

KBC Deep Groove Ball Bearings



KBC Deep Groove Ball Bearings

Standards • Basic Designs • Tolerances • Bearing Clearance • Cages • Alignment

Standards

Single row deep groove ball bearings KS B 2023

Basic Designs

Deep groove ball bearings are available as open design, and sealed design with either non-contact or contact seal. Availability of various KBC designs makes it possible for the customers to choose right kind of bearing suitable for their specific operating and environmental conditions.

Sealed bearings have grooves on inner ring for seals, but open type bearings do not have grooves on them as principle. However, Bearings which are supplied as sealed basic design may have grooves in the outer ring for the seals or shields also as open bearings, due to manufacturing reasons.




Open Deep Groove Ball Bearing
Open Deep Groove Ball Bearing with grooves in the inner ring

▼ Existence of Seal Grooves in KBC Open Deep Groove Ball Bearings

With Seal Grooves on Inner Ring	No Seal Grooves on Inner Ring
6000 ~ 5	6006 ~
6200 ~ 4	6205 ~
6300 ~ 3	6304 ~

Tolerances

Single row deep groove ball bearings of basic design have normal tolerances.

Bearings with narrow tolerances are supplied on request.

Tolerances: Refer to Table 7-2 Tolerances of Radial Bearings on Page 68.

Bearing Clearances

Single row deep groove ball bearings of basic design have normal clearances(MC3 Clearance for small-sized bearings.) Bearings with an increased bearing clearance are supplied on request.

Radial Clearances: Refer to Table 9-1 Radial Internal Clearances of Single Row Deep Groove Ball Bearings on Page 92, andTable 9-2 Radial internal Clearances of Small Diameter Deep Groove Ball Bearings on Page 92.

Cages

Basic deep groove ball bearings without cage suffix are fitted with a pressed steel cage. Pressed steel cage specially treated to improve abrasion-resistance and oil-proof quality are available also on request.

polyamide 66 cages can be used at operating temperatures of up to 120℃ over extended periods. If the bearings are lubricated with oil, any additives contained in the oil may reduce the cage service life. Also, aged oil may reduce the cage life at higher temperatures; therefore, the oil change intervals have to be strictly observed



Alignment

The self-aligning capacity of deep groove ball bearings is limited; this calls for well aligned bearing seats. Misalignment impairs the smooth running of the balls, induces additional stress in the bearing and consequently reduces the bearing service life.

KBC Deep Groove Ball Bearings

Speed Suitability · Heat Treatment · Sealed Bearings · Equivalent Loads

In order to keep additional stressing within reasonable limits, only minor misalignments - depending on the load - are permissible for deep groove ball bearings.

▼ Angle of Misalignment in Angular Minutes

Bearing Series	Low Loads	High Loads
62, 63	5'...10'	8'...16'
69, 160, 60	2'... 6'	5'...10'

Speed Suitability

Deep groove ball bearings are suitable for high speeds. Permissible speeds of bearings lubricated by grease or oil are listed on the Dimension Tables.

In the cases exceeding normal load conditions (When an applied load to a bearing is less than 8% of dynamic load rating and when axial load is less than 20% of radial load.), contact KBC.

Heat Treatment

KBC deep groove ball bearings are heat-treated in such a way that they can be used at operating temperatures of up to 120°C. If ordinary bearings are used at a temperature above 120°C, their hardness or dimension can be lowered or changed. The special bearings treated for stability even at the temperatures up to 350°C are available on request.

The operating temperatures of KBC deep groove ball bearings, which have been treated for dimensional stability under high temperatures, are shown below.

Care should be taken for sealed bearings and bearings with polyamide cages to observe the operating temperature limits.

▼ Operating Temperatures of KBC Deep Groove Ball Bearings, dimensionally stable under high temperatures.

