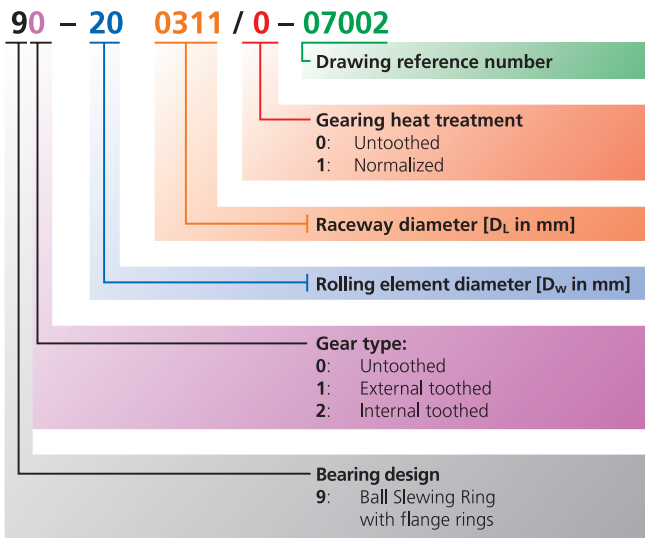
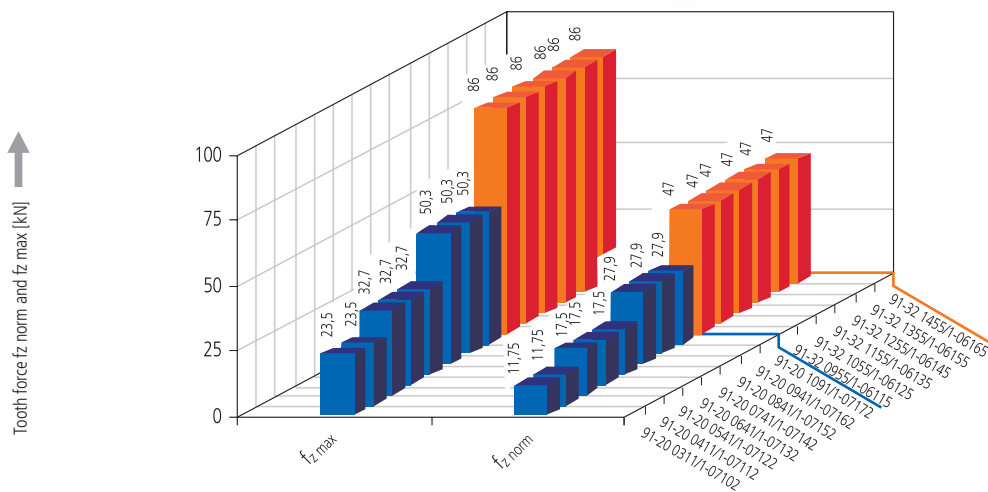


Series 920, 932

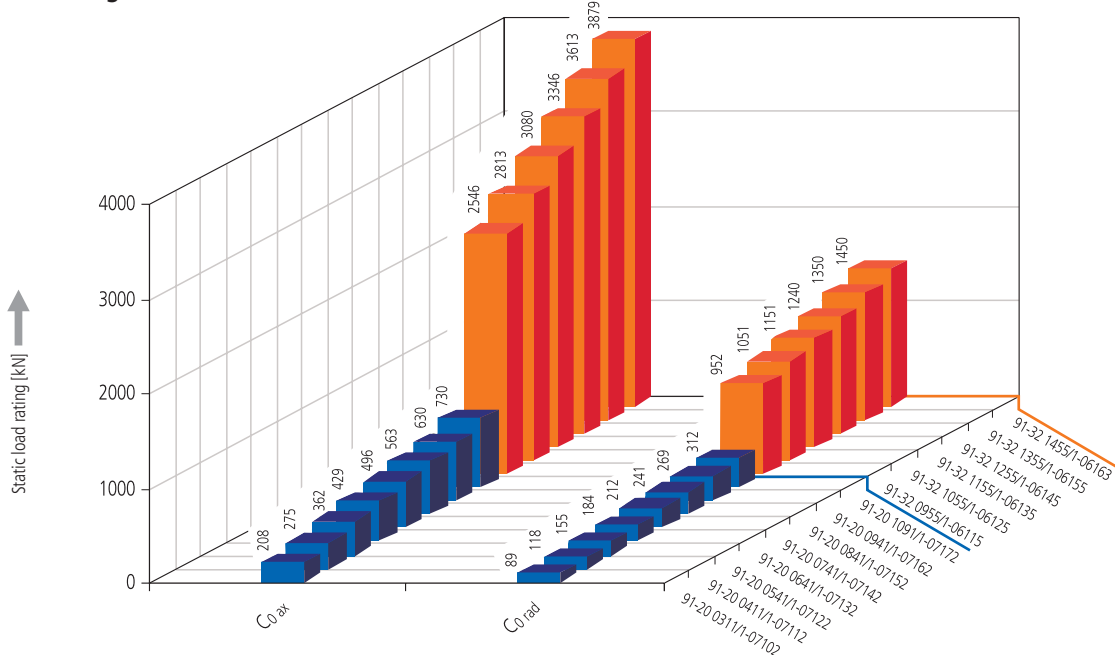
Series Overview - Ball Slewing Rings with flange rings



