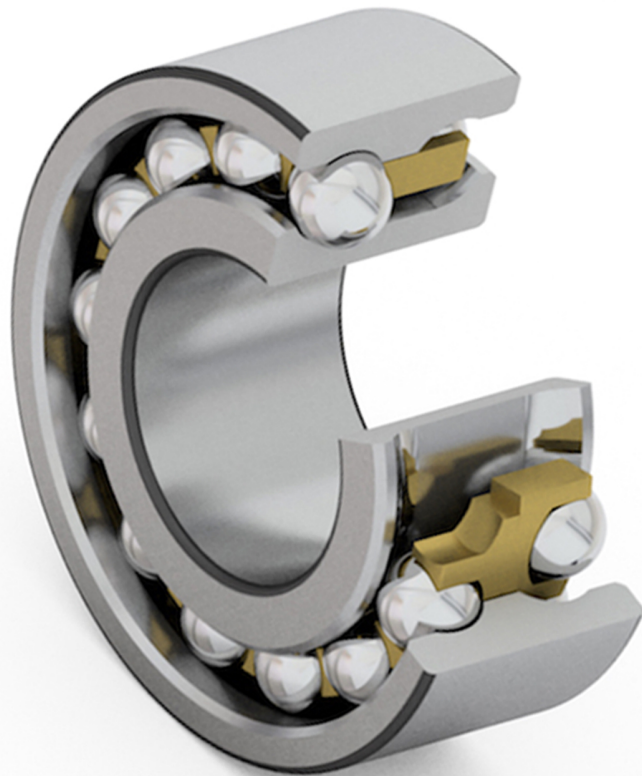
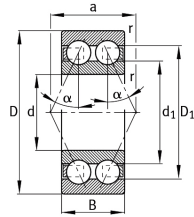


### Double Row Angular Contact Ball Bearings:

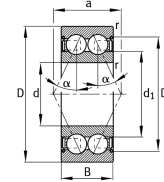
Double Row Angular contact ball bearings have the inner ring and outer ring raceways that are offset relative to each other in the axial direction. As a result, the line through the points of contact between the ball and the raceways is not perpendicular to the bearing axis but makes an angle less than 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.



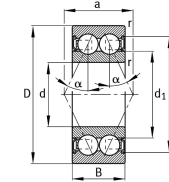
Suffix and Corresponding Description For Double Row Angular Contact Ball Bearings	
Suffix	Description of Suffix
B	Nominal Contact Angle $\alpha = 25^\circ$
C2	Axial Internal Clearance C2 (Clearance lesser than CN)
No Symbol	(CN) Normal Internal Clearance
C3	Axial Internal Clearance C3 (Clearance Larger than Normal)
C4	Axial Internal Clearance C4 (Clearance Larger than C3)
TVH	Solid Cage made from glass fiber reinforced Polyamide PA66
2RSR	Contact Seals on Both Side, radial contact (lip seal)
2Z	Non Contact Sealing Shield on both sides



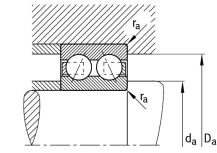
38...-B, 30...-B, 32...-B, 33...-B  
α = 25°



38...-B-2Z, 30...-B-2Z,  
32...-B-2Z, 33...-B-2Z  
α = 25°



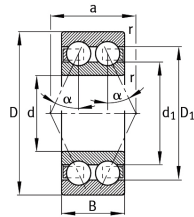
38...-B-2RSR, 30...-B-2RSR,  
32...-B-2RSR, 33...-B-2RSR  
α = 25°



