

Angular Contact Bearing



1. Angular contact ball bearings have raceways in the inner and outer rings that are displaced with respect to each other in the direction of the bearing axis. This means that they are designed to accommodate combined loads, i. E. Simultaneously acting radial and axial loads.

2. The axial load carrying capacity of angular contact ball bearings increases with increasing contact angle. The contact angle is defined as the angle between the line joining the points of contact of the ball and the raceways in the radial plane, along which the load is transmitted from one raceway to another, and a line perpendicular to the bearing axis.

3. Angular contact ball bearings features:

- 1) Load capacities are higher than deep groove ball bearings of same dimensions
- 2) Used for bearing radial-axial combined loads or pure thrust loads
- 3) Low operating friction and high limiting speed

4. Types:

1. Single row angular contact ball bearings
2. Double row angular contact ball bearings
3. Four-point contact ball bearings

5. Mounting

/DB: Mount in duplex, back to back

/DF: Mount in duplex, face to face

/DT: Mount in duplex, tandem

6. Internal structure:

C: Normal contact angle $\alpha=15$

AC: Normal contact angle $\alpha=25$

B: Normal contact angle $\alpha=40$

Boundary Dimensions	Basic Load Rating	Limiting Speed	Bearing Designation	Distance of working points	Shoulder Dimensions (mm)	Mass
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d	(mm)			(kN)		(rpm)			(mm)				(kg)
	D	B	r	Cr	Cor	Grease	Oil		a	da	Da	ra	Approx
20	47	14	1	23.5	15.3	12000	16000	6204B1	23.5	25.5	41.5	1	0.129
	52	15	1.1	27.4	18.1	11000	15000	6304B1	25.2	27	45	1	0.179
25	52	15	1	26.7	18.8	10000	14000	6205B1	27	30.5	46.5	1	0.156
	62	17	1.1	40.8	28	9200	13000	6305B1	30.5	32	55	1	0.285
30	62	16	1	36.3	27.6	8600	12000	6206B1	32.6	35.5	56.5	1	0.241
	72	19	1.1	49.5	36.6	7800	11000	6306B1	35.7	37	65	1	0.426
35	72	17	1.1	47.1	36.7	7500	10000	6207B1	37.5	42	65	1	0.351
	80	21	1.5	61.2	46.4	7000	9600	6307B1	40.3	43.5	71.5	1.5	0.565
40	80	18	1.1	55.9	46.5	6600	9000	6208B1	42.7	47	73	1	0.451
	90	23	1.5	74.1	57.6	6200	8500	6308B1	45.5	48.5	81.5	1.5	0.778
45	85	19	1.1	58.7	51.3	6100	8400	6209B1	45.9	52	78	1	0.512
	100	25	1.5	87.9	70	5500	7600	6309B1	50.8	53.5	91.5	1.5	1.040
50	90	20	1.1	65.4	58	5700	7900	6210B1	49	57	83	1	0.575
	110	27	2	103	83.7	5000	6900	6310B1	56	60	100	2	1.350
55	100	21	1.5	80	72.3	5200	7100	6211B1	54.3	63.5	91.5	1.5	0.763
	120	29	2	119	98.5	4500	6200	6311B1	61.3	65	110	2	1.720
60	110	22	1.5	91.7	87.6	4600	6300	6212B1	60.6	68.5	101.5	1.5	0.983
	130	31	2.1	145	126	4100	5700	6312B1	67.2	72	118	2	2.170
65	120	23	1.5	95.1	90.1	4300	5900	6213B1	64.8	73.5	111.5	1.5	1.230
	140	33	2.1	164	145	3800	5300	6313B1	72.1	77	128	2	2.670
70	125	24	1.5	103	99	4100	5600	6214B1	68.3	78.5	116.5	1.5	1.350
	150	35	2.1	184	165	3600	4900	6314B1	77	82	138	2	3.250
75	130	25	1.5	108	108	3900	5300	6215B1	71.8	83.5	121.5	1.5	1.470
	160	37	2.1	200	187	3400	4600	6315B1	82.3	87	148	2	3.900
80	140	26	2	126	128	3600	4900	6216B1	77	90	130	2	1.800
	170	39	2.1	217	210	3100	4300	6316B1	87.5	92	158	2	4.630
85	150	28	2	146	150	3400	4600	6217B1	82.3	95	140	2	2.250
	180	41	3	234	234	3000	4100	6317B1	92.8	99	166	2.5	5.450
90	160	30	2	167	173	3100	4300	6218B1	87.5	100	150	2	2.770
	190	43	3	252	260	2800	3800	8318B1	98	104	176	2.5	6.360
95	170	32	2.1	190	198	3000	4100	6219B1	92.8	107	158	2	3.370
	200	45	3	269	287	2600	3600	6319B1	103.3	109	186	2.5	7.370
100	180	34	2.1	201	213	2800	3800	6220B1	98	112	168	2	4.020
110	200	38	2.1	242	275	2500	3400	6322B1	108.5	122	188	2	5.640