

SPHERICALS

ROLLER BEARINGS

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SPHERICAL ROLLER BEARINGS

Spherical Roller Bearings consist of two rows of roller with common sphere raceway in outer ring and two inner ring race way inclined at an angle of bearing axis. Most spherical roller bearings has circumferential groove and three lubrication holes in outer ring. These bearings carry high radial load, high axial load acting in both direction.

These bearings are made in cylindrical and taper bore. (K Bore)

K = Taper 1:12

K30 = Taper 1:30

240XX and 241 XX Series have a taper of 1:30, other series have a taper of 1:12

Sleeve: Spherical roller bearings with tapered bore can be mounted on smooth or stepped shaft by using adapter sleeve & withdrawal sleeve.

Misalignment

As these bearings are self aligning angular misalignment between inner and outer ring can be accommodate without any effect on bearing performance. The permissible misalignment of spherical roller bearing varies depending on the size and load but it is approximately 0.018 to 0.045 radian (1° to 2.5°) with normal load. The Limiting speed is adjusted depending on he bearing load Conditions. Also higher speed are adjustable by making changes in the lubrication method. Cage Design, etc.

Series Available

For Single Row

202XX, 203XX

Spherical Roller Bearings have two rows and roller with a common sphered raceway in the outer ring and two inner raceway inclined at an angle to the bearing axis. They are self aligning and consequently insensitive to misalignment of the shaft with respect to housing and to shaft bonding.

These bearings are designed for high radial load, also accommodate high axial loads acting in both directions. An oil groove and holes are provided in the outer ring to supply lubricant, to use bearings with oil grooves and holes, it is essential to provide an oil groove in the housing bore, since the depth of the groove in the bearing is limited.

Another Feather in JFK's Research and Development Centers cap, by completely redesigning the Spherical Roller Bearings with the help of advance computer aided design and unique methods of calculations. Tests are carried out on the JFK test rings and in the field have confirmed the improved reliability and performance of the design.

All W33 Series bearings are manufactured with an oil groove and lubrication holes in the outer rings. Improved features such as cage design, surface finish, stress distribution across the rollers and elimination of the rubbing surfaces lead to: Doubling of expectancy and in some cases trebling for the same space envelope, due to the use of more reliable materials.

This allows smaller bearings to be used when machines are being redesigned. Doubling of static capacity allowing the bearing to perform well in low speed applications under a very heavy load. Higher operating speeds that allow a wider range of application. Better performance under shock loading and vibration is a valuable characteristic in difficult applications.



SPHERICAL BEARINGS

Radial Internal Clearance Of Spherical Roller Bearings With Cylindrical Bore.

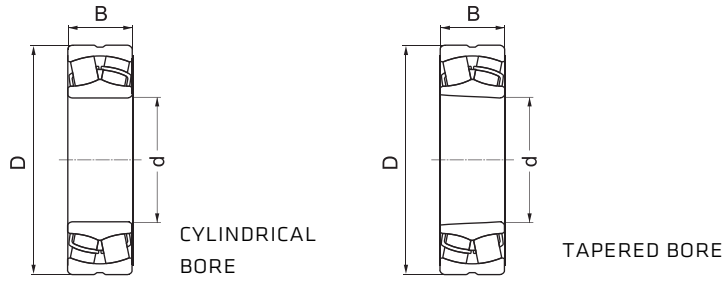
Bore Diameter		Radial Internal Clearance									
d		C2		Normal		C3		C4		C5	
Over (mm)	Incl.	Min.	Max.	Min.	Max.	Min.	Max. (Micron)	Min.	Max.	Min.	Max.
18	24	10	20	20	35	35	45	45	60	60	75
24	30	15	25	25	40	40	55	55	75	75	95
30	40	15	30	30	45	45	60	60	80	80	100
40	50	20	35	35	55	55	75	75	100	100	125
50	65	20	40	40	65	65	90	90	120	120	150
65	80	30	50	50	80	80	110	110	145	145	185
80	100	50	60	60	100	100	135	135	180	180	225
100	120	65	75	75	120	120	160	160	210	210	260
120	140	80	95	95	145	145	190	190	240	240	300
140	160	100	110	110	170	170	220	220	280	280	350
160	180	120	120	120	180	180	240	240	310	310	390
180	200	140	130	130	200	200	260	260	340	340	430
200	225	160	140	140	220	220	290	290	380	380	470
225	250	180	150	150	320	320	320	320	420	420	520
250	280	200	170	170	460	460	350	350	460	460	570

Radial Internal Clearance Of Spherical Roller Bearings With Taper Bore.

Bore Diameter		Radial Internal Clearance									
d		C2		Normal		C3		C4		C5	
Over (mm)	Incl.	Min.	Max.	Min.	Max.	Min.	Max. (Micron)	Min.	Max.	Min.	Max.
60	30	20	30	30	40	40	55	55	75	-	-
75	40	25	35	35	50	50	65	65	85	85	105
80	50	30	45	45	60	60	80	80	100	100	130
100	65	40	55	55	75	75	95	95	120	120	160
120	80	50	70	70	95	95	120	120	150	150	200
145	100	55	80	80	110	110	140	140	180	180	230
180	120	65	100	100	135	135	170	170	220	220	280
210	140	80	120	120	160	160	200	200	260	260	330
240	160	90	130	130	180	180	230	230	300	300	380
280	180	100	140	140	200	200	260	260	340	340	430
310	200	110	160	160	220	220	290	290	370	370	470
340	225	120	180	180	250	250	320	320	410	410	520
380	250	140	200	2200	270	270	350	350	450	450	570
420	280	150	220	220	300	300	390	390	490	490	620
460	315	170	240	240	330	330	430	430	540	540	680

