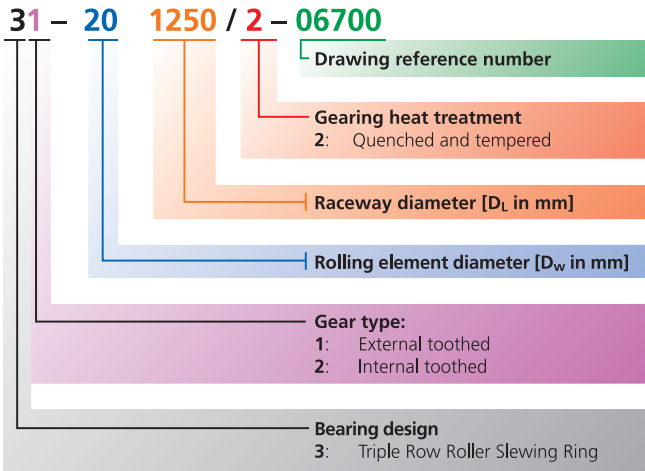
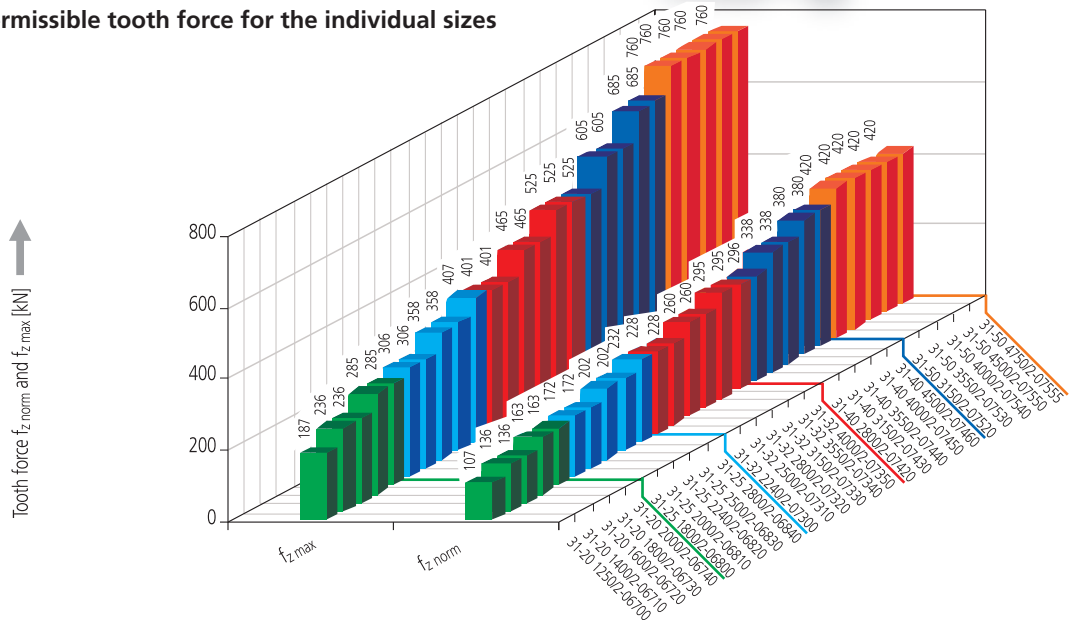


Series 320, 325, 332, 340, 350

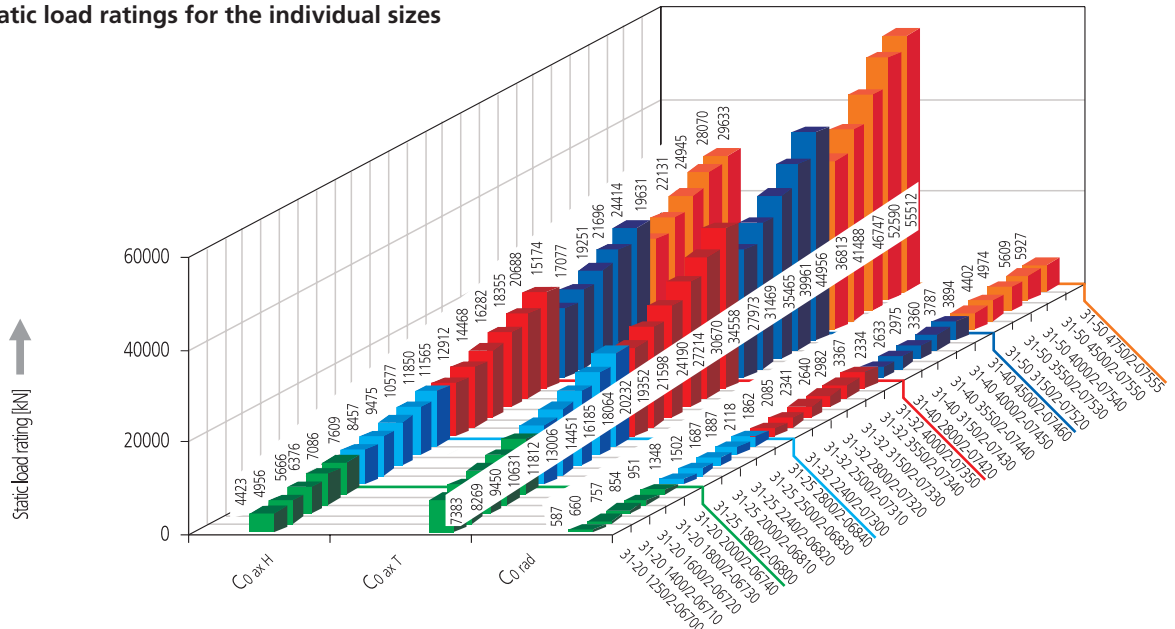
Series overview - Triple Row Roller Slewing Rings



Permissible tooth force for the individual sizes



Static load ratings for the individual sizes



Operating conditions

Permissible temperature range -25°C to +70°C

Maximum permissible rotational speed $n_{perm} = 20000 / D_L$

(D_L = raceway diameter)

