

Single row crossed cylindrical roller slewing bearings

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Product data – general

General

Single row crossed cylindrical roller slewing bearings are simple in design, consisting of a one-piece inner and outer ring and cylindrical rollers separated by polyamide spacers and generally protected by integral seals. They can accommodate heavy radial loads and medium axial loads as well as tilting moments. These SKF slewing bearings are intended for bearing arrangements where stiffness is important or zero operational clearance or preload as well as constant resistance to rotation are required.

Single row crossed cylindrical roller slewing bearings require tighter specifications for the flatness and stiffness of the support surface than single row four-point contact ball slewing bearings.

Due to the wide range of applications for single row crossed cylindrical roller slewing bearings, SKF manufactures them in many executions and sizes that are available from stock or within short lead times. The actual SKF manufacturing range of customized bearings is more extensive than what appears in the product tables. SKF manufactures a variety of customized single row crossed cylindrical roller slewing bearings to meet the demands of particular applications. Customized executions can include special ring materials and unique bolt patterns. Load carrying ability, speed capability, and/or running accuracy can also be customized.

A customized slewing bearing that meets your specific requirements might already exist. Therefore, SKF recommends contacting the application engineering service very early in the design stage so that SKF engineers, with their in-depth product and application knowledge, can help you find the most suitable bearing arrangement for your application.

Designs

Single row crossed cylindrical roller slewing bearings consist of a one-piece inner and outer ring and a set of cylindrical rollers and spacers, protected by integral seals. The cylindrical rollers are inserted into the bearing via a hole in one of the two rings and are separated by polyamide spacers. The axis of rotation of adjacent rollers are at 90° to each other. After loading the roller set and spacers, the hole is closed with a plug that conforms to the raceway contour.

The SKF range of single row crossed cylindrical roller slewing bearings is divided into:

- medium size single row crossed cylindrical roller slewing bearings
- customized single row crossed cylindrical roller slewing bearings



Medium size single row crossed cylindrical roller slewing bearings

SKF medium size single row crossed cylindrical roller slewing bearings are compact, with strong, full-size rings. Depending on the size, they are available with two different fixed cross-sections within each of the three series. To simplify installation, the inner and outer rings have a standardized number of equally spaced holes for attachment bolts.

The standard SKF single row medium size crossed roller slewing bearings (→ **fig. 1**) listed in the product tables include bearings with a mean raceway diameter ranging from 414 to 1 904 mm and are available with any of the following gear configurations:

- with an external gear (**a**), RKS. 161 series designation
- with an internal gear (**b**), RKS. 162 series designation
- without a gear (**c**), RKS. 160 series designation

These slewing bearings are available from stock or within short lead times. For up-to-date information about availability, contact the SKF application engineering service.

SKF medium size crossed cylindrical roller slewing bearings feature a unique and cost-effective combination of load carrying ability, stiffness, and speed capability. These features open a wide application field for medium size crossed cylindrical roller slewing bearings. Typical applications include, but are not limited to, earth moving, construction and material handling equipment as well as robotics.

Medium size crossed cylindrical roller slewing bearings can be operated continuously at circumferential speeds of up to 1.5 m/s and up to 2 m/s for brief periods.

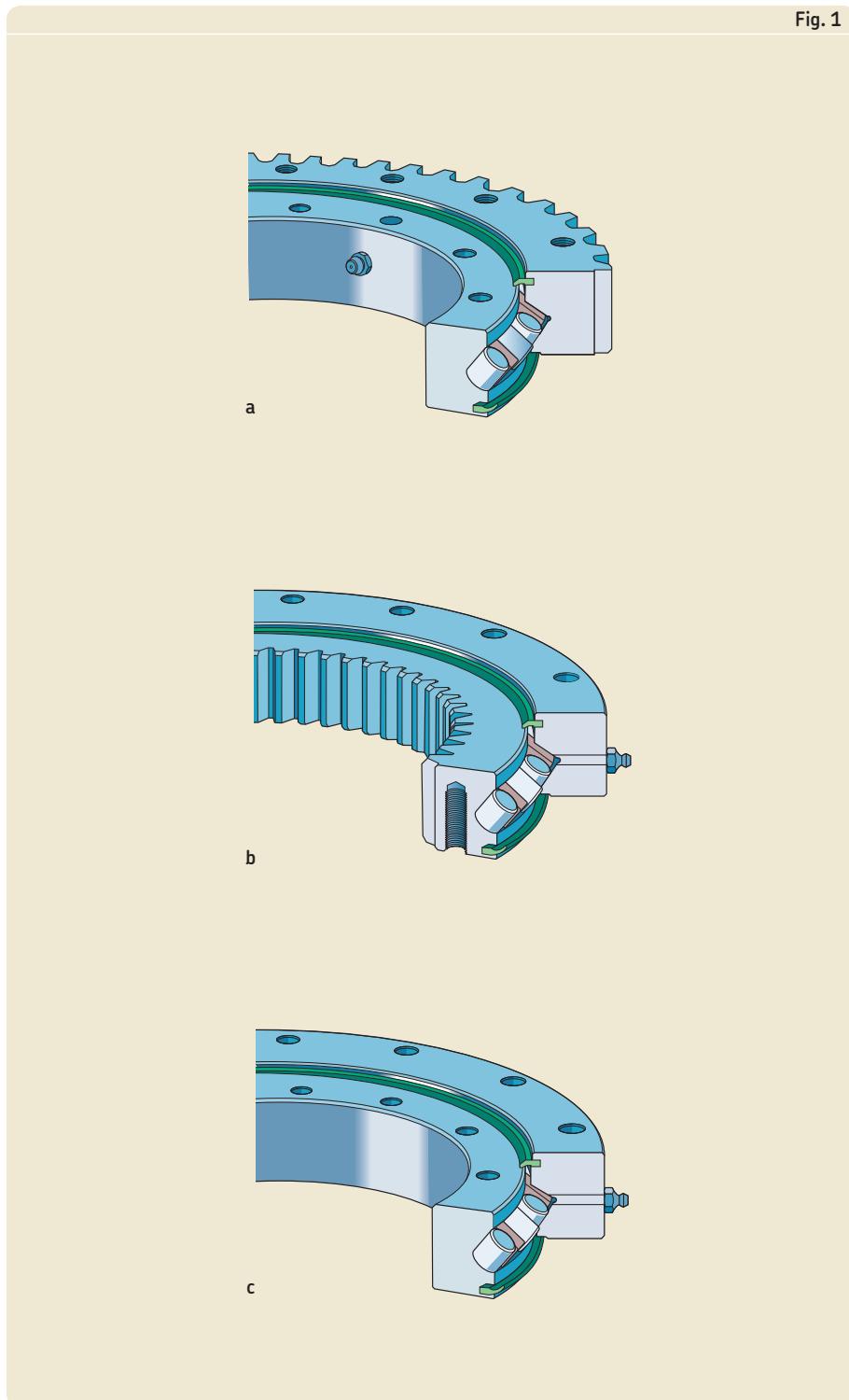
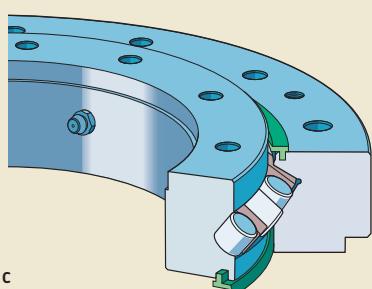
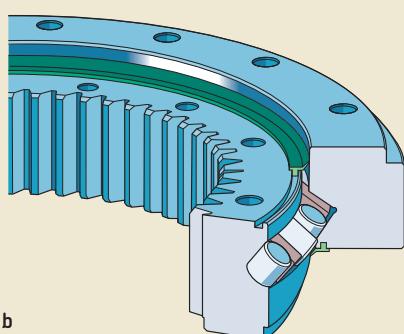
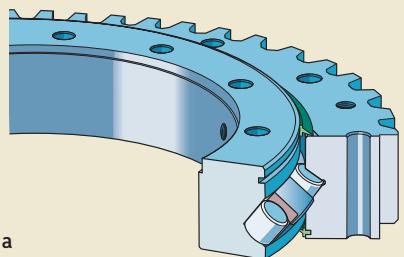


Fig. 1

Fig. 2



Customized single row crossed cylindrical roller slewing bearings

SKF manufactures single row crossed cylindrical roller slewing bearings in a variety of executions and sizes to meet the needs of particular applications.

The customized SKF single row crossed cylindrical roller slewing bearings (**→ fig. 2**) listed in the product tables include bearings with a mean raceway diameter ranging from 310 to 2 200 mm and are available with any of the following gear configurations or options:

- with an external gear (**a**)
- with an internal gear (**b**)
- without a gear (**c**)
- with (**c**) or without centring recesses

These customized bearings represent only a few designs and sizes, which are manufactured on a regular basis or within short lead times. Before incorporating a customized bearing in an application design, contact the SKF application engineering service for availability.

Depending on design, size and accuracy, customized single row crossed cylindrical roller slewing bearings can be operated at circumferential speeds of up to 1,5 m/s and up to 2 m/s for brief periods. For applications that will operate at higher speeds than those listed in the tables, contact the SKF application engineering service.

Bearing data – general

Dimensions

The boundary dimensions of single row crossed cylindrical roller slewing bearings are dictated by practical application requirements and do not comply with any international or national standard. Medium size bearings up to and including 1 094 mm mean raceway diameter are dimensionally interchangeable with competitors' products.

Tolerances

The dimensional and running accuracy of SKF single row crossed cylindrical roller slewing bearings are listed in:

- **table 1:** Diameter tolerances (→ fig. 3)
- **table 2:** Tolerances of tip circle and attachment bolt hole diameters (→ fig. 3)
- **table 3:** Running accuracy

The tolerance for the total height H is ± 1 mm for all single row crossed cylindrical roller slewing bearings.

Axial clearance, preload

Crossed cylindrical roller slewing bearings are manufactured with zero clearance or preload.

Material

The rings of medium size crossed cylindrical roller slewing bearings up to a mean raceway diameter of 1 094 mm are made as standard of C 45 E tempered steel, in accordance with EN 10083-2:2006. Crossed cylindrical roller slewing bearings with a mean raceway diameter larger than 1 094 mm are made of 42CrMo4 bearing steel for induction hardening, in accordance with EN 10083-3:2006.

The rings of customized crossed cylindrical roller slewing bearings listed in the product tables starting on **page 102** are produced either from

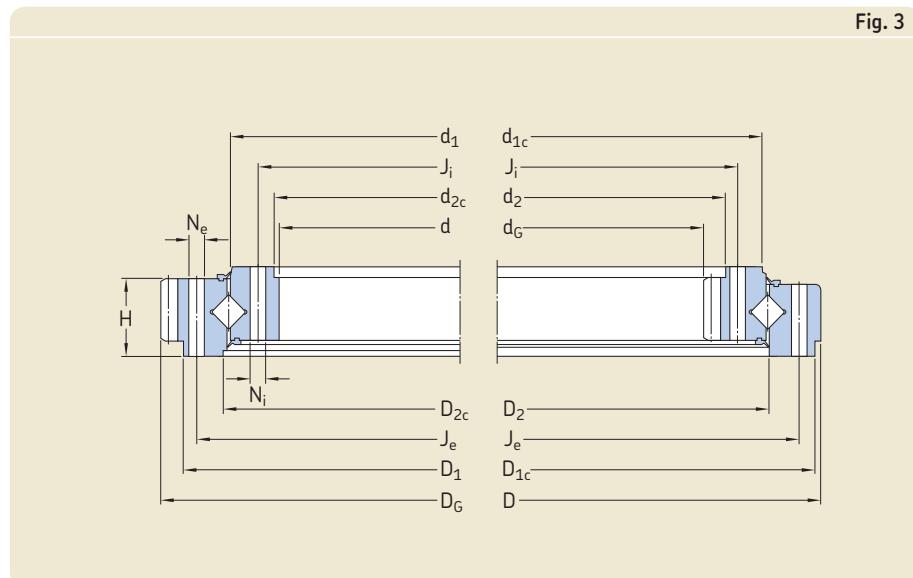
- a modified heat-treatable 42 C 2 steel, in accordance with NFA 35-557:1983, or 46Cr2 steel, in accordance to EN 10083-3-2006
- a 42CrMo4 bearing steel for induction hardening, in accordance with EN10083-3:2006

Inner and outer ring raceways are surface induction-hardened while leaving the remainder of the rings, including the gears, unaffected by the hardening process.