SPHERICAL ROLLER BEARING

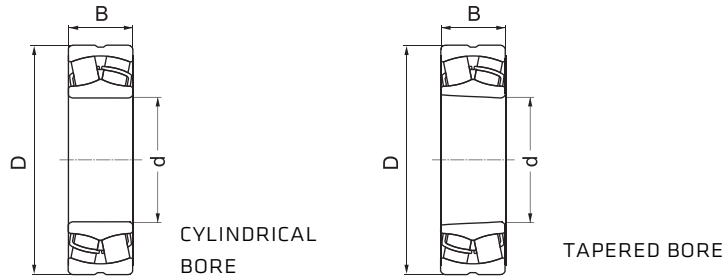
d20-90mm



Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Tapered Bore	Designation
d (mm)	D	B	Dynamic	Static	Pu (kN)	Grease	Oil	Kg		Bearing With Cylindrical Bore
			C (kN)	Co		RPM	RPM			
20	52	15	30.5	30.5	3.4	8000	10000	0.16		21304 CCW33
25	52	18	35.7	35.7	3.9	8500	11000	0.18	22205 CCKW33	22205 CCW33
	62	17	41.4	41.5	4.55	6700	8500	0.25		21305 CCW33
30	62	20	48.9	52	5.4	7500	9500	0.28	22206 CCKW33	22206 CCW33
	72	19	55.2	61	6.8	6000	7500	0.38		21306 CCW33
35	72	23	67.3	73.5	8	6300	8000	0.43	22207 CCKW33	22207 CCW33
	80	21	65.6	72	8.15	5300	6700	0.51		21307 CCW33
40	80	23	73.6	81.5	9.15	6000	7500	0.52	22208 CCKW33	22208 CCW33
	90	23	82.8	98	11	4500	5600	0.71	21308 CCKW33	21308 CCW33
	90	33	115	122	13.2	4500	5600	1.00	22208 CCKW33	22208 CCW33
45	85	23	77.1	88	9.5	5300	6700	0.56	22209 CCKW33	22209 CCW33
	100	25	101	114	12.9	4300	5300	0.95	21309 CCKW33	21309 CCW33
50	90	23	84.5	100	11	5000	6300	0.60	22210 CCKW33	22210 CCW33
	110	27	120	140	16	3600	4800	1.20	21310 CCKW33	21310 CCW33
	110	40	176	200	21.6	3400	4300	1.85	22310 CCKW33	22310 CCW33
55	100	25	99.5	118	12.9	4500	5600	0.82	22211 CCKW33	22211 CCW33
	120	29	138	163	18.6	3400	4300	1.60	21311 CCKW33	21311 CCW33
	120	43	199	232	25	3200	4000	2.35	22311 CCKW33	22311 CCW33
60	110	28	122	146	16.3	4000	5000	1.10	22212 CCKW33	22212 CCW33
	130	31	161	200	23.2	3000	3800	1.95	21312 CCKW33	21312 CCW33
	130	46	235	280	30	3000	3800	2.95	22312 CCKW33	22312 CCW33
65	120	31	148	183	21.2	3800	4800	1.45	22213 CCKW33	22213 CCW33
	140	3	184	240	270	2800	3600	2.45	21313 CCKW33	21313 CCW33
	140	48	253	300	32	2600	3400	3.55	22313 CCKW33	22313 CCW33
70	125	31	148	186	21.2	3600	4500	1.55	22214 CCKW33	22214 CCW33
	150	35	207	260	29	2600	3200	3.00	21314 CCKW33	21314 CCW33
	150	51	311	380	40	2400	3000	4.30	22314 CCKW33	22314 CCW33
75	130	31	158	208	23.6	3400	4300	1.65	22215 CCKW33	22215 CCW33
	160	37	235	300	32.5	2400	3200	3.55	21315 CCKW33	21315 CCW33
	160	55	345	430	44	2200	3000	5.25	22315 CCKW33	22315 CCW33
80	140	33	176	228	26	3200	4000	2.05	22216 CCKW33	22216 CCW33
	170	39	258	335	36	2200	3000	4.20	21316 CCKW33	21316 CCW33
	170	58	374	355	46.5	2000	2800	6.20	22316 CCKW33	22316 CCW33
85	150	36	210	270	31	3000	3800	2.55	22217 CCKW33	22217 CCW33
	180	41	293	375	40	2000	2800	5.00	21317 CCKW33	21317 CCW33
	180	60	420	520	52	1900	2600	7.25	22317 CCKW33	22317 CCW33
90	160	40	253	340	37.5	2600	3400	3.40	22218 CCKW33	22218 CCW33
	160	52.4	311	440	48	1900	2600	4.60	23218 CCKW33	23218 CCW33
	190	43	322	425	44	1900	2600	5.80	21318 CCKW33	21318 CCW33
	190	64	477	610	60	1800	2400	8.60	22318 CCKW33	22318 CCW33

