



# SPHERICAL ROLLER BEARINGS

## Dimensions in accordance with ISO 15-2008

Spherical roller bearings are designed to sustain heavy loads, shaft misalignment and deflection. They contain two symmetrical or asymmetrical rows of barrel-shaped rollers, which align themselves in the outer race sphered track. They are, therefore, able to carry very heavy radial loads and axial loads in either direction.

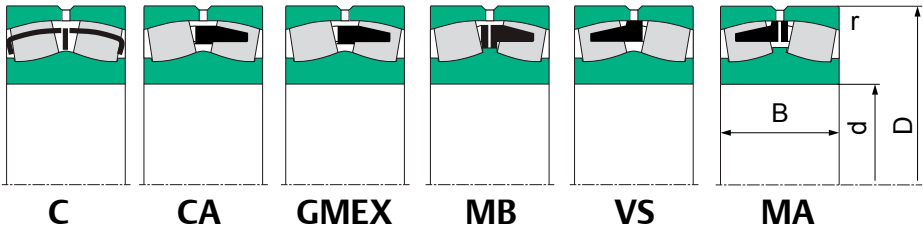
Roller guidance is achieved by the fixed flanges on the inner ring for the CA, GMEX, MB, VS and MA - design or a floating ring for the C design. For further information, see roller guidance design on next page.

## Misalignment

The table below gives figures for permitted misalignment in the different bearing series.

Bearings series	Angular misalignment degrees
213	1°
222	1.5°
223	2°
230	1.5°
231	1.5°
232	2.5°
239	1.5°
240	2°
241	2.5°





## Roller Guidance Designs

The sketches above show six types of roller guidance.

- C : 2 pressed sheet steel cages, rollers guided on a floating ring
- CA : 1 piece brass cage, roller guided between 2 inner ring flanges. Cage is guided on the rollers. Assymetrical roller position.
- GMEX : 1 piece brass cage, roller guided between 2 inner ring flanges. Cage is guided on the rollers. Assymetrical roller position.
- MB : 2 piece brass cage, roller guided between 2 inner ring flanges and one central rib. Cage is guided on the inner ring.
- VS C4 F80 : 1 piece brass cage, roller guided between 2 inner ring flanges. Cage is guided on the outer ring.
- MA C4 F80 : 2 piece brass cage, roller guided between 2 inner ring flanges and one central rib. Cage is guided on the outer ring.

Spherical roller bearings are manufactured with tapered bore-K(1:12) and K30 (1:30) with lubrication groove and 3 lubrication holes on the outside diameter W33. All Rollway sphericals have the W33 feature.

## Tolerances

Spherical roller bearings with cylindrical and tapered bore are generally manufactured to “PO” precision class.

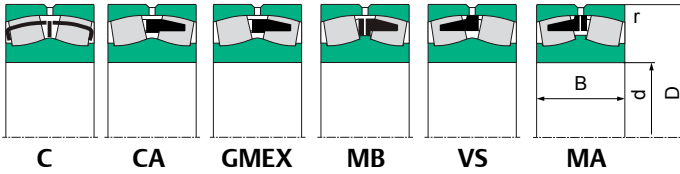
## Radial Clearance

Spherical roller bearings with cylindrical and tapered bore are generally manufactured to normal (CN), C2, C3, C4 and C5 clearances.

## Heat Treatment

Spherical roller bearings with outside diameter  $D > 240\text{mm}$  of all series given in this catalog can be used to an operating temperature of  $+150^{\circ}\text{C}$  ( $+302^{\circ}\text{F}$ ). Small size bearings operate normally at temperatures up to  $+120^{\circ}\text{C}$  ( $+248^{\circ}\text{F}$ ).

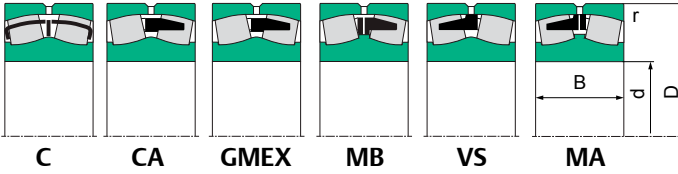
# Spherical Roller Bearings



Bearing		Principal Dimensions			Basic Load Ratings		Speed Ratings		Radius (Mm) R <sub>smin</sub>	Weight (Kg) G	Calculation Factors			
Type	Cage	Bore (Mm) D	Outer (Mm) D	Width (Mm) B	Dynamic (Kn) C <sub>r</sub>	Static (Kn) C <sub>or</sub>	Grease (Rpm)	Oil (Rpm)			E	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>o</sub>
22205	GMEX	25	52	18	38.9	37.0	11050	14450	0.2	1.00	0.35	1.95	2.90	1.91
22206	GMEX	30	62	20	55.7	57.0	8500	11900	0.3	1.00	0.33	2.03	3.02	1.98
21307	GMEX	35	80	21	70.0	75.0	5695	8075	0.5	1.50	0.27	2.53	3.77	2.47
22207	GMEX	35	72	23	76.7	80.0	7650	10200	0.4	1.10	0.34	2.00	2.98	1.96
21308	GMEX	40	90	23	96.1	94.4	5950	8075	0.7	1.50	0.27	2.51	3.74	2.45
22208	GMEX	40	80	23	84.0	89.6	6800	9350	0.5	1.10	0.29	2.35	3.50	2.30
22308	GMEX	40	90	33	128.1	136.0	5100	6800	1.0	1.50	0.39	1.75	2.61	1.71
22308	VS C4 F80	40	90	33	125.0	135.0	5300	6300	1.5	1.05	0.39	1.80	2.60	1.70
21309	GMEX	45	100	25	120.8	120.0	5355	7225	1.0	1.50	0.27	2.51	3.74	2.45
22209	GMEX	45	85	23	90.0	100.0	6375	8500	0.6	1.10	0.26	2.57	3.82	2.51
22309	GMEX	45	100	36	153.5	168.2	4505	5950	1.4	1.50	0.38	1.77	2.64	1.73
22309	VS C4 F80	45	100	36	153.0	179.0	4800	5800	1.5	1.41	0.37	1.80	2.70	1.80
21310	GMEX	50	110	27	124.0	139.0	4760	6370	1.3	2.00	0.25	2.67	3.97	2.61
22210	GMEX	50	90	23	91.1	104.0	5950	8075	0.6	1.10	0.24	2.77	4.12	2.70
22310	GMEX	50	110	40	202.7	224.0	4080	5355	1.9	2.00	0.37	1.84	2.74	1.80
22310	VS C4 F80	50	110	40	193.0	226.0	4600	5600	2.0	1.91	0.37	1.80	2.70	1.80
21311	GMEX	55	120	29	142.0	152.0	4760	6375	1.6	2.00	0.25	2.74	4.08	2.68
22211	GMEX	55	100	25	119.7	138.0	5355	7225	0.9	1.50	0.24	2.79	4.15	2.73
22311	GMEX	55	120	43	226.8	252.0	3655	4760	2.4	2.00	0.37	1.80	2.69	1.76
22311	VS C4 F80	55	120	43	226.0	268.0	4000	4800	2.0	2.37	0.36	1.90	2.80	1.80
23111	MB	55	120	43	220.0	255.0	2800	3600	2.0	2.43	0.25	2.70	4.02	2.70
21312	GMEX	60	130	31	178.5	190.0	4080	5355	2.1	2.10	0.24	2.76	4.11	2.70
22212	GMEX	60	110	28	133.4	154.0	4760	6375	1.2	1.50	0.24	2.78	4.13	2.71
22312	GMEX	60	130	46	316	316.0	3400	4500	2.1	2.93	0.37	1.85	2.75	1.76
22312	VS C4 F80	60	130	46	262.0	313.0	3800	4400	2.1	2.94	0.36	1.90	2.80	1.80
21313	GMEX	65	140	33	203.7	214.0	3655	5100	2.5	2.10	0.24	2.85	4.25	2.79
22213	GMEX	65	120	31	176.4	205.0	4250	5950	1.6	1.50	0.25	2.69	4.00	2.63
22313	GMEX	65	140	48	304.5	345.0	3230	4250	3.6	2.10	0.35	1.95	2.90	1.91
22313	VS C4 F80	65	140	48	285.0	330.0	3600	4200	2.1	3.67	0.35	1.90	2.90	1.90
21314	GMEX	70	150	35	224.7	240.0	3400	4760	3.0	2.10	0.23	2.88	4.29	2.82



