0	1.3	0.16
GSR-12	9.0	18.5	1.4	0.31
GSR-16	12.0	23.0	1.6	0.58
GSR-20	15.0	28.0	1.9	0.96

My sketches



igubal® pillow block bearings

Maintenance-free dry operation

Robust

Durable

Media-resistant

High radial loads



igubal® pillow block bearings

igubal® pillow block bearings are bearing units especially easy to install and which are able to compensate alignment errors and prevent edge pressure.



Maintenance-free
dry operation



Maintenance and
lubrication-free

Media-resistant

High radial loads

Available from stock

Detailed information about delivery time online.

Price breaks online

No minimum order value. No minimum order quantity

Max. +80 °C
Min. -30 °C

6 types
Ø 5–150mm

Imperial dimensions available
► Page 1515

Online product finder
► www.igus.eu/igubal-finder



When to use it?

- If chemical resistance is required
- If a cost-effective option is requested
- If you need dirt-resistant bearings
- To adjust misalignment
- If you need split components



When not to use it?

- When temperatures are higher than +80 C
- When an integrated fixing collar is required
- When diameters above 50mm are required
- When rotation speeds higher than 0.5m/s are required

igubal® pillow block bearings | Application examples

Typical sectors of industry
and application areas

- Plant design ● Machine building
- Packaging etc.



Improve technology and reduce costs –
110 exciting examples online
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Stone processing



Paper industry



► www.igus.eu/solar



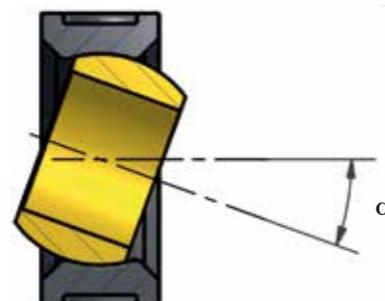
► www.igus.eu/packaging

Advantages

- Maintenance-free dry operation
- Robust
- Durable in varying loads
- Compensation of misalignment errors
- Resistant to edge loads
- Corrosion-free
- Chemical resistance
- Vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- High radial loads
- Media-resistant
- Space-saving
- Easy to fit
- Predictable service life
- Maintenance and lubrication-free

Product range

igubal® pillow block bearings are available in the dimensional K and E series for shaft diameters from 5 to 150mm. The dimensional K series is available in imperial dimensions. Please ask us for other dimensions.

Pivot angle**Application areas**

igubal® pillow block bearings ideally compensate for shaft misalignments, tilts and bends through their spherical adjustability. Applications in which these effects cannot be prevented are suitable for igubal® pillow block bearings.

Tolerances

Maintenance-free igubal® pillow block bearings are designed with an inner diameter tolerance of E10. The shaft tolerance should be included between h6 and h9. These recommended tolerances allow for changes in the bearing due to temperature.

Assembly

igubal® pillow block bearings are designed for mounting with two bolts. An exact orientation of the bearing housing is not necessary, since the spherical bearing compensates for alignment errors. Special adjusting rings can be used to fix the shaft.

igubal® pillow block bearings – space-saving**igubal® pillow block bearings – space-saving**

Easy to disassemble,
split housing and ball

K series

► Page 740



Easy to fit

E series

► Page 741



For quick assembly and
low total moisture absorption

E series

► Page 742



Split housing with
parallel hole

E series

► Page 743



Extremely light, compact
design

E series

► Page 744



Split pillow block bearing
for square profiles

E series

► Page 745

igubal® pillow block bearings – standard design

Compensation of
misalignment errors

K series

► Page 738



Compensation of misalignment errors,
imperial dimensions

K series

► Page 1515

igubal® combination with xiros® ball bearings

Low coefficient of friction,
pivoting version

E series

► Page 881



Low coefficient of friction,
fixed version

E series

► Page 880

Pillow block bearings: KSTM



- Maintenance-free dry operation
- Robust
- Durable in varying loads
- Compensation of misalignment and edge loads
- Resistant to corrosion and chemicals
- Vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight

Imperial dimensions available
► Page 1515

Service life calculation online
► www.igus.eu/igubal-expert

Technical data

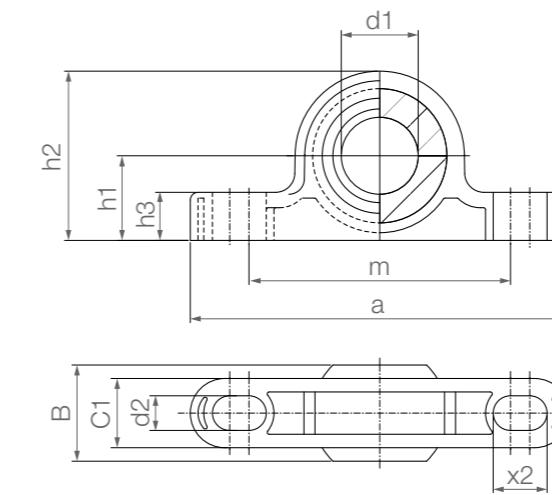
Part No.	Max. static tensile strain		Max. axial static compressive force	Max. tightening torque for longitudinal holes ¹⁴⁴⁾	Weight
	Short-term	Long-term			
KSTM-05	700	350	300	0.6	1.7
KSTM-06	1,100	550	300	1.3	2.9
KSTM-08	1,300	650	400	1.3	4.6
KSTM-10	1,500	750	500	2.5	8.6
KSTM-12	2,200	1,100	600	2.5	11.8
KSTM-14	2,400	1,200	600	4.5	18.4
KSTM-16	3,000	1,500	1,800	4.5	23.7
KSTM-18	3,500	1,750	1,200	10.5	32.2
KSTM-20	4,700	2,350	1,300	10.5	40.0
KSTM-22	6,100	3,050	1,400	10.5	54.0
KSTM-25	6,600	3,300	1,600	10.5	75.3
KSTM-30	8,100	4,050	2,100	21.5	116.8

¹⁴⁴⁾ To achieve the max. tightening torque, we recommend the use of washers.

Pillow block bearings: KSTM



Type	Size [mm]
K STM -05	
K series	
Pillow block bearing	
Metric	
Inner Ø	

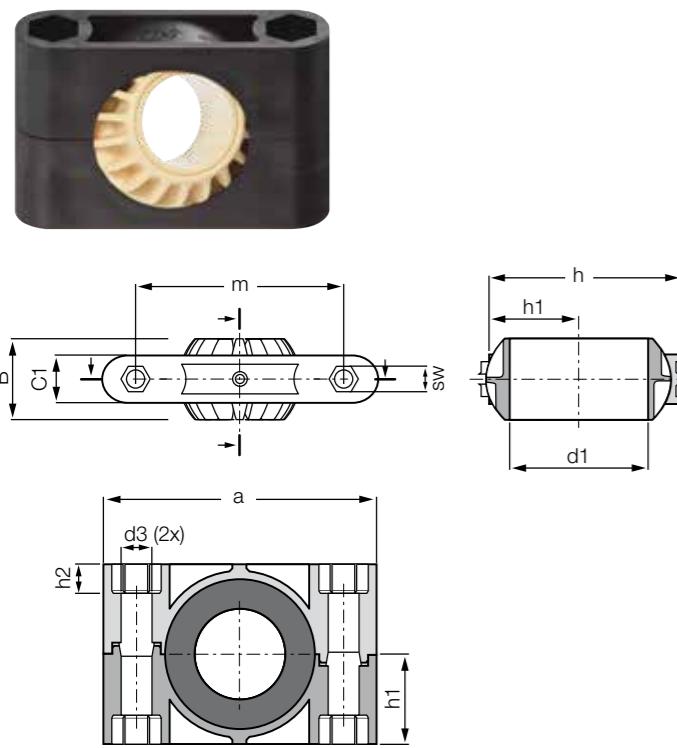


Material:
Housing: igumid G ► Page 1560
Spherical ball: iglidur® W300 ► Page 171

Dimensions [mm]

Part No.	d1 E10	B	C1	h1	h2	m	a	h3	d2	X2	Max. pivot angle
KSTM-05	5	8	6.0	7	14	25	34	4.0	3.3	4.6	30°
KSTM-06	6	9	7.0	10	18	33	43	5.5	4.5	6.0	29°
KSTM-08	8	12	9.0	10	20	33	47	6.0	4.5	7.0	25°
KSTM-10	10	14	10.5	14	26	46	62	7.5	5.5	8.0	25°
KSTM-12	12	16	12.0	14	28	46	65	8.5	5.5	9.0	25°
KSTM-14	14	19	13.5	18	34	60	82	9.5	6.6	11.0	23°
KSTM-16	16	21	15.0	18	36	60	86	10.5	6.6	12.0	23°
KSTM-18	18	23	16.5	22	42	68	93	11.5	9.0	13.0	23°
KSTM-20	20	25	18.0	22	44	68	98	13.0	9.0	14.0	23°
KSTM-22	22	28	20.0	24	48	74	108	14.0	9.0	16.0	22°
KSTM-25	25	31	22.0	27	54	86	124	16.0	9.0	17.0	22°
KSTM-30	30	37	25.0	32	64	96	139	17.0	11.0	20.0	22°

Pillow block bearings with split housing:
KSTM-GT



- Fitting is easy and does not require shaft removal
- Maintenance-free, dry operation
- For high static loads
- Mounting: M12

Technical data

Part No.	Max. radial tensile/ compressive strength		Max. axial tensile/ compressive strength		Max. tightening torque		Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	[Nm]	[Nm]	
KSTM-GT35 ²³⁾	11,000	5,500	2,500	1,250	5	15	250.3
KSTM-GT40	11,000	5,500	2,500	1,250	5	15	235.0
KSTM-GT40-GT ²⁴⁾	11,000	5,500	2,500	1,250	5	15	235.0
KSTM-GT45 ²³⁾	15,000	7,500	3,000	1,500	5	20	405.2
KSTM-GT50	15,000	7,500	3,000	1,500	5	20	389.2
KSTM-GT50-GT ²⁴⁾	15,000	7,500	3,000	1,500	5	20	389.2

Dimensions [mm]

Part No.	d1	d3	h	h1	h2	SW	a	m	C1	B	Max. pivot angle
	E10										
KSTM-GT35 ²³⁾	35.0	13.5	79.0	39.5	12.6	19.0	120.5	91.0	29.5	48.5	24°
KSTM-GT40	40.0	13.5	79.0	39.5	12.6	19.0	120.5	91.0	29.5	48.5	24°
KSTM-GT40-GT ²⁴⁾	40.0	13.5	79.0	39.5	12.6	19.0	120.5	91.0	29.5	48.5	24°
KSTM-GT45 ²³⁾	45.0	13.5	100.0	50.0	12.6	19.0	149.0	114.0	35.0	60.0	24°
KSTM-GT50	50.0	13.5	100.0	50.0	12.6	19.0	149.0	114.0	35.0	60.0	24°
KSTM-GT50-GT ²⁴⁾	50.0	13.5	100.0	50.0	12.6	19.0	149.0	114.0	35.0	60.0	24°

²³⁾ Diameter reduced by plain bearing; ²⁴⁾ Split housing and split ball



Order key

Type	Size [mm]	Version
K STM - GT 40 - GT		



Material:

Housing: RN33 ► Page 1562
Spherical ball: iglidur® J ► Page 159



Service life calculation online
► www.igus.eu/igubal-expert

- Low installation space and lightweight
- High stiffness and durability
- Predictable service life
- Dimensional K series according to DIN ISO 12240

Pillow block bearings with split housing:

ESTM



- High radial loads
- Media-resistant
- Space-saving design, easy to fit
- Predictable service life

Technical data

Part No.	Max. radial tensile tensile force		Max. radial compressive strength		Max. axial strength		Max. tightening torque fixing holes [Nm]	Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]		
ESTM-08	2,500	1,250	4,300	2,150	600	300	1.3	5.0
ESTM-10	3,400	1,700	5,300	2,650	700	350	2.5	7.1
ESTM-12	4,500	2,250	6,500	3,250	750	375	2.5	9.0
ESTM-16	6,700	3,350	8,500	4,250	1,100	550	4.5	17.5
ESTM-20	8,500	4,250	11,000	5,750	1,400	700	4.5	27.4
ESTM-25	13,500	6,750	18,500	9,250	2,300	1,150	10.5	50.8
ESTM-30 ²⁵⁾	10,000	5,000	16,500	8,250	2,500	1,250	10.5	79.7

²⁵⁾ Lower values loads due to different manufacturing method

Dimensions [mm]

Part No.	d1	d3	h	h1	h2	a	m	C1	B	R1	Max. pivot angle
ESTM-08	8	4.5	—	19	9.5	—	31	22	9	8	45°
ESTM-10	10	5.5	—	22	11.0	—	36	26	10	9	50°
ESTM-12	12	5.5	—	26	13.0	—	38	28	10	10	50°
ESTM-16	16	6.6	10.6	34	17.0	6.4	50	37	13	13	65°
ESTM-20	20	9.0	14.0	40	20.0	8.6	62	46	16	16	80°
ESTM-25	25	9.0	14.0	48	24.0	8.6	72	54	18	20	90°
ESTM-30	30	11.0	17.0	56	28.0	10.6	86	64	22	11.0	20°

Alternative spherical ball materials ► Page 783



J4VEM:
Clearance-free,
preloaded



JEM: Low
moisture
absorption



REM:
Low-cost



J4EM:
Low-cost and
low
moisture
absorption

Pillow block bearings with split housing and split ball: ESTM-GT...-GT



Order key

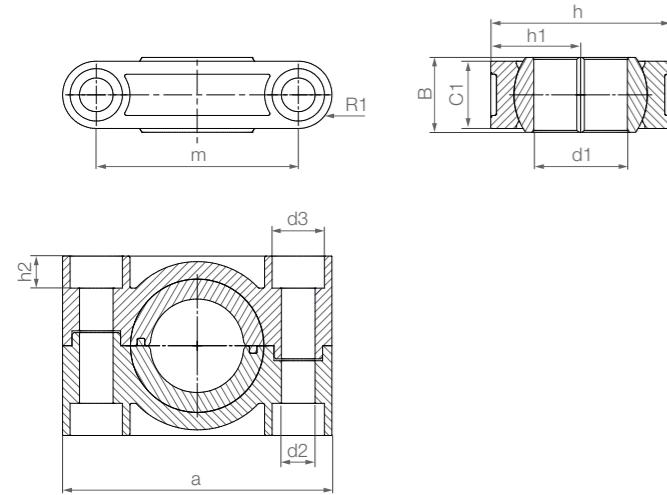
Type	Size [mm]	Version
E STM - GT 16 - GT		
E series	Pillow block bearing	Metric
	Split housing	Split housing
	Inner Ø	Split ball

Material:

Housing: RN33 ► Page 1562

Spherical ball: iglidur® J ► Page 159

- Save time during assembly and disassembly
- Low installation space and lightweight
- High stiffness and durability
- Spherical ball material iglidur® J for low moisture absorption
- Ideal for outdoor use
- Dimensional E series according to DIN ISO 12240
- Adapter available ► Accessories, page 803



Technical data

Part No.	max. static		Max. static		Max. tightening torque	Weight		
	radial tensile strain		radial compressive force					
	Short-term	Long-term	Short-term	Long-term				
	[N]	[N]	[N]	[N]		[g]		
ESTM-GT16-GT	2,500	1,250	8,500	4,250	4.5	18		
ESTM-GT20-GT	5,000	2,500	11,000	5,750	4.5	28		
ESTM-GT25-GT	5,000	2,500	18,500	9,250	10.5	52		
ESTM-GT30-GT	5,000	2,500	16,500	8,250	10.5	84		

Dimensions [mm]

Part No.	d1	d2	d3	h	h1	h2	a	m	C1	B	R1	Max. pivot angle
	E10											
ESTM-GT16-GT	16	6.6	10.6	34	17	6.4	50	37	13	13	6.5	22°
ESTM-GT20-GT	20	9.0	14.0	40	20	8.6	62	46	16	16	8.0	22°
ESTM-GT25-GT	25	9.0	14.0	48	24	8.6	72	54	18	20	9.0	22°
ESTM-GT30-GT	30	11.0	17.0	56	28	10.6	86	64	22	22	11.0	22°

Split housings with parallel holes:
ESTM-GT

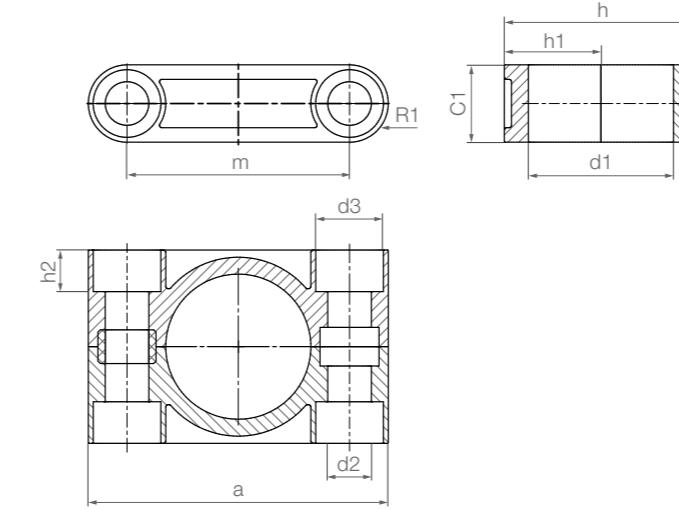
Order key



Type	Size	Version [mm]
E STM - GT 16 - 25		
E series	Pillow block bearing	Metric
	Split housing	Dimension
	Inner Ø	

Material:

igumid G ► Page 1560



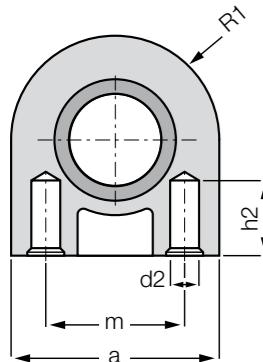
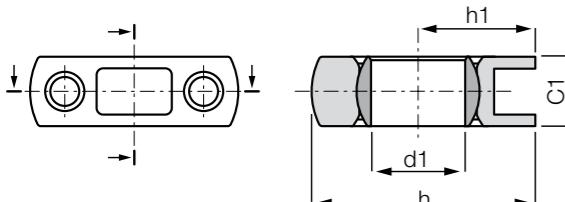
Technical data

Part No.	max. static		Max. static		Max. tightening torque	Weight		
	radial tensile strain		radial compressive force					
	Short-term	Long-term	Short-term	Long-term				
	[N]	[N]	[N]	[N]		[g]		
ESTM-GT16-25	3,600	1,800	7,000	3,500	4.5	12.6		
ESTM-GT20-30	4,800	2,400	9,000	4,500	4.5	21.1		
ESTM-GT25-35	8,500	4,250	15,000	7,500	10.5	39.9		
ESTM-GT30-40	9,500	4,750	18,500	9,250	10.5	66.5		

Dimensions [mm]

Part No.	d1	d2	d3	h	h1	h2	a	m	C1	R1
	E10									
ESTM-GT16-25	25	6.6	10.6	34	14	6.4	50	37	13	6.5
ESTM-GT20-30	30	9.0	14.0	40	20	8.6	62	46	16	8.0
ESTM-GT25-35	35	9.0	14.0	48	24	8.6	72	54	18	9.0
ESTM-GT30-40	40	11.0	17.0	56	28	10.6	86	64	22	11.0

Pillow block bearings, Slim Line:
ESTM SL



Service life calculation online
► www.igus.eu/igubal-expert

Technical data

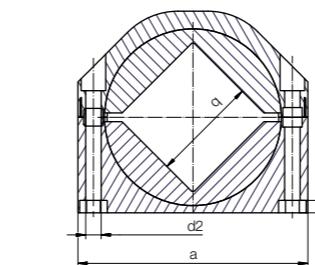
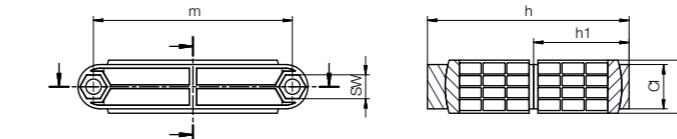
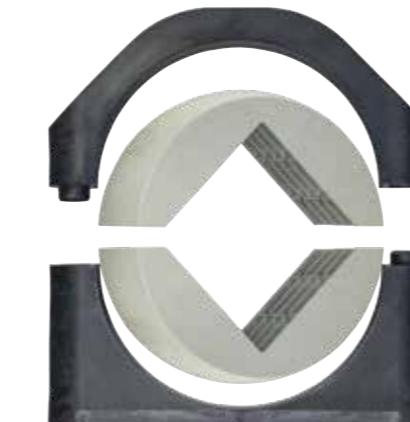
Part No.	Max. radial tensile force		Max. radial compressive strength		Max. lateral strength		Max. axial strength		Weight [g]
	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[N]	
ESTM-05-SL-M3	1,500	750	1,400	700	900	450	150	75	1.6
ESTM-06-SL-M3	1,500	750	1,400	700	900	450	150	75	1.7
ESTM-08-SL-M3	1,600	800	1,400	700	950	475	100	50	1.7
ESTM-10-SL-M3	1,600	800	1,400	700	1,000	500	100	50	1.9

