BEARING CW

Product Tables

Deep Groove Ball Bearings
Angular Contact Ball Bearings

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Deep Groove Ball Bearings

Single and Double Row

Globally, single row ball bearings are the most utilized type of bearings. They are simple in design and can be used in a wide range of applications. They consist of an inner ring, an outer ring, ball set and cage (see Chapter 1). Curvatures in the inner and outer rings cup the ball making it possible to apply radial and axial loads to these bearings.

They are also ideal for applications with high rotation speeds because the rolling friction in ball bearings is very low compared to other bearing types.

Deep groove ball bearings are very well suited for applications where high or very high rotation speeds are required. Basic versions of the single row deep groove ball bearing (no seal or shield) are said to be open. When the inner diameter is smaller than 10 mm, the open and covered versions are distinguished from one another by the overall width. Depending on the application, CW BEARING can offer bearings with light-contact seals (LLH), non-contact seals (LLB), full contact seals (LLU), double shields (ZZ) or with special seals. Our technical service can help you find the best suitable seal material for your applications.

CW can deliver deep groove ball bearings with or without grease. The standard grease filling is 25% to 35% of the free space inside the bearing. The quantity of grease in the bearing can be reduced or increased to the customer's requirements or CW BEARING recommendations. We offer a large range of different grease types.

If the load capacity of a single row deep groove ball bearing is exceeded, then a double row deep groove ball bearing can be considered if the outer and inner diameter of the bearing cannot be changed. Double row ball bearings are available in the same series, bore and outer diameters as single row ball bearings, but have a greater width.

Special bearing dimensions and types can be produced per customer's request, as can bearings with standard dimensions according to ISO 15.

CW BEARING can produce ball bearings with standard tolerances for dimensions and clearance or provide custom bearings with special tolerances if required for the application.

In the previous chapter you will find the requisite information for calculating the bearing lifetime, the radial play, the tolerable misalignment and the axial capacity for your selected bearing size and type.

Figure 1
Single row deep groove ball bearing

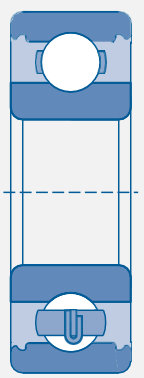
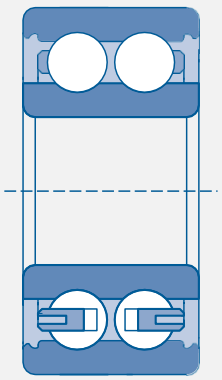


Figure 2
Double row deep groove ball bearing



Angular Contact Bearings

Single and Double Row

The raceways of the inner and outer ring of angular contact ball bearings are biased with one side having a higher shoulder. These are designed to bear combined lo- ads in the axial and radial direction. However, unlike a deep groove ball bearing, axial loads can be applied in one direction only. For this reason, a second opposing bearing must always be used.

The greater the contact angle of an angular contact ball bearing, the greater the axial loading capacity will be. Our standard single row angular contact ball bearings come with a 40° contact angle, making them extremely suitable for applications with a high axial load.

As you can see in Figure 4, double row angular contact ball bearings have the same internal geometry as two single row angular contact ball bearings placed side by side.

The advantage of double row angular contact ball bearings as compared to single row angular contact ball bearings is that they can bear radial and axial loads in both directions. Double row angular contact ball bearings have a rigid mounting, which also can bear some misalignment. Our double row angular contact ball bearings standard is an angular contact of 25°.

Single row and double row angular contact ball bearings can be supplied with or without shields or seals depending on the customer's request and the requirements of the application.

Depending on the application, the angular contact bearing can be supplied with a plastic cage (glass fiber reinforced polyamide 66), as shown in Figure 3 and Figure 4, or a steel cage.

CW BEARING also has the engineering capabilities to develop customized angular contact ball bearings, should one be required for your application.

Figure 3
Single row angular contact ball bearing

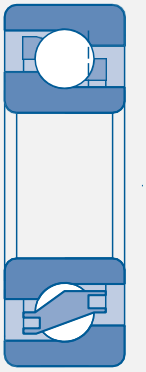
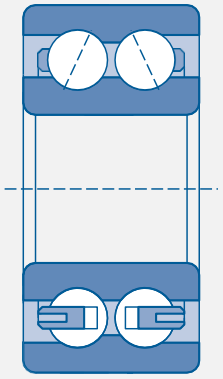
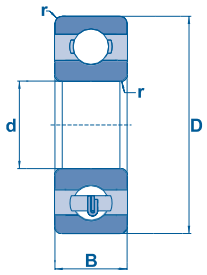


Figure 4
Double row angular contact ball bearing



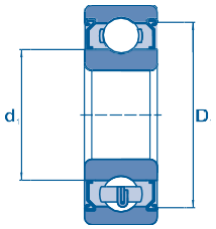


Single row deep groove ball bearing (open)

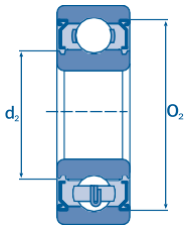
Product Table 1

Single Row Deep Groove Ball Bearing (< 10 mm)

