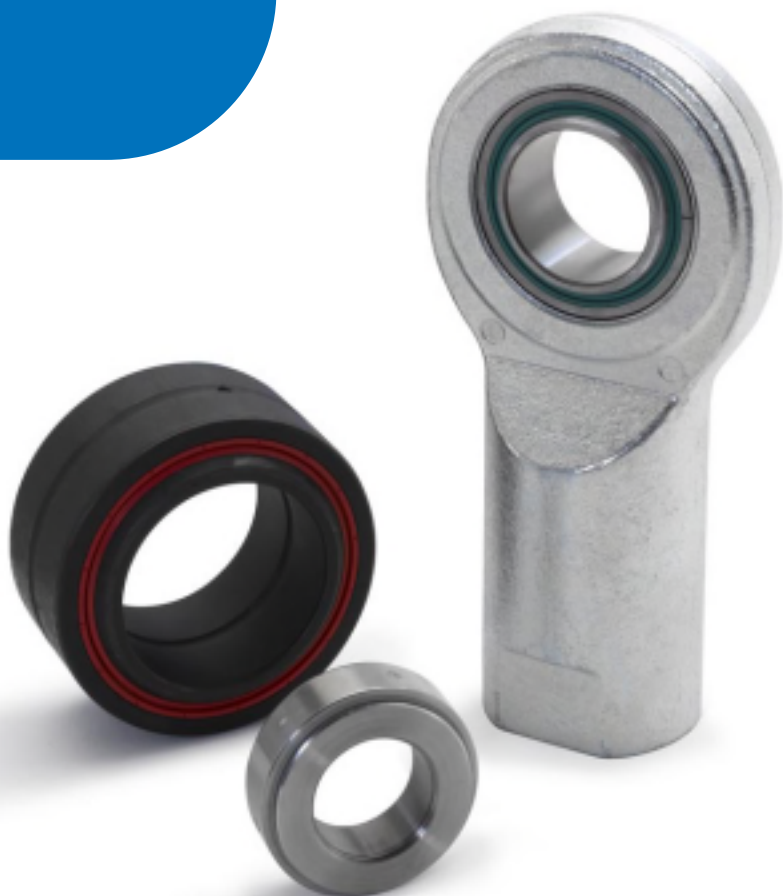


# SKF spherical plain bearings and rod ends





# Maintenance-free radial spherical plain bearings

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## Maintenance-free radial spherical plain bearings

SKF manufactures maintenance-free radial spherical plain bearings in a variety of designs and a wide range of sizes. Three sliding contact surface combinations are available:

- Steel/PTFE sintered bronze, designation suffix C
- Steel/PTFE fabric, designation suffix TX
- Steel/PTFE FRP, designation suffix F

All three sliding contact surface combinations are self-lubricating. Bearings with a steel/PTFE sintered bronze or steel/PTFE fabric sliding contact surface combinations must not be lubricated. Bearings with a steel/PTFE FRP (fibre reinforced polymer) sliding contact surface combination are also maintenance-free; however, occasional relubrication is beneficial to help maximize bearing service life. To facilitate relubrication, steel/PTFE FRP bearings are equipped with lubrication facilities.

The different designs of SKF maintenance-free radial spherical plain bearings are listed in **table 3** on **pages 128 to 129**. Their design depends on the size and series, with the main differences being the material or the design of the outer ring.

### Dimensions

The dimensions of metric maintenance-free radial spherical plain bearings are in accordance with ISO 12240-1:1998. The dimensions of inch bearings in the GEZ series are in accordance with ANSI/ABMA Std. 22.2-1988.

### Tolerances

The dimensional tolerances for metric maintenance-free radial spherical plain bearings are in accordance with ISO 12240-1:1998 and listed in **table 1**.

The dimensional tolerances for inch bearings in the GEZ series are in accordance with ANSI/ABMA Std. 22.2-1988 and listed in **table 2**. The symbols used are explained in the following:

d	nominal bore diameter
$\Delta_{dmp}$	deviation of the mean bore diameter from the nominal
D	nominal outside diameter
$\Delta_{Dmp}$	deviation of the mean outside diameter from the nominal
$\Delta_{Bs}$	deviation of the single inner ring width from the nominal
$\Delta_{Cs}$	deviation of the single outer ring width from the nominal

For the TX and TXG3 designs, outer ring tolerances apply to dimensions before fracture.

Table 1

## Dimensional tolerances for metric maintenance-free radial spherical plain bearings


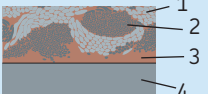
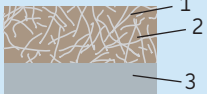
Nominal diameter d, D over		Inner ring $\Delta_{dmp}$ high low		$\Delta_{Bs}$ high low		Outer ring $\Delta_{Dmp}$ high low		$\Delta_{Cs}$ high low	
incl.		$\mu\text{m}$		$\mu\text{m}$		$\mu\text{m}$		$\mu\text{m}$	
mm		$\mu\text{m}$		$\mu\text{m}$		$\mu\text{m}$		$\mu\text{m}$	
-	18	0	-8	0	-120	0	-8	0	-240
18	30	0	-10	0	-120	0	-9	0	-240
30	50	0	-12	0	-120	0	-11	0	-240
50	80	0	-15	0	-150	0	-13	0	-300
80	120	0	-20	0	-200	0	-15	0	-400
120	150	0	-25	0	-250	0	-18	0	-500
150	180	0	-25	0	-250	0	-25	0	-500
180	250	0	-30	0	-300	0	-30	0	-600
250	315	0	-35	0	-350	0	-35	0	-700
315	400	0	-40	0	-400	0	-40	0	-800
400	500	0	-45	0	-450	0	-45	0	-900
500	630	0	-50	0	-500	0	-50	0	-1 000
630	800	0	-75	0	-750	0	-75	0	-1 100
800	1 000	0	-100	0	-1 000	0	-100	0	-1 200
1 000	1 250	0	-125	0	-1 250	0	-125	0	-1 300
1 250	1 600	-	-	-	-	0	-160	0	-1 600
1 600	2 000	-	-	-	-	0	-200	0	-2 000

Table 2

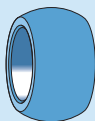
## Dimensional tolerances for inch maintenance-free radial spherical plain bearings

Nominal diameter d, D over		Inner ring $\Delta_{dmp}$ high low		$\Delta_{Bs}$ high low		Outer ring $\Delta_{Dmp}$ high low		$\Delta_{Cs}$ high low	
incl.		$\mu\text{m}$		$\mu\text{m}$		$\mu\text{m}$		$\mu\text{m}$	
in		$\mu\text{m}$		$\mu\text{m}$		$\mu\text{m}$		$\mu\text{m}$	
-	2	0	-13	0	-130	0	-13	0	-130
2	3	0	-15	0	-130	0	-15	0	-130
3	3.1875	0	-20	0	-130	0	-15	0	-130
3.1875	4.75	0	-20	0	-130	0	-20	0	-130
4.75	6	0	-25	0	-130	0	-25	0	-130
6	7	-	-	-	-	0	-25	0	-130
7	8.75	-	-	-	-	0	-30	0	-130

