



**Rod ends, series K (wide version), internal and external thread** **Page**

		Maintenance free, plastic Ø 5-20mm.....	461
		Lubricateable (GS), steel Ø 2-40mm.....	462
		Maintenance free (GT), steel Ø 4-40mm.....	463
		Maintenance free (GT-R), stainless steel Ø 5-40mm.....	464
		With ball bearing (BR), steel Ø 6-30mm.....	466
		With ball bearing (BR-R), stainless steel Ø 6-20mm.....	467

**Rod ends, series E (slim version), internal and external thread** **Page**

	Maintenance free (GEW, GAW), steel Ø 6-80mm.....	465
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**Rod Ends, special sizes (medium wide version), internal thread** **Page**

	With ball bearing, steel, internal thread (PF), Ø 10-20mm....	468
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**Spherical bearings, series K (wide version)** **Page**

		Lubricateable, steel and stainless steel Ø 5-40mm.....	469
		Lubricateable, with outer ring, steel Ø 5-40mm.....	469
		Lubricateable, with outer ring, stainless steel Ø 5-40mm.....	469
		Maintenance free, steel and stainless steel Ø 5-40mm.....	470
		Maintenance free, with outer ring, steel Ø 5-40mm.....	470
		Maintenance free, with outer ring, stainless steel Ø 5-40mm..	470

**Spherical bearings, series E (slim version)** **Page**

	Lubricateable, steel Ø 6-80mm.....	471
	Maintenance free, steel Ø 6-80mm.....	471
		Maintenance free, stainless steel Ø 6-80mm.....

## Rod Ends and Spherical Bearings, Basics

### Load Capacity of Rod Ends and Spherical Bearings made from steel

**Radial load:** The load rating depends on the load case:

**Load case I** (stationary or static load):

Load rating like table 1.

**Load case II** (fluctuating or simple dynamic load):

Load rating like table 2. Attention for types GT and GT-R:

Load ratings from table 1 may not be exceeded.

**Load case III** (alternating or shock load):

The load rating depends highly on the real kind of application and use. We recommend 50% of the load rating from table 2.

**Axial load:** The axial force may not exceed 20 % of the radial load.

**Table 1: Static Load Rating C<sub>0</sub> in kN for Load Case I**

Bore Diameter of Rod End mm	Rod Ends with Internal Thread				Rod Ends with External Thread				Spherical bearings					
	GS	GT	GT-R	GEW	GS	GT	GT-R	GAW	S	S...D	G	G...D	GE...DO	GE...UK
2	3	-	-	-	0,6	-	-	-	-	-	-	-	-	-
3	4,1	-	-	-	1,5	-	-	-	-	-	-	-	-	-
4	-	5,2	-	-	-	2,6	-	-	-	-	-	-	-	-
5	9,9	8	11,8	-	4,3	4,3	6,2	-	10	12,5	19,8	12,5	-	-
6	11,9	8,9	13,1	10,3	6	6	8,8	6,9	12,8	15,5	25,8	15,5	17	9
8	17,1	14,1	20,7	15,8	11	11	16,1	12,7	21,6	27,8	42,6	27,8	27,5	14,6
10	21,4	19,3	28,3	23,4	17,4	17,4	25,5	19,9	30	39	60	39	40,5	21,6
12	27	23,5	34,5	31	25,5	23,5	34,5	29	40	53,5	80	53,5	54	28,5
14	24,5	21	39,5	-	24,5	20,8	39,5	-	51,5	70	102,5	70	-	-
15	-	-	-	42,5	-	-	-	39,5	-	-	-	-	85	44
16	37	32	60,5	54,5	36,5	32	60,5	54	64,5	88	128,5	88	106	56
17	-	-	-	54,5	-	-	-	54	-	-	-	-	106	56
18	43	38,6	73	-	43	38,6	73	-	78,5	106,5	157	106,5	-	-
20	49,5	44	83	62,5	49,5	43,8	83	62,5	94,5	130	188,5	130	146	78
22	57	53	100	-	57	52,6	100	-	114	162	229	162	-	-
25	68	62	118	92	68	61,4	118	92	142	204	293	204	240	127
30	82	82	155	124	82	81,6	155	124	416	281	416	281	310	166
35	101	101	191	144	101	101	191	144	480	343	480	343	400	338
40	124	124	235	178	124	124	235	178	693	495	693	495	500	419
45	-	-	-	263	-	-	-	263	-	-	-	-	640	540
50	-	-	-	320	-	-	-	320	-	-	-	-	780	665
60	-	-	-	497	-	-	-	497	-	-	-	-	1220	1030
70	-	-	-	606	-	-	-	566	-	-	-	-	1560	1320
80	-	-	-	752	-	-	-	752	-	-	-	-	2000	1700

**Table 2: Dynamic Load Rating C in kN for Load Case II**

Bore Diameter of Rod End mm	Rod Ends with Internal Thread				Rod Ends with External Thread				Spherical bearings					
	GS	GT	GT-R	GEW	GS	GT	GT-R	GAW	S	S...D	G	G...D	GE...DO	GE...UK
2	1,1	-	-	-	1,1	-	-	-	-	-	-	-	-	-
3	1,8	-	-	-	1,8	-	-	-	-	-	-	-	-	-
4	-	0,8	-	-	-	0,8	-	-	-	-	-	-	-	-
5	2,5	7,5	7,5	-	2,5	7,5*	7,5*	-	2,5	7,5	3,3	7,5	-	-
6	3,2	9,3*	9,3	3,6	3,2	9,3*	9,3*	3,6	3,2	9,3	4,3	9,3	3,4	3,6
8	5,4	16,7*	16,7	5,8	5,4	16,7*	16,7*	5,8	5,4	16,7	7,1	16,7	5,5	5,8
10	7,5	23,4*	23,4	8,6	7,5	23,4*	23,4	8,6	7,5	23,4	10	23,4	8,1	8,6
12	10	32*	32	11,5	10	32*	32	11,5	10	32	13,5	32	10,8	11,5
14	13	42*	42*	-	13	42*	42*	-	13	42	17	42	-	-
15	-	-	-	17,5	-	-	-	17,5	-	-	-	-	17	17,5
16	16	52,5*	52,5	22,5	16	52,5*	52,5	22,5	16	62,5	21,5	62,5	21,2	22
17	-	-	-	22,5	-	-	-	22,5	-	-	-	-	21,2	22
18	19,5	64*	64	-	19,5	64*	64*	-	19,5	64	26	64	-	-
20	23,5	78*	78	31,5	23,5	78*	78	31,5	23,5	78	31,5	78	30	31
22	29	97*	97	-	29	97*	97	-	29	97	38	97	-	-
25	35	122*	122*	51	35	122*	122*	51	35	122	47	122	48	51
30	64	168*	168*	66	64	168*	168*	66	64	168	64	168	62	65
35	80	206*	206*	140	80	206*	206*	140	80	206	80	206	80	140
40	116	286*	286*	185	116	286*	286*	185	116	286	116	286	100	185
45	-	-	-	240	-	-	-	240	-	-	-	-	127	240
50	-	-	-	295	-	-	-	295	-	-	-	-	156	295
60	-	-	-	460	-	-	-	460	-	-	-	-	245	460
70	-	-	-	590	-	-	-	590	-	-	-	-	315	590
80	-	-	-	750	-	-	-	750	-	-	-	-	400	750

\* Attention: The static load rating is lower. The dynamic load ratings are calculated for the bearing, to be used for further calculations. The static load ratings from table 1 may not be exceeded.

## Rod Ends and Spherical Bearings, Basic Informations

### Permissible Speed of the Inner Ring for Rod Ends and Spherical Bearings made from steel

The effective determination of the maximum rotational speed depends on various factors and variables which cannot all be predefined by the manufacturer.

- Load.
- Loading case (I,II and III).
- Type of lubrication (central lubrication system etc.).
- Ambient temperature.
- Environmental influences (dust etc.).

For the aforementioned reasons the manufacturer cannot determine any explicit, general values for the maximum speed of the inner ring. The values in the table were calculated assuming favourable conditions. Rod ends DIN series E (GEW and GAW) and spherical bearings DIN series E (GE...DO and GE...UK) are not suitable for higher speeds (only for alternating load).

Rod End-Bores	Rod Ends			Spherical Bearings			
	GS min <sup>-1</sup>	GT** min <sup>-1</sup>	GT-R** min <sup>-1</sup>	S min <sup>-1</sup>	S...D** min <sup>-1</sup>	G min <sup>-1</sup>	G...D** min <sup>-1</sup>
5	1200	600	600	900	600	-	600
6	1500	530	530	760	530	1500	530
8	1200	420	420	620	420	1200	420
10	1000	350	350	500	350	1000	350
12	860	300	300	450	300	860	300
14	750	260	260	360	260	750	260
16	660	230	230	350	230	660	230
18	600	210	210	320	210	600	210
20	540	190	190	280	190	540	190
22	500	170	170	250	170	500	170
25	440	150	150	230	150	440	150
30	370	130	130	370	130	370	130
35	330	110	110	330	110	330	110
40	290	100	100	290	150	290	100

\* Sizes 2, 3 and 4 mm and GS external thread 5 mm are not suitable for higher speeds.

\*\* Speeds stated are for short-term rotary operation (not suitable for permanent rotary operation).

### Tolerances for Rod Ends and Spherical Bearings

#### Ball Bores

Series K:

Bore tolerance H7.

Matching shaft: g6 recommended.

Series E:

Bore tolerance 0/-8μ.

Matching shaft: g7 recommended.

#### Outer diameter of the spherical bearing

Series K: Tolerance h6.

Housing tolerance J7 recommended.

Series E: Tolerance h5.

Housing tolerance JS7 recommended.

**Thread** Metric thread according to DIN 13. All external thread are rolled for high strength.

### Lubrication

All rod ends and spherical bearings, which are not declared as maintenance-free, must be lubricated. An initial lubrication before use is required. But maintenance-free parts must not be lubricated.

**We recommend the following lubrication intervals:**

- If the system runs at full speed during the phase of start-up wear, i.e., during the first 5 operating days, running 8 hours per day, and in a dirty operating environment, i.e., under unfavourable ambient conditions, the unit should be lubricated twice a day.

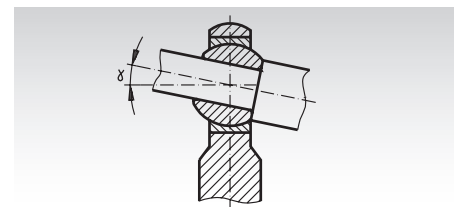
- With oscillating motion once to twice a week.

- With higher temperatures possibly once or twice a day.

We recommend high quality grease with Molykote or graphite ingredient.

### Tilting Angle

**Max. tilting angle:** the tilting angles stated in the table relate to the maximum permissible misalignment of the shaft axis towards the bearing



## Thermoplastic Rod Ends igubal® KCRM and KCLM similar to DIN 12240-4 (DIN 648) series K, Internal Thread

**Material spherical ball:** iglidur® W300, yellowish.

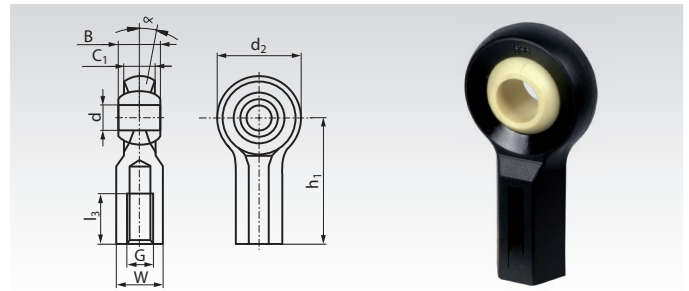
**Material housing:** igumid G, black.



- Maintenance-free, silent running and anti-vibrating.
  - High strength at very low weight.
  - Resistant against corrosion and many chemicals.
  - Electrical and thermal isolating.
  - The counter part must rotate inside the bore of the spherical ball.
- With a metal bolt, a sliding speed up to 30 m/min. may be possible.  
The spherical ball may only compensate shaft misalignment.

Temperature range: -30° to +80°C.

