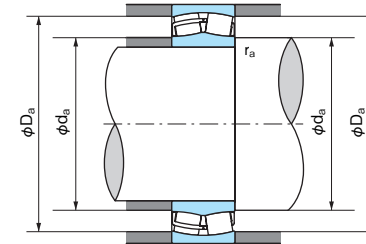
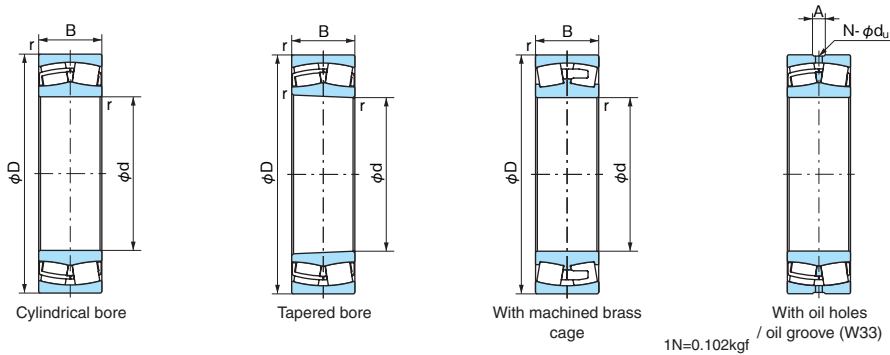


Spherical Roller Bearings

Bore Diameter: 140~150mm



■ Dynamic equivalent radial load
 $P_r = X F_r + Y F_a$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y_1	0.67	Y_2

Values of Y_1 , Y_2 and e from table.

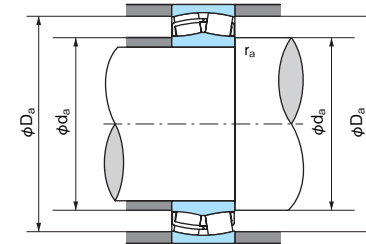
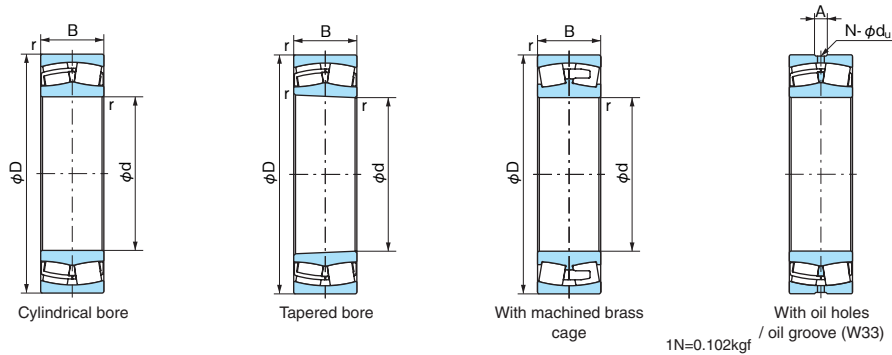
■ Static equivalent radial load
 $P_0 = F_r + Y_0 F_a$
 Values Y_0 from table.