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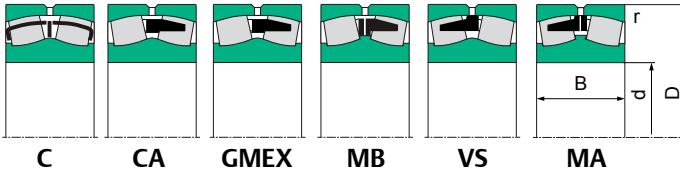


Bearing		Principal Dimensions			Basic Load Ratings		Speed Ratings		Radius (Mm) R <sub>smin</sub>	Weight (Kg) G	Calculation Factors			
Type	Cage	Bore (Mm) D	Outer (Mm) D	Width (Mm) B	Dynamic (Kn) C <sub>r</sub>	Static (Kn) C <sub>or</sub>	Grease (Rpm)	Oil (Rpm)			E	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>o</sub>
22214	GMEX	70	125	31	181.7	215.0	4250	5695	1.7	1.50	0.23	2.90	4.31	2.83
22314	GMEX	70	150	51	353.9	417.0	2890	3825	4.4	2.10	0.34	1.99	2.96	1.94
22314	VS C4 F80	70	150	51	340.0	420.0	3600	4000	2.1	4.39	0.34	2.00	2.90	1.90
21315	GMEX	75	160	37	263.6	283.0	3400	4760	3.6	2.10	0.23	2.90	4.31	2.83
22215	GMEX	75	130	31	186.9	227.0	4080	5355	1.7	1.50	0.22	3.04	4.53	2.97
22315	GMEX	75	160	55	374.9	447.0	723	1020	5.5	2.10	0.38	1.78	2.65	1.74
22315	VS C4 F80	75	160	55	380.0	475.0	3000	3600	2.1	5.35	0.35	2.00	2.90	1.90
21316	GMEX	80	170	39	285.6	310.0	3230	4505	4.3	2.10	0.23	2.92	4.35	2.86
22216	GMEX	80	140	33	201.6	244.0	3655	5100	2.1	2.00	0.22	3.07	4.57	3.00
22316	GMEX	80	170	58	453.2	535.0	2550	3400	6.6	2.10	0.35	1.92	2.86	1.88
22316	VS C4 F80	80	170	58	420.0	535.0	2800	3400	2.1	6.41	0.34	2.00	2.90	1.90
21317	GMEX	85	180	41	309.0	356.0	3230	4505	5.1	3.00	0.23	2.96	4.41	2.90
22217	GMEX	85	150	36	247.8	308.0	3400	4760	2.7	2.00	0.22	3.01	4.48	2.94
22317	GMEX	85	180	60	478.8	543.0	2380	3230	3	7.14	0.34	1.99	2.96	1.94
22317	VS C4 F80	85	180	60	462.0	591.0	2500	3200	3.0	7.47	0.34	2.00	3.00	2.00
22317	MB	85	180	60	460.0	570.0	1700	2200	3.0	7.25	0.38	1.78	2.64	1.80
22318	CA	90	190	64	472.0	600.0	1900	2500	3.0	8.87	0.35	1.92	2.86	1.88
23218	CA	90	160	52.4	316.0	453.0	1600	2200	2.0	4.64	0.33	2.07	3.09	2.03
21318	GMEX	90	190	43	360.2	397.0	3060	4080	5.9	3.00	0.23	2.97	4.42	2.90
22218	GMEX	90	160	40	294.0	369.0	3230	4505	3.5	2.00	0.24	2.87	4.27	2.80
23218	GMEX	90	160	52	354.9	483.0	2380	3230	4.4	3.00	0.31	2.16	3.22	2.11
22318	VS C4 F80	90	190	64	530.0	677.0	2600	3000	3.0	8.56	0.34	2.00	3.00	2.00
23218	MB	90	160	52	340.0	485.0	1500	2000	2.0	4.60	0.34	1.99	2.96	2.00
22318	MB	90	190	64	530.0	670.0	1700	2200	3.0	8.69	0.38	1.78	2.64	1.80
22319	CA	95	200	67	516.0	657.0	1800	2300	3.0	10.40	0.35	1.92	2.86	1.88
21319	GMEX	95	200	45	402.2	460.0	2890	3825	6.9	3.00	0.22	3.04	4.52	2.97
22219	GMEX	95	170	43	329.7	414.0	3060	4080	4.2	2.10	0.24	2.81	4.18	2.75
22319	VS C4 F80	95	200	67	568.0	744.0	2200	2800	3.0	10.31	0.34	2.00	3.00	2.00
22319	MB	95	200	67	570	740	1500	2000	3.0	10.20	0.41	1.65	2.45	1.70
22320	CA	100	215	73	613	799	1600	2200	3.0	13.30	0.35	1.91	2.85	1.87

Bearing		Principal Dimencions			Basic Load Ratings		Speed Ratings		Radius (Mm) R <sub>smin</sub>	Weight (Kg) G	Calculation Factors			
Type	Cage	Bore (Mm) D	Outer (Mm) D	Width (Mm) B	Dynamic (Kn) C <sub>r</sub>	Static (Kn) C <sub>0r</sub>	Grease (Rpm)	Oil (Rpm)			E	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>0</sub>
23120	CA	100	165	52	326	490	1700	2200	2.0	4.39	0.31	2.21	3.29	2.16
23220	CA	100	180	60.3	405	589	1500	1900	2.1	6.81	0.33	2.03	3.02	1.98
24020	CA	100	150	50	242	425	1500	2000	1.5	3.15	0.30	2.23	3.32	2.18
21320	GMEX	100	215	47	429	498	2890	3825	8.4	3.00	0.22	3.06	4.56	2.99
22220	GMEX	100	180	46	379	475	2890	3825	5.1	2.10	0.24	2.80	4.18	2.74
22320	VS C4 F80	100	215	73	670.0	880.0	2200	2600	3.0	13.21	0.34	2.00	2.90	1.90
23120	MB	100	165	52	355	540	2000	2600	2.0	4.50	0.33	2.05	3.05	2.10
23220	MB	100	180	60	455	660	1500	2000	2.1	6.70	0.34	1.99	2.96	2.00
22320	MB	100	215	73	670	880	1400	1800	3.0	12.70	0.41	1.65	2.45	1.70
22222	CA	110	200	53	414	574	2000	2700	2.1	7.69	0.26	2.55	3.80	2.50
22322	CA	110	240	80	724	915	1500	2000	3.0	18.30	0.35	1.91	2.85	1.87
23022	CA	110	170	45	304	489	1900	2500	2.0	3.79	0.25	2.67	3.97	2.61
23122	CA	110	180	56	382	596	1500	2000	2.0	5.72	0.29	2.32	3.45	2.26
23222	CA	110	200	69.8	528	786	1300	1800	2.1	9.79	0.34	2.00	2.97	1.95
24022	CA	110	170	60	294	506	1300	1800	2.0	5.60	0.32	2.12	3.15	2.07
24122	CA	110	180	69	462	758	1200	1500	2.0	6.85	0.37	1.84	2.74	1.80
22322	VS C4 F80	110	240	80	800.0	1060.0	1800	2200	3.0	18.01	0.35	2.00	2.90	1.90
23022	MB	110	170	45	295	485	2000	2600	2.0	3.75	0.26	2.60	3.87	2.60
23024	MB	110	180	46	335	560	1800	2400	2.0	4.20	0.24	2.81	4.19	2.80
23122	MB	110	180	56	410	640	1800	2400	2.0	5.55	0.31	2.18	3.24	2.20
23222	MB	110	200	70	570	840	1200	1600	2.1	9.70	0.34	1.99	2.96	2.00
21322	MB	110	240	50	510	690	1500	2000	3.0	12.00	0.21	3.21	4.79	3.20
22322	MB	110	240	80	800	1060	1300	1700	3.0	17.70	0.38	1.78	2.64	1.80
22224	CA	120	215	58	488	666	1900	2500	2.1	9.06	0.27	2.49	3.71	2.43
22324	CA	120	260	86	848	1130	1400	1800	3.0	23.40	0.34	1.96	2.92	1.92
23024	CA	120	180	46	317	514	1700	2300	2.0	4.10	0.24	2.79	4.15	2.73
23124	CA	120	200	62	468	726	1400	1900	2.0	8.01	0.30	2.25	3.34	2.20
23224	CA	120	215	76	592	904	1200	1600	2.1	12.10	0.34	1.98	2.94	1.93
24024	CA	120	180	60	386	673	1200	1700	2.0	5.40	0.31	2.18	3.24	2.13
24124	CA	120	200	80	601	994	1100	1400	2.0	10.20	0.39	1.74	2.59	1.70