**IR** = Internal Right-hand thread. **IL** = Internal Left-hand thread.



Ordering Details: e.g.: Product No. 632 556 05, Rod End igubal KCRM, 5mm

Product No. KCRM IR	Product No. KCLM IL	dE10 mm	B mm	C1 mm	d2 mm	h1 mm	l3 mm	Thread		Tilting angle $\alpha$ °	Load Rating*		Weight g
								G mm	W mm		radial static N	axial static N	
632 556 05	632 557 05	5	8	6	18	27	12	M5	SW9	43	600	90	4,0
632 556 06	632 557 06	6	9	7	20	30	13,5	M6	SW10	40	700	150	4,2
632 556 08	632 557 08	8	12	9	24	36	17	M8	SW13	35	1050	250	7,6
632 556 10	632 557 10	10	14	10,5	30	43	22	M10	SW15	35	1500	400	12,8
632 556 10F	632 557 10F	10	14	10,5	30	43	21	M10x1,25	SW15	35	1500	400	12,8
632 556 12	632 557 12	12	16	12	34	50	25	M12	SW17	35	1780	375	19
632 556 12F	632 557 12F	12	16	12	34	50	25	M12x1,25	SW17	35	1780	375	19
632 556 16	632 557 16	16	21	15	42	64	30	M16	SW20	35	1900	400	34
632 556 16F	632 557 16F	16	21	15	42	64	30	M16x1,5	SW20	35	1900	400	34
632 556 20	632 557 20	20	25	18	50	77	35	M20	SW24	35	2275	200	55
632 556 20F	632 557 20F	20	25	18	50	77	35	M20x1,5	SW24	35	2275	200	55

\* At short term, the radial load may be twice as high.

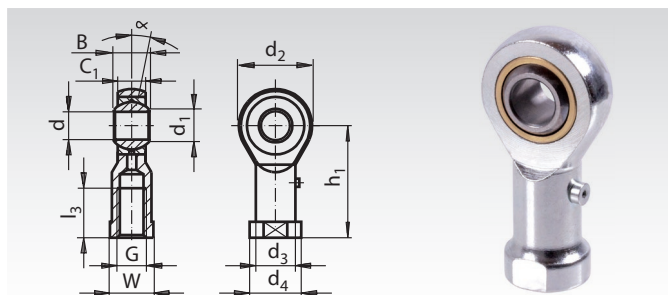
*Other versions or sizes on request.*

## Heavy-Duty Rod Ends GS DIN 12240-4 (DIN 648) Series K, Internal Thread

**Material internal ring:** Roller bearing steel 100Cr6, hardened HRC 62 ±1, ground and polished.  
**Material outer part:** Bores 6-12 mm, free cutting steel, turned, bores 14-30 mm C22 forged, zinc-plated.  
**Material bearing race:** Special brass CuZn40Al1.  
**Normal bearing clearance:** 15 - 45 μ at a measuring load of 100 N.  
 Sliding speeds up to 60 m/min. Steel on high-duty bronze, thus high radial and axial alternating loads.  
 Load tables pages 459 - 460.

**Initial lubrication before use is required!**

IR = Internal-Right hand thread. IL = Internal Left-hand thread.



Ordering Details: e.g.: Product No. 632 002 00, Rod End GS, IR

Product No. IR	Product No. IL	dH7 mm	B-0.1 mm	C1±0.2 mm	d1 mm	d2 mm	d3 mm	d4 mm	h1 mm	l3-1.0 mm	Thread ISO DIN 13 6H G mm	W mm	Tilting angle α °	Weight g
632 002 00*	632 102 00*	2	4,5	3,6	2,6	9	3,8	4,5	16	7	M2	4	16	3
632 003 00*	632 103 00*	3	6	4,5	5,1	14	5	6,5	21	10	M3	5,5	14	6
632 005 00	632 105 00	5	8	6	7,7	18	9	11	27	10	M5	9	13	86
632 006 00	632 106 00	6	9	6,75	8,9	20	10	13	30	12	M6	11	13	27
632 008 00	632 108 00	8	12	9	10,4	24	12,5	16	36	16	M8	13	14	46
632 010 00	632 110 00	10	14	10,5	12,9	28	15	19	43	20	M10	17	13	76
632 012 00	632 112 00	12	16	12	15,4	32	17,5	22	50	22	M12	19	13	115
632 014 00	632 114 00	14	19	13,5	16,8	36	20	25	57	25	M14	22	16	170
632 016 00	632 116 00	16	21	15	19,3	42	22	27	64	28	M16	22	15	230
632 018 00	632 118 00	18	23	16,5	21,8	46	25	31	71	32	M18x1,5	27	15	320
632 020 00	632 120 00	20	25	18	24,3	50	27,5	34	77	33	M20x1,5	32	14	415
632 022 00	632 122 00	22	28	20	25,8	54	30	37	84	37	M22x1,5	32	15	540
632 025 00	632 125 00	25	31	22	29,6	60	33,5	42	94	42	M24x2	36	15	750
632 030 00	632 130 00	30	37	25	34,8	70	40	51	110	51	M30x2	41	17	1130
632 035 00	632 135 00	35	43	28	37,7	80	46	58	125	56	M36x2	50	19	1600
632 040 00	632 140 00	40	49	35	44,2	90	57	69	142	60	M42x2	60	16	2770

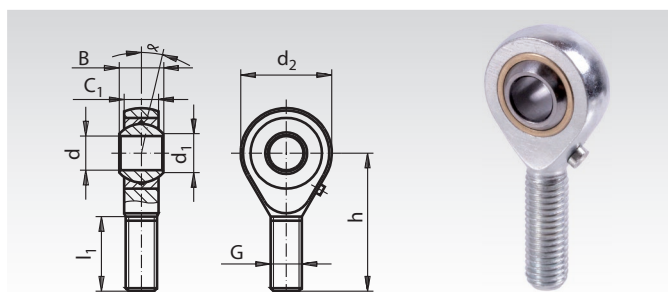
\* Up to size 3 without grease nipple.

## Heavy-Duty Rod Ends GS DIN 12240-4 (DIN 648) Series K, External Thread

**Material internal ring:** Roller bearing steel 100Cr6, hardened HRC 62 ±1, ground and polished.  
**Material outer part:** Bores 6-12 mm, free cutting steel, turned, bores 14-30 mm C22 forged, zinc-plated.  
**Material bearing race:** Special brass CuZn40Al1.  
**Normal bearing clearance:** 15 - 45 μ at a measuring load of 100 N.  
 Sliding speeds up to 60 m/min. Steel on high-duty bronze, thus high radial and axial alternating loads.  
 Load tables pages 459 - 460.

**Initial lubrication before use is required!**

AR = External Right-hand thread. AL = External Left-hand thread.



Ordering Details: e.g.: Product No. 632 202 00, Rod End GS, AR

Product No. AR	Product No. AL	dH7 mm	B-0.1 mm	C1±0.2 mm	d1 mm	d2 mm	h mm	l1-1.0 mm	Thread ISO DIN 13 6H G mm	Tilting angle α °	Weight g
632 202 00*	632 302 00*	2	4,5	3,6	2,6	9	20	12	M2	16	3
632 203 00*	632 303 00*	3	6	4,5	5,1	14	26	15	M3	14	6
632 205 00*	632 305 00*	5	8	6	7,7	18	33	20	M5	13	13
632 206 00	632 306 00	6	9	6,75	8,9	20	36	22	M6	13	20
632 208 00	632 308 00	8	12	9	10,4	24	42	25	M8	14	33
632 210 00	632 310 00	10	14	10,5	12,9	28	48	29	M10	13	56
632 212 00	632 312 00	12	16	12	15,4	32	54	33	M12	13	87
632 214 00	632 314 00	14	19	13,5	16,8	36	60	36	M14	16	129
632 216 00	632 316 00	16	21	15	19,3	42	66	40	M16	15	189
632 218 00	632 318 00	18	23	16,5	21,8	46	72	44	M18x1,5	15	267
632 220 00	632 320 00	20	25	18	24,3	50	78	47	M20x1,5	14	348
632 222 00	632 322 00	22	28	20	25,8	54	84	51	M22x1,5	15	443
632 225 00	632 325 00	25	31	22	29,6	60	94	57	M24x2	15	600
632 230 00	632 330 00	30	37	25	34,8	70	110	71	M30x2	17	1030
632 235 00	632 335 00	35	43	28	37,7	80	125	73	M36x2	19	1600
632 240 00	632 340 00	40	49	35	44,2	90	142	78	M42x2	16	2550

\* Up to size 5 without grease nipple.

## Heavy-Duty Rod Ends GT DIN 12240-4 (DIN 648) Series K, Maintenance Free, Internal Thread

**Material internal ring:** Roller bearing steel 100Cr6, hardened HRC 62 ±1, ground and polished.

**Material outer part:** Bores 6-12 mm, free cutting steel, turned, bores 14-30 mm C22 forged, zinc-plated.

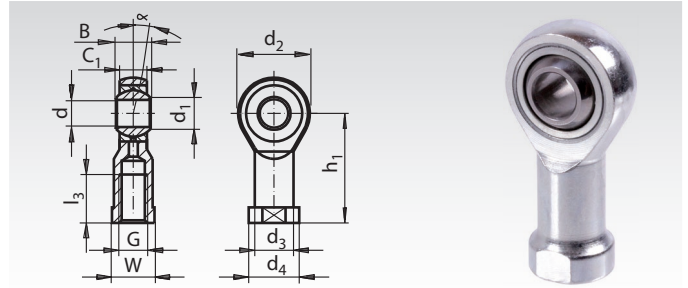
**Material bearing race:** Free cutting steel with PTFE-lining.

For high, radial and axial alternating loads.

Sliding speeds up to 10 m/min.

Load tables pages 459 - 460.

IR = Internal Right-hand thread. IL = Internal Left-hand thread.



Ordering Details: e.g.: Product No. 632 604 00, Rod End GT, IR

Product No. IR	Product No. IL	d <sup>H7</sup> mm	B <sup>-0.1</sup> mm	C <sub>1</sub> <sup>±0.2</sup> mm	d <sub>1</sub> mm	d <sub>2</sub> mm	d <sub>3</sub> mm	d <sub>4</sub> mm	h <sub>1</sub> mm	l <sub>3</sub> <sup>-1.0</sup> mm	Thread ISO DIN 13 6H G mm	W mm	Tilting angle α °	Weight g
632 604 00	632 704 00	4	7	5,25	6,5	14	7,8	9,5	24	12	M4	8	14	11
632 605 00	632 705 00	5	8	6	7,7	18	9	11	27	10	M5	9	13	18
632 606 00	632 706 00	6	9	6,75	8,9	20	10	13	30	12	M6	11	13	27
632 608 00	632 708 00	8	12	9	10,4	24	12,5	16	36	16	M8	13	14	46
632 610 00	632 710 00	10	14	10,5	12,9	28	15	19	43	20	M10	17	13	76
632 612 00	632 712 00	12	16	12	15,4	32	17,5	22	50	22	M12	19	13	115
632 614 00	632 714 00	14	19	13,5	16,8	36	20	25	57	25	M14	22	16	170
632 616 00	632 716 00	16	21	15	19,3	42	22	27	64	28	M16	22	15	230
632 618 00	632 718 00	18	23	16,5	21,8	46	25	31	71	32	M18x1,5	27	15	320
632 620 00	632 720 00	20	25	18	24,3	50	27,5	34	77	33	M20x1,5	32	14	415
632 622 00	632 722 00	22	28	20	25,8	54	30	37	84	37	M22x1,5	32	15	540
632 625 00	632 725 00	25	31	22	29,6	60	33,5	42	94	42	M24x2	36	15	750
632 630 00	632 730 00	30	37	25	34,8	70	40	51	110	51	M30x2	41	17	1130
632 635 00	632 735 00	35	43	28	37,7	80	46	58	125	56	M36x2	50	19	1600
632 640 00	632 740 00	40	49	35	44,2	90	57	69	142	60	M42x2	60	16	2770

## Heavy-Duty Rod Ends GT DIN 12240-4 (DIN 648) Series K, Maintenance Free, External Thread

**Material internal ring:** Roller bearing steel 100Cr6, hardened HRC 62 ±1, ground and polished.

**Material outer part:** Bores 6-12 mm, free cutting steel, turned, bores 14-30 mm C22 forged, zinc-plated.

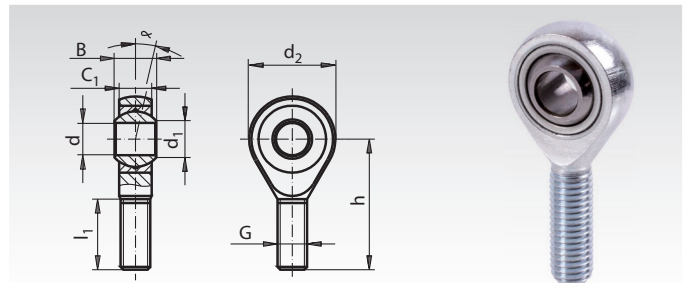
**Material bearing race:** Free cutting steel with PTFE-lining.