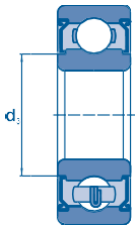
Type	Bore	Outer Diameter	Width		Radius	Basic Load Ratings		Fatigue, Load Limit	Balls	
			open	capped		dynamic	static			
	d	D	B	B_1	~ r_{min}	C	C_0	C_u	No.	Dia.
	mm	mm	mm	mm	mm	N	N	N		mm
683	3	7	2	3	0.10	310	111	5	7	1.200
693	3	8	3	4	0.15	560	179	8	6	1.588
603	3	9	3	5	0.15	570	187	9	7	1.588
623	3	10	4	4	0.15	630	218	10	7	1,588
633	3	13	5	5	0,30	1,300	485	22	7	2,381
684	4	9	2.5	4	0,10	640	225	10	7	1,588
694	4	11	4	4	0,15	960	345	16	8	1,588
604	4	12	4	4	0,20	960	345	16	9	1,588
624	4	13	5	5	0,20	1,300	485	22	7	2,381
634	4	16	5	5	0,30	1,730	670	30	8	2,381
685	5	11	3	5	0,15	715	218	10	9	1,588
695	5	13	4	4	0,20	1,080	430	20	8	2,000
605	5	14	5	5	0,20	1,330	505	23	7	2,381
625	5	16	5	5	0,30	1,730	670	30	8	2,381
635	5	19	6	6	0,30	2,340	885	40	7	3,500
686	6	13	3.5	5	0,15	1,080	440	20	8	2,000
696	6	15	5	5	0,20	1,730	670	30	8	2,381
606	6	17	6	6	0,30	2,260	835	38	8	2,381
626	6	19	6	6	0,30	2,340	885	40	7	3,500
636	6	22	7	7	0,30	3,300	1,370	62	7	3,969
687	7	14	3.5	5	0,15	1,170	510	23	9	2,000
697	7	17	5	5	0,30	1,610	715	33	9	2,381
607	7	19	6	6	0,30	2,340	885	40	7	3,500
627	7	22	7	7	0,30	3,300	1,370	62	7	3,969
637	7	26	9	9	0,30	4,050	1,620	74	7	4,763
688	8	16	4	5	0,20	1,260	590	27	9	2,381
698	8	19	6	6	0,30	2,240	910	41	7	3,500
608	8	22	7	7	0,30	3,300	1,370	62	7	3,969
628	8	24	8	8	0,30	3,350	1,430	65	7	3,969
638	8	28	9	9	0,30	4,550	1,970	90	7	4,763
689	9	17	4	5	0,20	1,330	665	30	9	2,381
699	9	20	6	6	0,30	1,720	840	38	8	3,175
609	9	24	7	7	0,30	3,350	1,430	65	7	3,969
629	9	26	8	8	0,60	4,550	1,970	90	7	4,763
639	9	30	10	10	0,60	5,100	2 390	109	7	4,763



Inner ring UG structure

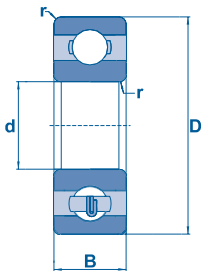


Inner ring V structure



Inner ring T structure

Limiting Speed			Weight (approx.)	Dimensions				
Oil	Grease			UG Structure (Shoulder)	V Structure	T Structure	Outer Ring	Outer Ring
	ZZ, LLB	LLU		~ d_1	~ d_2	~ d_3	~ D_1	~ D_2
1/min	1/min	1/min	g	mm	mm	mm	mm	mm
75,000	63,000	-	0.32	4.20	-	-	5.80	6.10
67,000	60,000	-	0.60	4.10	-	-	6.30	6.80
67,000	56,000	-	0.80	4.86	-	-	7.20	7.90
60,000	50,000	-	1.45	5.30	-	-	7.70	8.40
50,000	42,000	-	3.20	6.95	-	-	10.45	11.30
63,000	53,000	-	0.65	5.30	-	-	7.70	8.00
56,000	48,000	-	1.60	6.40	-	-	8.60	9.30
54,000	46,000	-	2.10	6.70	-	-	9.30	10.00
48,000	40,000	-	3.10	6.90	-	-	10.50	11.40
43,000	36,000	33,000	5.30	8.80	-	*	12.20	13.80
53,000	45,000	-	1.16	6.80	-	-	9.15	9.85
50,000	43,000	38,000	2.40	7.30	-	6.70	10.20	11.00
50,000	40,000	-	3.00	7.80	-	6.90	11.28	12.20
43,000	36,000	33,000	4.50	8.80	-	7.60	12.20	13.80
40,000	32,000	28,000	8.50	10.30	-	9.30	15.40	16.50
50,000	40,000	35,000	1.87	8.00	-	-	11.00	11.80
45,000	40,000	35,000	3.90	8.80	-	-	12.40	13.20
45,000	38,000	31,000	5.50	8.60	-	*	12.40	13.80
40,000	32,000	28,000	7.80	10.30	9.80	9.30	15.40	16.50
37,000	31,000	-	13.60	12.20	-	10.80	17.80	19.00
45,000	40,000	31,000	2.00	9.00	-	-	12.00	12.60
43,000	36,000	28,000	4.80	10.30	-	9.30	13.60	14.20
43,000	36,000	25,000	7.40	10.30	9.80	9.30	15.40	16.50
36,000	30,000	23,000	12.10	12.20	12.00	10.80	17.80	19.00
34,000	29,000	-	24.40	12.80	12.30	11.60	18.80	19.70
43,000	36,000	27,000	3.00	10.20	-	9.60	13.80	14.40
43,000	36,000	26,000	7.20	10.30	-	-	15.40	16.50
40,000	34,000	23,000	11.60	12.20	11.50	10.80	17.80	19.00
34,000	28,000	21,000	16.30	12.80	12.30	11.60	18.80	19.70
33,000	28,000	-	28.00	14.60	-	13.00	21.40	22.60
43,000	36,000	24,000	4.10	11.10	-	-	14.90	15.50
40,000	34,000	21,000	7.70	12.40	-	11.30	16.60	17.50
38,000	32,000	21,000	13.60	12.90	12.30	11.80	18.50	19.70
34,000	28,000	19,000	18.90	14.60	13.60	13.00	21.40	22.60
31,000	26,000	-	35.50	17.10	16.10	*	22.90	24.10



