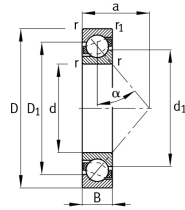


Angular Contact Ball Bearings:

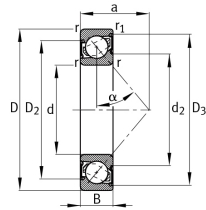
Angular contact ball bearings have the inner ring and outer ring raceways that are offset relative to each other in the axial direction. As a result, the line through the points of contact between the ball and the raceways is not perpendicular to the bearing axis but makes an angle less than 90 degrees and is defined as the contact angle. Due to this Angular Contact Ball Bearings are capable of taking radial loads and also axial loads in one direction.



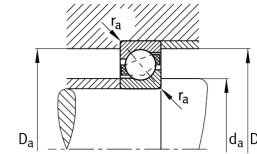
Suffix and Corresponding Description For Angular Contact Ball Bearings	
Suffix	Description of Suffix
B	Standard Contact Angle 40°
JP	Steel Cage
MP	Solid Brass Cage
2RS	Contact Seals on Both Side
DB	Two Angular Contact Ball Bearing in Back to Back Arrangement
DF	Two Angular Contact Ball Bearing in Face to Face Arrangement
DT	Two Angular Contact Ball Bearing in Tandem Arrangement
TVH TVP	Solid Cage made from glass fiber reinforced Polyamide
UA	Universal design for fitting in pairs, bearing pair has small axial internal Clearance in Pair arrangement
UL	Universal design for fitting in pairs, bearing pair has slight preload in Pair arrangement
UO	Universal design for fitting in pairs, bearing pair is clearance - free in Pair arrangement
P5	Bearing in tolerance class P5



