

Self-aligning Ball Bearing



1. The self-aligning ball bearing has two rows of balls and a common concave sphered raceway in the outer ring. The bearing is consequently self-aligning and insensitive to angular misalignments of the shaft relative to the housing. It is particularly suitable for applications where considerable shaft deflections or misalignment are to be expected. Additionally, the self-aligning ball bearing has the lowest friction of all rolling bearings, which enables it to run cooler even at high speeds.

2. Features:

With two structures of bore cylindrical or tapered and retainers made of steel sheet or synthetic resins, the bearings are characteristic of their spherically formed outer ring raceways allowing for misalignment within 3 degree deflection between inner ring and outer ring, so as to compensate concentricity and deflection errors.

3. Applications:

Widely used in machinery of mining, power, and textile etc.

Boundary Dimensions (mm)				Basic Load Rating		Limiting Speed		Bearing Designation		Shoulder Dimensions (mm)				Coefficient of axial load			Mass (kg)	
				(kN)		(rpm)				da	Da	ra	e	Y1	Y2	Y0	Cylindrical bore	Tape bo
d	D	B	r	Cr	Cor	Grease	Oil	Cylindrical bore	Tapered bore	da	Da	ra	e	Y1	Y2	Y0	Cylindrical bore	Tape bo
5	19	6	0.3	2.55	0.48	30000	37000	135		7	17	0.3	0.34	1.6	2.87	1.94	0.009	
6	19	6	0.3	2.5	0.48	30000	37000	126		8	17	0.3	0.34	1.86	2.87	1.94	0.009	
7	22	7	0.3	2.65	0.56	27000	33000	127		9	20	0.3	0.35	1.82	2.82	1.91	0.014	
8	22	7	0.3	2.6	0.56	26000	33000	108		10	20	0.3	0.35	1.82	2.82	1.91	0.014	
9	26	8	0.6	3.8	0.8	23000	29000	129		13	22	0.6	0.34	1.86	2.87	1.94	0.022	
10	30	9	0.6	5.5	1.2	23000	28000	1200		14	26	0.6	0.33	1.92	2.97	2.01	0.034	
	30	14	0.6	7.4	1.6	23000	29000	2200		14	26	0.6	0.59	1.07	1.65	1.12	0.047	
	35	11	0.6	7.25	1.6	20000	24000	1300		14	31	0.6	0.34	1.85	2.87	1.94	0.058	
	35	17	0.6	9.3	2.1	18000	24000	2300		14	31	0.6	0.59	1.07	1.66	1.13	0.085	
12	32	10	0.6	5.6	1.25	21000	26000	1201		16	28	0.6	0.33	1.89	2.93	1.98	0.04	
	32	14	0.6	7.65	1.75	21000	26000	2201		16	28	0.6	0.53	1.18	1.83	1.24	0.053	
	37	12	1	9.4	2.15	18000	22000	1301		17	32	1	0.36	1.77	2.74	1.86	0.067	
	37	17	1	9.7	2.3	16000	22000	2301		17	32	1	0.54	1.17	1.81	1.23	0.095	