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 $n_{perm} = 40000 / D_L$
 With a horizontal rotational axis $n_{perm} = 20000 / D_L$
 (D_L = raceway diameter)
 "Compressive" load
 Bolt grade 10.9

Typical applications

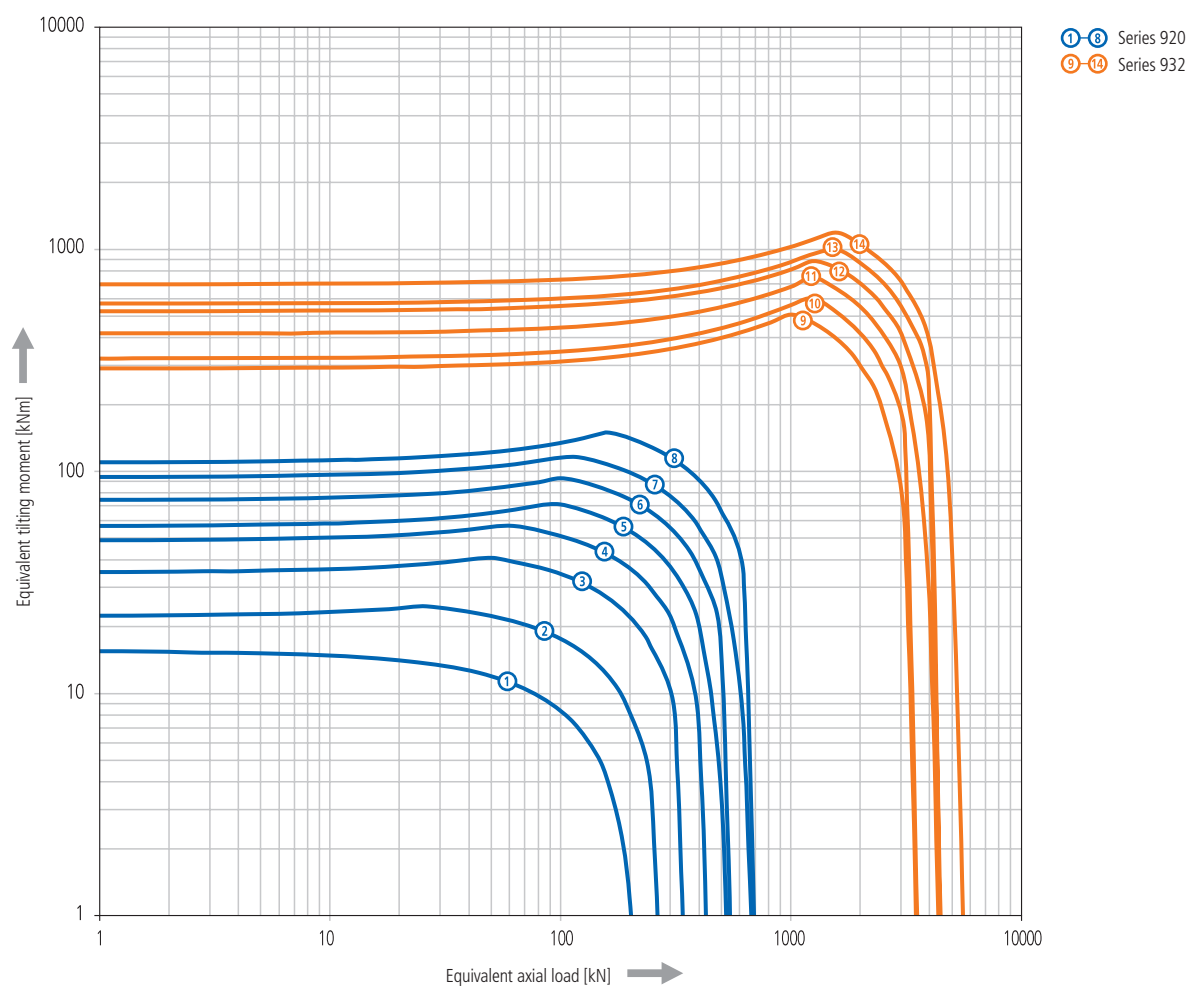
Simple turntables, slewing mechanisms, bogies, light cranes and construction machinery.

Characteristics

- Robust design for rough mounting structure
- Cost-optimized design
- Ideally suitable for applications with low precision requirements
- For Series 920 precision versions are available