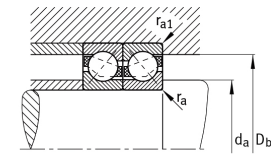
70...-B, 72...-B, 73...-B
α = 40°



70...-B-2RS, 72...-B-2RS, 73...-B-2RS
2RS seal



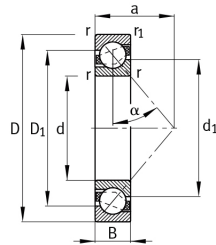
Mounting dimensions



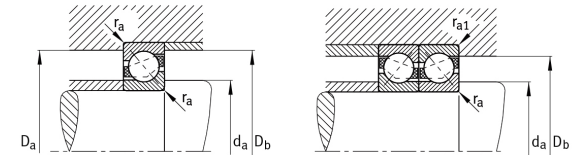
Mounting dimensions

Boundary Dimensions										Basic Load Rating		Limiting Speed		
(mm)										(KN)		(rpm)		
d	D	B	D ₁	D ₂	D ₃	d ₁	d ₂	a	r	r ₁	Cr	Cor	Steel / Polyamide Cage	Sealed with Polyamide Cage
									(min)	(min)				
10	30	9	22.1	23.3	25.6	18	15.5	13	0.6	0.3	5	2.6	32,000	15,000
12	32	10	24.6	25.9	28.8	19.5	17	14	0.6	0.3	6.95	3.6	28,000	14,000
12	37	12	27.2	-	-	22.1	-	16	1	0.6	10.6	5.3	24,000	-
15	35	11	27.6	29.2	32.1	22.5	19.7	16	0.6	0.3	8	4.5	24,000	12,000
15	42	13	31.8	33.3	38.1	25.5	22.9	18	1	0.6	13.2	7.2	20,000	11,000
17	40	12	31.2	33.1	36.3	26.2	22.9	18	0.6	0.6	10	5.7	20,000	11,000
17	47	14	35.8	37.2	42.6	28.5	26.1	20	1	0.6	16.3	9	18,000	9,500
20	42	12	34.7	37.1	40.9	29.1	25.9	12	0.6	0.3	13.4	7.5	-	9,500
20	47	14	36.6	39.1	43	30.4	26.8	21	1	0.6	13.4	7.8	18,000	9,000
20	52	15	39.9	41.4	47.1	32.4	30	23	1.1	0.6	19	11	17,000	8,500
25	47	12	39.7	41.5	45.9	34.1	30.9	21	0.6	0.3	15	9.3	-	8,000
25	52	15	41.6	44.1	48	35.4	31.8	24	1	0.6	14.6	9.3	16,000	8,000
25	62	17	48.1	50.4	57.1	39.3	35.8	27	1.1	0.6	26	16	14,000	7,000
30	42	7	37.3	-	-	34.7	-	18.6	0.3	0.2	5.6	4.6	17,000	-
30	55	13	46.9	48.8	53.6	40.7	38.2	24	1	0.6	18.3	13	14,000	6,700
30	62	16	49.8	51.9	57	42.8	39.8	27	1	0.6	20.4	14	13,000	6,300
30	72	19	56	58.6	65.9	46.5	42.8	31	1.1	0.6	33	22	11,000	6,000
35	47	7	42.3	-	-	39.7	-	20.7	0.3	0.2	6	5.3	15,000	-
35	62	14	53.2	-	-	46.5	-	27	1	0.6	22.4	16	12,000	6,000
35	72	17	57.9	60.2	66.5	49.5	45.8	31	1.1	0.6	27	19	11,000	5,600
35	80	21	63.1	64.7	73.5	52.7	49.2	35	1.5	1	40	28	9,500	5,000
40	52	7	47.3	-	-	44.7	-	22.8	0.3	0.2	6.3	5.9	13,000	-
40	68	15	58.6	60.5	66.3	51.3	48.8	30	1	0.6	26	19	10,000	5,300
40	80	18	64.7	67	73.8	55.7	52	34	1.1	0.6	32	24	9,500	5,000
40	90	23	71.7	73.9	83.3	59.2	55.6	39	1.5	1	50	35	8,500	4,500
45	58	7	52.8	-	-	50.2	-	25.1	0.3	0.2	6.55	6.6	13,000	-
45	85	19	70	-	-	60.5	-	37	1.1	0.6	36	27	8,500	-
45	100	25	79.8	-	-	66.7	-	43	1.5	1	61	43	7,500	-