Boundary dimensions (mm)				Bearing No.		Basic dynamic load rating Cr (N)	Basic static load rating Cor (N)	Limiting speed (min ⁻¹)		Dimensions of lubrication holes and grooves	Abutment and fillet dimensions (mm)			Constant e	Axial load factor			Mass (kg) Cylindrical bore (Reference)	Bearing No.			
d	D	B	r (min)	Cylindrical bore	Tapered bore			Grease lubrication	Oil lubrication		Hole diameter du	Groove width A	Hole count N		da (min)	Da (max)	ra (max)		Y1	Y2	Y0	Cylindrical bore
140	190	37	1.5	23928AX	23928AXK	345000	466000	2,550	3,300	4	7	6	148.5	181.5	1.5	0.18	3.79	5.65	3.71	3.13	23928AX	23928AXK
	210	53	2	23028E	23028EK	585000	710000	2,400	2,800	5	10	6	150.0	200.0	2.0	0.23	2.98	4.44	2.91	6.61	23028E	23028EK
	210	53	2	23028AX	23028AXK	580000	711000	3,000	3,900	5	10	6	150.0	200.0	2.0	0.25	2.75	4.10	2.69	6.70	23028AX	23028AXK
	210	69	2	24028EX1	24028EX1K30	720000	920000	2,200	3,000	6	11	6	150.0	200.0	2.0	0.30	2.28	3.39	2.23	8.40	24028EX1	24028EX1K30
	210	69	2	24028AX	24028AXK30	720000	819000	2,200	3,000	6	11	6	150.0	200.0	2.0	0.31	2.15	3.20	2.10	8.22	24028AX	24028AXK30
	225	68	2.1	23128EX1	23128EX1K	790000	940000	2,100	2,850	6	11	6	152.0	213.0	2.0	0.28	2.45	3.65	2.40	10.5	23128EX1	23128EX1K
	225	68	2.1	23128AX	23128AXK	790000	934000	2,200	3,100	6	11	6	152.0	213.0	2.0	0.30	2.27	3.37	2.22	10.8	23128AX	23128AXK
	225	85	2.1	24128EX1	24128EX1K30	950000	1180000	2,100	2,800	8	14	6	152.0	213.0	2.0	0.36	1.87	2.79	1.83	13.0	24128EX1	24128EX1K30
	225	85	2.1	24128AX	24128AXK30	930000	1030000	2,100	2,800	8	14	6	152.0	213.0	2.0	0.36	1.87	2.79	1.83	12.7	24128AX	24128AXK30
	250	68	3	22228EX	22228EXK	1050000	1030000	1,900	2,500	6	12	6	154.0	236.0	2.5	0.26	2.60	3.87	2.54	13.9	22228EX	22228EXK
	250	68	3	22228AEX	22228AEXK	945000	890000	2,700	3,400	6	12	6	154.0	236.0	2.5	0.30	2.26	3.37	2.21	14.8	22228AEX	22228AEXK
	250	88	3	23228EX1	23228EX1K	1130000	1290000	1,900	2,500	8	15	6	154.0	236.0	2.5	0.34	1.99	2.96	1.95	18.8	23228EX1	23228EX1K
	250	88	3	23228AX	23228AXK	1120000	1270000	2,200	2,800	8	16	6	154.0	236.0	2.5	0.38	1.78	2.65	1.74	19.3	23228AX	23228AXK
	300	102	4	22328E	22328EK	1540000	1520000	1,600	2,200	10	22	6	158.0	282.0	3.0	0.37	1.82	2.72	1.78	35.9	22328E	22328EK
	300	102	4	22328A2X	22328A2XK	1560000	1540000	2,200	3,000	10	22	6	158.0	282.0	3.0	0.40	1.69	2.52	1.65	34.5	22328A2X	22328A2XK
150	210	45	2	23930AX	23930AXK	465000	622000	2,400	3,000	5	9	6	200.0	160.0	2.0	0.20	3.44	5.12	3.36	5.01	23930AX	23930AXK
	225	56	2.1	23030E	23030EK	640000	790000	1,900	2,500	5	11	6	162.0	213.0	2.0	0.22	3.04	4.53	2.97	8.01	23030E	23030EK
	225	56	2.1	23030AX	23030AXK	640000	791000	2,700	3,600	5	11	6	162.0	213.0	2.0	0.24	2.79	4.16	2.73	8.20	23030AX	23030AXK
	225	75	2.1	24030EX1	24030EX1K30	815000	1060000	2,100	2,700	6	11	6	162.0	213.0	2.0	0.30	2.23	3.32	2.18	10.5	24030EX1	24030EX1K
	225	75	2.1	24030AX	24030AXK30	815000	924000	2,100	2,700	6	11	6	162.0	213.0	2.0	0.32	2.10	3.13	2.06	10.4	24030AX	24030AXK30
	250	80	2.1	23130EX1	23130EX1K	1000000	1230000	1,900	2,500	6	13	6	162.0	238.0	2.0	0.30	2.24	3.34	2.19	16.2	23130EX1	23130EX1K
	250	80	2.1	23130AX	23130AXK	1030000	1310000	2,100	2,800	6	13	6	162.0	238.0	2.0	0.35	1.95	2.91	1.91	16.7	23130AX	23130AXK
	250	100	2.1	24130EX1	24130EX1K30	1230000	1520000	1,900	2,500	8	14	6	162.0	238.0	2.0	0.38	1.77	2.64	1.73	19.6	24130EX1	24130EX1K30
	250	100	2.1	24130AX	24130AXK30	1120000	1340000	1,900	2,500	8	14	6	162.0	238.0	2.0	0.38	1.76	2.62	1.72	19.5	24130AX	24130AXK30
	270	73	3	22230EX	22230EXK	1200000	1200000	1,800	2,400	6	14	6	164.0	256.0	2.5	0.25	2.69	4.00	2.63	18.9	22230EX	22230EXK
	270	73	3	22230AEX	22230AEXK	1060000	1020000	2,400	3,100	6	14	6	164.0	256.0	2.5	0.29	2.30	3.42	2.25	18.1	22230AEX	22230AEXK
	270	96	3	23230EX1	23230EX1K	1340000	1540000	1,800	2,400	8	15	6	164.0	256.0	2.5	0.34	1.96	2.93	1.92	24.2	23230EX1	23230EX1K
	270	96	3	23230AX	23230AXK	1320000	1530000	1,900	2,700	8	15	6	164.0	256.0	2.5	0.40	1.70	2.53	1.66	24.8	23230AX	23230AXK
	320	108	4	22330E	22330EK	1770000	1740000	1,500	2,100	10	22	6	168.0	302.0	3.0	0.37	1.82	2.70	1.78	43.3	22330E	22330EK
	320	108	4	22330A2X	22330A2XK	1720000	1710000	2,100	2,800	10	22	6	168.0	302.0	3.0	0.40	1.67	2.49	1.63	41.5	22330A2X	22330A2XK