Table 1						
		Diameter tolerances				
		Nominal diameter	Diameter tolerances Ungeared inner and/or outer diameter (d, D)	Centring diameters ¹⁾		Bolt hole pitch circle diameters (J _i , J _e)
over	incl.		(d _{2c} , D _{2c})	(d _{1c} , D _{1c})		
mm		mm				
0	500	±1	0/+0,2	0/-0,2	±0,5	
500	1 000	±1	0/+0,3	0/-0,3	±0,5	
1 000	1 500	±1	0/+0,35	0/-0,35	±0,6	
1 500	2 000	±1	0/+0,4	0/-0,4	±0,8	
2 000	2 500	±1	0/+0,4	0/-0,4	±1	

¹⁾ Applies only to customized bearings

Table 2				
Tolerances of tip circle and attachment bolt hole diameters				
Tip circle diameters D _G and d _G	Module m	Tolerances External gear	Internal gear	Bolt hole diameters K _e and K _i
			Nominal diameter	Tolerance
mm				
5	0/-0,25	0/+0,25	11	±0,3
6	0/-0,3	0/+0,3	14	±0,3
8	0/-0,4	0/+0,4	16	±0,4
10	0/-0,5	0/+0,5	18	±0,4
14	0/-0,7	0/+0,7	22	±0,4
16	0/-0,8	0/+0,8		



The cylindrical rollers are made of 100Cr6 bearing steel for through-hardening, in accordance with EN ISO 683-17:2000.

Corrosion protection

Single row crossed cylindrical roller slewing bearings are protected, as standard, by a solvent free rust inhibitor.

Gears

The gear teeth are manufactured to an SKF specification that closely follows accuracy grade 12 in accordance with ISO 1328-2:1997 and are not hardened. Guideline values for the permissible tooth forces can be obtained from the product tables.

The gear of a new bearing is coated with a preservative. After mounting has been completed, lubricant needs to be applied to the gear. This lubricant should have good adhesive properties and high resistance to water washout. Additionally, the lubricant has to withstand at least temperatures of +100 °C and has to have a base oil viscosity of 500 mm²/s at +40 °C or higher.

Seals

The integral seals are made of profiled strips of non-reinforced acrylonitrile-butadiene rubber (NBR). They seal axially against the side face of the inner or outer ring (**→ fig. 4a**) or radially against the cylindrical surface of the inner or outer ring (**→ fig. 4b**). This material has very good engineering properties and shows good resistance to most mineral oils and greases. The permissible operating temperatures of the seal material range from -40 to +110 °C.

Lubrication

Standard SKF single row crossed cylindrical roller slewing bearings are filled with a mineral oil based grease with a consistency of 2 on the NLGI scale using a lithium soap thickener and containing extreme pressure additives. The base oil viscosity is 200 mm²/s at 40 °C and 16 mm²/s at 100 °C. This grease has good rust inhibiting properties and a temperature range of -20 up to +110 °C. Reliable lubrication according to the SKF traffic light concept occurs when operating temperatures range from +30 to +110°C.

Table 3					
Running accuracy					
Nominal mean raceway diameter d_m		Running accuracy Medium size bearings		Customized bearings	
over	incl.	Radial runout ¹⁾ max	Axial runout ²⁾ max	Radial runout ¹⁾ max	Axial runout ²⁾ max
mm	mm				
0	500	0,2	0,3	0,2	0,2
500	1 000	0,3	0,4	0,3	0,2
1 000	1 500	0,35	0,5	0,35	0,2
1 000	2 000	0,45	0,6	0,4	0,25
1 500	2 500	0,5	0,7	0,45	0,25

¹⁾ Radial runout of the centring of inner or outer ring of assembled bearing
²⁾ Axial runout of the mating surface of inner or outer ring of assembled bearing

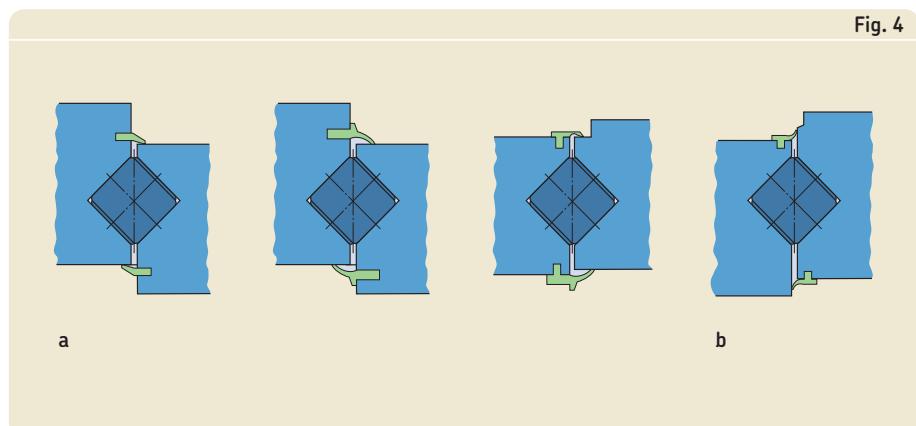


Fig. 4

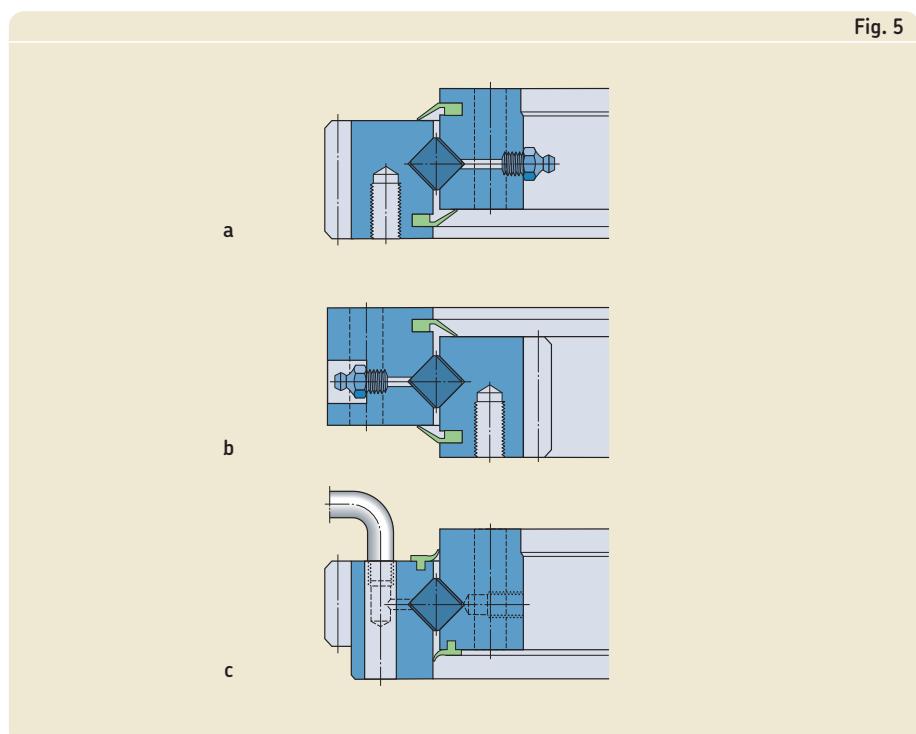


Fig. 5

Medium size single row crossed cylindrical roller slewing bearings can be relubricated through four equally spaced grease fittings A M 10x1 to DIN 71412:1987:

- in the inner ring of bearings with an external gear (→ fig. 5a)
- in the outer ring of bearings with an internal gear (→ fig. 5b)
- in the outer ring of bearings without a gear

Relubrication features of customized slewing bearings (→ fig. 5c) depend on the needs of the application. For additional information, contact the SKF application engineering service.

Guidelines to determine relubrication intervals for slewing bearings in vertical arrangements under normal and clean conditions are provided in the chapter "Lubrication", starting on **page 26**.

Designation system

The designation system for SKF medium size crossed roller slewing bearings consists only of a few figures, the significance of which is described in **table 5**.

The designation system for SKF customized slewing bearings consists of several figures and is described briefly in **table 6** "Designation system of customized slewing bearings" on **page 59**.

Table 5

Designation system of medium size crossed cylindrical roller slewing bearings

Examples: RKS.162.14.0414
RKS.160.20.1904

RKS.	16	2.	14.	0414
RKS.	16	0.	20.	1904

Bearing identification

RKS SKF slewing bearing

Series identification

16 Medium size crossed cylindrical roller slewing bearing

Identification of gear position

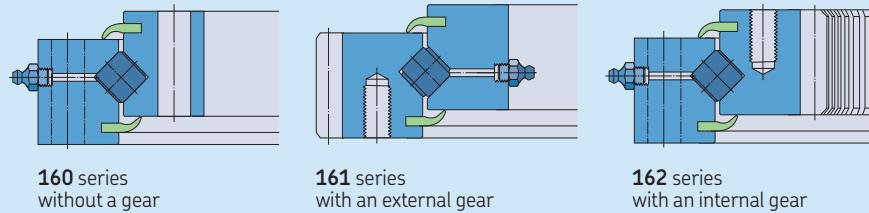
0	Without a gear
1	With an external gear
2	With an internal gear

Roller size identification

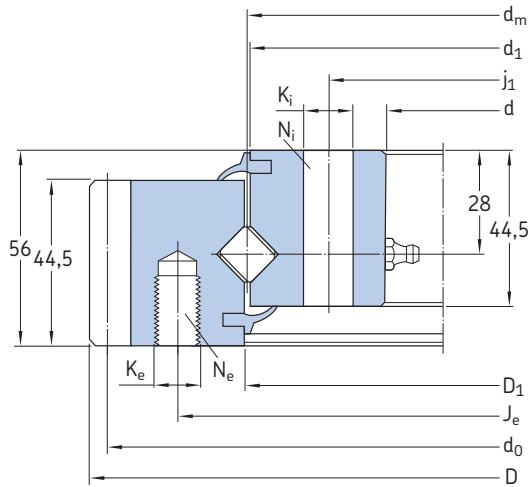
14	14 mm roller diameter
16	16 mm roller diameter
20	20 mm roller diameter