Reference Speed		Bearing Designation			Shoulder Dimensions					Mass
(rpm)					(mm)					(kg)
Steel / Polyamide Cage	Sealed with Polyamide Cage	Steel Cage	Polyamide Cage	Sealed with Polyamide Cage	d _a	D _a	D _b	r _a	r _{a1}	Approx
					(min)	(max)	(max)	(max)	(max)	
22,600	-	7200-B-JP	7200-B-TVP	7200-B-2RS-TVP	14.2	25.8	27.6	0.6	0.3	0.033
21,200	-	7201-B-JP	7201-B-TVP	7201-B-2RS-TVP	16.2	27.8	29.6	0.6	0.3	0.038
16,400	-	7301-B-JP	7301-B-TVP	-	17.6	31.4	32.8	1	0.6	0.066
19,200	-	7202-B-JP	7202-B-TVP	7202-B-2RS-TVP	19.2	30.8	32.6	0.6	0.3	0.047
14,300	-	7302-B-JP	7302-B-TVP	7302-B-2RS-TVP	20.6	36.4	37.8	1	0.6	0.088
17,200	-	7203-B-JP	7203-B-TVP	7203-B-2RS-TVP	21.2	35.8	35.8	0.6	0.6	0.069
12,900	-	7303-B-JP	7303-B-TVP	7303-B-2RS-TVP	22.6	41.4	42.8	1	0.6	0.117
-	-	-	7004-B-TVP	7004-B-2RS-TVP	23.2	38.8	40	0.6	0.3	0.06
15,400	-	7204-B-JP	7204-B-TVP	7204-B-2RS-TVP	25.6	41.4	42.8	1	0.6	0.111
11,600	-	7304-B-JP	7304-B-TVP	7304-B-2RS-TVP	27	45	47.8	1	0.6	0.152
-	-	-	7005-B-TVP	7005-B-2RS-TVP	28.2	43.8	45	0.6	0.3	0.071
13,600	-	7205-B-JP	7205-B-TVP	7205-B-2RS-TVP	30.6	46.4	47.8	1	0.6	0.135
9,900	-	7305-B-JP	7305-B-TVP	7305-B-2RS-TVP	32	55	57.8	1	0.6	0.242
-	-	-	71806-B-TVH	-	32	40	40.6	0.3	0.2	0.025
-	-	-	7006-B-TVP	7006-B-2RS-TVP	34.6	50.4	51.8	1	0.6	0.109
11,300	-	7206-B-JP	7206-B-TVP	7206-B-2RS-TVP	35.6	56.4	57.8	1	0.6	0.202
8,700	-	7306-B-JP	7306-B-TVP	7306-B-2RS-TVP	37	65	67.8	1	0.6	0.362
-	-	-	71807-B-TVH	-	37	45	45.6	0.3	0.2	0.027
-	-	-	7007-B-TVP	7007-B-2RS-TVP	39.6	57.4	58.8	1	0.6	0.14
9,600	-	7207-B-JP	7207-B-TVP	7207-B-2RS-TVP	42	65	67.8	1	0.6	0.3
7,900	-	7307-B-JP	7307-B-TVP	7307-B-2RS-TVP	44	71	74.4	1.5	1	0.475
-	-	-	71808-B-TVH	-	42	50	50.6	0.3	0.2	0.029
-	-	-	7008-B-TVP	7008-B-2RS-TVP	44.6	63.4	64.8	1	0.6	0.17
8,600	-	7208-B-JP	7208-B-TVP	7208-B-2RS-TVP	47	73	75.8	1	0.6	0.387
7,200	-	7308-B-JP	7308-B-TVP	7308-B-2RS-TVP	49	81	84.4	1.5	1	0.646
-	-	-	71809-B-TVH	-	47	56	56.6	0.3	0.2	0.033
8,000	-	7209-B-JP	7209-B-TVP	-	52	78	80.8	1	0.6	0.428
6,600	-	7309-B-JP	7309-B-TVP	-	54	91	95	1.5	1	0.878



718...-B, 72...-B, 73...-B
α = 40°

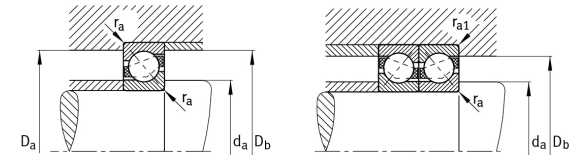
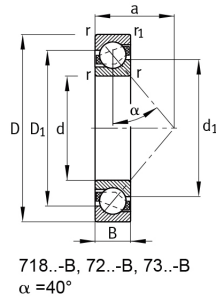