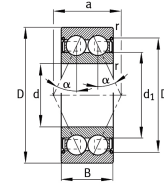
Mounting dimensions

Boundary Dimensions							Basic Load Rating		Limiting Speed				
(mm)							(KN)		(rpm)				
d	D	B	D <sub>1</sub>	D <sub>2</sub>	d <sub>1</sub>	a	r	Cr	Cor	Polyamide Cage	Polyamide Cage With Shield (2Z)	Polyamide Cage With Sealed (2RS)	
							(min)						
5	14	7	-	-	7.5	6.3	0.2	1.81	0.95	30,000	24,000	15,000	
6	17	9	-	-	8.3	8.8	0.3	3.1	1.42	28,000	22,000	15,000	
7	19	10	-	-	9	10	0.3	3.65	1.7	26,000	20,000	15,000	
8	22	11	-	-	10.5	10.7	0.3	5.2	2.65	26,000	19,000	14,000	
10	19	7	-	-	13	8.1	0.3	2.12	1.4	26,000	18,000	16,000	
10	26	12	-	-	13.5	12.3	0.3	5.7	3.25	24,000	17,000	14,000	
10	30	14	23.9	25.3	17.9	15	0.6	7.8	4.55	22,000	16,000	-	
12	21	7	-	-	15	8.9	0.3	2.19	1.55	24,000	17,000	15,000	
12	28	12	-	-	15.5	13	0.3	6.2	3.75	22,000	16,000	13,000	
12	32	15.9	25.7	28.1	18.3	17	0.6	10.6	5.85	20,000	15,000	-	
15	24	7	-	-	18	10.1	0.3	2.43	1.96	22,000	16,000	14,000	
15	32	13	-	-	20.4	14.8	0.3	8.6	5.4	20,000	15,000	12,000	
15	35	15.9	28.8	-	21.1	18	0.6	11.8	7.1	19,000	14,000	12,000	
15	42	19	34.5	-	25.6	21	1	16.3	10	16,000	-	-	
17	26	7	-	-	20	10.9	0.3	2.48	2.08	19,000	14,000	12,000	
17	35	14	-	-	21.6	15.5	0.3	9.2	6.2	18,000	13,000	11,000	
17	40	17.5	33.1	-	24	20	0.6	14.6	9	17,000	12,000	10,000	
17	47	22.2	37.7	-	26.2	24	1	20.8	12.5	15,000	-	-	
20	32	10	-	-	24.3	14.3	0.3	5.8	4.85	17,000	12,000	10,000	
20	42	16	-	-	25.2	19.1	0.6	14.5	9.6	16,000	11,000	9,000	
20	47	20.6	38.7	-	28.9	24	1	19.6	12.5	15,000	10,000	8,500	
20	52	22.2	42.7	-	31.2	26	1.1	23.2	15	13,000	9,000	8,000	
25	37	10	-	-	28.3	15.9	0.3	6	5.6	14,000	9,500	8,500	
25	47	16	-	-	29.8	21.2	0.6	15.5	11.1	13,000	9,000	8,000	
25	52	20.6	43.7	-	33.9	26	1	21.2	14.6	12,000	8,500	7,500	
25	62	25.4	-	53.1	37.2	31	1.1	30	20	-	-	6,700	
30	42	10	-	-	32.8	18.1	0.3	6.3	6.1	11,000	8,000	7,000	
30	55	19	-	-	35.6	24.8	1	20.3	15.6	10,000	7,500	6,700	
30	62	23.8	52.1	-	40	31	1	30	21.2	9,500	7,000	6,300	
30	72	30.2	58.9	-	44	36	1.1	41.5	28.5	8,500	6,300	5,600	