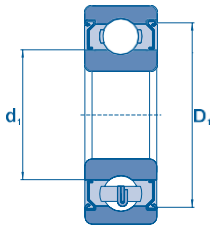
Single row deep groove ball bearing (open)

Product Table 2

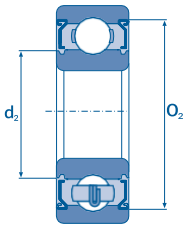
Single Row Deep Groove Ball Bearing (10 - 20 mm)

Type	Bore	Outer Diameter	Width	Radius	Basic Load Ratings		Fatigue Load Limit	Balls	
					dynamic	static			
	d	D	B	~ r_{min}	C	C_0	C_u	No.	Dia.
	mm	mm	mm	mm	N	N	N		mm
6800	10	19	5	0.30	1,720	840	38	9	2.381
63800*	10	19	7	0.30	1,720	840	38	9	2.381
6900	10	22	6	0.30	2,700	1,270	58	8	3.500
6000	10	26	8	0.30	4,550	1,970	90	7	4.763
63000*	10	26	12	0.30	4,550	1,970	90	7	4.763
16100*	10	28	8	0.30	5,100	2,370	108	7	4.763
6200	10	30	9	0.60	5,100	2,390	109	8	4.763
62200*	10	30	14	0.60	5,970	2,630	120	8	4.763
6300	10	35	11	0.60	8,100	3,450	157	7	6.350
62300*	10	35	17	0.60	8,100	3,450	157	7	6.350
6801	12	21	5	0.30	1,920	1,040	47	12	2.381
63801*	12	21	7	0.30	1,920	1,040	47	12	2.381
6901	12	24	6	0.30	2,890	1,460	66	9	3.500
16001*	12	28	7	0.30	5,100	2,370	108	10	3.969
6001	12	28	8	0.30	5,100	2,370	108	8	4.763
63001*	12	28	12	0.30	5,100	2,370	108	8	4.763
16101*	12	30	8	0.30	5,100	2,390	109	8	4.763
6201	12	32	10	0.60	6,800	3,050	139	7	5.953
62201*	12	32	14	0.60	6,800	3,050	139	7	5.953
6301	12	37	12	1.00	9,700	4,200	191	7	6.747
62301*	12	37	17	1.00	9,710	4,190	190	7	6.747
6802	15	24	5	0.30	2,080	1,260	57	14	2.381
63802*	15	24	7	0.30	2,080	1,260	57	14	2.381
6902	15	28	7	0.30	4,350	2,260	103	10	3.969
16002*	15	32	8	0.30	5,600	2,840	129	9	4.763
6002	15	32	9	0.30	5,600	2,840	129	9	4.763
63002*	15	32	13	0.30	5,600	2,840	129	9	4.763
6202	15	35	11	0.60	7,650	3,750	170	8	5.953
62202*	15	35	14	0.60	7,650	3,750	170	8	5.953
6302	15	42	13	1.00	11,400	5,450	248	7	7.938
62302*	15	42	17	1.00	11,400	5,450	248	7	7.938
6803	17	26	5	0.30	2,630	1,570	71	16	2.381
63803*	17	26	7	0.30	2,230	1,570	71	16	2.381
6903	17	30	7	0.30	4,600	2,550	116	11	3.969
16003*	17	35	8	0.30	6,000	3,250	148	10	4.763
6003	17	35	10	0.30	6,000	3,250	148	10	4.763
63003*	17	35	14	0.30	6,000	3,250	148	10	4.763
6203	17	40	12	0.60	9,550	4,800	218	8	6.747
62203*	17	40	16	0.60	9,550	4,800	218	8	6.747
6303	17	47	14	1.00	13,300	6,650	302	7	8.731
62303*	17	47	19	1.00	13,630	6,620	301	7	8.731
6804	20	32	7	0.30	4,030	2,450	112	13	3.500
63804*	20	32	10	0.30	4,000	2,470	112	14	3.175
6904	20	37	9	0.30	6,400	3,700	168	11	4.763
16004*	20	42	8	0.30	7,900	4,450	202	10	5.556
6004	20	42	12	0.60	9,400	5,000	227	9	6.350
63004*	20	42	16	0.60	9,400	5,000	227	9	6.350
6204	20	47	14	1.00	12,800	6,600	300	8	7.938
62204*	20	47	18	1.00	12,800	6,600	300	8	7.938
6304	20	52	15	1.10	15,900	7,900	359	7	9.525
62304*	20	52	21	1.10	15,900	7,900	359	7	9.525