Suffix	Max. Temperature
S0	150°C
S1/SH1/SS1	200°C
SH2/SS2	250°C
SH3	300°C
SH4	350°C

Sealed Deep Groove Ball Bearings

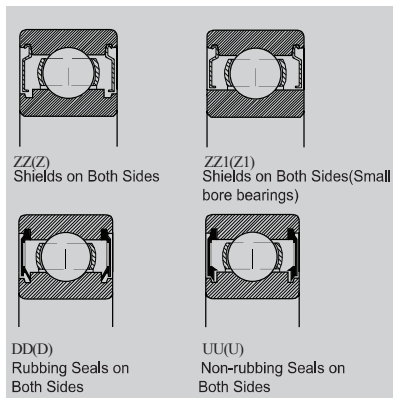
In addition to open deep groove ball bearings, KBC supplies as basic designs also deep groove ball bearings with shields (Non-contact steel plate seals) or seals (Contact seals) on both sides. All these bearings are filled at the manufacturer's plant with a high-quality grease, tested to KBC specifications.

Sealed bearings get to be sealed completely by labyrinth formed between seal groove on inner ring and shield bore.

Sealed bearings are divided into two types depending on existence of contact between seal lip and bearing inner ring, namely contact and non-contact types. Non-contact seals, which create small and long labyrinth, have better sealing quality than shield type, although they produce about same torque performances.

Contact seals are excellent sealers, but their torque and permissible speeds are inferior than those of shield or non-contact types.

KBC supplies also other kinds of sealed bearings with seals of various shapes and materials, suitable for all kinds of operational environment of the customers. Contact KBC for details.



KBC Deep Groove Ball Bearings

Equivalent Loads · Special Bearings · Abutment Dimensions · Prefixes · Suffixes

Equivalent Dynamic Load

$$P = X \cdot F_r + Y \cdot F_a$$

The contact angle of deep groove ball bearings increases with the axial load. Therefore, the factors X and Y depend on F_a/C_0 , as shown on below Table.

▼ Radial Factors and Thrust Factors for Deep Groove Ball Bearings					
F_a/C_0	e	$F_a/F_r \leq e$		$F_a/F_r > e$	
		X	Y	X	Y
0.014	0.19	1	0	0.56	2.30
0.028	0.22	1	0	0.56	1.99
0.056	0.26	1	0	0.56	1.71
0.084	0.28	1	0	0.56	1.55
0.11	0.30	1	0	0.56	1.45
0.17	0.34	1	0	0.56	1.31
0.28	0.38	1	0	0.56	1.15
0.42	0.42	1	0	0.56	1.04
0.56	0.44	1	0	0.56	1.00

Equivalent Static Load

$$P_0 = F_r \quad : \quad \frac{F_a}{F_r} \leq 0.8 \text{ for}$$

$$P_0 = 0.6 \cdot F_r + 0.5 \cdot F_a \quad : \quad \frac{F_a}{F_r} > 0.8 \text{ for}$$

Special Bearings

KBC has developed some special deep groove ball bearings, suitable to used under various special and extreme operating conditions.

Some of them are; Creep-prevention bearings with two plastic resin bands on outside surface (Prefix EC), ceramic bearings for high-speeds with excellent chemical-resistance, heat-resistance, and vacuum bearings coated with solid lubricant, polymer bearings with solid lubricant, 4-point contact ball bearings restricting axial clearance variations against radial clearance by tight-fits. Contact KBC for details.

Abutment Dimensions

The bearing rings should closely fit the shaft or housing shoulder; they must not be allowed to foul

the shoulder fillet radius. Consequently, the maximum fillet radius R of the mating part must be smaller than the minimum corner, $r_{\min}$, of the deep groove ball bearing.

The shoulder of mating parts must be so high that even with maximum bearing corner there is an adequate abutment surface area. The Dimension

Table on the next pages list the maximum fillet radius, R, and the minimum shoulder height of shaft, D_s , and the maximum shoulder diameter of housing, d_H .

