

NOMENCLATURE

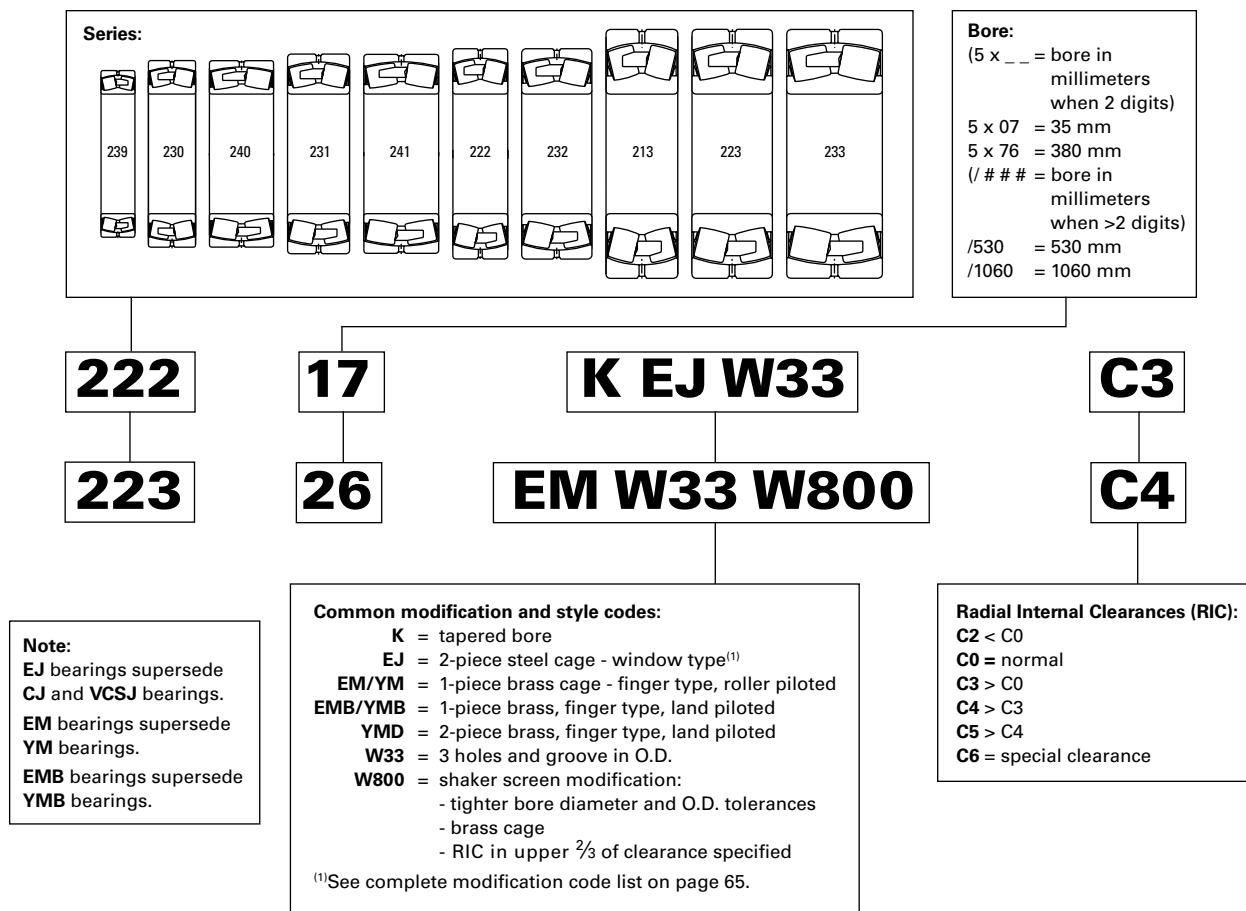


Fig. 23. Timken spherical roller bearing nomenclature.

SPHERICAL ROLLER BEARINGS – continued

- Shaft and housing fits, internal clearances, tolerances and other technical data for these bearings are found in the engineering section of this catalog and the Timken Engineering Manual (order no. 10424).
- Bearings are available with a tapered bore for adapter-type mounting. To order, add the suffix “K” to bearing number (e.g., 23120K).
- Consult your Timken sales engineer for up-to-date information about the availability of the bearings you have selected.