SPHERICAL ROLLER BEARING

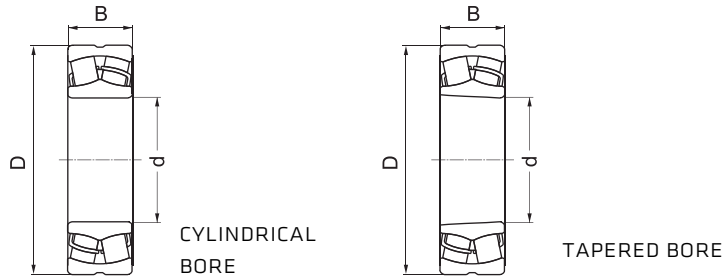
d95-150mm



Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Tapered Bore	Designation
d (mm)	D	B	C (kN)	Co	Pu (kN)	Grease	Oil			Bearing With Cylindrical Bore
95	170	43	282	375	40	2400	3200	4.00	22219 CCKW33	22219 CCW33
	200	45	351	480	49	1800	2400	7.15	21319 CCKW33	21319 CCW33
	200	67	518	670	64	1800	2400	10.0	22319 CCKW33	22319 CCW33
100	165	52	322	490	53	2000	2800	4.40	23120 CCKW33	23120 CCW33
	180	46	311	415	44	2200	3000	4.85	22220 CCKW33	22220 CCW33
	180	60.3	414	600	63	1700	2200	6.70	23220 CCKW33	23220 CCW33
	215	47	385	530	53	1700	2200	8.80	21320 CCKW33	21320 CCW33
	215	73	610	800	75	1700	2200	13.0	22320 CCKW33	22320 CCW33
110	170	45	267	440	46.5	2200	3000	3.75	23022 CCKW33	23022 CCW33
	180	56	374	585	61	1900	2600	5.55	23122 MBKW33	23122 MBW33
	180	69	460	750	78	1600	2000	6.85	24122 CCKW33	24122 CCW33
	200	53	408	560	57	2000	2800	7.00	22222 CCKW33	22222 CCW33
	200	69.8	518	765	76.5	1600	2000	9.70	23222 CCKW33	23222 CCW33
	240	50	460	630	61	1600	2000	12.0	21322 CCKW33	21322 CCW33
	240	80	725	965	86.5	1600	2000	18.0	23222 CCKW33	22322 CCW33
120	180	46	305	510	53	2000	2800	4.20	23024 CCKW33	23024 CCW33
	180	60	374	670	68	1600	2000	5.40	24024 MBKW33	24024 MBW33
	200	62	449	695	71	1800	2400	7.80	23124 CCKW33	23124 CCW33
	200	80	575	950	95	1400	1800	10.0	24124 MBKW33	24124 MBW33
	215	58	466	670	67	1900	2600	8.70	22224 CCKW33	22224 CCW33
	215	76	610	930	93	1500	1900	12.0	23224 MBKW33	23224 MBW33
	260	86	845	1120	100	1400	1800	22.0	22324 CCKW33	22324 CCW33
	130	180	37	202	360	37.5	2000	3200	2.95	
200		52	374	610	61	1900	2600	6.10	23026 CCKW33	23026 CCW33
200		69	477	815	81.5	1500	1900	7.95	24026 MBKW33	24026 MBW33
210		64	489	780	78	1700	2200	8.55	23126 CCKW33	23126 CCW33
210		80	587	1000	100	1300	1700	11.0	24126 MBKW33	24126 MBW33
230		64	546	800	78	1800	2400	11.0	22226 CCKW33	22226 CCW33
230		80	690	1060	104	1300	1700	14.0	23226 MBKW33	23226 MBW33
280		93	978	1320	114	1300	1700	28.5	22326 MBKW33	22326 MBW33
140		210	53	397	680	68	1800	2400	6.55	23028 CCKW33
	210	69	495	900	88	1400	1800	8.45	24028 MBKW33	24028 MBW33
	225	68	546	900	88	1600	2000	10.5	23128 CCKW33	23128 CCW33
	225	85	673	1160	112	1100	1500	13.0	24128 MBKW33	24128 MBW33
	250	68	610	900	86.5	1700	2200	14.0	22228 CCKW33	22228 CCW33
	250	88	799	1250	120	1200	1600	18.5	23228 MBKW33	23228 MBW33
	300	102	1130	1560	132	1100	1500	34.5	22328 MBKW33	22328 MBW33
	150	225	56	437	750	73.5	1700	2200	7.95	23030 CCKW33
225		75	564	1040	100	1300	1700	10.5	24030 MBKW33	24030 MBW33
250		80	725	1200	114	1400	1800	16.0	23130 MBKW33	23130 MBW33
250		100	897	1530	146	1000	1400	19.5	24130 MBKW33	24130 MBW33
270		73	736	1080	102	1600	2000	18.0	22230 CCKW33	22230 MBW33
270		96	937	1460	137	1100	1500	24.0	23230 MBKW33	23230 MBW33
320		108	1270	1760	146	1000	1400	41.5	22330 MBKW33	22330 MBW33