* available on request

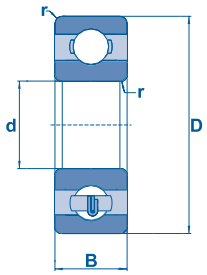


Inner ring UG structure



Inner ring V structure

Limiting Speed			Weight (approx.)	Dimensions			
Oil	Grease			UG Structure	V Structure	Outer ring	Outer ring
	ZZ, LLB	LLU		~ d_1	~ d_2	~ D_1	~ D_2
1/min	1/min	1/min	kg	mm	mm	mm	mm
45,000	38,000	24,000	0.0056	12.6	-	16.4	17.2
40,800	34,000	22,000	0.0250	12.6	-	16.4	17.2
38,000	32,000	23,000	0.0096	13.0	-	18.0	19.0
36,000	30,000	21,000	0.0190	14.6	13.6	21.4	22.6
35,000	28,000	19,000	0.0280	14.6	13.6	21.4	22.6
32,000	28,000	19,000	0.0240	15.9	14.9	22.0	23.2
30,000	25,000	18,000	0.0320	17.2	15.6	23.8	25.2
30,000	24,000	16,000	0.0480	17.2	15.6	23.8	25.2
27,000	23,000	17,000	0.0530	19.4	18.2	27.6	29.5
25,000	20,000	13,300	0.0790	19.4	18.2	27.6	29.5
40,000	33,000	23,000	0.0064	14.7	-	18.3	19.1
36,000	30,000	19,000	0.0700	14.7	-	18.3	19.1
36,000	30,000	19,000	0.0110	15.0	-	20.0	20.8
32,000	28,000	18,000	0.0210	19.2	17.8	24.8	26.2
32,000	28,000	16,000	0.0220	17.1	15.8	23.7	24.9
32,000	25,500	17,000	0.0290	17.1	15.8	23.7	24.9
32,000	28,000	16,000	0.0270	17.9	16.6	24.9	26.1
28,000	22,000	16,000	0.0370	18.3	17.1	26.1	28.1
28,000	22,000	14,700	0.0510	18.3	17.1	23.7	24.9
24,000	20,000	16,000	0.0600	19.3	18.2	29.7	31.6
23,000	18,500	12,300	0.0820	19.3	18.2	29.7	31.6
33,000	28,000	17,000	0.0075	17.7	-	21.3	22.1
32,000	26,000	16,000	0.0070	17.7	-	21.3	22.1
30,000	26,000	16,000	0.0160	18.7	17.3	24.3	25.3
28,000	23,000	15,000	0.0250	20.4	19.3	26.6	29.1
28,000	23,000	15,000	0.0300	20.4	19.3	26.6	28.4
28,000	22,000	14,000	0.0440	20.4	19.3	26.6	28.4
24,000	20,000	14,000	0.0450	21.6	20.5	29.4	30.9
24,000	19,000	12,700	0.0570	21.6	20.5	29.4	30.9
20,000	17,000	12,000	0.0820	24.3	22.7	34.7	36.7
20,000	15,500	10,300	0.1140	24.3	22.7	34.7	36.7
30,000	26,000	15,000	0.0830	19.8	-	23.2	24.0
27,600	23,000	14,000	0.0100	19.8	-	23.2	24.0
28,000	24,000	14,000	0.0180	20.7	-	26.3	27.3
24,000	21000	13,000	0.0320	22.9	-	29.1	30.5
24,000	21,000	13,000	0.0390	22.9	21.6	29.1	31.3
25,000	20,000	13,300	0.0550	22.9	21.6	29.1	31.3
22,000	17,000	12,000	0.0650	24.6	23.5	33.4	35.3
21,000	17,000	11,300	0.0870	24.6	23.5	33.4	35.3
19,000	16,000	11,000	0.1550	27.2	25.5	37.7	39.6
17,000	14,000	9,300	0.1540	27.2	25.5	37.7	39.6
25,000	21,000	12,000	0.0190	23.2	22.2	28.0	29.2
25,000	21,000	12,000	0.0230	23.8	-	28.2	29.0
23,000	19,000	12,000	0.0360	25.1	24.0	31.8	33.0
20,000	18,000	12,000	0.0500	27.4	-	34.4	36.2
20,000	18,000	11,000	0.0690	26.9	25.2	35.1	26.5
20,000	16,500	11,000	0.0820	26.9	25.2	35.1	26.5
18,000	15,000	11,000	0.1050	18.5	26.6	39.7	40.5
17,000	14,000	9,300	0.1390	18.5	26.6	39.7	40.5
17,000	14,000	11,000	0.1450	30.2	28.4	42.1	44.7
15,000	12,000	8,000	0.2090	30.2	28.4	42.1	44.7



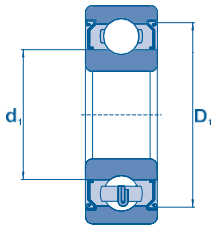
Single row deep groove ball bearing (open)

Product Table 3

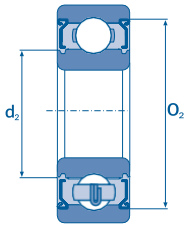
Single Row Deep Groove Ball Bearing (22 - 32 mm)

Type	Bore	Outer Diameter	Width	Radius	Basic Load Ratings		Fatigue Load Limit	Balls	
					dynamic	static			
	d	D	B	~ r_{min}	C	C_0	C_u	No.	Dia.
	mm	mm	mm	mm	N	N	N		mm
60/22	22	44	12	0.6	9,400	5,050	206	9	6.350
62/22	22	50	14	1.0	12,900	6,800	277	8	7.938
63/22	22	56	16	1.1	18,400	9,250	377	7	10.319
6805	25	37	7	0.3	4,500	3,150	143	16	3.500
63805*	25	37	10	0.3	4,500	3,150	143	15	3.500
6905	25	42	9	0.3	7,050	4,450	202	13	4.763
16005*	25	47	8	0.3	8,850	5,600	255	11	5.556
6005	25	47	12	0.6	10,100	5,850	266	10	6.350
63005*	25	47	16	0.6	10,100	5,850	266	10	6.350
6205	25	52	15	1.0	14,000	7,850	357	9	7.938
62205*	25	52	18	1.0	14,000	7,850	357	9	7.938
6305	25	62	17	1.1	20,600	11,200	509	8	10.319
62305*	25	62	24	1.1	23,620	12,130	551	7	11.500
6405	25	80	21	1.5	36,000	19,500	886	7	13.494
60/28	28	52	12	0.6	12,500	7,400	302	11	6.350
62/28	28	58	16	1.0	16,600	9,500	388	9	8.731
63/28	28	68	18	1.0	26,700	14,000	571	7	12.700
6806	30	42	7	0.3	4,700	3,650	166	18	3.500
6906	30	47	9	0.3	7,250	5,000	227	14	4.763
16006*	30	55	9	0.3	11,200	7,350	334	13	5.556
6006	30	55	13	1.0	13,200	8,300	377	11	7.144
63006*	30	55	19	1.0	13,200	8,300	377	11	7.144
6206	30	62	16	1.0	19,500	11,300	514	9	9.525
62206*	30	62	20	1.0	19,500	11,300	514	9	9.525
6306	30	72	19	1.1	26,700	15,000	682	8	11.906
62306*	30	72	27	1.1	28,160	15,820	719	8	11.906
6406	30	90	23	1.5	43,500	24,000	1,091	8	13.494
60/32	32	58	13	1.0	15,100	9,150	385	11	7.144
62/32	32	65	17	1.0	20,700	11,600	473	8	11.112
63/32	32	75	20	1.1	29,900	17,000	694	8	11.906