15	35	11	0.6	7.45	1.75	18000	22000	1202		19	31	0.6	0.33	1.9	2.95	2	0.049	
	35	14	0.6	7.7	1.85	18000	22000	2202		19	31	0.6	0.5	1.27	1.97	1.33	0.06	
	42	13	1	9.55	2.3	16000	20000	1302		20	37	1	0.34	1.86	2.88	1.95	0.094	
	42	17	1	12.1	2.9	14000	20000	2302		20	37	1	0.5	1.27	1.96	1.33	0.114	
17	40	12	0.6	7.9	2	16000	20000	1203		21	36	0.6	0.31	2.03	3.14	2.12	0.073	
	40	16	0.6	9.8	2.4	16000	20000	2203		21	36	0.6	0.5	1.27	1.96	1.33	0.088	
	47	14	1	12.5	3.2	14000	17000	1303		22	42	1	0.33	1.92	2.97	2.01	0.13	
	47	19	1	14.5	3.6	13000	18000	2303		22	42	1	0.49	1.28	1.98	1.34	0.158	
20	47	14	1	9.9	2.6	14000	17000	1204	1204K	25	42	1	0.29	2.16	3.35	2.27	0.12	0.1
	47	18	1	12.6	3.3	14000	17000	2204	2204K	25	42	1	0.48	1.31	2.02	1.37	0.14	0.1
	52	15	1.1	12.4	3.3	13000	15000	1304	1304K	26.5	45.5	1	0.3	2.12	3.28	2.22	0.163	0.1
	52	21	1.1	18	4.7	11000	15000	2304	2304K	26.5	45.5	1	0.49	1.29	2	1.35	0.209	0.2
25	52	15	1	12.1	3.3	12000	14000	1205	1205K	30	47	1	0.28	2.28	3.52	2.39	0.141	0.1
	52	18	1	12.6	3.3	12000	15000	2205	2205K	30	47	1	0.4	1.58	2.45	1.66	0.163	0.1
	62	17	1.1	18	5	9900	12000	1305	1305K	31.5	55.5	1	0.27	2.31	3.57	2.42	0.257	0.2
	62	24	1.1	24.4	6.6	9400	13000	2305	2305K	31.5	55.5	1	0.46	1.36	2.1	1.42	0.335	0.3
30	62	16	1	15.6	4.65	9900	12000	1206	1206K	35	57	1	0.25	2.55	3.94	2.67	0.22	0.2
	62	20	1	15.6	4.65	10000	12000	2206	2206K	35	57	1	0.35	1.79	2.77	1.87	0.26	0.2
	72	19	1.1	21.3	6.3	8700	11000	1306	1306K	36.5	65.5	1	0.26	2.4	3.72	2.52	0.387	0.3
	72	27	1.1	31.4	8.75	8000	11000	2306	2306K	36.5	65.5	1	0.44	1.44	2.23	1.51	0.5	0.4
35	72	17	1.1	15.8	5.1	8500	10000	1207	1207K	41.5	65.5	1	0.23	2.71	4.2	2.84	0.323	0.3
	72	23	1.1	21.6	6.6	8500	10000	2207	2207K	41.5	65.5	1	0.37	1.71	2.65	1.79	0.403	0.3
	80	21	1.5	25.1	7.85	7600	9300	1307	1307K	43	72	1.5	0.25	2.48	3.84	2.6	0.51	0.5
	80	31	1.5	39.4	11.3	7100	9800	2307	2307K	43	72	1.5	0.45	1.39	2.15	1.46	0.675	0.6
40	80	18	1.1	19.2	6.5	7500	9200	1208	1208K	46.5	73.5	1	0.22	2.83	4.38	2.97	0.417	0.4
	80	23	1.1	22.4	7.4	7600	9300	2208	2208K	46.5	73.5	1	0.33	1.92	2.96	2.01	0.505	0.4
	90	23	1.5	29.5	9.7	6900	8400	1308	1308K	48	82	1.5	0.25	2.57	3.98	2.69	0.715	0.7
	90	33	1.5	44.9	13.5	6200	8600	2308	2308K	48	82	1.5	0.43	1.47	2.27	1.54	0.925	0.9
45	85	19	1.1	21.8	7.35	7000	8500	1209	1209K	51.5	78.5	1	0.21	2.94	4.56	3.09	0.465	0.4
	85	23	1.1	23.3	8.15	7000	8500	2209	2209K	51.5	78.5	1	0.3	2.09	3.23	2.19	0.545	0.5
	100	25	1.5	38.1	12.7	6100	7500	1309	1309K	53	92	1.5	0.25	2.56	3.95	2.68	0.957	0.9
	100	36	1.5	54.4	16.7	5600	7700	2309	2309K	53	92	1.5	0.42	1.51	2.33	1.58	1.23	1.1
50	90	20	1.1	22.7	8.1	6500	7900	1210	1210K	56.5	83.5	1	0.21	3.07	4.76	3.22	0.525	0.5
	90	23	1.1	23.3	8.5	6500	7900	2210	2210K	56.5	83.5	1	0.27	2.33	3.61	2.45	0.59	0.5
	110	27	2	43.4	14.1	5600	6800	1310	1310K	59	101	2	0.23	2.7	4.17	2.83	1.21	1.1
	110	40	2	64.6	20.3	5100	7000	2310	2310K	59	101	2	0.4	1.56	2.41	1.63	1.64	1.1
55	100	21	1.5	26.8	10	5800	7100	1211	1211K	63	92	1.5	0.2	3.19	4.94	3.34	0.705	0.6
	100	25	1.5	26.8	10	5800	7100	2211	2211K	63	92	1.5	0.27	2.35	3.64	2.47	0.81	0.7
	120	29	2	51.3	17.9	5000	6200	1311	1311K	64	111	2	0.23	2.7	4.18	2.83	1.58	1.5
	120	43	2	75.3	24	4600	6400	2311	2311K	64	111	2	0.41	1.53	2.37	1.6	2.1	2.0