Note: Suffix K or K30 means tapered bore (1/12 or 1/30).

Spherical Roller Bearings

Bore Diameter: 160~170mm



Dynamic equivalent radial load
 $P_r = X F_r + Y F_a$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y_1	0.67	Y_2

Values of Y_1 , Y_2 and e from table.

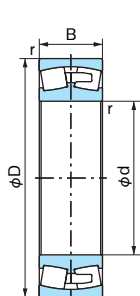
Static equivalent radial load
 $P_0 = F_r + Y_0 F_a$
 Values Y_0 from table.

Boundary dimensions (mm)				Bearing No.		Basic dynamic load rating Cr (N)	Basic static load rating Cor (N)	Limiting speed (min ⁻¹)			Dimensions of lubrication holes and grooves			Abutment and fillet dimensions (mm)			Constant e	Axial load factor			Mass (kg) Cylindrical bore (Reference)	Bearing No.	
d	D	B	r (min)	Cylindrical bore	Tapered bore			Grease lubrication	Oil lubrication		Hole diameter du	Groove width A	Hole count N	da (min)	Da (max)	ra (max)		Y ₁	Y ₂	Y ₀		Cylindrical bore	Tapered bore
160	220	45	2	23932AX	23932AXK	475000	649000	2,250	2,800		5	10	6	170.0	210.0	2.0	0.19	3.60	5.37	3.52	5.29	23932AX	23932AXK
	240	60	2.1	23032E	23032EK	735000	915000	1,800	2,400		5	11	6	172.0	228.0	2.0	0.22	3.01	4.48	2.94	9.74	23032E	23032EK
	240	60	2.1	23032AX	23032AXK	735000	917000	2,500	3,300		5	11	6	172.0	228.0	2.0	0.24	2.79	4.16	2.73	9.90	23032AX	23032AXK
	240	80	2.1	24032EX1	24032EX1K30	950000	1280000	1,900	2,500		6	11	6	172.0	228.0	2.0	0.30	2.24	3.34	2.19	12.7	24032EX1	24032EX1K30
	240	80	2.1	24032AX	24032AXK30	915000	1110000	1,900	2,500		6	11	6	172.0	228.0	2.0	0.32	2.12	3.15	2.07	12.4	24032AX	24032AXK30
	270	86	2.1	23132EX1	23132EX1K	1180000	1430000	1,800	2,400		8	16	6	172.0	258.0	2.0	0.30	2.22	3.30	2.17	20.5	23132EX1	23132EX1K
	270	86	2.1	23132AX	23132AXK	1200000	1460000	1,900	2,500		8	16	6	172.0	258.0	2.0	0.34	1.96	2.91	1.91	21.2	23132AX	23132AXK
	270	109	2.1	24132EX1	24132EX1K30	1450000	1810000	1,800	2,400		10	17	6	172.0	258.0	2.0	0.39	1.74	2.59	1.70	25.5	24132EX1	24132EX1K30
	270	109	2.1	24132AX	24132AXK30	1340000	1610000	1,800	2,400		10	17	6	172.0	258.0	2.0	0.39	1.74	2.59	1.70	25.5	24132AX	24132AXK30
	290	80	3	22232E	22232EK	1230000	1330000	1,500	2,100		6	14	6	174.0	276.0	2.5	0.26	2.57	3.83	2.52	23.7	22232E	22232EK