Design of maintenance-free radial spherical plain bearings

Sliding contact surface combination	Steel/PTFE sintered bronze	Steel/PTFE fabric	Steel/PTFE FRP
<b>Lining</b>	 <ol style="list-style-type: none"> <li>1 PTFE</li> <li>2 Tin bronze</li> <li>3 Sheet steel backing</li> </ol>	 <ol style="list-style-type: none"> <li>1 PTFE fibres</li> <li>2 Reinforcement fibres</li> <li>3 Resin</li> <li>4 Steel backing</li> </ol>	 <ol style="list-style-type: none"> <li>1 Fibres</li> <li>2 Polymer and PTFE</li> <li>3 Steel backing</li> </ol>

Inner ring



**C and CJ2 designs**

Bearing steel, through-hardened and ground, sliding surface hard chromium plated

**TXA and TXE designs**

Bearing steel, through-hardened and ground, sliding surface hard chromium plated

**TXGR, TXG3E and TXG3A designs**

Stainless steel  
X 46 Cr 13/1.4034, hardened, ground

**Series GEP and GEC**

Bearing steel, through-hardened, ground, sliding surface hard chromium plated

Outer ring



**C design**

Steel backing with PTFE sintered bronze layer pressed around the inner ring, with a butt joint

**CJ2 design**

Steel backing with PTFE sintered bronze sleeve pressed around the inner ring, without a butt joint

**TXA and TXE designs**

Bearing steel, through-hardened and ground

TXA: axially split, held together by one or two bands or bolted together

TXE: fractured at one point

**TXG3A and TXG3E design**

Stainless steel  
X 46 Cr 13/1.4034, hardened, ground,  
TXG3A: axially split, held together by one or two bands

TXG3E: fractured at one point

**TXGR design**

Unhardened stainless steel  
X 17 CrNi 16-2 or equivalent, pressed around the inner ring, no butt joint

**Series GEP and GEC**



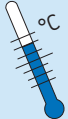
Hardenable steel, ground, FRP shells are retained by side flanges and also glued to the outer ring

Series GEP: radially split, separable

Series GEC: axially split, held together by two bands ( $d \leq 400$  mm) or bolted together ( $d > 400$  mm)

Table 3

## Design of maintenance-free radial spherical plain bearings

Sliding contact surface combination	Steel/PTFE sintered bronze	Steel/PTFE fabric	Steel/PTFE FRP
<b>Seals</b> RS design  LS design 	Available on request	Bearings with designation suffix -2RS or -2LS (depending on bearing size) have a double- or triple-lip seal on both sides (→ page 79)	None
<b>Permissible operating temperature range</b> 	-50 to +150 °C, for short periods up to +280 °C  Reduced carrying capacity above 80 °C	Bearings without seals: -50 to +150 °C  Bearings with RS seals: with a bore diameter $d < 320$ mm: -30 to +130 °C with a bore diameter $d \geq 320$ mm: -35 to +100 °C  Bearings with LS seals: -50 to +110 °C  Reduced carrying capacity above 65 °C for both sealed and unsealed bearings	-40 to +75 °C, for short periods up to +110 °C  Reduced carrying capacity above 50 °C
<b>Lubrication</b> (refer to the section <i>Lubrication</i> , starting on page 84)	Self-lubricating; the bearings must not be lubricated	Self-lubricating; the bearings must not be lubricated	Greased before leaving factory, self-lubricating capability, however occasional relubrication extends service life

### Radial internal clearance, preload

Maintenance-free radial spherical plain bearings with a bore diameter  $d \leq 90$  mm either have an internal clearance or a slight preload (negative clearance) depending on their design. Therefore, these bearings can only be provided with an upper limit for bearing internal clearance. The lower limit must be assessed by the frictional moment, resulting from the preload (negative clearance).

The radial internal clearance and the upper limit of the permissible frictional moment of bearings with a steel/PTFE sintered bronze sliding contact surface are listed in **table 4**. The values for the clearance limits of bearings with a steel/PTFE fabric and a steel/PTFE FRP sliding contact surface combination are listed in **tables 5 to 8**.

### Materials

The materials for the inner ring, outer ring, sliding layer and seals, where applicable, are listed in **table 3** on **pages 128 to 129**.

### Permissible operating temperature range

The permissible operating temperature range of maintenance-free radial spherical plain bearings depends on the sliding contact surface combination and the material of the seals (→ **table 3** on **pages 128 to 129**). However, if the load carrying capacity of the bearings is to be fully exploited, the temperature range must be narrowed. Depending on the application, it is possible to operate at temperatures above the upper limit for brief periods. For additional information, contact the SKF application engineering service.

Table 4

Radial internal clearance and frictional moment of steel/PTFE sintered bronze bearings, metric sizes

Nominal diameter d		Radial internal clearance max	Frictional moment max
over	incl.		
mm		$\mu\text{m}$	Nm

#### Series GE .. C, CJ2

2,5	12	28	0,15
12	20	35	0,25
20	30	44	0,40
30	60	53	0,75

#### Series GEH .. C

2,5	10	28	0,15
10	17	35	0,25
17	25	44	0,40

Table 5

Radial internal clearance for steel/PTFE fabric bearings, metric sizes

Nominal diameter d		Radial internal clearance	
over	incl.	min	max
mm		$\mu\text{m}$	

#### Series

GE .. TXA, TXE, TXGR, TXG3A, TXG3E  
GEH<sup>1)</sup>.. TXA, TXE, TXG3A, TXG3E  
GEC .. TXA

12	12	–	50
20	20	–	50
20	30	–	50
30	60	–	50
60	90	–	50
90	140	50	130
140	180	50	140
180	300	80	190
300	460	100	230
460	530	100	245
530	670	100	260
670	800	100	270

<sup>1)</sup> Bearings in the GEH .. TX.. series with a bore diameter  $d = 90$  mm have a radial clearance corresponding to the values quoted for the next larger diameter.



Table 6

Radial internal clearance for steel/PTFE fabric bearings, inch sizes

Nominal diameter d		Radial internal clearance	
over	incl.	min	max
in		µm	

Series GEZ .. TXE, TXA

–	3	–	50
3	4.75	50	130
4.75		50	140

Table 7

Radial internal clearance for steel/PTFE FRP bearings, metric sizes

Bore diameter d		Radial internal clearance	
over	incl.	min	max
mm		µm	

Series GEP .. FS

90	120	85	285
120	180	100	335
180	220	100	355
220	240	110	365
240	280	110	380
280	300	135	415
300	380	135	490
380	400	135	510
400	480	145	550
480	500	145	570
500	600	160	610
600	630	160	640
630	750	170	670
750	800	170	700
800	950	195	770
950	1 000	195	820

Table 8

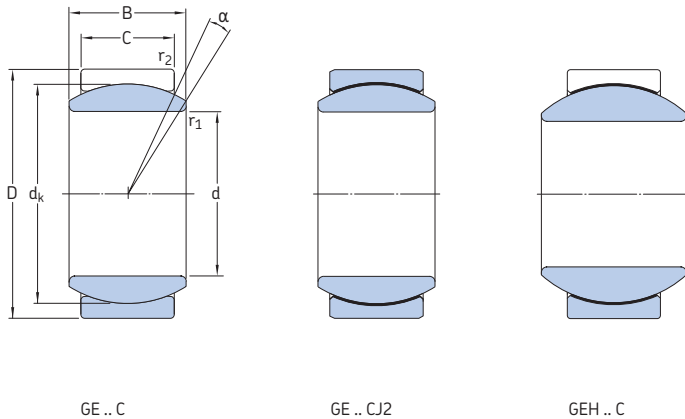
Radial internal clearance for steel/PTFE FRP bearings, metric sizes