"Compressive" load

Bolt grade 10.9

Typical applications

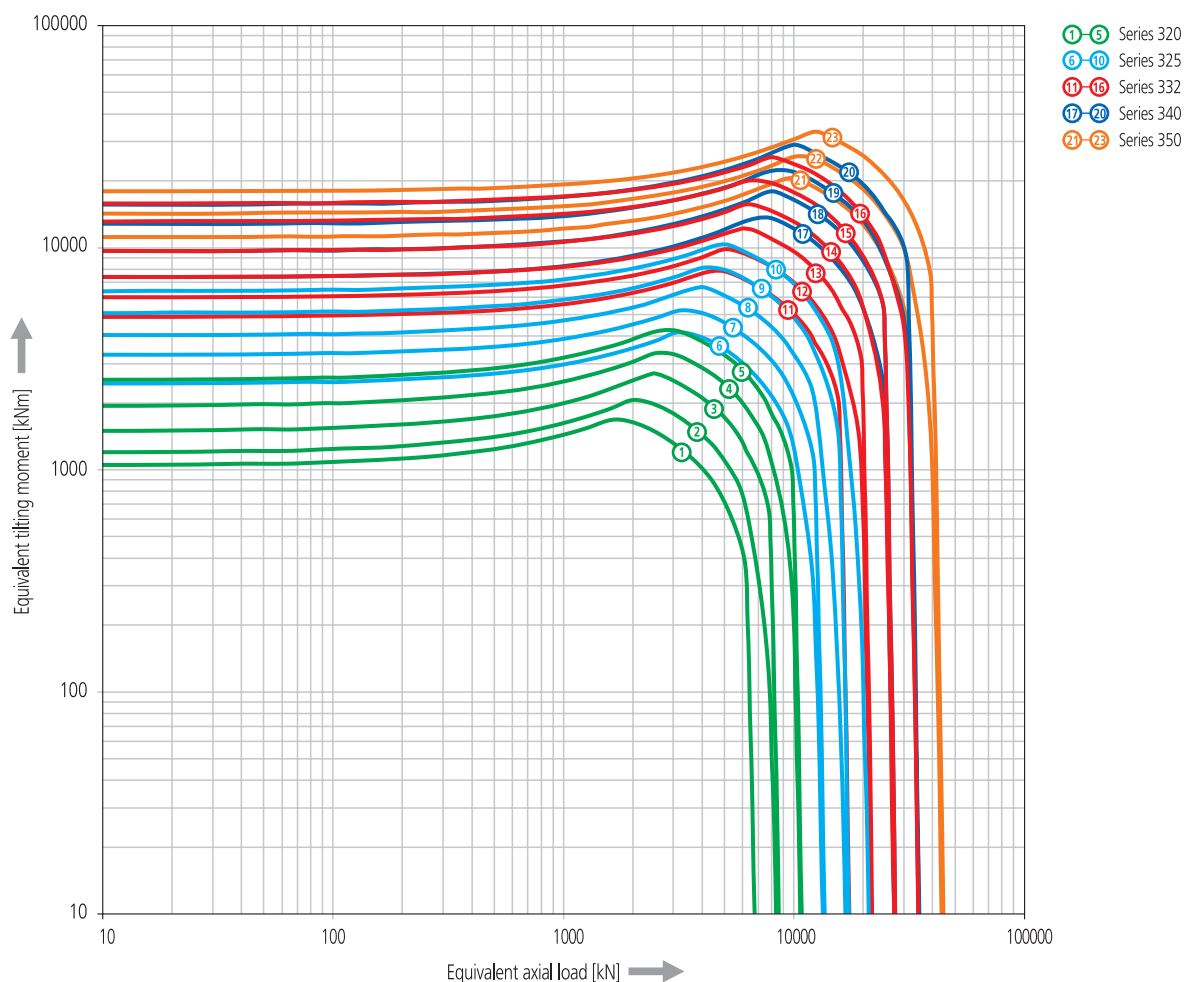
Heavy harbour cranes, shipboard cranes, ladle turrets and grab cranes, radar antennas, wind energy turbine main bearings, tunnel boring machines and loading buoys (oil, gas swivels), machine tools (in general where the application requires high duty cycles).

Characteristics

- High precision
- Highest axial load capacity
- Especially high tilting moment load capacity
- High rigidity
- Long service life

Limiting load diagrams, series 320, 325, 332, 340, 350

Please refer to the explanations in the Technical Information section of the catalog.



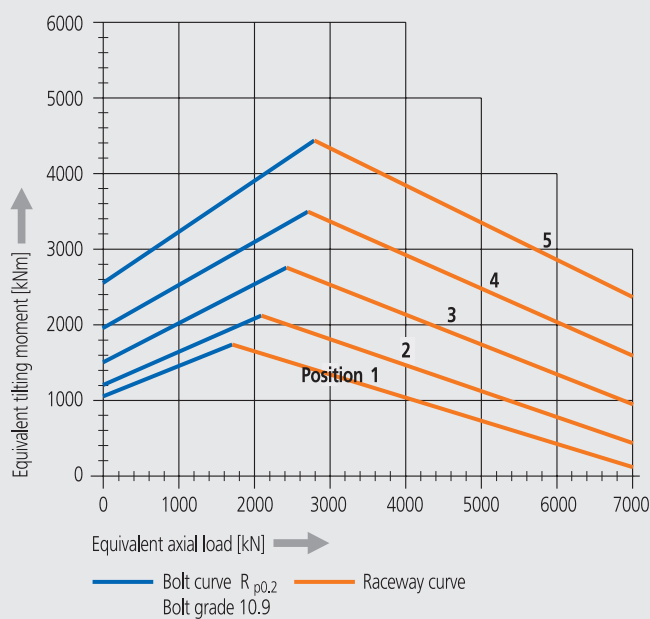
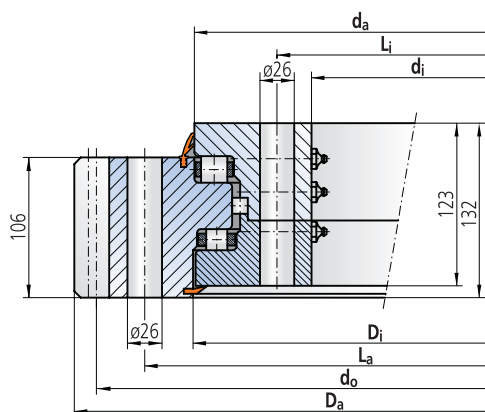
Series 320 standard design