Limiting load diagrams, series 920 / 932

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



Series 920 standard design

Untoothed

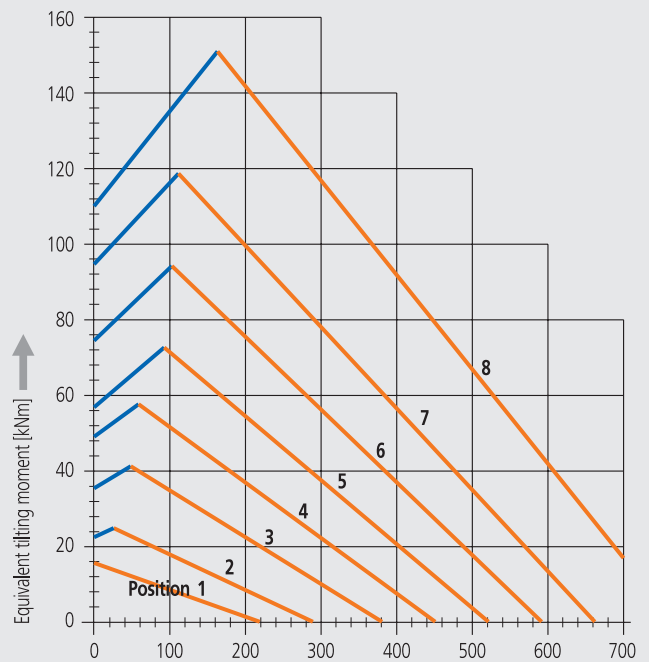
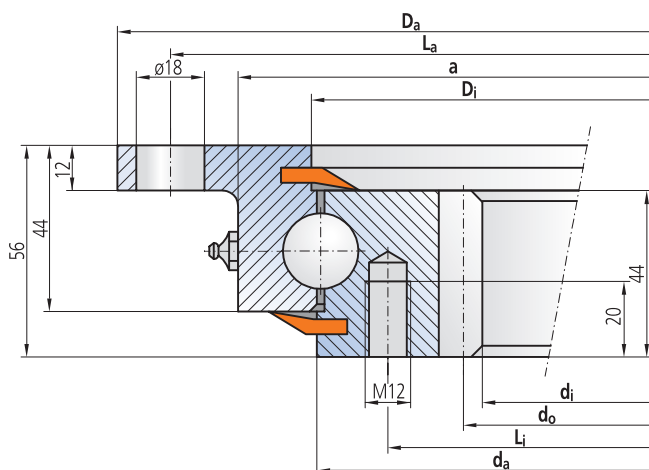
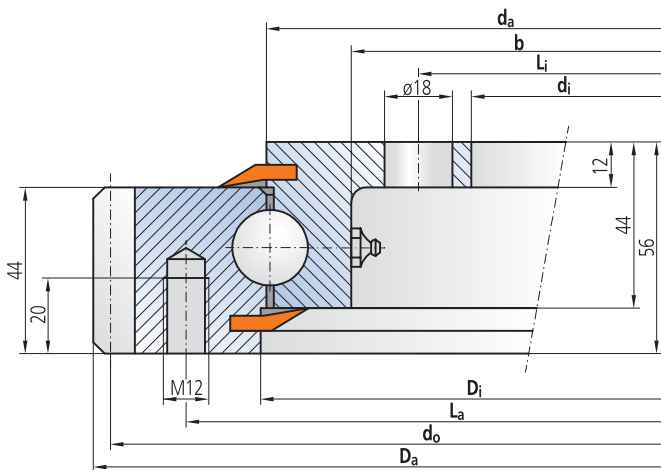
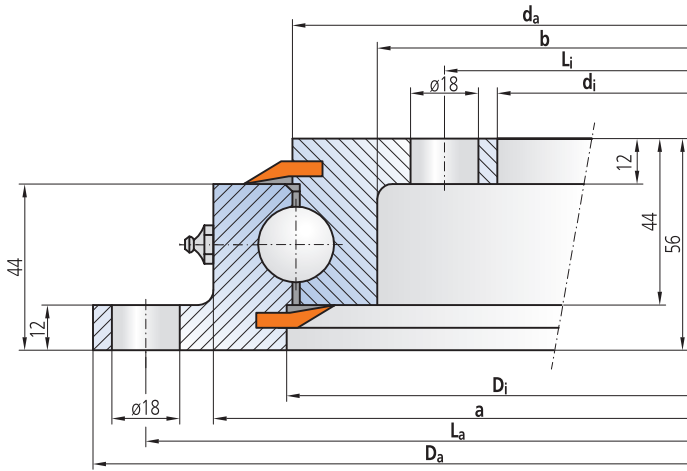
Drawing number	Position	Dimension and weight							Mounting holes				Load ratings			
		Outside diameter, outer ring	Inside diameter, inner ring	Inside diameter, outer ring	Outside diameter, inner ring	Diameter, outer ring	Diameter, inner ring	Weight	Pitch circle diameter, outer ring	Number of holes, outer ring	Pitch circle diameter, inner ring	Number of holes, inner ring	Static	Dynamic		
		D _a [mm]	d _i [mm]	D _i [mm]	d _a [mm]	a [mm]	b [mm]	G [kg]	L _a [mm]	n _a [-]	L _i [mm]	n _i [-]	C _{o rad} [kN]	C _{o ax} [kN]	C _{rad} [kN]	C _{ax} [kN]
90-20 0311/0-07002	1	418	204	315.5	312.5	353	269	19	390	8	232	12	89	208	140	140
90-20 0411/0-07012	2	518	304	415.5	412.5	453	369	25	490	8	332	12	118	275	156	156
90-20 0541/0-07022	3	648	434	545.5	542.5	583	499	33	620	10	462	14	155	362	173	174
90-20 0641/0-07032	4	748	534	645.5	642.5	683	599	40	720	12	562	16	184	429	184	185
90-20 0741/0-07042	5	848	634	745.5	742.5	783	699	46	820	12	662	16	212	496	194	195
90-20 0841/0-07052	6	948	734	845.5	842.5	883	799	52	920	14	762	18	241	563	204	205
90-20 0941/0-07062	7	1048	834	945.5	942.5	983	899	58	1020	16	862	20	269	630	213	214
90-20 1091/0-07072	8	1198	984	1095.5	1092.5	1133	1049	68	1170	16	1012	20	312	730	224	225