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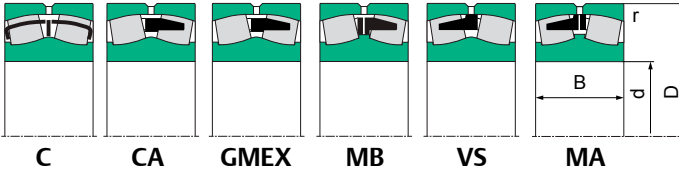
Bearing		Principal Dimensions			Basic Load Ratings		Speed Ratings		Radius (Mm) R <sub>smin</sub>	Weight (Kg) G	Calculation Factors			
Type	Cage	Bore (Mm) D	Outer (Mm) D	Width (Mm) B	Dynamic (Kn) C <sub>r</sub>	Static (Kn) C <sub>0r</sub>	Grease (Rpm)	Oil (Rpm)			E	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>0</sub>
22324	VS C4 F80	120	260	86	930.0	1230.0	1700	2000	3.0	22.49	0.34	2.00	3.00	2.00
24024	MB	120	180	60	410	740	1460	1800	2.0	5.12	0.34	1.99	2.96	2.00
23124	MB	120	200	62	495	770	1700	2200	2.0	7.80	0.31	2.18	3.24	2.20
22224	MB	120	215	58	510	740	1500	2000	2.1	9.04	0.30	2.25	3.35	2.30
24124	MB	120	200	80	630	1050	1000	1300	2.0	10.20	0.43	1.57	2.34	1.60
23224	MB	120	215	76	670	1020	1100	1500	2.1	12.00	0.38	1.78	2.64	1.80
22324	MB	120	260	86	930	1230	1100	1500	3.0	22.00	0.38	1.78	2.64	1.80
22226	CA	130	230	64	613	880	1800	2300	3.0	11.20	0.28	2.43	3.61	2.37
22326	CA	130	280	93	978	1320	1300	1700	4.0	28.50	0.35	1.95	2.90	1.91
23026	CA	130	200	52	401	660	1600	2100	2.0	6.02	0.25	2.71	4.04	2.65
23126	CA	130	210	64	512	798	1300	1800	2.0	8.75	0.28	2.40	3.58	2.35
23226	CA	130	230	80	670	1020	1100	1500	3.0	14.30	0.34	1.99	2.96	1.94
24026	CA	130	200	69	484	841	1100	1500	2.0	8.16	0.33	2.07	3.09	2.03
24126	CA	130	210	80	597	1020	980	1300	2.0	11.10	0.36	1.87	2.79	1.83
22326	VS C4 F80	130	280	93	1080	1465	1600	1900	4.0	27.63	0.33	2.00	3.00	2.00
23026	MB	130	200	52	410	670	1700	2200	2.0	6.10	0.24	2.81	4.19	2.80
24026	MB	130	200	69	530	900	1200	1600	2.0	7.95	0.36	1.88	2.79	1.90
23126	MB	130	210	64	540	860	1500	2000	2.0	8.55	0.31	2.18	3.24	2.20
24126	MB	130	210	80	650	1100	900	1200	2.0	11.00	0.41	1.65	2.45	1.70
22226	MB	130	230	64	600	865	1500	2000	3.0	11.20	0.31	2.18	3.24	2.20
23226	MB	130	230	80	760	1170	1100	1500	3.0	14.00	0.34	1.99	2.96	2.00
22326	MB	130	280	93	1080	1450	1100	1400	4.0	28.50	0.38	1.78	2.64	1.80
22228	CA	140	250	68	656	920	1600	2200	3.0	14.30	0.27	2.49	3.71	2.43
22328	CA	140	300	102	1140	1550	1200	1600	4.0	35.90	0.35	1.91	2.85	1.87
23028	CA	140	210	53	415	689	1500	2000	2.0	6.43	0.24	2.81	4.19	2.75
23128	CA	140	225	68	546	876	1200	1600	2.1	10.70	0.28	2.39	3.56	2.34
23228	CA	140	250	88	818	1230	1000	1400	3.0	18.90	0.35	1.92	2.85	1.87
24028	CA	140	210	69	495	865	1100	1400	2.0	8.42	0.31	2.21	3.29	2.16
24128	CA	140	225	85	634	1100	920	1200	2.1	13.10	0.35	1.94	2.88	1.89
22328	VS C4 F80	140	300	102	1240	1720	1400	1500	4.0	35.92	0.35	2.00	2.90	1.90

Bearing		Principal Dimencions			Basic Load Ratings		Speed Ratings		Radius (Mm) R <sub>smin</sub>	Weight (Kg) G	Calculation Factors			
Type	Cage	Bore (Mm) D	Outer (Mm) D	Width (Mm) B	Dynamic (Kn) C <sub>r</sub>	Static (Kn) C <sub>0r</sub>	Grease (Rpm)	Oil (Rpm)			E	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>0</sub>
23080	MB	140	210	53	435	750	1500	2000	2.0	6.55	0.24	2.81	4.19	2.80
23128	MB	140	225	68	600	990	1400	1800	2.1	10.20	0.31	2.18	3.24	2.20
23128	MB	140	225	69	600	990	1400	1800	2.1	10.50	0.31	2.18	3.24	2.20
24128	MB	140	225	85	740	1280	850	1100	2.1	13.20	0.38	1.78	2.64	1.80
22228	MB	140	250	68	670	990	1300	1700	3.0	14.00	0.30	2.25	3.35	2.30
23228	MB	140	250	68	880	1380	1000	1300	3.0	18.50	0.38	1.78	2.64	1.80
22328	MB	140	300	102	1240	1720	1000	1300	4.0	34.50	0.41	1.65	2.45	1.70
22230	CA	150	270	73	750	1060	1500	2000	3.0	18.10	0.27	2.49	3.71	2.43
22330	CA	150	320	108	1270	1750	1100	1500	4.0	43.70	0.35	1.92	2.86	1.88
23030	CA	150	225	56	467	789	1400	1900	2.1	7.81	0.24	2.84	4.23	2.78
23130	CA	150	250	80	716	1150	1100	1500	2.1	16.20	0.31	2.16	3.22	2.12
23230	CA	150	270	96	925	1450	980	1300	3.0	24.30	0.36	1.87	2.79	1.83
24030	CA	150	225	75	564	1010	990	1300	2.1	10.50	0.32	2.12	3.15	2.07
24130	CA	150	250	100	891	1520	840	1100	2.1	19.50	0.39	1.74	2.59	1.70
22330	VS C4 F80	150	320	108	1400	1940	1000	1300	4.0	44.30	0.38	2.00	2.90	1.90
23030	MB	150	225	56	480	830	1400	1800	2.1	7.80	0.24	2.81	4.19	2.80
24030	MB	150	225	75	620	1140	1100	1400	2.1	10.50	0.33	2.05	3.05	2.10
23130	MB	150	250	80	800	1320	1300	1700	2.1	16.30	0.33	2.05	3.05	2.10
22230	MB	150	270	73	810	1190	1200	1600	3.0	18.00	0.30	2.25	3.35	2.30
23230	MB	150	270	96	1030	1610	1000	1300	3.0	24.50	0.41	1.65	2.45	1.70
22330	MB	150	320	108	1400	1940	1000	1300	4.0	43.50	0.41	1.65	2.45	1.70
22232	CA	160	290	80	879	1220	1400	1900	3.0	22.80	0.28	2.43	3.61	2.37
22332	CA	160	340	114	1350	1860	1000	1400	4.0	51.90	0.35	1.91	2.85	1.87
23032	CA	160	240	60	538	917	1300	1700	2.1	9.56	0.24	2.84	4.23	2.78
23132	CA	160	270	86	841	1370	1000	1400	2.1	20.80	0.31	2.16	3.22	2.12
23232	CA	160	290	104	1050	1670	910	1200	3.0	31.70	0.36	1.87	2.79	1.83
24032	CA	160	240	80	655	1180	930	1200	2.1	13.00	0.32	2.12	3.15	2.07
24132	CA	160	270	109	1050	1810	780	1000	2.1	26.10	0.39	1.71	2.54	1.67
23032	MB	160	240	60	560	970	1300	1700	2.1	9.50	0.24	2.81	4.19	2.80
23032	MB	160	240	60	560	970	1300	1700	2.1	9.70	0.24	2.81	4.19	2.80