Mounting dimensions

Mounting dimensions

Boundary Dimensions								Basic Load Rating		Limiting Speed	Reference Speed
(mm)								(KN)		(rpm)	(rpm)
d	D	B	D ₁	d ₁	a	r	r ₁	C _r	C _{or}	Steel / Polyamide Cage	Steel / Polyamide Cage
						(min)	(min)				
50	65	7	59.3	56.7	27.8	0.3	0.2	6.95	7.35	9,500	-
50	90	20	74.8	66.2	39	1.1	0.6	37.5	28.5	8,000	7,600
50	110	27	87.6	73.1	47	2	1	70	50	7,000	6,100
55	72	9	65.3	61.7	31.1	0.3	0.2	11.8	11.8	9,000	-
55	100	21	83	72.6	43	1.5	1	46.5	38.5	7,000	6,900
55	120	29	95.3	80.3	51	2	1	80	61	6,300	5,700
60	78	10	70.8	67.2	33.9	0.3	0.2	12.2	12.9	8,000	-
60	110	22	91.1	79.5	47	1.5	1	56	45	6,300	6,200
60	130	31	103.4	87.3	55	2.1	1.1	90	66.9	5,600	5,400
65	85	10	77	73	36.5	0.6	0.3	15.3	16	7,500	-
65	120	23	98.9	86	51	1.5	1	64	55	6,000	5,700
65	140	33	112	95	60	2.1	1.1	103	82	5,300	5,100
70	90	10	82	78	38.5	0.6	0.3	16	17.3	7,000	-
70	125	24	104.7	91	53	1.5	1	69.5	62	5,600	5,500
70	150	35	120.1	101.9	64	2.1	1.1	117	93	5,000	4,800
75	95	10	87	83	40.6	0.6	0.3	16.3	18	6,300	-
75	130	25	109.2	96.5	56	1.5	1	68	62	5,300	5,400
75	160	37	128.5	108.8	68	2.1	1.1	130	107	4,500	4,550
80	100	10	92	88	42.7	0.6	0.3	16.6	19	6,000	-
80	140	26	117.8	102.9	59	2	1	80	72	5,000	5,000
80	170	39	136.7	115.7	72	2.1	1.1	144	124	4,300	4,350
85	150	28	125	110.6	63	2	1	90	86	4,500	4,800
85	180	41	144	122	76	3	1.1	155	138	4,000	4,150
90	160	30	133.4	117.5	67	2	1	106	98	4,300	4,600
90	190	43	153	129.7	80	3	1.1	167	155	3,800	4,000
95	170	32	142	124.9	72	2.1	1.1	116	106	4,000	4,500
95	200	45	160.1	136.7	84	3	1.1	176	167	3,800	3,850
100	180	34	149.6	131.9	76	2.1	1.1	137	132	3,800	4,250
100	215	47	172.3	145.8	90	3	1.1	199	197	3,600	3,600
105	190	36	157.7	138.2	80	2.1	1.1	144	142	6,000	4,150

Bearing Designation			Shoulder Dimensions					Mass
Steel Cage	Polyamide Cage	Solid Brass Cage	(mm)					(kg)
			d _a	D _a	D _b	r _a	r _{a1}	Approx
			(min)	(max)	(max)	(max)	(max)	
-	71810-B-TVH	-	52	63	63.6	0.3	0.2	0.043
7210-B-JP	7210-B-TVP	-	57	83	85.8	1	0.6	0.493
7310-B-JP	7310-B-TVP	-	61	99	104.4	2	1	1.13
-	71811-B-TVH	-	57	70	70.6	0.3	0.2	0.058
7211-B-JP	7211-B-TVP	-	64	91	94.4	1.5	1	0.645
7311-B-JP	7311-B-TVP	-	66	109	114.4	2	1	1.46
-	71812-B-TVH	-	62	76	76.6	0.3	0.2	0.07
7212-B-JP	7212-B-TVP	-	69	101	104.4	1.5	1	0.847
7312-B-JP	7312-B-TVP	-	72	118	123	2.1	1	1.74
-	71813-B-TVH	-	68.2	81.8	83	0.6	0.3	0.085
7213-B-JP	7213-B-TVP	-	74	111	114.4	1.5	1	1.08
7313-B-JP	7313-B-TVP	-	77	128	133	2.1	1	2.22
-	71814-B-TVH	-	73.2	86.8	88	0.6	0.3	0.091
7214-B-JP	7214-B-TVP	-	79	116	119.4	1.5	1	1.17
7314-B-JP	7314-B-TVP	-	82	138	143	2.1	1	2.76
-	71815-B-TVH	-	78.2	91.8	93	0.6	0.3	0.096
7215-B-JP	7215-B-TVP	-	84	121	124.4	1.5	1	1.25
7315-B-JP	7315-B-TVP	-	87	148	153	2.1	1	3.29
-	71816-B-TVH	-	83.2	96.8	98	0.6	0.3	0.101
7216-B-JP	7216-B-TVP	-	91	129	134.4	2	1	1.53
7316-B-JP	7316-B-TVP	-	92	158	163	2.1	1	3.86
7217-B-JP	7217-B-TVP	-	96	139	144.4	2	1	1.94
7317-B-JP	7317-B-TVP	-	99	166	173	2.5	1	4.4
7218-B-JP	7218-B-TVP	-	101	149	154.4	2	1	2.38
7318-B-JP	7318-B-TVP	-	104	176	183	2.5	1	5.14
7219-B-JP	7219-B-TVP	-	107	158	163	2.1	1	2.64
7319-B-JP	7319-B-TVP	-	109	186	193	2.5	1	5.93
7220-B-JP	7220-B-TVP	-	112	168	173	2.1	1	3.45
7320-B-JP	7320-B-TVP	-	114	201	208	2.5	1	7.38
-	-	7221-B-MP	117	178	183	2.1	1	4.18