External toothed

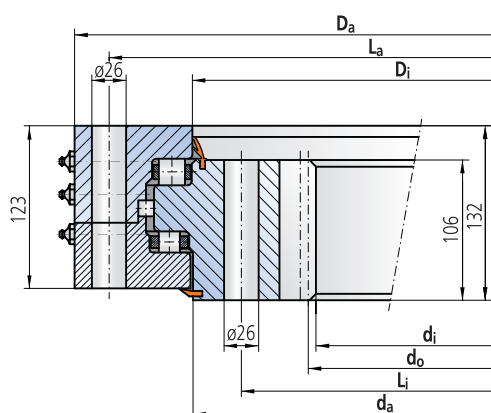
Drawing number	Position	Dimensions and weight					Mounting holes			Gearing and tooth forces						Load ratings					
		Outside diameter, outer ring	Inside diameter, inner ring	Inside diameter, outer ring	Outside diameter, inner ring	Weight	Pitch circle diameter, outer ring	Pitch circle diameter, inner ring	Number of holes per pitch circle	Pitch circle diameter	Module	Number of teeth	Addendum modification coeff.	Permissible tooth force	Maximum permissible tooth force	Static			Dynamic		
		D_a [mm]	d_i [mm]	D_i [mm]	d_a [mm]	G [kg]	L_a [mm]	L_i [mm]	n [-]	d_o [mm]	m [mm]	$z2$ [-]	$x2$ [-]	f_z^{norm} [kN]	f_z^{max} [kN]	$C_{o rad}$ [kN]	$C_{o ax T}$ [kN]	$C_{o ax H}$ [kN]	C_{rad} [kN]	$C_{ax T}$ [kN]	$C_{ax H}$ [kN]
31-20 1250/2-06700	1	1461.6	1103	1282	1280	542	1355	1155	36	1428	12	119	+0.50	107	187	587	7383	4423	395	1371	999
31-20 1400/2-06710	2	1635.2	1253	1432	1430	646	1505	1305	36	1596	14	114	+0.50	136	236	660	8269	4956	419	1462	1076
31-20 1600/2-06720	3	1831.2	1453	1632	1630	731	1705	1505	40	1792	14	128	+0.50	136	236	757	9450	5666	451	1580	1156
31-20 1800/2-06730	4	2044.8	1653	1832	1830	844	1905	1705	46	2000	16	125	+0.50	163	285	854	10631	6376	481	1668	1224
31-20 2000/2-06740	5	2236.8	1853	2032	2030	912	2105	1905	54	2192	16	137	+0.50	163	285	951	11812	7086	509	1768	1299

Internal toothed

Drawing number	Position	Dimensions and weight					Mounting holes			Gearing and tooth forces						Load ratings					
		Outside diameter, outer ring	Inside diameter, inner ring	Inside diameter, outer ring	Outside diameter, inner ring	Weight	Pitch circle diameter, outer ring	Pitch circle diameter, inner ring	Number of holes per pitch circle	Pitch circle diameter	Module	Number of teeth	Addendum modification coeff.	Permissible tooth force	Maximum permissible tooth force	Static			Dynamic		
		D_a [mm]	d_i [mm]	D_i [mm]	d_a [mm]	G [kg]	L_a [mm]	L_i [mm]	n [-]	d_o [mm]	m [mm]	$z2$ [-]	$x2$ [-]	f_z^{norm} [kN]	f_z^{max} [kN]	$C_{o rad}$ [kN]	$C_{o ax T}$ [kN]	$C_{o ax H}$ [kN]	C_{rad} [kN]	$C_{ax T}$ [kN]	$C_{ax H}$ [kN]
32-20 1250/2-06750	1	1397	1032	1219	1218	539	1345	1145	36	1044	12	87	-0.50	117	214	625	7383	4452	407	1371	1005
32-20 1400/2-06760	2	1547	1162	1369	1368	630	1495	1295	36	1176	14	84	-0.50	146	269	698	8269	4984	432	1462	1075
32-20 1600/2-06770	3	1747	1372	1569	1568	705	1695	1495	40	1386	14	99	-0.50	146	269	795	9450	5694	463	1580	1162
32-20 1800/2-06780	4	1947	1552	1769	1768	829	1895	1695	46	1568	16	98	-0.50	175	319	892	10631	6404	492	1668	1236
32-20 2000/2-06790	5	2147	1760	1969	1968	902	2095	1895	54	1776	16	111	-0.50	175	319	989	11812	7114	519	1768	1307



Please adhere strictly to the rules given in the Technical Information section when using above graph!



Bearing ring material: 42CrMo4V
 3 to 5 Taper type grease nipples on each circumferential row
 Mounting holes equally spaced
 Raceway system supplied pre-lubricated
 Dimensions without tolerances DIN ISO 2768 coarse

Clearances

Position	Radial clearance	Axial clearance
1	max. 0.20	max. 0.07
2	max. 0.20	max. 0.07
3	max. 0.25	max. 0.08
4	max. 0.25	max. 0.08
5	max. 0.25	max. 0.08

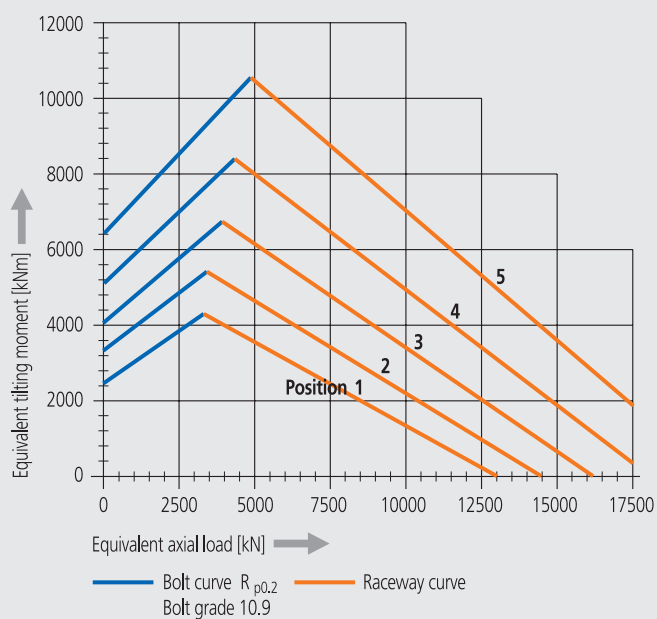
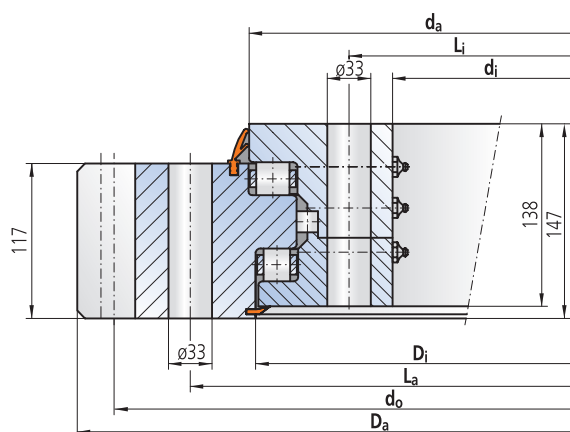
Series 325 standard design