60	110	22	1.5	30.2	11.5	5200	6400	1212	1212K	68	102	1.5	0.19	3.37	5.22	3.53	0.9	0.8
	110	28	1.5	34.1	12.6	5300	6500	2212	2212K	68	102	1.5	0.28	2.26	3.49	2.36	1.09	1.0
	130	31	2.1	57.2	20.8	4500	5500	1312	1312K	71	119	2	0.22	2.91	4.5	3.05	1.96	1.9
	130	46	2.1	87.2	28.3	4200	5800	2312	2312K	71	119	2	0.39	1.62	2.51	1.7	2.6	2.5
65	120	23	1.5	31	12.5	4800	5800	1213	1213K	73	112	1.5	0.17	3.67	5.68	3.84	1.15	1.1
	120	31	1.5	43.5	16.4	4900	5900	2213	2213K	73	112	1.5	0.28	2.24	3.47	2.35	1.46	1.4
	140	33	2.1	61.7	22.9	4300	5200	1313	1313K	76	129	2	0.23	2.73	4.23	2.86	2.45	2.4
	140	48	2.1	95.8	32.5	3800	5300	2313	2313K	76	129	2	0.38	1.66	2.58	1.74	3.23	3.1
70	125	24	1.5	34.6	13.8	4600	5700	1214	1214K	78	117	1.5	0.18	3.48	5.38	3.64	1.26	
	125	31	1.5	43.9	17.1	4600	5600	2214	2214K	78	117	1.5	0.26	2.42	3.74	2.53	1.52	
	150	35	2.1	74	27.7	4000	4900	1314	1314K	81	139	2	0.22	2.84	4.4	2.98	2.99	
	150	51	2.1	89.6	31.7	3600	4900	2314	2314K	81	139	2	0.35	1.82	2.82	1.91	4.23	
75	130	25	1.5	38.8	15.7	4300	5300	1215	1215K	83	122	1.5	0.17	3.6	5.58	3.77	1.36	1.3
	130	31	1.5	44.2	17.8	4300	5300	2215	2215K	83	122	1.5	0.25	2.49	3.85	2.61	1.62	1.5
	160	37	2.1	78.9	29.9	4000	4900	1315	1315K	86	149	2	0.23	2.8	4.33	2.93	3.56	3.5
	160	55	2.1	103	36.8	3400	4600	2315	2315K	86	149	2	0.34	1.86	2.88	1.95	5.13	5.0
80	140	26	2	39.8	17	4000	4900	1216	1216K	89	131	2	0.16	3.9	6.03	4.08	1.67	1.6
	140	33	2	49	19.9	4100	5000	2216	2216K	89	131	2	0.26	2.42	3.75	2.54	2.01	1.9
	170	39	2.1	88.1	33.1	3500	4300	1316	1316K	91	159	2	0.22	2.9	4.49	3.04	4.18	4.1
	170	58	2.1	129	45.7	3100	4300	2316	2316K	91	159	2	0.34	1.87	2.9	1.96	6.1	5.9
85	150	28	2	49.2	20.8	3800	4600	1217	1217K	94	141	2	0.17	3.61	5.59	3.78	2.07	2.0
	150	36	2	58.3	23.6	3800	4600	2217	2217K	94	141	2	0.25	2.49	3.85	2.61	2.52	2.4
