

ANGULAR CONTACT BALL BEARINGS

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ANGULAR CONTACT BALL BEARING

In angular contact ball bearing inner and outer rings are displaced with respect to each other in direction of bearing axis. They are designed for commensation of combined load, acting radial an axial. An axial load carrying capacity of angular contact ball bearing increase as increase contact angle.

Type

Single row angular contact ball bearing
Double row angular contact ball bearing
Four point contact ball bearing

Series Available

For Single Row
7000, 7200, 7300, 7400

Double Row
3200, 3300, 5200, 5300

4 point contact
QJ 200 & QJ 300

Single Row Angular Contact Ball Bearing (Available in Steal, Brass & Polymide Cages)

Can accommodate axial load acting in unidirectional only, Have only limited ability to accommodate misalignment.
More Series Available ALS, AMS.

Double Row Angular Contact Ball Bearing

It is designed to correspond, two single row angular contact ball bearing, which take less axial space.
Can accommodate high radial and axial load acting in bidirectional.

Single Row Angular Contact Ball Bearing

These bearings have a contact angle so they can sustain significant axial loads in one direction together with radial loads. Because of their design, when radial load is applied componam/nt produce an axial force. Because of these two opposed bearings or a combination of more than two must be used. As the rigidity of single row angular contact ball bearings can be increased by preloading. They are often used in the main spindless a machine tools which wish running accuracy is require.

Double Row Angular Contact Ball Bearing

This is basically a back to back mounting of two single angular contact ball bearings, but there inner and outer rings are each integrated into one. This type of bearings can be sustained axial load in both direction this type is used as fixed end bearings.

Precaution for use of angular contact ball bearings

Operating conditions: Where vibration and moment load are heavy, lubrication is marginal, the speed and temperature are closed to their limit, this bearing may not be suitable and if the load on angular contact ball bearings come too small or it the ratio of the axial loads for matched bearings exceed during operation, slippage occurs between the bal and raceways, which may result in smearing, especially in large bearing where the wight of ball and cage is high.



SINGLE ROW

Preload of universally match able single row angular contact ball bearings arranged back to back of face to face.

Bore Diameter		Axial internal clearance of Bearing in Series 72xx and 73xx					
d		CA		CB		CC	
Over (mm)	Incl.	Min.	Max.	Min. (Micron)	Max.	Min.	Max.
10	18	5	13	15	23	24	32
18	30	7	15	18	26	32	40
30	50	9	17	22	30	40	48
50	80	11	23	26	38	48	60
80	110	14	26	32	44	55	67
110	180	17	29	35	47	62	74
180	250	21	37	45	61	74	90

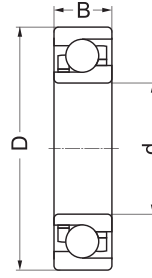
DOUBLE ROW

Bore Diameter		Axial internal clearance of Bearing in Series 32xx and 33xx					
d		CA		Normal		C3	
Over (mm)	Incl.	Min.	Max.	Min. (Micron)	Max.	Min.	Max.
-	10	1	11	5	21	12	28
10	18	1	12	6	23	13	31
18	24	2	14	7	25	16	34
24	30	2	15	8	27	18	37
30	40	2	16	9	29	21	40
40	50	2	18	11	33	23	44
50	65	3	22	13	36	26	48
65	80	3	24	15	40	30	54
80	100	3	26	18	46	35	63
100	110	4	30	22	53	42	73