For high, radial and axial alternating loads.

Sliding speeds up to 10 m/min.

Load tables pages 459 - 460.

AR = External Right-hand thread. AL = External Left-hand thread.



Ordering Details: e.g.: Product No. 632 804 00, Rod End GT, AR

Product No. AR	Product No. AL	d <sup>H7</sup> mm	B <sup>-0.1</sup> mm	C <sub>1</sub> <sup>±0.2</sup> mm	d <sub>1</sub> mm	d <sub>2</sub> mm	h mm	l <sub>1</sub> <sup>-1.0</sup> mm	Thread ISO DIN 13 6H G mm	Tilting angle α °	Weight g
632 804 00	632 904 00	4	7	5,25	6,5	14	30	19	M4	14	9
632 805 00	632 905 00	5	8	6	7,7	18	33	20	M5	13	13
632 806 00	632 906 00	6	9	6,75	8,9	20	36	22	M6	13	20
632 808 00	632 908 00	8	12	9	10,4	24	42	25	M8	14	33
632 810 00	632 910 00	10	14	10,5	12,9	28	48	29	M10	13	56
632 812 00	632 912 00	12	16	12	15,4	32	54	33	M12	13	87
632 814 00	632 914 00	14	19	13,5	16,8	36	60	38	M14	16	129
632 816 00	632 916 00	16	21	15	19,3	42	66	40	M16	15	189
632 818 00	632 918 00	18	23	16,5	21,8	46	72	44	M18x1,5	15	267
632 820 00	632 920 00	20	25	18	24,3	50	78	47	M20x1,5	14	348
632 822 00	632 922 00	22	28	20	25,8	54	84	51	M22x1,5	15	443
632 825 00	632 925 00	25	31	22	29,6	60	94	57	M24x2	15	600
632 830 00	632 930 00	30	37	25	34,8	70	110	71	M30x2	17	1030
632 835 00	632 935 00	35	43	28	37,7	80	125	73	M36x2	19	1600
632 840 00	632 940 00	40	49	35	44,2	90	142	78	M42x2	16	2570

## Heavy-Duty Rod Ends GT-R DIN 12240-4 (DIN 648) Series K, Maintenance Free, Stainless Steel, Internal Thread

### Material:

Rod End: Stainless steel 1.4057.  
(forged piece)



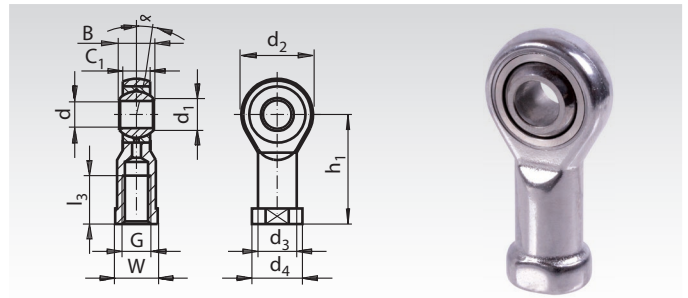
Thread rolled, surface clear stained.

Ball: Stainless steel 1.4034, hardened, all sides ground, bearing surface super finish.

Bearing Shell: Stainless steel 1.4571 with PTFE-lining.

Tolerances and load tables page 459 - 460.

IR = Internal Right-hand thread. IL = Internal Left-hand thread.



Ordering Details: e.g.: Product No. 632 996 05, Rod End GT-R, IR Stainless

Product No. IR	Product No. IL	d <sup>H7</sup> mm	B <sup>-0.1</sup> mm	C <sub>1</sub> <sup>±0.2</sup> mm	d <sub>1</sub> mm	d <sub>2</sub> mm	d <sub>3</sub> mm	d <sub>4</sub> mm	h <sub>1</sub> mm	l <sub>3</sub> <sup>-1.0</sup> mm	Thread ISO DIN 13 6H G mm	W mm	Tilting angle α °	Weight g
632 996 05	632 997 05	5	8	6	7,7	18	9	11	27	10	M5	9	13	18
632 996 06	632 997 06	6	9	6,75	8,9	20	10	13	30	12	M6	11	13	27
632 996 08	632 997 08	8	12	9	10,4	24	12,5	16	36	16	M8	13	14	46
632 996 10	632 997 10	10	14	10,5	12,9	28	15	19	43	20	M10	17	13	76
632 996 12	632 997 12	12	16	12	15,4	32	17,5	22	50	22	M12	19	13	115
632 996 14	632 997 14	14	19	13,5	16,8	36	20	25	57	25	M14	22	16	170
632 996 16	632 997 16	16	21	15	19,3	42	22	27	64	28	M16	22	15	230
632 996 18	632 997 18	18	23	16,5	21,8	46	25	31	71	32	M18x1,5	27	15	320
632 996 20	632 997 20	20	25	18	24,3	50	27,5	34	77	33	M20x1,5	32	14	415
632 996 22	632 997 22	22	28	20	25,8	54	30	37	84	37	M22x1,5	32	15	540
632 996 25	632 997 25	25	31	22	29,6	60	33,5	42	94	42	M24x2	36	15	750
632 996 30	632 997 30	30	37	25	34,8	70	40	50	110	51	M30x2	41	17	1130
632 996 35	632 997 35	35	43	28	37,7	80	46	58	125	56	M36x2	50	19	1600
632 996 40	632 997 40	40	49	35	44,2	90	57	69	142	60	M42x2	60	16	2770

## Heavy-Duty Rod Ends GT-R DIN 12240-4 (DIN 648) Series K, Maintenance Free, Stainless Steel, External Thread

### Material:

Rod End: Stainless steel 1.4057.  
(forged piece)



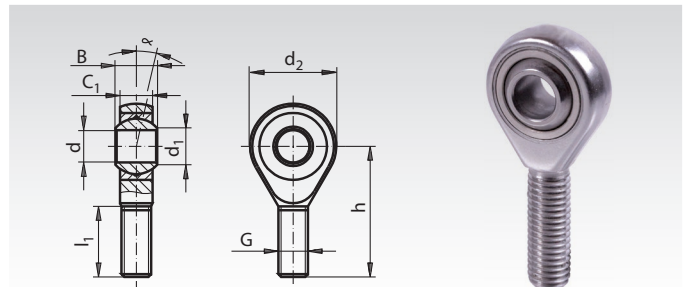
Thread rolled, surface clear stained.

Ball: Stainless steel 1.4034, hardened, all sides ground, bearing surface super finish.

Bearing Shell: Stainless steel 1.4571 with PTFE-lining.

Tolerances and load tables page 459 - 460.

AR = External Right-hand thread. AL = External Left-hand thread.



Ordering Details: e.g.: Product No. 632 998 05, Rod End GT-R, AR Stainless

Product No. AR	Product No. AL	d <sup>H7</sup> mm	B <sup>-0.1</sup> mm	C <sub>1</sub> <sup>±0.2</sup> mm	d <sub>1</sub> mm	d <sub>2</sub> mm	h mm	l <sub>1</sub> <sup>-1.0</sup> mm	Thread ISO DIN 13 6H G mm	Tilting angle α °	Weight g
632 998 05	632 999 05	5	8	6	7,7	18	33	20	M5	13	13
632 998 06	632 999 06	6	9	6,75	8,9	20	36	22	M6	13	20
632 998 08	632 999 08	8	12	9	10,4	24	42	25	M8	14	33
632 998 10	632 999 10	10	14	10,5	12,9	28	48	29	M10	13	56
632 998 12	632 999 12	12	16	12	15,4	32	54	33	M12	13	87
632 998 14	632 999 14	14	19	13,5	16,8	36	60	38	M14	16	129
632 998 16	632 999 16	16	21	15	19,3	42	66	40	M16	15	189
632 998 18	632 999 18	18	23	16,5	21,8	46	72	44	M18x1,5	15	267
632 998 20	632 999 20	20	25	18	24,3	50	78	47	M20x1,5	14	348
632 998 22	632 999 22	22	28	20	25,8	54	84	51	M22x1,5	15	443
632 998 25	632 999 25	25	31	22	29,6	60	94	57	M24x2	15	600
632 998 30	632 999 30	30	37	25	34,8	70	110	71	M30x2	17	1030
632 998 35	632 999 35	35	43	28	37,7	80	125	73	M36x2	19	1600
632 998 40	632 999 40	40	49	35	44,2	90	142	78	M42x2	16	2570

Threaded bars with metric thread and fine thread page 510.

Loctite thread locking and bonding products page 811.

## Rod Ends GEW DIN 12240-4 (DIN 648) Series E, Maintenance Free, Internal Thread

### Material:

Housing: up to size 10 free cutting steel 9SMnPb28K, turned,  
from size 12 heat-treated steel C45, forged.

Bearing: maintenance-free steel/PTFE bearing.

Tribological pairing: hard chrome - steel/PTFE

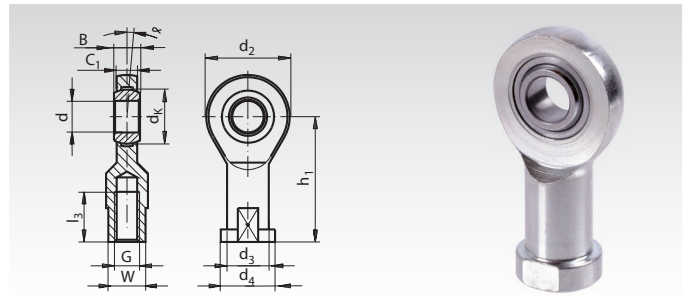
Tolerances and load tables page 459 - 460.

Application: For pivoting motions (alternating load).

Not for higher speeds.

IR = Internal Right-hand thread. IL = Internal Left-hand thread.

Ordering Details: e.g.: Product No. 634 106 00, Rod End GEW, IR



Product No. IR	Product No. IL	d mm	B mm	C <sub>1</sub> mm	d <sub>2</sub> mm	d <sub>3</sub> mm	d <sub>4</sub> mm	d <sub>K</sub> mm	h <sub>1</sub> mm	l <sub>3</sub> mm	Thread ISO DIN 13 6H G mm	W mm	Tilting angle α °	Weight g
634 106 00	634 306 00	6	6	4,4	20	10	13	10	30	12	M6	11	13	21
634 108 00	634 308 00	8	8	6	24	12,5	16	13	36	16	M8	14	15	38
634 110 00	634 310 00	10	9	7	28	15	19	16	43	20	M10	17	12	60
634 112 00	634 312 00	12	10	8	34	17,5	22	18	50	22	M12	19	11	96
634 115 00	634 315 00	15	12	10	40	21	26	22	61	29	M14	22	8	180
634 116 00	634 316 00	16	14	11	46	24	30	25	67	33	M16	27	10	220
634 117 00	634 317 00	17	14	11	46	24	30	25	67	33	M16	27	10	220
634 120 00	634 320 00	20	16	13	53	27,5	35	29	77	38	M20x1,5	32	9	350
634 125 00	634 325 00	25	20	17	64	33,5	42	35,5	94	48	M24x2	36	7	640
634 130 00	634 330 00	30	22	19	73	40	50	40,7	110	56	M30x2	41	6	930
634 135 00	634 335 00	35	25	21	82	47	58	47	125	60	M36x3	50	6	1300
634 140 00	634 340 00	40	28	23	92	52	65	53	142	65	M39x3	55	7	2000
634 145 00	634 345 00	45	32	27	102	58	70	60	145	65	M42x3	60	7	2500
634 150 00	634 350 00	50	35	30	112	62	75	66	160	68	M45x3	65	6	3500
634 160 00	634 360 00	60	44	38	135	70	88	80	175	70	M52x3	75	6	5550
634 170 00	634 370 00	70	49	42	160	80	98	92	200	80	M56x4	85	6	8600
634 180 00	634 380 00	80	55	47	180	95	110	105	235	85	M64x4	100	6	12000

## Rod Ends GAW DIN 12240-4 (DIN 648) Series E, Maintenance Free, External Thread

### Material:

Housing: up to size 10 Free cutting steel 9SMnPb28K, turned,  
from size 12 heat-treated steel C45, forged.

Bearing: maintenance-free steel/PTFE bearing.

Tribological pairing: hard chrome - steel/PTFE.