	180	41	3	97.3	37.8	3300	4000	1317	1317K	98	167	2.5	0.22	2.93	4.53	3.07	4.98	4.9
	180	60	3	141	51.5	3000	4100	2317	2317K	98	167	2.5	0.35	1.82	2.82	1.91	7.05	6.8
90	160	30	2	56.8	23.4	3500	4300	1218	1218K	99	151	2	0.17	3.69	5.7	3.86	2.52	2.4
	160	40	2	67.7	27.2	3500	4300	2218	2218K	99	151	2	0.26	2.39	3.71	2.51	3.4	3.3
	190	43	3	116	44.4	3100	3800	1318	1318K	103	177	2.5	0.22	2.81	4.35	2.94	5.8	5.7
	190	64	3	153	57.9	2800	3900	2318	2318K	103	177	2.5	0.34	1.84	2.85	1.93	8.44	8.2
95	170	32	2.1	57	24.3	3300	4000	1219	1219K	106	159	2	0.17	3.63	5.62	3.8	3.1	3.0
	170	43	2.1	82.7	34.3	3300	4000	2219	2219K	106	159	2	0.26	2.43	3.76	2.55	4.1	4
	200	45	3	132	50.8	2900	3600	1319	1319K	108	187	2.5	0.23	2.73	4.23	2.86	6.69	6.5
	200	67	3	166	64.8	2700	3700	2319	2319K	108	187	2.5	0.35	1.82	2.82	1.91	9.79	9.5
100	180	34	2.1	69	29.7	3100	3800	1220	1220K	111	169	2	0.17	3.62	5.6	3.79	3.7	3.6
	180	46	2.1	80.9	34	3100	3800	2220	2220K	111	169	2	0.24	2.57	3.98	2.7	4.98	4.8
	215	47	3	143	57.3	2800	3400	1320	1320K	113	202	2.5	0.24	2.66	4.11	2.78	8.3	8.1
	215	73	3	183	73.4	2400	3400	2320	2320K	113	202	2.5	0.34	1.84	2.85	1.93	12.4	12
105	190	36	2.1	77	34	2900	3600	1221		116	179	2	0.18	3.56	5.51	3.73	4.37	
	190	50	2.1	94.9	40.1	3000	3600	2221		116	179	2	0.26	2.43	3.76	2.55	6.07	
	225	49	3	149	60.2	2600	3200	1321		118	212	2.5	0.23	2.73	4.22	2.86	10	
	225	77	3	187	78	2300	3200	2321		118	212	2.5	0.36	1.75	2.71	1.83	14.3	

110	200	38	2.1	80.2	35.2	2800	3400	1222	1222K	121	179	2	0.17	3.64	5.63	3.81	5.15	5.0
	200	53	2.1	120	48.9	2800	3400	2222	2222K	121	179	2	0.26	2.41	3.73	2.53	7.1	6.9
	240	50	3	150	63.2	2400	3000	1322	1322K	123	227	2.5	0.22	2.82	4.37	2.96	11.8	11
	240	80	3	200	85.7	2200	3000	2322	2322K	123	227	2.5	0.35	1.82	2.82	1.91	17.3	16

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