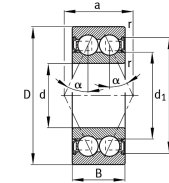
Reference Speed		Bearing Designation			Shoulder Dimensions			Mass
(rpm)					(mm)			(kg)
Polyamide Cage With Shield (2Z)	Polyamide Cage With Sealed (2RS)	Polyamide Cage	Polyamide Cage With Shield (2Z)	Polyamide Cage With Sealed (2RS)	d <sub>a</sub>	D <sub>a</sub>	r <sub>a</sub>	Approx
					(min)	(max)	(max)	
23,500	-	30/5-B-TVH	30/5-B-2Z-TVH	30/5-B-2RSR-TVH	6.4	12.6	0.2	0.008
22,500	-	30/6-B-TVH	30/6-B-2Z-TVH	30/6-B-2RSR-TVH	8	15	0.3	0.01
21,000	-	30/7-B-TVH	30/7-B-2Z-TVH	30/7-B-2RSR-TVH	9	17	0.3	0.012
20,000	-	30/8-B-TVH	30/8-B-2Z-TVH	30/8-B-2RSR-TVH	10	20	0.3	0.02
21,100	-	3800-B-TVH	3800-B-2Z-TVH	3800-B-2RSR-TVH	12	17	0.3	0.008
17,500	-	3000-B-TVH	3000-B-2Z-TVH	3000-B-2RSR-TVH	12	24	0.3	0.022
20,900	-	3200-B-TVH	3200-B-2Z-TVH	-	14.2	25.8	0.6	0.05
18,100	-	3801-B-TVH	3801-B-2Z-TVH	3801-B-2RSR-TVH	14	19	0.3	0.008
15,500	-	3001-B-TVH	3001-B-2Z-TVH	3001-B-2RSR-TVH	14	26	0.3	0.025
20,000	-	3201-B-TVH	3201-B-2Z-TVH	-	16.2	27.8	0.6	0.051
14,800	-	3802-B-TVH	3802-B-2Z-TVH	3802-B-2RSR-TVH	17	22	0.3	0.009
13,200	-	3002-B-TVH	3002-B-2Z-TVH	3002-B-2RSR-TVH	17	30	0.3	0.036
17,100	-	3202-B-TVH	3202-B-2Z-TVH	3202-B-2RSR-TVH	19.2	30.8	0.6	0.065
12,000	-	3302-B-TVH	-	-	20.6	36.4	1	0.124
13,200	-	3803-B-TVH	3803-B-2Z-TVH	3803-B-2RSR-TVH	19	24	0.3	0.015
12,200	-	3003-B-TVH	3003-B-2Z-TVH	3003-B-2RSR-TVH	19	33	0.3	0.042
15,400	-	3203-B-TVH	3203-B-2Z-TVH	3203-B-2RSR-TVH	21.2	35.8	0.6	0.093
11,400	-	3303-B-TVH	-	-	22.6	41.4	1	0.177
12,700	-	3804-B-TVH	3804-B-2Z-TVH	3804-B-2RSR-TVH	22	30	0.3	0.02
10,600	-	3004-B-TVH	3004-B-2Z-TVH	3004-B-2RSR-TVH	23.2	38.8	0.6	0.08
13,900	-	3204-B-TVH	3204-B-2Z-TVH	3204-B-2RSR-TVH	25.6	41.4	1	0.154
9,900	-	3304-B-TVH	3304-B-2Z-TVH	3304-B-2RSR-TVH	27	45	1	0.217
10,300	-	3805-B-TVH	3805-B-2Z-TVH	3805-B-2RSR-TVH	27	35	0.3	0.025
8,900	-	3005-B-TVH	3005-B-2Z-TVH	3005-B-2RSR-TVH	28.2	43.8	0.6	0.1
11,800	-	3205-B-TVH	3205-B-2Z-TVH	3205-B-2RSR-TVH	30.6	46.4	1	0.178
-	-	-	-	3305-B-2RSR-TVH	32	55	1	0.359
8,700	-	3806-B-TVH	3806-B-2Z-TVH	3806-B-2RSR-TVH	32	40	0.3	0.03
18,000	-	3006-B-TVH	3006-B-2Z-TVH	3006-B-2RSR-TVH	34.6	50.4	1	0.16
10,300	-	3206-B-TVH	3206-B-2Z-TVH	3206-B-2RSR-TVH	35.6	56.4	1	0.289
7,800	-	3306-B-TVH	3306-B-2Z-TVH	3306-B-2RSR-TVH	37	65	1	0.548



