
SKF

Maintenance-free rod ends

SKF manufactures maintenance-free rod ends with three different sliding contact surface combinations in different series:

- Steel/PTFE sintered bronze (→ **fig. 1**):
  – SI(L) .. C series
  – SA(L) .. C series
- Steel/PTFE fabric (→ **fig. 2**):
  – SI(L) .. TXE-2LS series
  – SI(L)A .. TXE-2LS series
  – SA(L) .. TXE-2LS series
  – SA(L)A .. TXE-2LS series
- Steel/PTFE FRP (→ **fig. 3**):
  – SI(L)KB .. F series
  – SA(L)KB .. F series

Rod ends with either a steel/PTFE sintered bronze or steel/PTFE fabric sliding contact surface combination contain a bearing from the standard assortment. The outer ring is staked in place in the housing.

Rod ends with a steel/PTFE FRP sliding contact surface combination consist of a rod end housing and a spherical plain bearing inner ring. Between the housing and the inner ring, a sliding layer of fibre reinforced polymer, containing PTFE, is moulded to the housing.

SKF supplies maintenance-free rod ends with a threaded shank with a right-hand thread as standard. With the exception of rod ends with the designation suffix VZ019, all rod ends are also available with a left-hand thread. They are identified by the designation prefix L.

Dimensions

The dimensions of SKF maintenance-free rod ends are in accordance with ISO 12240-4:1998.

Male and female threads of SKF rod ends are in accordance with ISO 965-1:1998, except for rod ends with female thread having the designation suffix /VZ019, which is in accordance with ISO 8139:2009.

Fig. 1

Maintenance-free rod end, steel/PTFE sintered bronze

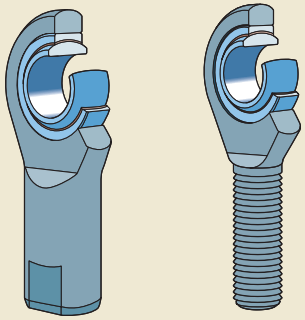


Fig. 2

Maintenance-free rod end, steel/PTFE fabric

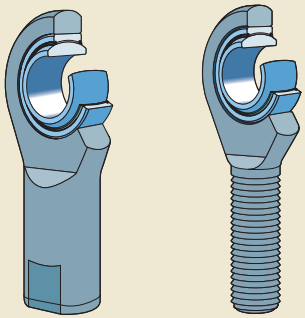
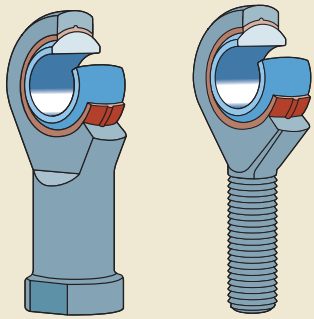


Fig. 3

Maintenance-free rod end, steel/PTFE FRP



Tolerances

SKF rod end inner ring dimensional tolerances are in accordance with ISO 12240-1:1998. The tolerances are listed in **table 1**.

The symbols used in **table 1** are explained in the following:

d nominal bore diameter
Δ_{dmp} deviation of the mean bore diameter from the nominal
Δ_{Bs} deviation of the single inner ring width from the nominal

Radial internal clearance, preload

Depending on their design, SKF maintenance-free rod ends may have a radial internal clearance or a light preload. **Table 2** lists maximum values for the radial internal clearance as well as for the frictional moment in the circumferential direction caused by preload.

Table 2

Radial internal clearance and frictional moment for maintenance-free rod ends

Bore diameter d		Radial internal clearance	Frictional moment
over	incl.	max	max
mm		µm	Nm
Sliding surface steel/PTFE sintered bronze (designation suffix C)			
–	**12**	28	0,15
12	**20**	35	0,25
20	**30**	44	0,40
Sliding surface steel/PTFE fabric (designation suffix TXE-2LS)			
35	**80**	50	–
Sliding surface steel/PTFE FRP (designation suffix F)			
5		50	0,20
6		50	0,25
8		50	0,30
10		75	0,40
12		75	0,50
14		75	0,60
16		75	0,70
18		85	0,80
20		100	1
22		100	1,2

Table 1

Inner ring dimensional tolerances for maintenance-free rod ends

Bore diameter d		SA(A) and SI(A) series				SAKB and SIKB series			
		Δ_{dmp}		Δ_{Bs}		Δ_{dmp}		Δ_{Bs}	
over	incl.	high	low	high	low	high	low	high	low
mm		µm		µm		µm		µm	
–	**6**	0	–8	0	–120	12	0	0	–120
6	**10**	0	–8	0	–120	15	0	0	–120
10	**18**	0	–8	0	–120	18	0	0	–120
18	**30**	0	–10	0	–120	21	0	0	–120
30	**50**	0	–12	0	–120	–	–	–	–
50	**80**	0	–15	0	–150	–	–	–	–

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Materials

SKF rod end housings for maintenance-free bearings are made of materials as listed in **table 3**.