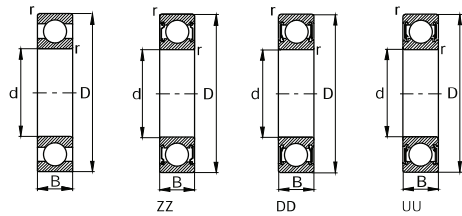
Prefix

- BR** Basic dimensions (bore diameter, outer diameter, width) and inter designs differ from the standards.
- EC** For creep prevention
- HC** High-load capacity design

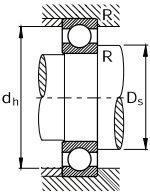
Suffix

- A** Inter design differs from the standards.
- F1** Bore diameter differs from the standards.
- F2** Outer diameter differs from the standards.
- h** Width differs from the standards.
- HL** Long life, special heat treatment
- PC** Glass-fiber reinforced polyamide 66 cage
- SL** Pressed steel cage with low temperature nitriding treatment
- ZZ** Shields on both sides
- UU** Non-rubbing seals on both sides
- DD** Rubbing seals on both sides

KBC Deep Groove Ball Bearings
Single Row



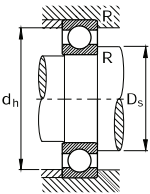
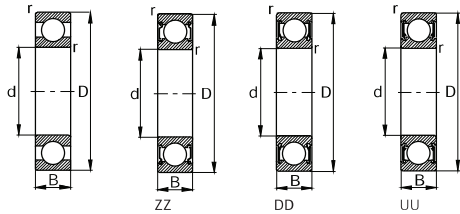
Shaft	Dimensions				Abutment Dimensions		
	d	D	B	r	D _s	d _h	R
	mm			min	min	max	max
8	8	22	7	0.3	10	20	0.3
	8	22	7	0.3	10	20	0.3
	8	22	7	0.3	10	20	0.3
	8	22	7	0.3	10	20	0.3
	8	22	7	0.3	10	20	0.3
10	8	28	9	0.3	10	26	0.3
	10	26	8	0.3	12	24	0.3
	10	26	8	0.3	12	24	0.3
	10	26	8	0.3	12	24	0.3
	10	26	8	0.3	12	24	0.3
	10	27	11	0.3	12	25	0.3
	10	30	8	0.6	14	26	0.6
	10	30	9	0.6	14	26	0.6
	10	30	9	0.6	14	26	0.6
	10	30	9	0.6	14	26	0.6
	10	30	9	0.6	14	26	0.6
	10	35	11	0.6	14	31	0.6
	10	35	11	0.6	14	31	0.6
	10	35	11	0.6	14	31	0.6
	10	35	11	0.6	14	31	0.6
12	12	28	8	0.3	14	26	0.3
	12	28	8	0.3	14	26	0.3
	12	28	8	0.3	14	26	0.3
	12	28	8	0.3	14	26	0.3
	12	32	10	0.6	16	28	0.6
	12	32	10	0.6	16	28	0.6
	12	32	10	0.6	16	28	0.6
	12	32	10	0.6	16	28	0.6
	12	37	12	1	17	32	1
	12	37	12	1	17	32	1
	12	37	12	1	17	32	1
	12	37	12	1	17	32	1
12.7	12.7	32	10	0.6	17	27.5	0.6
	12.7	32	10	0.6	17	27.5	0.6
13	13	31	7	0.3	15	29	0.3
	13	31	7	0.3	15	29	0.3
15	15	32	9	0.3	17	30	0.3
	15	32	9	0.3	17	30	0.3
	15	32	9	0.3	17	30	0.3
	15	32	9	0.3	17	30	0.3
	15	32	9	0.3	17	30	0.3