External toothed

Drawing number	Position	Dimension 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	Diameter, inner ring	Weight	Pitch circle diameter, outer ring	Number of holes, outer ring	Pitch circle diameter, inner ring	Number of holes, inner ring	Teilkreisdurchmesser	Modul	Zähnezahl	zulässige Zahnkraft	maximal zulässige Zahnkraft	Static	Dynamic		
		D _a [mm]	d _i [mm]	D _i [mm]	d _a [mm]	b [mm]	G [kg]	L _a [mm]	n _a [-]	L _i [mm]	n _i [-]	d _o [mm]	m [mm]	z2 [-]	f _{z norm} [kN]	f _{z max} [kN]	C _{o rad} [kN]	C _{o ax} [kN]	C _{rad} [kN]	C _{ax} [kN]
91-20 0311/1-07102	1	404.0	204	315.5	312.5	269	23	355	10	232	12	395	5	79	11.75	23.5	89	208	140	140
91-20 0411/1-07112	2	504.0	304	415.5	412.5	369	30	455	10	332	12	495	5	99	11.75	23.5	118	275	156	156
91-20 0541/1-07122	3	640.8	434	545.5	542.5	499	42	585	14	462	14	630	6	105	17.5	32.7	155	362	173	174
91-20 0641/1-07132	4	742.8	534	645.5	642.5	599	53	685	16	562	16	732	6	122	17.5	32.7	184	429	184	185
91-20 0741/1-07142	5	838.8	634	745.5	742.5	699	56	785	18	662	16	828	6	138	17.5	32.7	212	496	194	195
91-20 0841/1-07152	6	950.4	734	845.5	842.5	799	68	885	18	762	18	936	8	117	27.9	50.3	241	563	204	205
91-20 0941/1-07162	7	1046.4	834	945.5	942.5	899	75	985	20	862	20	1032	8	129	27.9	50.3	269	630	213	214
91-20 1091/1-07172	8	1198.4	984	1095.5	1092.5	1049	87	1135	22	1012	20	1184	8	148	27.9	50.3	312	730	224	225

Internal toothed

Drawing number	Position	Dimension 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	Diameter, outer ring	Weight	Pitch circle diameter, outer ring	Number of holes, outer ring	Pitch circle diameter, inner ring	Number of holes, inner ring	Teilkreisdurchmesser	Modul	Zähnezahl	zulässige Zahnkraft	maximal zulässige Zahnkraft	Static	Dynamic		
		D _a [mm]	d _i [mm]	D _i [mm]	d _a [mm]	a [mm]	G [kg]	L _a [mm]	n _a [-]	L _i [mm]	n _i [-]	d _o [mm]	m [mm]	z2 [-]	f _{z norm} [kN]	f _{z max} [kN]	C _{o rad} [kN]	C _{o ax} [kN]	C _{rad} [kN]	C _{ax} [kN]
92-20 0311/1-07202	1	418	225	315.5	312.5	353	21	390	8	275	12	235	5	47	11.9	22.7	89	208	140	140
92-20 0411/1-07212	2	518	325	415.5	412.5	453	28	490	8	375	12	335	5	67	11.9	22.7	118	275	156	156
92-20 0541/1-07222	3	648	444	545.5	542.5	583	39	620	10	505	16	456	6	76	17.5	32.9	155	362	173	174
92-20 0641/1-07232	4	748	546	645.5	642.5	683	46	720	12	605	18	558	6	93	17.5	32.9	184	429	184	185
92-20 0741/1-07242	5	848	648	745.5	742.5	783	52	820	12	705	20	660	6	110	17.5	32.9	212	496	194	195
92-20 0841/1-07252	6	948	736	845.5	842.5	883	63	920	14	805	20	752	8	94	28	50.5	241	563	204	205
92-20 0941/1-07262	7	1048	840	945.5	942.5	983	69	1020	16	905	22	856	8	107	28	50.5	269	630	213	214
92-20 1091/1-07272	8	1198	984	1095.5	1092.5	1133	83	1170	16	1055	24	1000	8	125	28	50.5	312	730	224	225



Equivalent axial load [kN] →

 Bolt curve $R_{p0.2}$ Bolt grade 10.9 Raceway curve

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

Radial clearance: 0 - 0.3 mm
 Axial tilting clearance: 0 - 0.5 mm
 Bearing ring material: C45N
 4 Taper type grease nipples on the circumference
 Mounting holes equally spaced
 Raceway system supplied pre-lubricated
 Dimensions without tolerances DIN ISO 2768 coarse