	290	80	3	22232E2	22232E2K	1230000	1320000	1,800	2,400		6	14	6	174.0	276.0	2.5	0.28	2.37	3.53	2.32	24.0	22232E2	22232E2K
	290	80	3	22232A2X	22232A2XK	1210000	1300000	2,200	3,000		6	14	6	174.0	276.0	2.5	0.31	2.20	3.27	2.15	23.8	22232A2X	22232A2XK
	290	104	3	23232E	23232EK	1500000	1710000	1,300	1,800		10	22	6	174.0	276.0	2.5	0.37	1.82	2.71	1.78	30.4	23232E	23232EK
	290	104	3	23232A2X	23232A2XK	1460000	1650000	1,900	2,400		10	22	6	174.0	276.0	2.5	0.39	1.72	2.56	1.68	30.7	23232A2X	23232A2XK
	340	114	4	22332E	22332EK	1950000	1950000	1,400	1,900		10	22	6	178.0	322.0	3.0	0.36	1.85	2.75	1.81	51.4	22332E	22332EK
170	230	45	2	23934AX	23934AXK	490000	691000	2,100	2,700		5	10	6	180.0	220.0	2.0	0.18	3.78	5.63	3.70	5.58	23934AX	23934AXK
	260	67	2.1	23034E	23034EK	880000	1080000	1,600	2,200		6	13	6	182.0	248.0	2.0	0.23	2.89	4.31	2.83	13.1	23034E	23034EK
	260	67	2.1	23034AX	23034AXK	880000	1080000	2,400	3,100		6	13	6	182.0	248.0	2.0	0.27	2.51	3.74	2.45	13.1	23034AX	23034AXK
	260	90	2.1	24034EX1	24034EX1K30	1120000	1480000	1,800	2,400		8	14	6	182.0	248.0	2.0	0.32	2.11	3.15	2.07	17.3	24034EX1	24034EX1K30
	260	90	2.1	24034AX	24034AXK30	1030000	1320000	1,800	2,400		8	14	6	182.0	248.0	2.0	0.34	2.00	2.97	1.95	17.0	24034AX	24034AXK30
	280	88	2.1	23134EX1	23134EX1K	1260000	1530000	1,600	2,200		8	16	6	182.0	268.0	2.0	0.29	2.30	3.43	2.25	21.6	23134EX1	23134EX1K
	280	88	2.1	23134AX	23134AXK	1260000	1500000	1,800	2,400		8	16	6	182.0	268.0	2.0	0.34	2.01	3.00	1.97	22.2	23134AX	23134AXK
	280	109	2.1	24134AX	24134AXK30	1360000	1650000	1,600	2,200		10	17	6	182.0	268.0	2.0	0.37	1.82	2.70	1.78	26.4	24134AX	24134AXK30
	310	86	4	22234E	22234EK	1390000	1510000	1,400	1,900		8	18	6	188.0	292.0	3.0	0.29	2.33	3.47	2.28	30.0	22234E	22234EK
	310	110	4	23234E	23234EK	1720000	1970000	1,300	1,800		10	22	6	188.0	292.0	3.0	0.36	1.85	2.75	1.81	37.0	23234E	23234EK
	310	110	4	23234A2X	23234A2XK	1680000	1910000	1,800	2,250		10	22	6	188.0	292.0	3.0	0.39	1.71	2.54	1.67	37.6	23234A2X	23234A2XK
	360	120	4	22334E	22334EK	2150000	2200000	1,300	1,800		10	22	6	188.0	342.0	3.0	0.36	1.85	2.75	1.81	60.6	22334E	22334EK

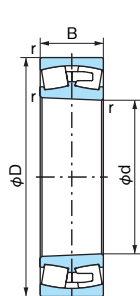
Note: Suffix K or K30 means tapered bore (1/12 or 1/30).

