Introduction

Angular contact ball bearings, double row (Figure 1a)

SKF double row ball bearings are designed with solid or one-piece inner and outer rings with contact angles converging outside the bearing providing overall system rigidity.

The double row angular contact ball bearings are available in two styles, Conrad (suffix A) and Max type (suffix E). The more popular style is the Conrad type. This assembly uses a slight elastic deflection of the outer ring to insert the "last ball". This results in uninterrupted raceways with smooth running, and significant thrust carrying capacity in both directions.

Bearings of the Max type design (suffix E) have a filling slot for inserting the balls. This permits assembly with a greater number of balls than in the previously described Conrad type bearings.

Filling slot bearing features are similar to those of the Conrad type; however, because of the greater number of balls (with the exception of a few sizes) their radial load carrying capacity is often higher than that of the Conrad type. On the other hand, heavy thrust loads can be accommodated in only one direction. These bearings should be mounted so that the predominant axial load acting on the shaft is directed away from the filling slot (**Figure 1a**). Thrust loads in the direction of the filling slot **should not** exceed a thrust to radial load ratio of Fa / Fr = 0.3.

Part number markings are normally located on either the side face or the O.D. The side face marking is always on the side opposite the filling slot, and the O.D. marking is offset from the center away from the side with the filling slot. Therefore, even double sealed or shielded bearings with the filling slot covered from view can be oriented correctly.

Angular contact ball bearings, four-point (Figure 1b)

Four-point contact ball bearings are single row angular contact ball bearings having raceways which are designed to enable axial loads to be accommodated in both directions. They need less axial space than double row bearings. The four-point contact ball bearings shown in the following tables have a contact angle of 35° and a two-part inner ring, allowing a large number of balls to be incorporated, thus providing a high axial load carrying capacity. The bearings are separable, i.e. the inner ring halves and the outer ring with ball and cage assembly can be mounted individually.

Angular contact ball bearings, thrust pack

A thrust pack bearing consists of a standard QJ bearing and a single row angular contact bearing (BEGAM version) matched together and are intended for applications having predominate axial load in one direction. The axial load should not reverse direction during operation except for transient conditions such as at machine start up or shut-down, else the BEGAM bearing may become unloaded and have possible skidding problems. These bearings are matched in sets and are serialized and therefore **are not** interchangeable amongst sets.

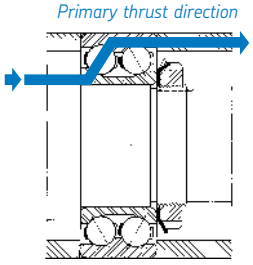
Variations

Angular contact ball bearings, single row for universal matching

These bearings are specially manufactured so that when mounted in random order (back-to-back, face-to-face or tandem) (**Figure 2**), but immediately adjacent to each other, the predetermined value of axial internal clearance or preload will be attained. An even distribution of load will occur without shims or similar devices.

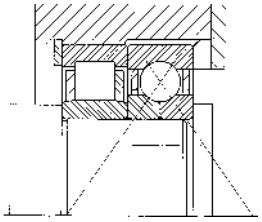
The standard bearings for universal matching carry the suffix CB where C indicates clearance and B the magnitude of the clearance (**Figure 3**). Bearings with a smaller or greater clearance are also available (suffixes CA and CC, respectively) as are bearings with light, moderate or heavy preload, (suffixes GA, GB and GC, respectively where G = preload or negative clearance). When ordering bearings for universal matching; for example 7206 BECB, it is necessary to indicate the number of individual bearings required since SKF does not stock these in sets.

Figure 1a



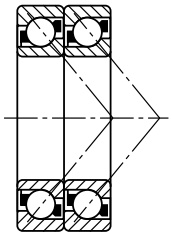
Double row, angular contact ball bearing

Figure 1b

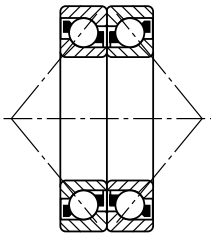


Four-point contact ball bearing

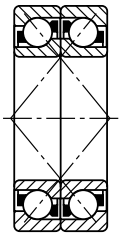
Figure 2



Tandem arrangement

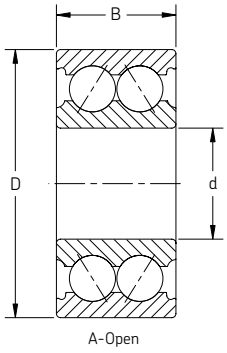


Back-to-back arrangement

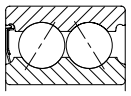


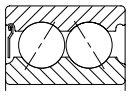
Face-to-face arrangement

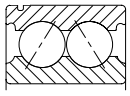
Double row, 30° contact angle
Conrad
Open, sealed, shielded and snap ring
Standard and SKF Explorer
Series: 3200 A – 3220 A
Size: 10 mm – 100 mm
0.3937 in – 3.9370 in