Mounting dimensions

Mounting dimensions

Boundary Dimensions								Basic Load Rating		Limiting Speed	Reference Speed
(mm)								(KN)		(rpm)	(rpm)
d	D	B	D ₁	d ₁	a	r	r ₁	C _r	C _{or}	Steel / Polyamide Cage	Steel / Polyamide Cage
						(min)	(min)				
105	225	49	179.6	153.5	94	3	1.1	209	214	5,300	3,500
110	200	38	165.7	144.9	84	2.1	1.1	155	154	3,600	4,050
110	240	50	191.5	161.9	98	3	1.1	232	245	3,400	3,200
120	215	40	179.5	157.2	90	2.1	1.1	169	178	3,400	3,800
120	260	55	207.7	175.9	107	3	1.1	255	285	3,200	2,950
130	230	40	191.8	169.2	96	3	1.1	186	204	3,200	3,400
130	280	58	222.5	188.5	115	4	1.5	285	325	3,000	2,650
140	250	42	207.5	183.5	103	3	1.1	198	231	4,800	3,200
140	300	62	240.2	203.9	123	4	1.5	300	345	4,300	2,450
150	270	45	223.5	197.5	111	3	1.1	227	275	4,500	2,900
150	320	65	256.5	217.8	131	4	1.5	325	390	3,800	2,250
160	290	48	238	212	118	3	1.1	236	280	4,300	2,700
160	340	68	272.2	232.4	139	4	1.5	360	450	3,600	2,070
170	310	52	256.5	228.9	127	4	1.5	265	325	3,800	2,500
170	360	72	291.6	248.4	147	4	1.5	405	530	3,200	1,910

Bearing Designation			Shoulder Dimensions					Mass
Steel Cage	Polyamide Cage	Solid Brass Cage	(mm)					(kg)
			d _a	D _a	D _b	r _a	r _{a1}	Approx
			(min)	(max)	(max)	(max)	(max)	
-	-	7321-B-MP	119	211	218	2.5	1	9
7222-B-JP	7222-B-TVP	-	122	188	193	2.1	1	4.7
7322-B-JP	7322-B-TVP	-	124	226	233	2.5	1	9.97
-	7224-B-TVP	-	132	203	208	2.1	1	5.31
-	7324-B-TVP	-	134	246	253	2.5	1	12.5
-	7226-B-TVP	-	144	216	223	2.5	1	6.12
-	7326-B-TVP	-	147	263	271	3	1.5	15.1
-	-	7228-B-MP	154	236	243	2.5	1	8.55
-	-	7328-B-MP	157	283	291	3	1.5	20.5
-	-	7230-B-MP	164	256	263	2.5	1	10.9
-	-	7330-B-MP	167	303	311	3	1.5	24.8
-	-	7232-B-MP	174	276	283	2.5	1	13.5
-	-	7332-B-MP	177	323	331	3	1.5	29
-	-	7234-B-MP	187	293	301	3	1.5	16.7
-	-	7334-B-MP	187	343	351	3	1.5	34.4