Spherical Roller Bearings

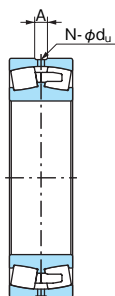
Bore Diameter: 180~200mm



Cylindrical bore

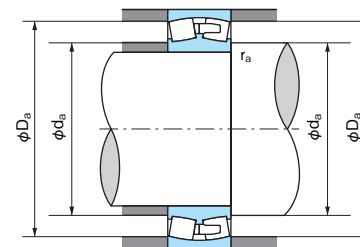


Tapered bore



With oil holes / oil groove (W33)

1N=0.102kgf



Dynamic equivalent radial load
 $P_r = X F_r + Y F_a$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y ₁	0.67	Y ₂

Values of Y₁, Y₂ and e from table.

Static equivalent radial load
 $P_0 = F_r + Y_0 F_a$

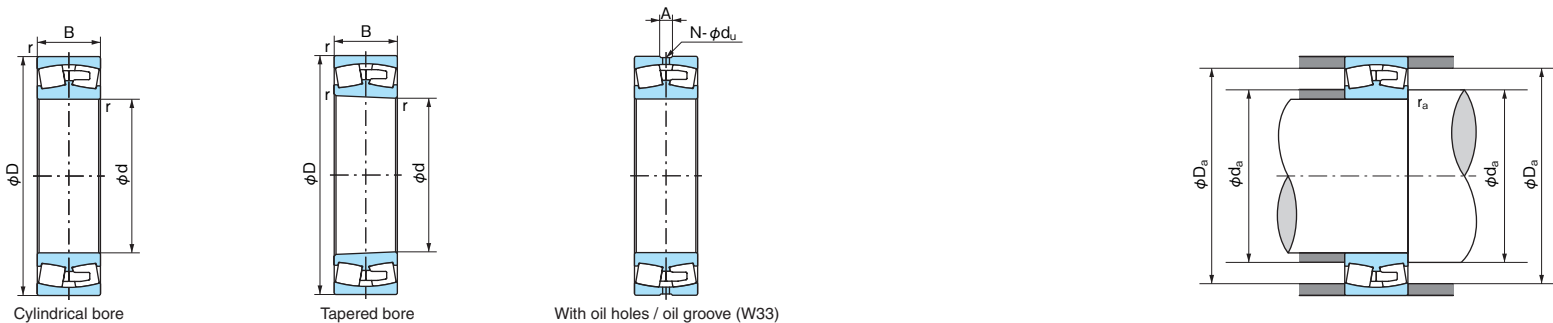
Values Y₀ from table.