Nominal diameter d		Radial internal clearance	
over	incl.	min	max
mm		µm	

Series GEC .. FBAS

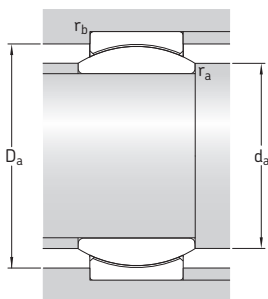
300	340	135	350
340	400	135	360
400	500	145	390
500	530	160	420
530	630	160	440
630	670	170	460
670	800	170	490
800	850	195	530
850	1 000	195	560

Maintenance-free radial spherical plain bearings, steel/PTFE sintered bronze, metric sizes  
d 4 – 60 mm



Principal dimensions				Angle of tilt <sup>1)</sup> $\alpha$	Basic load ratings		Mass	Designation
d	D	B	C		dynamic	static		
mm				degrees	C	C <sub>0</sub>	kg	–
4	12	5	3	16	2,16	5,4	0,003	GE 4 C
6	14	6	4	13	3,6	9	0,004	GE 6 C
8	16	8	5	15	5,85	14,6	0,008	GE 8 C
10	19	9	6	12	8,65	21,6	0,012	GE 10 C
	22	12	7	18	11,4	28,5	0,020	GEH 10 C
12	22	10	7	10	11,4	28,5	0,017	GE 12 C
	26	15	9	18	18	45	0,030	GEH 12 C
15	26	12	9	8	18	45	0,032	GE 15 C
	30	16	10	16	22,4	56	0,050	GEH 15 C
17	30	14	10	10	22,4	56	0,050	GE 17 C
	35	20	12	19	31,5	78	0,090	GEH 17 C
20	35	16	12	9	31,5	78	0,065	GE 20 C
	42	25	16	17	51	127	0,16	GEH 20 C
25	42	20	16	7	51	127	0,12	GE 25 C
	47	28	18	17	65,5	166	0,20	GEH 25 C
30	47	22	18	6	65,5	166	0,16	GE 30 C
35	55	25	20	6	80	200	0,23	GE 35 CJ2
40	62	28	22	7	100	250	0,32	GE 40 CJ2
45	68	32	25	7	127	320	0,46	GE 45 CJ2
50	75	35	28	6	156	390	0,56	GE 50 CJ2
60	90	44	36	6	245	610	1,10	GE 60 CJ2

<sup>1)</sup> To fully utilize the angle of tilt, the shaft shoulder should not be larger than  $d_{a \max}$ .

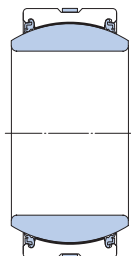
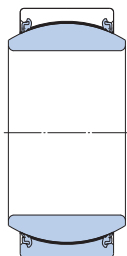
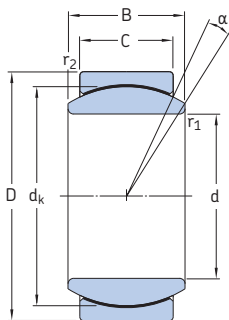


## Dimensions

## Abutment and fillet dimensions

d	d <sub>k</sub>	r <sub>1</sub> min	r <sub>2</sub> min	d <sub>a</sub> min	d <sub>a</sub> max	D <sub>a</sub> min	D <sub>a</sub> max	r <sub>a</sub> max	r <sub>b</sub> max
mm				mm					
4	8	0,3	0,3	5,4	6,2	7,6	10,7	0,3	0,3
6	10	0,3	0,3	7,4	8	9,5	12,7	0,3	0,3
8	13	0,3	0,3	9,4	10,2	12,3	14,6	0,3	0,3
10	16	0,3	0,3	11,5	13,2	15,2	17,6	0,3	0,3
	18	0,3	0,3	11,6	13,4	17,1	20,6	0,3	0,3
12	18	0,3	0,3	13,5	15	17,1	20,6	0,3	0,3
	22	0,3	0,3	13,7	16,1	20,9	24,5	0,3	0,3
15	22	0,3	0,3	16,6	18,4	20,9	24,5	0,3	0,3
	25	0,3	0,3	16,7	19,2	23,7	28,5	0,3	0,3
17	25	0,3	0,3	18,7	20,7	23,7	28,5	0,3	0,3
	29	0,3	0,3	18,9	21	27,6	33,4	0,3	0,3
20	29	0,3	0,3	21,8	24,2	27,6	33,4	0,3	0,3
	35,5	0,3	0,6	22,1	25,2	33,7	39,5	0,3	0,6
25	35,5	0,6	0,6	27,7	29,3	33,7	39,5	0,6	0,6
	40,7	0,6	0,6	27,9	29,5	38,7	44,4	0,6	0,6
30	40,7	0,6	0,6	32,8	34,2	38,7	44,4	0,6	0,6
35	47	0,6	1	37,9	39,8	44,7	51,4	0,6	1
40	53	0,6	1	42,9	45	50,4	58,3	0,6	1
45	60	0,6	1	48,7	50,8	57	64,2	0,6	1
50	66	0,6	1	53,9	56	62,7	71,1	0,6	1
60	80	1	1	65,4	66,8	76	85,8	1	1

Maintenance-free radial spherical plain bearings, steel/PTFE fabric, metric sizes  
d 12 – 90 mm



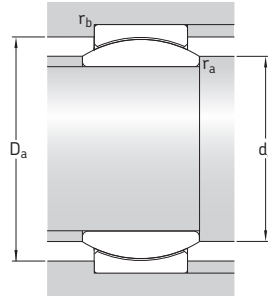
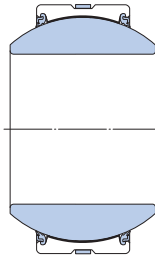
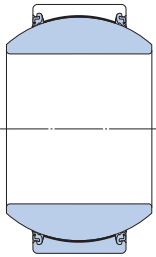
GE ..TXGR

GE ..TX(G3)E-2LS

GE ..TX(G3)A-2LS

Principal dimensions				Angle of tilt <sup>1)</sup> $\alpha$	Basic load ratings		Mass	Designations Material Bearing steel	Stainless steel
d	D	B	C		C	C <sub>0</sub>			
mm				degrees	kN		kg	–	
12	22	10	7	10	30	50	0,017	–	GE 12 TXGR
15	26	12	9	8	47,5	80	0,032	–	GE 15 TXGR
17	30	14	10	10	60	100	0,050	–	GE 17 TXGR
20	35	16	12	9	83	140	0,065	GE 20 TXE-2LS GEH 20 TXE-2LS	GE 20 TXG3E-2LS GEH 20 TXG3E-2LS
	42	25	16	17	137	228	0,15		
25	42	20	16	7	137	228	0,12	GE 25 TXE-2LS GEH 25 TXE-2LS	GE 25 TXG3E-2LS GEH 25 TXG3E-2LS
	47	28	18	17	176	290	0,19		
30	47	22	18	6	176	290	0,16	GE 30 TXE-2LS GEH 30 TXE-2LS	GE 30 TXG3E-2LS GEH 30 TXG3E-2LS
	55	32	20	17	224	375	0,29		
35	55	25	20	6	224	375	0,23	GE 35 TXE-2LS GEH 35 TXE-2LS	GE 35 TXG3E-2LS GEH 35 TXG3E-2LS
	62	35	22	15	280	465	0,39		
40	62	28	22	6	280	465	0,32	GE 40 TXE-2LS GEH 40 TXE-2LS	GE 40 TXG3E-2LS GEH 40 TXG3E-2LS
	68	40	25	17	360	600	0,52		
45	68	32	25	7	360	600	0,46	GE 45 TXE-2LS GEH 45 TXE-2LS	GE 45 TXG3E-2LS GEH 45 TXG3E-2LS
	75	43	28	14	440	735	0,69		
50	75	35	28	6	440	735	0,56	GE 50 TXE-2LS GEH 50 TXE-2LS	GE 50 TXG3E-2LS GEH 50 TXG3E-2LS
	90	56	36	17	695	1160	1,41		
60	90	44	36	6	695	1160	1,10	GE 60 TXE-2LS GEH 60 TXE-2LS	GE 60 TXG3E-2LS GEH 60 TXG3E-2LS
	105	63	40	17	880	1460	2,06		
70	105	49	40	6	880	1460	1,55	GE 70 TXE-2LS GEH 70 TXE-2LS	GE 70 TXG3A-2LS GEH 70 TXG3A-2LS
	120	70	45	16	1140	1900	2,99		
80	120	55	45	5	1140	1900	2,30	GE 80 TXE-2LS GEH 80 TXE-2LS	GE 80 TXG3A-2LS GEH 80 TXG3A-2LS
	130	75	50	14	1370	2320	3,55		
90	130	60	50	5	1370	2320	2,75	GE 90 TXE-2LS GEH 90 TXA-2LS	GE 90 TXG3A-2LS GEH 90 TXG3A-2LS
	150	85	55	15	1730	2850	5,40		