ANGULAR CONTACT BALL BEARINGS

SINGLE ROW

d10-60mm

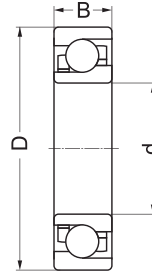


Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Designation
d	D	B	Dynamic	Static	P _u (kN)	Grease	Oil	Kg	
(mm)			C (kN)	C ₀		RPM			
10	30	9	7.02	3.35	0.14	1900	28000	0.030	7200 B
	37	12	10.60	5.00					
12	32	10	7.61	3.80	0.16	18000	26000	0.036	7201 B
	37	12	10.60	5.00					
15	35	11	8.84	4.80	0.20	17000	24000	0.045	7202 B
	42	13	13.00	6.70					
17	40	12	11.10	6.10	0.26	15000	20000	0.065	7203 B
	47	14	15.90	8.30					
20	47	14	14.00	8.30	0.35	12000	17000	0.11	7204 B
	52	15	19.00	10.40					
25	52	15	15.60	10.20	0.43	10000	15000	0.13	7205 B
	62	17	26.00	15.60					
30	62	16	23.80	15.60	0.65	8500	12000	0.20	7206 B
	72	19	34.50	21.20					
35	72	17	30.70	20.80	0.88	8000	11000	0.28	7207 B
	80	21	39.00	24.50					
40	80	18	34.60	26.00	1.10	7000	9500	0.37	7208 B
	90	23	49.40	33.50					
45	85	19	37.70	28.00	1.20	6700	9000	0.42	7209 B
	100	25	60.50	41.50					
50	90	20	39.00	30.50	1.29	6000	8000	0.47	7210 B
	100	27	74.10	51.00					
55	100	21	48.80	38.00	1.63	5600	7500	0.62	7211 B
	120	29	85.20	60.00					
60	110	22	57.20	45.50	1.93	5000	6700	0.80	7212 B
	130	31	95.60	69.50					

ANGULAR CONTACT BALL BEARINGS

SINGLE ROW

d65-140mm

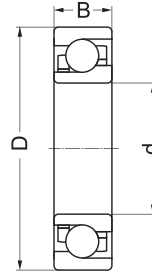


Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Designation
d (mm)	D	B	Dynamic C	Static Co	Pu (kN)	Grease RPM	Oil	Kg	
65	120	23	66.30	54.00	2.28	4500	6000	1.00	7213 B
	140	33	108.00	8.00	3.35	4300	5600	2.15	7313 B
70	125	24	71.50	60.00	2.50	4300	5600	1.10	7214 B
	150	35	119.00	90.00	3.65	3800	5000	2.65	7314 B
75	130	25	72.80	64.00	2.65	4300	5600	1.20	7215 B
	160	37	133.00	106.00	4.15	3600	4800	3.20	7315 B
80	140	26	83.20	73.50	3.00	3800	5000	1.45	7216 B
	170	39	132.00	118.00	4.50	3400	4500	3.80	7316 B
85	150	28	96.50	83.00	3.25	3600	4800	1.85	7217 B
	180	41	153.00	132.00	4.90	3200	4300	4.45	7317 B
90	160	30	108.00	96.50	3.65	3400	4500	2.30	7218 B
	190	43	165.00	146.00	5.20	3000	4000	5.20	7318 B
95	170	32	124.00	108.00	4.00	3200	4300	2.70	7219 B
	200	45	178.00	163.00	5.60	2800	3800	6.05	7319 B
100	180	34	135.00	122.00	4.40	3000	4000	3.30	7220 B
	215	47	203.00	19.00	6.40	2600	3600	7.50	7320 B
105	190	36	148.00	137.00	4.80	2800	3800	3.95	7221 B
	225	49	212.00	208.00	6.95	2400	3400	8.55	7321 B
110	200	38	163.00	153.00	5.20	2600	3600	4.60	7222 B
	240	50	225.00	224.00	7.20	2200	3200	10.0	7322 B
120	215	40	165.00	163.00	5.30	2200	3200	6.10	7224 B
	260	55	238.00	250.00	7.65	1900	2800	14.5	7324 B
130	230	40	186.00	193.00	6.10	1900	2800	6.95	7226 B
	280	58	251.00	270.00	8.00	1800	2600	17.5	7326 B
140	250	42	182.00	196.00	5.85	1800	2600	8.85	7228 B
	300	62	276.00	310.00	8.80	1700	2400	21.5	7328 B

ANGULAR CONTACT BALL BEARINGS

SINGLE ROW

d150-240mm

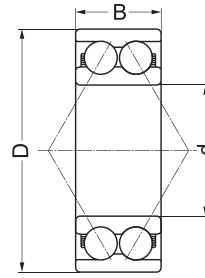


Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Designation
d (mm)	D	B	Dynamic C	Static C ₀	P _u (kN)	Grease RPM	Oil	Kg	
150	270	45	195	224	6.55	1700	2400	11.5	7230 B
	320	65	302	365	10.2	1600	2200	26.0	7330 B
160	290	48	199	236	6.7	1600	2200	14.0	7232 B
170	310	52	221	270	7.35	1600	2200	17.5	7234 B
	360	72	358	455	12	1400	1900	36.0	7334 B
180	320	52	251	320	8.5	1500	2000	18.0	7236 B
	380	75	371	490	12.5	1300	1800	42.0	7336 B
190	340	55	276	355	9.15	1400	1900	22.0	7238 B
	400	78	410	560	13.7	1200	1700	48.5	7338 B
220	400	65	319	465	11.2	1100	1600	37.0	7244 B
240	440	72	364	540	12.5	1000	1500	49.0	7248 B