Boundary dimensions (mm)				Bearing No.		Basic dynamic load rating Cr (N)	Basic static load rating Cor (N)	Limiting speed (min ⁻¹)			Dimensions of lubrication holes and grooves			Abutment and fillet dimensions (mm)			Constant e	Axial load factor			Mass (kg) Cylindrical bore (Reference)	Bearing No.	
d	D	B	r (min)	Cylindrical bore	Tapered bore			Grease lubrication	Oil lubrication		Hole diameter du	Groove width A	Hole count N	da (min)	Da (max)	ra (max)		Y ₁	Y ₂	Y ₀		Cylindrical bore	Tapered bore
180	250	52	2	23936AX	23936AXK	665000	939000	1,900	2,500		6	10	6	190.0	240.0	2.0	0.19	3.55	5.29	3.48	8.10	23936AX	23936AXK
	280	74	2.1	23036E	23036EK	1070000	1330000	1,500	2,200		8	15	6	192.0	268.0	2.0	0.24	2.84	4.23	2.78	17.4	23036E	23036EK
	280	74	2.1	23036AX	23036AXK	1040000	1280000	2,200	2,800		8	15	6	192.0	268.0	2.0	0.27	2.47	3.67	2.41	17.5	23036AX	23036AXK
	280	100	2.1	24036EX1	24036EX1K30	1330000	1760000	1,600	2,100		8	16	6	192.0	268.0	2.0	0.33	2.04	3.03	1.99	22.7	24036EX1	24036EX1K30
	280	100	2.1	24036AX	24036AXK30	1230000	1580000	1,600	2,100		8	16	6	192.0	268.0	2.0	0.32	2.12	3.15	2.07	22.5	24036AX	24036AXK30
	300	96	3	23136E	23136EK	1490000	1810000	1,300	1,800		8	18	6	194.0	286.0	2.5	0.32	2.12	3.15	2.07	27.9	23136E	23136EK
	300	96	3	23136A2X	23136A2XK	1450000	1740000	1,800	2,200		8	18	6	194.0	286.0	2.5	0.33	2.04	3.04	2.00	28.2	23136A2X	23136A2XK
	300	118	3	24136E	24136EK30	1640000	2040000	1,350	1,800		10	22	6	194.0	286.0	2.5	0.39	1.73	2.57	1.69	33.7	24136E	24136EK30
	320	86	4	22236E	22236EK	1460000	1610000	1,400	1,900		8	18	6	198.0	302.0	3.0	0.28	2.43	3.61	2.37	30.9	22236E	22236EK
	320	112	4	23236E	23236EK	1790000	2100000	1,200	1,600		10	22	6	198.0	302.0	3.0	0.36	1.87	2.79	1.83	39.4	23236E	23236EK
	320	112	4	23236A2X	23236A2XK	1750000	2070000	1,800	2,200		10	22	6	198.0	302.0	3.0	0.39	1.75	2.61	1.71	39.0	23236A2X	23236A2XK
190	380	126	4	22336E	22336EK	2380000	2400000	1,200	1,600		12	26	6	198.0	362.0	3.0	0.36	1.87	2.78	1.83	70.5	22336E	22336EK
	260	52	2	23938AX	23938AXK	675000	969000	1,800	2,400		6	10	6	200.0	250.0	2.0	0.18	3.69	5.50	3.61	8.46	23938AX	23938AXK
	290	75	2.1	23038E	23038EK	1080000	1330000	1,400	1,900		6	14	6	202.0	278.0	2.0	0.25	2.69	4.00	2.63	18.4	23038E	23038EK
	290	75	2.1	23038A2X	23038A2XK	1080000	1310000	2,100	2,800		6	14	6	202.0	278.0	2.0	0.26	2.55	3.80	2.50	17.8	23038A2X	23038A2XK
