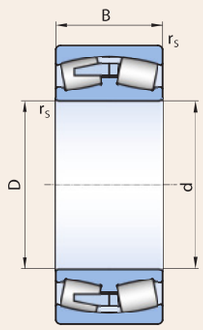
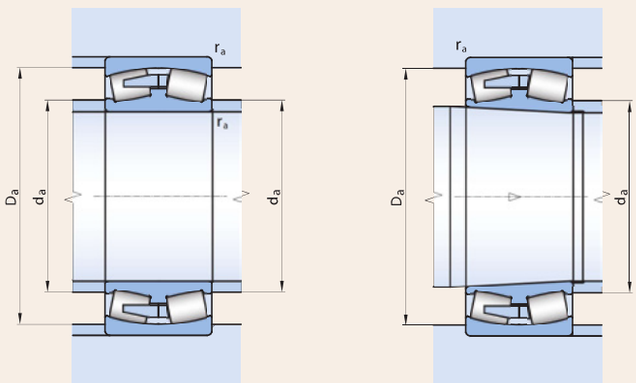
SPHERICAL ROLLER BEARINGS
double row



Dimensions				Basic Load Ratings		Limited Speed for Lubrication		Bearing Designation	Weight	Factors			
d	D	B	r_s min	C_r dyn.	C_{0r} stat.	with grease	with oil			e	Y_1	Y_2	Y_0
[mm]				[kN]		[min^{-1}]			[kg]				
140	300	102	4	1120	1530	1260	1600	**22328CW33MB**	43.4	0.37	1.84	2.74	1.8
160	240	80	2.1	694	1310	1200	1500	**24032CW33MB**	13.4	0.31	2.17	3.23	2.12
160	290	104	3	1100	1690	1000	1300	**23232MB**	31	0.32	2.1	3.2	2.1
170	260	90	2.1	840	1580	1100	1400	**24034CW33MB**	17.5	0.32	2.1	3.1	2.1
170	310	110	4	1230	1900	940	1200	**23234MB**	37.7	0.34	2	3	2
180	250	52	2	501	874	1600	2000	**23936CCW33MB**	8	0.19	3.5	5.2	3.4
180	280	100	2.1	1020	1960	1150	1500	**24036CW33MB**	23	0.34	2	2.9	1.9
180	300	118	3	1230	2200	630	790	**24136CW33MB**	35.7	0.39	1.74	2.59	1.7
180	320	112	4	1305	2080	890	1100	**23236MB**	40	0.31	2.2	3.2	2.1
190	290	100	2.1	1070	2060	1100	1400	**24038CW33MB**	24	0.32	2.1	3.1	2.1
190	340	120	4	1460	2360	840	1000	**23238MB**	48.5	0.32	2.1	3.2	2.1
190	400	132	5	1750	2545	840	1000	**22338MB**	84.1	0.31	2.2	3.2	2.1
200	280	60	2.1	619	1120	1300	1700	**23940CCW33MB**	11.8	0.2	3.43	5.1	3.35
200	310	82	2.1	915	1600	890	1100	**23040MB**	24.1	0.23	2.9	4.3	2.8
200	310	109	2.1	1205	2150	1050	1300	**24040CW33MB**	30.5	0.34	2	3	2
200	340	140	3	1750	3150	800	1000	**24140CW33MB**	52.8	0.42	1.62	2.42	1.59
200	360	98	4	1280	1920	1100	1400	**22240CW33MB**	51.3	0.28	2.41	3.59	2.36
200	360	128	4	1620	2560	790	940	**23240MB**	58.4	0.32	2.1	3.2	2.1
200	420	138	5	2030	2930	840	1060	**22340CW33MB**	110	0.35	1.93	2.87	1.88
220	300	60	2.1	600	1155	1500	1800	**23944CCW33MB**	12.8	0.18	3.7	5.6	3.7
220	340	90	3	1095	1950	790	940	**23044MB**	31.5	0.23	2.9	4.3	2.8
220	340	118	3	1340	2420	900	1200	**24044CW33MB**	39.5	0.33	2.1	3.1	2
220	370	120	4	1710	2820	890	1100	**23144CCW33MB**	56	0.32	2.1	3.1	2.1
220	400	144	4	2020	3260	710	840	**23244MB**	82	0.32	2.1	3.1	2
240	360	92	3	1175	2190	750	890	**23048MB**	35.5	0.22	3	4.5	2.9
240	360	118	3	1500	2990	800	1000	**24048CW33MB**	42.5	0.32	2.1	3.1	2
240	440	160	4	2470	4188	640	760	**23248CW33MB**	114.2	0.36	1.88	2.79	1.84
260	360	75	2.1	944	1850	1060	1300	**23952CCW33MB**	24.2	0.19	3.5	5.21	3.42
260	400	104	4	1425	2590	670	790	**23052MB**	50.7	0.23	3	4.4	2.9
260	400	140	4	1915	3730	700	900	**24052CW33MB**	64.5	0.35	1.9	2.9	1.9
280	380	75	2.1	840	1900	670	790	**23956CCW33MB**	26.4	0.18	3.8	5.7	3.7
280	420	106	4	1650	2935	890	1100	**23056CW33MB**	59.4	0.24	2.8	4.2	2.8
280	420	140	4	1920	3910	670	840	**24056CW33MB**	72	0.32	2.12	3.16	2.07
280	500	176	5	2915	5127	560	670	**23256CW33MB**	153	0.36	1.86	2.77	1.82