External toothed

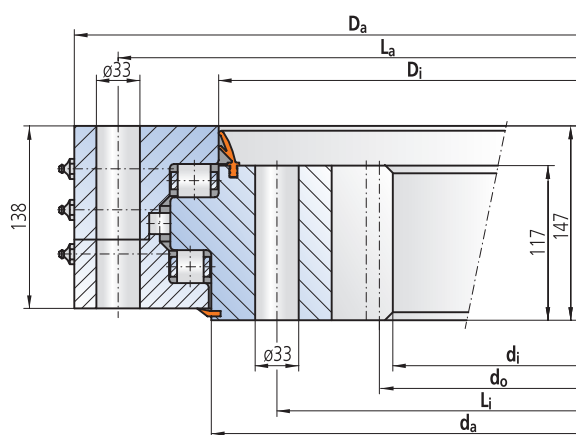
Drawing number	Position	Dimensions and weight					Mounting holes			Gearing and tooth forces						Load ratings					
		Outside diameter, outer ring	Inside diameter, inner ring	Inside diameter, outer ring	Outside diameter, inner ring	Weight	Pitch circle diameter, outer ring	Pitch circle diameter, inner ring	Number of holes per pitch circle	Pitch circle diameter	Module	Number of teeth	Addendum modification coeff.	Permissible tooth force	Maximum permissible tooth force	Static			Dynamic		
		D_a [mm]	d_i [mm]	D_i [mm]	d_a [mm]	G [kg]	L_a [mm]	L_i [mm]	n [-]	d_o [mm]	m [mm]	$z2$ [-]	$x2$ [-]	f_z^{norm} [kN]	f_z^{max} [kN]	$C_{o rad}$ [kN]	$C_{o ax T}$ [kN]	$C_{o ax H}$ [kN]	C_{rad} [kN]	$C_{ax T}$ [kN]	$C_{ax H}$ [kN]
31-25 1800/2-06800	1	2076.8	1619	1826	1836	1126	1925	1685	36	2032	16	127	+0.50	172	306	1348	13006	7609	701	2265	1664
31-25 2000/2-06810	2	2268.8	1819	2026	2036	1216	2125	1885	44	2224	16	139	+0.50	172	306	1502	14451	8457	743	2417	1769
31-25 2240/2-06820	3	2516.4	2059	2266	2276	1378	2366	2125	48	2466	18	137	+0.50	202	358	1687	16185	9475	790	2559	1889
31-25 2500/2-06830	4	2786.4	2319	2526	2536	1567	2625	2385	54	2736	18	152	+0.50	202	358	1887	18064	10577	838	2723	1983
31-25 2800/2-06840	5	3096.0	2619	2826	2836	1785	2925	2685	60	3040	20	152	+0.50	232	407	2118	20232	11850	890	2908	2132

Internal toothed

Drawing number	Position	Dimensions and weight					Mounting holes			Gearing and tooth forces						Load ratings					
		Outside diameter, outer ring	Inside diameter, inner ring	Inside diameter, outer ring	Outside diameter, inner ring	Weight	Pitch circle diameter, outer ring	Pitch circle diameter, inner ring	Number of holes per pitch circle	Pitch circle diameter	Module	Number of teeth	Addendum modification coeff.	Permissible tooth force	Maximum permissible tooth force	Static			Dynamic		
		D_a [mm]	d_i [mm]	D_i [mm]	d_a [mm]	G [kg]	L_a [mm]	L_i [mm]	n [-]	d_o [mm]	m [mm]	$z2$ [-]	$x2$ [-]	f_z^{norm} [kN]	f_z^{max} [kN]	$C_{o rad}$ [kN]	$C_{o ax T}$ [kN]	$C_{o ax H}$ [kN]	C_{rad} [kN]	$C_{ax T}$ [kN]	$C_{ax H}$ [kN]
32-25 1800/2-06850	1	1981	1520	1763	1774	1101	1915	1675	36	1536	16	96	-0.50	185	342	1424	13006	7660	722	2265	1667
32-25 2000/2-06860	2	2181	1728	1963	1974	1202	2115	1875	44	1744	16	109	-0.50	185	342	1577	14451	8508	762	2417	1773
32-25 2240/2-06870	3	2421	1944	2203	2214	1406	2355	2115	48	1962	18	109	-0.50	217	394	1763	16185	9526	808	2559	1886
32-25 2500/2-06880	4	2681	2214	2463	2474	1545	2615	2375	54	2232	18	124	-0.50	217	394	1963	18064	10628	855	2723	1996
32-25 2800/2-06890	5	2981	2500	2763	2774	1767	2915	2675	60	2520	20	126	-0.50	248	449	2194	20232	11901	907	2908	2121



Please adhere strictly to the rules given in the Technical Information section when using above graph!