Dimensions [mm]

Part No.	d1	d2	h	h1	h2	a	m	C1	R1	Max. pivot angle
E10										
ESTM-05-SL-M3	5	2.5	18	10	6.5	16	10	6	8	17°
ESTM-06-SL-M3	6	2.5	18	10	6.5	16	10	6	8	17°
ESTM-08-SL-M3	8	2.5	19	10	6.5	18	12	6	9	17°
ESTM-10-SL-M3	10	2.5	20	10	6.5	20	14	6	10	17°

Split pillow block bearings for square profiles:
ESQM

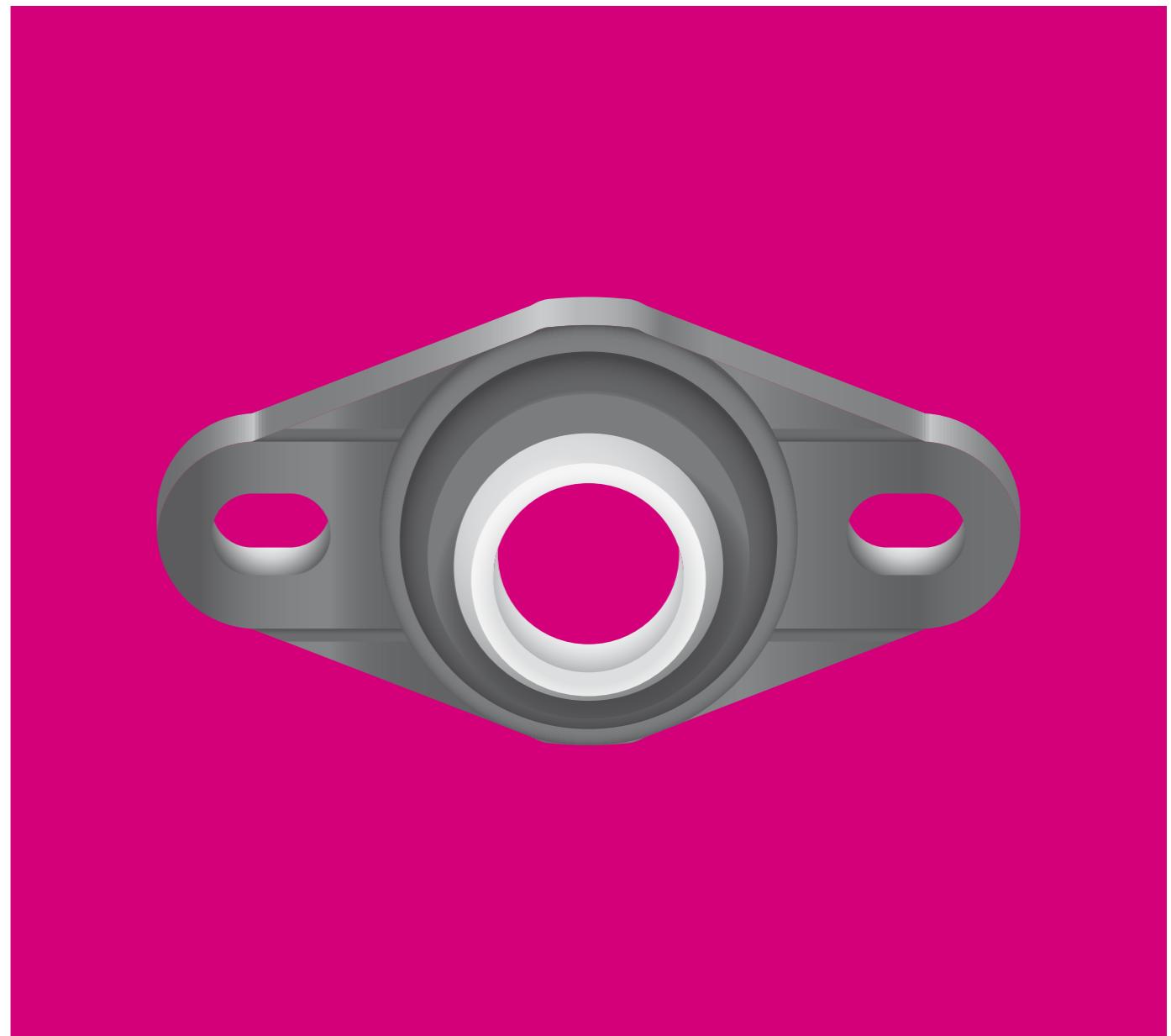
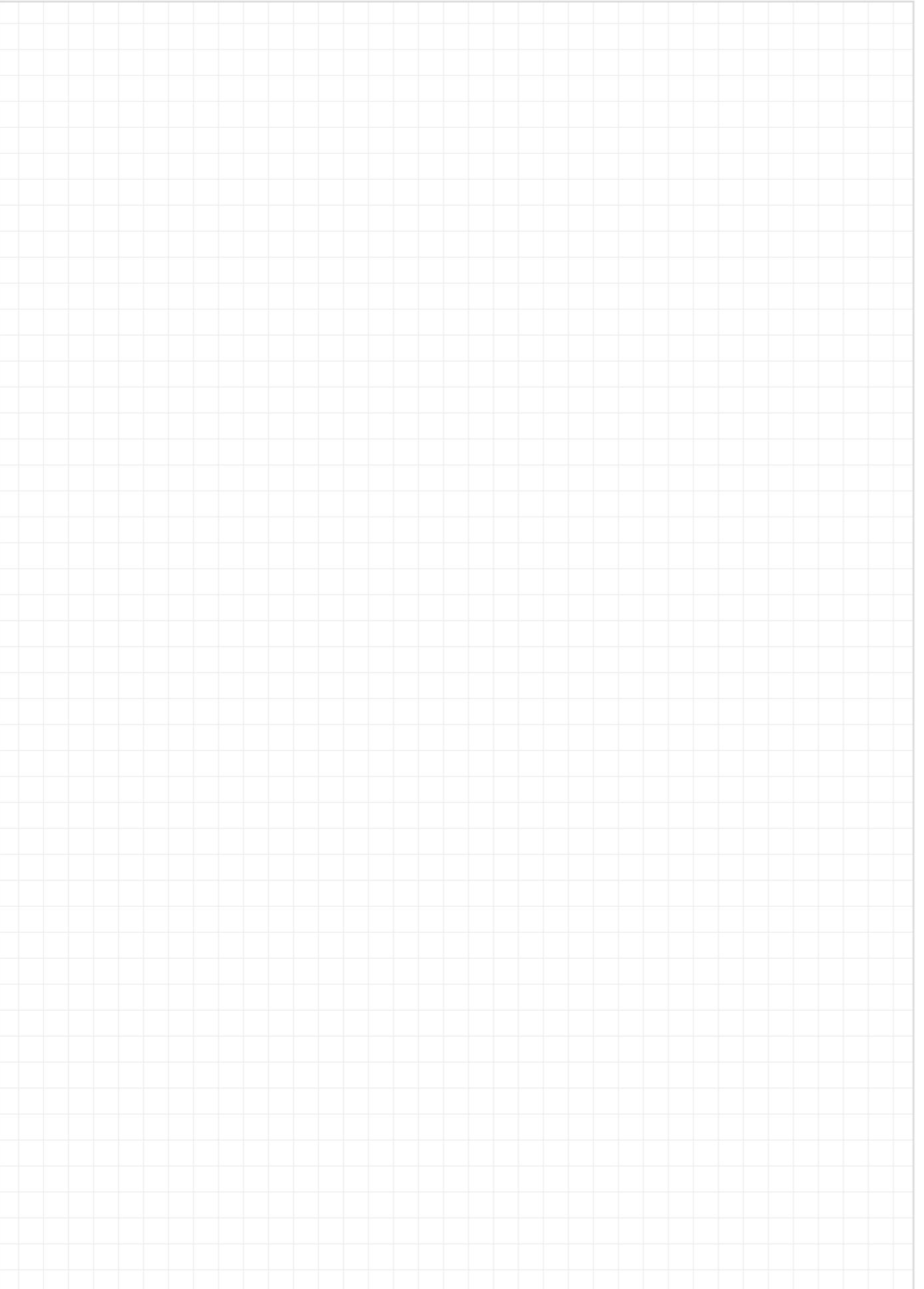
Order key



Dimensions [mm]

Part No.	q +1	SW	d2	h	h1	h2	a	m	B	C1	Weight [g]
ESQM-110	110.5	24	17.5	228	108	13.6	260	225	60	50	1,255
ESQM-120	120.0	24	17.5	228	108	13.6	260	225	60	50	1,210

My sketches



igubal® fixed flange bearings

Maintenance-free dry operation

Robust

Durable

Compensation of misalignment errors

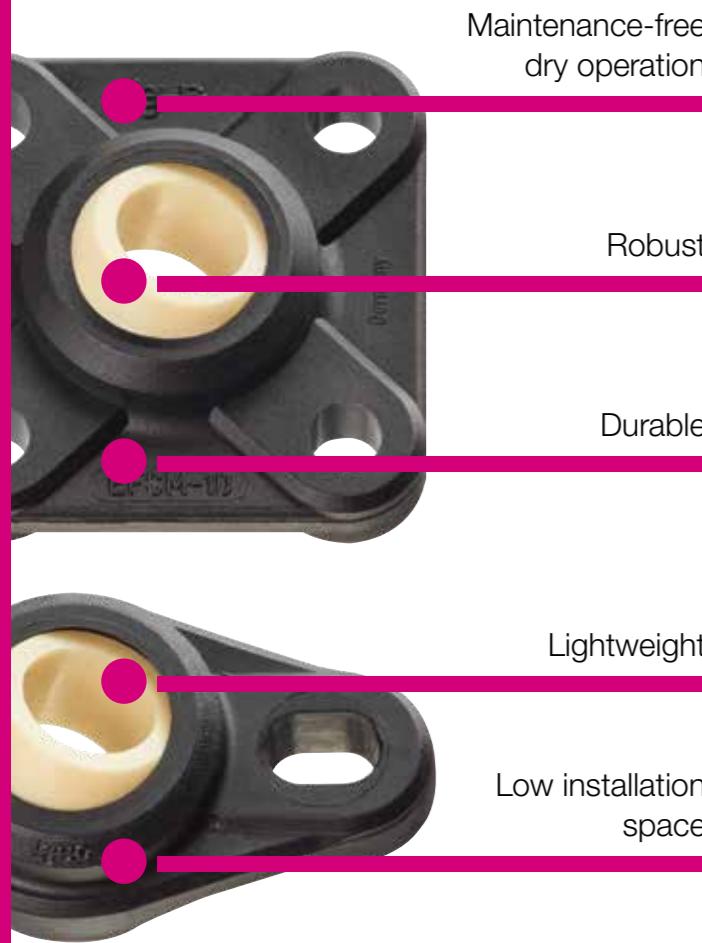
Resistant to edge loads

Lightweight



igubal® fixed flange bearings

igubal® fixed flange bearings have been developed for supporting the centre or ends of shafts. Like all standard igubal® products, these bearings consist of an igumid G housing and an iglidur® W300 spherical ball. For temperatures up to +200 °C please select the HT version (High Temperature). igubal® fixed flange bearings are made to the dimensional E series and are offered with two or four mounting holes.



Maintenance-free
dry operation

Robust

Durable

Lightweight

Low installation
space



When to use it?

- If chemical resistance is required
- If a cost-effective option is requested
- If you need dirt-resistant bearings
- To adjust misalignment
- If you need split components
- If temperatures higher than +200 °C are required



When not to use it?

- When temperatures are higher than +200 °C
 - HT version, page 759–760
- When an integrated fixing collar is required
- When dimensions above 50mm are required
- When rotation speeds higher than 0.5m/s are required



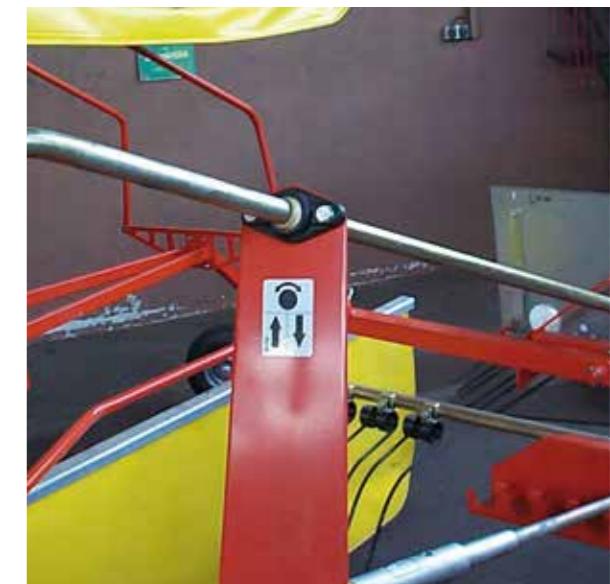
Typical sectors of industry and application areas

- Plant design
- Automation
- Agricultural machines
- Machine building
- Food industry etc.

Improve technology and reduce costs –
110 exciting examples online
► www.igus.eu/igubal-applications



Material handling



► www.igus.eu/agriculture



► www.igus.eu/rotary-sorter



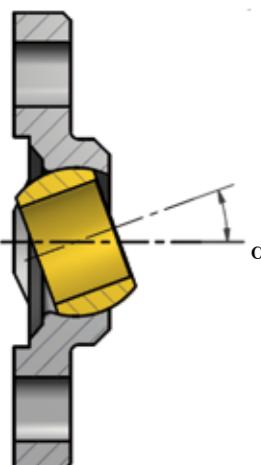
► www.igus.eu/food

Application areas

Since igubal® fixed flange bearings are made for maintenance-free dry operation, they are especially suitable for applications in which access to the bearing is limited, in wet environments or cleanroom environments. igubal® fixed flange bearings are also found in electric brushes, awnings, conveyor technology, and bakery machines.

Assembly

igubal® fixed flange bearings are designed for mounting with two or four bolts, depending on the design. The 2-hole types are provided with elongated holes, which allow easy and flexible installation. An exact positioning of the bearing housing is not necessary, since the fixed flange bearing compensates for alignment errors. Special adjusting rings can be used to fix the shaft.

Pivot angle

igubal® fixed flange bearings – for temperatures up to +80 °C



Easy to fit

E series

► From page 752



For higher radial load

E series

► From page 754



Universal and quick assembly

Female thread

► Page 756



Universal and quick assembly

Male thread

► Page 757



High static load, split housing

K series

► Page 758

igubal® fixed flange bearings – for temperatures up to +200 °C



Easy to fit

E series

► Page 759



For higher radial load

E series

► Page 760

igubal® combination with xiros® ball bearings



Low coefficient of friction,
pivoting version

E series

► Page 882



Low coefficient of friction,
pivoting version

E series

► Page 883

Fixed flange bearings with 2 mounting holes: EFOM



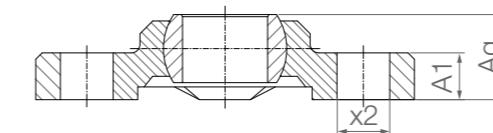
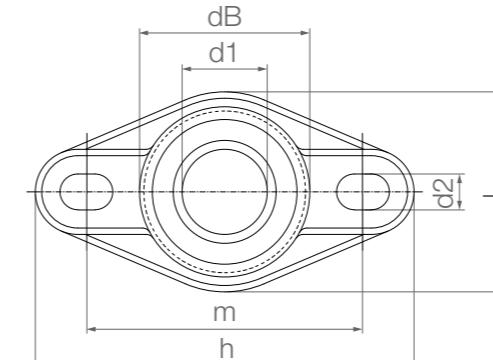
- iglidur® W300 extremely wear-resistant spherical ball
- Easy to fit
- Compensation of misalignment errors
- Absolute corrosion resistance
- Lightweight
- Maintenance-free dry operation



Service life calculation online
► www.igus.eu/igubal-expert



Order key



Type	Size [mm]			
E series	Fixed flange bearing	2 holes	Metric	Inner Ø
E F O M -04				



Material:
Housing: igumid G ► Page 1560
Spherical ball: iglidur® W300 ► Page 171
Combination with xiros® ball bearings ► Page 883

Technical data

Part No.	Max. permissible axial load		Max. permissible radial load		Max. tightening torque Holes	Weight [g]
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]	[Nm]	
EFOM-04	400	200	750	375	0.6	1.9
EFOM-05	400	200	750	375	0.6	2.3
EFOM-06	500	250	800	400	0.6	1.8
EFOM-08	700	350	1,100	550	1.3	4.1
EFOM-10	850	425	2,000	1,000	2.5	6.8
EFOM-12	1,100	550	2,200	1,100	2.5	8.9
EFOM-15	1,300	650	2,400	1,200	4.5	15.0
EFOM-16	1,400	700	2,800	1,400	4.5	17.7
EFOM-17	1,800	900	3,200	1,600	4.5	24.9
EFOM-20	1,800	900	5,500	2,750	10.5	32.8
EFOM-25	3,000	1,500	6,000	3,000	10.5	58.5
EFOM-30	3,500	1,750	6,500	3,250	21.5	78.9

Alternative spherical ball materials ► Page 783



J4VEM:
Clearance-free, preloaded



JEM:
low moisture absorption



REM:
Low-cost



J4EM:
Low-cost and low moisture absorption

Dimensions [mm]

Part No.	d1 E10	dB	h	L	m	A1	Ag	d2	x2	Max. pivot angle	
										Hole pitch	Height of plate
EFOM-04	4	14.0	33.8	16.0	24.0	4.5	8.0	3.2	5.0	±0.1	+1.0
EFOM-05	5	14.0	33.8	16.0	24.0	4.5	8.5	3.2	5.0		
EFOM-06	6	14.0	33.8	16.0	24.0	4.5	8.5	3.2	5.0		
EFOM-08	8	18.0	44.2	22.0	31.0	5.5	10.5	4.3	6.5		
EFOM-10	10	22.2	52.0	26.0	36.0	6.5	12.0	5.3	8.0		
EFOM-12	12	25.0	56.7	31.0	41.0	7.0	13.0	5.3	8.0		
EFOM-15	15	29.8	68.6	36.0	50.0	8.5	15.5	6.4	10.0		
EFOM-16	16	32.0	72.6	38.0	53.0	10.0	17.5	6.4	10.1		
EFOM-17	17	34.8	74.6	41.0	55.0	10.0	18.0	6.4	10.2		
EFOM-20	20	40.0	89.0	47.0	65.0	11.0	20.0	8.4	12.5		
EFOM-25	25	48.5	101.0	58.5	75.0	14.0	25.0	8.4	12.6		
EFOM-30	30	55.0	118.0	65.0	87.5	15.0	26.0	10.5	16.0		

Standard tolerances:

from 0.5 to 6mm: ±0.1mm

from 6 to 30mm: ±0.2mm

from 30 to 120mm: ±0.3mm

Fixed flange bearings with 4 mounting holes: EFSM



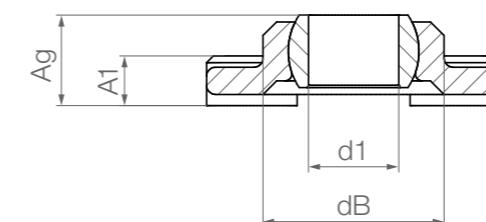
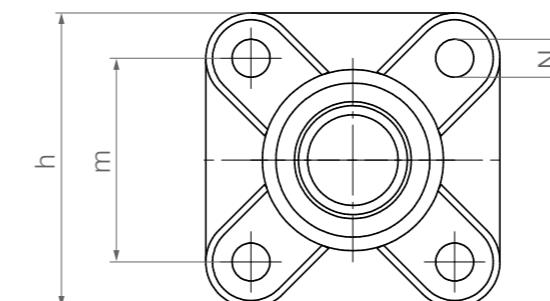
- iglidur® W300 extremely wear-resistant spherical ball
- Easy to fit
- Compensation of misalignment errors
- Absolute corrosion resistance
- Lightweight
- Maintenance-free dry operation