<sup>1)</sup> To fully utilize the angle of tilt, the shaft shoulder should not be larger than  $d_{a \max}$ .



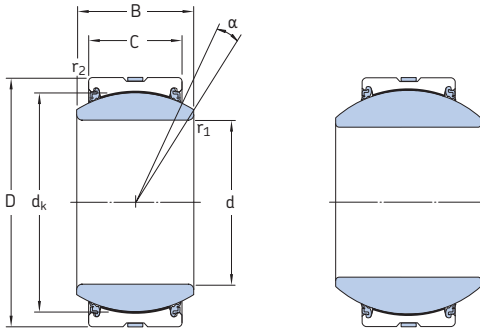
GEH..TX(G3)E-2LS

GEH..TX(G3)A-2LS

**Dimensions****Abutment and fillet dimensions**

d	d <sub>k</sub>	r <sub>1</sub> min	r <sub>2</sub> min	d <sub>a</sub> min	d <sub>a</sub> max	D <sub>a</sub> min	D <sub>a</sub> max	r <sub>a</sub> max	r <sub>b</sub> max
mm				mm					
12	18	0,3	0,3	13,8	15	17,1	20,4	0,3	0,3
15	22	0,3	0,3	16,9	18,4	20,9	24,3	0,3	0,3
17	25	0,3	0,3	19	20,7	23,7	28,3	0,3	0,3
20	29	0,3	0,3	22,1	24,2	27,6	33,2	0,3	0,3
	35,5	0,3	0,6	22,9	25,2	36,9	39,2	0,3	0,6
25	35,5	0,6	0,6	28,2	29,3	36,9	39,2	0,6	0,6
	40,7	0,6	0,6	28,7	29,5	41,3	44	0,6	0,6
30	40,7	0,6	0,6	33,3	34,2	41,3	44	0,6	0,6
	47	0,6	1	33,8	34,4	48,5	51	0,6	1
35	47	0,6	1	38,5	39,8	48,5	51	0,6	1
	53	0,6	1	39	39,7	54,5	57,5	0,6	1
40	53	0,6	1	43,5	45	54,5	57,5	0,6	1
	60	0,6	1	44,2	44,7	61	63,5	0,6	1
45	60	0,6	1	49,5	50,8	61	63,5	0,6	1
	66	0,6	1	50	50	66,5	70,5	0,6	1
50	66	0,6	1	54,5	56	66,5	70,5	0,6	1
	80	0,6	1	56	57,1	80	84	0,6	1
60	80	1	1	66,5	66,8	80	84	1	1
	92	1	1	67	67	92	99	1	1
70	92	1	1	76,5	77,9	92	99	1	1
	105	1	1	77,8	78,2	105	113	1	1
80	105	1	1	87	89,4	105	113	1	1
	115	1	1	87,1	87,1	113	123	1	1
90	115	1	1	97,5	98,1	113	123	1	1
	130	1	1	98,3	98,3	131	144	1	1

Maintenance-free radial spherical plain bearings, steel/PTFE fabric, metric sizes  
d 100 – 300 mm

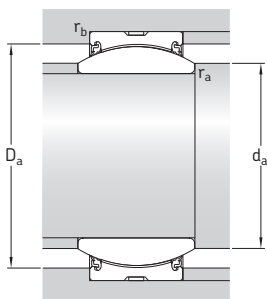


GE .. TX(G3)A-2LS

GEH .. TX(G3)A-2LS

Principal dimensions				Angle of tilt <sup>1)</sup> $\alpha$	Basic load ratings		Mass	Designations	
d	D	B	C		dynamic	static		Material	Bearing steel
				degrees	C	$C_0$	Stainless steel		
mm				degrees	kN		–		
<b>100</b>	150	70	55	6	1 730	2 850	4,40	<b>GE 100 TXA-2LS</b>	<b>GE 100 TXG3A-2LS</b>
	160	85	55	13	1 860	3 100	5,90	<b>GEH 100 TXA-2LS</b>	<b>GEH 100 TXG3A-2LS</b>
<b>110</b>	160	70	55	6	1 860	3 100	4,80	<b>GE 110 TXA-2LS</b>	<b>GE 110 TXG3A-2LS</b>
	180	100	70	12	2 700	4 500	9,50	<b>GEH 110 TXA-2LS</b>	<b>GEH 110 TXG3A-2LS</b>
<b>120</b>	180	85	70	6	2 700	4 500	8,25	<b>GE 120 TXA-2LS</b>	<b>GE 120 TXG3A-2LS</b>
	210	115	70	16	3 000	5 000	14,90	<b>GEH 120 TXA-2LS</b>	<b>GEH 120 TXG3A-2LS</b>
<b>140</b>	210	90	70	7	3 000	5 000	11,0	<b>GE 140 TXA-2LS</b>	<b>GE 140 TXG3A-2LS</b>
<b>160</b>	230	105	80	8	3 800	6 400	14,0	<b>GE 160 TXA-2LS</b>	<b>GE 160 TXG3A-2LS</b>
<b>180</b>	260	105	80	6	4 300	7 200	18,5	<b>GE 180 TXA-2LS</b>	<b>GE 180 TXG3A-2LS</b>
<b>200</b>	290	130	100	7	6 000	10 000	28,0	<b>GE 200 TXA-2LS</b>	<b>GE 200 TXG3A-2LS</b>
<b>220</b>	320	135	100	8	6 550	11 000	35,5	<b>GE 220 TXA-2LS</b>	–
<b>240</b>	340	140	100	8	7 200	12 000	40,0	<b>GE 240 TXA-2LS</b>	–
<b>260</b>	370	150	110	7	8 650	14 300	51,5	<b>GE 260 TXA-2LS</b>	–
<b>280</b>	400	155	120	6	10 000	16 600	65,0	<b>GE 280 TXA-2LS</b>	–
<b>300</b>	430	165	120	7	10 800	18 000	78,5	<b>GE 300 TXA-2LS</b>	–

<sup>1)</sup> To fully utilize the angle of tilt, the shaft shoulder should not be larger than  $d_{a \max}$ .

