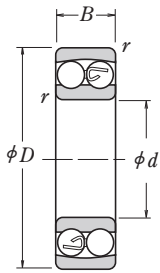
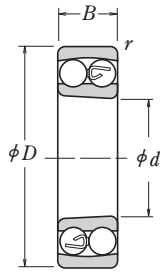


SELF-ALIGNING BALL BEARINGS

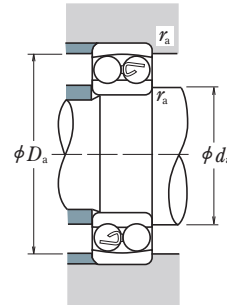
Bore Diameter 75 – 110 mm



Cylindrical Bore



Tapered Bore


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	0.65	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 listed in the table below.

Boundary Dimensions (mm)				Basic Load Ratings (N)		Limiting Speeds (min ⁻¹)		Bearing	Designations	Abutment and Fillet Dimensions (mm)			Constant	Axial Load Factors			Mass (kg)
d	D	B	r min.	C_r	C_{0r}	Grease	Oil	Cylindrical Bore	Tapered Bore ⁽¹⁾	d_a min.	D_a max.	r_a max.	e	Y_2	Y_3	Y_0	approx.
75	130	25	1.5	43 000	15 700	4 300	5 300	1215	1215 K	83	122	1.5	0.17	5.6	3.6	3.8	1.36
	130	31	1.5	49 000	17 800	4 300	5 300	2215	2215 K	83	122	1.5	0.25	3.9	2.5	2.6	1.6
	160	37	2.1	88 000	30 000	3 800	4 500	1315	1315 K	86	149	2	0.22	4.4	2.8	2.9	3.63
	160	55	2.1	137 000	43 000	3 400	4 300	2315	2315 K	86	149	2	0.38	2.5	1.6	1.7	4.84
80	140	26	2	44 000	17 000	4 000	5 000	1216	1216 K	89	131	2	0.16	6.0	3.9	4.1	1.68
	140	33	2	54 000	19 900	4 000	5 000	2216	2216 K	89	131	2	0.25	3.9	2.5	2.7	2.02
	170	39	2.1	98 000	33 000	3 600	4 300	1316	1316 K	91	159	2	0.22	4.5	2.9	3.1	4.24
	170	58	2.1	143 000	45 000	3 200	4 000	* 2316	* 2316 K	91	159	2	0.39	2.5	1.6	1.7	5.75
85	150	28	2	54 500	20 800	3 800	4 500	1217	1217 K	94	141	2	0.17	5.7	3.7	3.8	2.1
	150	36	2	64 500	23 600	3 800	4 800	2217	2217 K	94	141	2	0.25	3.9	2.5	2.6	2.56
	180	41	3	108 000	38 000	3 400	4 000	1317	1317 K	98	167	2.5	0.21	4.6	2.9	3.1	5.03
	180	60	3	156 000	51 500	3 000	3 800	2317	2317 K	98	167	2.5	0.37	2.6	1.7	1.8	6.68
90	160	30	2	63 000	23 500	3 600	4 300	1218	1218 K	99	151	2	0.17	5.8	3.8	3.9	2.56
	160	40	2	77 500	28 700	3 600	4 300	2218	2218 K	99	151	2	0.27	3.7	2.4	2.5	3.22
	190	43	3	129 000	44 500	3 200	3 800	* 1318	* 1318 K	103	177	2.5	0.22	4.3	2.8	2.9	5.83
	190	64	3	170 000	57 500	2 800	3 600	2318	2318 K	103	177	2.5	0.38	2.6	1.7	1.7	7.87
95	170	32	2.1	70 500	27 100	3 400	4 000	1219	1219 K	106	159	2	0.17	5.8	3.7	3.9	3.12
	170	43	2.1	92 000	34 500	3 400	4 000	2219	2219 K	106	159	2	0.27	3.7	2.4	2.5	3.96
	200	45	3	142 000	51 000	3 000	3 600	* 1319	* 1319 K	108	187	2.5	0.23	4.3	2.8	2.9	6.79
	200	67	3	177 000	64 500	2 800	3 400	* 2319	* 2319 K	108	187	2.5	0.38	2.6	1.7	1.8	9.09
100	180	34	2.1	76 500	29 700	3 200	3 800	1220	1220 K	111	169	2	0.17	5.6	3.6	3.8	3.74
	180	46	2.1	104 000	38 500	3 200	3 800	2220	2220 K	111	169	2	0.27	3.7	2.4	2.5	4.71
	215	47	3	155 000	57 500	2 800	3 400	* 1320	* 1320 K	113	202	2.5	0.24	4.1	2.7	2.8	8.4
	215	73	3	206 000	79 000	2 400	3 200	* 2320	* 2320 K	113	202	2.5	0.38	2.6	1.7	1.8	11.7
105	190	36	2.1	82 500	32 500	3 000	3 600	1221	—	116	179	2	0.18	5.5	3.6	3.7	4.43
	190	50	2.1	120 000	45 000	3 000	3 600	2221	—	116	179	2	0.28	3.5	2.3	2.4	5.73
	225	49	3	169 000	64 500	2 600	3 200	* 1321	—	118	212	2.5	0.23	4.2	2.7	2.9	9.58
	225	77	3	220 000	87 000	2 400	3 000	* 2321	—	118	212	2.5	0.38	2.6	1.7	1.7	14.5
110	200	38	2.1	96 000	38 500	2 800	3 400	1222	1222 K	121	189	2	0.17	5.7	3.7	3.9	5.21
	200	53	2.1	135 000	51 500	2 800	3 400	* 2222	* 2222 K	121	189	2	0.28	3.5	2.2	2.3	6.75
	240	50	3	177 000	72 000	2 400	3 000	* 1322	* 1322 K	123	227	2.5	0.22	4.4	2.8	3.0	11.5
	240	80	3	233 000	94 500	2 200	2 800	* 2322	* 2322 K	123	227	2.5	0.37	2.6	1.7	1.8	17.5

Notes ⁽¹⁾ Suffix K represents bearings with tapered bores (1 : 12).

(*) The balls of the bearings marked * protrude slightly from the bearing face. The protrusion amounts are shown on Page C114.

Remark For dimensions related to adapters, refer to Pages C350 and C351.