# Spherical Roller Bearings

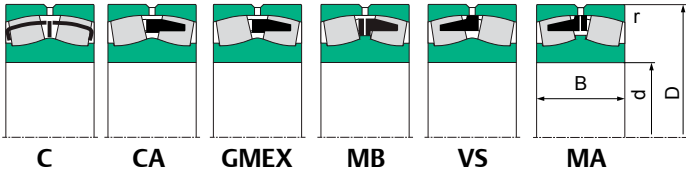


Bearing		Principal Dimensions			Basic Load Ratings		Speed Ratings		Radius (Mm) R <sub>smin</sub>	Weight (Kg) G	Calculation Factors			
Type	Cage	Bore (Mm) D	Outer (Mm) D	Width (Mm) B	Dynamic (Kn) C <sub>r</sub>	Static (Kn) C <sub>or</sub>	Grease (Rpm)	Oil (Rpm)			E	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>o</sub>
24032	MB	160	240	80	720	1320	1000	1300	2.1	13.00	0.34	1.99	2.96	2.00
24032	MB	160	240	80	720	1320	1000	1300	2.1	13.30	0.34	1.99	2.96	2.00
23132	MB	160	270	86	930	1510	1200	1600	2.1	20.50	0.33	2.05	3.05	2.10
22232	MB	160	290	80	950	1420	1100	1500	3.0	23.30	0.30	2.25	3.35	2.30
23232	MB	160	290	104	1180	1830	900	1200	3.0	31.70	0.41	1.65	2.45	1.70
22332	MA C4 F80	160	340	114	1520	2160	900	1200	4.0	50.50	0.38	1.78	2.64	1.80
22332	MB	160	340	114	1520	2160	900	1200	4.0	50.80	0.38	1.78	2.64	1.80
22234	CA	170	310	86	983	1380	1300	1800	4.0	29.20	0.28	2.41	3.59	2.35
22334	CA	170	360	120	1500	2090	980	1300	4.0	61.10	0.35	1.91	2.85	1.87
23034	CA	170	260	67	652	1110	1200	1600	2.1	13.00	0.25	2.74	4.08	2.68
23134	CA	170	280	88	887	1490	990	1300	2.1	22.20	0.31	2.21	3.29	2.16
23234	CA	170	310	110	1230	1970	840	1100	4.0	35.80	0.34	1.99	2.96	1.94
24034	CA	170	260	90	800	1470	860	1200	2.1	17.60	0.33	2.07	3.09	2.03
24134	CA	170	280	109	1080	1870	740	990	2.1	26.40	0.37	1.83	2.72	1.79
23034	MB	170	260	67	680	1170	1200	1600	2.1	13.40	0.24	2.81	4.19	2.80
24034	MB	170	260	90	880	1610	1000	1300	2.1	17.70	0.34	1.99	2.96	2.00
23134	MB	170	280	88	990	1650	1100	1500	2.1	22.30	0.33	2.05	3.05	2.10
22234	MB	170	310	86	1080	1610	1100	1400	4.0	28.90	0.31	2.18	3.24	2.20
23234	MA C4 F80	170	310	110	1340	2120	850	1100	4.0	37.80	0.38	1.78	2.64	1.80
22334	MA C4 F80	170	360	120	1690	2380	850	1100	4.0	60.20	0.38	1.78	2.64	1.80
22334	MB	170	360	120	1690	2380	850	1100	4.0	62.20	0.38	1.78	2.64	1.80
22236	CA	180	320	86	1040	1490	1300	1700	4.0	30.00	0.27	2.51	3.74	2.45
22336	CA	180	380	126	1640	2290	930	1200	4.0	71.40	0.35	1.92	2.86	1.88
23036	CA	180	280	74	702	1170	1100	1500	2.1	17.30	0.24	2.76	4.11	2.70
23136	CA	180	300	96	999	1650	930	1200	3.0	28.00	0.32	2.13	3.17	2.08
23236	CA	180	320	112	1270	2050	820	1100	4.0	39.50	0.35	1.94	2.88	1.89
24036	CA	180	280	100	936	1710	810	1100	2.1	23.50	0.34	1.99	2.96	1.94
24136	CA	180	300	118	1240	2180	700	930	3.0	32.56	0.38	1.77	2.64	1.73
23036	MB	180	280	74	800	1380	1100	1500	2.1	17.60	0.24	2.81	4.19	2.80
23036	MB	180	280	100	1030	1900	900	1200	2.1	23.00	0.36	1.88	2.79	1.90

Bearing		Principal Dimencions			Basic Load Ratings		Speed Ratings		Radius (Mm) R <sub>smin</sub>	Weight (Kg) G	Calculation Factors			
Type	Cage	Bore (Mm) D	Outer (Mm) D	Width (Mm) B	Dynamic (Kn) C <sub>r</sub>	Static (Kn) C <sub>or</sub>	Grease (Rpm)	Oil (Rpm)			E	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>o</sub>
24036	MB	180	260	100	1030	1900	900	1200	2.1	23.20	0.36	1.88	2.79	1.90
23136	MB	180	300	96	1160	1940	1100	1400	3.0	28.40	0.33	2.05	3.05	2.10
22236	MB	180	320	86	1110	1720	1100	1400	4.0	30.40	0.30	2.25	3.35	2.30
23236	MB	180	320	112	1420	2330	750	1000	4.0	40.80	0.38	1.78	2.64	1.80
22336	MB	180	380	126	1900	2700	850	1100	4.0	68.20	0.38	1.78	2.64	1.80
22336	MA C4 F80	180	380	126	1900	2700	850	1100	4.0	68.20	0.38	1.78	2.64	1.80
22238	CA	190	340	92	1150	1700	1200	1600	4.0	37.30	0.27	2.49	3.71	2.43
22338	CA	190	400	132	1810	2540	880	1200	5.0	82.70	0.35	1.94	2.88	1.89
23038	CA	190	290	75	781	1360	1100	1400	2.1	18.20	0.24	2.76	4.11	2.70
23138	CA	190	320	104	1170	1960	870	1200	3.0	34.90	0.32	2.12	3.15	2.07
23238	CA	190	340	120	1420	2340	760	1000	4.0	48.00	0.33	2.03	3.03	1.99
24038	CA	190	290	100	931	1800	780	1000	2.1	23.80	0.33	2.07	3.09	2.03
24138	CA	190	320	128	1330	2340	650	870	3.0	41.50	0.37	1.82	2.71	1.78
23038	MB	190	290	75	830	1470	1100	1400	2.1	18.60	0.26	2.60	3.87	2.60
24038	MB	190	290	100	1080	1980	850	1100	2.1	24.30	0.34	1.99	2.96	2.00
23138	MB	190	320	104	1320	2290	1100	1400	3.0	35.60	0.34	1.99	2.96	2.00
22238	MB	190	340	92	1220	1870	1000	1300	4.0	37.70	0.30	2.25	3.35	2.30
24138	MB	190	320	128	1540	2750	600	800	3.0	41.80	0.43	1.57	2.34	1.60
23238	MB	190	340	120	1610	2640	750	1000	4.0	48.90	0.38	1.78	2.64	1.80
22338	MB	190	400	132	2060	2920	750	1000	5.0	84.80	0.38	1.78	2.64	1.80
22338	MA C4 F80	190	400	132	1610	2640	750	1000	4.0	48.80	0.36	1.90	2.80	1.80
22240	CA	200	360	98	1290	1910	1100	1500	4.0	43.20	0.27	2.47	3.67	2.41
22340	CA	200	420	138	1990	2800	840	1100	5.0	95.20	0.35	1.95	2.90	1.91
23040	CA	200	310	82	867	1470	1000	1400	2.1	23.30	0.24	2.76	4.11	2.70
23140	CA	200	340	112	1370	2310	830	1100	3.0	43.10	0.32	2.09	3.11	2.04
23240	CA	200	360	128	1580	2620	730	970	4.0	57.80	0.36	1.90	2.83	1.86
24040	CA	200	310	109	1170	2170	730	970	2.1	31.40	0.33	2.03	3.02	1.98
24140	CA	200	340	140	1590	2790	620	830	3.0	53.30	0.40	1.68	2.50	1.64
23940	MB	200	280	60	525	1020	1100	1400	2.1	11.5	0.21	3.14	4.78	3.3
24140	MB	200	340	140	1400	2385	560	750	3.0	51.50	0.43	1.57	2.34	1.60