Identification of bearing size

0414	414 mm mean raceway diameter to
1904	1 904 mm mean raceway diameter

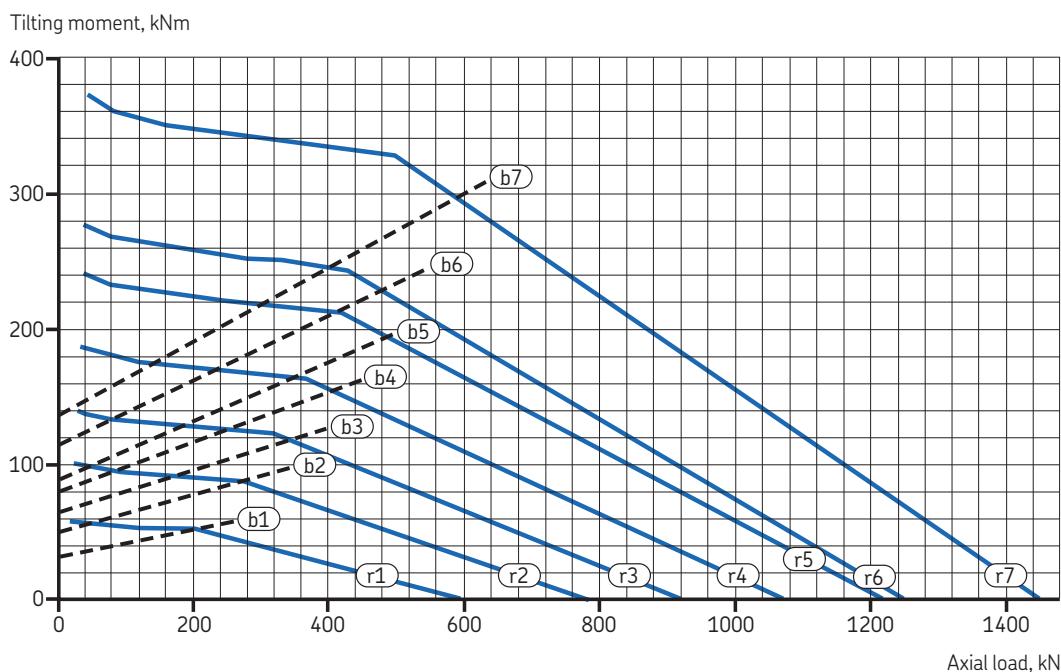


Medium size crossed cylindrical roller slewing bearings with an external gear
 d_m 414 – 1 094 mm



Dimensions		Attachment bolt holes				Inner ring				Mass	Designation		
d_m	D	D_1	d	d_1	J_e	K_e	N_e	J_i	K_i	N_i			
		mm				–		mm		–		kg	–
414	504	416	344	412	455	M 12	20	368	14	24	32,0	RKS.161.14.0414	
544	640,8	546	474	542	585	M 12	28	498	14	32	44,0	RKS.161.14.0544	
644	742,8	646	574	642	685	M 12	32	598	14	36	52,0	RKS.161.14.0644	
744	838,8	746	674	742	785	M 12	36	698	14	40	59,0	RKS.161.14.0744	
844	950,4	846	774	842	885	M 12	36	798	14	40	71,0	RKS.161.14.0844	
944	1 046,4	946	874	942	985	M 12	40	898	14	44	77,0	RKS.161.14.0944	
1 094	1 198,4	1 096	1 024	1 092	1 135	M 12	44	1 048	14	48	91,0	RKS.161.14.1094	

Relubrication can be done through 4 equally spaced grease fittings A M10×1 to DIN 71412 in the inner ring.

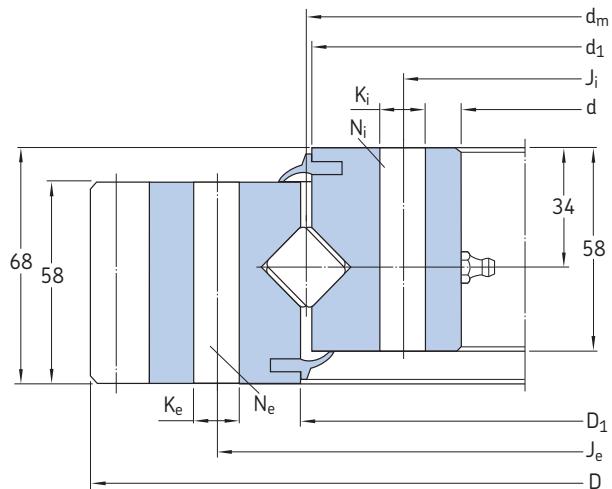


Designation	Gear Dimensions				Permissible axial tooth forces		Basic load ratings		Static limiting load diagram	
	$d_0^{(1)}$	m	z	$k \cdot m$	$T_{f\text{normal}}^{(2)}$	$T_{f\text{max}}$	dynamic C	static C_0	Raceway curves	Bolt curves
-	mm	–	mm	kN	–	kN	–	–	–	–
RKS.161.14.0414	495	5	99	–0,5	12	46	167	595	r1	b1
RKS.161.14.0544	630	6	105	–0,6	16	54	194	784	r2	b2
RKS.161.14.0644	732	6	122	–0,6	16	54	210	919	r3	b3
RKS.161.14.0744	828	6	138	–0,6	16	54	228	1 070	r4	b4
RKS.161.14.0844	936	8	117	–0,8	21	72	244	1 220	r5	b5
RKS.161.14.0944	1 032	8	129	–0,8	21	72	258	1 250	r6	b6
RKS.161.14.1094	1 184	8	148	–0,8	21	72	279	1 450	r7	b7

¹⁾ Gear pitch circle diameter

²⁾ Normalized gear teeth; calculated for 3 000 000 operating cycles

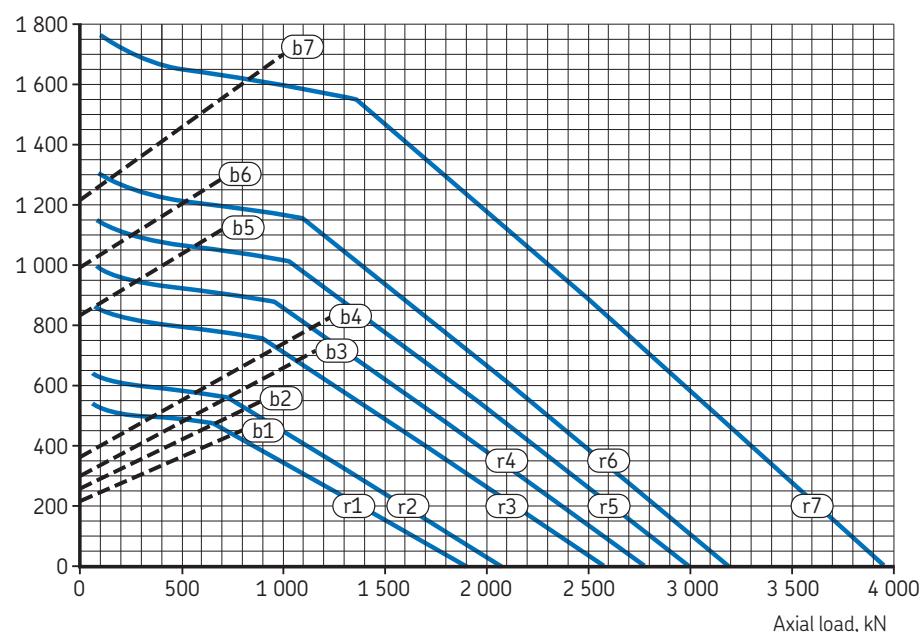
Medium size crossed cylindrical roller slewing bearings with an external gear
 d_m 1 204 – 1 904 mm



Dimensions		Attachment bolt holes						Inner ring			Mass	Designation
		Outer ring										
d_m	D	D_1	d	d_1	J_e	K_e	N_e	J_i	K_i	N_i		
			mm			mm			mm			kg
												–
1 204	1 338	1 206	1 119	1 202	1 257	16	45	1 151	16	45	155	RKS.161.16.1204
1 314	1 448	1 317	1 229	1 312	1 367	16	50	1 261	16	50	168	RKS.161.16.1314
1 424	1 558	1 427	1 339	1 422	1 477	16	54	1 371	16	54	182	RKS.161.16.1424
1 534	1 668	1 537	1 449	1 532	1 587	16	60	1 481	16	60	195	RKS.161.16.1534
1 644	1 791	1 647	1 536	1 642	1 708	22	54	1 580	22	54	242	RKS.161.16.1644
1 754	1 901	1 757	1 646	1 752	1 818	22	60	1 690	22	60	258	RKS.161.16.1754
1 904	2 073,4	1 907	1 796	1 902	1 968	22	64	1 840	22	64	305	RKS.161.20.1904

Relubrication can be done through 4 equally spaced grease fittings A M10x1 to DIN 71412 in the inner ring.

Tilting moment, kNm

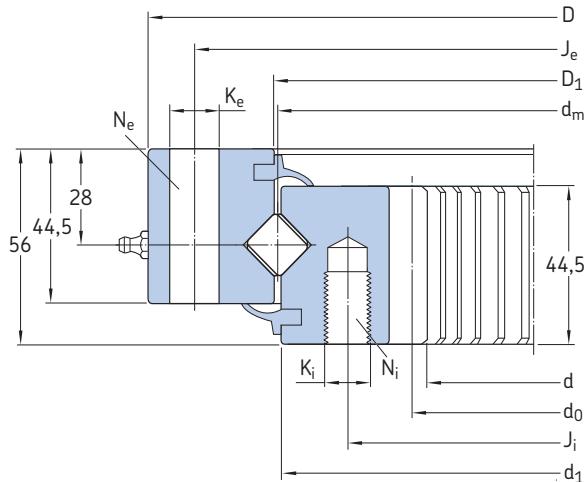


Designation	Gear Dimensions					Permissible tooth forces $T_{f\text{normal}}^{2)}$	$T_{f\text{max}}$	Basic load ratings		Static limiting load diagram	
	$d_0^{1)}$	m	z	x·m	k·m			axial dynamic C	static C_0	Raceway curves	Bolt curves
-	mm	-	mm	-	-	kN	kN	-	-	-	-
RKS.161.16.1204	1 310	10	131	+5	-1	45	130	402	1 900	r1	b1
RKS.161.16.1314	1 420	10	142	+5	-1	45	130	421	2 070	r2	b2
RKS.161.16.1424	1 530	10	153	+5	-1	45	130	439	2 580	r3	b3
RKS.161.16.1534	1 640	10	164	+5	-1	45	130	456	2 770	r4	b4
RKS.161.16.1644	1 760	10	176	+6,5	-1	45	130	475	2 990	r5	b5
RKS.161.16.1754	1 870	10	187	+6,5	-1	45	130	491	3 180	r6	b6
RKS.161.20.1904	2 030	14	145	+9,1	-1,4	62	181	644	3 950	r7	b7