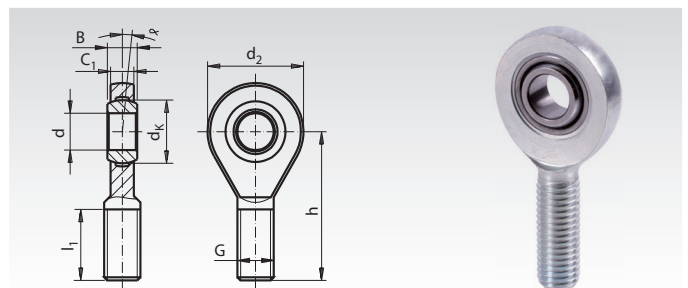
Tolerances and load tables page 459 - 460.

Application: For pivoting motions (alternating load).

Not for higher speeds.

AR = External Right-hand thread. AL = External Left-hand thread.

Ordering Details: e.g.: Product No. 634 606 00, Rod End GAW, ER



Product No. AR	Product No. AL	d mm	B mm	C <sub>1</sub> mm	d <sub>2</sub> mm	d <sub>K</sub> mm	h mm	l <sub>1</sub> mm	Thread ISO DIN 13 6H G mm	Tilting angle α °	Weight g
634 606 00	634 806 00	6	6	4,4	20	10	36	18	M6	13	16
634 608 00	634 808 00	8	8	6	24	13	42	22	M8	15	28
634 610 00	634 810 00	10	9	7	28	16	48	26	M10	12	50
634 612 00	634 812 00	12	10	8	34	18	54	28	M12	11	86
634 615 00	634 815 00	15	12	10	40	22	63	34	M14	8	140
634 616 00	634 816 00	16	14	11	46	25	69	36	M16	10	190
634 617 00	634 817 00	17	14	11	46	25	69	36	M16	10	190
634 620 00	634 820 00	20	16	13	53	29	78	43	M20x1,5	9	320
634 625 00	634 825 00	25	20	17	64	35,5	94	53	M24x2	7	560
634 630 00	634 830 00	30	22	19	73	40,7	110	65	M30x2	6	890
634 635 00	634 835 00	35	25	21	82	47	140	82	M36x3	6	1400
634 640 00	634 840 00	40	28	23	92	53	150	86	M39x3	7	1800
634 645 00	634 845 00	45	32	27	102	60	163	94	M42x3	7	2610
634 650 00	634 850 00	50	35	30	112	66	185	107	M45x3	6	3450
634 660 00	634 860 00	60	44	38	135	80	210	115	M52x3	6	5900
634 670 00	634 870 00	70	49	42	160	92	235	125	M56x4	6	8200
634 680 00	634 880 00	80	55	47	180	105	270	140	M64x4	6	12000

Threaded bars with metric thread and fine thread page 510.

Loctite thread locking and bonding products page 811.

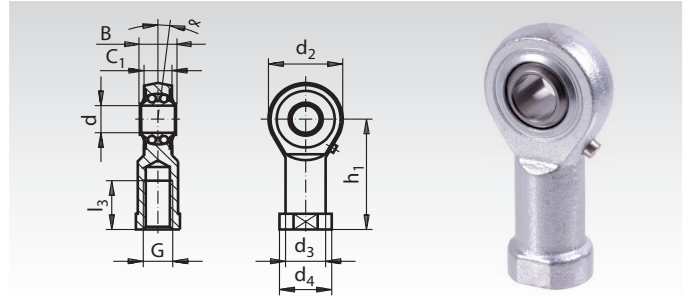


## Heavy-Duty Rod Ends BR with Spherical Bearing DIN 12240-4 (DIN 648) Series K, Internal Thread

**Material rod end:** Alloyed, case-hardened steel (forged piece) quenched and tempered, bearing race hardened, ground and lapped. Thread rolled/cut, surface zinc-plated and chromatised.  
**Material inner ring:** Bearing steel hardened, precisely honed.  
**Lubricant:** Calcium-complex grease (-20°C to +120°C).  
 If required special lubricants.

Rod end with low friction ball bearing, long-term lubricated, sealed with cover plates, with high load rating.

**IR** = Internal Right-hand thread. **IL** = Internal Left-hand thread.



Ordering Details: e.g.: Product No. 632 406 00, Rod End BR, IR

Product No. IR	Product No. IL	d <sup>H7</sup> mm	B <sup>-0,1</sup> mm	C <sub>1</sub> mm	d <sub>2</sub> mm	d <sub>3</sub> mm	d <sub>4</sub> mm	h <sub>1</sub> mm	l <sub>3</sub> mm	G mm	α °	Load Rating [kN]		Calculation Factors*		Speed n <sub>max</sub> min <sup>-1</sup>	Weight g
												dynam. C	static C <sub>0</sub>	Y	Y <sub>0</sub>		
632 406 00	632 456 00	6	9	6,75	20	10	13	30	12	M6	8	2,8	0,65	2,09	2,19	1350	23
632 408 00	632 458 00	8	12	9	24	12,5	16	36	16	M8	8,5	4,0	1,0	1,8	1,89	1300	41
632 410 00	632 460 00	10	14	10,5	28	15	19	43	20	M10	8	4,5	1,5	1,9	1,81	1225	66
632 412 00	632 462 00	12	16	12	32	17,5	22	50	22	M12	7,5	5,0	1,8	1,74	1,82	1125	100
632 414 00	632 464 00	14	19	13,5	36	20	25	57	25	M14	6	5,6	2,0	2,36	2,48	1025	150
632 416 00	632 466 00	16	21	15	42	22	27	64	28	M16	8	6,3	2,4	2,24	2,35	975	199
632 418 00	632 468 00	18	23	16,5	46	25	31	71	32	M18x1,5	8,5	7,1	2,9	2,21	2,31	900	278
632 420 00	632 470 00	20	25	18	50	27,5	34	77	33	M20x1,5	7	7,9	3,5	2,46	2,58	825	352
632 422 00	632 472 00	22	28	20	54	30	38	84	37	M22x1,5	8	9,3	4,0	2,35	2,24	725	470
632 425 00	632 475 00	25	31	22	64	30	35	94	42	M24x2	5	11,0	5,7	2,02	2,12	600	583
632 430 00	632 480 00	30	37	25	70	40	50	110	51	M30x2	7,5	14,2	7,5	2,24	2,35	450	925

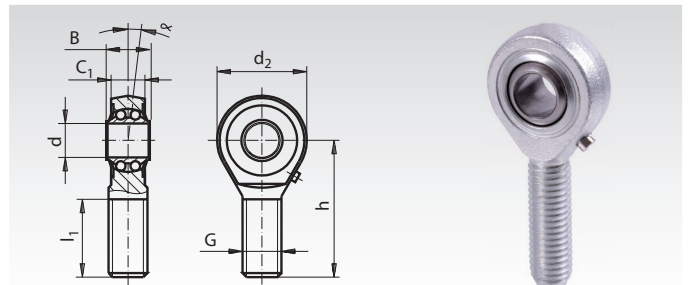
\* Calculation see page 468.

## Heavy-Duty Rod Ends BR with Spherical Bearing DIN 12240-4 (DIN 648) Series K, External Thread

**Material rod end:** Alloyed, case-hardened steel (forged piece) quenched and tempered, bearing race hardened, ground and lapped. Thread rolled/cut, surface zinc-plated and chromatised.  
**Material inner ring:** Bearing steel hardened, precisely honed.  
**Lubricant:** Calcium-complex grease (-20°C to +120°C).  
 Special grease if required.

Basically without friction, long-term lubrication, sealed with cover plates, offer small dimensions, large pivoting angle and high load rating.

**AR** = External Right-hand thread. **AL** = External Left-hand thread.



Ordering Details: e.g.: Product No. 632 506 00, Rod End BR, AR

Product No. AR	Product No. AL	d <sup>H7</sup> mm	B <sup>-0,1</sup> mm	C <sub>1</sub> mm	d <sub>2</sub> mm	h mm	l <sub>1</sub> mm	G mm	α °	Load Rating [kN]		Calculation Factors*		Speed n <sub>max</sub> min <sup>-1</sup>	Weight g
										dynam. C	static C <sub>0</sub>	Y	Y <sub>0</sub>		
632 506 00	632 556 00	6	9	6,75	20	36	22	M6	8	2,8	0,65	2,09	2,19	1350	18
632 508 00	632 558 00	8	12	9	24	42	25	M8	8,5	4,0	1,0	1,8	1,89	1300	33
632 510 00	632 560 00	10	14	10,5	28	48	29	M10	8	4,5	1,5	1,9	1,81	1225	57
632 512 00	632 562 00	12	16	12	32	54	33	M12	7,5	5,0	1,8	1,74	1,82	1125	81
632 514 00	632 564 00	14	19	13,5	36	60	36	M14	6	5,6	2,0	2,36	2,48	1025	122
632 516 00	632 566 00	16	21	15	42	66	40	M16	8	6,3	2,4	2,24	2,35	975	166
632 518 00	632 568 00	18	23	16,5	46	72	44	M18x1,5	8,5	7,1	2,9	2,21	2,31	900	241
632 520 00	632 570 00	20	25	18	50	78	47	M20x1,5	7	7,9	3,5	2,46	2,58	825	303
632 522 00	632 572 00	22	28	20	54	84	51	M22x1,5	8	9,3	4,0	2,35	2,24	725	391
632 525 00	632 575 00	25	31	22	64	94	57	M24x2	5	11,0	5,7	2,02	2,12	600	598
632 530 00	632 580 00	30	37	25	70	110	66	M30x2	7,5	14,2	7,5	2,24	2,35	450	825

\* Calculation see page 468.

Threaded bars with metric thread and fine thread page 510.  
 Loctite thread locking and bonding products page 811.

## Heavy-Duty Rod Ends BR-R with Spherical Bearing DIN 12240-4 Series K, Stainless Steel, Internal Thread

**Material rod end:** Stainless steel, forged, hardened.  
Bearing race superfinished.

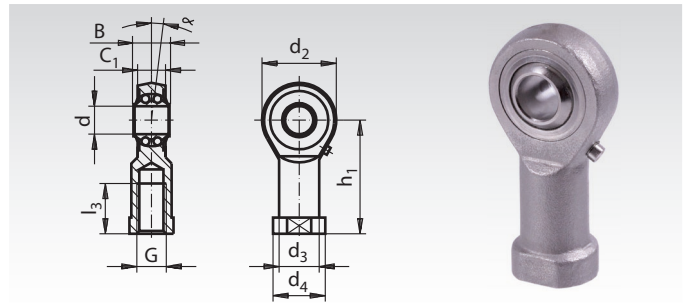


**Material inner ring and rollers:** Stainless steel, hardened, superfinished.

**Lubricant:** Aluminium-complex-soap-grease, approval according to USDA H1, -45°C to +120°C. If required special lubricants.

Basically without friction, long-term lubrication, sealed with cover plates, offer small dimensions, large pivoting angle and high load rating.

**IR** = Internal Right-hand thread. **IL** = Internal Left-hand thread.



Ordering Details: e.g.: Product No. 632 994 06, Rod End BR-R, IR

Product No. IR	Product No. IL	d <sup>H7</sup> mm	B <sup>-0,1</sup> mm	C <sub>1</sub> mm	d <sub>2</sub> mm	d <sub>3</sub> mm	d <sub>4</sub> mm	h <sub>1</sub> mm	l <sub>3</sub> mm	G mm	α °	Load Rating [kN]		Calculation Factors*		Speed n <sub>max</sub> min <sup>-1</sup>	Weight g
												dynam. C	static C <sub>0</sub>	Y	Y <sub>0</sub>		
632 994 06	632 994 56	6	9	6,75	20	10	13	30	12	M6	8	1,9	0,5	2,09	2,19	1350	24
632 994 08	632 994 58	8	12	9	24	12,5	16	36	16	M8	8,5	2,8	0,7	1,8	1,89	1300	44
632 994 10	632 994 60	10	14	10,5	28	15	19	43	20	M10	8	3,1	1,0	1,9	1,81	1225	72
632 994 12	632 994 62	12	16	12	32	17,5	22	50	22	M12	7,5	3,5	1,3	1,74	1,82	1125	107
632 994 16	632 994 66	16	21	15	42	22	27	64	28	M16	8	4,3	1,6	2,24	2,35	975	224
632 994 20	632 994 70	20	25	18	50	27,5	34	77	33	M20x1,5	7	5,4	2,3	2,46	2,58	825	367

\* Calculation see page 468.