# Spherical Roller Bearings

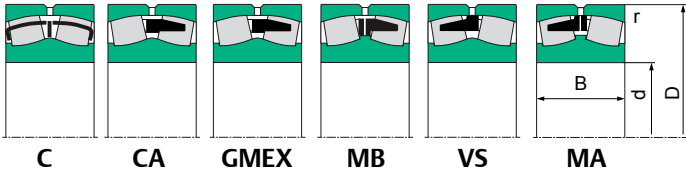


Bearing		Principal Dimensions			Basic Load Ratings		Speed Ratings		Radius (Mm) R <sub>smin</sub>	Weight (Kg) G	Calculation Factors			
Type	Cage	Bore (Mm) D	Outer (Mm) D	Width (Mm) B	Dynamic (Kn) C <sub>r</sub>	Static (Kn) C <sub>or</sub>	Grease (Rpm)	Oil (Rpm)			E	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>o</sub>
23240	MB	200	360	128	1620	2590	750	1000	4.0	58.50	0.38	1.78	2.64	1.80
22340	MB	200	420	138	1910	2750	670	900	5.0	95.00	0.38	1.78	2.64	1.80
22244	CA	220	400	108	1560	2260	1000	1400	4.0	59.50	0.26	2.55	3.80	2.50
23044	CA	220	340	90	1030	1790	930	1200	3.0	31.00	0.24	2.79	4.15	2.73
23144	CA	220	370	120	1500	2570	760	1000	4.0	54.10	0.31	2.21	3.29	2.16
23244	CA	220	400	144	1960	3270	660	880	4.0	81.50	0.36	1.87	2.79	1.83
24044	CA	220	340	118	1370	2550	660	880	3.0	40.50	0.33	2.07	3.09	2.03
24144	CA	220	370	150	1870	3390	570	750	4.0	67.50	0.39	1.71	2.54	1.67
22344	CA	220	460	145	2370	3450	1360	980	5	119.00	0.32	2.09	3.11	2.04
23944	MB	220	300	60	555	1036	1100	1400	2.1	13.50	0.18	3.75	5.58	3.70
23044	MB	220	340	90	1025	1730	1000	1300	3.0	31.50	0.24	2.81	4.19	2.80
24044	MB	220	340	118	1190	2098	750	1000	3.0	39.50	0.36	1.88	2.79	1.90
23144	MB	220	370	120	1455	2380	900	1200	4.0	54.50	0.31	2.18	3.24	2.20
22244	MB	220	400	108	1485	2483	850	1100	4.0	63.00	0.30	2.25	3.35	2.30
24144	MB	220	370	150	1780	3109	530	700	4.0	65.00	0.43	1.57	2.34	1.60
23244	MB	220	400	144	1850	2899	600	800	4.0	82.50	0.38	1.78	2.64	1.80
22248	CA	240	440	120	1970	2870	1000	1400	4.0	80.70	0.28	2.45	3.64	2.39
23048	CA	240	360	92	1130	2080	870	1200	3.0	34.30	0.24	2.81	4.19	2.75
23148	CA	240	400	128	1680	3060	700	930	4.0	66.30	0.32	2.13	3.17	2.08
24048	CA	240	360	118	1400	2680	620	830	3.0	43.60	0.31	2.21	3.29	2.16
24148	CA	240	400	160	2110	3880	520	700	4.0	83.80	0.39	1.74	2.59	1.70
22348	CA	240	500	155	2740	3990	800	650	5	149.00	0.32	2.09	3.11	2.04
23948	MB	240	320	60	600	1170	1000	1300	2.1	14.00	0.18	3.75	5.58	3.90
23048	MB	240	360	92	1105	1969	900	1200	3.0	34.50	0.24	2.81	4.19	2.80
23148	MB	240	400	128	1640	2720	850	1100	4.0	67.50	0.31	2.18	3.24	2.20
24148	MB	240	400	160	1970	3477	480	630	4.0	80.50	0.43	1.57	2.34	1.60
22248	MB	240	440	120	1815	2701	750	1000	4.0	85.50	0.30	2.25	3.35	2.30
23248	MB	240	440	160	2370	3837	560	750	4.0	110.00	0.38	1.78	2.64	1.80
23952	CA	260	360	75	902	1750	1100	1500	2.1	21.60	0.18	3.80	5.60	3.60
23052	CA	260	400	104	1350	2550	900	1200	4.0	49.80	0.23	2.90	4.40	2.80

Bearing		Principal Dimencions			Basic Load Ratings		Speed Ratings		Radius (Mm) R <sub>smin</sub>	Weight (Kg) G	Calculation Factors			
Type	Cage	Bore (Mm) D	Outer (Mm) D	Width (Mm) B	Dynamic (Kn) C <sub>r</sub>	Static (Kn) C <sub>or</sub>	Grease (Rpm)	Oil (Rpm)			E	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>o</sub>
24052	CA	260	400	140	1710	3500	700	900	4.0	66.70	0.33	2.00	3.00	2.00
23152	CA	260	440	144	2190	4050	800	1000	4.0	88.90	0.31	2.20	3.30	2.20
24152	CA	260	440	180	2100	4350	430	530	4.0	115.0	0.39	1.73	2.58	1.69
22252	CA	260	480	130	2280	3600	850	1100	5.0	106.0	0.27	2.51	3.74	2.45
23252	CA	260	480	174	2800	4750	630	800	5.0	141.0	0.35	1.90	2.90	1.80
22352	CA	260	540	165	3080	4750	630	800	6.0	186.0	0.31	2.20	3.30	2.20
22256	CA	280	500	130	2320	3590	1400	1000	5	117.20	0.26	2.6	3.87	2.54
23856	CA	280	350	52	435	1230	1200	1500	2.0	11.4	0.13	5.36	7.98	5.24
23956	CA	280	380	75	803	1850	1000	1400	2.1	25.7	0.18	3.80	5.66	3.72
23056	CA	280	420	106	1450	2850	850	1100	4.0	56.8	0.23	2.91	4.40	2.84
24056	CA	280	420	140	1780	3700	670	850	4.0	69.2	0.31	2.20	3.30	2.20
23156	CA	280	460	146	2190	4150	750	950	5.0	104.0	0.30	2.30	3.40	2.20
24156	CA	280	460	180	2530	4750	400	500	5.0	119.0	0.40	1.70	2.50	1.60
23256	CA	280	500	176	2840	5100	600	750	5.0	147.0	0.35	1.90	2.90	1.80
22356	CA	280	580	175	3520	5700	600	750	6.0	221.0	0.30	2.30	3.40	2.20
23860	CA	300	380	60	640	1650	950	1400	3.0	18.2	0.13	5.20	7.70	5.00
23960	CA	300	420	90	1160	2500	950	1300	3.0	40.1	0.19	3.60	5.30	3.60
23060	CA	300	460	118	1770	3450	800	1000	4.0	75.8	0.23	2.90	4.40	2.80
24060	CA	300	460	160	2220	2700	600	750	4.0	99.0	0.32	2.09	3.11	2.04
23160	CA	300	500	160	2680	4750	670	850	5.0	126.0	0.30	2.30	3.40	2.20
24160	CA	300	500	200	3100	6000	600	750	5.0	161.0	0.39	1.75	2.61	1.71
22260	CA	300	540	140	2620	4300	750	950	5.0	138.0	0.26	2.60	3.90	2.50
23260	CA	300	540	192	3300	5600	530	670	5.0	192.0	0.35	1.90	2.90	1.80
23864	CA	320	400	60	670	1620	920	1280	2.1	20.3	0.12	5.60	8.40	5.60
23964	CA	320	440	90	1200	2650	900	1200	3.0	42.7	0.18	3.80	5.60	3.60
23064	CA	320	480	121	1930	2200	800	1000	4.0	84.8	0.23	2.90	4.40	2.80
24064	CA	320	480	160	2480	5100	560	700	4.0	105.0	0.32	2.09	3.11	2.04
23164	CA	320	540	176	3150	3200	630	800	5.0	200.0	0.31	2.20	3.30	2.20
24164	CA	320	540	218	3560	6500	340	430	5.0	206.0	0.40	1.70	2.50	1.60
22264	CA	320	580	150	3000	4550	670	850	5.0	175.0	0.26	2.60	3.90	2.50