Service life calculation online
► www.igus.eu/igubal-expert



Type	Size [mm]		
E	F	S	M
E series	Fixed flange bearing	4 holes	Metric
			Inner Ø



Material:
Housing: igumid G ► Page 1560
Spherical ball: iglidur® W300 ► Page 171
Combination with xiros® ball bearings ► Page 882

Technical data

Part No.	Max. permissible axial load		Max. permissible radial load		Max. tightening torque	Weight [g]
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]	[Nm]	
EFSM-04	200	100	1,000	500	0.6	2.6
EFSM-05	300	150	1,000	500	0.6	2.7
EFSM-06	300	150	1,000	500	0.6	2.8
EFSM-08	450	225	1,400	700	1.3	5.9
EFSM-10	700	350	2,000	1,000	2.5	9.1
EFSM-12	850	425	2,500	1,250	2.5	11.0
EFSM-15	1,100	550	3,000	1,500	4.5	20.2
EFSM-16	1,350	675	3,200	1,600	4.5	23.3
EFSM-17	1,600	800	3,400	1,700	4.5	27.9
EFSM-20	2,000	1,000	4,000	2,000	10.5	45.0
EFSM-25	2,400	1,200	5,600	2,800	10.5	76.0
EFSM-30	2,800	1,400	6,000	3,000	21.5	100.7

Alternative spherical ball materials ► Page 783



J4VEM:
Clearance-free, preloaded



JEM:
low moisture absorption



REM:
Low-cost



J4EM:
Low-cost and low moisture absorption

Dimensions [mm]

Part No.	d1 E10	dB	h	m	A1	Ag	N	Max. pivot angle
			Width	Hole pitch	Height of plate	Total height	Hole Ø	
EFSM-04	4	14.0	25	17	4.5	8.5	3.2	28°
EFSM-05	5	14.0	25	17	4.5	8.5	3.2	29°
EFSM-06	6	14.0	25	17	4.5	8.5	3.2	25°
EFSM-08	8	18.0	33	22	5.5	10.5	4.3	25°
EFSM-10	10	21.9	38	26	6.5	12.0	5.3	25°
EFSM-12	12	25.0	40	28	7.0	13.0	5.3	21°
EFSM-15	15	30.0	49	34	8.5	15.5	6.4	20°
EFSM-16	16	32.0	52	36	9.0	16.5	6.4	27°
EFSM-17	17	35.0	54	38	10.0	18.0	6.4	21°
EFSM-20	20	40.0	65	45	11.0	20.0	8.4	19°
EFSM-25	25	48.5	74	52	14.0	25.0	8.4	15°
EFSM-30	30	54.5	85	60	15.0	26.0	10.5	14°

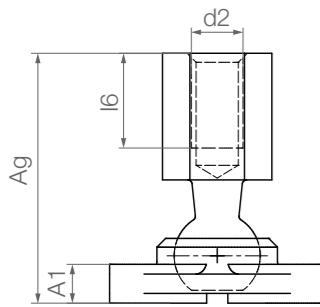
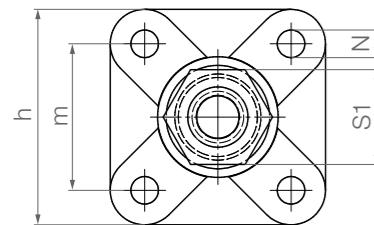
Standard tolerances:

from 0.5 to 6mm: ±0.1mm
from 6 to 30mm: ±0.2mm
from 30 to 120mm: ±0.3mm

Complete housing with ball stud,
female thread: GFSM-...-IG



- Maintenance and corrosion-free
- Easy connection – easy assembly
- Compensation of misalignment errors



Technical data

Part No.	Max. static tensile strain		Max. static compressive force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
GFSM-06-IG	150	75	350	175	16.4
GFSM-08-IG	250	125	750	375	34.0
GFSM-10-IG	140	70	1,200	600	61.1

Dimensions [mm]

Part No.	d2	m	h	Ag	A1	I6	N	S1	Max. pivot angle
GFSM-06-IG	M6	17	25	29.0	4.5	11	3.2	SW11	32°
GFSM-08-IG	M8	22	33	36.0	5.5	12	4.3	SW14	40°
GFSM-10-IG	M10	26	38	43.5	6.5	16	5.3	SW17	34°

²⁸⁾ Stainless steel ball stud upon request



Order key

Type	Size [mm]	Version
GF S M - 06 - IG ES		
Flange mounted		
4 holes		
Metric		
Inner Ø		
Female thread		

Options:

Ball stud

Blank = Made of galvanised steel

ES = Made of stainless steel²⁸⁾

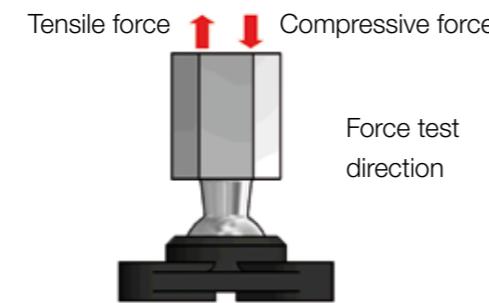


Material:

Housing: igumid G ► Page 1560

Ball stud: galvanised and stainless steel²⁸⁾

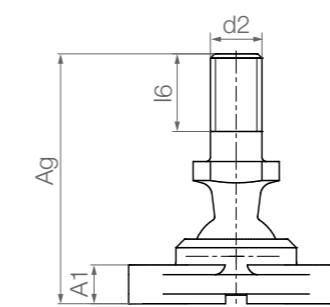
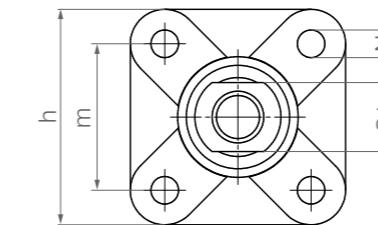
► Accessories, page 800



Complete housing with ball stud,
male thread: GFSM-...-AG



- Maintenance and corrosion-free
- Easy connection – easy assembly
- Compensation of misalignment errors



Technical data

Part No.	Max. static tensile strain		Max. static compressive force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
GFSM-06-AG	150	75	350	175	10.6
GFSM-08-AG	250	125	750	375	23.1
GFSM-10-AG	140	70	1,200	600	41.2

Dimensions [mm]

Part No.	d2	m	h	Ag	A1	I6	N	S1	Max. pivot angle
GFSM-06-AG	M6	17	25	29.0	4.5	10.5	3.2	SW8	32°
GFSM-08-AG	M8	22	33	36.0	5.5	13.5	4.3	SW11	34°
GFSM-10-AG	M10	26	38	43.5	6.5	16.0	5.3	SW13	40°

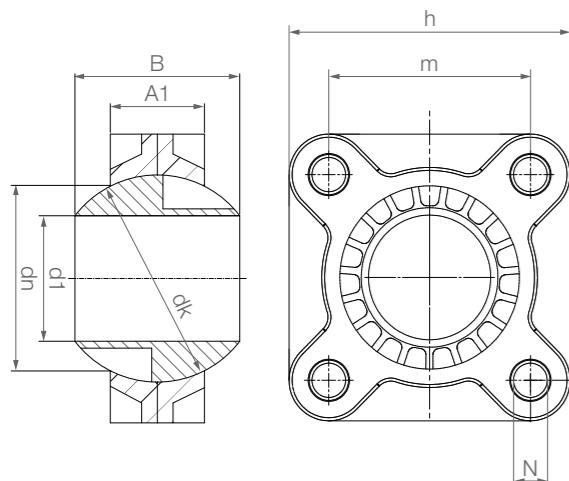
²⁹⁾ Ball stud with right-hand thread; left-hand thread upon request

²⁸⁾ Stainless steel ball stud upon request

Fixed flange bearings with 4 mounting holes and split housing: KFSM GT



- Pre-assembled
- Option with push-in feet
- Resistant to dirt
- Lightweight
- Low installation space
- For high static loads
- High stiffness and durability
- Predictable service life
- Maintenance-free dry operation
- Mounting:
with push-in feet M10,
without push-in feet M12



Technical data

Part No.	Max. static radial load		Max. static axial load		Weight [g]
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	
KFSM-GT-35-A ²³⁾	5,000	2,500	4,500	2,250	183.5
KFSM-GT-40-A	5,000	2,500	4,500	2,250	161.6
KFSM-GT-45-A ²³⁾	6,000	3,000	5,000	2,500	294.6
KFSM-GT-50-A	6,000	3,000	5,000	2,500	260.1

Max. tightening torque for fixing: 30Nm

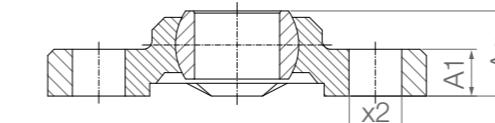
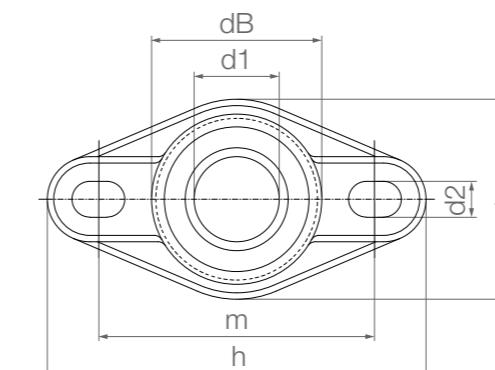
Dimensions [mm]

Part No.	d1	dn	d3	dk	A1	A2	B	m	h	N	Max. pivot angle
	E10										
KFSM-GT-35-A ²³⁾	35.0	59.0	26.0	66.0	30.0	45.0	48.5	66.0	92.0	13.5	24°
KFSM-GT-40-A	40.0	59.0	26.0	66.0	30.0	45.0	48.5	66.0	92.0	13.5	24°
KFSM-GT-45-A ²³⁾	45.0	72.0	26.0	82.0	40.0	60.0	60.0	78.0	104.0	13.5	24°
KFSM-GT-50-A	50.0	72.0	26.0	82.0	40.0	60.0	60.0	78.0	104.0	13.5	24°

For KFSM with distance pieces, please add an "A" to the Part No. Example: KFSM-GT-50-A

²³⁾ Diameter given by iglidur® J bore reducer

High-temperature fixed flange bearings with 2 mounting holes: EFOM-HT



Technical data

Part No.	Max. permissible axial load		Max. permissible radial load		Max. tightening torque	Weight
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]	Holes	[g]
EFOM-05-HT	275	138	460	230	0.6	2.5
EFOM-06-HT	300	150	611	305	0.6	2.3
EFOM-08-HT	644	322	934	467	1.3	5.0
EFOM-10-HT	764	382	1,000	500	2.5	8.3
EFOM-12-HT	874	437	1,290	645	2.5	10.7

Dimensions [mm]

Part No.	d1	dB	h	L	m	A1	Ag	d2	x2	Max. pivot angle
	E10		Length	Width	Hole pitch ±0.1	Height of plate	Total height	Elongated hole		
EFOM-05-HT	5	14	33.8	16	24	4.5	8.5	3.2	5.0	29°
EFOM-06-HT	6	14	33.8	16	24	4.5	8.5	3.2	5.5	27°
EFOM-08-HT	8	18	44.2	22	31	5.5	10.5	4.3	6.5	24°
EFOM-10-HT	10	22	52.0	26	36	6.5	12.0	5.3	8.0	24°
EFOM-12-HT	12	25	56.7	31	41	7.0	13.0	5.3	8.0	21°

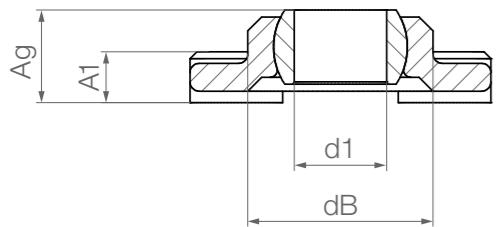
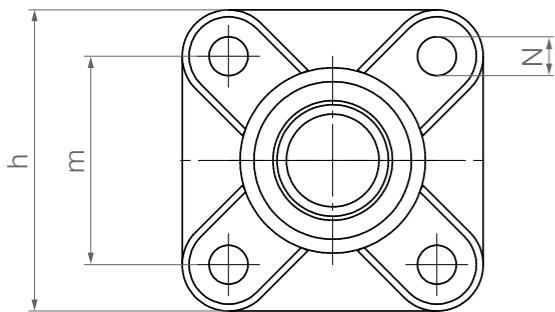
Other dimensions available upon request

igubal® fixed flange bearings | Product range

High-temperature fixed flange bearings with
4 mounting holes: EFSM-HT



Order key



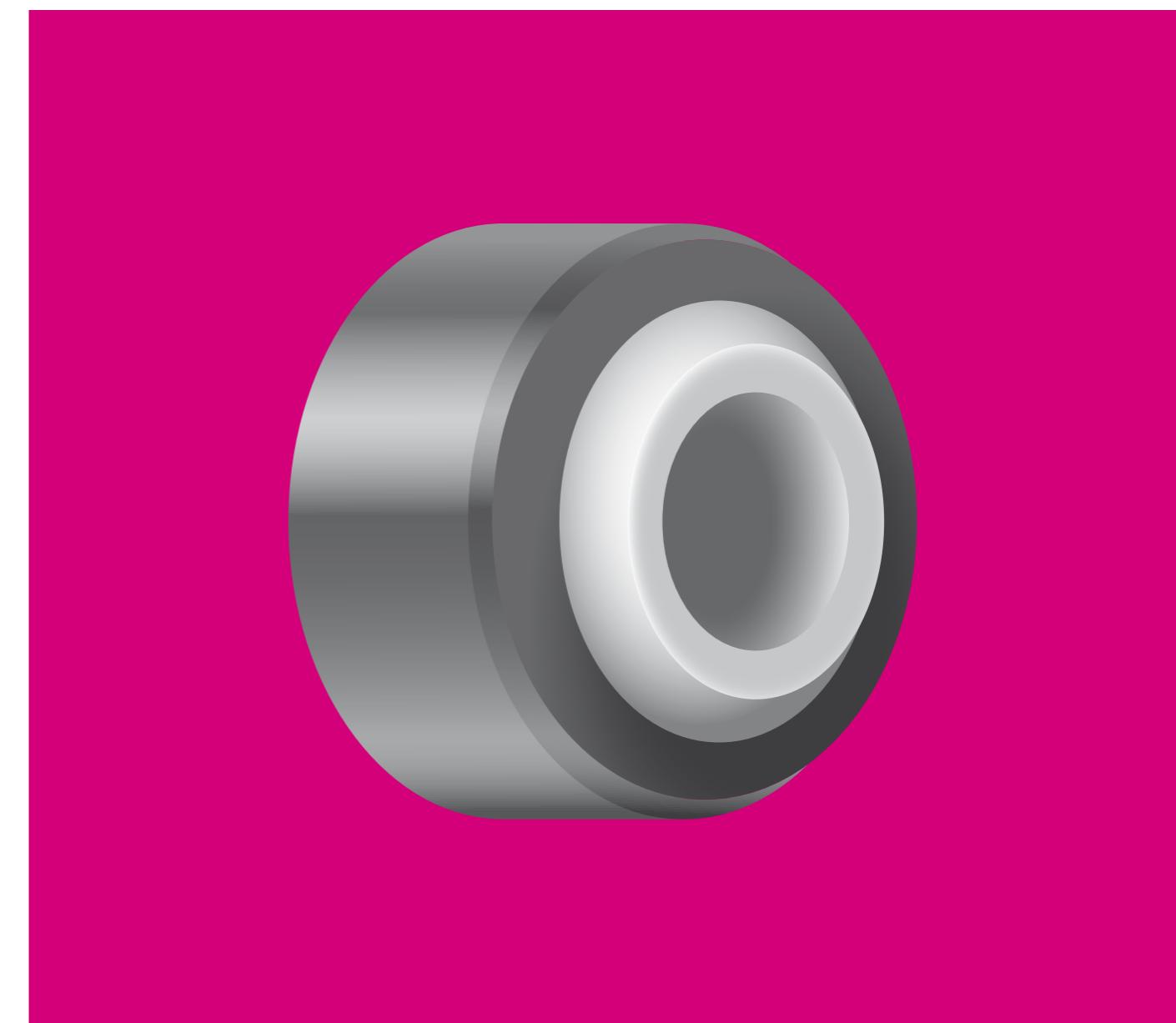
Technical data

Part No.	Max. permissible axial load		Max. permissible radial load		Max. tightening torque Holes	Weight [g]
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]		
EFSM-05-HT	275	138	440	220	0.6	3.5
EFSM-06-HT	339	170	523	262	0.6	3.3
EFSM-08-HT	412	206	713	356	1.3	7.1
EFSM-10-HT	864	432	1,202	601	2.5	11.2
EFSM-12-HT	1,024	512	1,347	674	2.5	13.3

Dimensions [mm]

Part No.	d1	dB	h	m	A1	Ag	N	Max. pivot angle
	E10		Width	Hole pitch ±0.1	Height of plate	Total height	Hole d	
EFSM-05-HT	5	14	25	17	4.5	8.5	3.2	29°
EFSM-06-HT	6	14	25	17	4.5	8.5	3.2	25°
EFSM-08-HT	8	18	33	22	5.5	10.5	4.3	25°
EFSM-10-HT	10	22	38	26	6.5	12.0	5.3	25°
EFSM-12-HT	12	25	40	28	7.0	13.0	5.3	21°

Other dimensions available upon request



igubal® spherical bearings

Easy to fit



Cost-effective



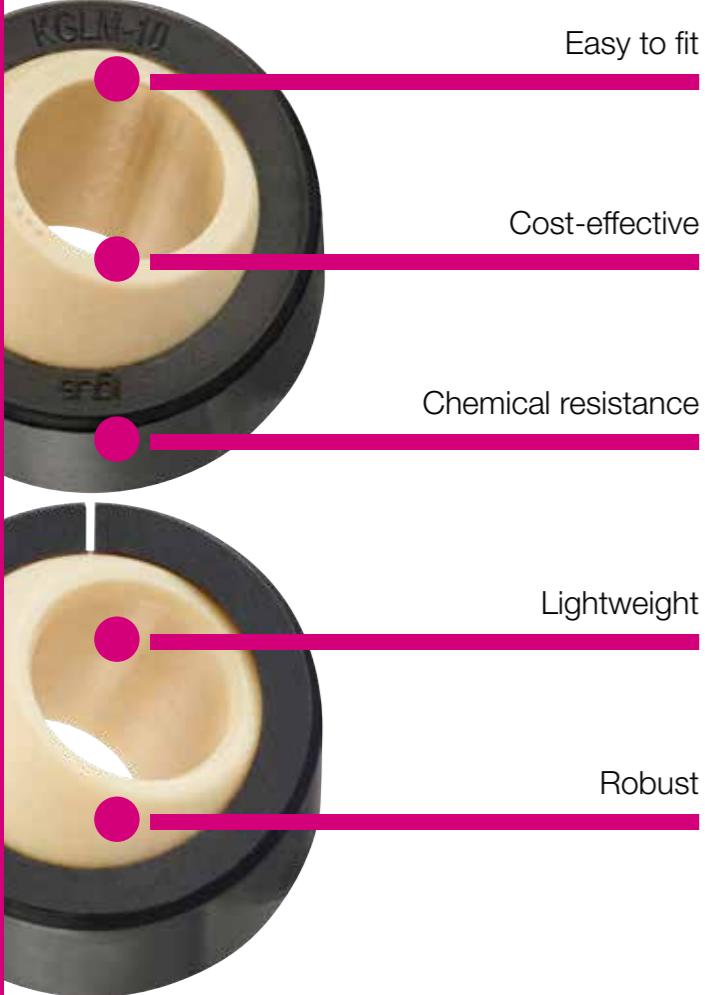
Chemical resistance

Lightweight

Robust

igubal® spherical bearings

The use of spherical bearings is usually associated with heavy materials, difficult installation, and high costs. Most of the time, maintenance is still necessary long-term, and the bearings are only corrosion-resistant in special designs. igubal® spherical bearings put an end to all of these disadvantages: they are easy to fit, cost-effective, lightweight and robust.