## Heavy-Duty Rod Ends BR with Spherical Bearing DIN 12240-4 Series K, Stainless Steel, External Thread

**Material rod end:** Stainless steel, forged, hardened.  
Bearing race superfinished, thread rolled.

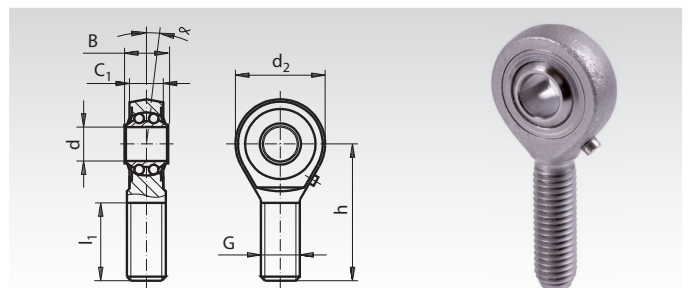


**Material inner ring and rollers:** Stainless steel, hardened, superfinished

**Lubricant:** Aluminium-complex-soap-grease, approval according to USDA H1, -45°C to +120°C. If required special lubricants.

Basically without friction, long-term lubrication, sealed with cover plates, offer small dimensions, large pivoting angle and high load rating.

**AR** = External Right-hand thread. **AL** = External Left-hand thread.



Ordering Details: e.g.: Product No. 632 995 06, Rod End BR-R, AR

Product No. AR	Product No. AL	d <sup>H7</sup> mm	B <sup>-0,1</sup> mm	C <sub>1</sub> mm	d <sub>2</sub> mm	h mm	l <sub>1</sub> mm	G mm	α °	Load Rating [kN]		Calculation Factors*		Speed n <sub>max</sub> min <sup>-1</sup>	Weight g
										dynam. C	static C <sub>0</sub>	Y	Y <sub>0</sub>		
632 995 06	632 995 56	6	9	6,75	20	36	22	M6	8	1,9	0,5	2,09	2,19	1350	19
632 995 08	632 995 58	8	12	9	24	42	25	M8	8,5	2,8	0,7	1,8	1,89	1300	36
632 995 10	632 995 60	10	14	10,5	28	48	29	M10	8	3,1	1,0	1,9	1,81	1225	60
632 995 12	632 995 62	12	16	12	32	54	33	M12	7,5	3,5	1,3	1,74	1,82	1125	87
632 995 16	632 995 66	16	21	15	42	66	40	M16	8	4,3	1,6	2,24	2,35	975	190
632 995 20	632 995 70	20	25	18	50	78	47	M20x1,5	7	5,4	2,3	2,46	2,58	825	338

\* Calculation see page 468.

Threaded bars with metric thread and Fine thread page 510.  
Loctite thread locking and bonding products page 811.

## Heavy-Duty Rod Ends PF with Integral Spherical Bearing

**Material rod end:** Alloyed, case-hardened steel (forged) quenched and tempered, bearing race hardened, ground and lapped. Thread rolled/cut, surface zinc-plated and chromatised.

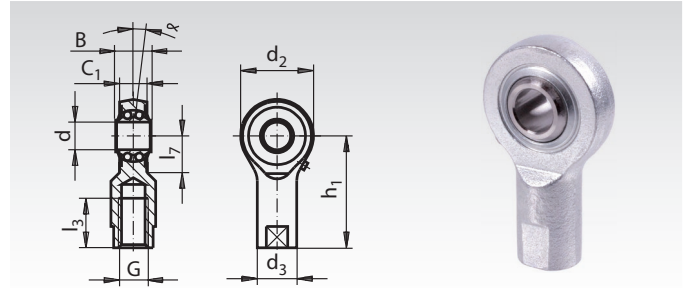
**Material inner ring:** Bearing steel hardened, precisely turned.

**Lubricant:** Calcium-complex grease (-20°C to +120°C). Special grease if required.

Short design with internal thread.

Threaded bars with metric ISO thread and ISO fine thread page 510.

IR = Internal Right-hand thread. IL = Internal Left-hand thread.



Ordering Details: e.g.: Product No. 634 410 00, Rod End PF

Product No. IR	Product No. IL	d <sub>1</sub> <sup>1)</sup> mm	Bh <sup>12</sup> mm	C <sub>1</sub> mm	d <sub>2</sub> mm	d <sub>3</sub> mm	h <sub>1</sub> mm	l <sub>3</sub> mm	l <sub>7</sub> mm	G mm	α °	Bearing loads [kN]		Calculation-Factors		Speed n <sub>max.</sub>	Weight g
												dynam. C	static C <sub>0</sub>	Y	Y <sub>0</sub>		
634 410 00	634 460 00	10	13	9	30	15	38	17	14,5	M8	7	2,6	1,0	1,90	1,81	1225	63
634 415 00	634 465 00	15	16,5	12	40	19	51	24	20	M12	7	5,0	1,9	2,30	2,41	1025	143
634 420 00	634 470 00	20	20,5	15	48	22	65	32	22	M16	6,5	6,1	3,0	2,34	2,45	850	223

<sup>1)</sup> Tolerance DIN 620.

\* in min<sup>-1</sup>

### Inner Rings - Tolerances DIN 620

Nominal dimension range of the bore d <sub>1</sub> mm		Tolerance in μm	
above	up to	min.	max.
0,6	2,5	-8	+1
2,5	10	-8	+1
10	18	-8	+1
18	30	-9	+1
30	50	-11	+1

### Rough Calculation for Rod Ends/Ball Bearing Type

- β = half the pivoting angle in °
- C = dynamic load rating in N
- C<sub>0</sub> = static load rating in N
- F<sub>a</sub> = axial load in N (F<sub>a</sub> ≤ 0.2 F<sub>r</sub>)
- F<sub>r</sub> = radial load in N
- n = speed or pivoting frequency in min<sup>-1</sup>
- P = dynamic equivalent radial load in N  
(for self-aligning ball bearing P = F<sub>r</sub> + Y · F<sub>a</sub>)  
(for self-aligning roller bearing P = F<sub>r</sub> + 9.5 · F<sub>a</sub>)
- P<sub>0</sub> = Static equivalent radial load in N  
(for self-aligning ball bearing P<sub>0</sub> = F<sub>r</sub> + Y<sub>0</sub> · F<sub>a</sub>)  
(for self-aligning roller bearing P<sub>0</sub> = F<sub>r</sub> + 5 · F<sub>a</sub>)
- Y = axial factor, dynamic
- Y<sub>0</sub> = axial factor, static

#### Nominal Service Life L<sub>n</sub> (n)

Rotating:

$$L_{hrot} = 10^6 \left( \frac{C}{P} \right)^z \frac{1}{60 \cdot n} \text{ [h]}$$

Oscillating:

$$L_{hosz.} = 10^6 \frac{\left( \frac{C}{P \sqrt[3]{\frac{\beta}{90}}} \right)^z}{60 \cdot n} \text{ [h]}$$

z = 3 for self-aligning ball bearing  
z = 3.33 for self-aligning roller bearing

Conditions:

Pivoting angle β ≥ 3°  
For pivoting angle β < 3° we recommend the use of rod ends with slide bearings.

Static load

stationary:

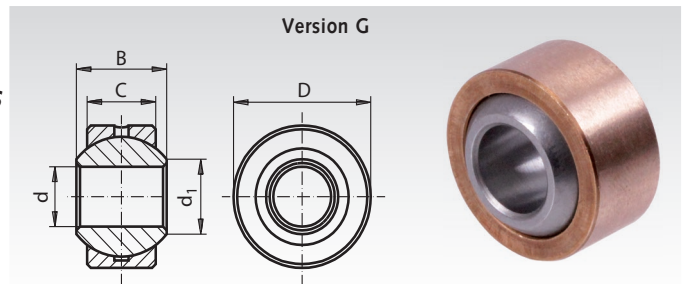
$$P_0 \leq C_0 \text{ [N]}$$

## Spherical Bearings Series K, Steel or Stainless Steel, re-lubricateable

**Material standard:** Inner ring bearing steel 100Cr6, hardened, ground and polished. Bearing shell special bronze CuSn8.

**Material stainless:** Inner ring stainless steel 1.4034, hardened, ground and polished. Bearing shell special bronze CuSn8.

- DIN 12240-1 (DIN 648), series K (wide shape).
- Re-lubricateable (from size 6 with lubrication hole).
- Initial lubrication before use is required.
- Suitable for higher speeds.
- Without additional outer ring.



Ordering Details: e.g.: Product No. 633 205 00, Spherical Bearing, Series K, Steel, re-lubricateable, 5mm

Product No. Standard	Product No. Stainless	d <sup>H7</sup> mm	B <sup>-0,1</sup> mm	C <sup>-0,1</sup> mm	D <sup>-0,012</sup> mm	d <sub>1</sub> mm	α °	Load Rating [kN]		Speed n <sub>max</sub> min <sup>-1</sup>	Weight g
								dynam. C	static C <sub>0</sub>		
633 205 00*	633 992 05	5	8	6	13	7,7	13	3,3	19,8	-	5
633 206 00	633 992 06	6	9	6,75	16	8,9	13	4,3	25,8	1500	9
633 208 00	633 992 08	8	12	9	19	10,4	14	7,1	42,6	1200	16
633 210 00	633 992 10	10	14	10,5	22	12,9	13	10	60	1000	25
633 212 00	633 992 12	12	16	12	26	15,4	13	13,5	80	860	40
633 214 00	633 992 14	14	19	13,5	28	16,8	16	17	103	750	51
633 216 00	633 992 16	16	21	15	32	19,3	15	21,5	129	660	76
633 218 00	633 992 18	18	23	16,5	35	21,8	15	26	157	600	97
633 220 00	633 992 20	20	25	18	40	24,3	14	31,5	189	540	141
633 222 00	633 992 22	22	28	20	42	25,8	15	38	229	500	168
633 225 00	633 992 25	25	31	22	47	29,6	15	47	293	440	231
633 230 00	633 992 30	30	37	25	55	34,8	17	64	416	370	362
633 235 00	633 992 35	35	43	28	62	37,7	19	80	480	330	502
633 240 00	633 992 40	40	49	35	72	44,2	16	116	693	290	832

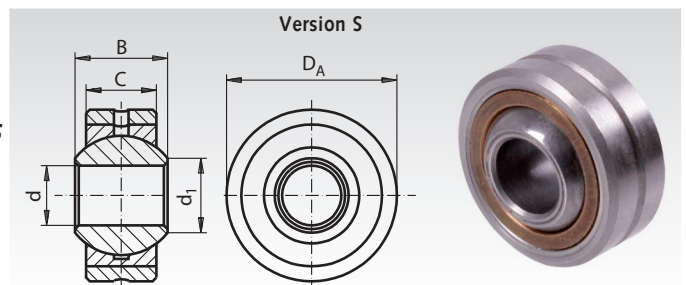
\* Without lubrication bore.

## Spherical Bearings Series K, Steel or Stainless Steel, re-lubricateable, with Outer Ring

**Material standard:** Inner ring bearing steel 100Cr6, hardened, ground and polished. Bearing shell special bronze CuSn8. Outer ring steel 9SMnPb28K, zinc plated.

**Material stainless:** Inner ring stainless steel 1.4034, hardened, ground and polished. Bearing shell special bronze CuSn8. Outer ring stainless steel 1.4305.

- DIN 12240-1 (DIN 648), series K (wide shape).
- Re-lubricateable, initial lubrication before use is required.
- Suitable for higher speeds.
- With additional outer ring.