Series 920 precision version

Untoothed

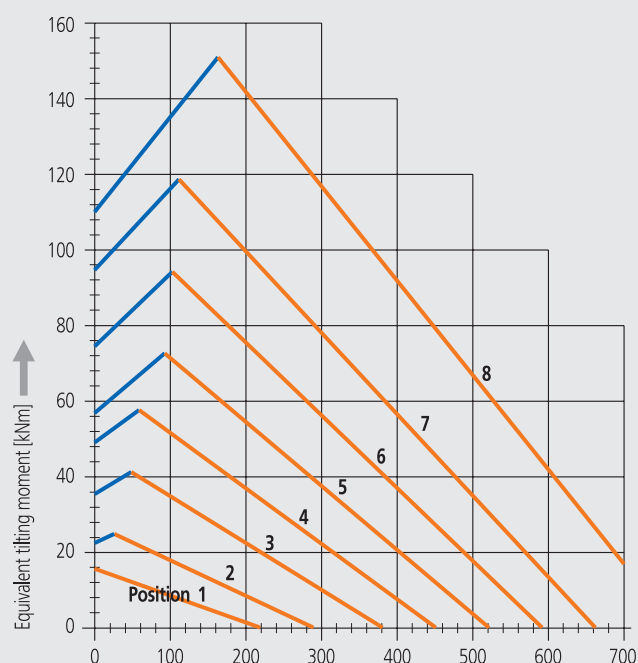
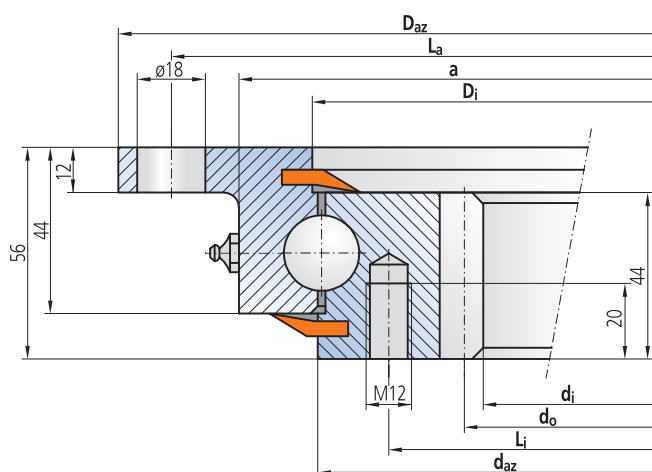
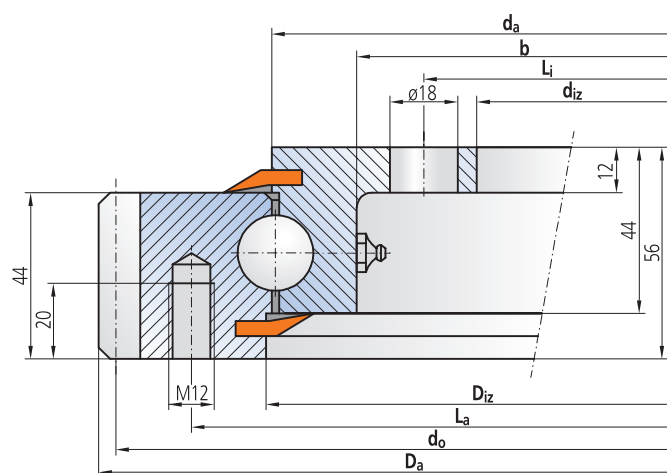
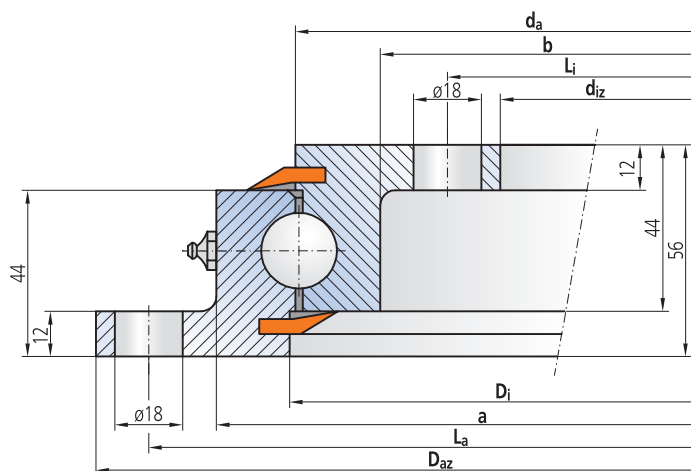
Drawing number	Position	Dimension and weight							Mounting holes				Load ratings			
		Outside diameter, outer ring Zentrierung	Inside diameter, inner ring Zentrierung	Inside diameter, outer ring	Outside diameter, inner ring	Diameter, Outer ring	Diameter, inner ring	Weight	Pitch circle diameter, outer ring	Number of holes, outer ring	Pitch circle diameter, inner ring	Number of holes, inner ring	Static		Dynamic	
		D _{az} [mm]	d _{iz} [mm]	D _i [mm]	d _a [mm]	a [mm]	b [mm]	G [kg]	L _a [mm]	n _a [-]	L _i [mm]	n _i [-]	C _{o rad} [kN]	C _{o ax} [kN]	C _{rad} [kN]	C _{ax} [kN]
90-20 0311/0-07003	1	417-0.10	205+0.07	315.5	312.5	353	269	19	390	8	232	12	89	208	140	140
90-20 0411/0-07013	2	517-0.11	305+0.08	415.5	412.5	453	369	25	490	8	332	12	118	275	156	156
90-20 0541/0-07023	3	647-0.13	435+0.10	545.5	542.5	583	499	33	620	10	462	14	155	362	173	174
90-20 0641/0-07033	4	747-0.13	535+0.11	645.5	642.5	683	599	40	720	12	562	16	184	429	184	185
90-20 0741/0-07043	5	847-0.14	635+0.13	745.5	742.5	783	699	46	820	12	662	16	212	496	194	195
90-20 0841/0-07053	6	947-0.14	735+0.13	845.5	842.5	883	799	52	920	14	762	18	241	563	204	205
90-20 0941/0-07063	7	1047-0.17	835+0.14	945.5	942.5	983	899	58	1020	16	862	20	269	630	213	214
90-20 1091/0-07073	8	1197-0.17	985+0.14	1095.5	1092.5	1133	1049	68	1170	16	1012	20	312	730	224	225