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Bearing Part Number	Bearing Dimensions			Load Ratings		Cage Type	Mounting Data			Equivalent Radial Load Factors ⁽²⁾				Geometry Factor ⁽³⁾ C _g	Speed Reference			Weight
	Bore d	O.D. D	Width B	Dynamic C	Static C _o		Fillet ⁽¹⁾ (Max.) R	Backing Diameter		Dynamic		Static	Thermal Reference Speed ⁽⁴⁾		Limiting Speed ⁽⁵⁾			
								Shaft d _a	Housing D _a	e	F _a ≤ e F _r X = 1 Y	F _a > e F _r X = 0.67 Y				In All Cases Y ₀		
											Oil	Grease						
	mm in.	mm in.	mm in.	kN lbf.	kN lbf.		mm in.	mm in.	mm in.						RPM	RPM	RPM	kg lbs.
22319	95 3.7402	200 7.8740	67 2.6378	694 156000	774 174000	EJ	2.5 0.1	122 4.8	180 7.1	0.32	2.10	3.13	2.05	0.072	3000	2600	3470	10.2 22.4
22319	95 3.7402	200 7.8740	67 2.6378	663 149000	725 163000	EM	2.5 0.1	122 4.8	180 7.1	0.32	2.10	3.13	2.05	0.071	3100	2600	4020	10.2 22.4
24020	100 3.9370	150 5.9055	50 1.9685	352 79100	506 114000	EJ	1.5 0.06	111 4.4	139 5.5	0.29	2.32	3.45	2.26	0.065	3200	2700	4060	3.0 6.6
21320	100 3.9370	215 8.4646	47 1.8504	521 119000	530 121000	EJ	2.5 0.1	133 5.2	193 7.6	0.22	3.13	4.66	3.06	0.075	3400	2800	4190	8.1 17.7
23120	100 3.9370	165 6.4961	52 2.0472	446 100000	583 131000	EJ	2 0.08	114 4.5	150 6.0	0.28	2.35	3.50	2.30	0.067	3200	2700	4070	4.4 9.7
23120	100 3.9370	165 6.4961	52 2.0472	446 100000	583 131000	EM	2 0.08	114 4.5	150 6.0	0.28	2.35	3.50	2.30	0.067	3200	2700	4060	4.4 9.7
22220	100 3.9370	180 7.0866	46 1.8110	435 97700	502 113000	EJ	2 0.08	120 4.7	163 6.4	0.24	2.85	4.24	2.78	0.069	3800	3100	4990	5.0 11.0
22220	100 3.9370	180 7.0866	46 1.8110	435 97700	502 113000	EM	2 0.08	120 4.7	163 6.4	0.24	2.85	4.24	2.78	0.069	3800	3100	5230	5.0 11.0
23220	100 3.9370	180 7.0866	60.3 2.3740	554 124000	678 152000	EJ	2 0.08	119 4.7	164 6.5	0.30	2.22	3.30	2.17	0.070	2700	2300	3780	6.6 14.5
23220	100 3.9370	180 7.0866	60.3 2.374	554 124000	678 152000	EM	2 0.08	119 4.7	164 6.5	0.30	2.22	3.30	2.17	0.070	2700	2300	3440	6.6 14.5
22320	100 3.9370	215 8.4646	73 2.8740	804 181000	910 205000	EJ	2.5 0.1	131 5.1	193 7.6	0.33	2.06	3.07	2.02	0.075	2800	2400	3250	12.7 28.2
22320	100 3.9370	215 8.4646	73 2.8740	768 173000	853 192000	EM	2.5 0.1	130 5.1	193 7.6	0.33	2.06	3.07	2.02	0.074	2900	2500	3810	12.8 28.2
23022	110 4.3307	170 6.6929	45 1.7717	391 88000	534 120000	EJ	2 0.08	125 4.9	158 6.2	0.23	2.90	4.32	2.84	0.071	3600	2900	4300	3.6 7.9
24022	110 4.3307	170 6.6929	60 2.3622	493 111000	706 159000	EJ	2 0.08	122 4.8	157 6.2	0.31	2.15	3.21	2.11	0.070	2900	2500	3660	4.9 10.8
23122	110 4.3307	180 7.0866	56 2.2047	518 116000	686 154000	EJ	2 0.08	126 5.0	166 6.5	0.28	2.40	3.58	2.35	0.072	2900	2500	3730	5.6 12.3
23122	110 4.3307	180 7.0866	56 2.2047	518 116000	686 154000	EM	2 0.08	126 5.0	166 6.5	0.28	2.40	3.58	2.35	0.072	2900	2500	3720	5.6 12.3
24122	110 4.3307	180 7.0866	69 2.7165	595 134000	811 182000	EJ	2 0.08	124 4.9	164 6.5	0.34	1.96	2.92	1.92	0.071	2100	1800	3000	6.7 14.7
22222	110 4.3307	200 7.8740	53 2.0866	555 125000	653 147000	EJ	2 0.08	133 5.2	182 7.2	0.25	2.73	4.06	2.67	0.074	3500	2900	4410	7.2 15.8

⁽¹⁾Maximum shaft or housing fillet radius that bearing corners will clear.

⁽²⁾These factors apply for both inch and metric calculations. See engineering section for instructions on use.

⁽³⁾Geometry constant for Lubrication Life Factor a31 is found in the Bearing Ratings section of the Engineering Manual (order no. 10424).

⁽⁴⁾See thermal reference speed in the Engineering Manual (order no. 10424) and on page 61.

⁽⁵⁾See limiting speed on page 61.

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