Bearing ring material: 42CrMo4V
 6 to 10 Taper type grease nipples on each circumferential row
 Mounting holes equally spaced
 Raceway system supplied pre-lubricated
 Dimensions without tolerances DIN ISO 2768 coarse

Clearances

Position	Radial clearance	Axial clearance
1	max. 0.25	max. 0.08
2	max. 0.25	max. 0.08
3	max. 0.33	max. 0.10
4	max. 0.33	max. 0.10
5	max. 0.40	max. 0.13

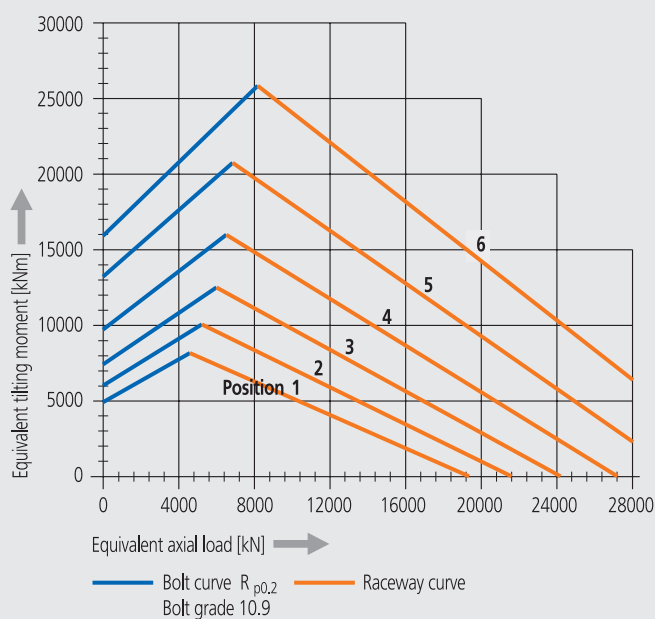
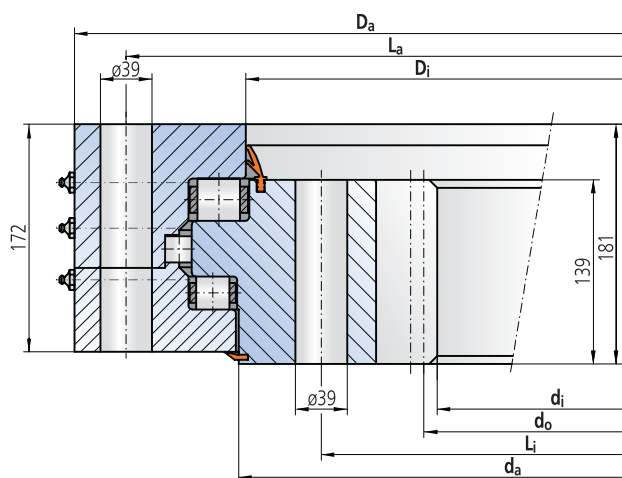
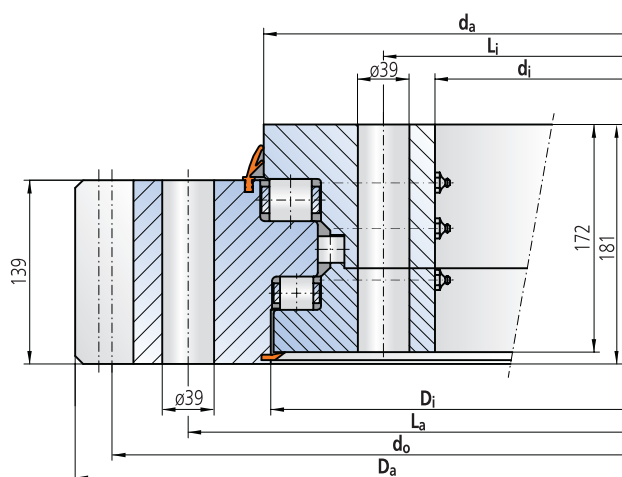
Series 332 standard design

External toothed

Drawing number	Position	Dimensions and weight					Mounting holes			Gearing and tooth forces						Load ratings					
		Outside diameter, outer ring	Inside diameter, inner ring	Inside diameter, outer ring	Outside diameter, inner ring	Weight	Pitch circle diameter, outer ring	Pitch circle diameter, inner ring	Number of holes per pitch circle	Pitch circle diameter	Module	Number of teeth	Addendum modification coeff.	Permissible tooth force	Maximum permissible tooth force	Static			Dynamic		
		D_a [mm]	d_i [mm]	D_i [mm]	d_a [mm]	G [kg]	L_a [mm]	L_i [mm]	n [-]	d_o [mm]	m [mm]	$z2$ [-]	$x2$ [-]	f_z^{norm} [kN]	f_z^{max} [kN]	$C_{o rad}$ [kN]	$C_{o ax T}$ [kN]	$C_{o ax H}$ [kN]	C_{rad} [kN]	$C_{ax T}$ [kN]	$C_{ax H}$ [kN]
31-32 2240/2-07300	1	2552.4	2022	2270	2281	1975	2395	2100	40	2502	18	139	+0.50	228	401	1862	19352	11565	988	3600	2561
31-32 2500/2-07310	2	2822.4	2282	2530	2541	2260	2655	2360	44	2772	18	154	+0.50	228	401	2085	21598	12912	1049	3837	2717
31-32 2800/2-07320	3	3136.0	2582	2830	2841	2576	2955	2660	48	3080	20	154	+0.50	260	465	2341	24190	14468	1114	4105	2879
31-32 3150/2-07330	4	3476.0	2932	3180	3191	2828	3305	3010	56	3420	20	171	+0.50	260	465	2640	27214	16282	1187	4368	3096
31-32 3550/2-07340	5	3889.6	3332	3580	3591	3249	3705	3410	66	3828	22	174	+0.50	295	525	2982	30670	18355	1266	4603	3277
31-32 4000/2-07350	6	4351.6	3782	4030	4041	3752	4155	3860	72	4290	22	195	+0.50	295	525	3367	34558	20688	1351	4955	3486