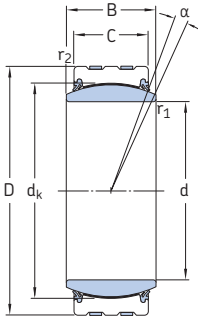


## Dimensions

## Abutment and fillet dimensions

d	d <sub>k</sub>	r <sub>1</sub> min	r <sub>2</sub> min	d <sub>a</sub> min	d <sub>a</sub> max	D <sub>a</sub> min	D <sub>a</sub> max	r <sub>a</sub> max	r <sub>b</sub> max
mm				mm					
<b>100</b>	130	1	1	108	109,5	131	144	1	1
	140	1	1	108,5	111,2	141,5	153	1	1
<b>110</b>	140	1	1	118	121	141,5	153	1	1
	160	1	1	120	124,5	157,5	172	1	1
<b>120</b>	160	1	1	130	135,5	157,5	172	1	1
	180	1	1	130,5	138	180	202	1	1
<b>140</b>	180	1	1	149	155,5	180	202	1	1
<b>160</b>	200	1	1	170	170	197	222	1	1
<b>180</b>	225	1,1	1,1	191	199	224,5	250	1	1
<b>200</b>	250	1,1	1,1	213	213,5	244,5	279	1	1
<b>220</b>	275	1,1	1,1	233	239,5	271	309	1	1
<b>240</b>	300	1,1	1,1	253	265	298	329	1	1
<b>260</b>	325	1,1	1,1	273	288	321,5	359	1	1
<b>280</b>	350	1,1	1,1	294	313,5	344,5	388	1	1
<b>300</b>	375	1,1	1,1	314	336,5	371	418	1	1

**Maintenance-free radial spherical plain bearings, steel/PTFE fabric, metric sizes  
d 320 – 800 mm**



GEC ..TXA-2RS  
d ≤ 400 mm

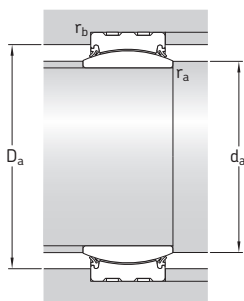


GEC ..TXA-2RS  
d ≥ 420 mm

Principal dimensions				Angle of tilt <sup>1)</sup> $\alpha$	Basic load ratings		Mass	Designation
d	D	B	C		dynamic C	static $C_0$		
mm				degrees	kN		kg	–
320	440	160	135	4	14 000	23 200	75	GEC 320 TXA-2RS
340	460	160	135	3	14 600	24 500	82,5	GEC 340 TXA-2RS
360	480	160	135	3	15 300	25 500	84	GEC 360 TXA-2RS
380	520	190	160	4	19 300	32 500	125	GEC 380 TXA-2RS
400	540	190	160	3	20 400	34 000	130	GEC 400 TXA-2RS
420	560	190	160	3	21 200	35 500	140	GEC 420 TXA-2RS
440	600	218	185	3	26 000	43 000	195	GEC 440 TXA-2RS
460	620	218	185	3	27 000	45 000	200	GEC 460 TXA-2RS
480	650	230	195	3	30 000	50 000	235	GEC 480 TXA-2RS
500	670	230	195	3	31 000	51 000	245	GEC 500 TXA-2RS
530	710	243	205	3	34 500	57 000	290	GEC 530 TXA-2RS
560	750	258	215	3	38 000	63 000	340	GEC 560 TXA-2RS
600	800	272	230	3	43 000	72 000	405	GEC 600 TXA-2RS
630	850	300	260	3	52 000	86 500	525	GEC 630 TXA-2RS
670	900	308	260	3	55 000	91 500	590	GEC 670 TXA-2RS
710	950	325	275	3	62 000	102 000	685	GEC 710 TXA-2RS
750	1 000	335	280	3	65 500	110 000	770	GEC 750 TXA-2RS
800	1 060	355	300	3	75 000	125 000	910	GEC 800 TXA-2RS

<sup>1)</sup> To fully utilize the angle of tilt, the shaft shoulder should not be larger than  $d_{a \max}$ .



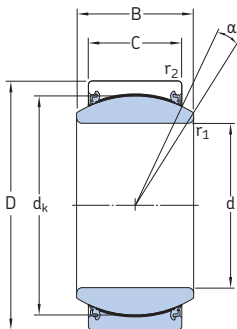


## Dimensions

## Abutment and fillet dimensions

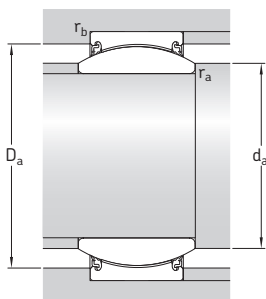
d	d <sub>k</sub>	r <sub>1</sub> min	r <sub>2</sub> min	d <sub>a</sub> min	d <sub>a</sub> max	D <sub>a</sub> min	D <sub>a</sub> max	r <sub>a</sub> max	r <sub>b</sub> max
mm				mm					
320	380	1,1	3	337	344	376	414	1	3
340	400	1,1	3	357	366	396	434	1	3
360	420	1,1	3	376	388	416	454	1	3
380	450	1,5	4	400	407	445	490	1,5	4
400	470	1,5	4	420	429	465	510	1,5	4
420	490	1,5	4	439	451	485	530	1,5	4
440	520	1,5	4	461	472	514	568	1,5	4
460	540	1,5	4	482	494	534	587	1,5	4
480	565	2	5	504	516	559	613	2	5
500	585	2	5	524	537	579	633	2	5
530	620	2	5	555	570	613	672	2	5
560	655	2	5	585	602	648	711	2	5
600	700	2	5	627	644	692	760	2	5
630	740	3	6	662	676	732	802	3	6
670	785	3	6	702	722	776	853	3	6
710	830	3	6	744	763	821	901	3	6
750	875	3	6	784	808	865	950	3	6
800	930	3	6	835	859	920	1008	3	6

Maintenance-free radial spherical plain bearings, steel/PTFE fabric, inch sizes  
d 1 – 3.75 in