¹⁾ Gear pitch circle diameter

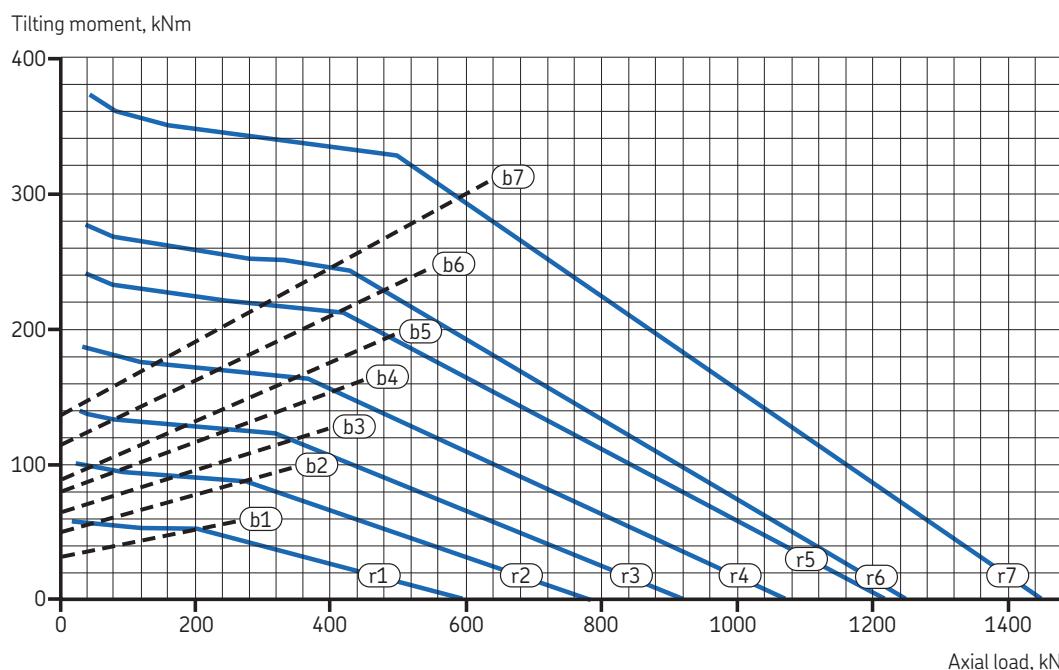
²⁾ Normalized gear teeth; calculated for 3 000 000 operating cycles

Medium size crossed cylindrical roller slewing bearings with an internal gear
 d_m 414 – 1 094 mm



Dimensions		Attachment bolt holes						Inner ring			Mass	Designation
		Outer ring										
d_m	D	D ₁	d	d ₁	J _e	K _e	N _e	J _i	K _i	N _i		
mm					mm	–		mm	–	kg	–	
414	486	416	326,5	412	460	14	24	375	M 12	24	31,0	RKS.162.14.0414
544	616	546	445,2	542	590	14	32	505	M 12	32	42,0	RKS.162.14.0544
644	716	646	547,2	642	690	14	36	605	M 12	36	50,0	RKS.162.14.0644
744	816	746	649,2	742	790	14	40	705	M 12	40	58,0	RKS.162.14.0744
844	916	846	737,6	842	890	14	40	805	M 12	40	69,0	RKS.162.14.0844
944	1016	946	841,6	942	990	14	44	905	M 12	44	76,0	RKS.162.14.0944
1 094	1 166	1 096	985,6	1 092	1 140	14	48	1 055	M 12	48	91,0	RKS.162.14.1094

Relubrication can be done through 4 equally spaced grease fittings A M10×1 to DIN 71412 in the outer ring.

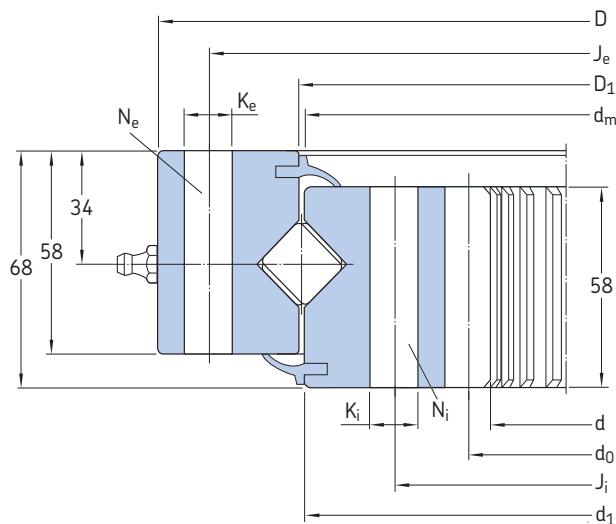


Designation	Gear Dimensions				Permissible tooth forces		Basic load ratings		Static limiting load diagram	
	$d_0^{(1)}$	m	z	$k \cdot m$	$T_{f\text{normal}}^{(2)}$	$T_{f\text{max}}$	axial dynamic C	static C_0	Raceway curves	Bolt curves
-	mm	–	mm	kN		kN		–	–	–
RKS.162.14.0414	335	5	67	-0,75	12	49	167	595	r1	b1
RKS.162.14.0544	456	6	76	-0,6	16	65	194	784	r2	b2
RKS.162.14.0644	558	6	93	-0,6	16	65	210	919	r3	b3
RKS.162.14.0744	660	6	110	-0,6	16	65	228	1 070	r4	b4
RKS.162.14.0844	752	8	94	-0,8	21	87	244	1 220	r5	b5
RKS.162.14.0944	856	8	107	-0,8	21	87	258	1 250	r6	b6
RKS.162.14.1094	1 000	8	125	-0,8	21	87	279	1 450	r7	b7

¹⁾ Gear pitch circle diameter

²⁾ Normalized gear teeth; calculated for 3 000 000 operating cycles

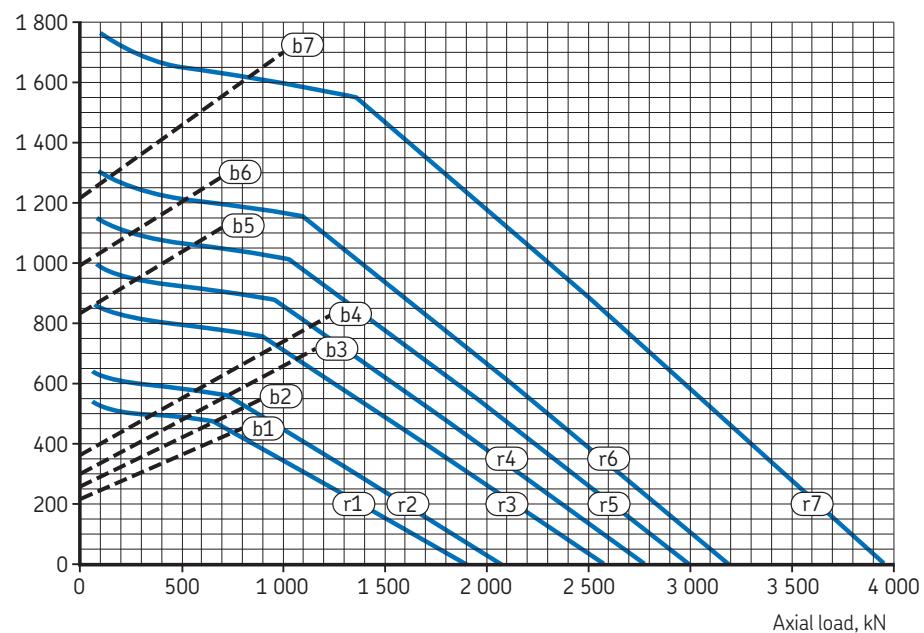
Medium size crossed cylindrical roller slewing bearings with an internal gear
 d_m 1 204 – 1 904 mm



Dimensions		Attachment bolt holes						Inner ring			Mass	Designation	
		Outer ring								J _i	K _i	N _i	
d _m	D	D ₁	d	d ₁	J _e	K _e	N _e	–	mm	–	kg	–	
mm													
1 204	1 289	1 206	1 072	1 202	1 257	16	45	1 151	16	45	148	RKS.162.16.1204	
1 314	1 399	1 316,5	1 182	1 312	1 367	16	50	1 261	16	50	160	RKS.162.16.1314	
1 424	1 509	1 426,5	1 292	1 422	1 477	16	54	1 371	16	54	175	RKS.162.16.1424	
1 534	1 619	1 536,5	1 402	1 532	1 587	16	60	1 481	16	60	190	RKS.162.16.1534	
1 644	1 752	1 646,5	1 495	1 642	1 708	22	54	1 580	22	54	240	RKS.162.16.1644	
1 754	1 862	1 756,5	1 605	1 751	1 818	22	60	1 690	22	60	255	RKS.162.16.1754	
1 904	2 012	1 906,5	1 729	1 902	1 968	22	64	1 840	22	64	305	RKS.162.20.1904	

Relubrication can be done through 4 equally spaced grease fittings A M10×1 to DIN 71412 in the outer ring.

Tilting moment, kNm

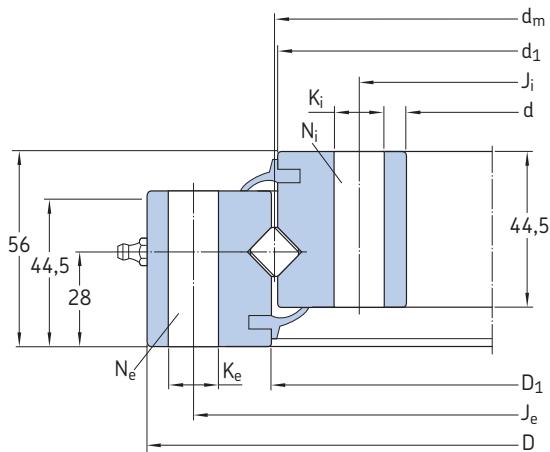


Designation	Gear Dimensions					Permissible tooth forces $T_{f\text{normal}}^{2)}$	$T_{f\text{max}}$	Basic load ratings		Static limiting load diagram	
	$d_0^{1)}$	m	z	x·m	k·m			axial C	dynamic C_0	static	Raceway curves
-	mm	-	mm	-	kN	kN	-	-	-	-	-
RKS.162.16.1204	1 080	10	108	+0,5	-1	48	169	402	1 900	r1	b1
RKS.162.16.1314	1 190	10	119	+0,5	-1	48	169	421	2 070	r2	b2
RKS.162.16.1424	1 300	10	130	+0,5	-1	48	169	439	2 580	r3	b3
RKS.162.16.1534	1 410	10	141	+0,5	-1	48	169	456	2 770	r4	b4
RKS.162.16.1644	1 500	10	150	+0,65	-1	48	169	475	2 990	r5	b5
RKS.162.16.1754	1 610	10	161	+0,65	-1	48	169	491	3 180	r6	b6
RKS.162.20.1904	1 736	14	124	+0,65	-1,4	69	230	644	3 950	r7	b7