ANGULAR CONTACT BALL BEARINGS

DOUBLE ROW

d10-50mm

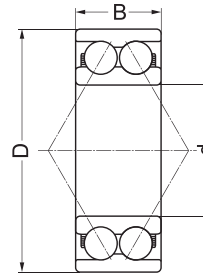


Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Designation
d (mm)	D	B	Dynamic C (kN)	Static Co	Pu (kN)	Grease RPM	Oil RPM	Kg	
10	30	14	7.61	4.3	0.183	22000	24000	0.051	3200
12	32	15.9	10.1	5.6	0.24	20000	22000	0.058	3201
15	35	15.9	11.2	6.8	0.285	18000	18000	0.066	3202
	42	19	15.1	9.3	0.4	16000	16000	0.013	3302
17	40	17.5	14.3	8.8	0.365	16000	16000	0.096	3203
	47	22.02	21.6	12.7	0.54	14000	14000	0.18	3303
20	47	20.6	20	12	0.51	14000	14000	0.16	3204
	52	22.2	23.6	14.6	0.62	13000	13000	0.22	3304
25	52	20.6	21.6	14.3	0.6	12000	12000	0.18	3205
	62	25.4	32	20.4	0.865	11000	11000	0.35	3305
30	62	23.8	30	20.4	0.865	10000	10000	0.29	3206
	72	30.2	41.5	27.5	1.16	9000	9000	0.53	3306
35	72	27	40	28	1.18	9000	9000	0.44	3207
	80	34.9	52	35.5	1.5	8500	8500	0.71	3307
40	80	30.2	47.5	34	1.43	8000	8000	0.58	3208
	90	36.5	64	44	1.86	7500	7500	1.05	3308
45	85	30.2	51	39	1.63	7500	7500	0.63	3209
	100	39.7	75	53	2.24	6700	6700	1.40	3309
50	90	30.2	51	39	1.66	7000	7000	0.66	3210
	110	44.4	90	64	2.75	6000	6000	1.95	3310

ANGULAR CONTACT BALL BEARINGS

DOUBLE ROW

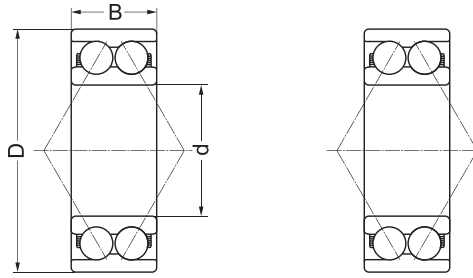
d55-110mm



Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Designation
d	D	B	Dynamic	Static		Grease	Oil		
(mm)			C (kN)	C ₀	P _u (kN)	RPM		Kg	
55	100	33.36	60	47.5	2	6300	6000	1.05	3211
	120	49.2	112	81.5	3.45	5300	5300	2.55	3311
60	110	36.5	73.5	58.5	2.5	5600	5600	1.40	3212
	130	54	127	95	4.05	5000	5000	3.25	3312
65	120	38.1	80.6	73.5	3.1	4500	4800	1.75	3213
	140	58.7	146	110	4.55	4500	4500	4.10	3313
70	125	39.7	88.4	80	3.4	4300	4500	1.90	3214
	150	63.5	153	125	5	4000	4000	5.05	3314
75	130	41.3	95.6	88	3.75	4300	4500	2.10	3215
	160	68.3	176	140	5.5	4000	4000	5.55	3315
80	140	44.4	106	95	3.9	4000	4300	2.65	3216
	170	68.3	182	156	6	3400	3600	6.80	3316
85	150	49.2	124	110	4.4	3600	3800	3.40	3217
	180	73	195	176	6.55	3200	3400	8.30	3317
90	160	52.4	130	120	4.55	3400	3600	4.15	3218
	190	73	195	180	6.4	3000	3200	9.25	3318
95	170	55.6	159	146	5.4	3200	3400	5.00	3219
	200	77.8	225	216	7.5	2800	3000	11.0	3319
100	180	60.3	178	166	6	3000	3200	6.10	3220
	215	82.6	255	216	7.5	2800	3000	11.0	3320
110	200	69.8	212	212	7.25	2800	2800	8.80	3222
	240	92.1	291	305	9.8	2400	2600	19.0	3322