GEZ .. TXE-2LS

Principal dimensions				Angle of tilt	Basic load ratings		Mass	Designation
d	D	B	C	$\alpha$	C	$C_0$		
in/mm				degrees	lbf/kN		lb/kg	–
<b>1</b> 25,400	1.6250 41,275	0.875 22,23	0.750 19,05	6	18 680 83	37 350 166	0.26 0,12	<b>GEZ 100 TXE-2LS</b>
<b>1.25</b> 31,750	2.0000 50,800	1.093 27,76	0.937 23,80	6	29 030 129	58 500 260	0.51 0,23	<b>GEZ 104 TXE-2LS</b>
<b>1.375</b> 34,925	2.1875 55,563	1.187 30,15	1.031 26,19	5	35 100 156	69 750 310	0.77 0,35	<b>GEZ 106 TXE-2LS</b>
<b>1.5</b> 38,100	2.4375 61,913	1.312 33,33	1.125 28,58	6	41 850 186	84 380 375	0.93 0,42	<b>GEZ 108 TXE-2LS</b>
<b>1.75</b> 44,450	2.8125 71,438	1.531 38,89	1.312 33,33	6	57 380 255	114 750 510	1.40 0,64	<b>GEZ 112 TXE-2LS</b>
<b>2</b> 50,800	3.1875 80,963	1.750 44,45	1.500 38,10	6	75 380 335	150 750 670	2.05 0,93	<b>GEZ 200 TXE-2LS</b>
<b>2.25</b> 57,150	3.5625 90,488	1.969 50,01	1.687 42,85	6	95 630 425	191 250 850	2.85 1,30	<b>GEZ 204 TXE-2LS</b>
<b>2.5</b> 63,500	3.9375 100,013	2.187 55,55	1.875 47,63	6	117 000 520	234 000 1 040	4.10 1,85	<b>GEZ 208 TXE-2LS</b>
<b>2.75</b> 69,850	4.3750 111,125	2.406 61,11	2.062 52,38	6	141 750 630	285 750 1 270	5.30 2,40	<b>GEZ 212 TXE-2LS</b>
<b>3</b> 76,200	4.75 120,650	2.625 66,68	2.25 57,15	6	168 750 750	337 500 1 500	6.84 3,1	<b>GEZ 300 TXE-2LS</b>
<b>3.25</b> 82,550	5.125 130,175	2.844 72,24	2.437 61,9	6	198 000 880	396 000 1 760	8.38 3,8	<b>GEZ 304 TXE-2LS</b>
<b>3.5</b> 88,900	5.5 139,700	3.062 77,78	2.625 66,68	6	229 500 1020	459 000 2040	10.58 4,8	<b>GEZ 308 TXE-2LS</b>
<b>3.75</b> 95,250	5.875 149,225	3.281 83,34	2.812 71,43	6	265 500 1180	531 000 2360	12.79 5,8	<b>GEZ 312 TXE-2LS</b>

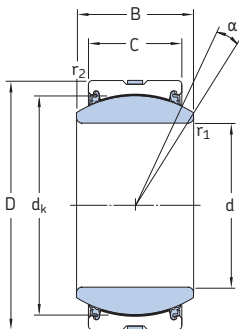


## Dimensions

## Abutment and fillet dimensions

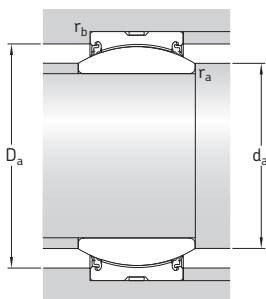
d	d <sub>k</sub>	r <sub>1</sub> min	r <sub>2</sub> min	d <sub>a</sub> min	d <sub>a</sub> max	D <sub>a</sub> min	D <sub>a</sub> max	r <sub>a</sub> max	r <sub>b</sub> max
in/mm		in/mm							
<b>1</b> 25,400	1.4370 36,500	0.012 0,3	0.039 1	1.09 27,6	1.14 28,9	1.45 36,8	1.46 37,1	0.012 0,3	0.039 1
<b>1.25</b> 31,750	1.7950 45,593	0.024 0,6	0.039 1	1.38 35	1.42 36,1	1.81 45,9	1.83 46,4	0.024 0,6	0.039 1
<b>1.375</b> 34,925	1.9370 49,200	0.024 0,6	0.039 1	1.51 38,3	1.53 38,8	1.93 49	2.01 51	0.024 0,6	0.039 1
<b>1.5</b> 38,100	2.1550 54,737	0.024 0,6	0.039 1	1.64 41,6	1.71 43,4	2.17 55,1	2.25 57,2	0.024 0,6	0.039 1
<b>1.75</b> 44,450	2.5150 63,881	0.024 0,6	0.039 1	1.92 48,8	1.99 50,6	2.52 64,1	2.62 66,5	0.024 0,6	0.039 1
<b>2</b> 50,800	2.8750 73,025	0.024 0,6	0.039 1	2.18 55,4	2.28 57,9	2.85 72,4	2.95 74,9	0.024 0,6	0.039 1
<b>2.25</b> 57,150	3.2350 82,169	0.024 0,6	0.039 1	2.44 62	2.56 65,1	3.22 81,9	3.31 84,1	0.024 0,6	0.039 1
<b>2.5</b> 63,500	3.5900 91,186	0.024 0,6	0.039 1	2.7 68,6	2.85 72,3	3.56 90,4	3.68 93,4	0.024 0,6	0.039 1
<b>2.75</b> 69,850	3.9500 100,330	0.024 0,6	0.039 1	2.96 75,2	3.13 79,5	3.95 100,4	4.1 104,2	0.024 0,6	0.039 1
<b>3</b> 76,200	4.3120 109,525	0.024 0,6	0.039 1	3.220 81,8	3.417 86,8	4.299 109,2	4.469 113,5	0.024 0,6	0.039 1
<b>3.25</b> 82,550	4.675 118,745	0.024 0,6	0.039 1	3.480 88,4	3.709 94,2	4.677 118,8	4.831 122,7	0.024 0,6	0.039 1
<b>3.5</b> 88,900	5.04 128,016	0.024 0,6	0.039 1	3.740 95	4.000 101,6	5.024 127,6	5.197 132	0.024 0,6	0.039 1
<b>3.75</b> 95,250	5.39 136,906	0.024 0,6	0.039 1	4.000 101,6	4.276 108,6	5.362 136,2	5.559 141,2	0.024 0,6	0.039 1

Maintenance-free radial spherical plain bearings, steel/PTFE fabric, inch sizes  
d 4 – 6 in



GEZ ..TXA-2LS

Principal dimensions				Angle of tilt	Basic load ratings		Mass	Designation
d	D	B	C	$\alpha$	dynamic	static		
in/mm				degrees	lbf/kN		lb/kg	–
<b>4</b>	6.25	3.5	3	6	301 500	596 250	15.435	<b>GEZ 400 TXA-2LS</b>
101,600	158,750	88,9	76,2		1340	2650	7	
<b>4.5</b>	7	3.937	3.375	6	382 500	765 000	21.609	<b>GEZ 408 TXA-2LS</b>
114,300	177,800	100	85,725		1700	3400	9,8	
<b>4.75</b>	7.375	4.156	3.562	6	427 500	843 750	25.358	<b>GEZ 412 TXA-2LS</b>
120,650	187,325	105,56	90,48		1900	3750	11,5	
<b>5</b>	7.75	4.375	3.75	6	468 000	933 750	29.768	<b>GEZ 500 TXA-2LS</b>
127	196,850	111,13	95,25		2080	4150	13,5	
<b>6</b>	8.75	4.75	4.125	5	585 000	1 170 000	38.588	<b>GEZ 600 TXA-2LS</b>
152,400	222,250	120,65	104,78		2600	5200	17,5	

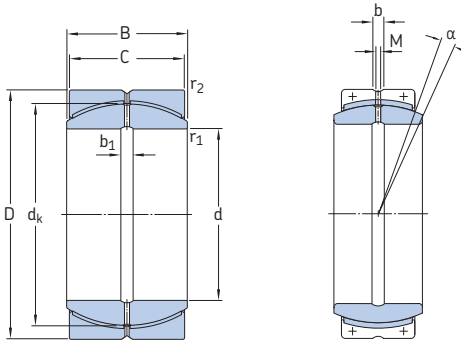


## Dimensions

## Abutment and fillet dimensions

d	d <sub>k</sub>	r <sub>1</sub> min	r <sub>2</sub> min	d <sub>a</sub> min	d <sub>a</sub> max	D <sub>a</sub> min	D <sub>a</sub> max	r <sub>a</sub> max	r <sub>b</sub> max
in/mm		in/mm							
<b>4</b>	5.75	0.024	0.039	4.272	4.547	5.709	5.925	0.024	0.039
	101,600	0,6	1	108,5	115,5	145	150,5	0,6	1
<b>4.5</b>	6.475	0.039	0.043	4.843	5.138	6.358	6.634	0.039	0.043
	114,300	1	1,1	123	130,5	161,5	168,5	1	1,1
<b>4.75</b>	6.825	0.039	0.043	5.098	5.413	6.850	6.969	0.039	0.043
	120,650	1	1,1	129,5	137,5	174	177	1	1,1
<b>5</b>	7.19	0.039	0.043	5.354	5.689	7.106	7.323	0.039	0.043
	127	1	1,1	136	144,5	180,5	186	1	1,1
<b>6</b>	8.156	0.039	0.043	6.358	6.614	8.012	8.307	0.039	0.043
	152,400	1	1,1	161,5	168	203,5	211	1	1,1