External toothed

Drawing number	Position	Dimension and weight							Mounting holes				Gearing and tooth forces				Load ratings			
		Outside diameter, outer ring	Inside diameter, inner ring Zentrierung	Inside diameter, outer ring Zentrierung	Outside diameter, inner ring	Diameter, inner ring	Weight	Pitch circle diameter, outer ring	Number of holes, outer ring	Pitch circle diameter, inner ring	Number of holes, inner ring	Teilkreisdurchmesser	Modul	Zähnezahl	zulässige Zahnkraft	maximal zulässige Zahnkraft	Static		Dynamic	
		D _a [mm]	d _{iz} [mm]	D _{iz} [mm]	d _a [mm]	b [mm]	G [kg]	L _a [mm]	n _a [-]	L _i [mm]	n _i [-]	d _o [mm]	m [mm]	z2 [-]	f _{z norm} [kN]	f _{z max} [kN]	C _{o rad} [kN]	C _{o ax} [kN]	C _{rad} [kN]	C _{ax} [kN]
91-20 0311/1-07103	1	404.0	205+0.07	317+0.09	312.5	269	23	355	10	232	12	395	5	79	11.75	23.5	89	208	140	140
91-20 0411/1-07113	2	504.0	305+0.08	417+0.10	412.5	369	30	455	10	332	12	495	5	99	11.75	23.5	118	275	156	156
91-20 0541/1-07123	3	640.8	435+0.10	547+0.11	542.5	499	42	585	14	462	14	630	6	105	17.5	32.7	155	362	173	174
91-20 0641/1-07133	4	742.8	535+0.11	647+0.13	642.5	599	53	685	16	562	16	732	6	122	17.5	32.7	184	429	184	185
91-20 0741/1-07143	5	838.8	635+0.13	747+0.13	742.5	699	56	785	18	662	16	828	6	138	17.5	32.7	212	496	194	195
91-20 0841/1-07153	6	950.4	735+0.13	847+0.14	842.5	799	68	885	18	762	18	936	8	117	27.9	50.3	241	563	204	205
91-20 0941/1-07163	7	1046.4	835+0.14	947+0.14	942.5	899	75	985	20	862	20	1032	8	129	27.9	50.3	269	630	213	214
91-20 1091/1-07173	8	1198.4	985+0.14	1097+0.17	1092.5	1049	87	1135	22	1012	20	1184	8	148	27.9	50.3	312	730	224	225

Internal toothed

Drawing number	Position	Dimension and weight							Mounting holes				Gearing and tooth forces				Load ratings			
		Outside diameter, outer ring Zentrierung	Inside diameter, inner ring	Inside diameter, outer ring	Outside diameter, inner ring Zentrierung	Diameter, outer ring	Weight	Pitch circle diameter, outer ring	Number of holes, outer ring	Pitch circle diameter, inner ring	Number of holes, inner ring	Teilkreisdurchmesser	Modul	Zähnezahl	zulässige Zahnkraft	maximal zulässige Zahnkraft	Static		Dynamic	
		D _{az} [mm]	d _i [mm]	D _i [mm]	d _{az} [mm]	a [mm]	G [kg]	L _a [mm]	n _a [-]	L _i [mm]	n _i [-]	d _o [mm]	m [mm]	z2 [-]	f _{z norm} [kN]	f _{z max} [kN]	C _{o rad} [kN]	C _{o ax} [kN]	C _{rad} [kN]	C _{ax} [kN]
92-20 0311/1-07203	1	417-0.10	225	315.5	311-0.08	353	21	390	8	275	12	235	5	47	11.9	22.7	89	208	140	140
92-20 0411/1-07213	2	517-0.11	325	415.5	411-0.10	453	28	490	8	375	12	335	5	67	11.9	22.7	118	275	156	156
92-20 0541/1-07223	3	647-0.13	444	545.5	541-0.11	583	39	620	10	505	16	456	6	76	17.5	32.9	155	362	173	174
92-20 0641/1-07233	4	747-0.13	546	645.5	641-0.13	683	46	720	12	605	18	558	6	93	17.5	32.9	184	429	184	185
92-20 0741/1-07243	5	847-0.14	648	745.5	741-0.13	783	52	820	12	705	20	660	6	110	17.5	32.9	212	496	194	195
92-20 0841/1-07253	6	947-0.14	736	845.5	841-0.14	883	63	920	14	805	20	752	8	94	28	50.5	241	563	204	205
92-20 0941/1-07263	7	1047-0.17	840	945.5	941-0.14	983	69	1020	16	905	22	856	8	107	28	50.5	269	630	213	214
92-20 1091/1-07273	8	1197-0.17	984	1095.5	1091-0.17	1133	83	1170	16	1055	24	1000	8	125	28	50.5	312	730	224	225



Equivalent axial load [kN] →

 Bolt curve $R_{p0.2}$ Bolt grade 10.9 Raceway curve

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

Bearing ring material: C45N
 4 Taper type grease nipples on the circumference
 Mounting holes equally spaced
 Raceway system supplied pre-lubricated
 Dimensions without tolerances DIN ISO 2768 coarse

Clearance of precision version

Position	Radial Clearance	Axial Clearance
1	max. 0.03	max. 0.03
2	max. 0.03	max. 0.03
3	max. 0.03	max. 0.03
4	max. 0.04	max. 0.04
5	max. 0.04	max. 0.04
6	max. 0.05	max. 0.05
7	max. 0.05	max. 0.05
8	max. 0.06	max. 0.06