# Spherical Roller Bearings

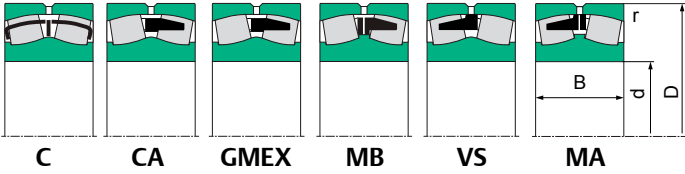


Bearing		Principal Dimensions			Basic Load Ratings		Speed Ratings		Radius (Mm) R <sub>smin</sub>	Weight (Kg) G	Calculation Factors			
Type	Cage	Bore (Mm) D	Outer (Mm) D	Width (Mm) B	Dynamic (Kn) C <sub>r</sub>	Static (Kn) C <sub>or</sub>	Grease (Rpm)	Oil (Rpm)			E	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>o</sub>
23264	CA	320	580	208	3900	6800	500	630	5.0	253.0	0.35	1.90	2.90	1.80
23968	CA	340	460	90	1200	2700	900	1200	3.0	46.0	0.17	4.00	5.90	4.00
23068	CA	340	520	133	2180	4400	700	900	5.0	115.0	0.24	2.80	4.20	2.80
24068	CA	340	520	180	2710	5700	530	670	5.0	137.0	0.33	2.00	3.00	2.00
23168	CA	340	580	190	3500	6300	600	750	5.0	211.0	0.31	2.20	3.30	2.20
24168	CA	340	580	243	4400	7950	320	400	5.0	256.0	0.40	1.70	2.50	1.60
23268	CA	340	620	224	4400	7700	430	530	6.0	297.0	0.35	1.90	2.90	1.80
23972	CA	360	480	90	1290	2820	850	1100	3.0	46.6	0.16	4.20	6.30	4.00
23072	CA	360	540	134	2280	4800	670	850	5.0	126.0	0.23	2.90	4.40	2.80
24072	CA	360	540	180	2820	6100	600	750	5.0	150.0	0.31	2.20	3.30	2.20
23172	CA	360	600	192	3580	6850	560	700	5.0	255.0	0.30	2.30	3.40	2.20
24172	CA	360	600	243	5600	8400	300	380	5.0	270.0	0.37	1.80	2.70	1.80
22272	CA	360	650	170	3630	6200	380	480	6.0	253.0	0.26	2.60	3.87	2.54
23272	CA	360	650	232	4650	8300	400	500	6.0	335.0	0.35	1.90	2.90	1.80
22372	CA	360	750	224	4900	8600	400	500	7.5	460.0	0.31	2.21	3.29	2.16
23976	CA	380	520	106	1730	3800	800	1000	4.0	69.5	0.17	4.00	5.90	4.00
23076	CA	380	560	135	2480	5000	630	800	5.0	130.0	0.22	3.00	4.60	2.80
24076	CA	380	560	180	3150	6900	480	600	5.0	150.0	0.30	2.30	3.40	2.20
23176	CA	380	620	194	3740	7350	400	500	5.0	250.0	0.30	2.30	3.40	2.20
24176	CA	380	620	243	4400	9200	300	380	5.0	296.0	0.30	2.30	3.40	2.20
23276	CA	380	680	240	4800	9200	380	480	6.0	386.0	0.35	1.90	2.90	1.80
23980	CA	400	540	106	1750	3950	750	950	4.0	72.4	0.17	4.00	5.90	4.00
23080	CA	400	590	142	2650	5600	630	800	5.0	133.0	0.21	3.14	4.68	3.07
24080	CA	400	600	200	3600	7800	450	560	5.0	202.0	0.30	2.30	3.40	2.20
23180	CA	400	650	200	4100	7650	380	480	6.0	275.0	0.28	2.40	3.60	2.50
24180	CA	400	650	250	4800	9600	320	400	6.0	326.0	0.36	1.87	2.79	1.83
23280	CA	400	720	256	6150	11300	340	430	6.0	350.0	0.35	1.90	2.90	1.80
22380	CA	400	820	243	5400	9600	340	430	7.5	623.0	0.31	2.21	3.29	2.16
23984	CA	420	560	106	1530	4050	700	900	4.0	72.4	0.16	4.20	6.30	4.00
23084	CA	420	620	150	2970	6400	450	560	5.0	150.0	0.22	3.00	4.60	2.80

Bearing		Principal Dimencions			Basic Load Ratings		Speed Ratings		Radius (Mm) R <sub>smin</sub>	Weight (Kg) G	Calculation Factors			
Type	Cage	Bore (Mm) D	Outer (Mm) D	Width (Mm) B	Dynamic (Kn) C <sub>r</sub>	Static (Kn) C <sub>or</sub>	Grease (Rpm)	Oil (Rpm)			E	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>o</sub>
24084	CA	420	620	200	3690	8450	380	480	5.0	202.0	0.30	2.30	3.40	2.20
23184	CA	420	700	224	4680	9200	360	450	6.0	353.0	0.30	2.30	3.40	2.20
24184	CA	420	700	280	5750	11100	300	380	6.0	436.0	0.38	1.80	2.60	1.70
23284	CA	420	760	272	6170	11900	320	400	7.5	550.0	0.35	1.90	2.90	1.80
23988	CA	440	600	118	2030	4850	450	560	4.0	101.0	0.17	4.00	5.90	4.00
23088	CA	440	650	157	3060	6500	430	530	6.0	179.0	0.22	3.00	4.60	2.80
24088	CA	440	650	212	4150	9100	360	450	6.0	251.0	0.30	2.30	3.40	2.20
23188	CA	440	720	226	4950	10000	340	430	6.0	378.0	0.30	2.30	3.40	2.20
24188	CA	440	720	280	7300	13400	300	380	6.0	469.0	0.37	1.80	2.70	1.80
23288	CA	440	790	280	7600	12300	320	400	7.5	612.0	0.35	1.90	2.90	1.80
24892	CA	460	580	118	1730	4850	450	560	3.0	82.0	0.17	4.00	5.90	4.00
23992	CA	460	620	118	2120	5000	430	530	4.0	105.0	0.16	4.20	6.30	4.00
23092	CA	460	680	163	3280	6950	400	500	6.0	226.0	0.22	3.00	4.60	2.80
24092	CA	460	680	218	4200	9100	340	430	6.0	304.0	0.29	2.35	3.50	2.30
23192	CA	460	760	240	5500	10000	320	400	7.5	443.0	0.30	2.30	3.40	2.20
24192	CA	460	760	300	6890	14400	160	200	7.5	461.0	0.37	1.80	2.70	1.80
23292	CA	460	830	296	7350	13500	300	380	7.5	698.0	0.35	1.90	2.90	1.80
23896	CA	480	600	90	1420	4000	450	600	3.0	60.4	0.13	5.36	7.98	5.24
23996	CA	480	650	128	2370	5750	400	500	5.0	126.0	0.18	3.80	5.60	3.60
23096	CA	480	700	165	3300	6900	380	480	6.0	217.0	0.21	3.20	4.80	3.20
24096	CA	480	700	218	5250	10200	340	430	6.0	296.0	0.28	2.40	3.60	2.50
23196	CA	480	790	248	6100	12000	300	380	7.5	516.0	0.30	2.30	3.40	2.20
24196	CA	480	790	308	8000	14900	240	320	7.5	584.0	0.37	1.80	2.70	1.80
23296	CA	480	870	310	7750	15200	260	340	7.5	853.0	0.35	1.90	2.90	1.80
238/500	CA	500	620	90	1450	3800	420	520	3.0	66.0	0.12	5.60	8.40	5.60
239/500	CA	500	670	128	2530	6000	400	500	5.0	120.0	0.17	4.00	5.90	4.00
230/500	CA	500	720	167	3470	7650	380	480	6.0	228.0	0.21	3.20	4.80	3.20
240/500	CA	500	720	218	5400	10600	420	520	6.0	306.0	0.26	2.60	3.90	2.50
231/500	CA	500	830	264	6100	13800	320	400	7.5	588.0	0.30	2.30	3.40	2.20
241/500	CA	500	830	325	9600	16000	300	380	7.5	736.0	0.37	1.80	2.70	1.80