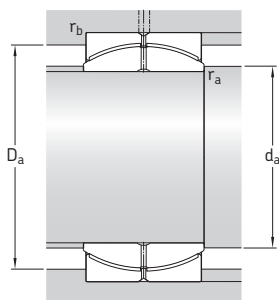
Maintenance-free radial spherical plain bearings, steel/PTFE FRP, metric sizes  
d 100 – 420 mm



GEP .. FS

GEC .. FBAS

Principal dimensions				Angle of tilt	Basic load ratings		Mass	Designation
d	D	B	C	$\alpha$	C	$C_0$		
mm				degrees	kN		kg	–
<b>100</b>	150	71	67	2	600	900	4,5	<b>GEP 100 FS</b>
<b>110</b>	160	78	74	2	720	1 080	5,35	<b>GEP 110 FS</b>
<b>120</b>	180	85	80	2	850	1 270	7,95	<b>GEP 120 FS</b>
<b>140</b>	210	100	95	2	1 200	1 800	13	<b>GEP 140 FS</b>
<b>160</b>	230	115	109	2	1 600	2 400	16,5	<b>GEP 160 FS</b>
<b>180</b>	260	128	122	2	2 080	3 100	24,5	<b>GEP 180 FS</b>
<b>200</b>	290	140	134	2	2 450	3 650	33,5	<b>GEP 200 FS</b>
<b>220</b>	320	155	148	2	3 050	4 550	46	<b>GEP 220 FS</b>
<b>240</b>	340	170	162	2	3 550	5 400	53,5	<b>GEP 240 FS</b>
<b>260</b>	370	185	175	2	4 250	6 400	69,5	<b>GEP 260 FS</b>
<b>280</b>	400	200	190	2	5 000	7 500	89,5	<b>GEP 280 FS</b>
<b>300</b>	430	212	200	2	5 600	8 300	110	<b>GEP 300 FS</b>
<b>320</b>	440	160	135	4	3 000	4 500	69,0	<b>GEC 320 FBAS</b>
	460	230	218	2	6 400	9 650	135	<b>GEP 320 FS</b>
<b>340</b>	460	160	135	3	3 150	4 750	73,0	<b>GEC 340 FBAS</b>
	480	243	230	2	7 100	10 800	150	<b>GEP 340 FS</b>
<b>360</b>	480	160	135	3	3 250	4 900	77,0	<b>GEC 360 FBAS</b>
	520	258	243	2	8 150	12 200	200	<b>GEP 360 FS</b>
<b>380</b>	520	190	160	4	4 300	6 550	116	<b>GEC 380 FBAS</b>
	540	272	258	2	9 150	13 700	220	<b>GEP 380 FS</b>
<b>400</b>	540	190	160	3	4 500	6 700	120	<b>GEC 400 FBAS</b>
	580	280	265	2	9 650	14 600	275	<b>GEP 400 FS</b>
<b>420</b>	560	190	160	3	4 650	6 950	126	<b>GEC 420 FBAS</b>
	600	300	280	2	10 600	16 000	300	<b>GEP 420 FS</b>

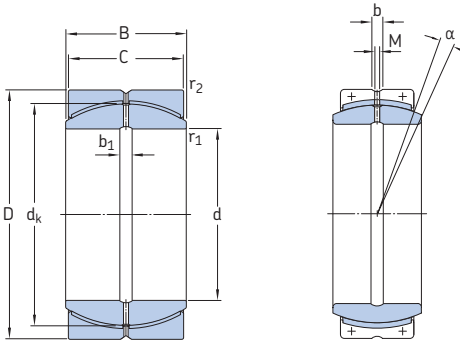


## Dimensions

## Abutment and fillet dimensions

d	d <sub>k</sub>	b	b <sub>1</sub>	M	r <sub>1</sub> min	r <sub>2</sub> min	d <sub>a</sub> min	d <sub>a</sub> max	D <sub>a</sub> min	D <sub>a</sub> max	r <sub>a</sub> max	r <sub>b</sub> max
mm							mm					
100	135	7,5	7,5	4	1	1	107	114	125,6	141,9	1	1
110	145	7,5	7,5	4	1	1	117	122	135	151	1	1
120	160	7,5	7,5	4	1	1	128	135	149	171	1	1
140	185	7,5	7,5	4	1	1	148	155	173	200	1	1
160	210	7,5	7,5	4	1	1	169	175	195	218	1	1
180	240	7,5	7,5	4	1,1	1,1	191	203	224	246	1	1
200	260	11,5	11,5	5	1,1	1,1	211	219	242	276	1	1
220	290	13,5	13,5	6	1,1	1,1	232	245	270	304	1	1
240	310	13,5	13,5	6	1,1	1,1	253	259	289	323	1	1
260	340	15,5	15,5	7	1,1	1,1	274	285	317	352	1	1
280	370	15,5	15,5	7	1,1	1,1	294	311	345	381	1	1
300	390	15,5	15,5	7	1,1	1,1	315	327	363	411	1	1
320	380	21	21	8	1,1	3	328	344	370	426	1	3
	414	21	21	8	1,1	3	335	344	385	434	1	3
340	400	21	21	8	1,1	3	348	366	391	446	1	3
	434	21	21	8	1,1	3	356	359	404	453	1	3
360	420	21	21	8	1,1	3	368	388	412,5	466	1	3
	474	21	21	8	1,1	4	377	397	441	490	1	4
380	450	21	21	8	1,5	4	389	407	435,5	503	1,5	4
	494	21	21	8	1,5	4	398	412	460	508	1,5	4
400	470	21	21	8	1,5	4	409	429	457	523	1,5	4
	514	21	21	8	1,5	4	418	431	478	549	1,5	4
420	490	21	21	8	1,5	4	429	451	478,5	543	1,5	4
	534	21	21	8	1,5	4	439	441	497	568	1,5	4

Maintenance-free radial spherical plain bearings, steel/PTFE FRP, metric sizes  
d 440 – 850 mm