	290	100	2.1	24038E	24038EK30	1420000	1920000	1,300	1,800		8	18	6	202.0	278.0	2.0	0.34	1.98	2.94	1.93	24.6	24038E	24038EK30
	320	104	3	23138E	23138EK	1720000	2120000	1,200	1,600		10	22	6	204.0	306.0	2.5	0.32	2.09	3.11	2.04	35.0	23138E	23138EK
	320	104	3	23138A2X	23138A2XK	1710000	2090000	1,600	2,100		10	22	6	204.0	306.0	2.5	0.34	1.96	2.92	1.92	33.5	23138A2X	23138A2XK
	320	128	3	24138E	24138EK30	1900000	2380000	1,200	1,600		12	26	6	204.0	306.0	2.5	0.40	1.68	2.50	1.64	42.0	24138E	24138EK30
	340	92	4	22238E	22238EK	1590000	1740000	1,300	1,800		8	18	6	208.0	322.0	3.0	0.28	2.39	3.56	2.34	37.2	22238E	22238EK
	340	120	4	23238E	23238EK	2070000	2450000	1,200	1,500		10	22	6	208.0	322.0	3.0	0.36	1.87	2.79	1.83	48.0	23238E	23238EK
	340	120	4	23238A2X	23238A2XK	2000000	2370000	1,600	2,100		10	22	6	208.0	322.0	3.0	0.39	1.72	2.56	1.68	47.5	23238A2X	23238A2XK
200	400	132	5	22338E	22338EK	2600000	2670000	1,200	1,600		12	26	6	212.0	378.0	4.0	0.36	1.89	2.81	1.85	81.8	22338E	22338EK
	280	60	2.1	23940AX	23940AXK	840000	1190000	1,800	2,200		6	11	6	212.0	268.0	2.0	0.20	3.44	5.13	3.37	11.9	23940AX	23940AXK
	310	82	2.1	23040E	23040EK	1270000	1560000	1,400	1,900		8	18	6	212.0	298.0	2.0	0.26	2.64	3.93	2.58	23.4	23040E	23040EK
	310	82	2.1	23040A2X	23040A2XK	1270000	1570000	1,900	2,500		8	18	6	212.0	298.0	2.0	0.28	2.45	3.64	2.39	23.3	23040A2X	23040A2XK
	310	109	2.1	24040E	24040EK30	1640000	2230000	1,200	1,600		10	22	6	212.0	298.0	2.0	0.35	1.95	2.90	1.91	31.2	24040E	24040EK30
	340	112	3	23140E	23140EK	1950000	2390000	1,200	1,500		10	22	6	214.0	326.0	2.5	0.33	2.06	3.06	2.01	42.7	23140E	23140EK
	340	112	3	23140A2X	23140A2XK	1900000	2330000	1,600	2,100		10	22	6	214.0	326.0	2.5	0.35	1.94	2.83	1.89	42.5	23140A2X	23140A2XK
	340	140	3	24140E	24140EK30	2220000	2820000	1,200	1,500		12	26	6	214.0	326.0	2.5	0.41	1.63	2.43	1.60	52.9	24140E	24140EK30
	360	98	4	22240E	22240EK	1810000	1990000	1,200	1,600		8	18	6	218.0	342.0	3.0	0.29	2.35	3.50	2.30	44.8	22240E	22240EK
	360	128	4	23240E	23240EK	2290000	2750000	1,200	1,500		12	26	6	218.0	342.0	3.0	0.37	1.85	2.75	1.80	57.7	23240E	23240EK
	360	128	4	23240A2X	23240A2XK	2240000	2680000	1,500	1,900		12	26	6	218.0	342.0	3.0	0.39	1.71	2.54	1.67	57.0	23240A2X	23240A2XK
200	420	138	5	22340E	22340EK	2890000	3000000	1,200	1,500		12	26	6	222.0	398.0	4.0	0.35	1.93	2.87	1.88	93.7	22340E	22340EK