Details of the materials used for the maintenance-free radial spherical plain bearings incorporated in the rod ends are listed in **table 3** on **pages 128** to **129.**

The inner ring of rod ends with a steel/PTFE FRP sliding contact surface combination is made of bearing steel. The ring is through-hardened and ground. The sliding contact surface of the inner ring is hard chromium plated. The sliding layer consists of a fibre reinforced polymer, containing PTFE.

Table 3

Housing materials for maintenance-free rod ends

Series	Size	Material	Material No.
SA(A) SI(A)	6 to 80	Heat treatable steel C45V, zinc coated and chromatized	1.0503
SAKB SIKB	5 to 12	Free-machining steel, zinc coated and chromatized	1.0718
	14 to 22	Heat treatable steel C35N, zinc coated and chromatized	1.0501

Permissible operating temperature range

The permissible operating temperature range for SKF maintenance-free rod ends depends on the rod end housing, the incorporated bearing and the bearing seals. The values for the permissible operating temperature range are listed in **table 4**.

The load carrying capacity of the rod end is reduced at temperatures above 100 °C. For temperatures below 0 °C, check to be sure that the fracture toughness of the rod end housing is adequate for the intended application.

Table 4

Permissible operating temperature range for maintenance-free rod ends

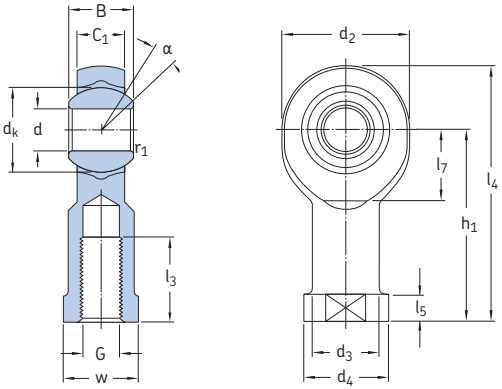
Rod end sliding contact surface combination	Permissible operating temperature range[1]		Reduced load carrying capacity
	from	incl.	from
–	°C		°C
Steel/PTFE sintered bronze	–50	+150	+80
Steel/PTFE fabric	–40	+110	+65
Steel/PTFE FRP	–40	+75	+50

[1] For temperatures below 0 °C, make sure that the fracture toughness of the rod end housing is adequate for the intended application.

Fatigue strength

In all applications where a rod end is subjected to alternating loads, loads that vary in magnitude or where failure of a rod end is dangerous, make sure that the selected rod end has sufficient fatigue strength.