Easy to fit

Cost-effective

Chemical resistance

Lightweight

Robust

**When to use it?**

- For high axial and radial loads
- When an easy installation is required
- In case of reduced installation space
- If chemical resistance is required
- If a cost-effective option is requested
- If you need dirt-resistant bearings
- To adjust misalignment

**When not to use it?**

- When temperatures are higher than +80 °C
- For dimensions above 30mm
- When rotation speeds higher than 0.5m/s are required

Available from stock

Detailed information about delivery time online.

Price breaks online

No minimum order value. No minimum order quantity

Max. +80 °C
Min. -30 °C
13 types
Ø 2–40mm
Imperial dimensions available
▶ From page 1516

Online product finder
▶ www.igus.eu/igubal-finder

igubal® spherical bearings | Application examples

**Typical sectors of industry
and application areas**

- Food industry ● Railway technology
- Automotive ● Plant design etc.



Improve technology and reduce costs –
110 exciting examples online
► www.igus.eu/igubal-applications

► www.igus.eu/food► www.igus.eu/traffic► www.igus.eu/automotive► www.igus.eu/hose-skiving

The use of spherical bearings is usually associated with heavy materials, difficult installation, and high costs. Most of the time, maintenance is still necessary long-term, and the bearings are only corrosion-resistant in special designs. Often roller bearings or plain bearings malfunction prematurely due to high edge loads, or because they need to be readjusted, reamed, or refitted in order to compensate for alignment errors.

igubal® spherical bearings put an end to all of these disadvantages and open up many new possibilities for your engineering design:

- Easy to fit
- Extremely cost-effective
- Lightweight
- Robust

Application areas

Ease of installation makes many applications possible for igubal® spherical bearings. They can be used anywhere. The self-aligning feature offers design advantages and helps to simplify assembly.

Tolerances

Maintenance-free igubal® spherical bearings are designed with an inner diameter tolerance of E10. The shaft tolerance should be included between h6 and h9. These recommended tolerances allow for changes in the bearing due to temperature.

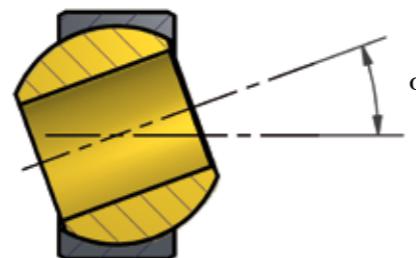
Assembly

igubal® spherical bearings are press-fitted into a recommended H7 housing bore and axially secured. An exact orientation of the bearing housing is not necessary, since the spherical bearing compensates for alignment errors.

Dimensions

igubal® spherical bearings are manufactured according to DIN ISO 12240 for dimensional K and E series. The product range provides standard dimensions from 2 to 40mm. The dimensional K series is available in imperial dimensions. Please contact us if you need other dimensions.

Pivot angle



igubal® spherical bearings



Easy to fit, cost-effective, selectable spherical ball material

K series

► Page 767



Standard, easy to fit

K series

► Page 766



For extremely narrow installation space

K series

► Page 768



Standard, easy to fit, imperial dimensions

K series

► Page 1516



Space-saving

E series

► Page 769



Cost-effective, selectable spherical ball material

E series

► Page 770

igubal® self-aligning clip bearings



Simply snap into sheet metal

E series

► Page 771



For high axial and radial loads, selectable spherical ball material

Dimensional E series

► Page 772



For tolerance compensation, selectable spherical ball material

E series

► Page 773



Clip into sheet metal, can be assembled on both sides

► Page 774

igubal® double joints and coupling joints



Robust plastic, selectable spherical ball material

E series

► Page 775



Selectable materials, individual dimensions and alignment

► Page 777



Removable, selectable materials, individual dimensions and alignment

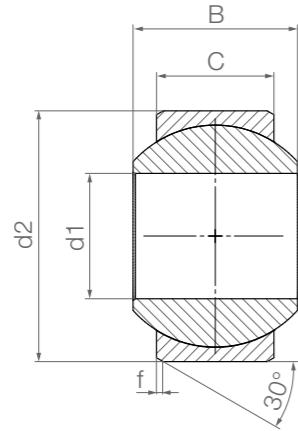
► Page 778



Selectable materials, individual dimensions and alignment

► Page 776

Spherical bearings: KGLM



Order key

Type Size [mm]

K GL M - 02

K series Spherical bearing Metric Inner Ø

Material:

Housing: igumid G ► Page 1560
Spherical ball: iglidur® W300 ► Page 171

Imperial dimensions available
► Page 1516

Service life calculation online
► www.igus.eu/igubal-expert

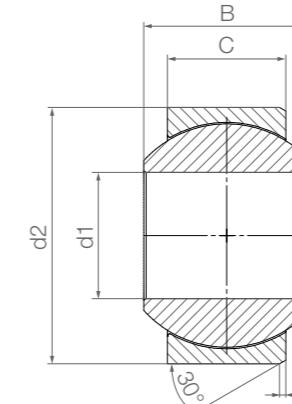
- Compensation of misalignment and edge loads
- Corrosion-free
- Vibration-dampening
- Excellent vibration dampening
- Suitable for rotating, oscillating and axial movements

Technical data and dimensions [mm]

Part No.	Max. static load on the housing		Max. tightening torque through ball	d1	d2	B	C	f	Weight	Max. pivot angle
	radial [N]	axial ²⁹⁾ [N]								
KGLM-02	300	60		1	2	8	4	3.0	0.8	0.1
KGLM-03	550	200		2	3	10	6	4.5	0.8	0.5
KGLM-05	1,300	500		5	5	13	8	6.0	0.8	1.0
KGLM-06	1,800	650		10	6	16	9	6.5	0.8	1.6
KGLM-08	2,700	1,200		12	8	19	12	9.0	0.8	2.9
KGLM-10	4,000	1,400		20	10	22	14	10.5	0.8	4.4
KGLM-12	5,400	1,500		30	12	26	16	12.0	0.8	7.0
KGLM-14	6,000	2,500		35	14	28	19	13.5	0.8	9.1
KGLM-16	8,000	3,000		40	16	32	21	15.0	0.8	12.8
KGLM-18	9,000	4,000		45	18	35	23	16.5	0.8	16.6
KGLM-20	10,000	5,000		55	20	40	25	18.0	0.8	24.4
KGLM-22	11,700	6,500		60	22	42	28	20.0	0.8	28.5
KGLM-25	13,600	7,500		65	25	47	31	22.0	0.8	39.3
KGLM-30	20,000	9,000		70	30	55	37	25.0	1.0	62.6

²⁹⁾ The maximum static axial load is determined when fitted into a blind housing

Spherical bearings: KGLM low-cost



Order key

Type Size [mm] Version

K GL M - 05 - LC

K series Spherical bearing Metric Inner Ø Low-cost

Material:

Housing: igumid G ► Page 1560
Spherical ball: iglidur® W300 ► Page 171
Other spherical ball materials upon request
► Page 783

Technical data

Part No.	Max. static load on the housing		Max. tightening torque through ball	Weight
	radial [N]	axial ²⁹⁾ [N]		
KGLM-05 LC	1,300	500	5	1.0
KGLM-08 LC	2,700	1,200	12	2.9
KGLM-10 LC	4,000	1,400	20	4.3
KGLM-12 LC	5,400	1,500	30	6.9
KGLM-14 LC	6,000	2,500	35	9.0
KGLM-16 LC	8,000	3,000	40	12.7
KGLM-18 LC	9,000	4,000	45	16.6
KGLM-20 LC	10,000	5,000	55	23.6
KGLM-25 LC	13,600	7,500	65	38.9
KGLM-30 LC	20,000	9,000	70	61.0

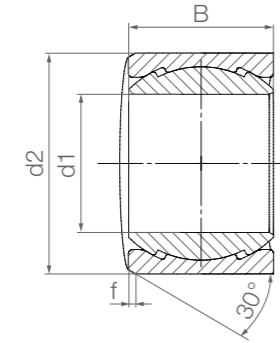
²⁹⁾ The maximum static axial load is determined when fitted into a blind housing

Dimensions [mm]

Part No.	d1 E10	d2 ³⁰⁾	B	C	f	Max. pivot angle	
						Max. static load on the housing	Max. tightening torque through ball
KGLM-05 LC	5	13	8	6.0	0.8	30°	
KGLM-08 LC	8	19	12	9.0	0.8	29°	
KGLM-10 LC	10	22	14	10.5	0.8	25°	
KGLM-12 LC	12	26	16	12.0	0.8	25°	
KGLM-14 LC	14	28	19	13.5	0.8	23°	
KGLM-16 LC	16	32	21	15.0	0.8	23°	
KGLM-18 LC	18	35	23	16.5	0.8	23°	
KGLM-20 LC	20	40	25	18.0	0.8	23°	
KGLM-25 LC	25	47	31	22.0	0.8	22°	
KGLM-30 LC	30	55	37	25.0	1.0	22°	

³⁰⁾ In press-fitted condition

Spherical bearings: KGLM Slim Line



Order key

Type	Size [mm]	Version
K GL M -	08	SL
K series	Spherical bearing	Metric
	Inner Ø	
		Slim Line

- Very small installation space
- Wall thickness 50% thinner than KGLM
- Angle compensation up to 5°
- Lightweight
- Dimensions according to DIN 1850



Material:

Housing: igumid G ► Page 1560
Spherical ball: iglidur® W300 ► Page 171

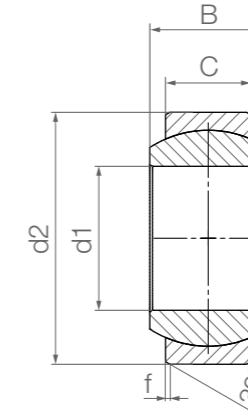


Service life calculation online
► www.igus.eu/igubal-expert

Technical data and dimensions [mm]

Part No.	Max. static load (short-term)		Max. static load (long-term)		d1	d2	B	f	Weight	Max. pivot angle
	radial	axial	radial	axial						
	[N]	[N]	[N]	[N]						[g]
KGLM-08 SL	2,700	450	1,350	225	8	14	9.0	0.5	1.1	5°
KGLM-10 SL	4,000	750	2,000	375	10	16	10.5	0.5	1.5	5°
KGLM-12 SL	4,500	750	2,250	375	12	18	12.0	0.5	2.0	5°
KGLM-16 SL	6,500	500	3,250	250	16	22	15.0	0.5	3.1	5°

Spherical bearings: EGLM



Order key

Type	Size [mm]
E GL M -	04
E series	Spherical bearing
	Metric
	Inner Ø

- Compensation of misalignment and edge loads
- Corrosion-free
- Vibration-dampening
- Excellent vibration dampening
- Suitable for rotating, oscillating and linear movements



Material:

Housing: igumid G ► Page 1560
Spherical ball:
Spherical balls with 04–30mm diameters made of iglidur® W300 ► Page 171
Spherical balls with 40mm diameter made of iglidur® J ► Page 159
Other spherical ball materials upon request (Ø 04–12mm and 40mm)



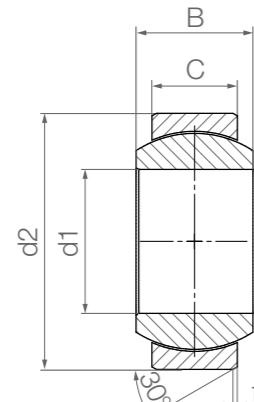
Service life calculation online
► www.igus.eu/igubal-expert

Technical data and dimensions [mm]

Part No.	Max. static load on the housing		Max. tightening torque through ball	d1	d2	B	C	f	Weight	Max. pivot angle
	radial	axial ²⁹⁾								
	[N]	[N]	[Nm]							[g]
EGLM-04	600	50	1.0	4	12	5	3.0	0.5	0.4	37°
EGLM-05	1,000	130	2.0	5	14	6	4.0	0.5	0.8	33°
EGLM-06	1,200	150	2.5	6	14	6	4.0	0.5	0.9	27°
EGLM-08	1,800	175	7.0	8	16	8	5.0	0.5	1.2	24°
EGLM-10	2,500	400	14.0	10	19	9	6.0	0.5	1.9	24°
EGLM-12	3,800	650	25.0	12	22	10	7.0	0.5	2.8	21°
EGLM-15	5,500	1,000	30.0	15	26	12	9.0	0.5	6.9	21°
EGLM-16	6,000	1,150	32.0	16	28	13	9.5	0.5	9.0	21°
EGLM-17	6,300	1,200	35.0	17	30	14	10.0	1.0	10.6	21°
EGLM-20	9,000	1,400	40.0	20	35	16	12.0	1.0	16.3	18°
EGLM-25	14,000	2,900	55.0	25	42	20	16.0	1.0	29.0	16°
EGLM-30	17,000	4,000	70.0	30	47	22	18.0	1.0	37.4	13°
EGLM-40	22,500	2,500	80.0	40	62	28	22.0	1.0	57.0	15°

²⁹⁾ The maximum static axial load is determined when fitted into a blind housing

Spherical bearings: EGLM Low-cost



Order key

Type	Size [mm]	Version
E GL M - 15 - LC		
E series	Spherical bearing	Metric
	Inner Ø	Low-cost

- Easy to fit
- Cost-effective
- Chemical- and corrosion-resistant
- Robust
- Compensation of misalignment errors



Material:

Housing: igumid G ► Page 1560
 Spherical ball: iglidur® W300 ► Page 171
 Other spherical ball materials upon request
 ► Page 783



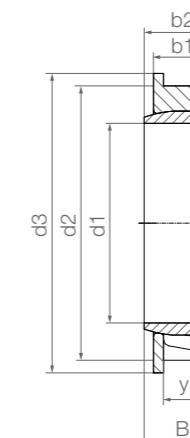
Service life calculation online
 ► www.igus.eu/igubal-expert

Technical data and dimensions [mm]

Part No.	Max. static load on the housing		Max. tightening torque through ball		d1	d2	B	C	f	Weight	Max. pivot angle
	radial [N]	axial ²⁹⁾ [N]	[Nm]	E10						[g]	
EGLM-15-LC	5,500	1,000	30	15	26	12	9.0	0.5	4.5	21°	
EGLM-16-LC	6,000	1,150	32	16	28	13	9.5	0.5	6.0	21°	
EGLM-20-LC	9,000	1,400	40	20	35	16	12.0	1.0	11.0	18°	
EGLM-25-LC	14,000	2,900	55	25	42	20	16.0	1.0	20.0	16°	
EGLM-30-LC	17,000	4,000	70	30	47	22	18.0	1.0	26.0	13°	

²⁹⁾ The maximum static axial load is determined when fitted into a blind housing

Clip bearings: ECLM



Order key

Type	Size [mm]
E series	Clip bearing Metric Inner Ø Metal sheet thickness

- Very easy installation by clipping into sheet metal
- No additional locating spigot necessary
- Extremely small installation space: space-saving, thin-walled design



Material:

Housing: igumid G ► Page 1560
 Spherical ball: iglidur® J ► Page 159



Service life calculation online
 ► www.igus.eu/igubal-expert

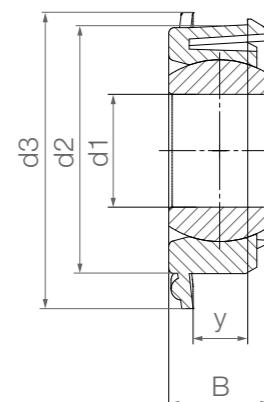
Technical data

Part No.	Max. static compressive force (short-term)				Max. static compressive force (long-term)				Weight
	radial [N]	axial [N]	radial [N]	axial [N]	radial [N]	axial [N]	radial [N]	axial [N]	
ECLM-05-02	700	25	350	12.5	0.5				
ECLM-06-02	700	25	350	12.5	0.5				
ECLM-08-02	1,000	25	500	12.5	0.5				
ECLM-10-03	1,400	30	700	15.0	0.8				
ECLM-12-03	1,800	20	900	10.0	0.8				
ECLM-16-03	2,800	40	1,400	20.0	1.1				

Dimensions [mm]

Part No.	d1	B	d2	d3	y	Sheet metal thickness	b1	b2	Max. pivot angle
	E10		±0.2				±0.1		
ECLM-05-02	5	6	12	13	2	3.9	6.0	25°	
ECLM-06-02	6	6	12	13	2	3.9	6.0	18°	
ECLM-08-02	8	6	14	15	2	3.9	6.0	16°	
ECLM-10-03	10	6	16	17	3	4.5	6.7	12°	
ECLM-12-03	12	6	18	19	3	4.5	6.7	12°	
ECLM-16-03	16	6	22	24	3	4.5	6.7	12°	

Clip bearings: ECLM-HD



Order key

Type	Size [mm]	Version
E CL M - 08 - 04 - HD		
E series	Clip bearing	Metric
	Inner Ø d1	Metal sheet thickness
		Heavy duty

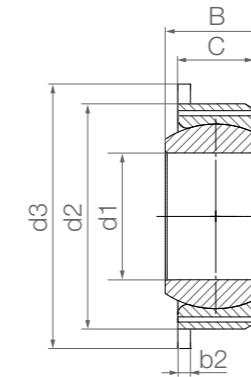
- High axial and radial loads
- Adjustment of axial and radial clearance by pre-loading
- Very easy installation by clipping into sheet metal
- No additional locating spigot necessary
- For plate thickness 4–8mm



Material:

Housing: igumid G ► Page 1560
 Spherical ball: iglidur® W300 ► Page 171
 Other spherical ball materials upon request
 ► Page 783

Clip bearings: EGFM-...T



Order key

Type	Size [mm]	Version
E GF M - 08 T		
E series	Clip bearing with flange	Metric
	Inner Ø d1	Tolerance compensation

- Maintenance-free dry operation
- Easy to fit
- Max. tolerance compensation ±0.2mm



Material:

Housing: igumid G ► Page 1560
 Spherical ball: iglidur® W300 ► Page 171
 Other spherical ball materials upon request
 ► Page 783

Technical data

Part No.	Max. static compressive force (short-term)		Max. static compressive force (long-term)		Weight [g]
	radial	axial	radial	axial	
ECLM-08-04-HD	1,750	125	875	60	2.0
ECLM-10-05-HD	2,500	150	1,250	75	3.1
ECLM-12-06-HD	3,500	175	1,750	85	3.8
ECLM-16-08-HD	4,500	250	2,250	125	7.0
ECLM-20-08-HD	6,000	330	3,000	165	12.0

Dimensions [mm]

Part No.	d1	B	d2	d3	y	Max. pivot angle
	E10		±0.15		±0.1	
ECLM-08-04-HD	8	8	18	25	4	28°
ECLM-10-05-HD	10	9	22	28	5	24°
ECLM-12-06-HD	12	10	24	32	6	24°
ECLM-16-08-HD	16	13	30	38	8	22°
ECLM-20-08-HD	20	16	36	44	8	21°

Alternative spherical ball materials ► Page 783



REM:
Low-cost



JEM:
low moisture
absorption



J4EM:
low-cost and
low moisture
absorption



J4VEM:
clearance-free
pre-loaded
spherical ball

Technical data

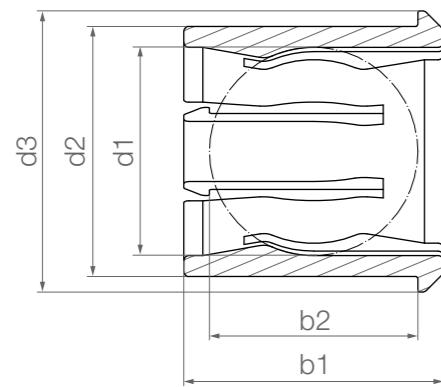
Part No.	Max. stat. compressive force (short-term)		Max. stat. compressive force (long-term)		Weight [g]
	radial	axial	radial	axial	
EGFM-08 T SL ³¹⁾	1,100		150		75
EGFM-10 T	1,900		220		110
EGFM-12 T	2,500		270		135
EGFM-16 T	6,000		600		300
EGFM-20 T	9,000		800		400
EGFM-25 T	14,000		2,800		1,400
EGFM-30 T	17,000		3,000		1,500