Series 932 standard design

Untoothed

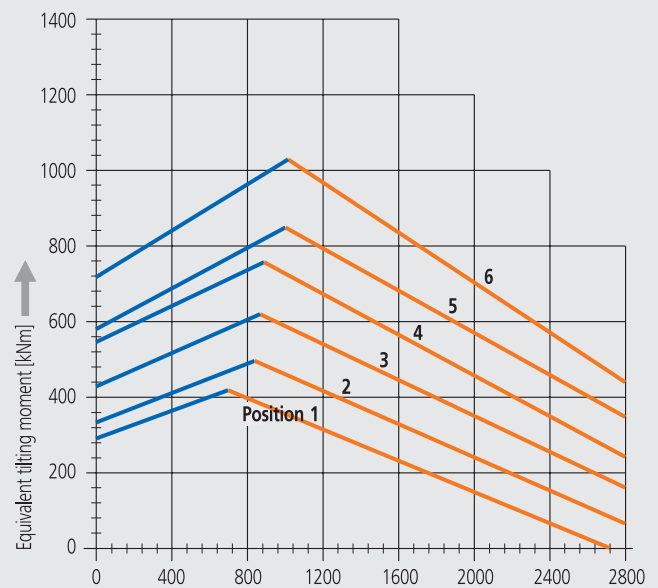
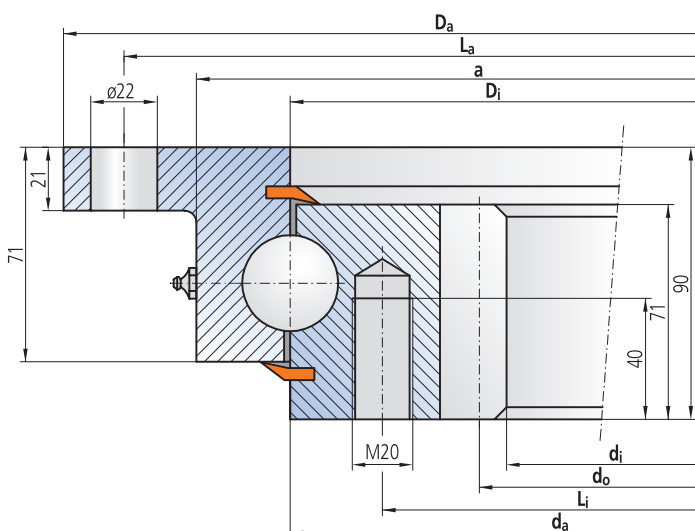
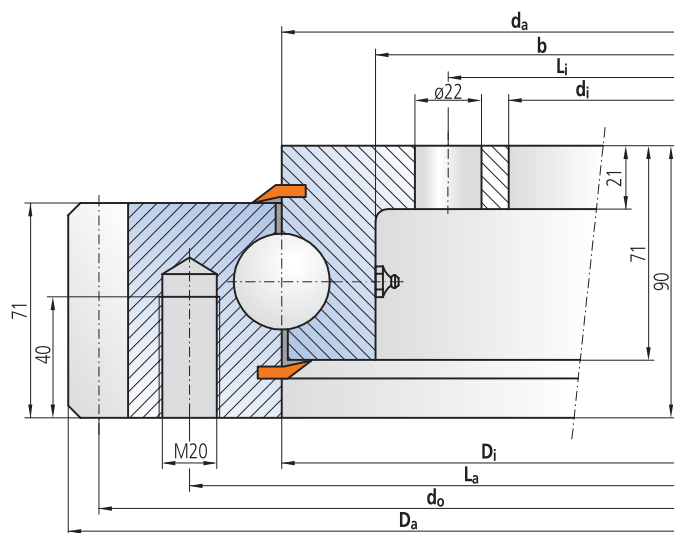
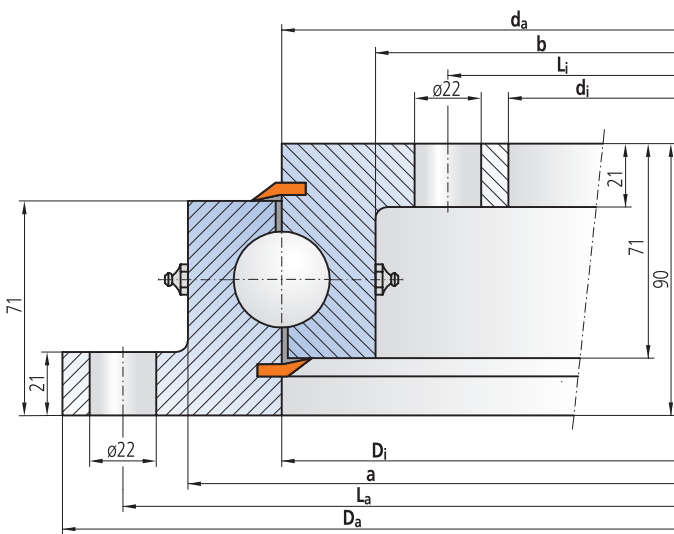
Drawing number	Position	Dimension and weight							Mounting holes				Load ratings			
		Outside diameter, Outer ring D_a [mm]	Inside diameter, inner ring d_i [mm]	Inside diameter, Outer ring D_i [mm]	Outside diameter, inner ring d_a [mm]	Diameter, Outer ring a [mm]	Diameter, inner ring b [mm]	Weight G [kg]	Pitch circle diameter, Outer ring L_a [mm]	Number of holes, Outer ring n_a [-]	Pitch circle diameter, inner ring L_i [mm]	Number of holes, inner ring n_i [-]	Static $C_{o\ rad}$ [kN]	$C_{o\ ax}$ [kN]	Dynamic C_{rad} [kN]	C_{ax} [kN]
90-32 0955/0-06015	1	1100	805	955	955	1017	893	131	1060	30	845	30	1029	2754	411	479
90-32 1055/0-06025	2	1200	905	1055	1055	1117	993	145	1160	30	945	30	1137	3043	427	497
90-32 1155/0-06035	3	1300	1005	1155	1155	1217	1093	159	1260	36	1045	36	1245	3331	442	514
90-32 1255/0-06045	4	1400	1105	1255	1255	1317	1193	172	1360	42	1145	42	1353	3619	456	531
90-32 1355/0-06055	5	1500	1205	1355	1355	1417	1293	186	1460	42	1245	42	1460	3908	469	546
90-32 1455/0-06065	6	1600	1305	1455	1455	1517	1393	200	1560	48	1345	48	1568	4196	482	561