Abutment and Fillet Dimensions				
d	d_a min	D_a max	D_a min	r_a max
		[mm]		
140	153	287	254	3
160	178	222	214	2
160	174	276	245	2.5
170	182	248	228	2
170	188	292	261	3
180	194	236	233	2
180	192	268	245	2
180	200	280	256	2
180	198	302	274	3
190	202	278	253	2
190	208	322	288	3
190	212	378	338	4
200	214	266	260	2
200	212	298	279	2
200	212	298	271	2
200	214	326	286	2
200	218	342	318	3
200	218	342	307	3
200	226	394	360	4
220	232	288	280	2
220	234	326	302	2.5
220	234	326	297	2.5
220	238	352	325	3
220	238	382	337	3
240	254	346	324	2.5
240	254	346	318	2.5
240	264	416	374	3
260	274	346	342	2
260	278	382	356	3
260	278	382	348	3
280	292	368	347	2
280	298	402	377	3
280	298	402	369	3
280	306	474	426	4

Double row spherical roller bearings can simultaneously accommodate heavy radial loads and axial loads in both directions. The spherical shape of the outer ring raceway enables mutual alignment in operation and secures uniform load distribution on the rolling elements. They are suitable for rolling mill roll arrangements, gearboxes, railway carriages, axleboxes, etc.

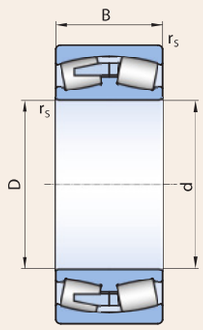
Suffixes

C	– Difference in internal design
CC	– Difference in internal design
C3, C4, C5	– Radial clearance greater than normal
FB	– Machined steel cage guided on the inner ring
K	– Tapered bore, taper 1:12
K30	– Tapered bore, tape 1:30 (Type 240..; 241..)
MB	– Machined brass cage guided on the inner ring
W33	– Lubrication groove and holes in outer ring

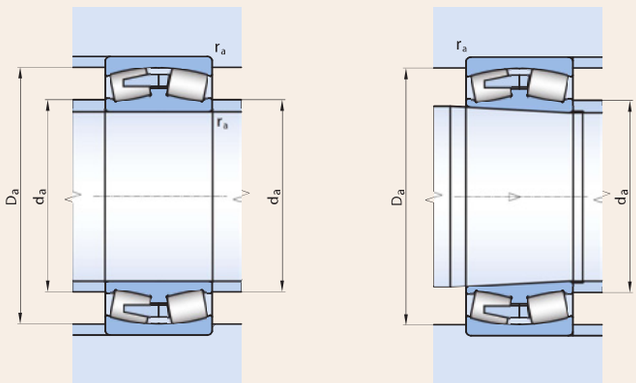
Radial equivalent load:

- dynamic:	$P_r = F_r + Y_1 F_a$	if $F_a/F_r \leq e$	[kN]
	$P_r = 0{,}67F_r + Y_2 F_a$	if $F_a/F_r > e$	[kN]
- static:	$P_{0r} = F_r + Y_0 F_a$		[kN]