Dimensions [mm]

Part No.	d1	d2	d3	C	B	b2	Housing		Max. pivot angle
	E10	Min.	Max.				Min.	Max.	
EGFM-08 T SL ³¹⁾	8	15.8	16.5	18	5.0	6	1.1	15.8	16.2
EGFM-10 T	10	20.8	21.6	26	6.0	9	1.0	20.8	21.2
EGFM-12 T	12	22.8	23.6	28	7.0	10	1.0	22.8	23.2
EGFM-16 T	16	29.8	30.6	35	9.5	13	1.5	29.8	30.2
EGFM-20 T	20	34.8	35.6	42	12.0	16	2.0	34.8	35.2
EGFM-25 T	25	41.8	42.6	50	16.0	20	2.0	41.8	42.2
EGFM-30 T	30	46.8	47.6	55	18.0	22	2.0	46.8	47.2

³¹⁾ Spherical ball made of iglidur® J, H10 tolerance

Ball stud clip bearings: ZCLM



Order key

Type	Size [mm]	Options
Z CL M - 06 - 10 - MS		
Can be assembled on both sides		
Clip bearings		
Metric		
Ball stud M6		
Metal sheet thickness		

Z CL M - 06 - 10 - MS

Ball stud¹⁹⁾
 MS = Made of galvanised steel
 ES = Made of stainless steel²⁸⁾
 Blank = without ball stud



Material:

Clip bearing: iglidur® J ► Page 159

- Connection for rotating and pivoting movements
- Easy and quick assembly
- Absolute corrosion resistance
- Lubrication and maintenance-free
- Lightweight
- Chemical resistance
- Ball studs made from galvanised steel and stainless steel²⁸⁾

► Accessories, page 800

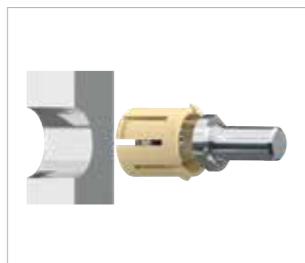
Dimensions [mm]

Part No.	d1	d2	d3	b1	b2	Weight [g]
ZCLM-06-10-MS	10	12	13.5	12.5	10	0.6

¹⁹⁾ Ball stud with right-hand thread; left-hand thread upon request²⁸⁾ Stainless steel ball stud upon request

More dimensions upon request

Assembly:

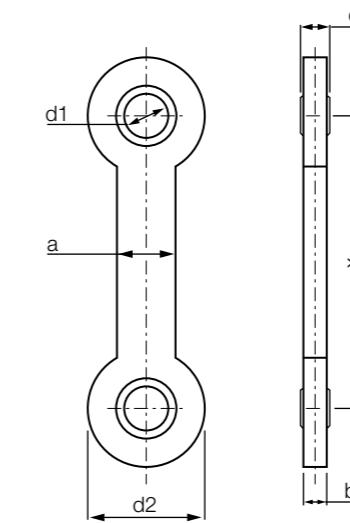
Assembly film
► www.igus.eu/zclm-film

Can be combined with accessories ► Page 800



GZRM-IG

Double joints: EGZM



Order key

Type	Size [mm]
E series	
Double joints	
Metric	
Inner Ø d1	
Pitch X	

i Material:

Housing: igumid G ► Page 1560

Spherical ball: iglidur® W300 ► Page 171

Other spherical ball materials upon request

► Page 783

- Maintenance-free dry operation
- Mechanical joining link between two components
- Compensation of misalignment errors
- Corrosion-resistant
- Double joint turned 90° available upon request

Technical data and dimensions [mm]

Part No.	Max. static load (short-term)		Max. static load (long-term)		d1 E10	d2	X	b	a	c	Weight	Max. pivot angle
	Tensile force [N]	Compressive force [N]	Tensile force [N]	Compressive force [N]								
	EGZM-04-25	1,100	1,300	550	650	4	20	25	4	10	5	3.5
EGZM-04-50	1,100	750	550	375	4	20	50	4	10	5	4.8	32°
EGZM-04-75	1,100	500	550	250	4	20	75	4	10	5	6.1	32°
EGZM-05-25	1,100	1,300	550	650	5	20	25	4	10	6	2.2	37°
EGZM-05-50	1,100	750	550	375	5	20	50	4	10	6	4.9	37°
EGZM-05-75	1,100	500	550	250	5	20	75	4	10	6	6.3	37°
EGZM-06-25	1,100	1,300	550	650	6	20	25	4	10	6	3.4	30°
EGZM-06-50	1,100	750	550	375	6	20	50	4	10	6	4.8	30°
EGZM-06-75	1,100	500	550	250	6	20	75	4	10	6	3.4	30°
EGZM-08-60	3,000	3,500	1,500	1,750	8	30	60	7	15	8	15.2	20°
EGZM-08-100	3,000	1,900	1,500	950	8	30	100	7	15	8	19.5	20°
EGZM-10-60	2,500	3,500	1,250	1,750	10	30	60	7	15	9	15.3	25°
EGZM-10-85	2,500	2,300	1,250	1,150	10	30	85	7	15	9	18.1	25°
EGZM-10-100	2,500	1,900	1,250	950	10	30	100	7	15	9	19.4	25°
EGZM-12-60	2,000	3,500	1,000	1,750	12	30	60	7	15	10	14.7	25°
EGZM-12-100	2,500	1,900	1,000	950	12	30	100	7	15	10	18.8	25°

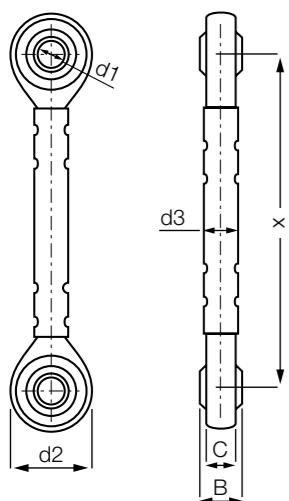
Alternative spherical ball materials ► Page 783

REM:
Low-costJEM:
low moisture
absorptionJ4EM:
low-cost and
low moisture
absorptionJ4VEM:
clearance-free
pre-loaded
spherical ball

Variable double joints: KDGM



Version A Version B



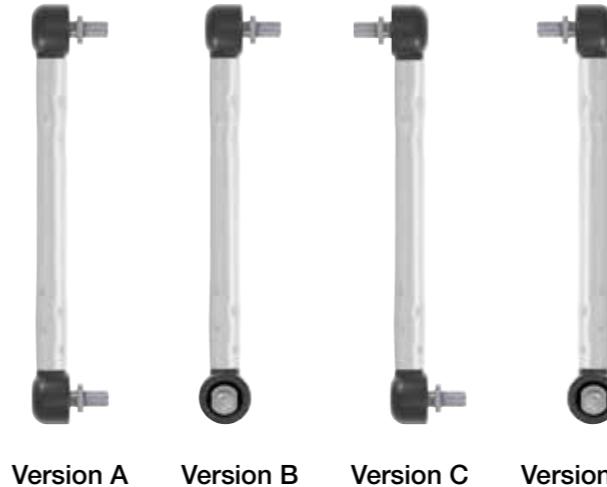
Dimensions [mm]

Part No.	d1	d2	d3	X	B	C	Max. pivot angle
	E10			Min.			
KDGM-06-A-SR-J [] ³²⁾	6	20	6	72	9	7.0	40°
KDGM-08-A-SR-J [] ³²⁾	8	24	8	84	12	9.0	35°
KDGM-10-A-ER-J ¹⁴⁵⁾ [] ³²⁾	10	30	10	96	14	10.5	35°
KDGM-12-A-SR-J [] ³²⁾	12	34	12	108	16	12.0	35°

³²⁾ Please add the required centre distance in mm¹⁴⁵⁾ Size only available with stainless steel tube (ER)

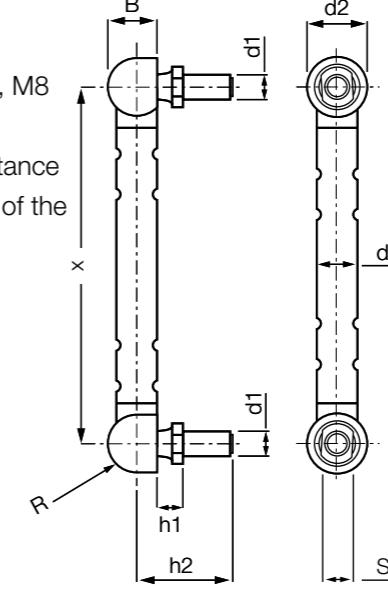
Order example, KDGM-06-A-SR-J, 100 : Double joint with 6mm inner diameter, version A, tube material made of steel, spherical ball made of iglidur® J, centre distance 100mm

Variable coupling joints: WDGM



Version A Version B Version C Version D

- Socket cup M5, M6, M8 and M10
- Individual centre distance
- Individual alignment of the bearing position



Dimensions [mm]

Part No.	d1	d2	d3	X	B	h1	h2	S1	R	Max. pivot angle
WDGM-05-A-SR-SZ [] ³²⁾	M5	12.8	8	64	10.8	4.6	19.2	SW8	6.4	23°
WDGM-06-A-ER-SZ ¹⁴⁵⁾ [] ³²⁾	M6	14.8	10	80	12.3	6.1	23.5	SW9	7.4	25°
WDGM-08-A-SR-SZ [] ³²⁾	M8	19.3	12	80	16.2	5.9	29.5	SW12	9.7	24°
WDGM-10-A-SR-SZ [] ³²⁾	M10 ³³⁾	19.3	12	90	16.2	7.9	36.0	SW14	9.7	24°

¹⁴⁵⁾ Size only available with stainless steel tube (ER)²⁸⁾ Stainless steel ball stud upon request³²⁾ Please add the required centre distance in mm³³⁾ Housing's size 8 with a special M10 stud, available only in metal

Order example, WDGM-05-A-SR-SZ, 100: Coupling joint with 5mm ball stud thread, version A, tube material made of steel, ball stud made of steel, centre distance 100mm

Can be combined with accessories ► From page 800:



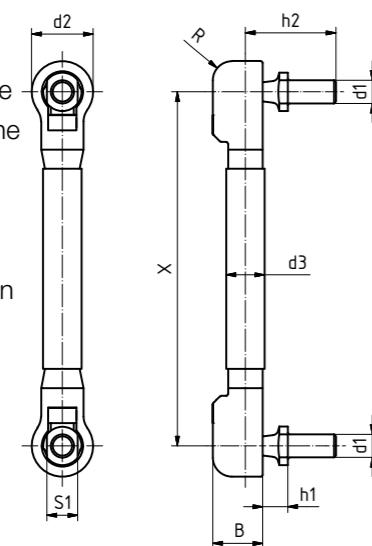
igubal® coupling joints | Product range

Variable coupling joints, removable:
WDGM-DE



Version A Version B Version C Version D

- Socket cup M6
- Individual centre distance
- Individual alignment of the bearing position
- Easy assembly and disassembly
- High holding forces when assembled



Dimensions [mm]

Part No.	d1	d2	d3	X	B	h1	h2	S1	R	Max. pivot angle	
	Min.									Width across flats	
WDGM-06-A-ER-SZ-DE	[] ³²⁾	M6	16	10	100	13	6.5	23.5	SW8	5	23°

¹⁴⁵⁾ Size only available with stainless steel tube (ER)

²⁸⁾ Stainless steel ball stud upon request

³²⁾ Please add the required centre distance in mm

Order example, WDGM-06-A-ER-SZ-DE, 150 : Removable coupling joint with 6mm ball stud thread, version A, tube material made of stainless steel, ball stud made of steel, centre distance 150mm

Assembly:



Can be combined with accessories

► From page 800:



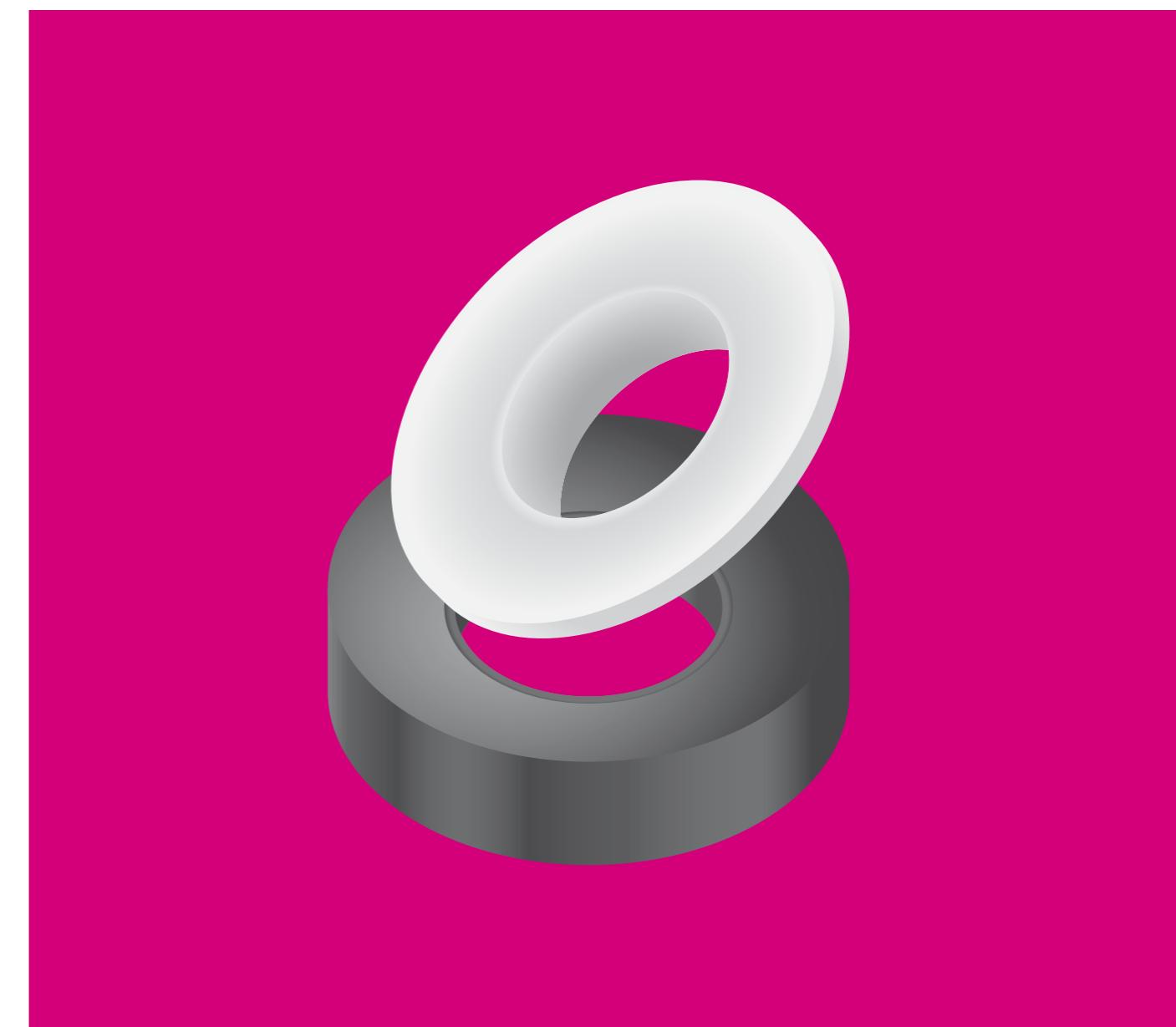
GZRM-IG



GZRM



GZRM-MS / GZRM-ES



igubal® spherical thrust bearings

Easy to fit

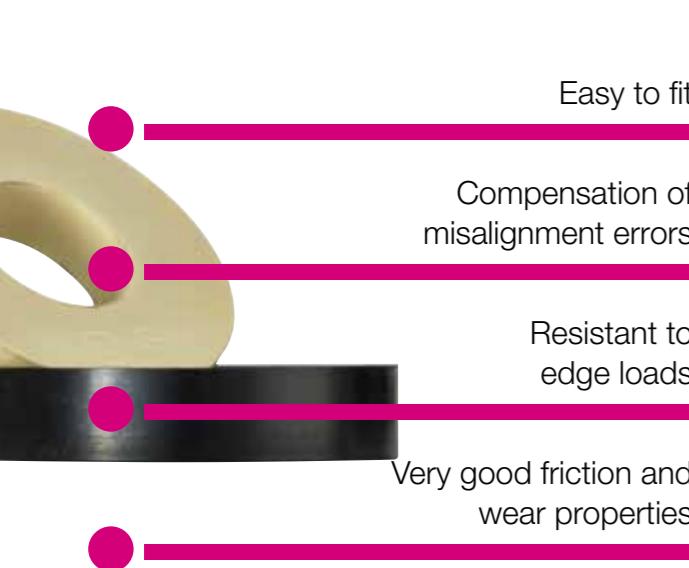
Compensation of misalignment errors

Resistant to edge loads

Very good friction and wear properties



igubal® self-aligning spherical thrust bearings are very easy to fit and help to compensate for alignment errors and prevent edge pressure.



Easy to fit

Compensation of misalignment errors



Resistant to edge loads

Very good friction and wear properties



When to use it?

- If you want to save weight
- If corrosion resistance is requested
- If a bearing with a good coefficient of friction is required



When not to use it?

- At very high loads
- When temperatures are higher than +80 °C
- When high speeds have to be achieved



Available from stock

Detailed information about delivery time online.



Price breaks online

No minimum order value. No minimum order quantity



Max. +80 °C

Min. -30 °C



Type 1

Ø 5–20mm



Online product finder

► www.igus.eu/igubal-finder

Mechanical properties

igubal® self-aligning spherical thrust bearings are very easy to fit and help to compensate for alignment errors and prevent edge pressure. The housing pad is made of the impact-resistant, thermoplastic composite igumid G. The spherical washer is made of iglidur® W300 material. This combination provides exceptionally good friction and wear properties.

Loads

The load capacity of igubal® spherical thrust bearings is very high in standard ambient temperatures. For high continuous loads and high temperatures, the load capacity of the spherical thrust bearings should be tested in an experiment that simulates the application.

Coefficient of sliding friction and speed

Taking into account the radial load, maximum surface speeds up to 0.5m/s rotating are possible.

Assembly

The housing pad is installed so that it is countersunk and secured. The spherical washer is loosely fitted in the socket and is held in place by the shaft that is placed into the bearing.

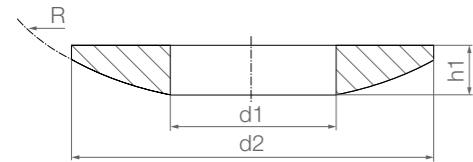
Product range

igubal® spherical thrust bearings are available in standard form to suit diameters from 5 to 20mm. Please contact us if you require other dimensions.