# Spherical Roller Bearings



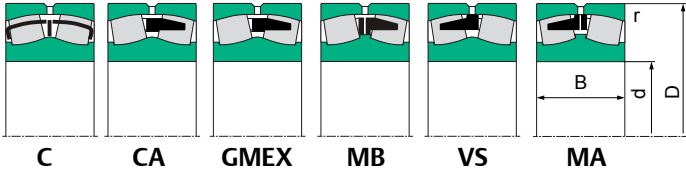
Bearing		Principal Dimensions			Basic Load Ratings		Speed Ratings		Radius (Mm) R <sub>smin</sub>	Weight (Kg) G	Calculation Factors			
Type	Cage	Bore (Mm) D	Outer (Mm) D	Width (Mm) B	Dynamic (Kn) C <sub>r</sub>	Static (Kn) C <sub>0r</sub>	Grease (Rpm)	Oil (Rpm)			E	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>0</sub>
232/500	CA	500	920	336	9460	18600	280	360	7.5	985.0	0.35	1.90	2.90	1.80
238/530	CA	530	650	90	1500	4200	400	500	3.0	64.2	0.12	5.60	8.40	5.60
248/530	CA	530	650	118	1820	5280	380	480	3.0	91.0	0.15	4.50	6.70	4.50
239/530	CA	530	710	316	2900	6700	360	450	5.0	154.0	0.17	4.00	5.90	4.00
230/530	CA	530	780	185	4290	9650	340	430	6.0	339.0	0.22	3.00	4.60	2.80
240/530	CA	530	780	250	5400	12700	280	360	6.0	416.0	0.29	2.30	3.50	2.40
231/530	CA	530	870	272	8100	13200	260	340	7.5	665.0	0.30	2.30	3.40	2.20
241/530	CA	530	870	335	10300	18700	190	280	7.5	846.0	0.37	1.80	2.80	1.80
232/530	CA	530	980	335	10300	20300	210	290	9.5	1220	0.36	1.87	2.79	1.83
239/560	CA	560	750	140	3050	7200	340	430	5.0	177.0	0.16	4.20	6.30	4.00
230/560	CA	560	820	195	4300	10500	320	410	6.0	363.0	0.22	3.14	4.67	3.07
240/560	CA	560	820	258	5700	13200	220	300	6.0	471.0	0.28	2.40	3.60	2.50
231/560	CA	560	920	280	7590	15700	240	320	7.5	756.0	0.30	2.30	3.40	2.20
241/560	CA	560	920	355	10000	20100	120	160	7.5	953.0	0.37	1.80	2.80	1.80
232/560	CA	560	1030	365	11200	21000	190	260	9.5	1380	0.35	1.90	2.90	1.80
239/600	CA	600	800	150	3260	8400	320	400	5.0	220.0	0.17	4.00	5.90	4.00
249/600	CA	600	800	200	4070	11200	320	400	5.0	287.0	0.22	3.00	4.60	2.80
230/600	CA	600	870	200	5170	11600	300	380	6.0	442.0	0.22	3.00	4.60	2.80
240/600	CA	600	870	272	8100	16500	220	300	6.0	560.0	0.30	2.30	3.40	2.80
231/600	CA	600	980	300	8900	18800	180	250	7.5	894.0	0.29	2.30	3.50	2.40
241/600	CA	600	980	375	10000	21600	110	150	7.5	1140	0.36	1.90	2.82	1.85
232/600	CA	600	1090	388	12500	25000	190	260	9.5	1568	0.35	1.93	2.88	1.80
238/630	CA	630	780	112	2200	6300	300	380	4.0	124.0	0.12	5.60	8.40	5.60
239/630	CA	630	850	165	3550	9750	280	360	6.0	280.0	0.17	4.00	5.90	4.00
230/630	CA	630	920	212	5670	12800	260	340	7.5	471.0	0.21	3.20	4.80	3.20
231/630	CA	630	1030	315	10000	21000	180	250	7.5	1080	0.30	2.30	3.40	2.20
241/630	CA	630	1030	400	12500	27200	160	210	7.5	1440	0.37	1.80	2.70	1.80
238/670	CA	670	820	112	2210	6300	270	350	4.0	136.0	0.11	6.10	9.10	6.30
248/670	CA	670	820	150	3100	9600	270	350	4.0	178.0	0.16	4.20	6.30	4.00
239/670	CA	670	900	170	4400	10600	260	340	6.0	313.0	0.17	4.00	5.90	4.00

Bearing		Principal Dimencions			Basic Load Ratings		Speed Ratings		Radius (Mm) R <sub>smin</sub>	Weight (Kg) G	Calculation Factors			
Type	Cage	Bore (Mm) D	Outer (Mm) D	Width (Mm) B	Dynamic (Kn) C <sub>r</sub>	Static (Kn) C <sub>0r</sub>	Grease (Rpm)	Oil (Rpm)			E	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>0</sub>
230/670	CA	670	980	230	6900	15000	240	310	7.5	601.0	0.22	3.00	4.60	3.20
240/670	CA	670	980	308	9500	20000	190	270	7.5	807.0	0.28	2.40	3.60	2.50
231/670	CA	670	1090	336	11000	22500	175	240	7.5	1280	0.30	2.30	3.40	2.20
241/670	CA	670	1090	412	14000	31500	150	190	7.5	1560	0.36	1.87	2.79	1.83
232/670	CA	670	1220	438	15000	32000	160	210	12.0	2300	0.35	1.90	2.90	1.80
238/710	CA	710	870	118	2680	7550	260	340	4.0	156.0	0.11	6.10	9.10	6.30
239/710	CA	710	950	180	5000	12000	240	310	6.0	364.0	0.17	4.00	5.90	4.00
249/710	CA	710	950	243	6200	17000	200	280	6.0	500.0	0.22	3.00	4.60	2.80
230/710	CA	710	1030	236	6300	16200	220	300	7.5	669.0	0.21	3.20	4.80	3.20
240/710	CA	710	1030	315	9300	22500	180	250	7.5	910.0	0.27	2.50	3.70	2.50
231/710	CA	710	1150	345	12000	25800	170	220	9.8	1480	0.28	2.40	3.60	2.50
241/710	CA	710	1150	438	11900	29700	90	120	9.5	1791	0.35	1.90	2.90	1.80
232/710	CA	710	1280	450	17500	34400	160	210	12.0	2640	0.35	1.90	2.90	1.80
238/750	CA	750	920	128	2950	8600	240	310	5.0	188.0	0.11	6.10	9.10	6.30
239/750	CA	750	1000	185	5800	13500	210	290	6.0	426.0	0.16	4.20	6.30	4.00
249/750	CA	750	1000	250	7600	18200	180	250	6.0	566.0	0.22	3.00	4.60	2.80
230/750	CA	750	1090	250	7000	17900	200	280	7.5	789.0	0.21	3.20	4.80	3.20
240/750	CA	750	1090	335	10000	24800	170	220	7.5	1100	0.28	2.40	3.60	2.50
231/750	CA	750	1220	365	13500	28800	160	210	9.5	1760	0.28	2.40	3.60	2.50
241/750	CA	750	1220	475	16000	37000	130	170	9.5	2195	0.35	1.90	2.90	1.80
232/750	CA	750	1360	475	16390	36000	90	120	15.0	3100	0.36	1.87	2.79	1.83
248/800	CA	800	980	180	4150	13000	170	220	5.0	330.0	0.15	4.50	6.70	4.50
239/800	CA	800	1060	195	6350	14200	190	270	6.0	480.0	0.16	4.20	6.30	4.00
249/800	CA	800	1060	258	7800	19500	175	240	6.0	648.0	0.21	3.20	4.80	3.20
230/800	CA	800	1150	258	8090	19100	170	220	7.5	894.0	0.20	3.40	5.00	3.20
240/800	CA	800	1150	345	10300	24600	170	220	7.5	1092	0.27	2.50	3.70	2.50
231/800	CA	800	1280	375	14500	31000	150	190	9.5	1960	0.28	2.40	3.60	2.50
241/800	CA	800	1280	475	16300	37100	130	170	9.5	2350	0.35	1.90	2.90	1.80
238/850	CA	850	1030	136	3300	9800	180	250	5.0	244.0	0.11	6.10	9.10	6.30
239/850	CA	850	1120	200	5800	15500	180	250	6.0	570.0	0.16	4.20	6.30	4.00