¹⁾ Gear pitch circle diameter

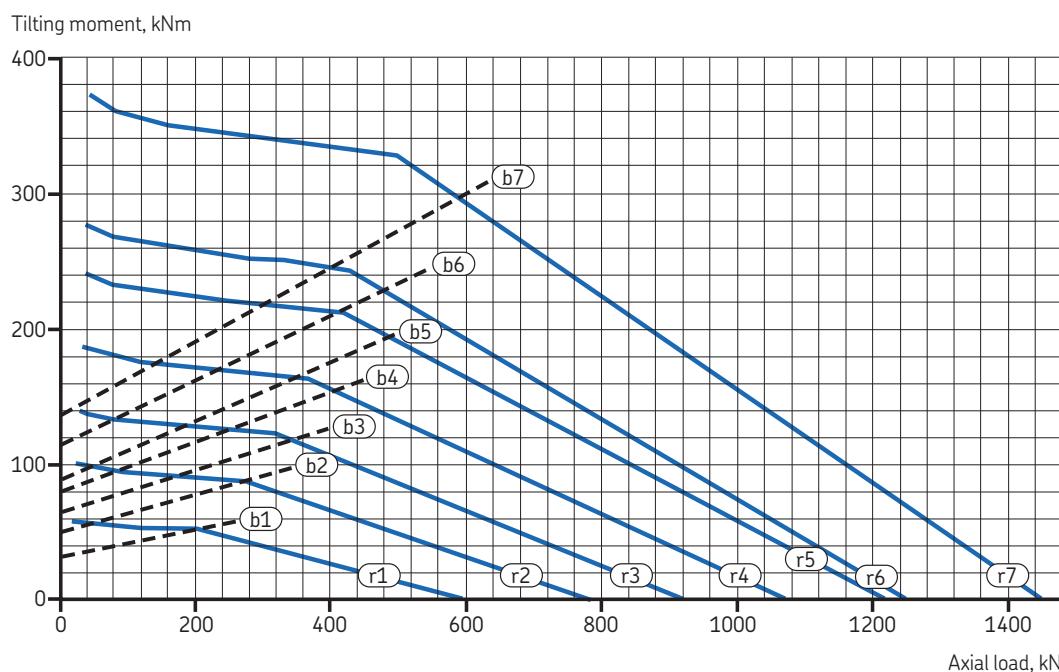
²⁾ Normalized gear teeth; calculated for 3 000 000 operating cycles

Medium size crossed cylindrical roller slewing bearings without a gear
 d_m 414 – 1 094 mm



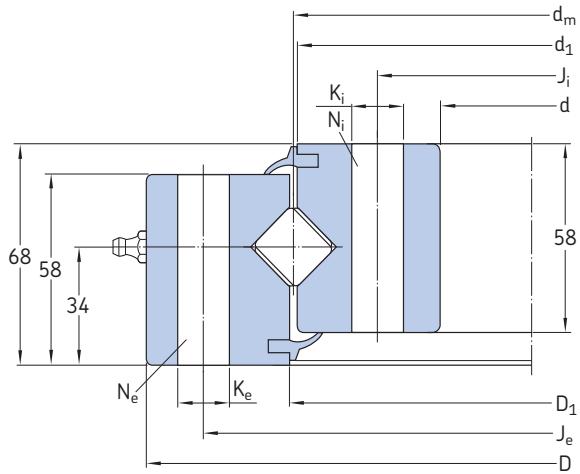
Dimensions		Attachment bolt holes						Inner ring				Mass	Designation
		Outer ring											
d_m	D	D_1	d	d_1	J_e	K_e	N_e	J_i	K_i	N_i			
						mm	–	mm	–	kg	–		
414	486	416	344	412	460	14	24	368	14	24	28,0	RKS.160.14.0414	
544	616	546	474	542	590	14	32	498	14	32	38,0	RKS.160.14.0544	
644	716	646	574	642	690	14	36	598	14	36	44,0	RKS.160.14.0644	
744	816	746	674	742	790	14	40	698	14	40	52,0	RKS.160.14.0744	
844	916	846	774	842	890	14	40	798	14	40	60,0	RKS.160.14.0844	
944	1016	946	874	942	990	14	44	898	14	44	67,0	RKS.160.14.0944	
1 094	1 166	1 096	1 024	1 092	1 140	14	48	1 048	14	48	77,0	RKS.160.14.1094	

Relubrication can be done through 4 equally spaced grease fittings A M10x1 to DIN 71412 in the outer ring.



Designation	Basic load ratings		Static limiting load diagram	
	axial dynamic C_d	static C_0	Raceway curves	Bolt curves
-	kN		-	
RKS.160.14.0414	167	595	r1	b1
RKS.160.14.0544	194	784	r2	b2
RKS.160.14.0644	210	919	r3	b3
RKS.160.14.0744	228	1 070	r4	b4
RKS.160.14.0844	244	1 220	r5	b5
RKS.160.14.0944	258	1 250	r6	b6
RKS.160.14.1094	279	1 450	r7	b7

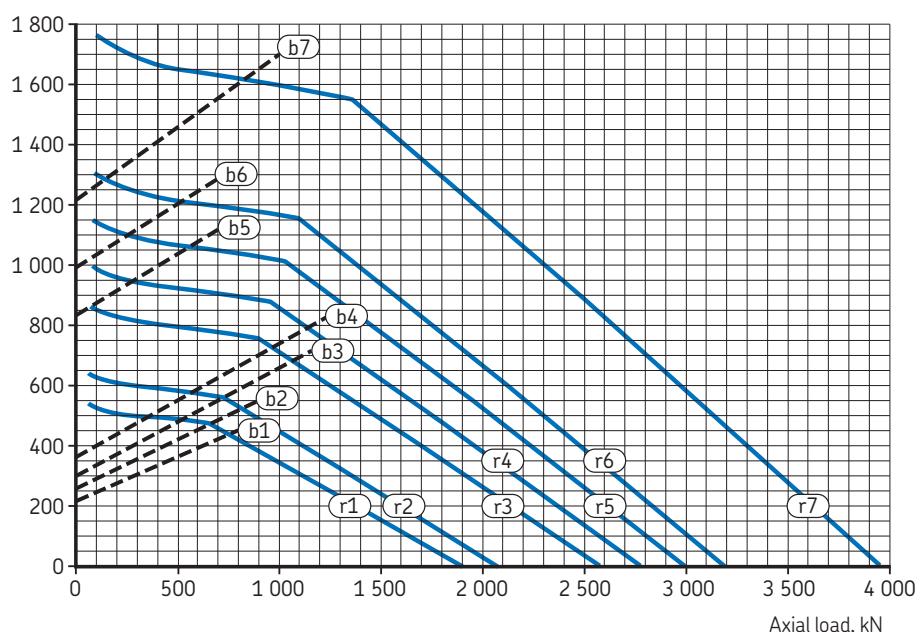
Medium size crossed cylindrical roller slewing bearings without a gear
 d_m 1 204 – 1 904 mm



Dimensions		Attachment bolt holes						Inner ring			Mass	Designation
d_m	D	D_1	d	d_1	J_e	K_e	N_e	J_i	K_i	N_i		
						mm	–	mm	–	kg	–	
1 204	1 289	1 206	1 119	1 202	1 257	16	45	1 151	16	45	124	RKS.160.16.1204
1 314	1 399	1 316,5	1 229	1 312	1 367	16	50	1 261	16	50	135	RKS.160.16.1314
1 424	1 509	1 426,5	1 339	1 422	1 477	16	54	1 371	16	54	146	RKS.160.16.1424
1 534	1 619	1 536,5	1 449	1 532	1 587	16	60	1 481	16	60	158	RKS.160.16.1534
1 644	1 752	1 646,5	1 536	1 642	1 708	22	54	1 580	22	54	215	RKS.160.16.1644
1 754	1 862	1 756,5	1 646	1 752	1 818	22	60	1 690	22	60	228	RKS.160.16.1754
1 904	2 012	1 906,5	1 796	1 902	1 968	22	64	1 840	22	64	248	RKS.160.20.1904

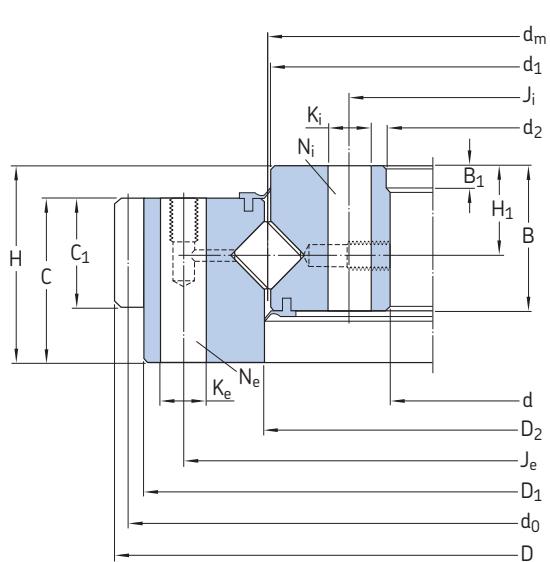
Relubrication can be done through 4 equally spaced grease fittings A M10x1 to DIN 71412 in the outer ring.

Tilting moment, kNm

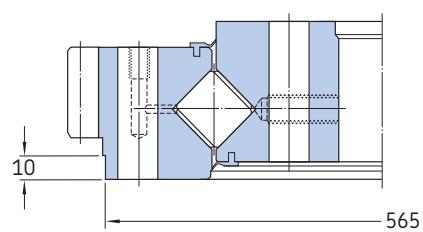


Designation	Basic load ratings		Static limiting load diagrams	
	axial C	dynamic C_0	Raceway curves	Bolt curves
-	kN	-	-	-
RKS.160.16.1204	402	1 900	r1	b1
RKS.160.16.1314	421	2 070	r2	b2
RKS.160.16.1424	439	2 580	r3	b3
RKS.160.16.1534	456	2 770	r4	b4
RKS.160.16.1644	475	2 990	r5	b5
RKS.160.16.1754	491	3 180	r6	b6
RKS.160.20.1904	644	3 950	r7	b7

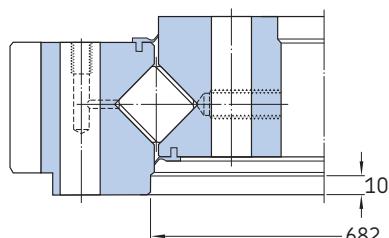
Customized crossed cylindrical roller slewing bearings with an external gear
 d_m 310 – 675 mm



Design 1



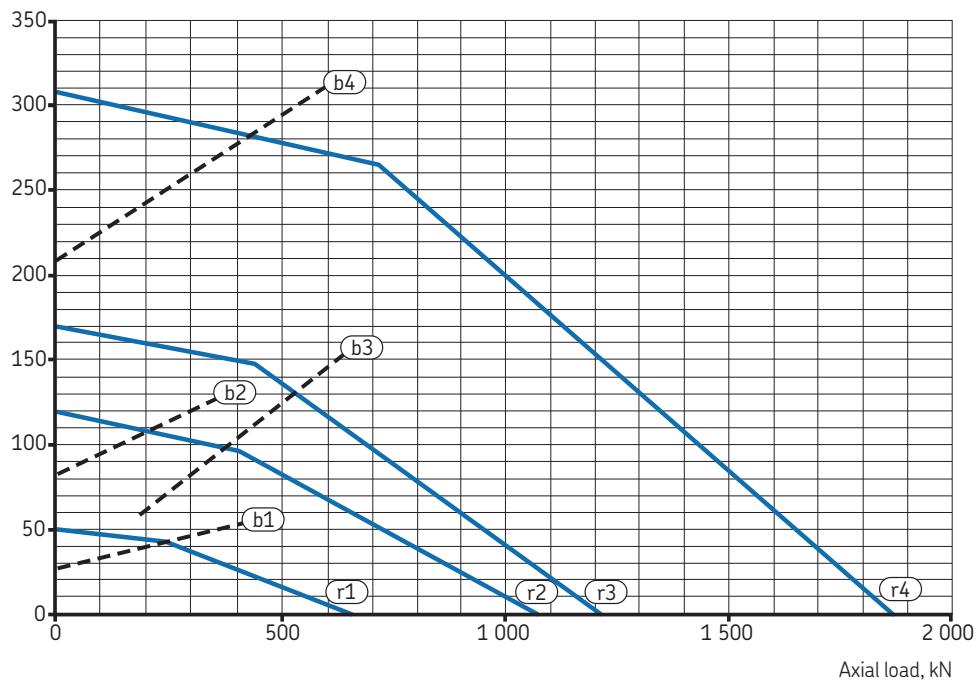
Design 2



Design 3

Dimensions												Mass	Designation				
Slewing bearing												Outer ring			Inner ring		
d_m	D	d	H	H_1	D_1	D_2	C	C_1	d_1	d_2	B	B_1					
mm												mm			kg	-	
310	403,5	233	55	28	379	312	43	37	308	235	45	10	24,0	RKS.921150303001			
474	589,5	378	75	37	567	476	60	40	472	384	58	10	62,0	RKS.121400202001			
574	695	477	77	35	671	576	64	42	572	480	57	9	79,0	RKS.121390101002			
675	816	571	90	42	781	677	73	65	673	574	67	10	117	RKS.122290101002			