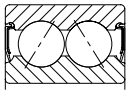


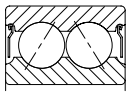
A-Open

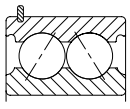

A-RS1


A-Z


A-N


A-2RS1


A-2Z


A-NR

Designation	Principal dimensions						Basic load ratings				Speed rating			Mass	
	Bore d		Outside dimeter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed	Sealed imiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	r/min	kg	lb
3200 A	10	0.3937	30	1.1811	14.0	0.5625	7 610	1 700	4 300	1 000	22 000	24 000	17 000	0.05	0.11
3201 A	12	0.4724	32	1.2598	15.9	0.6250	10 100	2 300	5 600	1 300	20 000	22 000	15 000	0.06	0.13
3202 A	15	0.5906	35	1.3780	15.9	0.6250	11 200	2 500	6 800	1 500	17 000	18 000	14 000	0.07	0.15
3203 A	17	0.6693	40	1.5748	17.5	0.6875	14 300	3 200	8 800	2 000	15 000	16 000	12 000	0.10	0.21
3204 A	20	0.7874	47	1.8504	20.6	0.8125	20 000	4 500	12 000	2 700	14 000	14 000	10 000	0.16	0.35
3205 A	25	0.9843	52	2.0472	20.6	0.8125	21 600	4 900	14 300	3 200	12 000	12 000	8 500	0.19	0.42
3206 A	30	1.1811	62	2.4409	23.8	0.9375	30 000	6 700	20 400	4 600	10 000	10 000	7 500	0.29	0.64
3207 A	35	1.3780	72	2.8346	27.0	1.0625	40 000	9 000	28 000	6 300	9 000	9 000	6 300	0.40	0.88
3208 A	40	1.5748	80	3.1496	30.2	1.1875	47 500	10 700	34 000	7 600	8 000	8 000	5 600	0.58	1.28
3209 A	45	1.7717	85	3.3465	30.2	1.1875	51 000	11 500	39 000	8 800	7 500	7 500	5 300	0.64	1.41
3210 A	50	1.9685	90	3.5433	30.2	1.1875	51 000	11 500	39 000	8 800	7 000	7 000	4 800	0.66	1.46
3211 A	55	2.1654	100	3.9370	33.3	1.3125	60 000	13 500	47 500	10 700	6 300	6 300	4 500	1.05	2.31
3212 A	60	2.3622	110	4.3307	36.5	1.4375	73 500	16 500	58 500	13 200	5 600	5 600	4 000	1.40	3.09
3213 A	65	2.5591	120	4.7244	38.1	1.5000	80 600	18 100	73 500	16 500	4 500	4 800	3 600	1.75	3.86
3214 A	70	2.7559	125	4.9213	39.7	1.5625	88 400	19 900	80 000	18 000	4 300	4 500	–	1.90	4.19
3215 A	75	2.9528	130	5.1181	41.3	1.6250	95 600	21 500	88 000	19 800	4 300	4 500	3 200	2.10	4.63
3216 A	80	3.1496	140	5.5118	44.4	1.7500	106 000	23 800	95 000	21 400	4 000	4 300	3 000	2.65	5.84
3217 A	85	3.3465	150	5.9055	49.2	1.9375	124 000	27 900	110 000	24 700	3 600	3 800	–	3.40	7.50
3218 A	90	3.5433	160	6.2992	52.4	2.0625	130 000	29 200	120 000	27 000	3 400	3 600	–	4.15	9.15
3219 A	95	3.7402	170	6.6929	55.6	2.1875	159 000	35 700	146 000	32 800	3 200	3 400	–	5.00	11.02
3220 A	100	3.9370	180	7.0866	60.3	2.3750	178 000	40 000	166 000	37 300	3 000	3 200	–	6.10	13.45

Note: The 5200/5300 series DRACBB have been replaced with the 3200/3300 series designation.
The product design has not changed; therefore, the fit, form and function remain the same.

Consult SKF USA Inc. prior to design change or order placement.