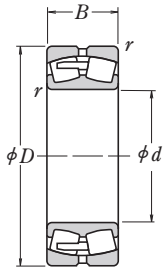
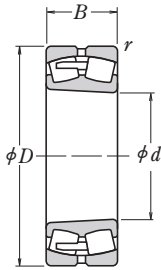


SPHERICAL ROLLER BEARINGS

Bore Diameter 160 – 170 mm



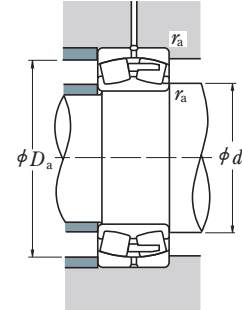
Cylindrical Bore



Tapered Bore



Without an Oil Groove and Holes

**Dynamic Equivalent Load**

$$P = XF_r + YF_a$$

$F_a/F_r \leq e$		$F_a/F_r > e$	
X	Y	X	Y
1	Y_3	0.67	Y_2

Static Equivalent Load

$$P_0 = F_r + Y_0 F_a$$

The values of e , Y_2 , Y_3 , and Y_0 are given in the table below.

Boundary Dimensions (mm)				Basic Load Ratings (N)		Speeds(min ⁻¹) Limiting Speeds				Bearing Designations		Abutment and Fillet Dimensions (mm)					Constant	Axial Load Factors			Mass (kg)	
<i>d</i>	<i>D</i>	<i>B</i>	<i>r</i> min.	<i>C</i> _r	<i>C</i> _{0r}	Thermal Speed Rating (Oil Bath)	Mechanical (Forced Oil Circulation)	Grease	Oil (Oil Bath)	Cylindrical Bore	Tapered Bore ⁽¹⁾	<i>d</i> _a min.	<i>d</i> _a max.	max.	<i>D</i> _a min.	<i>r</i> _a max.	<i>e</i>	<i>Y</i> ₂	<i>Y</i> ₃	<i>Y</i> ₀	approx.	
160	220	45	2	450 000	675 000	3 000	3 200	1 400	1 800	*23932CAME4	*23932CAMKE4	170	—	210	203	2	0.18	5.6	3.8	3.7	4.97	
	240	60	2.1	675 000	955 000	2 400	3 200	1 300	1 700	*23032CAME4	*23032CAMKE4	172	—	228	216	2	0.22	4.5	3.0	2.9	9.66	
	240	60	2.1	675 000	955 000	2 400	3 200	1 300	1 700	*23032CDE4	*23032CDKE4	172	179	228	216	2	0.22	4.5	3.0	2.9	9.66	
	240	80	2.1	845 000	1 260 000	1 800	2 800	1 100	1 400	*24032CAME4	*24032CAMK30E4	172	—	228	212	2	0.30	3.4	2.3	2.2	12.7	
	240	80	2.1	845 000	1 260 000	1 800	2 800	1 100	1 400	*24032CE4	*24032CK30E4	172	177	228	212	2	0.30	3.4	2.3	2.2	12.7	
	270	86	2.1	1 070 000	1 400 000	2 000	2 600	1 000	1 300	*23132CAME4	*23132CAMKE4	172	—	258	234	2	0.30	3.4	2.3	2.2	20.3	
	270	86	2.1	1 070 000	1 400 000	2 000	2 600	1 000	1 300	*23132CE4	*23132CKE4	172	185	258	234	2	0.30	3.4	2.3	2.2	20.3	
	270	109	2.1	1 240 000	1 670 000	1 300	2 200	1 000	1 300	*24132CAME4	*24132CAMK30E4	172	—	258	229	2	0.39	2.6	1.7	1.7	25.4	
	270	109	2.1	1 300 000	1 760 000	1 300	2 200	1 000	1 300	*24132CE4	*24132CK30E4	172	179	258	229	2	0.39	2.6	1.7	1.7	25.4	
	290	80	3	1 140 000	1 320 000	2 200	2 800	1 200	1 500	*22232CAME4	*22232CAMKE4	174	—	276	255	2.5	0.26	3.8	2.6	2.5	23.1	
	290	80	3	1 140 000	1 320 000	2 200	2 800	1 200	1 500	*22232CDE4	*22232CDKE4	174	190	276	255	2.5	0.26	3.8	2.6	2.5	23.1	
	290	104	3	1 370 000	1 770 000	1 500	2 200	1 000	1 300	*23232CAME4	*23232CAMKE4	174	—	276	245	2.5	0.34	2.9	2.0	1.9	30.5	