Ordering Details: e.g.: Product No. 633 005 00, Spherical Bearing, Series K, Steel, re-lubricateable, with Outer Ring, 5mm

Product No. Standard	Product No. Stainless	d <sup>H7</sup> mm	B <sup>-0,1</sup> mm	C <sup>-0,1</sup> mm	D <sub>A</sub> <sup>-0,012</sup> mm	d <sub>1</sub> mm	α °	Load Rating [kN]		Speed n <sub>max</sub> min <sup>-1</sup>	Weight g
								dynam. C	static C <sub>0</sub>		
633 005 00	633 990 05	5	8	6	16	7,7	13	3,3	19,8	1200	8
633 006 00	633 990 06	6	9	6,75	18	8,9	13	4,3	25,8	1500	12
633 008 00	633 990 08	8	12	9	22	10,4	14	7,1	42,6	1200	23
633 010 00	633 990 10	10	14	10,5	26	12,9	13	10	60	1000	38
633 012 00	633 990 12	12	16	12	30	15,4	13	13,5	80	860	58
633 014 00	633 990 14	14	19	13,5	34	16,8	16	17	103	750	83
633 016 00	633 990 16	16	21	15	38	19,3	15	21,5	129	660	115
633 018 00	633 990 18	18	23	16,5	42	21,8	15	26	157	600	150
633 020 00	633 990 20	20	25	18	46	24,3	14	31,5	189	540	200
633 022 00	633 990 22	22	28	20	50	25,8	15	38	229	500	270
633 025 00	633 990 25	25	31	22	56	29,6	15	47	293	440	375
633 030 00	633 990 30	30	37	25	66	34,8	17	64	416	370	540
633 035 00	633 990 35	35	43	28	78	37,7	19	80	480	330	850
633 040 00	633 990 40	40	49	35	87	44,2	16	116	693	290	1400

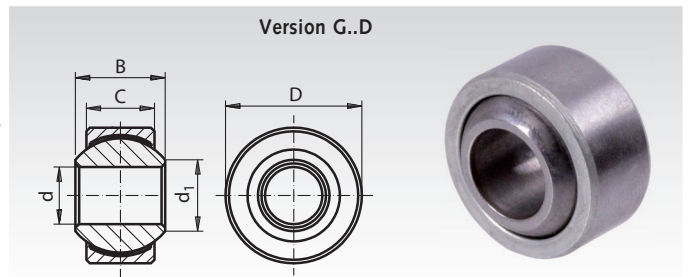
## Spherical Bearings Series K, Steel or Stainless Steel, maintenance-free

**Material standard:** Inner ring bearing steel 100Cr6, hardened, ground and polished. Bearing shell steel 9SMnPb28K, zinc plated, with PTFE-lining.

**Material stainless:** Inner ring stainless steel 1.4034, hardened, ground and polished. Bearing shell stainless steel 1.4571, with PTFE-lining.



- DIN 12240-1 (DIN 648), series K (wide shape).
- Maintenance-free.
- Suitable for high dynamic loads.
- Without additional outer ring.



Ordering Details: e.g.: Product No. 633 305 00, Spherical Bearing, Series K, Steel, maintenance-free, 5mm

Product No. Standard	Product No. Stainless	d <sup>H7</sup> mm	B <sup>-0,1</sup> mm	C <sup>-0,1</sup> mm	D <sup>-0,012</sup> mm	d <sub>1</sub> mm	α °	Load Rating [kN]		Speed n <sub>max</sub> min <sup>-1</sup>	Weight g
								dynam. C	static C <sub>0</sub>		
633 305 00	633 993 05	5	8	6	13	7,7	13	7,5	12,5	600	6
633 306 00	633 993 06	6	9	6,75	16	8,9	13	9,3	15,5	530	9
633 308 00	633 993 08	8	12	9	19	10,4	14	16,7	27,8	420	17
633 310 00	633 993 10	10	14	10,5	22	12,9	13	23,4	39	350	26
633 312 00	633 993 12	12	16	12	26	15,4	13	32	53,5	300	41
633 314 00	633 993 14	14	19	13,5	28	16,8	16	42	70	260	56
633 316 00	633 993 16	16	21	15	32	19,3	15	52,5	88	230	75
633 318 00	633 993 18	18	23	16,5	35	21,8	15	64	107	210	97
633 320 00	633 993 20	20	25	18	40	24,3	14	78	130	190	142
633 322 00	633 993 22	22	28	20	42	25,8	15	97	162	170	169
633 325 00	633 993 25	25	31	22	47	29,6	15	122	204	150	230
633 330 00	633 993 30	30	37	25	55	34,8	17	168	281	130	369
633 335 00	633 993 35	35	43	28	62	37,7	19	206	343	110	505
633 340 00	633 993 40	40	49	35	72	44,2	16	286	495	100	832

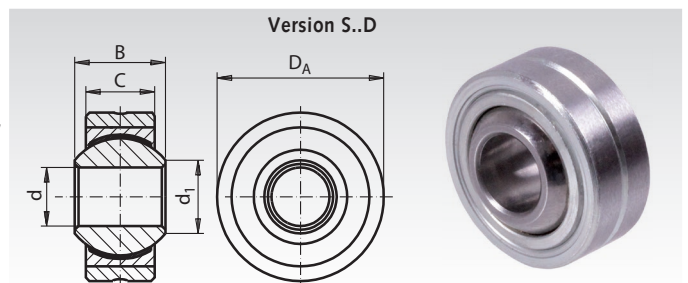
## Spherical Bearings Series K, Steel or Stainless Steel, maintenance-free, with Outer Ring

**Material standard:** Inner ring bearing steel 100Cr6, hardened, ground and polished. Outer ring and bearing shell steel, zinc plated. With PTFE-lining.

**Material stainless:** Inner ring stainless steel 1.4034, hardened, ground and polished. Bearing shell stainless steel 1.4571 with PTFE-lining. Outer ring stainless steel 1.4305.



- DIN 12240-1 (DIN 648), series K (wide shape).
- Maintenance-free.
- Suitable for high dynamic loads.
- With additional outer ring.



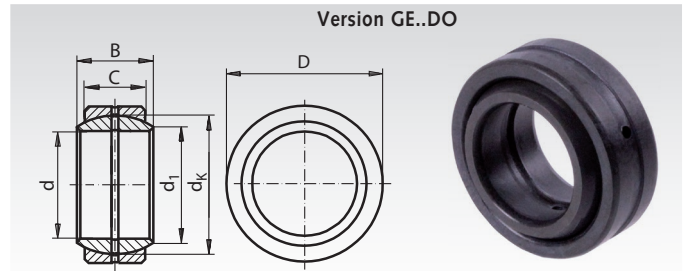
Ordering Details: e.g.: Product No. 633 105 00, Spherical Bearing, Series K, Steel, maintenance-free, with Outer Ring 5mm

Product No. Standard	Product No. Stainless	d <sup>H7</sup> mm	B <sup>-0,1</sup> mm	C <sup>-0,1</sup> mm	D <sub>A</sub> <sup>-0,012</sup> mm	d <sub>1</sub> mm	α °	Load Rating [kN]		Speed n <sub>max</sub> min <sup>-1</sup>	Weight g
								dynam. C	static C <sub>0</sub>		
633 105 00	633 991 05	5	8	6	16	7,7	13	7,5	12,5	600	8
633 106 00	633 991 06	6	9	6,75	18	8,9	13	9,3	15,5	530	12
633 108 00	633 991 08	8	12	9	22	10,4	14	16,7	27,8	420	23
633 110 00	633 991 10	10	14	10,5	26	12,9	13	23,4	39	350	38
633 112 00	633 991 12	12	16	12	30	15,4	13	32	53,5	300	58
633 114 00	633 991 14	14	19	13,5	34	16,8	16	42	70	260	83
633 116 00	633 991 16	16	21	15	38	19,3	15	52,5	88	230	115
633 118 00	633 991 18	18	23	16,5	42	21,8	15	64	107	210	150
633 120 00	633 991 20	20	25	18	46	24,3	14	78	130	190	200
633 122 00	633 991 22	22	28	20	50	25,8	15	97	162	170	270
633 125 00	633 991 25	25	31	22	56	29,6	15	122	204	150	375
633 130 00	633 991 30	30	37	25	66	34,8	17	168	281	130	540
633 135 00	633 991 35	35	43	28	78	37,7	19	206	343	110	850
633 140 00	633 991 40	40	49	35	87	44,2	16	286	495	100	1400

## Spherical Bearings Series E, Steel, re-lubricateable

**Material:** Inner ring and bearing shell from bearing steel 100Cr6, hardened, ground and phosphated. Treated with molybdenum disulfide. Bearing shell (outer ring) cut.

- DIN 12240-1 (DIN 648), series E (slim shape).
- Re-lubricateable (from size 15 with lubrication hole).
- Initial lubrication before use is required.
- Suitable for high, alternating loads.
- Sliding speed up to 60 m/min.



Ordering Details: e.g.: Product No. 633 606 00, Spherical Bearing, Series E, re-lubricateable, 6mm

Product No. Standard	d mm	B* mm	C mm	D mm	d <sub>1</sub> mm	d <sub>k</sub> mm	Tilting Angel α °	Weight g
633 606 00**	6 <sup>-0,008</sup>	6	4	14 <sup>-0,008</sup>	8,0	10	13	4
633 608 00**	8 <sup>-0,008</sup>	8	5	16 <sup>-0,008</sup>	10,2	13	15	7
633 610 00**	10 <sup>-0,008</sup>	9	6	19 <sup>-0,009</sup>	13,2	16	12	11
633 612 00**	12 <sup>-0,008</sup>	10	7	22 <sup>-0,009</sup>	14,9	18	11	17
633 615 00	15 <sup>-0,008</sup>	12	9	26 <sup>-0,009</sup>	18,4	22	8	26
633 616 00	16 <sup>-0,008</sup>	14	10	30 <sup>-0,009</sup>	20,7	25	10	40
633 617 00	17 <sup>-0,008</sup>	14	10	30 <sup>-0,009</sup>	20,7	25	10	40
633 620 00	20 <sup>-0,010</sup>	16	12	35 <sup>-0,011</sup>	24,1	29	9	64
633 625 00	25 <sup>-0,010</sup>	20	16	42 <sup>-0,011</sup>	29,3	35,5	7	115
633 630 00	30 <sup>-0,010</sup>	22	18	47 <sup>-0,011</sup>	34,2	40,7	6	149
633 635 00	35 <sup>-0,012</sup>	25	20	5 <sup>-0,013</sup>	39,7	47	6	228
633 640 00	40 <sup>-0,012</sup>	28	22	62 <sup>-0,013</sup>	45,0	53	7	318
633 645 00	45 <sup>-0,012</sup>	32	25	68 <sup>-0,013</sup>	50,7	60	7	421
633 650 00	50 <sup>-0,012</sup>	35	28	75 <sup>-0,013</sup>	55,9	66	6	562
633 660 00	60 <sup>-0,015</sup>	44	36	90 <sup>-0,015</sup>	66,8	80	6	1030
633 670 00	70 <sup>-0,015</sup>	49	40	105 <sup>-0,015</sup>	77,8	92	6	1570
633 680 00	80 <sup>-0,015</sup>	55	45	120 <sup>-0,015</sup>	89,4	105	6	2320

\* Outer ring tolerance before cutting. \*\* Up to size 12 without lubrication bore. Technical tables page 459 - 460.

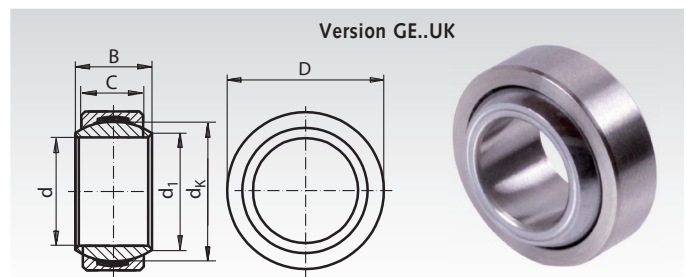
## Spherical Bearings Series E, Steel or Stainless Steel, maintenance-free

**Material standard:** Inner ring bearing steel 100Cr6, hardened, ground, polished and hard chromed. Bearing shell from bearing steel, 100Cr6 with PTFE-lining. From size 35 in 2RS-version (sealed on both sides).

**Material stainless:** Inner ring stainless steel 1.4125 (from size 45 stainless steel 1.4112), hardened, ground and polished. Bearing shell stainless steel 1.4571, with PTFE-lining.



- DIN 12240-1 (DIN 648), series E (slim shape).
- Maintenance-free.
- Suitable for high unidirectional load.
- Sliding speed up to 10 m/min.