Internal toothed

Drawing number	Position	Dimensions and weight					Mounting holes			Gearing and tooth forces						Load ratings					
		Outside diameter, outer ring	Inside diameter, inner ring	Inside diameter, outer ring	Outside diameter, inner ring	Weight	Pitch circle diameter, outer ring	Pitch circle diameter, inner ring	Number of holes per pitch circle	Pitch circle diameter	Module	Number of teeth	Addendum modification coeff.	Permissible tooth force	Maximum permissible tooth force	Static			Dynamic		
		D_a [mm]	d_i [mm]	D_i [mm]	d_a [mm]	G [kg]	L_a [mm]	L_i [mm]	n [-]	d_o [mm]	m [mm]	$z2$ [-]	$x2$ [-]	f_z^{norm} [kN]	f_z^{max} [kN]	$C_{o rad}$ [kN]	$C_{o ax T}$ [kN]	$C_{o ax H}$ [kN]	C_{rad} [kN]	$C_{ax T}$ [kN]	$C_{ax H}$ [kN]
32-32 2240/2-07360	1	2458	1908	2199	2210	2010	2380	2085	40	1926	18	107	-0.50	240	445	1966	19352	11658	1017	3600	2583
32-32 2500/2-07370	2	2718	2178	2459	2470	2210	2640	2345	44	2196	18	122	-0.50	240	445	2189	21598	13006	1076	3837	2720
32-32 2800/2-07380	3	3018	2460	2759	2770	2542	2940	2645	48	2480	20	124	-0.50	278	508	2445	24190	14561	1141	4105	2906
32-32 3150/2-07390	4	3368	2820	3109	3120	2807	3290	2995	56	2840	20	142	-0.50	278	508	2744	27214	16375	1212	4368	3092
32-32 3550/2-07400	5	3768	3190	3509	3520	3302	3690	3395	66	3212	22	146	-0.50	305	559	3089	30670	18449	1291	4603	3273
32-32 4000/2-07410	6	4218	3652	3959	3970	3664	4140	3845	72	3674	22	167	-0.50	305	559	3471	34558	20781	1372	4955	3509



Please adhere strictly to the rules given in the Technical Information section when using above graph!

Bearing ring material: 42CrMo4V
 7 to 9 Taper type grease nipples on each circumferential row
 Mounting holes equally spaced
 Raceway system supplied pre-lubricated
 Dimensions without tolerances DIN ISO 2768 coarse

Clearances

Position	Radial clearance	Axial clearance
1	max. 0.33	max. 0.10
2	max. 0.33	max. 0.10
3	max. 0.40	max. 0.13
4	max. 0.50	max. 0.15
5	max. 0.50	max. 0.15
6	max. 0.50	max. 0.17

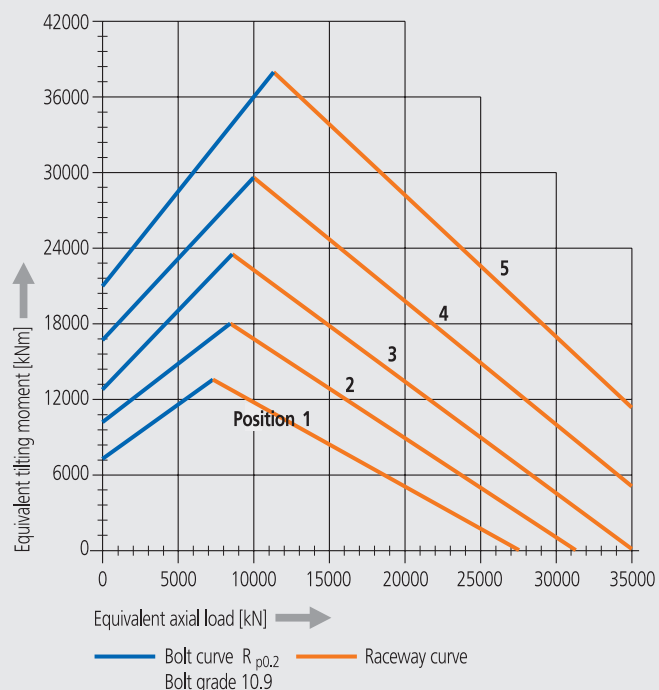
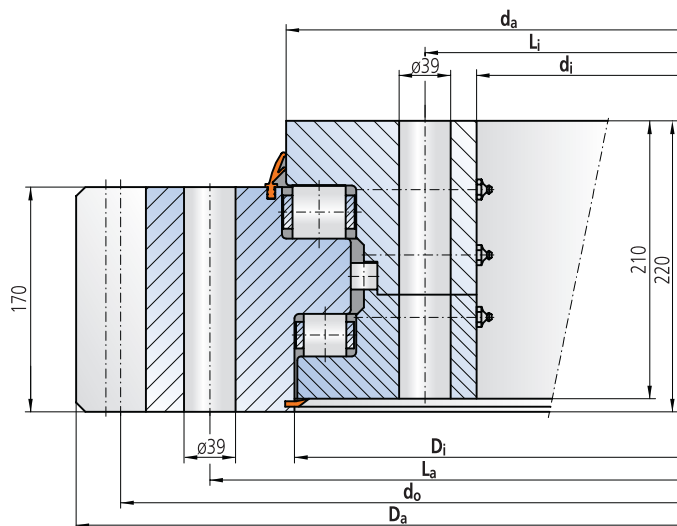
Series 340 standard design

External toothed

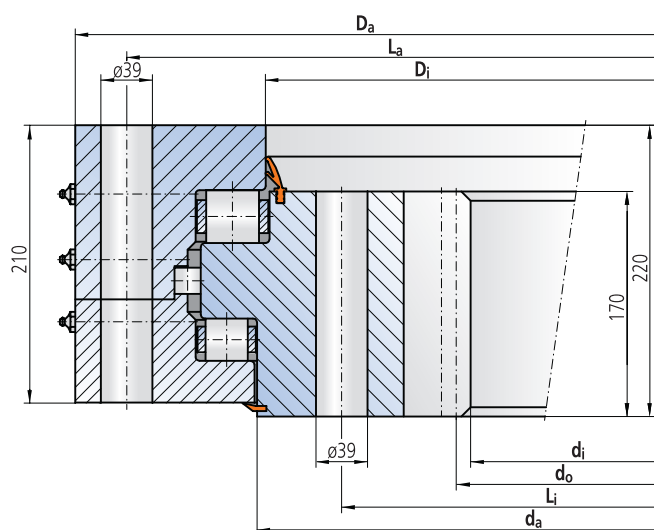
Drawing number	Position	Dimensions and weight					Mounting holes			Gearing and tooth forces						Load ratings					
		Outside diameter, outer ring	Inside diameter, inner ring	Inside diameter, outer ring	Outside diameter, inner ring	Weight	Pitch circle diameter, outer ring	Pitch circle diameter, inner ring	Number of holes per pitch circle	Pitch circle diameter	Module	Number of teeth	Addendum modification coeff.	Permissible tooth force	Maximum permissible tooth force	Static			Dynamic		
		D_a [mm]	d_i [mm]	D_i [mm]	d_a [mm]	G [kg]	L_a [mm]	L_i [mm]	n [-]	d_o [mm]	m [mm]	$z2$ [-]	$x2$ [-]	f_z^{norm} [kN]	f_z^{max} [kN]	$C_{o rad}$ [kN]	$C_{o ax T}$ [kN]	$C_{o ax H}$ [kN]	C_{rad} [kN]	$C_{ax T}$ [kN]	$C_{ax H}$ [kN]
31-40 2800/2-07420	1	3136.0	2562	2837	2850	3267	2965	2640	48	3080	20	154	+0.50	296	525	2334	27973	15174	1113	5534	4066
31-40 3150/2-07430	2	3515.6	2912	3187	3200	3812	3315	2990	56	3454	22	157	+0.50	338	605	2633	31469	17077	1186	5834	4344
31-40 3550/2-07440	3	3911.6	3312	3587	3600	4255	3715	3390	66	3850	22	175	+0.50	338	605	2975	35465	19251	1265	6268	4605
31-40 4000/2-07450	4	4363.2	3762	4037	4050	4805	4165	3840	72	4296	24	179	+0.50	380	685	3360	39961	21696	1348	6658	4945
31-40 4500/2-07460	5	4867.2	4262	4537	4550	5410	4665	4340	84	4800	24	200	+0.50	380	685	3787	44956	24414	1437	7122	5275