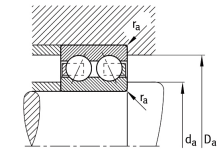
38...-B, 30...-B, 32...-B, 33...-B  
 $\alpha = 25^\circ$



38...-B-2Z, 30...-B-2Z,  
32...-B-2Z, 33...-B-2Z  
 $\alpha = 25^\circ$



38...-B-2RSR, 30...-B-2RSR,  
32...-B-2RSR, 33...-B-2RSR  
 $\alpha = 25^\circ$



Mounting dimensions

Boundary Dimensions							Basic Load Rating			Limiting Speed		
(mm)							(KN)			(rpm)		
d	D	B	D <sub>1</sub>	D <sub>2</sub>	d <sub>1</sub>	a	r	Cr	Cor	Polyamide Cage	Polyamide Cage With Shield (2Z)	Polyamide Cage With Sealed (2RS)
							(min)					
35	47	10	-	-	38.5	20	0.3	6.7	7	9,500	7,000	6,000
35	62	20	-	-	41.7	27.8	1	24.5	19.4	9,000	6,700	5,600
35	72	27	60.6	-	47.2	36	1.1	39	28.5	8,500	6,300	5,300
35	80	34.9	65.5	-	49.3	41	1.5	51	34.5	7,500	5,600	5,000
40	52	10	-	-	43.4	22.4	0.3	7	7.8	8,500	6,300	5,300
40	68	21	-	-	46.7	30.8	1	25.5	21.7	8,000	6,000	5,000
40	80	30.2	67.9	-	53	41	1.1	48	36.5	7,500	5,600	4,800
40	90	36.5	74.6	-	55.6	46	1.5	62	45	6,700	5,000	4,500
45	58	10	-	-	48.6	24.2	0.3	7.2	8.3	7,500	5,600	5,000
45	85	30.2	72.9	-	57.2	43	1.1	48	37.5	6,700	5,000	4,500
45	100	39.7	81.5	86.5	62.3	50	1.5	68	51	6,000	-	4,000
50	65	12	-	-	55.1	27.1	0.3	8.7	10.4	7,000	5,300	4,500
50	90	30.2	77.9	-	62	45	1.1	51	42.5	6,300	4,800	4,000
50	110	44.4	89.5	-	68.3	55	2	81.5	62	5,300	-	-
55	72	13	-	-	61.9	30.7	0.3	12.1	15.7	6,300	4,500	4,300
55	100	33.3	85.3	89.1	69	50	1.5	58.5	49	5,600	-	3,800
55	120	49.2	98.4	-	75.2	61	2	102	78	5,000	3,800	3,400
60	78	14	-	-	65.9	33.2	0.3	14.5	17.5	5,600	4,300	3,800
60	110	36.5	94.5	-	75.8	55	1.5	72	61	5,000	3,800	3,400
60	130	54	108.7	113.1	81.6	67	2.1	125	98	4,500	-	3,000
65	85	15	-	-	71.2	36.2	0.6	17.7	21.4	5,000	4,000	3,600
65	120	38.1	103.9	107.2	84.8	60	1.5	80	73.5	4,500	-	3,000
65	140	58.7	117.6	-	88.6	71	2.1	143	112	4,300	-	-
70	90	15	-	-	76.5	38.5	0.6	19.2	23.8	5,000	3,800	3,400
70	125	39.7	106.3	-	87	62	1.5	83	76.5	4,500	-	-
75	95	15	-	-	81.2	40.4	0.6	19.4	24.4	4,800	3,600	3,200
75	130	41.3	112.6	-	92.4	65	1.5	91.5	85	4,300	-	-
80	100	15	-	-	85.5	42.2	0.6	19.6	25.5	4,500	3,400	3,000
80	140	44.4	120.3	125.4	98.5	69	2	98	93	4,000	3,000	-