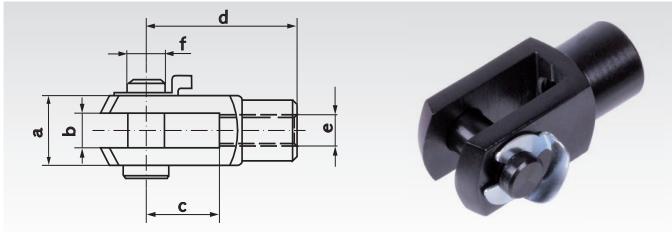
Ordering Details: e.g.: Product No. 633 706 00, Spherical Bearing, Series E, maintenance-free, 6mm

Product No. Standard	Product No. Stainless	d mm	B mm	C mm	D mm	d <sub>1</sub> mm	d <sub>k</sub> mm	Tilting Angel α °	Weight g
633 706 00	633 997 06	6 <sup>-0,008</sup>	6	4	14 <sup>-0,008</sup>	8,0	10	13	4
633 708 00	633 997 08	8 <sup>-0,008</sup>	8	5	16 <sup>-0,008</sup>	10,2	13	15	7
633 710 00	633 997 10	10 <sup>-0,008</sup>	9	6	19 <sup>-0,009</sup>	13,2	16	12	11
633 712 00	633 997 12	12 <sup>-0,008</sup>	10	7	22 <sup>-0,009</sup>	14,9	18	11	17
633 715 00	633 997 15	15 <sup>-0,008</sup>	12	9	26 <sup>-0,009</sup>	18,4	22	8	26
633 716 00	633 997 16	16 <sup>-0,008</sup>	14	10	30 <sup>-0,009</sup>	20,7	25	10	40
633 717 00	633 997 17	17 <sup>-0,008</sup>	14	10	30 <sup>-0,009</sup>	20,7	25	10	40
633 720 00	633 997 20	20 <sup>-0,010</sup>	16	12	35 <sup>-0,011</sup>	24,1	29	9	64
633 725 00	633 997 25	25 <sup>-0,010</sup>	20	16	42 <sup>-0,011</sup>	29,3	35,5	7	115
633 730 00	633 997 30	30 <sup>-0,010</sup>	22	18	47 <sup>-0,011</sup>	34,2	40,7	6	149
633 735 00*	633 997 35	35 <sup>-0,012</sup>	25	20	55 <sup>-0,013</sup>	39,8	47	6	228
633 740 00*	633 997 40	40 <sup>-0,012</sup>	28	22	62 <sup>-0,013</sup>	45,0	53	7	318
633 745 00*	633 997 45	45 <sup>-0,012</sup>	32	25	68 <sup>-0,013</sup>	50,8	60	7	421
633 750 00*	633 997 50	50 <sup>-0,015</sup>	35	28	75 <sup>-0,013</sup>	56,0	66	6	532
633 760 00*	633 997 60	60 <sup>-0,015</sup>	44	36	90 <sup>-0,015</sup>	66,8	80	6	1030
633 770 00*	633 997 70	70 <sup>-0,015</sup>	49	40	105 <sup>-0,015</sup>	77,9	92	6	1570
633 780 00*	633 997 80	80 <sup>-0,015</sup>	55	45	120 <sup>-0,015</sup>	89,4	105	6	2320

\* From size 35 in 2RS-version (sealed on both sides).

Technical tables page 459 - 460.

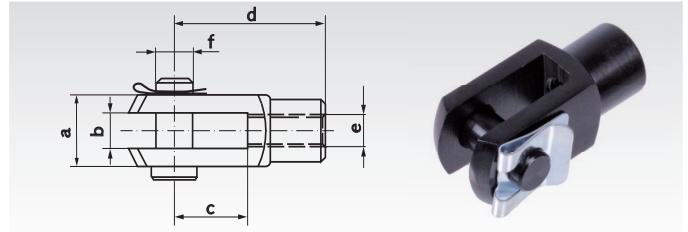
### Clevis Joints similar DIN 71752, Aluminium, KL



**Material:** Clevis and bolt aluminium, anodized black.  
With KL-Retainer from steel, bright zinc plated.

Ordering Details: e.g.: Product No. 637 660 01, Clevis joint 4 x 8, Aluminium, KL

### Clevis Joints similar DIN 71752, Aluminium, SL

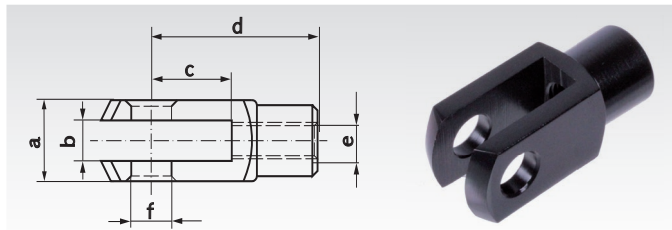


**Material:** Clevis and bolt aluminium, anodized black.  
With SL-Retainer from steel, bright zinc plated.

Ordering Details: e.g.: Product No. 637 664 01, Clevis joint 4 x 8, Aluminium, SL

Product No. KL right	Product No. SL right	Size mm	a mm	b mm	c mm	d mm	e mm	f mm	Weight g
637 660 01	637 664 01	4 x 8	8	4	8	16	M4	4	2,2
637 660 02	637 664 02	4 x 16	8	4	16	24	M4	4	2,9
637 660 03	637 664 03	5 x 10	10	5	10	20	M5	5	4,2
637 660 05	637 664 05	6 x 12	12	6	12	24	M6	6	7,2
637 660 07	637 664 07	8 x 16	16	8	16	32	M8	8	16,8
637 660 09	637 664 09	10 x 20	20	10	20	40	M10	10	33,3
637 660 11	637 664 11	12 x 24	24	12	24	48	M12	12	54,4
637 660 13	637 664 13	14 x 28	27	14	28	56	M14	14	78,1
637 660 15	637 664 15	16 x 32	32	16	32	64	M16	16	121,2

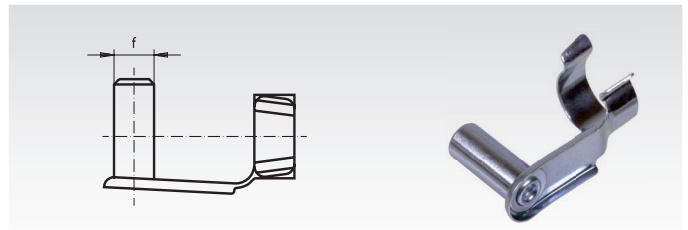
### Clevises similar DIN 71752, Aluminium



**Material:** Aluminium, anodized black.  
To be used with ES bolt or customer's bolt.

Ordering Details: e.g.: Product No. 637 662 01, Clevis 4 x 8, Aluminium

### Snap-On-Bolts type ES

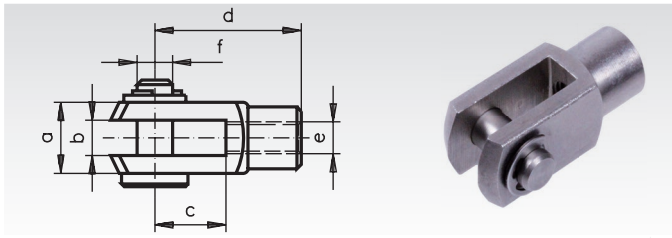


**Material:** Steel, bright zinc plated.  
ES bolt and clevis can be used as fork joint.

Ordering Details: e.g.: Product No. 637 401 00, ES Bolt for Clevis 4 x 8

Product No. Clevis	Product No. ES Bolt	Size mm	a mm	b mm	c mm	d mm	e mm	f mm	Weight Clevis g	Weight Bolt g
637 662 01	637 401 00	4 x 8	8	4	8	16	M4	4	1,7	1,5
637 662 02	637 402 00	4 x 16	8	4	16	24	M4	4	2,4	2,6
637 662 03	637 403 00	5 x 10	10	5	10	20	M5	5	3,1	2,7
637 662 05	637 405 00	6 x 12	12	6	12	24	M6	6	5,2	4,6
637 662 07	637 407 00	8 x 16	16	8	16	32	M8	8	12,7	10,4
637 662 09	637 409 00	10 x 20	20	10	20	40	M10	10	25,4	19
637 662 11	637 411 00	12 x 24	24	12	24	48	M12	12	41,6	33,5
637 662 13	637 413 00	14 x 28	27	14	28	56	M14	14	61,2	45
637 662 15	637 415 00	16 x 32	32	16	32	64	M16	16	96,9	70

### Clevis Joints similar DIN 71752, Stainless

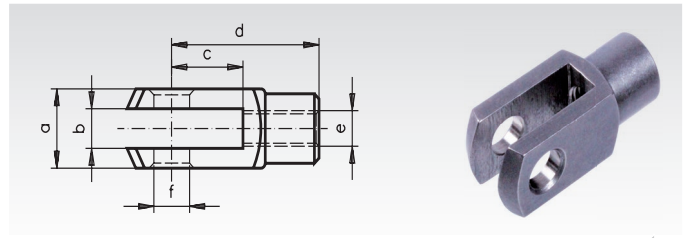


Material: Stainless Steel 1.4305.  
Design A: With bolt and circlip.



Ordering Details: e.g.: Product No. 637 990 01, Clevis DIN 71752, A 4 x 8, Right Hand, Stainless

### Clevises similar DIN 71752, Stainless



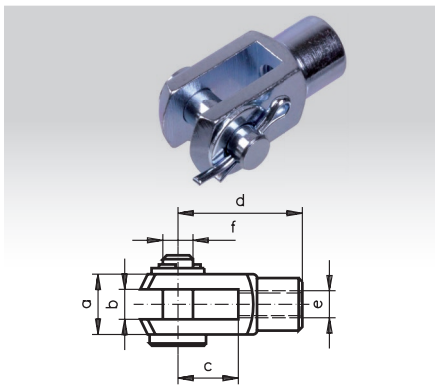
Material: Stainless steel 1.4305.  
Design G: Without bolt.



Ordering Details: e.g.: Product No. 637 992 01, Clevis DIN 71752, G 4 x 8, Right Hand, Stainless

Product No. A Right	Product No. G Right	Size mm	a mm	b mm	c mm	d mm	e mm	f mm	Weights	
									A g	G g
637 990 01	637 992 01	4 x 8	8	4	8	16	M4	4	6	5
637 990 02	637 992 02	4 x 16	8	4	16	24	M4	4	8	7
637 990 03	637 992 03	5 x 10	10	5	10	20	M5	5	10	9
637 990 04	637 992 04	5 x 20	10	5	20	30	M5	5	14	13
637 990 05	637 992 05	6 x 12	12	6	12	24	M6	6	16	15
637 990 06	637 992 06	6 x 24	12	6	24	36	M6	6	23	22
637 990 07	637 992 07	8 x 16	16	8	16	32	M8	8	38	37
637 990 08	637 992 08	8 x 32	16	8	32	48	M8	8	55	54
637 990 09	637 992 09	10 x 20	20	10	20	40	M10	10	80	74
637 990 10	637 992 10	10 x 40	20	10	40	60	M10	10	120	116
637 990 11	637 992 11	12 x 24	24	12	24	48	M12	12	125	121
637 990 12	637 992 12	12 x 48	24	12	48	72	M12	12	180	175
637 990 13	637 992 13	14 x 28	27	14	28	56	M14	14	190	178
637 990 14	637 992 14	14 x 56	27	14	56	85	M14	14	265	258
637 990 15	637 992 15	16 x 32	32	16	32	64	M16	16	300	282
637 990 16	637 992 16	16 x 64	32	16	64	96	M16	16	430	410

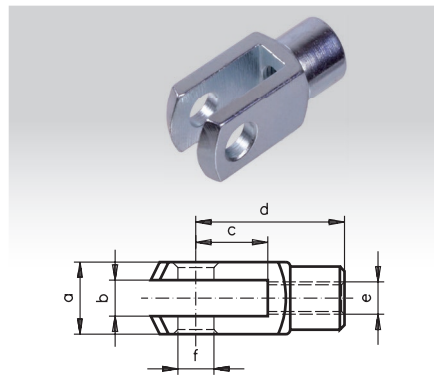
### Clevis Joints DIN 71752, Steel



Material: Steel zinc-plated.  
Design A: with split pin.

Ordering Details: e.g.: Product No. 637 001 00, Clevis DIN 71752, A 4 x 8 Right Hand

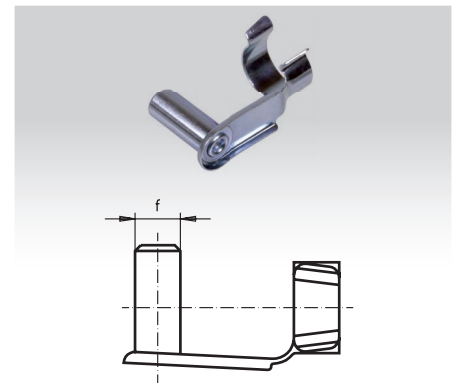
### Clevises DIN 71752, Steel



Material: Steel zinc-plated.  
Design G: without bolt.