	290	104	3	1 370 000	1 770 000	1 500	2 200	1 000	1 300	*23232CE4	*23232CKE4	174	189	276	245	2.5	0.34	2.9	2.0	1.9	30.5	
	340	114	4	1 700 000	1 900 000	1 400	2 200	1 100	1 300	*22332CAME4	*22332CAMKE4	178	—	322	287	3	0.35	2.9	1.9	1.9	49.3	
	170	230	45	2	450 000	680 000	3 000	3 600	1 400	1 800	*23934CAME4	*23934CAMKE4	180	—	220	213	2	0.17	5.8	3.9	3.8	5.38
		260	67	2.1	795 000	1 090 000	2 200	3 000	1 200	1 600	*23034CAME4	*23034CAMKE4	182	—	248	233	2	0.23	4.3	2.9	2.8	13
		260	67	2.1	795 000	1 090 000	2 200	3 000	1 200	1 600	*23034CDE4	*23034CDKE4	182	191	248	233	2	0.23	4.3	2.9	2.8	13
260		90	2.1	1 030 000	1 520 000	1 600	2 400	1 000	1 300	*24034CAME4	*24034CAMK30E4	182	—	248	228	2	0.31	3.2	2.2	2.1	17.3	
260		90	2.1	1 030 000	1 520 000	1 600	2 400	1 000	1 300	*24034CE4	*24034CK30E4	182	188	248	228	2	0.31	3.2	2.2	2.1	17.3	
280		88	2.1	1 180 000	1 570 000	1 800	2 600	1 000	1 300	*23134CAME4	*23134CAMKE4	182	—	268	245	2	0.29	3.5	2.3	2.3	21.8	
280		88	2.1	1 180 000	1 570 000	1 800	2 600	1 000	1 300	*23134CE4	*23134CKE4	182	194	268	245	2	0.29	3.5	2.3	2.3	21.8	
280		109	2.1	1 280 000	1 770 000	1 200	2 200	1 000	1 300	*24134CAME4	*24134CAMK30E4	182	—	268	239	2	0.38	2.7	1.8	1.7	26.6	
280		109	2.1	1 340 000	1 860 000	1 200	2 200	1 000	1 300	*24134CE4	*24134CK30E4	182	190	268	239	2	0.37	2.7	1.8	1.8	26.6	
310		86	4	1 240 000	1 500 000	2 000	2 600	1 100	1 400	*22234CAME4	*22234CAMKE4	188	—	292	270	3	0.26	3.8	2.6	2.5	28.8	
310		86	4	1 240 000	1 500 000	2 000	2 600	1 100	1 400	*22234CDE4	*22234CDKE4	188	206	292	270	3	0.26	3.8	2.6	2.5	28.8	
310		110	4	1 500 000	1 910 000	1 400	2 200	900	1 200	*23234CAME4	*23234CAMKE4	188	—	292	261	3	0.35	2.9	1.9	1.9	36.4	
310		110	4	1 500 000	1 910 000	1 400	2 200	900	1 200	*23234CE4	*23234CKE4	188	201	292	261	3	0.34	2.9	2.0	1.9	36.4	
360	120	4	1 970 000	2 110 000	1 300	2 000	1 000	1 200	*22334CAME4	*22334CAMKE4	188	—	342	304	3	0.35	2.9	1.9	1.9	57.9		

Note ⁽¹⁾ Suffixes K and K30 represent bearings with tapered bores (taper 1:12 or 1:30).

Remarks

- Bearings denoted by an asterisk (*) are NSK HPS bearings; they come standard with an oil groove and holes.
- The recommended fits (shaft tolerances) on Page A164 are different for NSK HPS bearings, with light loads defined as $\leq 0.05C_r$, normal loads as 0.05 to $0.10C_r$, and heavy loads as $> 0.10C_r$.
- For the dimensions of adapters and withdrawal sleeves, refer to Pages C352 and C358.