* available on request

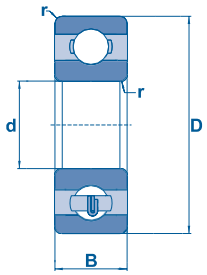


Inner ring UG structure



Inner ring V structure

Limiting Speed			Weight (approx.)	Dimensions			
Oil	Grease			UG Structure	V Structure	Outer Ring	Outer Ring
	ZZ, LLB	LLU		~ d_1	~ d_2	~ D_1	~ D_2
1/min	1/min	1/min	kg	mm	mm	mm	mm
20,000	17,000	11,000	0.074	27.90	-	36.40	38.00
16,000	14,000	9,500	0.119	31.25	-	40.70	42.60
16,000	13,000	9,500	0.179	32.80	-	45.20	-
21,000	18,000	9,800	0.022	28.40	-	33.20	34.20
21,000	18,000	9,800	0.027	28.40	-	33.20	34.20
19,000	16,000	9,700	0.043	29.90	28.50	37.00	38.90
18,000	15,000	9,500	0.060	32.40	-	39.60	41.40
18,000	15,000	9,500	0.080	31.90	30.15	40.10	41.50
18,000	15,000	9,500	0.105	31.90	30.15	40.10	41.50
15,000	13,000	9,000	0.128	33.80	31.80	44.20	46.00
15,000	12,000	8,000	0.157	33.80	31.80	44.20	46.00
14,000	11,000	8,000	0.232	38.30	36.20	51.00	52.50
12,500	10,000	6,700	0.272	38.30	36.20	51.00	52.50
11,000	8,500	6,000	0.518	44.40	42.20	60.60	62.80
16,000	14,000	8,500	0.096	36.20	-	43.80	-
14,000	12,000	8,000	0.175	37.75	-	48.20	-
13,000	10,000	7,500	0.287	40.70	-	54.70	57.50
18,000	15,000	8,300	0.026	33.40	-	38.20	39.20
17,000	14,000	8,200	0.049	35.40	34.30	41.60	42.90
15,000	13,000	8,000	0.088	39.05	37.45	46.25	48.05
15,000	13,000	8,000	0.115	38.10	36.60	47.30	78.95
15,000	12,000	8,000	0.166	38.10	36.60	47.30	78.95
13,000	10,000	7,500	0.199	40.70	38.70	52.50	54.50
12,500	10,000	6,700	0.245	40.70	38.70	52.50	54.50
12,000	10,000	6,700	0.345	44.70	42.60	59.70	62.60
10,000	8,400	5,600	0.499	44.70	42.60	59.70	62.60
10,000	8,000	5,000	0.706	51.90	48.90	68.10	71.10
14,000	12,000	7,500	0.122	40.35	-	49.60	-
12,000	10,000	7,100	0.225	41.80	-	55.20	-
11,000	9,000	6,300	0.389	46.35	-	60.60	-



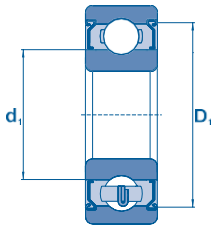
Single row deep groove ball bearing (open)

Product Table 4

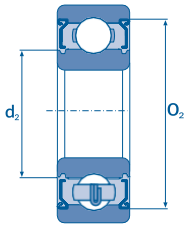
Single Row Deep Groove Ball Bearing (35 - 50 mm)

Type	Bore	Outer Diameter	Width	Radius	Basic Load Ratings		Fatigue Load Limit	Balls	
					dynamic	static			
	d	D	B	~ r_{min}	C	C_0	C_u	No.	Dia.
	mm	mm	mm	mm	N	N	N		mm
6807	35	47	7	0.3	4,900	4,100	186	20	3.500
6907	35	55	10	0.6	10,400	7,200	327	12	6.350
16007*	35	62	9	0.3	11,700	8,200	373	14	6.350
6007	35	62	14	1.0	16,000	10,300	468	11	7.938
63007*	35	62	20	1.0	16,000	10,300	468	11	7.938
6207	35	72	17	1.1	25,700	15,300	695	9	11.112
62207*	35	72	23	1.1	25,700	15,300	695	9	11.112
6307	35	80	21	1.5	33,500	19,200	873	8	13.494
62307*	35	80	31	1.5	33,500	19,200	873	8	13.494
6808	40	52	7	0.3	6,370	5,540	252	22	3.500
6908	40	62	12	0.6	13,700	10,000	455	13	6.747
16008*	40	68	9	0.3	12,600	9,650	439	15	6.350
6008	40	68	15	1.0	16,800	11,500	523	12	7.938
63008*	40	68	21	1.0	16,800	11,500	523	12	7.938
6208	40	80	18	1.1	29,100	17,900	814	9	11.906
62208*	40	80	23	1.1	29,100	17,900	814	9	11.906
6308	40	90	23	1.5	40,500	24,000	1091	8	15.081
62308*	40	90	33	1.5	40,500	24,000	1091	8	15.081
6809	45	58	7	0.3	6,570	6,130	279	23	3.969
6909	45	68	12	0.6	14,100	10,900	495	15	6.747
16009*	45	75	10	0.6	14,900	11,400	518	16	6.350
6009	45	75	16	1.0	20,900	15,200	691	11	8.731
63009*	45	75	23	1.0	20,900	15,200	691	11	8.731
6209	45	85	19	1.1	31,500	20,400	927	10	11.906
62209*	45	85	23	1.1	31,500	20,400	927	10	11.906
6810	50	65	7	0.3	6,400	6,200	282	23	3.969
6910	50	72	12	0.6	14,500	11,700	532	16	6.747
16010*	50	80	10	0.6	15,400	12,400	564	19	5.953
6010	50	80	16	1.0	21,800	16,600	755	14	8.731
6210	50	90	20	1.1	35,000	23,200	1055	10	12.700
62210*	50	90	23	1.1	35,000	23,200	1055	10	12.700