External toothed

Drawing number	Position	Dimension and weight							Mounting holes				Gearing and tooth forces				Load ratings			
		Outside diameter, Outer ring D_a [mm]	Inside diameter, inner ring d_i [mm]	Inside diameter, Outer ring D_i [mm]	Outside diameter, inner ring d_a [mm]	Diameter, inner ring b [mm]	Weight G [kg]	Pitch circle diameter, Outer ring L_a [mm]	Number of holes, Outer ring n_a [-]	Pitch circle diameter, inner ring L_i [mm]	Number of holes, inner ring n_i [-]	Teilkreisdurchmesser d_o [mm]	Modul m [mm]	Zähnezahl z_2 [-]	zulässige Zahnkraft $f_z\ norm$ [kN]	maximal zulässige Zahnkraft $f_z\ max$ [kN]	Static $C_{o\ rad}$ [kN]	$C_{o\ ax}$ [kN]	Dynamic C_{rad} [kN]	C_{ax} [kN]
91-32 0955/1-06115	1	1096.2	805	955	955	893	165	1016	30	845	30	1080	9	120	36	65	1029	2754	411	479
91-32 1055/1-06125	2	1198	905	1055	1055	993	183	1116	30	945	30	1180	10	118	43	76	1137	3043	427	497
91-32 1155/1-06135	3	1298	1005	1155	1155	1093	200	1216	36	1045	36	1280	10	128	43	76	1245	3331	442	514
91-32 1255/1-06145	4	1398	1105	1255	1255	1193	216	1316	42	1145	42	1380	10	138	43	76	1353	3619	456	531
91-32 1355/1-06155	5	1498	1205	1355	1355	1293	234	1416	42	1245	42	1480	10	148	43	76	1460	3908	469	546
91-32 1455/1-06165	6	1598	1305	1455	1455	1393	250	1516	48	1345	48	1580	10	158	43	76	1568	4196	482	561

Internal toothed

Drawing number	Position	Dimension and weight							Mounting holes				Gearing and tooth forces				Load ratings			
		Outside diameter, Outer ring D_a [mm]	Inside diameter, inner ring d_i [mm]	Inside diameter, Outer ring D_i [mm]	Outside diameter, inner ring d_a [mm]	Diameter, Outer ring a [mm]	Weight G [kg]	Pitch circle diameter, Outer ring L_a [mm]	Number of holes, Outer ring n_a [-]	Pitch circle diameter, inner ring L_i [mm]	Number of holes, inner ring n_i [-]	Teilkreisdurchmesser d_o [mm]	Modul m [mm]	Zähnezahl z_2 [-]	zulässige Zahnkraft $f_z\ norm$ [kN]	maximal zulässige Zahnkraft $f_z\ max$ [kN]	Static $C_{o\ rad}$ [kN]	$C_{o\ ax}$ [kN]	Dynamic C_{rad} [kN]	C_{ax} [kN]
92-32 0955/1-06215	1	1100	812	955	955	1017	159	1060	30	894	30	830	10	83	47	86	1029	2754	411	479
92-32 1055/1-06225	2	1200	912	1055	1055	1117	176	1160	30	994	30	930	10	93	47	86	1137	3043	427	497
92-32 1155/1-06235	3	1300	1012	1155	1155	1217	192	1260	36	1094	36	1030	10	103	47	86	1245	3331	442	514
92-32 1255/1-06245	4	1400	1112	1255	1255	1317	208	1360	42	1194	42	1130	10	113	47	86	1353	3619	456	531
92-32 1355/1-06255	5	1500	1212	1355	1355	1417	226	1460	42	1294	42	1230	10	123	47	86	1460	3908	469	546
92-32 1455/1-06265	6	1600	1312	1455	1455	1517	243	1560	48	1394	48	1330	10	133	47	86	1568	4196	482	561



Equivalent axial load [kN] →

 Bolt curve $R_{p0.2}$
 Bolt grade 10.9

Raceway curve

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

Radial clearance: 0 - 0.2 mm
 Axial tilting clearance: 0 - 0.4 mm
 Bearing ring material: C45N
 6 Taper type grease nipples on the circumference
 Mounting holes equally spaced
 Raceway system supplied pre-lubricated.
 Dimensions without tolerances DIN ISO 2768 coarse