Internal toothed

Drawing number	Position	Dimensions and weight					Mounting holes			Gearing and tooth forces						Load ratings					
		Outside diameter, outer ring	Inside diameter, inner ring	Inside diameter, outer ring	Outside diameter, inner ring	Weight	Pitch circle diameter, outer ring	Pitch circle diameter, inner ring	Number of holes per pitch circle	Pitch circle diameter	Module	Number of teeth	Addendum modification coeff.	Permissible tooth force	Maximum permissible tooth force	Static			Dynamic		
		D_a [mm]	d_i [mm]	D_i [mm]	d_a [mm]	G [kg]	L_a [mm]	L_i [mm]	n [-]	d_o [mm]	m [mm]	$z2$ [-]	$x2$ [-]	f_z^{norm} [kN]	f_z^{max} [kN]	$C_{o rad}$ [kN]	$C_{o ax T}$ [kN]	$C_{o ax H}$ [kN]	C_{rad} [kN]	$C_{ax T}$ [kN]	$C_{ax H}$ [kN]
32-40 2800/2-07470	1	3038	2460	2750	2763	3213	2960	2635	48	2480	20	124	-0.50	314	577	2452	27973	15438	1143	5534	4061
32-40 3150/2-07480	2	3388	2794	3100	3113	3683	3310	2985	56	2816	22	128	-0.50	357	658	2751	31469	17362	1214	5834	4365
32-40 3550/2-07490	3	3788	3190	3500	3513	4171	3710	3385	66	3212	22	146	-0.50	357	658	3093	35465	19561	1292	6268	4601
32-40 4000/2-07500	4	4238	3624	3950	3963	4810	4160	3835	72	3648	24	152	-0.50	398	740	3478	39961	21783	1373	6658	4976
32-40 4500/2-07510	5	4738	4128	4450	4463	5367	4660	4335	84	4152	24	173	-0.50	398	740	3905	44956	24501	1461	7122	5270



Please adhere strictly to the rules given in the Technical Information section when using above graph!



Bearing ring material: 42CrMo4V
 7 to 14 Taper type grease nipples on each circumferential row
 Mounting holes equally spaced
 Raceway system supplied pre-lubricated
 Dimensions without tolerances DIN ISO 2768 coarse

Clearances

Position	Radial clearance	Axial clearance
1	max. 0.40	max. 0.13
2	max. 0.50	max. 0.15
3	max. 0.50	max. 0.15
4	max. 0.50	max. 0.17
5	max. 0.60	max. 0.20

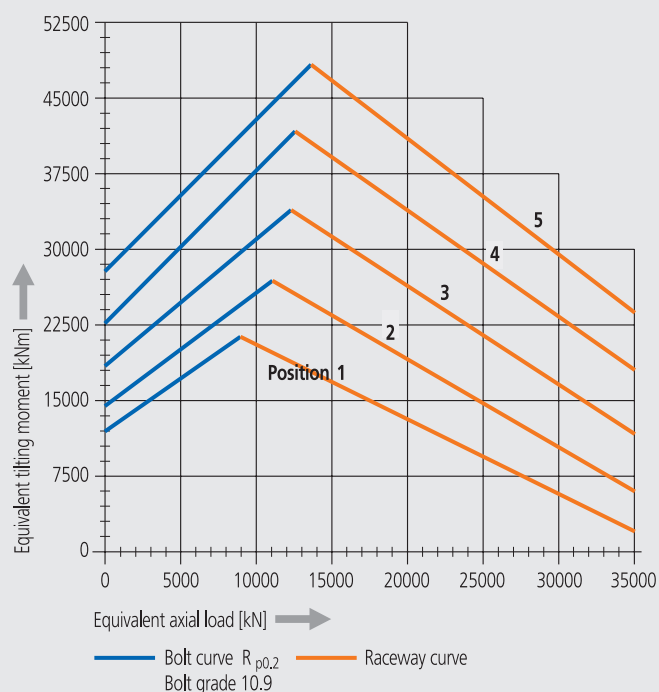
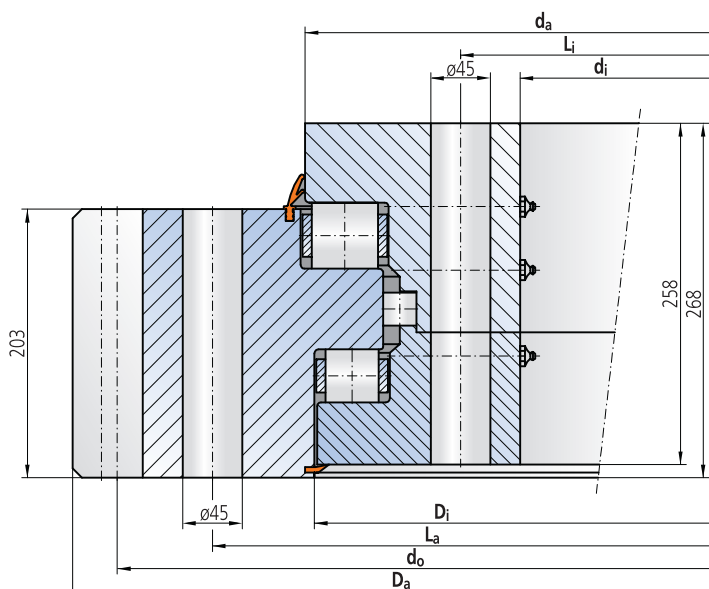
Series 350 standard design