# Spherical Roller Bearings



Bearing		Principal Dimensions			Basic Load Ratings		Speed Ratings		Radius (Mm) R <sub>smin</sub>	Weight (Kg) G	Calculation Factors			
Type	Cage	Bore (Mm) D	Outer (Mm) D	Width (Mm) B	Dynamic (Kn) C <sub>r</sub>	Static (Kn) C <sub>0r</sub>	Grease (Rpm)	Oil (Rpm)			E	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>0</sub>
249/850	CA	850	1120	272	8200	22500	170	220	6.0	750.0	0.22	3.00	4.60	2.80
230/850	CA	850	1220	272	8450	22500	180	240	7.5	1074	0.20	3.40	5.00	3.20
240/850	CA	850	1220	365	11400	29700	160	200	7.5	1410	0.27	2.50	3.70	2.50
231/850	CA	850	1360	400	16000	34200	130	170	12.0	2260	0.28	2.40	3.60	2.50
241/850	CA	850	1360	500	20000	45100	105	140	12.0	2750	0.35	1.90	2.90	1.80
248/900	CA	900	1090	190	4890	15500	210	375	5.0	370.0	0.14	4.80	7.20	4.50
239/900	CA	900	1180	206	6050	16400	180	240	6.0	611.0	0.15	4.50	6.70	4.50
230/900	CA	900	1280	280	10200	23500	160	210	7.5	1220	0.20	3.40	5.00	3.20
240/900	CA	900	1280	375	13000	34200	140	190	7.5	1600	0.26	2.60	3.90	2.50
241/900	CA	900	1420	515	21000	48500	95	140	12.0	3400	0.35	1.90	2.90	1.80
239/950	CA	950	1250	224	7350	19000	160	225	7.5	759.0	0.15	4.50	6.70	4.50
249/950	CA	950	1250	300	9300	25500	135	180	7.5	1030	0.21	3.20	4.80	3.20
230/950	CA	950	1360	300	11000	26800	150	210	7.5	1440	0.20	3.40	5.00	3.20
240/950	CA	950	1360	412	15000	38500	125	160	7.5	2100	0.27	2.50	3.70	2.50
241/950	CA	950	1500	545	24000	54500	90	125	7.5	3600	0.35	1.90	2.90	1.80
239/950	CAF	950	1250	224	7310	19500	260	340	7.5	755.0	0.15	4.50	6.70	4.50
240/950	CAF	950	1360	412	15210	39375	180	240	7.5	1990	0.27	2.50	3.72	2.50
238/1000	CA	1000	1220	165	4400	13600	125	160	6.0	402.0	0.11	5.92	8.81	5.78
249/1000	CA	1000	1320	315	10200	29200	125	160	7.5	1220	0.21	3.20	4.80	3.20
230/1000	CA	1000	1420	308	12700	30500	130	175	7.5	1590	0.19	3.60	5.30	3.60
240/1000	CA	1000	1420	412	15200	40500	110	150	7.5	2130	0.26	2.60	3.90	2.50
231/1000	CA	1000	1580	462	21500	48200	95	130	12.0	3520	0.28	2.40	3.50	2.50
241/1000	CA	1000	1580	580	26500	62200	85	110	12.0	4350	0.35	1.90	2.90	1.80
238/1060	CA	1060	1280	165	4700	14800	150	195	6.0	440.0	0.11	6.10	9.10	6.30
248/1060	CA	1060	1280	218	6000	19500	125	160	6.0	576.0	0.14	4.80	7.20	4.50
239/1060	CA	1060	1400	250	9350	25000	145	170	7.5	1041	0.16	4.20	6.30	4.00
249/1060	CA	1060	1400	335	11000	32600	115	150	7.5	1420	0.21	3.20	4.80	3.20
230/1060	CA	1060	1500	325	13500	33000	125	160	9.5	2300	0.19	3.60	5.30	3.60
240/1060	CA	1060	1500	438	17000	46000	100	145	9.5	2530	0.26	2.60	3.90	2.50
248/1120	CA	1120	1360	243	7150	23500	105	165	6.0	740.0	0.15	4.50	6.70	4.50

Bearing		Principal Dimencions			Basic Load Ratings		Speed Ratings		Radius (Mm) R <sub>smin</sub>	Weight (Kg) G	Calculation Factors			
Type	Cage	Bore (Mm) D	Outer (Mm) D	Width (Mm) B	Dynamic (Kn) C <sub>r</sub>	Static (Kn) C <sub>or</sub>	Grease (Rpm)	Oil (Rpm)			E	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>o</sub>
249/1120	CA	1120	1460	335	12000	35200	90	135	7.5	1500	0.20	3.40	5.00	3.20
230/1120	CA	1120	1580	345	15000	38100	90	125	9.5	2210	0.19	3.40	5.00	3.20
240/1120	CA	1120	1580	462	18100	49500	90	125	9.5	2940	0.26	2.60	3.90	2.50
238/1180	CA	1180	1420	180	5600	18000	150	190	6.0	577.0	0.11	6.28	9.35	6.14
248/1180	CA	1180	1420	243	7700	27200	135	160	6.0	790.0	0.14	4.80	7.20	4.50
239/1180	CA	1180	1540	272	10290	29600	110	150	7.5	1350	0.16	4.20	6.30	4.00
249/1180	CA	1180	1540	355	13310	40000	110	150	7.5	1772	0.20	3.42	5.09	3.34
230/1180	CA	1180	1660	355	10290	29600	110	150	9.5	2460	0.20	3.42	5.09	3.34
230/1250	CA	1250	1750	375	17500	44800	95	125	9.5	2850	0.19	3.60	5.30	3.60
248/1320	CA	1320	1600	280	9750	33400	85	115	6.0	1180	0.15	4.50	6.70	4.50
249/1320	CA	1320	1720	400	16000	49200	80	105	7.5	2510	0.21	3.20	4.80	3.20
240/1320	CA	1320	1850	530	23200	63300	70	85	12.0	4540	0.25	2.70	4.00	2.60
249/1400	CA	1400	1820	425	20000	58500	70	85	9.5	2920	0.20	3.42	5.09	3.34
248/1500	CA	1500	1820	315	12000	40000	65	83	7.5	1730	0.15	4.50	6.70	4.50
248/1800	CA	1800	2180	375	17400	62800	62	70	9.5	2920	0.15	4.50	6.70	4.50