SPHERICAL ROLLER BEARING

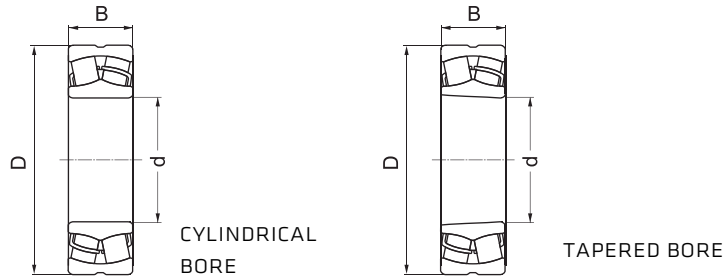
d160-220mm



Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Tapered Bore	Designation
d (mm)	D	B	Dynamic (kN)	Static (kN)	Pu (kN)	Grease RPM	Oil RPM	Kg		Bearing With Cylindrical Bore
160	220	45	299	570	55	1900	2600	5.20	23932 MBKW33	23932 MBW33
	240	60	506	880	83	1700	2200	9.70	23032 MBKW33	23032 MBW33
	240	80	656	1200	114	1100	1500	13.0	24032 MBKW33	24032 MBW33
	270	86	845	1370	129	1300	1700	20.5	23132 MBKW33	23132 MBW33
	270	109	1040	1760	163	950	1300	25.0	24132 MBKW33	24132 MBW33
	290	80	863	1290	118	1500	1900	22.5	22232 MBKW33	22232 MBW33
	290	104	1070	1660	153	1000	1400	30.0	23232 MBKW33	23232 MBW33
	340	114	1380	1960	160	950	1300	50.0	22332 MBKW33	22332 MBW33
170	260	67	621	1060	100	1600	2000	13.0	23034 MBKW33	23034 MBW33
	260	90	799	1460	137	1000	1400	17.5	24034 MBKW33	24034 MBW33
	280	88	897	1500	137	1200	1600	21.5	23134 MBKW33	23134 MBW33
	280	109	1070	1860	170	900	1200	26.5	24134 MBKW33	24134 MBW33
	310	86	978	1460	132	1300	1700	28.5	22234 MBKW33	22234 MBW33
	310	110	1220	1930	173	950	1300	36.5	23234 MBKW33	23234 MBW33
	360	120	1540	2160	176	950	1300	58.5	22334 MBKW33	22334 MBW33
	180	250	52	431	830	75.5	1700	2200	8.20	23936 MBKW33
280		74	725	1250	114	1400	1800	17.0	23036 MBKW33	23036 MBW33
280		100	937	1730	156	950	1300	23.0	24036 MBKW33	24036 MBW33
300		96	1050	1760	160	1100	1500	27.5	23136 MBKW33	23136 MBW33
300		118	1220	2160	196	900	1200	33.5	24136 MBKW33	24136 MBW33
320		86	1010	1560	140	1300	1700	29.5	22236 MBKW33	22236 MBW33
320		112	1290	2120	186	900	1200	39.0	23236 MBKW33	23236 MBW33
380		126	1730	2450	193	900	1200	69.0	22336 MBKW33	22336 MBW33
190		260	52	414	800	76.5	1700	2200	8.40	23938 MBKW33
	290	75	753	1340	122	1300	1700	18.0	23038 MBKW33	23038 MBW33
	290	100	978	1800	163	950	1300	24.0	24038 MBKW33	24038 MBW33
	320	104	1200	2080	183	100	1400	34.5	23138 MBKW33	23138 MBW33
	320	128	1400	2500	212	850	1100	42.0	24138 MBKW33	24138 MBW33
	340	92	1110	1700	150	1200	1600	36.5	22238 MBKW33	22238 MBW33
	340	120	1460	2400	208	850	1100	47.5	23238 MBKW33	23238 MBW33
	400	132	1870	2650	208	850	1100	80.0	22338 MBKW33	22338 MBW33
	200	280	60	546	1040	93	1600	2000	11.5	23940 MBKW33
310		82	880	1530	137	1200	1600	23.0	23040 MBKW33	23040 MBW33
310		109	1130	2120	186	900	1200	30.5	24040 MBKW33	24040 MBW33
340		112	1380	2360	204	950	1300	42.5	23140 MBKW33	23140 MBW33
340		140	1580	2800	232	800	1000	52.0	24140 MBKW33	24140 MBW33
360		98	1270	1930	266	1100	1500	43.5	22240 MBKW33	22240 MBW33
360		128	1610	2700	228	850	1100	57.0	23240 MBKW33	23240 MBW33
420		138	2020	2900	224	850	1100	92.5	22340 MBKW33	22340 MBW33
220		300	60	546	1080	93	1500	1900	13.0	23944 MBKW33
	340	90	1050	1860	163	100	1500	30.5	23044 MBKW33	23044 MBW33
	340	118	1360	2600	212	850	1100	39.5	24044 MBKW33	24044 MBW33
	370	120	1580	2750	232	900	1200	53.0	23144 MBKW33	23144 MBW33
	370	150	1840	3350	285	750	950	65.0	24144 MBKW33	24144 MBW33
	400	108	1520	2360	196	950	1300	60.5	22244 MBKW33	22244 MBW33
	400	144	2070	3450	285	750	950	79.5	23244 MBKW33	23244 MBW33
	460	145	2350	3450	260	750	950	120	22344 MBKW33	22344 MBW33

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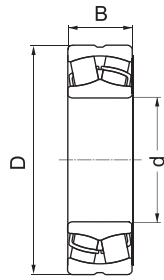
d240-340mm