External toothed

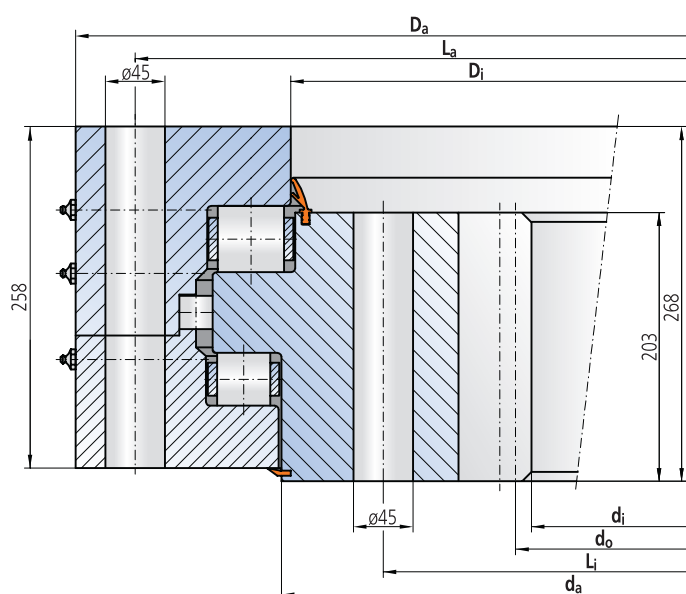
Drawing number	Position	Dimensions and weight					Mounting holes			Gearing and tooth forces						Load ratings					
		Outside diameter, outer ring	Inside diameter, inner ring	Inside diameter, outer ring	Outside diameter, inner ring	Weight	Pitch circle diameter, outer ring	Pitch circle diameter, inner ring	Number of holes per pitch circle	Pitch circle diameter	Module	Number of teeth	Addendum modification coeff.	Permissible tooth force	Maximum permissible tooth force	Static			Dynamic		
		D_a [mm]	d_i [mm]	D_i [mm]	d_a [mm]	G [kg]	L_a [mm]	L_i [mm]	n [-]	d_o [mm]	m [mm]	$z2$ [-]	$x2$ [-]	f_z^{norm} [kN]	f_z^{max} [kN]	$C_{o rad}$ [kN]	$C_{o ax T}$ [kN]	$C_{o ax H}$ [kN]	C_{rad} [kN]	$C_{ax T}$ [kN]	$C_{ax H}$ [kN]
31-50 3150/2-07520	1	3571.2	2885	3196	3210	5298	3350	2975	48	3504	24	146	+0.50	420	760	3894	36813	19631	1702	7913	5838
31-50 3550/2-07530	2	3955.2	3285	3596	3610	5830	3750	3375	54	3888	24	162	+0.50	420	760	4402	41488	22131	1815	8409	6272
31-50 4000/2-07540	3	4411.2	3735	4046	4060	6578	4200	3825	60	4344	24	181	+0.50	420	760	4974	46747	24945	1934	9018	6662
31-50 4500/2-07550	4	4915.2	4235	4546	4560	7456	4700	4325	68	4848	24	202	+0.50	420	760	5609	52590	28070	2062	9632	7088
31-50 4750/2-07555	5	5179.2	4485	4796	4810	7870	4950	4575	76	5112	24	213	+0.50	420	760	5927	55512	29633	2124	9850	7293

Internal toothed

Drawing number	Position	Dimensions and weight					Mounting holes			Gearing and tooth forces						Load ratings					
		Outside diameter, outer ring	Inside diameter, inner ring	Inside diameter, outer ring	Outside diameter, inner ring	Weight	Pitch circle diameter, outer ring	Pitch circle diameter, inner ring	Number of holes per pitch circle	Pitch circle diameter	Module	Number of teeth	Addendum modification coeff.	Permissible tooth force	Maximum permissible tooth force	Static			Dynamic		
		D_a [mm]	d_i [mm]	D_i [mm]	d_a [mm]	G [kg]	L_a [mm]	L_i [mm]	n [-]	d_o [mm]	m [mm]	$z2$ [-]	$x2$ [-]	f_z^{norm} [kN]	f_z^{max} [kN]	$C_{o rad}$ [kN]	$C_{o ax T}$ [kN]	$C_{o ax H}$ [kN]	C_{rad} [kN]	$C_{ax T}$ [kN]	$C_{ax H}$ [kN]
32-50 3150/2-07560	1	3415	2736	3090	3104	5128	3325	2950	48	2760	24	115	-0.50	440	820	4110	36813	19756	1750	7913	5830
32-50 3550/2-07570	2	3815	3120	3490	3504	5916	3725	3350	54	3144	24	131	-0.50	440	820	4618	41488	22256	1861	8409	6264
32-50 4000/2-07580	3	4265	3576	3940	3954	6623	4175	3800	60	3600	24	150	-0.50	440	820	5190	46745	25070	1980	9018	6654
32-50 4500/2-07590	4	4765	4080	4440	4454	7427	4675	4300	68	4104	24	171	-0.50	440	820	5825	52590	28195	2105	9632	7118
32-50 4750/2-07595	5	5015	4320	4690	4704	7840	4925	4550	76	4344	24	181	-0.50	440	820	6143	55512	29758	2164	9850	7322



Please adhere strictly to the rules given in the Technical Information section when using above graph!



Bearing ring material: 42CrMo4V
 8 to 12 Taper type grease nipples on each circumferential row
 Mounting holes equally spaced
 Raceway system supplied pre-lubricated
 Dimensions without tolerances DIN ISO 2768 coarse

Clearances

Position	Radial clearance	Axial clearance
1	max. 0.5	max. 0.15
2	max. 0.5	max. 0.15
3	max. 0.5	max. 0.17
4	max. 0.6	max. 0.20
5	max. 0.6	max. 0.20