Reference Speed		Bearing Designation			Shoulder Dimensions			Mass
(rpm)					(mm)			(kg)
Polyamide Cage With Shield (ZZ)	Polyamide Cage With Sealed (2RS)	Polyamide Cage	Polyamide Cage With Shield (2Z)	Polyamide Cage With Sealed (2RS)	d <sub>a</sub>	D <sub>a</sub>	r <sub>a</sub>	Approx
					(min)	(max)	(max)	
7,400	-	3807-B-TVH	3807-B-2Z-TVH	3807-B-2RSR-TVH	37	45	0.3	0.035
6,600	-	3007-B-TVH	3007-B-2Z-TVH	3007-B-2RSR-TVH	39.6	57.4	1	0.2
9,200	-	3207-B-TVH	3207-B-2Z-TVH	3207-B-2RSR-TVH	42	65	1	0.446
7,300	-	3307-B-TVH	3307-B-2Z-TVH	3307-B-2RSR-TVH	44	71	1.5	0.657
6,500	-	3808-B-TVH	3808-B-2Z-TVH	3808-B-2RSR-TVH	42	50	0.3	0.04
6,300	-	3008-B-TVH	3008-B-2Z-TVH	3008-B-2RSR-TVH	44.6	63.4	1	0.25
8,500	-	3208-B-TVH	3208-B-2Z-TVH	3208-B-2RSR-TVH	47	73	1	0.594
6,400	-	3308-B-TVH	3308-B-2Z-TVH	3308-B-2RSR-TVH	49	81	1.5	0.984
5,700	-	3809-B-TVH	3809-B-2Z-TVH	3809-B-2RSR-TVH	47	56	0.3	0.053
7,800	-	3209-B-TVH	3209-B-2Z-TVH	3209-B-2RSR-TVH	52	78	1	0.628
6,000	-	3309-B-TVH	-	3309-B-2RSR-TVH	54	91	1.5	1.34
5,600	-	3810-B-TVH	3810-B-2Z-TVH	3810-B-2RSR-TVH	52	63	0.3	0.07
7,100	-	3210-B-TVH	3210-B-2Z-TVH	3210-B-2RSR-TVH	57	83	1	0.68
5,700	-	3310-B-TVH	-	-	61	99	2	1.8
5,100	-	3811-B-TVH	3811-B-2Z-TVH	3811-B-2RSR-TVH	57	70	0.3	0.09
6,600	-	3211-B-TVH	-	3211-B-2RSR-TVH	64	91	1.5	0.954
5,400	-	3311-B-TVH	3311-B-2Z-TVH	3311-B-2RSR-TVH	66	109	2	2.32
4,800	-	3812-B-TVH	3812-B-2Z-TVH	3812-B-2RSR-TVH	62	76	0.3	0.14
6,200	-	3212-B-TVH	3212-B-2Z-TVH	3212-B-2RSR-TVH	69	101	1.5	1.27
5,100	-	3312-B-TVH	-	3312-B-2RSR-TVH	72	118	2.1	2.92
4,500	-	3813-B-TVH	3813-B-2Z-TVH	3813-B-2RSR-TVH	68.2	81.8	0.6	0.16
5,700	-	3213-B-TVH	-	3213-B-2RSR-TVH	74	111	1.5	1.64
4,850	-	3313-B-TVH	-	-	77	128	2.1	3.63
4,200	-	3814-B-TVH	3814-B-2Z-TVH	3814-B-2RSR-TVH	73.2	86.8	0.6	0.19
5,500	-	3214-B-TVH	-	-	79	116	1.5	1.8
3,950	-	3815-B-TVH	3815-B-2Z-TVH	3815-B-2RSR-TVH	78.2	91.8	0.6	0.21
5,300	-	3215-B-TVH	-	-	89.3	116.6	1.5	1.91
3,650	-	3816-B-TVH	3816-B-2Z-TVH	3816-B-2RSR-TVH	83.2	96.8	0.6	0.23
5,100	-	3216-B-TVH	3216-B-2Z-TVH	-	91	129	2	2.45