* available on request

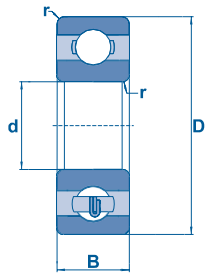


Inner ring UG structure



Inner ring V structure

Limiting Speed			Weight (approx.)	Dimensions			
Oil	Grease			UG Structure	V Structure	Outer Ring	Outer Ring
	ZZ, LLB	LLU		~ d_1	~ d_2	~ D_1	~ D_2
1/min	1/min	1/min	kg	mm	mm	mm	mm
16,000	13,000	7,300	0.029	38.40	-	43.00	44.20
14,000	12,000	7,000	0.075	40.90	-	49.10	50.40
13,000	11,000	7,000	0.108	44.40	43.00	52.60	54.40
13,000	11,000	7,000	0.155	43.40	41.50	54.20	55.80
13,000	10,500	7,000	0.214	43.75	41.50	53.40	55.80
11,000	9,500	6,300	0.288	47.00	44.80	60.40	62.60
11,000	8,800	5,900	0.393	47.00	44.80	60.40	62.60
10,000	8,500	6,000	0.460	19.90	47.70	66.10	68.30
9,000	7,300	4,900	0.687	19.90	47.70	66.10	68.30
14,000	12,000	6,500	0.033	43.40	-	48.20	49.20
13,000	11,000	6,100	0.111	46.60	45.20	55.40	57.10
12,000	10,000	6,000	0.125	49.90	48.50	58.10	59.90
12,000	10,000	6,000	0.192	49.50	47.50	59.50	61.90
12,000	9,500	6,300	0.262	49.50	47.50	59.50	61.90
10,000	8,500	5,600	0.365	52.80	50.60	67.40	69.60
9,500	7,800	5,200	0.478	52.80	50.60	67.40	69.60
9,000	7,500	5,300	0.635	56.10	53.10	74.20	77.20
8,000	6,700	4,500	0.903	56.10	53.10	74.20	77.20
13,000	11,000	5,800	0.040	48.70	47.70	54.00	55.20
12,000	9,500	5,600	0.130	52.40	51.00	61.20	62.90
11,000	9,000	5,300	0.166	55.80	54.40	64.10	65.90
11,000	9,000	5,300	0.245	55.50	53.50	66.90	69.00
11,000	9,000	5,300	0.299	55.50	53.50	66.90	69.00
9,000	7,500	5,200	0.405	57.80	55.70	72.50	75.00
9,000	7,500	5,200	0.522	57.80	55.70	72.50	75.00
11,000	9,500	5,200	0.052	54.30	-	60.70	61.80
11,000	9,000	5,200	0.179	56.60	55.10	65.50	67.40
10,000	8,500	5,000	0.179	62.30	-	69.70	70.80
10,000	8,500	5,000	0.260	60.50	58.50	71.90	74.00
8,500	7,100	4,800	0.465	62.40	60.20	77.60	81.00
8,500	7,100	4,000	0.543	62.40	60.20	77.60	81.00

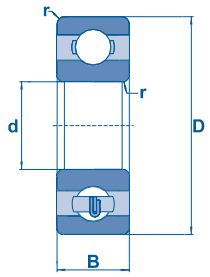


Inner ring UG structure

Product Table 5

Single Row Deep Groove Ball Bearing (R Series)