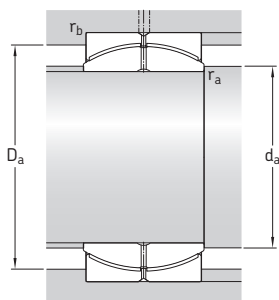


GEP..FS

GEC..FBAS

Principal dimensions				Angle of tilt	Basic load ratings		Mass	Designation
d	D	B	C	$\alpha$	C	$C_0$		
mm				degrees	kN		kg	–
<b>440</b>	600	218	185	3	5 850	8 800	176	<b>GEC 440 FBAS</b>
	630	315	300	2	12 200	18 600	360	<b>GEP 440 FS</b>
<b>460</b>	620	218	185	3	6 000	9 000	182	<b>GEC 460 FBAS</b>
	650	325	308	2	12 900	19 600	380	<b>GEP 460 FS</b>
<b>480</b>	650	230	195	3	6 700	10 000	216	<b>GEC 480 FBAS</b>
	680	340	320	2	14 300	21 200	435	<b>GEP 480 FS</b>
<b>500</b>	670	230	195	3	6 800	10 200	224	<b>GEC 500 FBAS</b>
	710	355	335	2	15 300	23 200	500	<b>GEP 500 FS</b>
<b>530</b>	710	243	205	3	7 650	11 400	266	<b>GEC 530 FBAS</b>
	750	375	355	2	17 000	25 500	585	<b>GEP 530 FS</b>
<b>560</b>	750	258	215	4	8 500	12 700	313	<b>GEC 560 FBAS</b>
	800	400	380	2	19 600	29 000	730	<b>GEP 560 FS</b>
<b>600</b>	800	272	230	3	9 800	14 600	378	<b>GEC 600 FBAS</b>
	850	425	400	2	22 000	33 500	860	<b>GEP 600 FS</b>
<b>630</b>	850	300	260	3	11 800	18 000	494	<b>GEC 630 FBAS</b>
	900	450	425	2	24 500	37 500	1 040	<b>GEP 630 FS</b>
<b>670</b>	900	308	260	3	12 500	18 600	551	<b>GEC 670 FBAS</b>
	950	475	450	2	27 500	41 500	1 210	<b>GEP 670 FS</b>
<b>710</b>	950	325	275	3	14 000	21 200	643	<b>GEC 710 FBAS</b>
	1 000	500	475	2	31 000	46 500	1 400	<b>GEP 710 FS</b>
<b>750</b>	1 000	335	280	3	15 000	22 400	727	<b>GEC 750 FBAS</b>
	1 060	530	500	2	34 500	52 000	1 670	<b>GEP 750 FS</b>
<b>800</b>	1 060	355	300	3	17 300	26 000	861	<b>GEC 800 FBAS</b>
	1 120	565	530	2	39 000	58 500	1 940	<b>GEP 800 FS</b>
<b>850</b>	1 120	365	310	3	18 600	28 000	983	<b>GEC 850 FBAS</b>
	1 220	600	565	2	45 000	67 000	2 600	<b>GEP 850 FS</b>



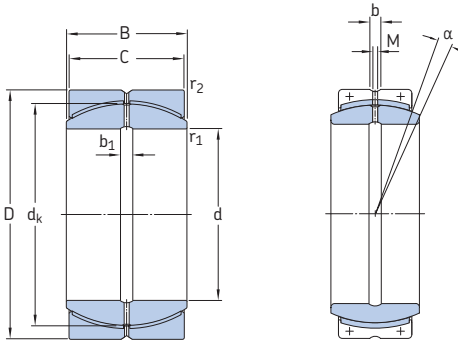


## Dimensions

## Abutment and fillet dimensions

d	d <sub>k</sub>	b	b <sub>1</sub>	M	r <sub>1</sub> min	r <sub>2</sub> min	d <sub>a</sub> min	d <sub>a</sub> max	D <sub>a</sub> max	D <sub>a</sub> min	r <sub>a</sub> max	r <sub>b</sub> max
mm							mm					
<b>440</b>	520	27	27	10	1,5	4	450	472	502	583	1,5	4
	574	27	27	10	1,5	4	460	479	534	596	1,5	4
<b>460</b>	540	27	27	10	1,5	4	470	494	524,5	603	1,5	4
	593	27	27	10	1,5	5	481	496	552	612	1,5	5
<b>480</b>	565	27	27	10	2	5	491	516	547,5	629	2	5
	623	27	27	10	2	5	503	522	580	641	2	5
<b>500</b>	585	27	27	10	2	5	511	537	571	650	2	5
	643	27	27	10	2	5	523	536	598	670	2	5
<b>530</b>	620	27	27	10	2	5	541	570	605	689	2	5
	673	27	27	10	2	5	554	558	626	709	2	5
<b>560</b>	655	27	27	10	2	5	572	602	639	729	2	5
	723	27	27	10	2	5	585	602	673	758	2	5
<b>600</b>	700	27	27	10	2	5	612	644	683	779	2	5
	773	27	27	10	2	6	627	645	719	801	2	6
<b>630</b>	740	35	35	13	3	6	646	676	716	824	3	6
	813	35	35	13	3	6	661	677	757	850	3	6
<b>670</b>	785	35	35	13	3	6	686	722	765	874	3	6
	862	35	35	13	3	6	702	719	802	898	3	6
<b>710</b>	830	35	35	13	3	6	726	763	810	924	3	6
	912	35	35	13	3	6	743	762	849	946	3	6
<b>750</b>	875	35	35	13	3	6	766	808	856	974	3	6
	972	35	35	13	3	6	784	814	904	1005	3	6
<b>800</b>	930	35	35	13	3	6	817	859	907	1033	3	6
	1022	35	35	13	3	6	836	851	951	1062	3	6
<b>850</b>	985	35	35	13	3	6	867	914	963	1093	3	6
	1112	35	35	13	3	7,5	888	936	1035	1156	3	7,5

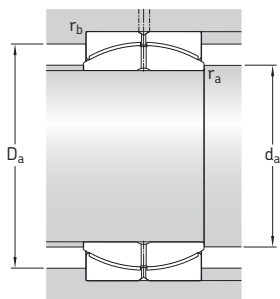
Maintenance-free radial spherical plain bearings, steel/PTFE FRP, metric sizes  
d 900 – 1 000 mm



GEP .. FS

GEC .. FBAS

Principal dimensions				Angle of tilt	Basic load ratings		Mass	Designation
d	D	B	C	$\alpha$	dynamic	static		
mm				degrees	kN		kg	–
<b>900</b>	1 180	375	320	3	20 400	31 000	1 120	<b>GEC 900 FBAS</b>
	1 250	635	600	2	49 000	73 500	2 690	<b>GEP 900 FS</b>
<b>950</b>	1 250	400	340	3	23 200	34 500	1 340	<b>GEC 950 FBAS</b>
	1 360	670	635	2	56 000	85 000	3 620	<b>GEP 950 FS</b>
<b>1 000</b>	1 320	438	370	3	27 000	40 000	1 650	<b>GEC 1000 FBAS</b>
	1 450	710	670	2	63 000	95 000	4 470	<b>GEP 1000 FS</b>



Dimensions							Abutment and fillet dimensions					
d	d <sub>k</sub>	b	b <sub>1</sub>	M	r <sub>1</sub> min	r <sub>2</sub> min	d <sub>a</sub> min	d <sub>a</sub> max	D <sub>a</sub> min	D <sub>a</sub> max	r <sub>a</sub> max	r <sub>b</sub> max
mm							mm					
<b>900</b>	1 040	35	35	13	3	6	917	970	1 017	1 153	3	6
	1 142	35	35	13	3	7,5	938	949	1 063	1 183	3	7,5
<b>950</b>	1 100	40	40	15	4	7,5	969	1 024	1 074	1 217	4	7,5
	1 242	40	40	15	4	7,5	993	1 045	1 156	1 290	4	7,5
<b>1 000</b>	1 160	40	40	15	4	7,5	1 020	1 074	1 128	1 287	4	7,5
	1 312	40	40	15	4	7,5	1 045	1 103	1 221	1 378	4	7,5