Tilting moment, kNm



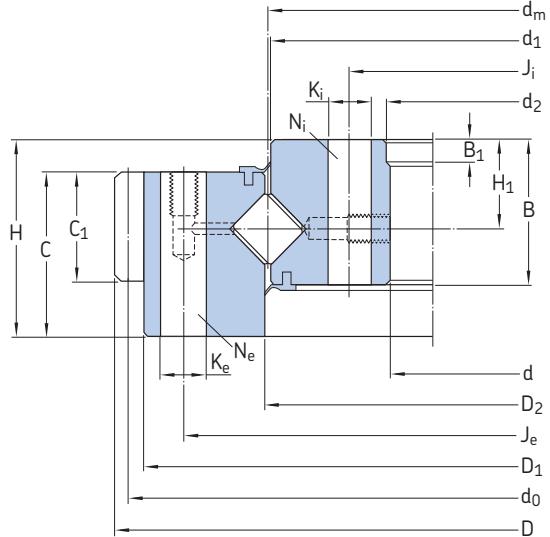
Designation	De-sign	Attachment bolt holes						Gear Dimensions						Permissible tooth forces $T_{f\text{normal}}^{(2)}$	$T_{f\text{max}}$	Basic load ratings		Static limiting load diagram	
		Outer ring	J_e	K_e	N_e	Inner ring	J_i	K_i	N_i	$d_0^{(1)}$	m	z	$x \cdot m$	$k \cdot m$		axial C	dynamic C_0	Raceway curves	Bolt curves
-	-	mm	-	mm	-	mm	-	mm	-	mm	-	mm	kN	kN	-	-	-	-	
RKS.921150303001	1	358	13	24	259	13	27 ³⁾	396	4,5	88	0	0,752	17	35	245	697	r1	b1	
RKS.121400202001	2	540	16	36	410	16	35 ³⁾	580,5	4,5	129	0	0	19	38	304	1 050	r2	b2	
RKS.121390101002	1	640	18	36	508	18	35 ³⁾	685	5	137	0	0	21	43	339	1 280	r3	b3	
RKS.122290101002	3	753	22	36	604	22	35 ³⁾	792	6	132	6,552	0,552	40	79	495	1 880	r4	b4	

¹⁾ Gear pitch circle diameter

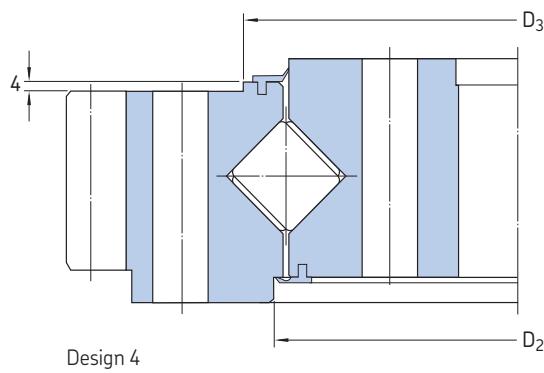
²⁾ Normalized gear teeth; calculated for 3 000 000 operating cycles

³⁾ Attachment bolt holes not equally spaced, ask SKF for detailed drawing

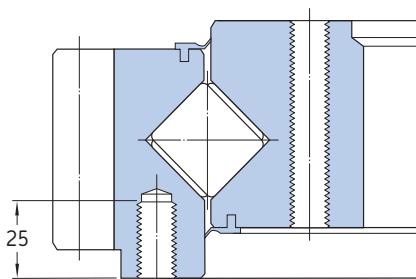
Customized crossed cylindrical roller slewing bearings with an external gear
 d_m 760 – 1117 mm



Design 1



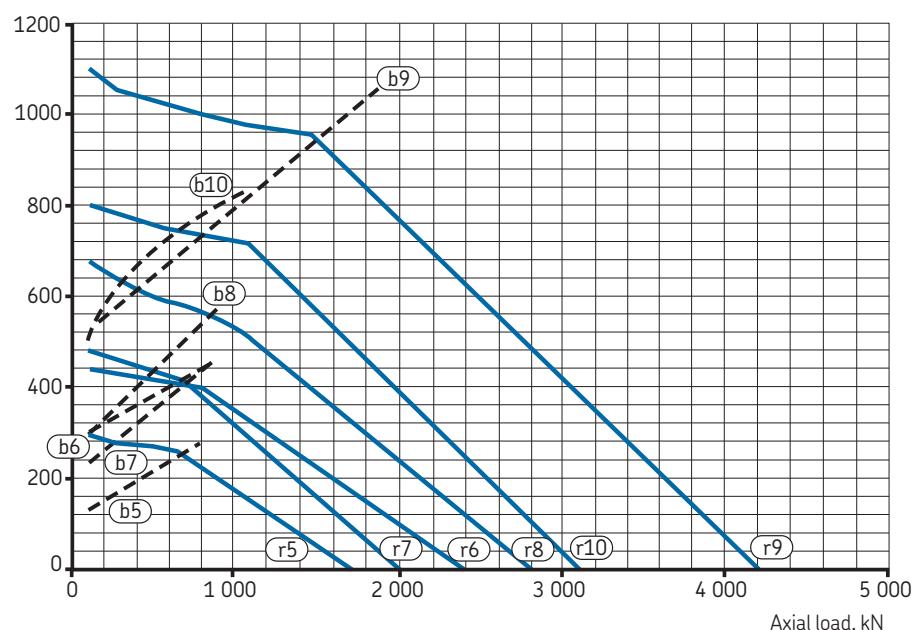
Design 4



Design 5

Dimensions														Mass	Designation
Slewing bearing															
d_m	D	d	H	H_1	D ₁	D ₂	D ₃	C	C ₁	d ₁	d ₂	B	B ₁		
mm														kg	–
760	864	668	82	39	835	762	–	64	56	758	680	61	10	97,0	RKS.221310101001
823	979	715	100	47	935	845	853	79	63	821	718	84	10	180	RKS.222500101001
980	1080	886	82	32	1040	982	–	72	64	978	895	53	10	120	RKS.221300101001
980	1144	868	100	50	1088	993	1010	81	68	978	870	88	10	230	RKS.222600101001
1117	1289,5	980	114	60	1240	1119	–	90	75	1115	985	96	10	330	RKS.324012324001
1117	1296	980	114	60	1240	1119	–	90	80	1115	985	96	10	340	RKS.322300101001

Tilting moment, kNm



Designation	De-sign	Attachment bolt holes				Gear Dimensions					Permissible tooth forces $T_{f\text{normal}}^{(2)}$	C	C_0	Basic load ratings	Static limiting load diagram		
		Outer ring	Inner ring	J_e	K_e	N_e	J_i	K_i	N_i	$d_0^{(1)}$	m	z	$x \cdot m$	$k \cdot m$	Raceway	Bolt curves	
-	-	mm	-	mm	-	mm	-	mm	-	mm	-	mm	kN	kN	-		
RKS.221310101001	5	800	M 16 24	706	M 16	24	852	6	142	0	0	34	69	397	1 710	r5 b5	
RKS.222500101001	4	893	22	28 ³⁾	753	22	28 ³⁾	940	10	94	11	1,5	74	136	558	2 330	r6 b6
RKS.221300101001	5	1 015	M 16 30	922	M 16	30	1 064	8	133	0	0	63	115	454	2 040	r7 b7	
RKS.222600101001	4	1 050	22	28 ³⁾	910	22	26 ³⁾	1 122	11	102	0	0	89	163	607	2 740	r8 b8
RKS.324012324001	1	1 198	22	40	1 035	22	40	1 250	10	125	10,5	0,75	91	167	1 090	4 100	r9 b9
RKS.322300101001	1	1 198	22	28	1 035	22	28	1 260	12	105	7,08	1,08	114	210	655	3 160	r10 b10

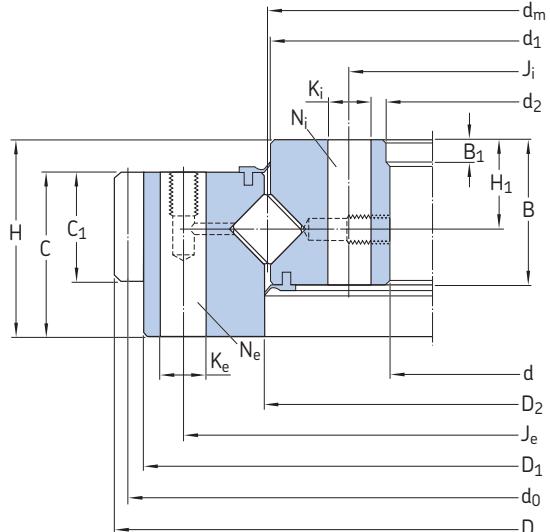
4

¹⁾ Gear pitch circle diameter

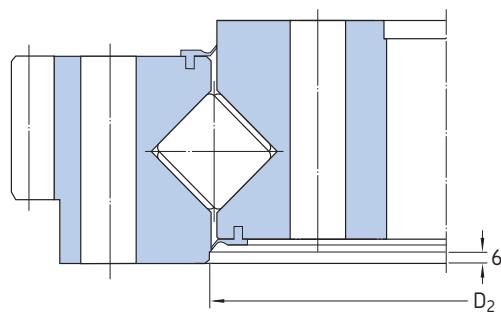
²⁾ Normalized gear teeth; calculated for 3 000 000 operating cycles

³⁾ Attachment bolt holes not equally spaced

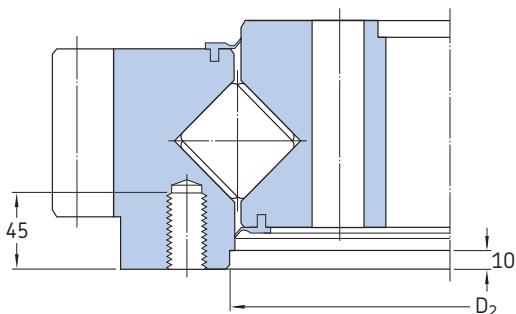
Customized crossed cylindrical roller slewing bearings with an external gear
 d_m 1 250 – 1 600 mm