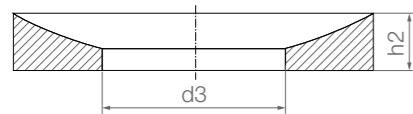
Spherical thrust bearings: SAM



Spherical washer



Housing pad



Technical data

Part No.	Max. static axial compressive strength		Max. static axial compressive strength		Weight [g]	
	Short-term		Long-term			
	[N]	[N]	[N]	[N]		
SAM-05	4,000		2,000		0.9	
SAM-06	5,000		2,500		1.1	
SAM-08	8,000		4,000		2.2	
SAM-10	10,000		5,000		3.4	
SAM-12	12,000		6,000		5.9	
SAM-16	17,000		8,500		8.5	
SAM-20	22,000		11,000		12.8	

Dimensions [mm]

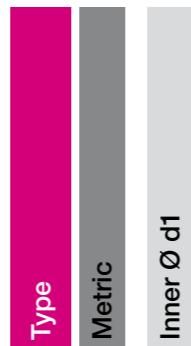
Part No.	d1 Spherical washer DIN 2768 medium	d3 Housing pad DIN 2768 medium	d2	h1 Spherical washer	h2 Housing pad	H ³⁴⁾ Overall height	R Radius	Compensati- on angle
SAM-05	5.2	7.0	15	3.0	3.5	4.7	15	3°
SAM-06	6.2	7.5	16	3.0	4.0	5.3	16	3°
SAM-08	8.2	10.0	20	4.0	5.0	6.8	20	2°
SAM-10	10.2	12.0	24	4.5	5.5	7.5	24	2°
SAM-12	12.5	14.5	30	5.0	6.2	8.0	32	2°
SAM-16	16.2	19.0	36	5.5	6.5	8.7	40	2°
SAM-20	20.2	23.0	44	6.0	7.0	8.6	45	2°

³⁴⁾ In assembled condition

Order key

Type Size [mm]

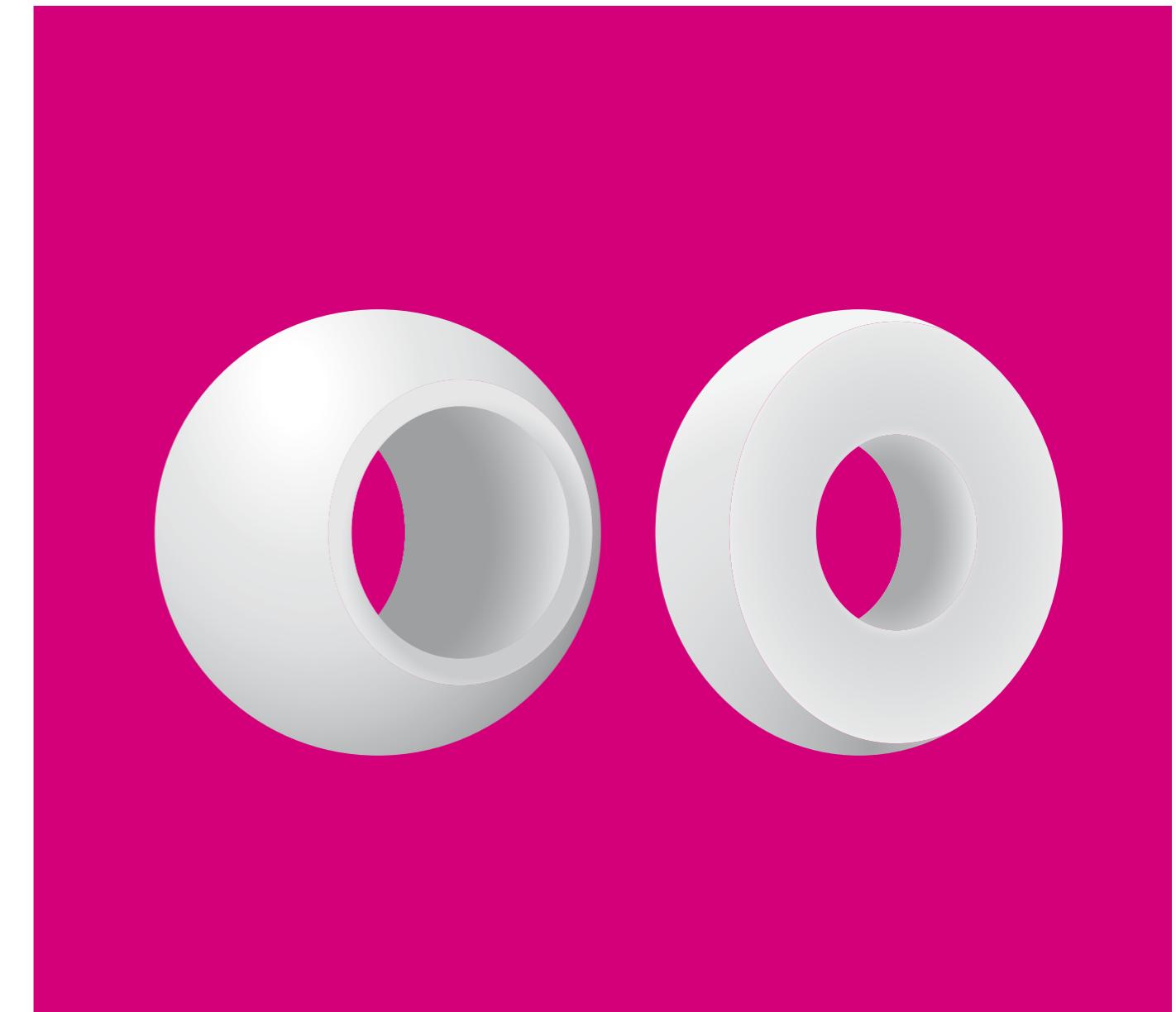
SA M-05



Material:

Spherical washer: iglidur® W300 ► Page 171

Housing pad: igumid G ► Page 1560



igubal® spherical balls

Maintenance-free dry operation



Corrosion-free



High compressive strength

Flexible



Lightweight

Different materials

Spherical balls for metallic bearing housings

igubal® spherical balls

Every single iglidur® material has its own special properties, which determines the suitability for your special applications and requirements. We have available spherical balls made from iglidur® materials W300 (standard), J, J4, R, RN248, UW and X. The spherical balls for metallic bearing housings are available in three materials for housing numbers 203 to 210.



When to use it?

- If you need maintenance-free material
- When dimensional E and K series components should be fitted
- If different iglidur® materials should be tested
- If high compressive strength is required
- If high flexibility is required
- Replacing ball bearings in metallic housings



When not to use it?

- When temperatures are higher than +250 °C
- When dimensions above 50mm are required
- When rotation speeds higher than 0.5m/s are required

Tolerances

Maintenance-free igubal® spherical balls are designed with a tolerance of the inner diameter of E10. The shaft tolerance should be included between h6 and h9. All values and tolerances according to DIN ISO 2768-m.



Typical sectors of industry and application areas

- Plant design ● Model building
- Furniture/Industrial design etc.

Improve technology and reduce costs –
110 exciting examples online
► www.igus.eu/igubal-applications



Drum bearing in a tumble dryer



► www.igus.eu/food



Carriage in a crane system



► www.igus.eu/design

Standard –
igubal® spherical balls

iglidur® W300 ► Page 171

**WKM**Dimensional K series
metric/imperial

► Page 787

WEMDimensional E series
metric/imperial

► Page 787

High temperatures –
igubal® spherical balls

iglidur® X ► Page 263

**XKM**Dimensional K series
metric

► Page 789

XEMDimensional E series
metric

► Page 789

Cost-effective –
igubal® spherical balls

iglidur® J4, ► Page 1558

**J4KM**Dimensional K series
metric

► Page 793

J4EMDimensional E series
metric

► Page 793

Detectable –
igubal® spherical balls

iglidur® RN248 ► Page 1562

**RN248KM**Dimensional K series
metric

► Page 796

RN248EMDimensional E series
metric

► Page 796

Low-cost –
igubal® spherical balls

iglidur® R ► Page 239

**RKM**Dimensional K series
metric

► Page 788

REMDimensional E series
metric

► Page 788

Low moisture absorption
igubal® spherical balls

iglidur® J ► Page 159

**JKM**Dimensional K series
metric

► Page 790-771

JEMDimensional E series
metric

► Page 790

Underwater applications –
igubal® spherical balls

iglidur® UW ► Page 495

**UWEM**Dimensional E series
metric

► Page 794

J4VEMDimensional E series
metric

► Page 795

For metallic bearing housings –
igubal® spherical balls

iglidur® J A180 ► Page 159

► Page 361

iglidur® A350 ► Page 369

**Standard**Dimensional UC series
metric

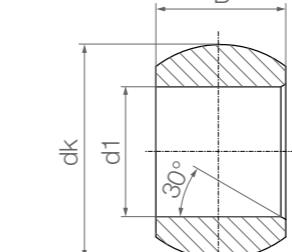
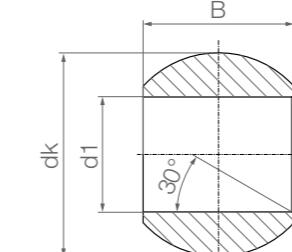
► Page 797

FDA-compliantDimensional UC series
metric

► Page 797

FDA-compliant, high temp.Dimensional UC series
metric

► Page 797

Standard spherical balls:
WKM and WEM

Order key

Type	Size [mm]	Options
W ... M - 02 - 04		
iglidur® W300 spherical balls	Dimensional series	
Metric	Inner Ø d1	Width

Series
K = Dimensional K series
E = Dimensional E series

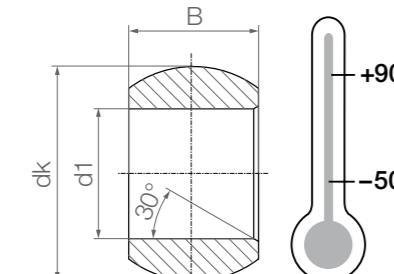
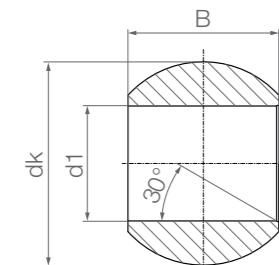
Imperial dimensions available
► Page 1516

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
WKM-02-04	2	5.10	4	0.1
WKM-03-06	3	8.10	6	0.3
WKM-05-08	5	11.30	8	0.6
WKM-06-09	6	12.80	9	0.9
WKM-08-12	8	16.00	12	1.6
WKM-10-14	10	19.00	14	2.7
WKM-12-16	12	22.10	16	4.0
WKM-14-19	14	25.40	19	6.0
WKM-16-21	16	28.40	21	8.2
WKM-18-23	18	31.50	23	10.8
WKM-20-25	20	35.10	25	14.5
WKM-22-28	22	38.30	28	18.7
WKM-25-31	25	42.90	31	26.0
WKM-30-37	30	51.20	37	44.7

Part No.	d1 E10	dK	B	Weight [g]
WEM-04-05	4	8.30	5	0.2
WEM-05-06	5	10.30	6	0.3
WEM-06-06	6	10.30	6	0.4
WEM-08-08	8	13.30	8	0.7
WEM-10-09	10	16.10	9	1.2
WEM-12-10	12	18.10	10	1.5
WEM-15-12	15	22.00	12	2.4
WEM-16-13	16	24.10	13	3.3
WEM-17-14	17	25.10	14	3.7
WEM-20-16	20	29.10	16	5.3
WEM-25-20	25	35.60	20	9.5
WEM-30-22	30	40.90	22	12.1

Low-cost spherical balls:
RKM and REM



Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
RKM-10-14	10	19	14	2.9

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
REM-05-06	5	10.20	6	0.4
REM-06-06	6	10.20	6	0.4
REM-08-08	8	13.20	8	0.8
REM-10-09	10	16.10	9	1.3
REM-12-10	12	18.10	10	1.6

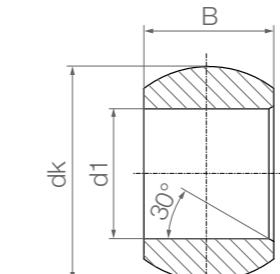
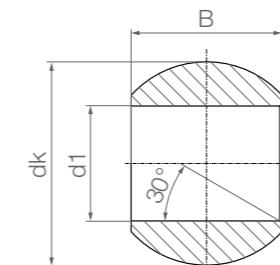


Order key

Type	Size [mm]	Options
R ... M - 10 - 14		
iglidur® R spherical balls		
Dimensional series		
Metric		
Inner Ø d1 [mm]		
Width		

Series
K = Dimensional K series
E = Dimensional E series

High temperatures spherical balls:
XKM and XEM



Order key

Type	Size [mm]	Options
X ... M - 10 - 14		
iglidur® X spherical balls		
Dimensional series		
Metric		
Inner Ø d1		
Width		

Series
K = Dimensional K series
E = Dimensional E series

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
XKM-10-14	10	19.10	14	2.9

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
XEM-05-06	5	10.30	6	0.4
XEM-06-06	6	10.20	6	0.4
XEM-08-08	8	13.30	8	0.8
XEM-10-09	10	16.10	9	1.3
XEM-12-10	12	18.10	10	1.6

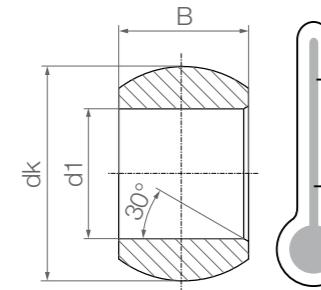
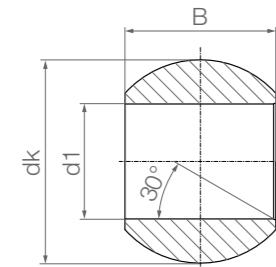
Low moisture absorption spherical balls:
JKM and JEM



JKM



JEM



Order key

Type	Size [mm]	Options
J ... M - 03 - 06		
iglidur® J spherical balls		
Dimensional series		
Metric		
Inner Ø d1		
Width		

Series
K = Dimensional K series
E = Dimensional E series



+90°
-50°

Low moisture absorption spherical balls:
JKM



JKM spherical ball with plain bearing



JKM spherical ball without plain bearing



Order key

Type	Size [mm]
J K M - 35 - 49	
iglidur® J spherical balls	
K series	
Metric	
Inner Ø d1	
Width	

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
JKM-03-06	3	8.10	6	0.3
JKM-05-08	5	11.30	8	0.7
JKM-06-09	6	12.80	9	1.0
JKM-08-12	8	15.90	12	1.9
JKM-10-14	10	19.00	14	3.1
JKM-12-16	12	22.10	16	4.7
JKM-16-21	16	28.40	21	9.4
JKM-20-25	20	35.10	25	17.6
JKM-25-31	25	42.80	31	31.6
JKM-30-37	30	51.20	37	53.0

Dimensions [mm]

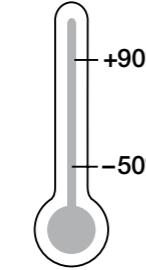
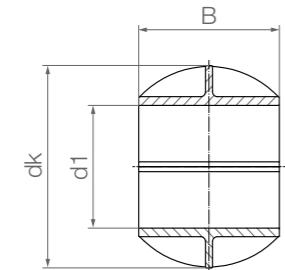
Part No.	d1 E10	dK	B	Weight [g]
JEM-04-05	4	8.30	5	0.3
JEM-05-06	5	10.20	6	0.4
JEM-06-06	6	10.20	6	0.4
JEM-08-08	8	13.30	8	0.8
JEM-10-09	10	16.10	9	1.3
JEM-12-10	12	18.10	10	1.7
JEM-15-12	15	22.00	12	2.9
JEM-16-13	16	24.10	13	3.9
JEM-17-14	17	25.20	14	4.1
JEM-20-16	20	29.10	16	6.4
JEM-25-20	25	35.60	20	11.5
JEM-30-22	30	40.90	22	14.5
JEM-40-28	40	53.00	28	31.0

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
JKM-35-49 ³⁵⁾	35	66.30	49	75.5
JKM-40-49	40	66.30	49	54.5
JKM-45-60 ³⁵⁾	45	82.40	60	125.1
JKM-50-60	50	82.40	60	92.1

³⁵⁾ Diameter reduced by means of a plain bearing

Low moisture absorption split spherical balls:
JKM-GT



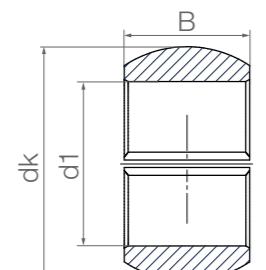
Order key

Type	Version	Size [mm]
J	K	M - GT
iglidur® J spherical balls	K series	Metric
Split ball		
Inner Ø d1 [mm]		

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
JKM-GT40	40	66.30	49	54.5
JKM-GT50	50	82.40	60	92.1

Low moisture absorption split spherical balls:
JEM-GT



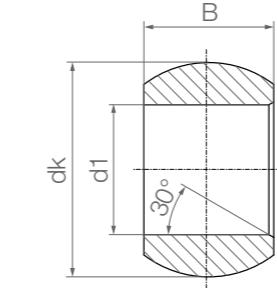
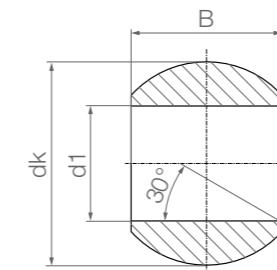
Order key

Type	Version	Size [mm]
J	E	M - GT - 16
iglidur® J spherical balls	E series	Metric
Split ball		
Inner Ø d1 [mm]		

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
JEM-GT16	16	23.7	13	3.7
JEM-GT20	20	28.9	16	6.1
JEM-GT25	25	35.6	20	10.9
JEM-GT30	30	40.8	22	14.6

Cost-effective spherical balls:
J4KM and J4EM



Order key

Type	Size [mm]	Options
J4 ... M - 10 - 14		
iglidur® J4 spherical balls	Dimensional series	
	Metric	
	Inner Ø d1	Width

Series
K = Dimensional K series
E = Dimensional E series

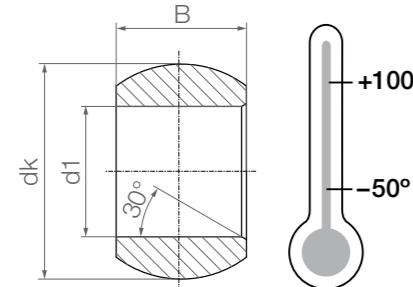
Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
J4KM-10-14	10	19.10	14	3.1
J4KM-12-16	12	22.10	16	4.7

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
J4EM-04-05	4	8.25	5	0.3
J4EM-05-06	5	10.20	6	0.4
J4EM-06-06	6	10.20	6	0.4
J4EM-08-08	8	13.30	8	0.8
J4EM-10-09	10	16.00	9	1.3
J4EM-12-10	12	18.00	10	1.7
J4EM-15-12	15	22.00	12	2.9
J4EM-16-13	16	24.00	13	3.9
J4EM-17-14	17	25.10	14	4.1
J4EM-20-16	20	28.90	16	6.4
J4EM-25-20	25	35.50	20	11.5
J4EM-30-22	30	40.90	22	14.5

Spherical balls for underwater applications:
UWEM



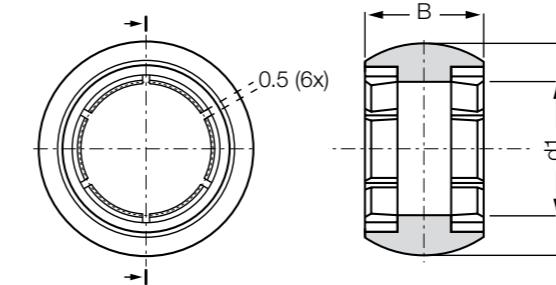
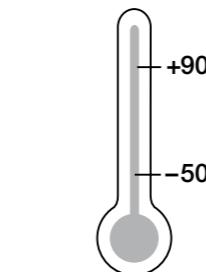
Order key

Type	Size [mm]		
iglidur® UW spherical balls	E series	Metric	Inner Ø d1
Width			
UW E M-16-13			

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
UWEM-10-09	10	16.10	9	1.4
UWEM-16-13	16	23.80	13	4.0
UWEM-20-16	20	28.80	16	6.5
UWEM-25-20	25	35.30	20	11.6
UWEM-30-22	30	40.50	22	15.2

Pre-tensioned spherical balls: J4VEM



Order key

Type	Size [mm]		
iglidur® J4 spherical balls	Preloaded	E series	Metric
Width			
J4 V E M-08-08			

- Can be combined with all E series housings
- Sizes from 8 to 20mm
- Clearance-free, pre-loaded
- Totally clearance-free in unloaded state

Dimensions [mm]

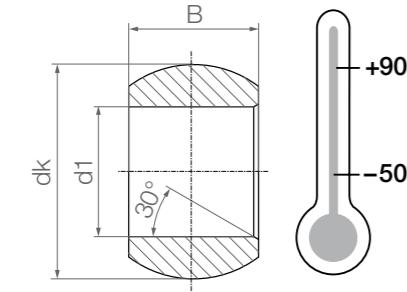
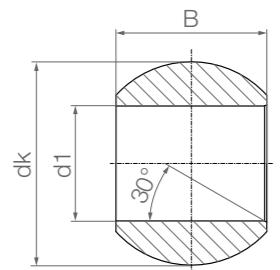
Part No.	d1 E10	dK	B	Weight [g]
J4VEM-08-08	8	13.20	8	0.7
J4VEM-10-09	10	16.10	9	1.2
J4VEM-12-10	12	18.10	10	1.5
J4VEM-16-13	16	24.10	13	3.7
J4VEM-20-16	20	29.10	16	6.2