Basic Bearing No.	Bore		Outer Diameter		Width W				Flange Dimensions inch Open		Radius	Basic Rated Loadings		Ball Complement	
					open		capped					Dynamic	Static		
	d		D		B		B1				~ r_{min}	C	C_0	No.	Size
	mm	inch	mm	inch	mm	inch	mm	inch	D_f	W_f	inch	N	N		mm
R09	1.016	0.4000	3.175	0.1250	1.19	0.0469	-	-	-	-	0.004	0.096	0.025	-	-
R0	1.191	0.0469	3.969	0.1562	1.59	0.0625	2.38	0.0937	0.203	0.013	0.004	0.138	0.035	-	-
R1	1.397	0.0550	4.673	0.1875	1.98	0.0781	2.78	0.1094	0.234	0.023	0.004	0.231	0.066	-	-
R1-4	1.984	0.0781	6.350	0.2500	2.38	0.0937	3.57	0.1400	0.296	0.023	0.004	0.31	0.108	-	-
R133	2.381	0.0937	4.763	0.1875	1.59	0.0625	2.38	0.0937	0.234	0.018	0.004	0.188	0.06	-	-
R1-5	2.381	0.0937	7.938	0.3125	2.78	0.1094	3.57	0.1406	0.359	0.023	0.006	0.55	0.175	-	-
R144	3.175	0.1250	6.350	0.2500	2.38	0.0937	2.78	0.1094	0.296	0.023	0.004	0.283	0.095	-	-
R2-5	3.175	0.1250	7.938	0.3125	2.78	0.1094	3.57	0.1406	0.359	0.023	0.004	0.56	0.179	-	-
R2-6	3.175	0.1250	9.525	0.3750	2.78	0.1094	3.57	0.1406	0.422	0.023	0.006	0.64	0.225	-	-
R2	3.175	0.1250	9.525	0.3750	3.97	0.1562	3.97	0.1562	0.440	0.03	0.012	0.63	0.218	7	1.588
R2A	3.175	0.1250	12.700	0.5000	4.37	0.1719	4.37	0.1719	-	-	0.012	0.64	0.225	6	2.381
R155	3.969	0.1562	7.938	0.3125	2.78	0.1094	3.18	0.1250	0.359	0.023	0.004	0.36	0.149	-	-
R156	4.763	0.1875	7.938	0.3125	2.78	0.1094	3.18	0.1250	0.359	0.023	0.004	0.36	0.149	-	-
R166	4.763	0.1875	9.525	0.3750	3.18	0.1250	3.18	0.1250	0.422	0.023	0.004	0.71	0.27	8	1.588
R3	4.763	0.1875	12.700	0.5000	3.97	0.1562	4.98	0.1960	0.565	0.042	0.012	1.3	0.485	6	2.381
R3?	4.763	0.1875	12.700	0.5000	-	-	3.98	0.1960	0.565	0.042	0.012	1.3	0.485	8	2
R3A	4.763	0.1875	12.700	0.5000	4.98	0.1960	4.98	0.1960	-	-	0.012	1.3	0.485	7	2.381
R168	6.350	0.2500	9.525	0.3750	3.18	0.1250	3.18	0.1250	0.422	0.023	0.004	0.375	0.173	-	-
R188	6.350	0.2500	12.700	0.5000	3.18	0.1250	4.76	0.1875	0.547	0.023	0.006	1.08	0.44	8	1.588
R4	6.350	0.2500	15.875	0.6250	4.98	0.1960	4.98	0.1960	0.690	0.042	0.012	1.48	0.615	8	2.381
R4A	6.350	0.2500	19.050	0.7500	5.56	0.2188	7.14	0.2812	-	-	0.016	2.34	0.885	6	3.969
R6	9.525	0.3750	22.225	0.8750	5.56	0.2188	7.14	0.2812	0.969	0.062	0.016	3.35	1.41	7	3.969
R8	12.700	0.5000	28.575	1.1250	6.35	0.2500	7.94	0.3125	0.225	0.062	0.016	5.12	2.94	8	4.763
R8-7	11.113	0.4375	28.575	1.1250	6.35	0.2500	-	-	-	-	0.016	5.12	2.94	8	4.763
R10	15.875	0.6250	34.925	1.3750	7.14	0.2812	8.73	0.3438	-	-	0.031	6.02	3.63	8	5.953
R12	19.050	0.7500	41.275	1.6250	7.94	0.3125	11.11	0.4375	-	-	0.031	9.48	5.81	9	6.35
99502H	15.875	0.6250	34.925	1.3750	-	-	11	0.4331	-	-	0.031	6.02	3.63	8	5.953



Inner ring UG structure

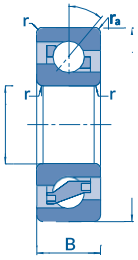
Product Table 6

Single Row Deep Groove Ball Bearing (1600 Series)

Basic Bearing No.	Bore		Outer Diameter		Width		Radius		Basic Load Ratings		Limiting Speed RPM X 1000		Balls Complement	
									Dynamic	Static				
	d		D		W		~ r_{min}		C	Co			No.	Dia.
	mm	inch	mm	inch	mm	inch	mm	inch	KN	KN				mm
1601	4.763	0.1875	17.463	0.6875	* 6.350	0.2500	0.3	0.012	1.3	0.55	43	53	6	3.969
1602	6.350	0.2500	17.463	0.6875	* 6.350	0.2500	0.3	0.012	1.3	0.55	43	53	6	3.969
1603	7.938	0.3125	22.225	0.8750	Δ 7.114	0.2801	0.3	0.012	3.35	1.142	32	38	7	3.969
1604	9.525	0.3750	22.225	0.8750	Δ 7.114	0.2801	0.4	0.015	3.35	1.142	32	38	7	3.969
1605	7.938	0.3125	23.019	0.9063	7.938	0.3125	0.3	0.012	3.35	1.142	32	38	7	3.969
1606	9.525	0.3750	23.019	0.9063	7.938	0.3125	0.4	0.015	3.35	1.142	32	38	7	3.969
1607	11.113	0.4375	23.019	0.9063	7.938	0.3125	0.4	0.015	4.55	1.97	32	38	7	3.969
1614	9.525	0.3750	28.575	1.1250	9.525	0.3750	0.6	0.025	5.1	2.15	26	30	8	4.763
1615	11.113	0.4375	28.575	1.1250	9.525	0.3750	0.6	0.025	5.1	2.15	26	30	8	4.763
1616	12.700	0.5000	28.575	1.1250	9.525	0.3750	0.6	0.025	5.1	2.15	26	30	8	4.763
1620	11.113	0.4375	34.925	1.3750	11.113	0.4375	0.6	0.025	8.1	3.45	19	23	8	5.953
1621	12.700	0.5000	34.925	1.3750	11.113	0.4375	0.6	0.025	8.1	3.45	19	23	8	5.953
1622	14.288	0.5625	34.925	1.3750	11.113	0.4375	0.6	0.025	5.6	2.95	19	23	8	5.953
1623	15.875	0.6250	34.925	1.3750	11.113	0.4375	0.6	0.025	5.6	2.95	19	23	8	5.953
1628	15.875	0.6250	41.275	1.6250	12.700	0.5000	0.6	0.025	11.5	5.5	18	21	8	6.747
1630	19.050	0.7500	41.275	1.6250	12.700	0.5000	0.6	0.025	11.5	5.5	18	21	8	6.350
1633	15.875	0.6250	44.450	1.7500	12.700	0.5000	0.6	0.025	11.5	5.5	18	21	8	6.350
1635	19.050	0.7500	44.450	1.7500	12.700	0.5000	0.6	0.025	11.5	5.5	18	21	8	6.350