SPHERICAL ROLLER BEARINGS
double row



Dimensions				Basic Load Ratings		Limited Speed for Lubrication		Bearing Designation	Weight	Factors			
d	D	B	r_s min	C_r dyn.	C_{0r} stat.	with grease	with oil	PSL		e	Y_1	Y_2	Y_0
[mm]				[kN]		[min^{-1}]			[kg]				
300	460	118	4	2000	3620	840	1060	**23060CCW33MB**	76.5	0.25	2.7	4.1	2.7
320	480	160	4	2540	5050	560	700	**24064CW33MB**	106	0.32	2.12	3.15	2.07
320	580	208	5	3813	6750	490	580	**23264CW33MB**	249	0.37	1.8	2.68	1.76
340	460	90	3	1390	2930	790	1000	**23968CCW33MB**	44.7	0.18	3.81	5.68	3.73
340	520	180	5	3055	6135	560	700	**24068CW33MB**	140	0.33	2	3	2
360	440	60	2.1	779	1960	790	1000	**23872CCW33MB**	20.3	0.12	5.74	8.54	5.61
360	480	90	3	1440	3100	710	890	**23972CCW33MB**	47	0.17	4	5.96	3.91
360	540	180	5	3040	6430	470	600	**24072CW33MB**	154	0.32	2.13	3.17	2.1
400	540	106	4	1960	4300	630	790	**23980CCW33MB**	72.7	0.18	3.78	5.63	3.7
400	600	200	5	3735	7790	450	560	**24080CW33MB**	205	0.3	2.3	3.4	2.2
420	560	106	4	1850	4470	600	750	**23984CW33MB**	76.2	0.17	3.99	5.94	3.9
420	620	150	5	3160	6560	560	710	**23084CCW33MB C3**	166	0.23	2.96	4.4	2.89
440	720	280	6	6680	13100	220	280	**24188CCK30W33MB**	454	0.39	1.73	2.58	1.69
460	620	118	4	2370	5310	530	670	**23992CCW33MB**	107	0.17	3.91	5.83	3.83
480	650	128	5	2900	6430	500	630	**23996CCW33MB**	130	0.17	3.9	5.8	3.8
500	590	90	2	1470	4550	530	670	**PSL512-310**	46.2	0.13	5.2	7.74	5.08
500	670	128	5	2930	6680	470	600	**239/500CCW33MB**	133	0.17	4	6	3.9
560	820	195	6	4820	11000	400	500	**230/560CW33MB**	369	0.23	2.99	4.45	2.92
560	820	258	6	6190	14700	280	350	**240/560W33MB**	487	0.3	2.28	3.4	2.23
600	800	150	5	3480	8910	400	500	**239/600CW33MB**	218	0.18	3.79	5.65	3.71
600	870	200	6	5210	12300	380	470	**230/600CW33MB**	416	0.22	3.13	4.66	3.06
600	870	272	6	7220	17800	270	330	**240/600CW33MB**	573	0.28	2.4	3.6	2.35
630	920	212	7.5	5840	13300	360	440	**230/630CKMB**	479	0.22	3.13	4.66	3.06
710	890	160	5	4140	11200	330	420	**PSL512-309**	240	0.16	4.19	6.24	4.1
710	1030	315	7.5	9440	22800	210	270	**240/710CW33MB**	923	0.29	2.35	3.49	2.29
750	1000	185	6	5280	13200	220	370	**239/750CCW33MB**	424.2	0.16	4.1	6.1	4
800	1060	195	6	5730	15500	250	350	**239/800CW33MB**	498	0.18	3.79	5.65	3.7
850	1220	272	7.5	9440	24200	240	300	**230/850CW33MB**	1110	0.21	3.26	4.86	3.19
880	1450	610	15	27100	57300	70	90	**PSL512-306**	3934	0.43	1.58	2.35	1.55
900	1420	515	12	20000	45400	94	120	**241/900CW33MB**	3210	0.37	1.83	2.72	1.79
1120	1580	462	9.5	22000	56200	126	160	**240/1120CCW33FB**	2990	0.27	2.47	3.68	2.42
1180	1660	475	9.5	23700	59600	120	150	**240/1180CCW33FB**	3280	0.26	2.56	3.81	2.5



Abutment and Fillet Dimensions

d	d_a min	D_a max	D_a min	r_a max
		[mm]		
300	318	442	415	3
320	343	457	426	3
320	346	554	492	4
340	358	442	428	2.5
340	362	498	454	4
360	374	426	419	2
360	378	462	450	2.5
360	382	518	478	4
400	417	525	505	3
400	422	578	527	4
420	438	538	522	3
420	440	600	580	4
440	463	697	648	5
460	478	596	577	3
480	502	628	594	4
500	512	578	558	2
500	522	648	613	4
560	583	797	748	5
560	583	797	748	5
600	622	778	745	4
600	630	840	790	5
600	630	840	770	5
630	665	885	838	6
710	732	868	842	4
710	745	995	924	6
750	778	972	935	5
800	830	1030	990	5
850	885	1185	1110	6
880	940	1390	1230	12
900	954	1366	1240	10
1120	1158	1544	1446	8
1180	1220	1624	1546	8