ANGULAR CONTACT BALL BEARINGS DOUBLE ROW WITH SHIELD

d10-90mm



Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Designation	
d (mm)	D	B	Dynamic	Static	P _u (kN)	Grease	Oil	Kg	Rubber Shield	Tow Shield
10	30	14.39	7150	3900	166	16000	22000	0.045	5200 RS	5200 2RS
12	32	15.88	10600	5850	245	15000	20000	0.050	5201 RS	5201 2RS
15	35	15.88	11700	6950	300	12000	17000	0.068	5202 RS	5202 2RS
17	40	17.46	14800	9000	380	10000	15000	0.090	5203 RS	5203 2RS
20	47	20.64	19500	12200	520	9000	13000	0.14	5204 RS	5204 2RS
	52	22.23	22500	14600	620	8500	12000	0.20	5304 RS	5304 2RS
25	52	20.64	21200	14600	620	8000	11000	0.16	5205 RS	5205 2RS
	62	25.40	30700	20400	865	7500	10000	0.32	5305 RS	5305 2RS
30	62	23.81	29600	21200	900	7000	9500	0.26	5206 RS	5206 2RS
	62	23.81	30300	28000	1200	7000	9500	0.35	5206 RS	5206 2RS
	72	30.16	41600	29000	1220	6300	8500	0.48	5306 RS	5306 2RS
	72	30.16	46800	43000	1830	6300	8500	0.48	5306 RS	5306 2RS
35	72	26.99	37700	27500	1180	6000	8000	0.40	5207 RS	5207 2RS
	72	26.99	39100	36500	1560	6000	8000	0.54	5207 RS	5207 2RS
	80	34.93	49400	34500	1460	5600	7500	0.66	5307 RS	5307 2RS
	80	34.93	52300	48000	2.040	5600	7500	0.86	5307 RS	5307 2RS
40	80	30.16	44900	34000	1430	5600	7500	0.53	5208 RS	5208 2RS
	80	30.16	49500	49000	2080	5600	7500	0.73	5208 RS	5208 2RS
	90	36.51	60500	43000	1830	5000	6700	0.86	5308 RS	5308 2RS
	90	36.51	67100	65500	2750	5000	6700	1.15	5308 RS	5308 2RS
45	85	30.2	48.80	39.00	1.66	5000	6700	0.57	5209 RS	5209 2RS
	100	39.7	72.80	53.00	2.24	4500	6700	1.15	5309 RS	5309 2RS
50	90	30.2	48.80	39.00	1.66	4800	6300	0.59	5210 RS	5210 2RS
	100	44.4	8520	64.00	2.70	4000	5300	1.55	5310 RS	5310 2RS
55	100	33.3	57.20	47.50	2.00	4300	5600	0.83	5211 RS	5211 2RS
	120	49.2	106.00	81.50	3.45	3800	5000	2.00	5311 RS	5311 2RS
60	110	36.5	70.20	58.50	2.50	3800	5000	1.10	5212 RS	5212 2RS
	130	54.0	121.00	95.00	4.00	3400	4500	2.60	5312 RS	5312 2RS
65	120	38.1	80.60	73.50	3.10	3600	4800	1.58	5213 RS	5213 2RS
	140	58.7	138.00	108.00	4.55	3200	4300	3.30	5313 RS	5313 2RS
70	125	39.7	88.40	80.00	3.40	3200	4300	1.50	5214 RS	5214 2RS
	160	63.5	153.00	125.00	5.00	2800	3800	4.05	5314 RS	5314 2RS
75	130	41.3	95.600	88.000	3.750	3200	4300	1.70	5215	5215
	160	68.3	168.00	14.000	5.500	2600	3600	4.90	5315	5315
80	140	44.4	106.000	95.000	3.900	2800	3800	2.10	5216	5216
85	150	49.2	124.000	110.000	4.400	2600	3600	2.70	5217	5217
90	160	52.4	130.000	120.000	4.550	2400	3400	3.40	5218	5218