5 sizes available: Ø 8, 10, 12, 16, 20mm combinable

with:

igubal® rod ends	EA(L)RM	► Page 710	igubal® fixed flange bearings	EFSM	► Page 754
igubal® rod ends	EB(L)RM	► Page 708	igubal® clip bearings	EGFM-T	► Page 773
igubal® pillow block bearings	ESTM	► Page 741	igubal® spherical bearings	EGLM	► Page 769
igubal® fixed flange bearings	EFOM	► Page 752	igubal® double joints	EGZM	► Page 775

Detectable spherical balls:
RN248KM and RN248EM



Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
RN248KM-06-09	6	12.80	9	1

Dimensions [mm]

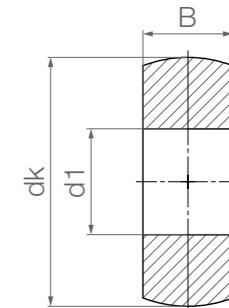
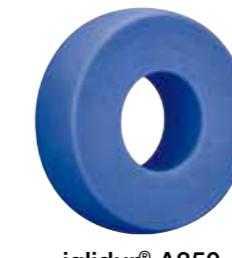
Part No.	d1 E10	dK	B	Weight [g]
RN248EM-05-06	5	10.30	6	0.4
RN248EM-06-06	6	10.20	6	0.4
RN248EM-08-08	8	13.20	8	0.8
RN248EM-10-09	10	16.10	9	1.3
RN248EM-12-10	12	18.10	10	1.6

Order key

Type	Size [mm]	Options
RN248 ... M - 06 - 09		
iglidur® RN248 spherical balls		
Dimensional series		
Metric		
Inner Ø d1		
Width		

Series
K = Dimensional K
series
E = Dimensional E
series

Slim spherical balls made of iglidur® materials for various metallic UC type bearing housings



- 3 different spherical ball materials available:
iglidur® J, A180 and A350
- Eight dimensions for housing numbers from 203 to 210

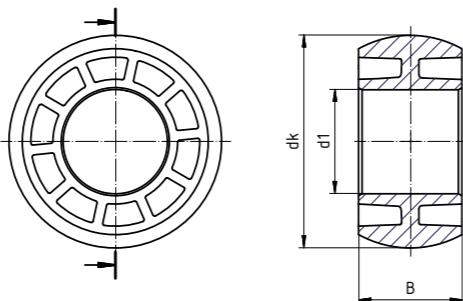
- Maintenance-free, dry operation
- Durable
- Corrosion-free
- Resistant to dirt

Dimensions [mm]

Part No.	Housing No. E10	d1	dk	B	Max. static compressive force	
					radial [kN]	axial [kN]
made of iglidur® J, low coefficient of friction (material information ► From page 159)						
JEM-17-17	UC203	17	47	17	10.0	7.5
JEM-20-17	UC204	20	47	17	11.5	7.5
JEM-25-17	UC205	25	52	17	14.5	7.5
JEM-30-19	UC206	30	62	19	19.5	9.5
JEM-35-20	UC207	35	72	20	24.0	10.5
JEM-40-21	UC208	40	80	21	29.0	12.0
JEM-45-22	UC209	45	85	22	34.0	13.0
JEM-50-24	UC210	50	90	24	41.5	15.5
made of iglidur® A180, FDA-compliant all-rounder (material information ► From page 361)						
A180EM-17-17	UC203	17	47	17	7.5	6.0
A180EM-20-17	UC204	20	47	17	9.0	6.0
A180EM-25-17	UC205	25	52	17	11.5	6.0
A180EM-30-19	UC206	30	62	19	15.5	7.5
A180EM-35-20	UC207	35	72	20	19.0	8.5
A180EM-40-21	UC208	40	80	21	23.0	9.0
A180EM-45-22	UC209	45	85	22	27.0	10.0
A180EM-50-24	UC210	50	90	24	33.0	12.0
made of iglidur® A350, for high temperatures and chemicals (material information ► From page 369)						
A350EM-17-17	UC203	17	47	17	17.0	13.0
A350EM-20-17	UC204	20	47	17	20.0	13.0
A350EM-25-17	UC205	25	52	17	25.0	13.0
A350EM-30-19	UC206	30	62	19	34.0	17.0
A350EM-35-20	UC207	35	72	20	41.5	18.5
A350EM-40-21	UC208	40	80	21	50.0	20.0

igubal® spherical balls | Product range

Cost-effective spherical balls made of iglidur® J for various UC type metallic bearing housings



- Cost-effective due to injection moulding method
- Eight dimensions for housing numbers from 203 to 210
- Maintenance-free, dry operation

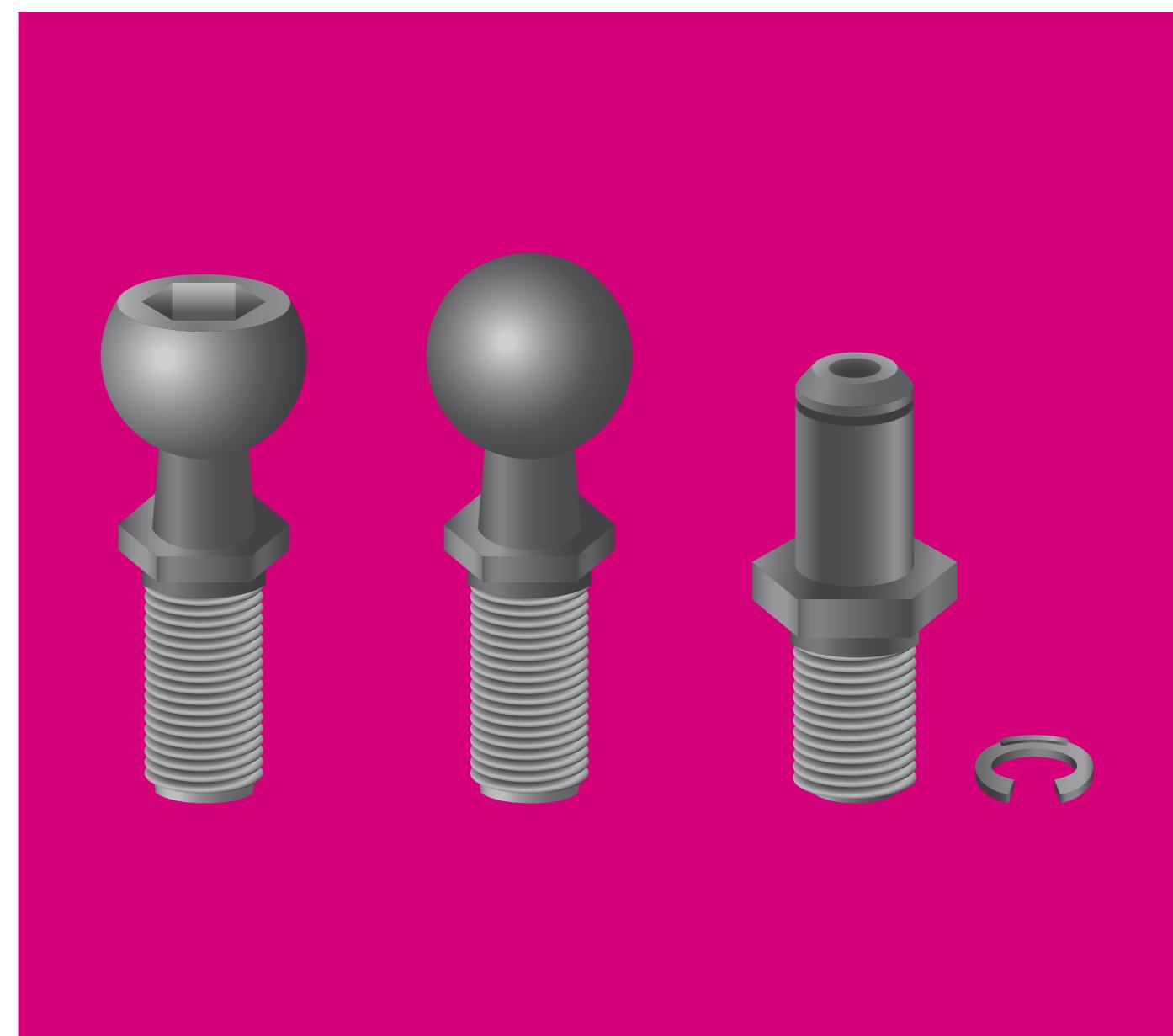
- Durable
- Resistant to corrosion and chemicals
- Resistant to dirt
- Low moisture absorption

Dimensions [mm]

Part No.	Housing No.	d1 E10	dk	B	Max. static compressive force	
					radial [kN]	axial [kN]
made of iglidur® J, low coefficient of friction (material information ► From page 159)						
JEM-17-17-SP	UC203	17	47	17	7.5	4.0
JEM-20-17-SP	UC204	20	47	17	8.0	4.0
JEM-25-17-SP	UC205	25	52	17	9.0	3.5
JEM-30-19-SP	UC206	30	62	19	13.5	5.0
JEM-35-20-SP	UC207	35	72	20	14.5	6.5
JEM-40-21-SP	UC208	40	80	21	21.0	6.0
JEM-45-22-SP	UC209	45	85	22	23.0	5.5
JEM-50-24-SP	UC210	50	90	24	25.0	5.5



Image exemplary



igubal® accessories

Ball studs made of plastic, galvanised steel and stainless steel



Adapter screw made from plastic

Adapter for E series pillow block bearings

Steel ball studs with female thread



Order key

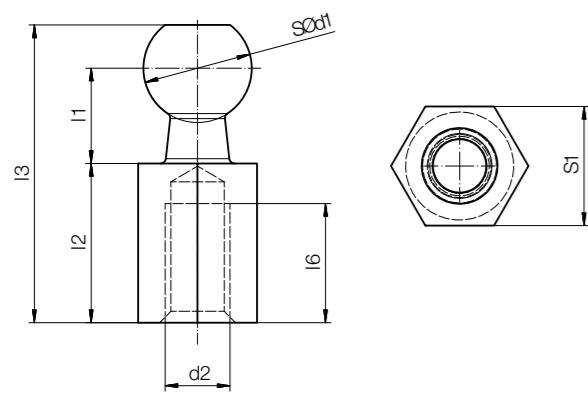
Type	Size [mm]	Version
In-line ball and socket joint	Thread	Metric
GZ R M - 05 - IG - ES		
Inner Ø		Female thread

Options:
 Thread
 R = Right-hand thread
 L = Left-hand thread
 (upon request)

Add-on:
 Blank = Galvanised steel
 ES = Stainless steel²⁸⁾

i Material:
 Galvanised and stainless steel (1.4305)

- Easy to fit
- DIN connection size
- Corrosion-free



Technical drawing

Dimensions [mm]

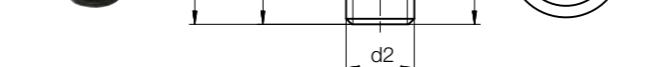
Part No.	d1	d2	l1	l2	l6	l3	S1	Weight
	-0.05						[g]	
GZRM-05-IG	8	M5	7.0	12.2	9	22.7	SW10	10
GZRM-06-IG	10	M6	8.8	14.7	11	27.5	SW11	15
GZRM-08-IG	13	M8	10.8	18.7	12	35.2	SW14	30
GZRM-10-IG	16	M10	13.3	22.7	16	43.0	SW17	55

²⁸⁾ Stainless steel ball stud upon request

Can be combined with:



Plastic and steel ball studs with male thread



Technical drawing

Order key

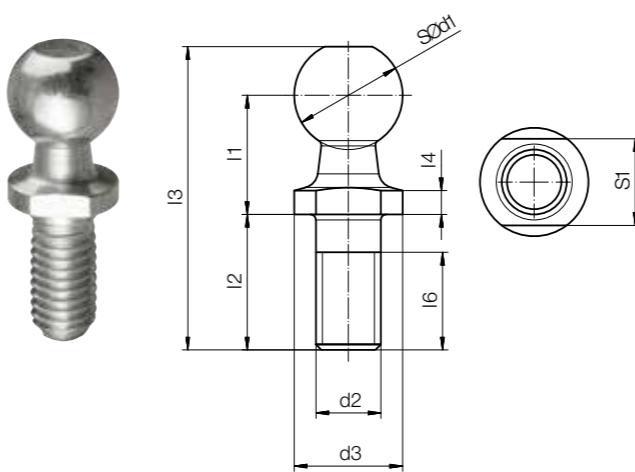
Type	Size [mm]	
In-line ball and socket joint	Thread	Metric
GZ R M - 05 - MS		
Inner Ø		

Options:
 Thread
 R = Right-hand thread
 L = Left-hand thread
 (upon request)

Add-on:
 Blank = Plastic
 MS = Galvanised steel¹⁹⁾
 ES = Stainless steel²⁸⁾

i Material:
 Plastic: igumid G ► Page 1560
 Galvanised and stainless steel (1.4305)

- Easy to fit
- DIN connection size
- Corrosion-free



Dimensions [mm] – ball studs made from plastic

Part No.	d1	d2	l1	l2	l3	l4	l6	S1	S2	Weight
	±0.1					±0.2		[g]		
GZRM-05	8	M5	9	10.2	21.7	2.0	8.2	SW7	4	1
GZRM-06	10	M6	11	12.5	26.5	2.2	10.5	SW8	5	1
GZRM-08	13	M8	13	16.5	33.5	2.4	13.5	SW11	6	3
GZRM-10	16	M10	16	20.0	40.5	2.7	16.0	SW13	8	6

Dimensions [mm] – ball studs made of galvanised and stainless steel

Part No.	d1	d2	d3	l1	l2	l3	l4	l6	S1	Weight
	h9		h14	±0.3	±0.3	±0.3	±0.4	Min.	h14	[g]
GZRM-05-MS ¹¹⁵⁾	8	M5	8	9	10.2	22.7	2.0	6.2	SW7	4.5
GZRM-06-MS ¹¹⁵⁾	10	M6	10	11	12.5	28.0	2.2	8.5	SW8	8.5
GZRM-08-MS ¹¹⁵⁾	13	M8	13	13	16.5	35.0	2.4	11.2	SW11	17.7
GZRM-10-MS ¹¹⁵⁾	16	M10	16	16	20.0	43.0	2.7	12.7	SW13	35.1

¹⁹⁾ Ball stud with right-hand thread; left-hand thread upon request

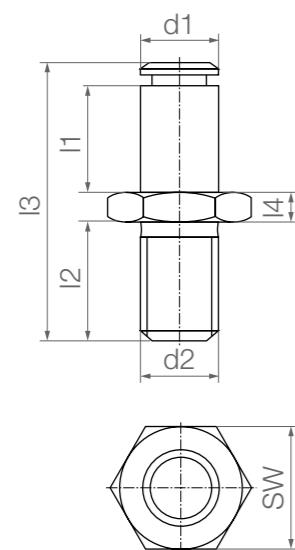
²⁸⁾ Stainless steel ball stud upon request

¹¹⁵⁾ For the stainless steel version please replace the suffix MS by ES

Can be combined with:



Adapter screws: PKRM and PKLM



Type	Size [mm]			Options
P K ... M - 05				
Adapter screw	K series	Thread	Metric	Inner Ø

i Material:
POM ► Page 1561

Solid plastic adapter screws with corresponding circlips are used as accessories for dimensional K series rod ends. In contrast to other "black" components of stock igubal® parts, the igubal® adapter screws consist of the material POM. This component effectively transforms a standard K series rod end into an angled ball and socket joint.

Technical data and dimensions [mm]

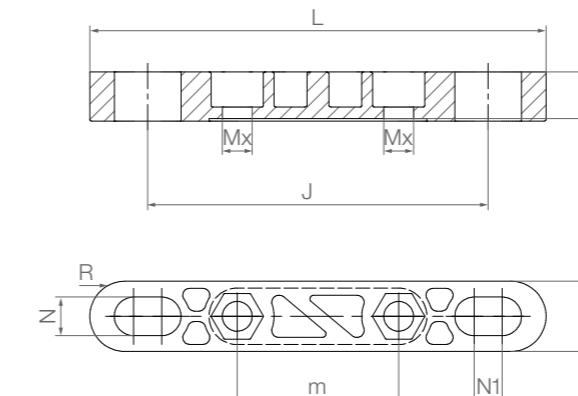
Part No.	Max. static tensile strain		Max. static radial load		d1 [N]	d2 [N]	l1 [N]	l2 [N]	l3 [N]	l4 [N]	SW [g]	Weight
	Short-term	Long-term	Short-term	Long-term			h11	Thread	Length adjusting bolt	Thread length	Total length	Nut width
	[N]	[N]	[N]	[N]								
PK□M-05	100	50	200	100	5	M5	8.5	11.3	25.0	2.7	SW8	0.7
PK□M-06	150	75	250	125	6	M6	9.5	12.8	28.0	3.2	SW10	1.2
PK□M-08	250	125	400	200	8	M8	12.5	12.5	32.0	4.0	SW13	2.6
PK□M-10	500	250	600	300	10	M10	14.5	14.5	37.5	5.0	SW16	4.0
PK□M-12	700	350	900	450	12	M12	16.5	15.5	42.0	6.0	SW18	7.5
PK□M-14	800	400	1,100	550	14	M14	19.5	15.5	47.0	7.0	SW21	11.4
PK□M-16	900	450	1,400	700	16	M16	22.0	16.5	52.0	8.0	SW24	16.9
PK□M-18	800	400	1,700	850	18	M18 x 1.5	24.0	20.5	59.0	9.0	SW27	16.9
PK□M-20	500	250	2,200	1,100	20	M20 x 1.5	26.0	25.0	67.0	10.0	SW30	34.4

²¹⁾ Delivery time: 4–6 weeks

Can be combined with:

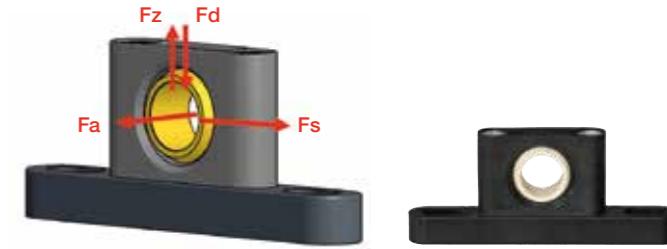


Adapters for dimensional E series pillow block bearings



Type	Size [mm]		
AD-01- E STM -20			
Adapter	E series	Pillow block bearing	Metric
			Inner Ø

- Same dimensions as metallic pillow block bearings
- Lightweight
- For pillow block bearings of dimensional E series (ESTM, ESTM-GT)
- Chemical and corrosion-resistant
- Fits directly
- Space-saving
- Same screws as traditional metallic versions



Technical data

Part No.	Max. radial tensile force [Fz]		Max. radial compressive strength [Fd]		Max. lateral strength [Fs]		Max. axial strength [Fa] (tensile/compressive)		Weight [g]
	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[N]	
AD-01-ESTM-20 ²⁶⁾	2,400	1,200	10,000	5,000	3,000	1,500	1,200	600	29.8
AD-01-ESTM-25 ²⁷⁾	2,400	1,200	10,000	5,000	3,000	1,500	1,200	600	74.0
AD-01-ESTM-30 ²⁷⁾	2,400	1,200	10,000	5,000	3,000	1,500	1,200	600	124.0

Dimensions [mm]

Part No.	for ESTM-...	L	A	R	J	h1	N	N1	m	Mx
AD-01-ESTM-20 ²⁶⁾	ESTM-20	130	20	10.0	97	13.3	11	8	46	M8
AD-01-ESTM-25 ²⁷⁾	ESTM-25	130	20	10.0	102	12.5	11	9	54	M8
AD-01-ESTM-30 ²⁷⁾	ESTM-30	158	25	12.5	118	14.9	14	10	64	M10