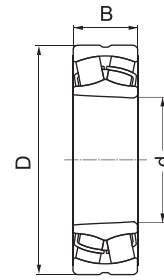
Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Tapered Bore	Designation
d	D	B	Dynamic	Static	Pu	Grease	Oil			Bearing With Cylindrical Bore
(mm)			C (kN)	Co	(kN)	RPM		Kg		
240	320	60	564	1160	98	1300	1700	14.0	23948 MBKW33	23948 MBW33
	360	92	1130	2080	176	1000	1400	33.5	23048 MBKW33	23048 MBW33
	360	118	1380	2700	228	800	1000	42.5	24048 MBKW33	24048 MBW33
	400	128	1790	3200	255	850	1100	65.5	23148 MBKW33	23148 MBW33
	400	160	2100	3900	325	670	850	80.5	24148 MBKW33	24148 MBW33
	440	120	1910	3000	245	900	1200	83.0	22248 MBKW33	22248 MBW33
	440	160	2530	4300	345	670	850	110	23248 MBKW33	23248 MBW33
	500	155	2670	4000	290	670	850	155	22348 MBKW33	22348 MBW33
260	360	75	880	1800	156	1100	1500	24.0	23952 MBKW33	23952 MBW33
	400	104	1400	2550	212	900	1200	48.5	23052 MBKW33	23052 MBW33
	400	140	1760	3450	285	700	900	64.5	24052 MBKW33	24052 MBW33
	440	144	2220	3900	290	800	1000	90.5	23152 MBKW33	23152 MBW33
	440	180	2620	4800	390	600	750	110	24152 MBKW33	24152 MBW33
	480	130	2300	3550	285	850	1100	110	22252 MBKW33	22252 MBW33
	480	174	2820	4750	360	630	800	140	23252 MBKW33	23252 MBW33
	540	165	3050	4550	325	630	800	190	22352 MBKW33	22352 MBW33
280	380	75	845	1760	143	1000	1400	26.0	23956 MBKW33	23956 MBW33
	420	106	1520	2850	224	850	1100	52.5	23056 MBKW33	23056 MBW33
	420	140	1870	3800	285	670	850	68.5	24056 MBKW33	24056 MBW33
	420	140	1870	3800	285	670	850	68.5	24056 MBKW33	24056 MBW33
	460	146	2300	4250	335	750	950	97.0	23156 MBKW33	23156 MBW33
	460	180	2670	5100	415	560	700	120	24156 MBKW33	24156 MBW33
	500	130	2350	3750	300	800	1000	115	22256 MBKW33	22256 MBW33
	500	176	2820	4900	365	600	750	150	23256 MBKW33	23256 MBW33
	580	175	3450	5200	365	600	750	235	22356 MBKW33	22356 MBW33
300	420	90	1200	2500	200	950	1300	40.5	23960 MBKW33	23960 MBW33
	460	118	1840	3450	265	800	1000	71.5	23060 MBKW33	23060 MBW33
	460	160	2350	4750	355	600	750	97.0	24060 MBKW33	24060 MBW33
	500	160	2820	5100	380	670	850	125	23160 MBKW33	23160 MBW33
	500	200	3280	6300	465	530	670	160	24160 MBKW33	24160 MBW33
	540	140	2760	4250	325	750	950	145	22260 MBKW33	22260 MBW33
	540	192	3340	5850	425	530	670	190	23260 MBKW33	23260 MBW33
	320	440	90	1240	2700	212	900	1200	42.0	23064 MBKW33
480		121	1960	3800	285	800	1000	78.0	23064 MBKW33	23064 MBW33
480		160	2480	5100	400	560	700	100	24064 MBKW33	24064 MBW33
540		176	3280	6000	440	630	800	165	23164 MBKW33	23164 MBW33
540		218	3740	7100	510	480	600	210	24164 MBKW33	24164 MBW33
580		150	3160	4900	375	670	850	175	22264 MBKW33	22264 MBW33
580		208	3850	6700	475	500	630	240	23264 MBKW33	23264 MBW33
340		460	90	1460	2800	216	1300	1400	45.5	23968 MBKW33
	520	133	2700	4500	335	100	1300	105	23068 MBKW33	23068 MBW33
	520	180	3450	6200	375	750	1100	140	24068 MBKW33	24068 MBW33
	580	190	4250	6800	480	800	1000	210	23168 MBKW33	23168 MBW33
	580	243	5300	8650	640	600	850	280	24168 MBKW33	24168 MBW33
	620	224	5100	7800	550	560	800	295	23268 MBKW33	23268 MBW33