Ordering Details: e.g.: Product No. 637 201 00, Clevis DIN 71752, G 4 x 8 Right Hand

### Snap-On-Bolts type ES, Steel



Material: Steel zinc-plated.  
ES-Standard 01

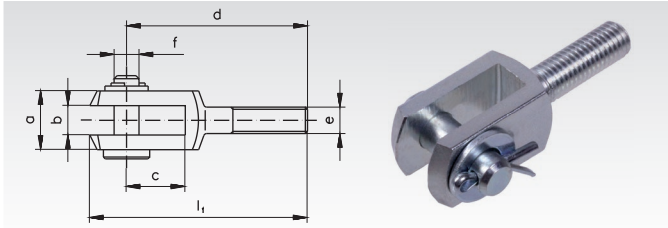
Ordering Details: e.g.: Product No. 637 401 00, ES Pin, for G 4 x 8

Product No. A Right	Product No. A Left	Product No. G Right	Product No. G Left	Product No. ES Bolt	Size mm	a mm	b mm	c mm	d mm	e mm	f mm	Weights		
												A g	G g	ES g
637 001 00	637 101 00	637 201 00	637 301 00	637 401 00	4 x 8	8	4	8	16	M4	4	6	5	1,5
637 002 00	637 102 00	637 202 00	637 302 00	637 402 00	4 x 16	8	4	16	24	M4	4	8	7	2,6
637 003 00	637 103 00	637 203 00	637 303 00	637 403 00	5 x 10	10	5	10	20	M5	5	10	9	2,7
637 004 00	637 104 00	637 204 00	637 304 00	637 404 00	5 x 20	10	5	20	30	M5	5	14	13	2,9
637 005 00	637 105 00	637 205 00	637 305 00	637 405 00	6 x 12	12	6	12	24	M6	6	16	15	4,6
637 006 00	637 106 00	637 206 00	637 306 00	637 406 00	6 x 24	12	6	24	36	M6	6	23	22	5
637 007 00	637 107 00	637 207 00	637 307 00	637 407 00	8 x 16	16	8	16	32	M8	8	38	37	10,4
637 008 00	637 108 00	637 208 00	637 308 00	637 408 00	8 x 32	16	8	32	48	M8	8	55	54	11,5
637 009 00	637 109 00	637 209 00	637 309 00	637 409 00	10 x 20	20	10	20	40	M10	10	80	74	19
637 010 00	637 110 00	637 210 00	637 310 00	637 410 00	10 x 40	20	10	40	60	M10	10	120	116	20,3
637 011 00	637 111 00	637 211 00	637 311 00	637 411 00	12 x 24	24	12	24	48	M12	12	125	121	33,5
637 012 00	637 112 00	637 212 00	637 312 00	637 412 00	12 x 48	24	12	48	72	M12	12	180	175	34,5
637 013 00	637 113 00	637 213 00	637 313 00	637 413 00	14 x 28	27	14	28	56	M14	14	190	178	45
637 014 00	637 114 00	637 214 00	637 314 00	637 414 00	14 x 56	27	14	56	85	M14	14	265	258	50
637 015 00	637 115 00	637 215 00	637 315 00	637 415 00	16 x 32	32	16	32	64	M16	16	300	282	70
637 016 00	637 116 00	637 216 00	637 316 00	637 416 00	16 x 64	32	16	64	96	M16	16	430	410	80

Clevis with ES-bolt can be used as fork joint.



### Clevis Joints DIN 71752, External Thread, Zinc-Plated

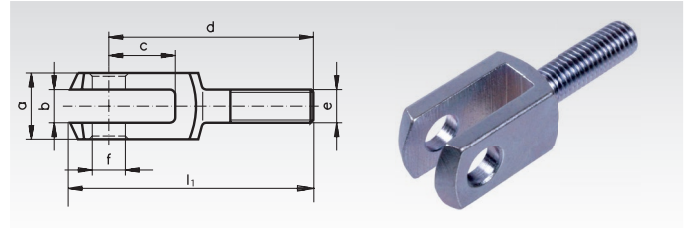


Material: 11SMnPb30 zinc-plated.

Design A: With bolt and split pin.

Ordering Details: e.g.: Product No. 637 705 00, Clevis Joint DIN 71752, A, External Thread

### Clevises DIN 71752, External Thread, Zinc Plated



Material: 11SMnPb30 zinc-plated.

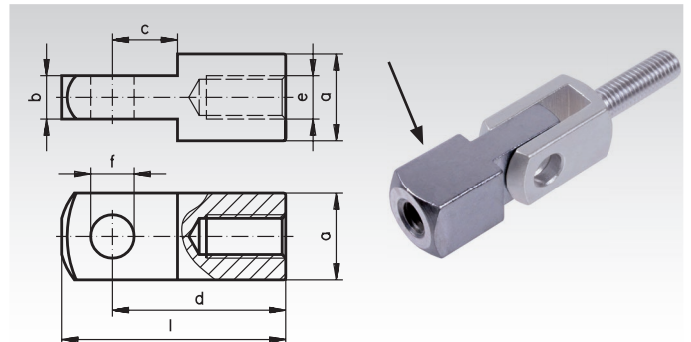
Design G: without bolt.

Ordering Details: e.g.: Product No. 637 505 00, Clevis DIN 71752, G, External Thread

Product No. A Right	Product No. G Right	Size mm	a mm	b mm	c mm	d mm	e mm	f mm	l <sub>1</sub> ±0,5 mm	Weights	
										A g	G g
637 705 00	637 505 00	6 x 12	12	6	12	37	M6	6	44	16	15
637 707 00	637 507 00	8 x 16	16	8	16	47	M8	8	57	38	36
637 709 00	637 509 00	10 x 20	20	10	20	57	M10	10	69	74	68
637 711 00	637 511 00	12 x 24	24	12	24	68	M12	12	82	126	122
637 713 00	637 513 00	14 x 28	27	14	28	78	M14	14	94	183	171
637 715 00	637 515 00	16 x 32	32	16	32	89	M16	16	108	306	288

### Mating Pieces with Internal Thread for Clevis Joints DIN 71752, Zinc Plated

Material: 11SMnPb30 zinc-plated.



Ordering Details: e.g.: Product No. 637 605 00, Mating piece with Internal Thread, Right-Hand

Product No.	Size mm	a mm	b mm	c mm	d mm	e mm	f mm	l <sub>1</sub> ±0,5 mm	Weight g
637 605 00	6 x 12	12	6	9	24	M6	6	31	21
637 607 00	8 x 16	16	8	12	32	M8	8	42	51
637 609 00	10 x 20	20	10	15	40	M10	10	52	98
637 611 00	12 x 24	24	12	18	48	M12	12	62	168
637 613 00	14 x 28	27	14	21	56	M14	14	72	247
637 615 00	16 x 32	32	16	24	64	M16	16	83	397

Loctite thread locking and bonding products  
page 811.

## Angle Joints DIN 71802, zinc-plated

**Material:** Steel zinc-plated.

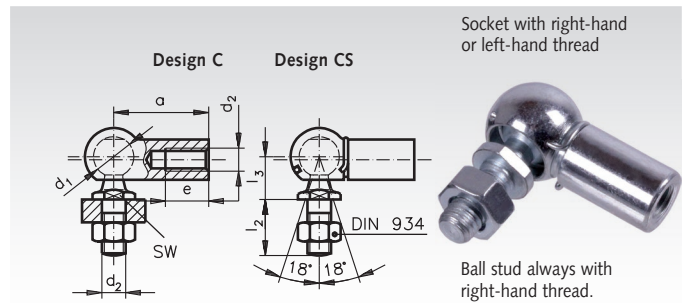
**Form C:** With threaded bolt and hexagon nut, ball stud hardened.

**Form CS:** With threaded bolt, hexagon nut and circlip. Ball stud hardened.

**Right** = Right-hand thread in the socket.

**Left** = Left-hand thread in the socket.

Ordering Details: e.g.: Product No. 636 405 00, Angle Joint DIN 71802, C 8, Right Hand



Product-No. C Righth	Product-No. CS Right	Product-No. C Left	Product-No. CS Left	$d_1^{H9/h9}$ mm	$d_2$ mm	SW <sup>h14</sup> mm	$a^{+0,3}$ mm	e mm	$l_3 \pm 3$ mm	$l_2 \pm 0,3$ mm	Pivoting Angle C Degrees	Pivoting Angle CS* Degrees	Weight g
636 405 00	636 605 00	636 505 00	636 705 00	8	M5	7	22	10,2	9	10,2	18°	18°/10°	15,2
636 406 00	636 606 00	636 506 00	636 706 00	10	M6	8	25	11,5	11	12,5	18°	18°/15°	25,2
636 408 00	636 608 00	636 508 00	636 708 00	13	M8	11	30	14	13	16,5	18°	18°/15°	53,1
636 410 00	636 610 00	636 510 00	636 710 00	16	M10	13	35	15,5	16	20	18°	18°/15°	103,8
636 414 00	636 614 00	636 514 00	636 714 00	19	M14x1,5	16	45	21,5	20	28	18°	18°/15°	220,9

\* Pivoting angle reduced by circlip.

## Angle Joints DIN 71802, Stainless

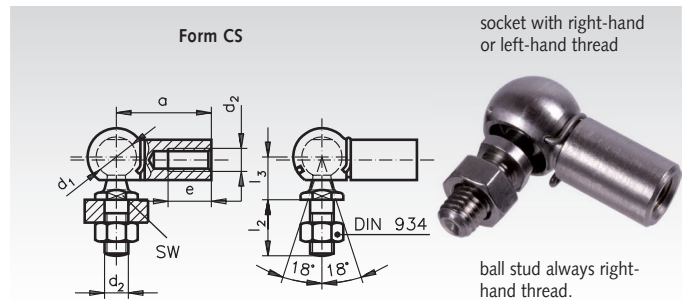
**Material:** Stainless steel 1.4305.

**Design CS:** With threaded bolt, hexagon nut and circlip.

**Right** = Right-hand thread in the socket.

**Left** = Left-hand thread in the socket.

Ordering Details: e.g.: Product No. 636 996 05, Angle Joint DIN 71802, CS 8, Right Hand, Stainless



Product-No. CS Righth	Product-No. CS Left	$d_1^{H9/h9}$ mm	$d_2$ mm	SW <sup>h14</sup> mm	$a^{+0,3}$ mm	e mm	$l_3 \pm 3$ mm	$l_2 \pm 0,3$ mm	Pivoting Angle* Degrees	Weight g
636 996 05	636 997 05	8	M5	7	22	10,2	9	10,2	18°/10°	15,2
636 996 06	636 997 06	10	M6	8	25	11,5	11	12,5	18°/15°	25,2
636 996 08	636 997 08	13	M8	11	30	14	13	16,5	18°/15°	53,1
636 996 10	636 997 10	16	M10	13	35	15,5	16	20	18°/15°	103,8
636 996 14	636 997 14	19	M14x1,5	16	45	21,5	20	28	18°/15°	220,9

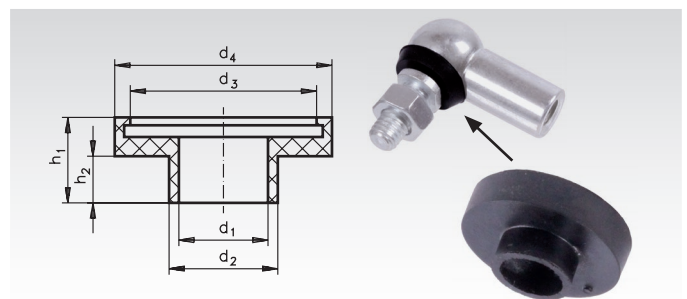
\* Pivoting angle reduced by circlip.

## Sealing Cap for Angle Joints DIN 71802

**Material:** Neoprene.

The sealing caps have delivered an optimal performance used with joints in very dirty or dusty environment. They also offer good protection against spray water and steam. Temperature range: -30°C to +110°C (short term 140°C).

Ordering Details: e.g.: Product No. 636 775 00, Sealing Cap for 8 mm  $d_1$



Product No.	for $d_1$ DIN 71802 mm	$d_1$ mm	$d_2$ mm	$d_3$ mm	$d_4$ mm	$h_1$ mm	$h_2$ mm	Weight p. % Pcs. g
636 775 00	8	4	5,4	9	11,5	4,5	1,5	32
636 776 00	10	5,5	6,9	10,5	13	6,5	3,5	44
636 778 00	13	7	8,6	14	17	7,5	3,5	86
636 780 00	16	9	10,5	17,5	21	8,5	4,5	116
636 782 00	19	11	12,6	21	24,5	12	7	215