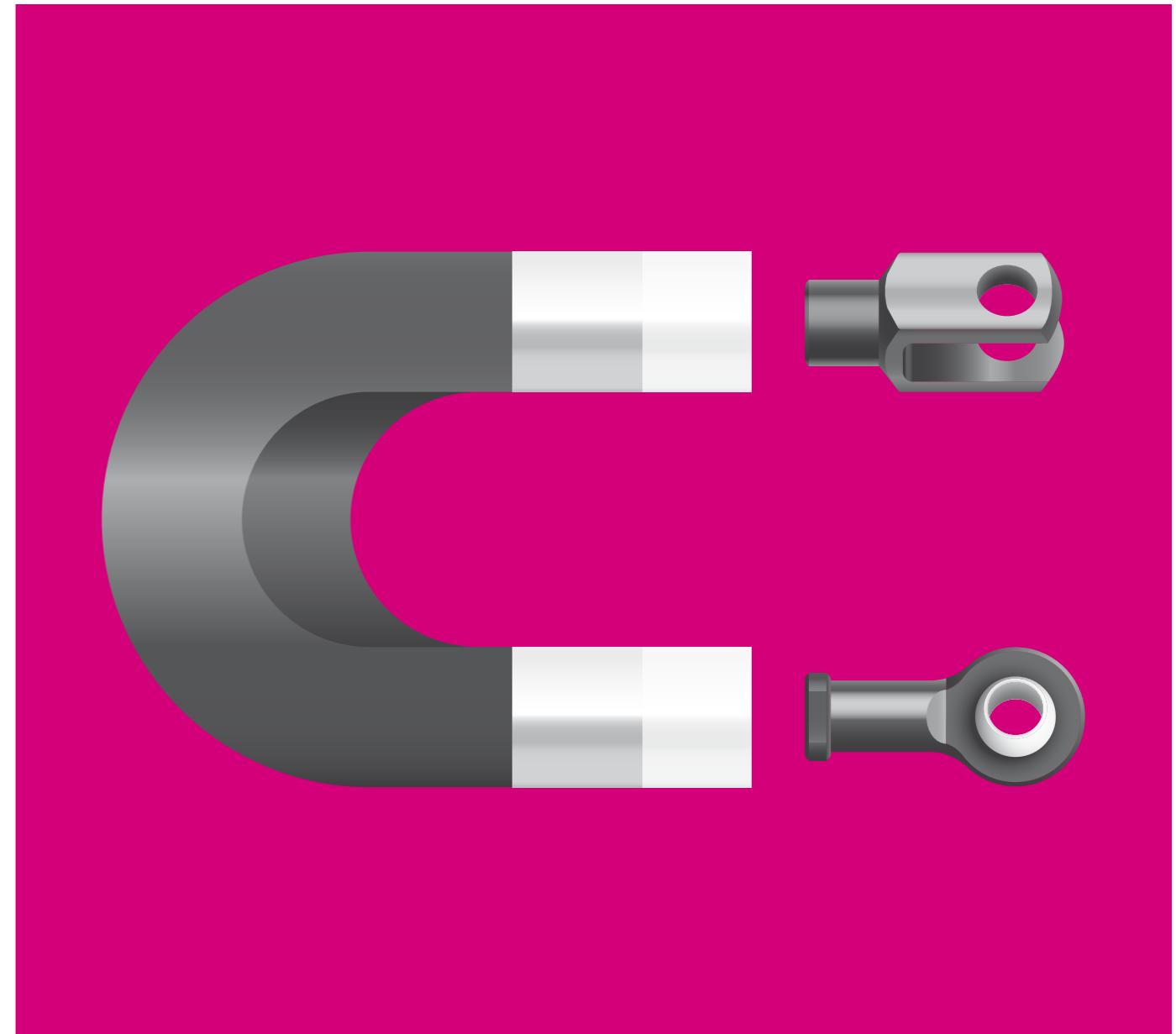
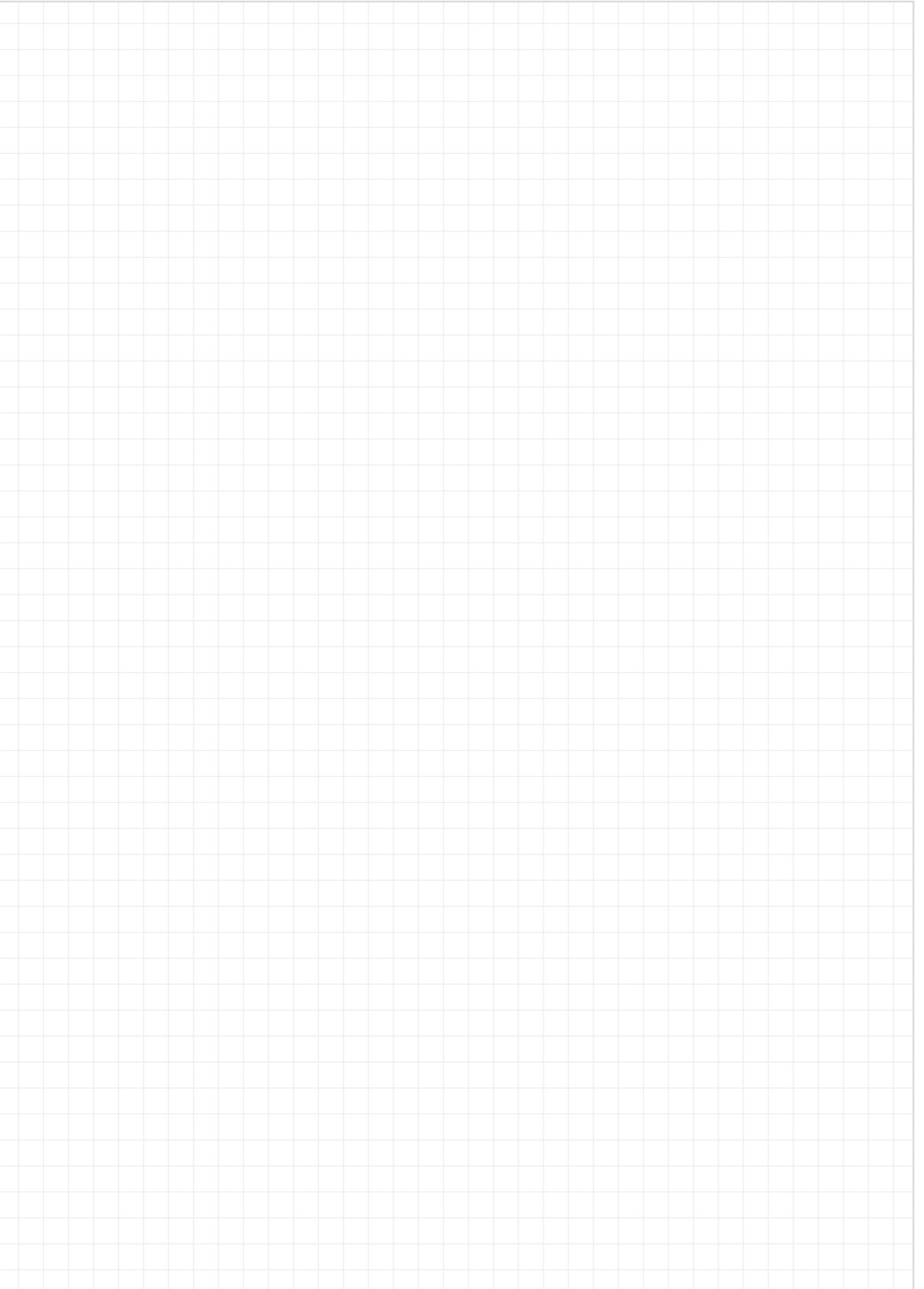
²⁶⁾ Material: plastic

²⁷⁾ Material: aluminium

Can be combined with:



My sketches



igubal® detectable

Resistant to dust and dirt

Lubrication and maintenance-free

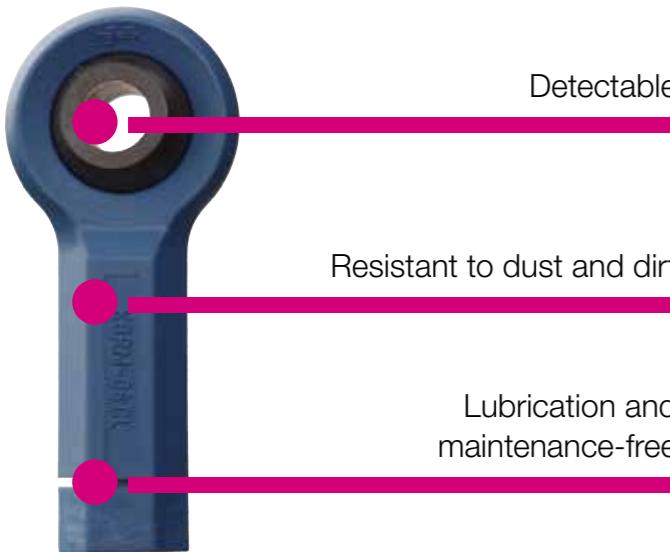
Vibration-dampening

Lightweight

Corrosion-free



Following igubal® bearings can be found quickly in case of accidental damage of the system through metal detectable material. Even the smallest fragment can be found by metal detectors.



When to use it?

- When particles should be detectable
- If you need maintenance-free material
- When dimensional E and K series components should be fitted
- If high compressive strength is required



When not to use it?

- When temperatures are higher than +80 °C
- When diameters above 16mm are required
- When rotation speeds higher than 0.5m/s are required



Available from stock

Detailed information about delivery time online.



Price breaks online

No minimum order value. No minimum order quantity



Max. +80 °C
Min. -30 °C



4 types
Ø 4–16mm



Online product finder

► www.igus.eu/igubal-finder

Available from stock



Easy assembly



Space-saving
Clevis joints,
high strength



Spring-loaded
fixing clip



Clevis joints with
spring-loaded fixing
clip



Spherical balls

K series

► Page 808

E series

► Page 809

E series

► Page 810

E series

► Page 812

E series

► Page 813

Dimensional K and
E series

► Page 796

Upon request

Rod ends



Higher forces

► Page 706



Space-saving

► Page 710



With clipped-on
ball

► Page 702



Easy to fit

► Page 741



Extremely light,
compact design

► Page 744

Fixed flange bearings



Easy to fit

► Page 752



For higher radial
load

► Page 754

Spherical bearings



Easy to fit,
cost-effective

► Page 767



For extremely
narrow
installation
space

► Page 768



Space-saving

► Page 769



Simply snap
into sheet metal

► Page 771



For tolerance
compensation

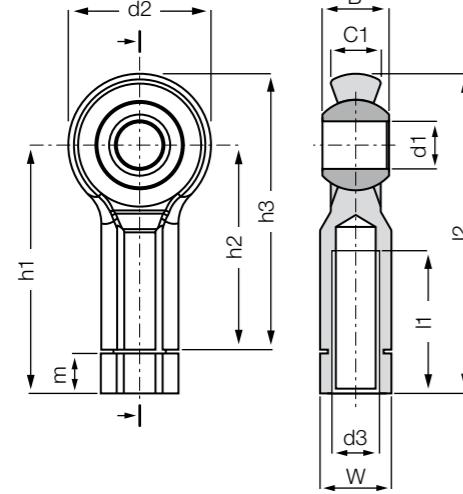
► Page 773



Robust plastic

► Page 775

Rod ends with female thread, detectable:
KBRM-CL-DT and KBLM-CL-DT



Order key

Type	Size [mm]			Version
K	B ... M-	06	-CL-DT	
K series	Housing (female thread)	Thread	Metric	
	Inner Ø			2nd generation
				Detectable

Options:

Thread

L = Left-hand thread

R = Right-hand thread



Material:

Housing: RN246 ► Page 1562

Spherical ball: RN248KM ► Page 796

- Smooth design no dirt traps
- Compensation of misalignment errors
- Lightweight
- Absolute corrosion resistance
- Dimensional K series according to DIN ISO 12240

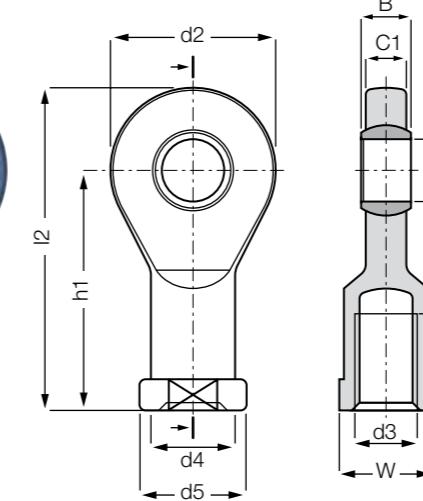
Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight
	Short-term	Long-term	Short-term	Long-term				
	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[g]
KB□M-06-CL-DT	980	490	210	105	8	0.8	10	4.5

Dimensions [mm]

Part No.	d1	d2	d3	W	B	C1	h3	h1	h2	I1	I2	m	Max. pivot angle
	E10												
KB□M-06-CL-DT	6	20	M6	SW10	9	7	40	36.5	30	20	46.5	5.7	40°

Rod ends with female thread, detectable:
EBRM-DT and EBLM-DT



Order key

Type	Size [mm]			Version
E	B ... M-	04	- DT	
E series	Housing (female thread)	Thread	Metric	
	Inner Ø			2nd generation
				Detectable

Options:

Thread

L = Left-hand thread

R = Right-hand thread



Material:

Housing: RN246 ► Page 1562

Spherical ball: RN248EM ► Page 796

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight
	Short-term	Long-term	Short-term	Long-term				
	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[g]
EB□M-04-DT	560	280	70	35	7	0.4	2.0	1.8
EB□M-05-DT	910	455	105	52	8	0.5	2.0	3.2
EB□M-06-DT	1,050	525	140	70	8	1.5	2.5	4.0
EB□M-08-DT	1,400	700	315	157	11	5.0	7.0	6.9
EB□M-10-DT	1,610	805	350	175	13	15.0	14.0	11.2
EB□M-12-DT	2,310	1,155	385	192	14	20.0	25.0	17.1

Dimensions [mm]

Part No.	d1	d2	d3	d4	d5	C1	B	h1	I1	I2	W	Max. pivot angle
	E10											
EB□M-04-DT	4	15	M4	–	–	3.5	5	22.5	9.5	30.0	SW8	33°
EB□M-05-DT	5	19	M5	9.0	11	4.4	6	30.0	12	39.5	SW9	33°
EB□M-06-DT	6	21	M6	11.0	13	4.4	6	30.0	8	40.5	SW11	27°
EB□M-08-DT	8	24	M8	13.0	16	6.0	8	36.0	14	48.0	SW14	24°
EB□M-10-DT	10	29	M10	15.0	19	7.0	9	43.0	18	57.5	SW17	24°
EB□M-12-DT	12	34	M12	18.0	22	8.0	10	50.0	20	67.0	SW19	21°

Clevis joints, detectable:
GERM-DT and GELM-DT



- Resistant to dust and dirt
- Maintenance and lubrication-free
- Vibration-dampening
- Lightweight

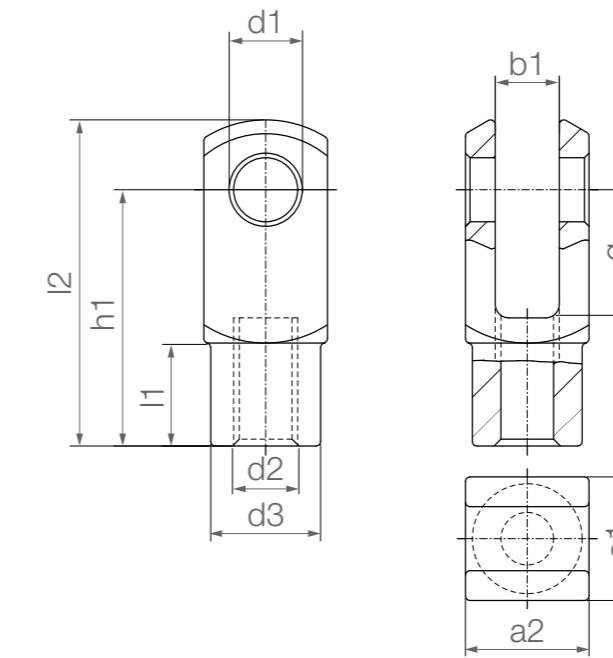
Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight [g]
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	
GE□M-04-DT	455	227.5	175	87.5	0.9
GE□M-05-DT	840	420	175	87.5	2.7
GE□M-06-DT	980	490	210	105	2.5
GE□M-08-DT	1,890	945	455	227.5	6.3
GE□M-10-DT	3,290	1,645	560	280	13.2
GE□M-10-DT-F	3,290	1,645	560	280	13.2
GE□M-12-DT	3,990	1,995	630	315	20.2
GE□M-12-DT-F	3,990	1,995	630	315	20.2

Clevis joints, detectable:
GERM-DT and GELM-DT



Type	Size [mm]	Version
G	E ... M -	04 - DT
Clevis joint	E series	Thread
	Metric	Metric
	Inner Ø	Detectable



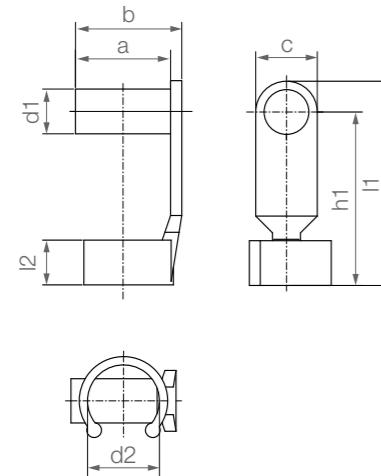
Options:
Thread
L = Left-hand thread
R = Right-hand thread

Material:
RN246 ► Page 1562

Dimensions [mm]

Part No.	d1	g	a1	a2	b1	d2	d3	I2	h1	I1
	H9	h11	+0.3	+0.3	B13	Thread tolerance	+0.3	+0.5	+0.3	+0.2
GE□M-04-DT	4	8	8	8	4	M4	8	21.0	16	6
GE□M-05-DT	5	12	12	12	6	M5	10	30.6	24	9
GE□M-06-DT	6	12	12	12	6	M6	10	30.6	24	9
GE□M-08-DT	8	16	16	16	8	M8	14	41.6	32	12
GE□M-10-DT	10	20	20	20	10	M10	18	51.3	40	15
GE□M-10-DT-F	10	20	20	20	10	M10 x 1.25	18	51.3	40	15
GE□M-12-DT	12	24	24	24	12	M12	20	61.3	48	18
GE□M-12-DT-F	12	24	24	24	12	M12 x 1.25	20	61.3	48	18

Spring-loaded fixing clips, detectable:
GEFM-DT



Order key

Type	Size [mm]	Version
G E F M - 04 - DT		

Clevis joint E series Spring-loaded fixing clip Metric Inner Ø Detectable



Material:
RN246 ► Page 1562

- Resistant to dust and dirt
- Maintenance and lubrication-free
- Vibration-dampening
- Lightweight

Dimensions [mm]

Part No.	d1 h11	d2	a	b	c	l1 ±0.5	h1	l2	Weight [g]
GEFM-04-DT	4	8	9.5	10.5	8	19.0	15	4.5	0.5
GEFM-05-DT	5	10	14.0	15.5	8	27.0	23	6.5	1.1
GEFM-06-DT	6	10	14.0	15.5	8	27.0	23	6.5	1.2
GEFM-08-DT	8	14	19.0	21.0	11	35.5	30	8.0	2.8
GEFM-10-DT	10	18	23.0	25.5	14	45.0	38	10.0	5.0
GEFM-12-DT	12	20	28.0	31.0	16	53.0	45	12.0	8.3

Clevis joints with spring-loaded fixing clips,
detectable: GERMF-DT and GELMF-DT



Order key

Type	Size [mm]	Version
G E ... M F - 04 - DT		

Clevis joint E series Thread Metric Spring-loaded fixing clip Inner Ø Detectable

Options:

- Thread
L = Left-hand thread
R = Right-hand thread



Material:
RN246 ► Page 1562

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	
GE□MF-04-DT	350	175	175	87.5	1.3
GE□MF-05-DT	630	315	175	87.5	3.8
GE□MF-06-DT	910	455	210	105.0	3.9
GE□MF-08-DT	1,470	735	455	227.5	9.1
GE□MF-10-DT	2,100	1,050	560	280.0	18.2
GE□MF-10-DT-F	2,100	1,050	560	280.0	18.2
GE□MF-12-DT	2,450	1,225	630	315.0	28.6
GE□MF-12-DT-F	2,450	1,225	630	315.0	28.6



Individual components: Clevis joint GERM-DT and spring-loaded fixing clip GEFM-DT
► Page 810 and 812