Note: Suffix K or K30 means tapered bore (1/12 or 1/30).

Spherical Roller Bearings

Bore Diameter: 220~260mm



Dynamic equivalent radial load
 $P_r = X F_r + Y F_a$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y_1	0.67	Y_2

Values of Y_1 , Y_2 and e from table.

Static equivalent radial load
 $P_0 = F_r + Y_0 F_a$
Values Y_0 from table.

Boundary dimensions (mm)				Bearing No.		Basic dynamic load rating Cr (N)	Basic static load rating Cor (N)	Limiting speed (min ⁻¹)			Dimensions of lubrication holes and grooves			Abutment and fillet dimensions (mm)			Constant e	Axial load factor			Mass (kg) Cylindrical bore (Reference)	Bearing No.	
d	D	B	r (min)	Cylindrical bore	Tapered bore			Grease lubrication	Oil lubrication		Hole diameter du	Groove width A	Hole count N	da (min)	Da (max)	ra (max)		Y1	Y2	Y0		Cylindrical bore	Tapered bore
220	300	60	2.1	23944E	23944EK	840000	1190000	1,300	1,800		6	12	6	232.0	288.0	2.0	0.18	3.75	5.59	3.67	12.6	23944E	23944EK
	340	90	3	23044E	23044EK	1470000	1880000	1,200	1,600		8	18	6	234.0	326.0	2.5	0.26	2.64	3.93	2.58	30.7	23044E	23044EK
	340	90	3	23044A2X	23044A2XK	1460000	1860000	1,800	2,400		8	18	6	234.0	326.0	2.5	0.27	2.51	3.74	2.45	30.5	23044A2X	23044A2XK
	340	118	3	24044E	24044EK30	1950000	2670000	1,200	1,500		10	22	6	234.0	326.0	2.5	0.34	1.98	2.95	1.94	40.3	24044E	24044EK30
	370	120	4	23144E	23144EK	2250000	2870000	1,000	1,300		10	22	6	238.0	352.0	3.0	0.33	2.06	3.07	2.02	54.3	23144E	23144EK
	370	120	4	23144A2X	23144A2XK	2210000	2780000	1,500	1,800		10	22	6	238.0	352.0	3.0	0.34	1.98	2.94	1.93	54.6	23144A2X	23144A2XK
	370	150	4	24144E	24144EK30	2530000	3250000	1,100	1,400		12	26	6	238.0	352.0	3.0	0.41	1.66	2.47	1.62	66.3	24144E	24144EK30
	400	108	4	22244E	22244EK	2140000	2380000	1,200	1,500		10	22	6	238.0	382.0	3.0	0.29	2.36	3.52	2.31	61.9	22244E	22244EK
	400	144	4	23244E	23244EK	2920000	3500000	1,000	1,200		12	26	6	238.0	382.0	3.0	0.37	1.83	2.72	1.79	81.4	23244E	23244EK
240	460	145	5	22344E	22344EK	3350000	3600000	1,000	1,300		12	26	6	242.0	438.0	4.0	0.34	2.00	2.98	1.95	119	22344E	22344EK
	320	60	2.1	23948E	23948EK	870000	1260000	1,200	1,600		6	12	6	252.0	308.0	2.0	0.17	3.95	5.87	3.86	13.7	23948E	23948EK
	360	92	3	23048E	23048EK	1530000	2000000	1,200	1,500		8	18	6	254.0	346.0	2.5	0.24	2.76	4.11	2.70	33.5	23048E	23048EK
	360	92	3	23048A2X	23048A2XK	1570000	2090000	1,600	2,200		8	18	6	254.0	346.0	2.5	0.27	2.53	3.77	2.47	33.5	23048A2X	23048A2XK
	360	118	3	24048E	24048EK30	1990000	2800000	1,000	1,300		10	22	6	254.0	346.0	2.5	0.32	2.10	3.13	2.05	43.3	24048E	24048EK30
	400	128	4	23148E	23148EK	2610000	3350000	1,000	1,200		12	26	6	258.0	382.0	3.0	0.32	2.13	3.17	2.08	66.6	23148E	23148EK
	400	128	4	23148A2X	23148A2XK	2540000	3250000	1,300	1,600		12	26	6	258.0	382.0	3.0	0.33	2.02	3.00	1.97	68.5	23148A2X	23148A2XK
	400	160	4	24148E	24148EK30	2850000	3700000	1,000	1,200		12	26	6	258.0	382.0	3.0	0.40	1.69	2.51	1.65	81.6	24148E	24148EK30
	440	120	4	22248E	22248EK	2630000	2930000	1,000	1,300		10	22	6	258.0	422.0	3.0	0.28	2.37	3.53	2.32	82.8	22248E	22248EK
260	440	160	4	23248E	23248EK	3400000	4100000	945	1,200		12	26	6	258.0	422.0	3.0	0.37	1.80	2.68	1.76	109	23248E	23248EK
	500	155	5	22348E	22348EK	3850000	4100000	1,000	1,200		12	26	6	262.0	487.0	4.0	0.34	2.00	2.98	1.96	151	22348E	22348EK
	360	75	2.1	23952E	23952EK	1240000	1780000	1,200	1,500		8	14	6	272.0	348.0	2.0	0.19	3.54	5.27	3.46	23.7	23952E	23952EK
	400	104	4	23052E	23052EK	1950000	2530000	1,100	1,400		10	22	6	278.0	382.0	3.0	0.25	2.66	3.97	2.61	48.9	23052E	23052EK
	400	140	4	24052E	24052EK30	2630000	3700000	940	1,200		12	26	6	278.0	382.0	3.0	0.34	1.98	2.94	1.93	65.7	24052E	24052EK30
	440	144	4	23152E	23152EK	3100000	4000000	900	1,100		12	26	6	278.0	422.0	3.0	0.33	2.06	3.06	2.01	92	23152E	23152EK
	440	180	4	24152E	24152EK30	3550000	4650000	900	1,100		15	32	6	278.0	422.0	3.0	0.42	1.59	2.37	1.56	113	24152E	24152EK30
	480	130	5	22252E	22252EK	3100000	3500000	1,000	1,200		12	26	6	282.0	458.0	4.0	0.28	2.40	3.57	2.34	107	22252E	22252EK
	480	174	5	23252E	23252EK	3950000	4800000	840	1,000		15	32	6	282.0	458.0	4.0	0.38	1.78	2.65	1.74	142	23252E	23252EK
260	540	165	6	22352E	22352EK	4350000	4750000	900	1,100		15	32	8	288.0	512.0	5.0	0.33	2.04	3.03	1.99	187	22352E	22352EK

Note: Suffix K or K30 means tapered bore (1/12 or 1/30).