SPHERICAL ROLLER BEARING

d360-460mm



CYLINDRICAL BORE



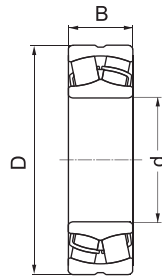
TAPERED BORE



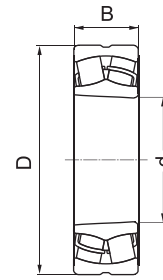
Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Tapered Bore	Designation
d (mm)	D	B	Dynamic	Static	Pu (kN)	Grease	Oil			Bearing With Cylindrical Bore
			C (kN)	Co		RPM		Kg		
360	480	90	1400	2750	220	1200	1300	43.0	23972 MBKW33	23972 MBW33
	540	134	2750	4800	345	950	1200	110	23072 MBKW33	23072 MBW33
	540	180	3550	6550	490	700	1000	145	24072 MBKW33	24072 MBW33
	600	192	4300	6950	490	750	1000	220	23172 MBKW33	23172 MBW33
	600	243	5600	9300	670	560	800	270	24172 MBKW33	24172 MBW33
	650	170	4300	6200	440	630	850	25	22272 MBKW33	22272 MBW33
	650	232	5400	8300	570	530	750	335	23272 MBKW33	23272 MBW33
	380	520	106	1960	3800	285	1100	1200	69.0	23976 MBKW33
560		135	2900	5000	380	900	1200	115	23076 MBKW33	23076 MBW33
560		180	3600	6800	480	670	950	150	24076 MBKW33	24076 MBW33
620		194	4400	7100	500	560	1000	230	23176 MBKW33	23176 MBW33
620		243	5700	9800	710	480	850	300	24176 MBKW33	24176 MBW33
680		240	5850	9150	620	500	750	375	23276 MBKW33	23276 MBW33
400	540	106	2000	3900	290	1100	1200	71.0	23980 MBKW33	23980 MBW33
	600	148	3250	5700	400	850	1100	150	23080 MBKW33	23080 MBW33
	600	200	4300	8150	560	630	900	205	24080 MBKW33	24080 MBW33
	650	200	4650	7650	530	530	950	265	23180 MBKW33	23180 MBW33
	650	250	6200	10600	735	430	800	340	24180 MBKW33	24180 MBW33
	720	256	6550	10400	680	480	670	450	23280 MBKW33	23280 MBW33
	820	243	7500	10400	670	430	750	650	22380 MBKW33	22380 MBW33
	420	560	106	2040	4150	300	1000	1100	74.5	23984 MBKW33
620		150	3400	6000	415	600	1100	155	23084 MBKW33	23084 MBW33
620		200	4400	8300	585	530	480	210	24084 MBKW33	24084 MBW33
700		224	5600	9300	620	480	900	350	23184 MBKW33	23184 MBW33
700		280	7350	12600	850	400	750	445	24184 MBKW33	24184 MBW33
760		272	7350	11600	765	450	630	535	23284 MBKW33	23284 MBW33
440		600	118	2450	4900	345	950	1000	99.5	23988 MBKW33
	650	157	3650	6550	450	560	1000	180	23088 MBKW33	23088 MBW33
	650	212	4800	9150	630	500	850	245	24088 MBKW33	24088 MBW33
	720	226	6000	10000	670	450	850	360	23188 MBKW33	23188 MBW33
	720	280	7500	13200	900	400	700	460	24188 MBKW33	24188 MBW33
	790	280	7800	12500	800	430	600	590	23288 MBKW33	23288 MBW33
	460	580	118	1790	4900	345	560	1100	75.5	24892 MBKW33
620		118	2500	5000	355	600	1000	105	23992 MBKW33	23992 MBW33
680		163	3900	6950	465	560	950	205	23092 MBKW33	23092 MBW33
680		218	5200	10000	670	480	800	275	24092 MBKW33	24092 MBW33
760		240	6400	101800	680	430	800	440	23192 MBKW33	23192 MBW33
760		300	8300	14600	1000	360	670	560	24192 MBKW33	24192 MBW33
830		296	8500	13700	880	400	560	695	23292 MBKW33	23292 MBW33

SPHERICAL ROLLER BEARING

d480-500mm



CYLINDRICAL BORE

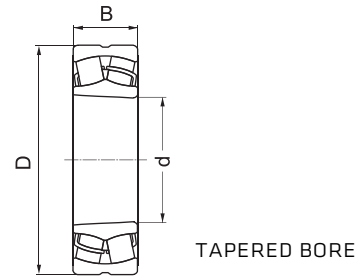
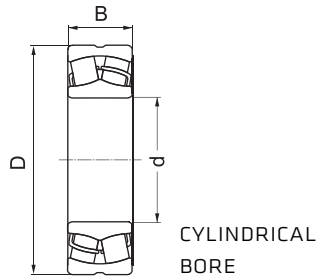


TAPERED BORE



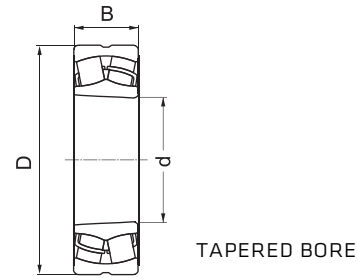
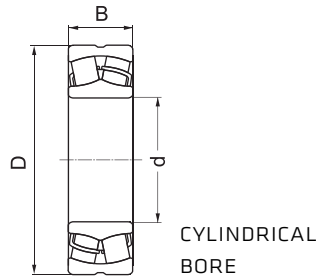
Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Tapered Bore	Designation
d (mm)	D	B	Dynamic	Static	Pu (kN)	Grease	Oil			Bearing With Cylindrical Bore
480	600	90	1440	3750	280	530	1100	61.0	23896 MBKW33	23896 MBW33
	650	128	2900	5700	405	560	1000	125	23996 MBKW33	23996 MBW33
	700	165	3900	6800	450	530	950	215	23096 MBKW33	23096 MBW33
	700	218	5300	10400	695	450	750	285	24096 MBKW33	24096 MBW33
	790	248	6950	12000	780	400	750	485	23196 MBKW33	23196 MBW33
	790	308	9000	15600	1040	340	630	605	24196 MBKW33	24196 MBW33
	870	310	9300	15000	950	380	530	800	23296 MBKW33	23296 MBW33
500	620	90	1480	4000	290	530	1000	62.0	238/500 MBKW33	238/500 MBW33
	670	128	2900	6000	415	530	950	130	239/500 MBKW33	239/500 MBW33
	720	167	4150	7800	510	500	900	225	230/500 MBKW33	230/500 MBW33
	720	218	5500	11000	735	430	700	295	240/500 MBKW33	240/500 MBW33
	830	264	7650	12900	830	380	700	580	231/500 MBKW33	231/500 MBW33
	830	325	9800	17000	1120	320	600	745	241/500 MBKW33	241/500 MBW33
	920	336	10600	173000	1060	360	500	985	232/500 MBKW33	232/500 MBW33