Design 1



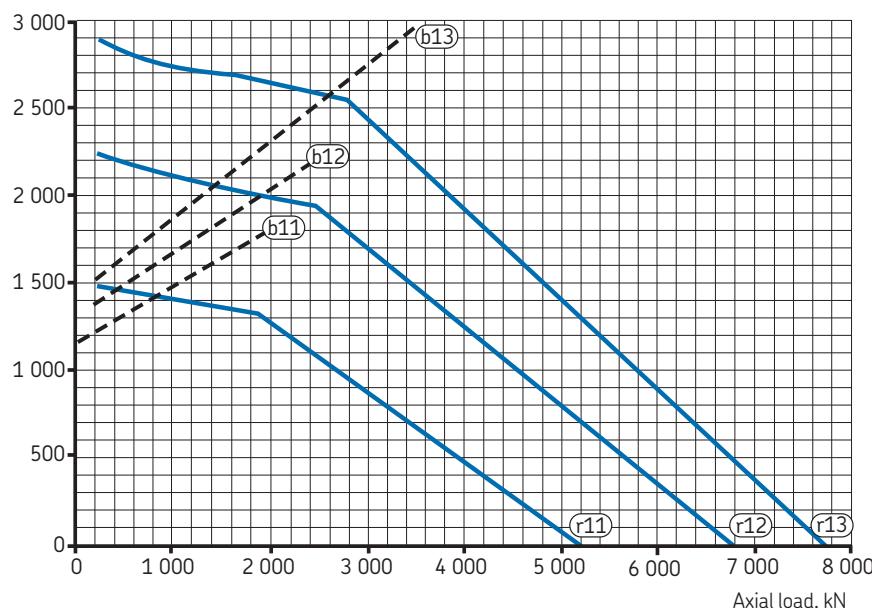
Design 6



Design 7

Dimensions												Mass	Designation				
Slewing bearing												Outer ring			Inner ring		
d_m	D	d	H	H_1	D_1	D_2	C	C_1	d_1	d_2	B	B_1					
mm												mm			kg	–	
1 250	1 475,5	1 080	110	60,5	1 415	1 252,5	89	75	1 247,5	1 085	100	10	490	RKS.425060101001			
1 250	1 475,5	1 080	110	60,5	1 415	1 252,5	89	75	1 247,5	1 085	100	10	480	RKS.425060201001			
1 250	1 475,5	1 080	110	60,5	1 415	1 252,5	89	75	1 247,5	1 085	100	10	480	RKS.425062621001			
1 390	1 604	1 205	130	68,5	1 551	1 394	109	75	1 387,5	1 208	116	10	620	RKS.427020101001			
1 600	1 804,8	1 430	141	68	1 730	1 608	125	95	1 597,5	1 437	118	10	710	RKS.427050403001			

Tilting moment, kNm



Designation	De-design	Attachment bolt holes				Gear Dimensions					Permissible tooth forces $T_{f\text{normal}}^{(2)}$	$T_{f\text{max}}$	Basic load ratings		Static limiting load diagram			
		Outer ring	Inner ring	J_e	K_e	N_e	J_i	K_i	N_i	$d_0^{(1)}$	m	z	$x \cdot m$	$k \cdot m$	axial dynamic C	static C_0	Raceway Bolt curves	Bolt curves
-	-	mm	-	mm	-	mm	-	mm	-	mm	-	mm	-	kN	kN	-	-	
RKS.425060101001	1	1 350	27	24	1 150	27	28	1 440	10	144	8,6	0,85	92	169	1 220	5 220	r11	b11
RKS.425060201001	1	1 350	27	24	1 150	27	28	1 428	14	102	13,3	3,55	125	229	1 220	5 220	r11	b11
RKS.425062621001	1	1 350	27	48	1 150	27	48	1 428	14	102	13,3	3,55	125	229	1 220	5 220	r11	b11
RKS.427020101001	6	1 500	30	24	1 280	30	40 ³⁾	1 570	10	157	7,5	0,5	93	171	1 730	6 660	r12	b12
RKS.427050403001	7	1 671	M 27	40 ³⁾	1 485	30	42 ³⁾	1 744	16	109	16,912	2,512	239	409	1 840	7 560	r13	b13

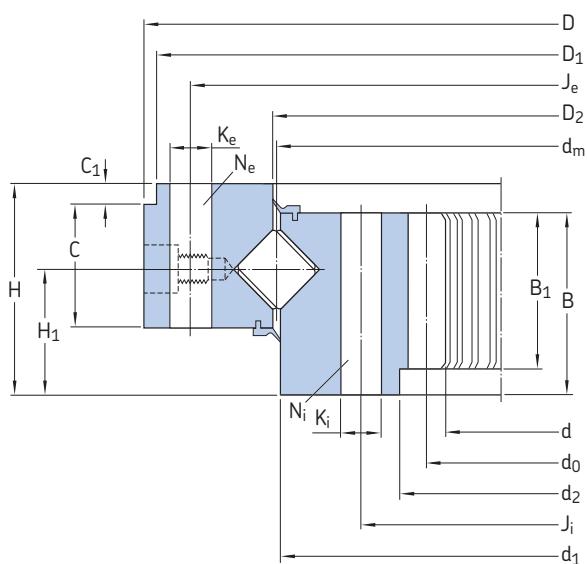
4

¹⁾ Gear pitch circle diameter

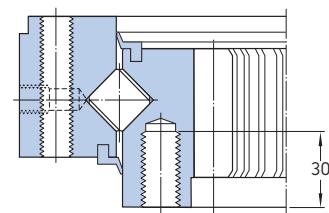
²⁾ Normalized gear teeth; calculated for 3 000 000 operating cycles

³⁾ Attachment bolt holes not equally spaced

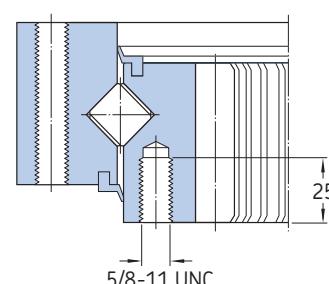
Customized crossed cylindrical roller slewing bearings with an internal gear
 d_m 489 – 1 077 mm



Design 1



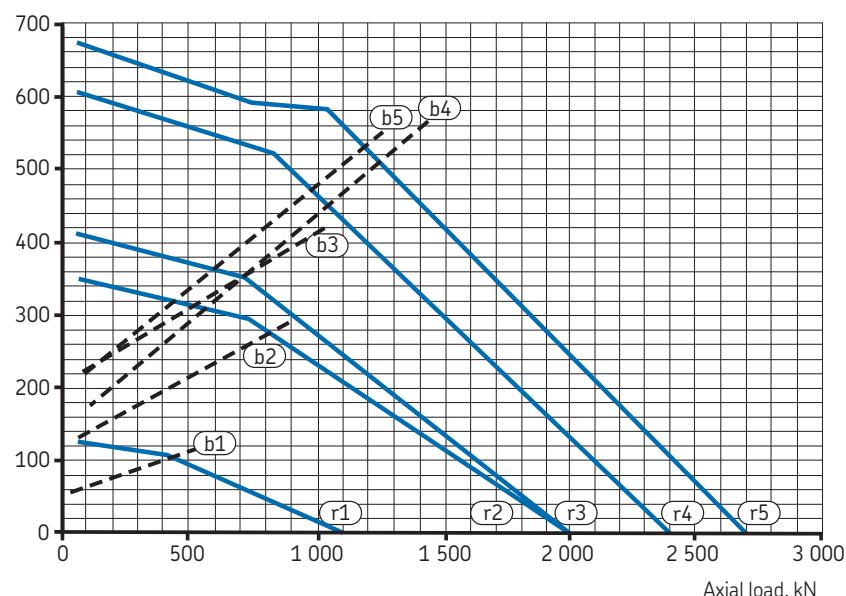
Design 2



Design 3

Dimensions													Mass	Designation
Slewing bearing				Outer ring					Inner ring					
d_m	D	d	H	H_1	D ₁	D ₂	C	C ₁	d ₁	d ₂	B	B ₁		
mm			mm		mm		mm		mm		kg		–	
489	562	384,6	60	30	560	491	50	10	487	418	50	45	42,0	RKS. 111280101002
713	825	567,5	90	53	815	715	62	10	711	605	78	67	133	RKS. 212140106001
885	972	785,6	82	46	970	887	61	10	883	820	68	60	110	RKS. 211430101001
1 075	1 177	965,1	90	47	–	1 077	77	–	1 073	1 010	70	70	155	RKS. 212600101001
1 077	1 172	961	90	49	1 165	1 079	63	10	1 075	1 010	72	64	182	RKS. 211440101001

Tilting moment, kNm



Designation	De-sign	Attachment bolt holes				Gear Dimensions						Permissible tooth forces $T_{fnormal}^{(2)}$	T_{fmax}	Basic load ratings		Static limiting load diagram		
		Outer ring	Inner ring	J_e	K_e	N_e	J_i	K_i	N_i	$d_0^{(1)}$	m	z	$x \cdot m$	$k \cdot m$	C	C_0	Raceway curves	Bolt curves
-	-	mm	mm	-	mm	-	mm	-	mm	-	mm	-	mm	kN	kN	-	-	
RKS. 111280101002	1	538	14	30	440	14	30	396	6	66	0	0,3	43	86	314	1 100	r1	b1
RKS. 212140106001	1	785	18	26 ³⁾	640	18	20 ³⁾	574	7	82	3,5	0,25	65	131	516	2 010	r2	b2
RKS. 211430101001	2	944	M16	36	850	M16	36	800	8	100	0	0,8	66	133	427	1 980	r3	b3
RKS. 212600101001	3	1 134	M18	36	1 040	5/8-11	36	955,04	10,16	94	12,7	2,47	107	196	475	2 410	r4	b4
RKS. 211440101001	2	1 134	M16	36	1 040	M16	36	980	10	98	0	0,5	111	205	639	2 790	r5	b5

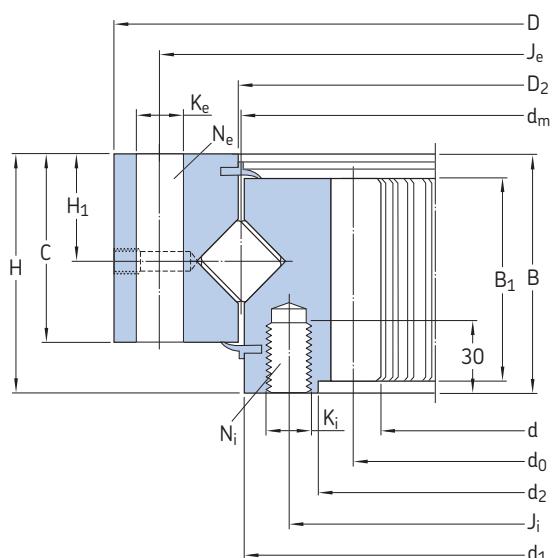
4

¹⁾ Gear pitch circle diameter

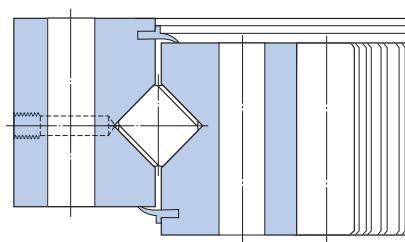
²⁾ Normalized gear teeth; calculated for 3 000 000 operating cycles

³⁾ Attachment bolt holes not equally spaced

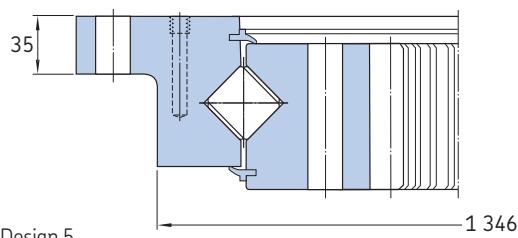
Customized crossed cylindrical roller slewing bearings with an internal gear
 d_m 1 202 – 2 202 mm