* Width for seal/shield bearing is 7.938 mm (0.3125 in)

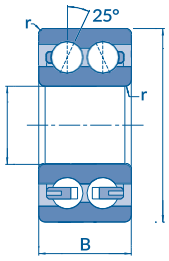
Δ Width for seal/shield bearing is 8.731 mm (0.34375 in)



Product Table 7

Single Row Angular Contact Ball Bearing (contact angle 40°)

Type	Bore	Outer Dia.	Width	Radius		Basic Load Ratings		Fatigue Load Limit	Balls		Limiting Speed		Weight (approx.)
						dynamic	static						
	d	D	B	~ r_{min}	~ $r_{min,a}$	C	C_0	C_u	No.	Dia.	Oil	Grease	
	mm	mm	mm	mm	mm	N	N	N		mm	1/min	1/min	kg
7201 B	12	32	10	0.6	0.3	7,500	3,800	173	8	6.350	24,000	16,000	0.036
7301 B	12	37	12	1.0	0.6	8,800	4,200	191	9	6.350	22,000	16,000	0.063
7202 B	15	35	11	0.6	0.3	7,900	4,300	195	9	6.350	22,000	14,000	0.045
7302 B	15	42	13	1.0	0.6	12,500	6,600	300	8	8.731	19,000	12,000	0.081
7203 B	17	40	12	0.6	0.3	9,900	5,500	250	11	7.144	19,000	12,000	0.064
7303 B	17	47	14	1.0	0.6	14,800	8,000	364	9	9.525	17,000	13,000	0.110
7204 B	20	47	14	1.0	0.6	13,300	7,700	350	10	8.500	16,000	12,000	0.110
7304 B	20	52	15	1.1	0.6	17,300	9,700	441	10	9.525	15,000	10,000	0.140
7205 B	25	52	15	1.0	0.6	14,800	9,400	427	11	8.731	14,000	9,000	0.130
7305 B	25	62	17	1.1	0.6	24,400	14,600	664	10	12.000	12,000	8,000	0.230
7206 B	30	62	16	1.0	0.6	20,500	13,500	614	12	10.319	12,000	7,500	0.190
7306 B	30	72	19	1.1	0.6	31,000	19,300	877	11	12.700	11,000	7,000	0.330
7207 B	35	72	17	1.1	0.6	27,100	18,400	836	13	10.319	10,000	6,500	0.280
7307 B	35	80	21	1.5	1.0	36,500	24,200	1,100	11	14.288	9,500	7,100	0.450
7208 B	40	80	18	1.1	0.6	32,000	23,000	1,045	14	12.000	9,000	6,000	0.370
7308 B	40	90	23	1.5	1.0	45,000	30,500	1,386	11	15.875	8,500	5,800	0.610



Product Table 8

Double Row Angular Contact Ball Bearing (contact angle 25°)

Type	Bore	Outer Dia.	Width	Radius	Basic Load Ratings		Fatigue Load Limit	Balls		Limiting Speed		Weight (approx.)
					dynamic	static						
	d	D	B	~ r_{min}	C	C_0	C_u	No.	Dia.	Oil	Grease	
	mm	mm	mm	mm	N	N	N		mm	1/min	1/min	kg
3001	12	28	12.0	0.3	6,200	3,750	170	16	4.763	22,000	15,500	0.025
3201	12	30	15.9	0.6	10,600	5,850	266	14	5.953	19,000	15,000	0.051
3002	15	32	13.0	0.3	8,600	5,400	245	18	4.763	20,000	15,000	0.036
3202	15	35	15.9	0.6	11,800	7,100	323	16	5.953	18,000	14,000	0.065
3302	15	42	19.0	1.0	16,300	10,000	455	16	6.747	14,000	11,000	0.124
3003	17	35	14.0	0.3	9,200	6,200	282	20	4.763	18,000	13,000	0.042
3203	17	40	17.5	0.6	14,600	9,000	409	16	6.350	15,500	12,000	0.093
3303	17	47	22.2	1.0	20,800	12,500	568	14	8.731	13,500	10,000	0.177
3004	20	42	16.0	0.6	14,500	9,600	436	18	6.350	15,000	11,000	0.080
3204	20	47	20.6	1.0	19,600	12,500	568	16	7.938	14,000	10,000	0.154
3304	20	52	22.2	1.1	23,200	15,000	682	14	9.525	12,000	9,000	0.217
3005	25	47	16.0	0.6	15,500	11,100	505	20	6.350	13,000	9,000	0.100
3205	25	52	20.6	1.0	21,200	14,600	664	18	7.938	12,000	8,500	0.178
3305	25	62	25.4	1.1	30,000	20,000	909	16	10.319	10,000	7,500	0.353
3006	30	55	19.0	1.0	20,300	15,600	709	22	7.144	10,000	8,000	0.160
3206	30	62	23.8	1.0	30,000	21,200	964	20	8.731	9,500	7,000	0.289
3306	30	72	30.2	1.1	41,500	28,500	1,295	16	11.906	8,500	6,300	0.657
3007	35	62	20.0	1.0	24,500	19,400	882	22	7.938	9,000	6,600	0.200
3207	35	72	27.0	1.1	39,000	28,500	1,295	18	10.500	8,500	6,300	0.446
3307	35	80	34.9	1.5	51,000	34,500	1,568	16	13.494	7,500	5,600	0.657
3008	40	68	21.0	1.0	25,500	21,700	986	24	7.938	8,000	6,300	0.250
3208	40	80	30.2	1.1	48,000	36,500	1,695	18	11.906	7,500	5,600	0.594
3308	40	90	36.5	1.5	62,000	45,000	2,045	16	15.081	6,700	5,000	0.984

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