SPHERICAL ROLLER BEARING
WITH RUBBER SEAL
 d30-100mm



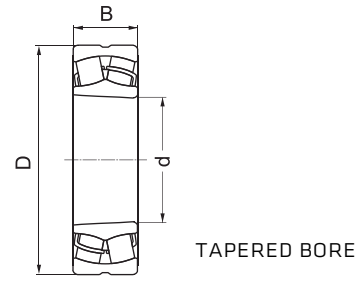
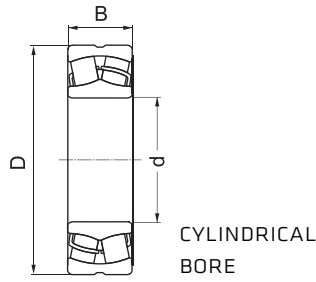
Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Designation
d	D	B	Dynamic	Static		Grease	Oil		
(mm)			C (kN)	Co	Pu (N)	RPM		Kg	Bearing With Cylindrical Bore
30	62	25	51	65	6	2800		0.350	SB22206SS
35	72	28	83	91	9	2400		0.520	SB22207SS
40	80	28	92	102	11	2200		0.570	SB22208SS
	90	40	143	151	16	1500		1.150	SB22308SS
45	85	28	96	110	11	2000		0.650	SB22209SS
	100	44	171	198	21	1400		1.500	SB22309SS
50	90	28	105	125	13	1900		0.700	SB22210SS
	100	48	220	250	27	1300		2.100	SB22310SS
55	100	31	12	146	18	1700		1.000	SB22211SS
	120	51	247	287	21	1200		2.520	SB22311SS
60	110	34	153	183	20	1600		1.300	SB22212SS
	130	55	293	350	37	1100		3.300	SB22312SS
65	120	38	191	237	28	1500		1.600	SB22213SS
	140	57	328	390	40	1000		4.600	SB22313SS
70	125	38	193	241	26	1400		1.800	SB22214SS
	150	60	405	494	50	950		4.600	SB22314SS
75	130	38	202	267	28	1300		2.100	SB22215SS
	160	65	448	561	65	900		5.650	SB22315SS
80	140	40	227	295	32	1200		2.400	SB22216SS
85	150	44	273	351	38	850		3.000	SB22217SS
90	160	48	327	438	46	1000		3.700	SB22218SS
95	170	51	384	485	50	900		4.300	SB22219SS
100	180	55	419	637	65	850		4.750	SB22220SS

SPHERICAL ROLLER BEARING
WITH E-TYPE CAGE
d20-90mm



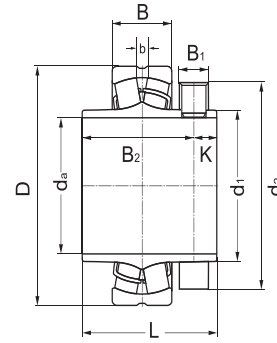
Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Designation
d	D	B	C	Co	Pu	RPM	Kg		
(mm)			(kN)		(N)				Bearing With Cylindrical Bore
			Dynamic	Static			Grease	Oil	
20	52	15	40.5	33.5	3.7	15000	0.16		21304-EW33
25	52	18	48	42.5	4.8	17000	0.18		22205-EW33
	62	17	52	43	4.75	13000	0.245		21305-EW33
30	62	20	64	57	6.9	13000	0.275		22206-EW33
	72	19	72	63	7	11000	0.386		21306-EW33
35	72	23	88	81.5	9.4	11000	0.434		22207-EW33
	80	21	83	73.5	8.1	9500	0.503		21307-EW33
40	80	23	102	90	11.8	10000	0.528		22208-EW33
	90	33	108	106	14.3	9500	0.701		21308-EW33
	90	33	156	150	13.1	7500	1.05		22308-EW33
45	85	23	104	98	12.7	10000	0.589		22209-EW33
	100	25	129	129	17.3	8500	0.845		21309-EW33
	100	36	186	183	16.1	6700	1.39		22309-EW33
50	90	23	108	106	14.3	9500	0.622		22210-EW33
	110	27	129	129	17.3	8500	1.28		21310-EW33
	110	40	228	224	20.3	6000	1.9		22310-EW33
55	100	25	129	129	17.3	8500	0.851		22211-EW33
	120	43	265	260	23.9	5600	2.27		22311-EW33
60	110	28	170	166	21.2	7500	1.12		22212-EW33
	130	31	212	228	28	6300	1.78		21312-EW33
	130	46	310	310	28	5000	2.89		22312-EW33
65	120	31	200	208	25.5	6700	1.55		22213-EW33
	140	33	250	270	34	5000	2.42		21313-EW33
	140	51	390	365	32.5	4800	3.57		22313-EW33
70	125	31	212	228	28	6300	1.65		22214-EW33
	150	35	250	270	34	5000	3		21314-EW33
	150	51	390	390	36.5	4500	4.21		22314-EW33
75	130	31	216	236	29.5	6300	1.72		22215-EW33
	160	37	305	325	38.5	4800	2.86		21315-EW33
	160	55	440	450	40.5	4300	5.18		22315-EW33
80	140	33	250	270	34	5600	2.13		22216-EW33
	170	39	305	325	38.5	4800	2.65		21316-EW33
	170	58	500	510	40.5	4300	6.27		22316-EW33
85	150	36	305	325	38.5	5300	2.65		22217-EW33
	180	60	540	560	50	4000	7.06		22317-EW33
90	160	40	345	375	42.5	4800	3.43		22218-EW33
	160	52.4	440	520	48.5	4300	4.27		23218-EW33
	190	65	610	630	55	3600	8.51		22318-EW33