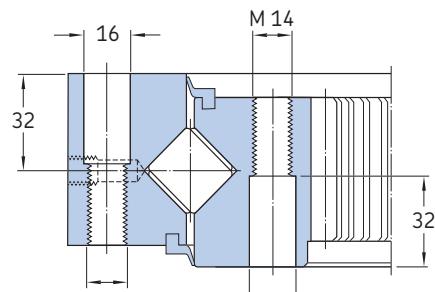
Design 3



Design 4



Design 5



Design 6

Dimensions

Slewing bearing

Outer ring Inner ring

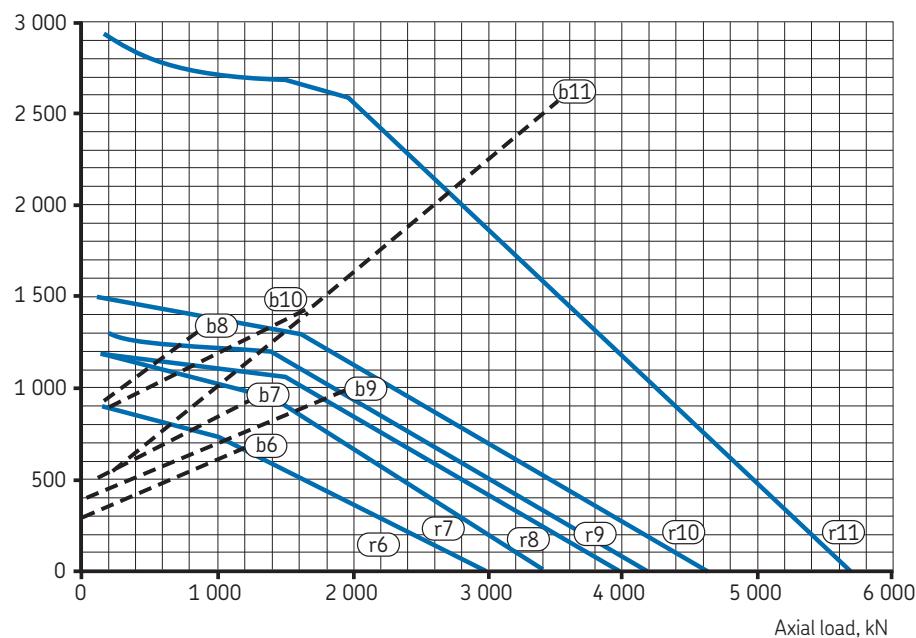
Mass

Designation

d_m	D	d	H	H ₁	D ₂	C	d ₁	d ₂	B	B ₁	kg	-
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d_m	D	d	H	H ₁	D ₂	C	d ₁	d ₂	B	B ₁	kg	-
1 202	1 316	1 082,1	105,5	49,5	1 204	85	1 200	1 128	92,5	91,5	260	RKS. 312410101001
1 202	1 316	1 082,1	105,5	49,5	1 204	85	1 200	1 128	92,5	91,5	260	RKS. 312410102001
1 202	1 316	1 082	105,5	49,5	1 204	85	1 200	–	92,5	–	260	RKS. 312290202001
1 231	1 365	1 038,8	102	51	1 233,25	90	1 228,75	–	90	–	370	RKS. 313500404001
1 240	1 447,8	1 038,8	104,65	52,5	1 242,25	92,2	1 237,75	1 086	88,9	87,9	425	RKS. 314310101001
1 350	1 495	1 164,8	110	55	1 352,5	93	1 347,5	–	95	–	440	RKS. 413290203001
2 202	2 290	2 091	70	35	2 205	62	2 199	2 115	62	52	290	RKS. 512080101001

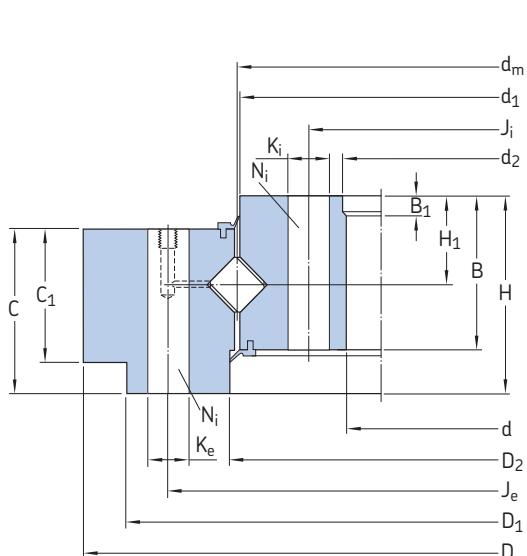
Tilting moment, kNm



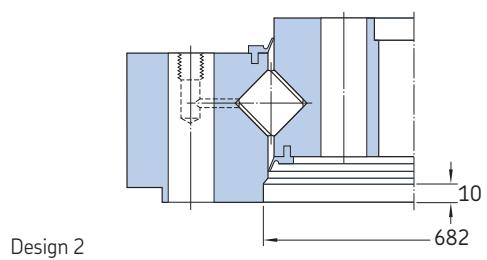
Designation	Attachment bolt holes				Gear Dimensions				Permissible tooth forces $T_{f\text{normal}}^{(2)}$	$T_{f\text{max}}$	Basic load ratings	Static load diagram						
	Outer ring	Inner ring	J _e	K _e	N _e	J _i	K _i	N _i	d ₀ ⁽¹⁾	m	z	x·m	k·m	axial C	static C ₀	Raceway curves	Bolt curves	
-	- mm	- mm	- mm	- mm	- mm	- mm	- mm	- mm	- mm	- mm	- mm	- mm	- mm	- kN	- kN	-	-	
RKS. 312410101001	3	1 276	22	34 ⁽³⁾	1 157	M 20	36	1 100	10	110	0,666	0,39	169	311	609	2 930	r6	b6
RKS. 312410102001	3	1 276	22	34 ⁽³⁾	1 157	M 20	36	1 100	10	110	0,666	0,39	169	311	609	2 930	r6	b6
RKS. 312290202001	3	1 276	22	36	1 157	M 20	36	1 100	10	110	0	1	125	250	679	3 380	r7	b7
RKS. 313500404001	4	1 312	22	60	1 150	22	60	1 064	14	75	7	1,4	283	486	880	4 190	r8	b8
RKS. 314310101001	5	1 403,35	24	33	1 149,35	24	36	1 054,61	10,16	104	-1,016	2,24	160	294	1 050	4 020	r9	b9
RKS. 413290203001	3	1 442	26	36	1 274	M 24	36	1 190	14	85	0	1,4	231	424	842	4 680	r10	b10
RKS. 512080101001	6	2 262	M 14	36	2 142	M 14	36	2 100	5	420	0	0,5	31	61	838	5 680	r11	b11

¹⁾ Gear pitch circle diameter²⁾ Normalized gear teeth; calculated for 3 000 000 operating cycles³⁾ Attachment bolt holes not equally spaced

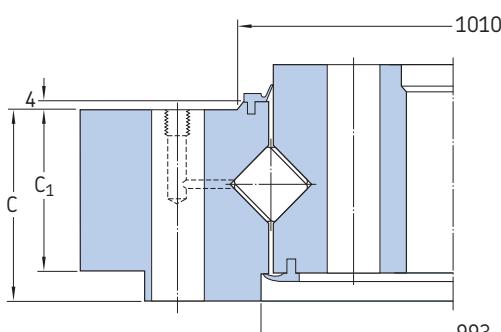
Customized crossed cylindrical roller slewing bearings without a gear
 d_m 310 – 980 mm



Design 1



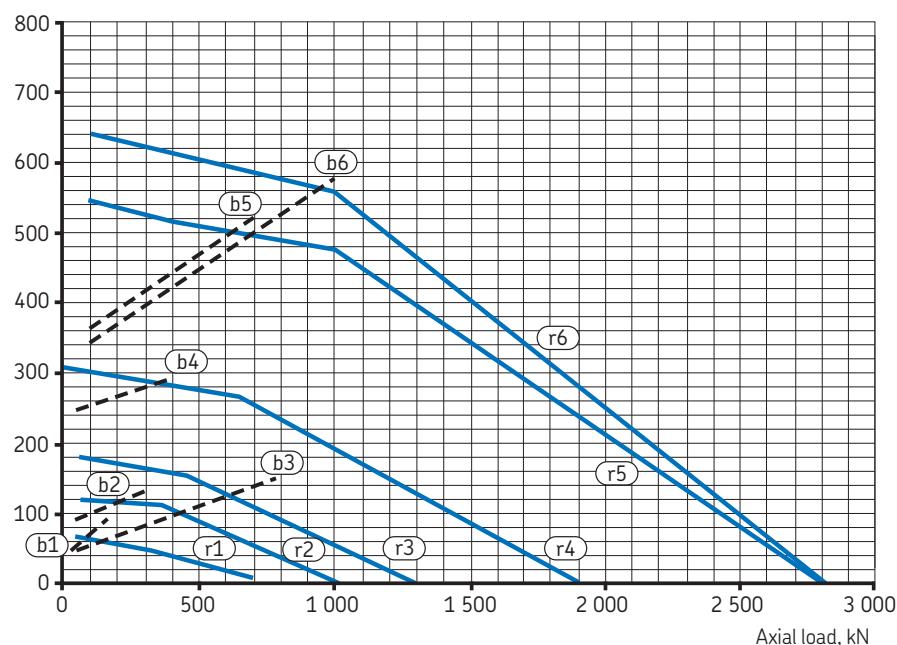
Design 2



Design 3

Dimensions													Mass	Designation
Slewing bearing					Outer ring				Inner ring					
d_m	D	d	H	H_1	D_1	D_2	C	C_1	d_1	d_2	B	B_1		
mm					mm				mm				kg	-
310	403,5	233	55	28	379	312	43	37	308	235	45	10	25,0	RKS.921155203001
474	589,5	378	75	37	567	476	60	40	472	384	58	10	64,0	RKS.121405202001
574	695	477	77	35	671	576	64	42	572	480	57	9	84,0	RKS.121395101002
675	816	571	90	42	781	677	73	65	673	574	67	10	125	RKS.122295101002
823	979	715	100	47	935	825	83	67	821	718	84	10	195	RKS.223475101001
980	1144	868	100	50	1 088	982	81	68	978	870	88	10	230	RKS.222605101001

Tilting moment, kNm



Designation	De-sign	Attachment bolt holes Outer ring			Inner ring			Basic load ratings			Static limiting load diagram	
		J _e	K _e	N _e	J _i	K _i	N _i	axial dynamic C	static C ₀	Raceway curves	Bolt curves	
-	-	mm	-	-	mm	-	-	-	-	-	-	
RKS.921155203001	1	358	13	24	259	13	28 ¹⁾	245	697	r1	b1	
RKS.121405202001	1	540	16	36	410	16	36 ¹⁾	304	1 050	r2	b2	
RKS.121395101002	1	640	18	36	508	18	36 ¹⁾	339	1 280	r3	b3	
RKS.122295101002	2	753	22	36	604	22	36 ¹⁾	495	1 880	r4	b4	
RKS.223475101001	1	893	22	36	753	22	36	709	2 790	r5	b5	
RKS.222605101001	3	1 050	22	28 ¹⁾	910	22	26 ¹⁾	607	2 740	r6	b6	

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¹⁾ Attachment bolt holes not equally spaced, ask SKF for detailed drawing