Maintenance-free rod ends with a female thread, steel/PTFE FRP
d **5 – 22** mm



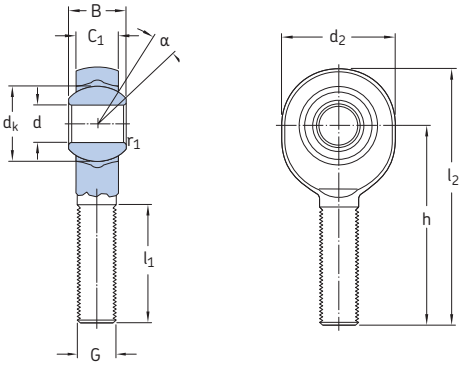
SI(L)KB .. F

Principal dimensions						Angle of tilt	Basic load ratings dynamic	static	Mass	Designations Rod end with right-hand thread	left-hand thread
d	d_2 max	G 6H	B	C_1 max	h_1	α	C	C_0			
mm						degrees	kN		kg	–	
5	19	M 5	8	6	27	13	3,25	5,3	0,019	**SIKB 5 F**	**SILKB 5 F**
6	21	M 6	9	6,75	30	13	4,25	6,8	0,028	**SIKB 6 F**	**SILKB 6 F**
8	25	M 8	12	9	36	14	7,1	11,4	0,047	**SIKB 8 F**	**SILKB 8 F**
10	29	M 10	14	10,5	43	13	9,8	14,3	0,079	**SIKB 10 F**	**SILKB 10 F**
	29	M 10×1,25	14	10,5	43	13	9,8	14,3	0,079	**SIKB 10 F/VZ019**	–
12	33	M 12	16	12	50	13	13,2	17	0,12	**SIKB 12 F**	**SILKB 12 F**
	33	M 12×1,25	16	12	50	13	13,2	17	0,12	**SIKB 12 F/VZ019**	–
14	37	M 14	19	13,5	57	16	17	27,5	0,16	**SIKB 14 F**	**SILKB 14 F**
16	43	M 16	21	15	64	15	21,4	34,5	0,23	**SIKB 16 F**	**SILKB 16 F**
	43	M 16×1,5	21	15	64	15	21,4	34,5	0,23	**SIKB 16 F/VZ019**	–
18	47	M 18×1,5	23	16,5	71	15	26	41,5	0,33	**SIKB 18 F**	**SILKB 18 F**
20	51	M 20×1,5	25	18	77	14	31	50	0,38	**SIKB 20 F**	**SILKB 20 F**
22	55	M 22×1,5	28	20	84	15	38	61	0,52	**SIKB 22 F**	**SILKB 22 F**

Dimensions

d	d_k	d_3 ≈	d_4 max	l_3 min	l_4 max	l_5 ≈	l_7 min	r_1 min	w h14
mm									
5	11,1	9	12	8	37	4	9	0,3	9
6	12,7	10	14	9	41	5	10	0,3	11
8	15,8	12,5	17	12	49	5	12	0,3	14
10	19 19	15 15	20 20	15 20	58 58	6,5 6,5	14 14	0,3 0,3	17 17
12	22,2 22,2	17,5 17,5	23 23	18 22	67 67	6,5 6,5	16 16	0,3 0,3	19 19
14	25,4	20	27	21	76	8	18	0,3	22
16	28,5 28,5	22 22	29 29	24 28	86 86	8 8	21 21	0,3 0,3	22 22
18	31,7	25	32	27	95	10	23	0,3	27
20	34,9	27,5	37	30	103	10	25	0,3	30
22	38,1	30	40	33	114	12	27	0,3	32

Maintenance-free rod ends with a male thread, steel/PTFE FRP
d **5 – 22** mm



SA(L)KB ..F

Principal dimensions						Angle of tilt	Basic load ratings dynamic	static	Mass	Designations Rod end with right-hand thread	left-hand thread
d	d_2 max	G 6g	B	C_1 max	h	α	C	C_0			
mm						degrees	kN		kg	–	
5	19	M 5	8	6	33	13	3,25	5,3	0,015	**SAKB 5 F**	**SALKB 5 F**
6	21	M 6	9	6,75	36	13	4,25	6,8	0,021	**SAKB 6 F**	**SALKB 6 F**
8	25	M 8	12	9	42	14	7,1	10	0,035	**SAKB 8 F**	**SALKB 8 F**
10	29	M 10	14	10,5	48	13	9,8	12,5	0,059	**SAKB 10 F**	**SALKB 10 F**
12	33	M 12	16	12	54	13	13,2	15	0,10	**SAKB 12 F**	**SALKB 12 F**
14	37	M 14	19	13,5	60	16	17	25,5	0,13	**SAKB 14 F**	**SALKB 14 F**
16	43	M 16	21	15	66	15	21,4	34,5	0,20	**SAKB 16 F**	**SALKB 16 F**
18	47	M 18×1,5	23	16,5	72	15	26	41,5	0,26	**SAKB 18 F**	**SALKB 18 F**
20	51	M 20×1,5	25	18	78	14	31	50	0,37	**SAKB 20 F**	**SALKB 20 F**
22	55	M 22×1,5	28	20	84	15	38	58,5	0,46	**SAKB 22 F**	**SALKB 22 F**

Dimensions

d	d_k	l_1 min	l_2 max	r_1 min
mm				
5	11,1	19	44	0,3
6	12,7	21	48	0,3
8	15,8	25	56	0,3
10	19	28	64	0,3
12	22,2	32	72	0,3
14	25,4	36	80	0,3
16	28,5	37	89	0,3
18	31,7	41	97	0,3
20	34,9	45	106	0,3
22	38,1	48	114	0,3