SPHERICAL ROLLER BEARING
WITH E-TYPE CAGE
 d95-110mm



Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Designation
d (mm)	D	B	Dynamic C	Static Co	Pu (N)	Grease RPM	Oil	Kg	Bearing With Cylindrical Bore
95	170	43	380	415	47	4500		4.13	
	200	67	670	695	60	3000		9.69	22319-EW33
100	165	52	450	570	52	4300		4.22	23120-EW33
	180	46	430	475	52	4300		4.96	22220-EW33
	180	60.3	550	655	60	3600		6.32	23220-EW33
	215	47	490	530	61	3600		8.19	21320-EW33
	215	73	815	915	75	3000		13.1	22320-EW33
110	170	45	530	530	52	4300		3.55	23022-EW33
	180	56	680	680	61	4000		5.31	23122-EW33
	200	53	600	600	62	4000		6.99	22222-EW33
	200	69.8	865	865	72	3000		9.18	23322-EW33
	240	50	640	640	69	3000		11.1	21322-EW33
	240	80	1060	1060	91	2600		17.7	22322-EW33

ROLLER BEARING UNITS
INSERT BEARING/COLLAR MOUNTED
4762XX SERIES



Shaft Dia.	Designation	Basic Load Rating										Set Screw	Mass	
		Dynamic				Static	b	B ₁	B ₂	d ₁	K			d ₂
da		D	B	L	C	Co	In							Lb
In		(mm)	(mm)	(In)	(Lb)									
1 1/16	476208B-107	80	23	2 3/4	16 600	18 300	.219	5/8	2 3/8	1.908	1	2 3/8	3/8-24X 1/2	2.50
1 1/2	476208B-108			2 3/4	16 600	18 300	.219	5/8	2 3/8	1.908	1	2 3/8	3/8-24X 1/2	2.45
1 11/16	472609B-111	85	236	2 7/8	17 300	19 800	.219	5/8	2 3/8	2.157	1	2 5/8	3/8-24X 1/2	2.75
1 3/4	472609B-112			2 7/8	17 300	19 800	.219	5/8	2 3/8	2.157	1	2 5/8	3/8-24X 1/2	2.70
1 15/16	472610B-115	90	23	2 7/8	19 000	22 400	.219	5/8	2 15/32	2.357	1	2 7/8	3/8-24X 1/2	2.90
2	472610B-200			2 7/8	19 000	22 400	.219	5/8	2 15/32	2.357	1	2 7/8	3/8-24X 1/2	2.80
2 3/16	472611B-203	100		3 1/8	22 400	26 500	.219	3/4	2 23/32	2.600	1 1/6	3 1/4	3/8-24X 1/2	3.90
2 7/16	472613B-207			3 1/8	22 400	26 500	.219	3/4	2 23/32	2.600	1 1/6	3 1/4	3/8-24X 1/2	3.90
2 1/2	472613B-208	120		3 3/8	33 300	41 100	.219	7/8	2 16/15	3.088	1 1/4	4	1/2-20X 3/4	6.75
2 11/16	472615B-211			3 3/8	33 300	41 100	.219	7/8	2 16/15	3.088	1 1/4	4	1/2-20X 3/4	6.75
2 3/4	472615B-212	130		3 5/8	35 500	46 800	.219	7/8	3 1/15	3.491	1 1/4	4 1/2	1/2-20X 7/8	9.35
2 15/16	472615B-215			3 5/8	35 500	46 800	.219	7/8	3 1/15	3.491	1 1/4	4 1/2	1/2-20X 7/8	9.35
	472615B-300			3 5/8	35 500	46 800	.219	7/8	3 1/15	3.491	1 1/4	4 1/2	1/2-20X 7/8	9.35
3 7/16	472618B-307	160		4 1/32	56 900	76 400	.219	7/8	2 3/8	4.224	1 7/16	5 1/8	1/2-20X 7/8	13.5
3 1/2	472618B-308			4 1/32	56 900	76 400	.219	7/8	2 3/8	4.224	1 7/16	5 1/8	1/2-20X 7/8	13.5
3 11/16	472620B-311	180		4 19/32	69 900	93 300	.328	1	3 15/16	4.650	1 5/8	6	5/8-18X 1	19.5
3 15/16	472610B-315			4 19/32	69 900	93 300	.328	1	3 15/16	4.650	1 5/8	6	5/8-18X 1	19.5
4	472620B-400			4 19/32	69 900	93 300	.328	1	3 15/16	4.650	1 5/8	6	5/8-18X 1	19.5
4 17/16	472622B-407VSB	200		6 1/8	91 700	126 000	.328	1	5 1/8	5.029	3 1/16	6 1/8	5/8-18X 7/8	29.5
4 1/2	472622B-408VSB			6 1/8	91 700	126 000	.328	1	5 1/8	5.029	3 1/16	6 1/8	5/8-18X 7/8	29.5
4 15/16	472626B-415VSB	230		6 5/8	123 000	180 000	.438	1	5 5/8	5.819	3 5/16	6 7/8	5/8-18X 7/8	46.5