Load Rating				Permissible Speed		Standards	Weight
Dynamic C		Static C ₀		Grease Lubrication	Oil	Bearing	≈
N	kgf	N	kgf	min ⁻¹		KBC	kg
3300	336	1370	140	34000	40000	608	0.012
3300	336	1370	140	34000		608ZZ1	0.012
3300	336	1370	140	34000		608UUG	0.012
3300	336	1370	140	28000		608DDG	0.012
4550	464	1960	200	28000	34000	638ZZ	0.025
4550	464	1960	200	30000	36000	6000	0.018
4550	464	1960	200	30000		6000ZZ	0.018
4550	464	1960	200	30000		6000UU	0.018
4550	464	1960	200	22000		6000DD	0.018
4550	464	1960	200	19000		EC6000DDF2h	0.022
5100	520	2390	244	24000	30000	6200h	0.023
5100	520	2390	244	24000	30000	6200	0.031
5100	520	2390	244	24000		6200ZZ	0.032
5100	520	2390	244	24000		6200UU	0.032
5100	520	2390	244	18000		6200DD	0.032
8100	826	3450	352	22000	26000	6300	0.051
8100	826	3450	352	22000		6300ZZ	0.053
8100	826	3450	352	22000		6300UU	0.053
8100	826	3450	352	17000		6300DD	0.053
5100	520	2370	242	28000	32000	6001	0.021
5100	520	2370	242	28000		6001ZZ	0.021
5100	520	2370	242	28000		6001UU	0.021
5100	520	2370	242	18000		6001DD	0.021
6800	693	3050	311	22000	28000	6201	0.036
6800	693	3050	311	22000		6201ZZ	0.038
6800	693	3050	311	22000		6201UU	0.038
6800	693	3050	311	17000		6201DD	0.038
9700	989	4200	428	20000	24000	6301	0.058
9700	989	4200	428	20000		6301ZZ	0.06
9700	989	4200	428	20000		6301UU	0.06
9700	989	4200	428	16000		6301DD	0.06
6800	693	3050	311	22000		6201ZZF1	0.037
6800	693	3050	311	23000	28000	BR1331	0.066
5600	571	2840	290	24000	28000	6002	0.03
5600	571	2840	290	24000		6002ZZ	0.032
5600	571	2840	290	24000		6002UU	0.032
5600	571	2840	290	15000		6002DD	0.032
5600	571	2840	290	15000		EC6002DD	0.03

Bearings of different designs can be custom-made on request.

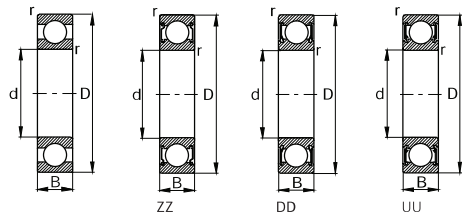
KBC Deep Groove Ball Bearings
Single Row



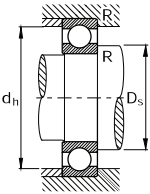
Shaft	Dimensions				Abutment Dimensions		
	d	D	B	r min	D _s min	d _h max	R max
	mm						
15	15	35	11	0.6	19	31	0.6
	15	35	11	0.6	19	31	0.6
	15	35	11	0.6	19	31	0.6
	15	35	11	0.6	19	31	0.6
	15	35	11	0.6	19	31	0.6
	15	40	11	0.6	19	36	0.6
	15	40	11	0.6	19	36	0.6
	15	42	13	1	20	37	1
	15	42	13	1	20	37	1
	15	42	13	1	20	37	1
	15	42	13	1	20	37	1
	15	42	13	1	20	37	1
	15	42	13	1	20	37	1
	15	42	13	1	20	37	1
	15	47	14	1	20	42	1
15.875	15.875	34.925	11	0.6	20	31	0.6
	15.875	35	11	0.6	20	31	0.6
	15.875	40	12	0.6	20	36	0.6
16	16	35	11	0.6	20	31	0.6
17	17	30	7	0.3	19	28	0.3
	17	30	7	0.3	19	28	0.3
	17	30	7	0.3	19	28	0.3
	17	35	10	0.3	19	33	0.3
	17	35	10	0.3	19	33	0.3
	17	35	10	0.3	19	33	0.3
	17	35	10	0.3	19	33	0.3
	17	40	12	0.6	21	36	0.6
	17	40	12	0.6	21	36	0.6
	17	40	12	0.6	21	36	0.6
	17	40	12	0.6	21	36	0.6
	17	40	12	0.6	21	36	0.6
	17	42	12	0.6	21	36	0.6
	17	42	13	1	21	36.5	1
	17	47	14	1	22	42	1
	17	47	14	1	22	42	1
	17	47	14	1	22	42	1
	17	47	14	1	22	42	1
	17	47	17	1	22	41.5	1

Load Rating				Permissible Speed		Standards	Weight ≈
Dynamic C		Static C ₀		Grease Lubrication	Oil	Bearing	
N	kgf	N	kgf	min ⁻¹		KBC	kg
7650	780	3700	377	20000	24000	6202	0.044
7650	780	3700	377			6202ZZ	0.046
7650	780	3700	377	20000		6202UU	0.046
7650	780	3700	377	14000		6202DD	0.046
7650	780	3700	377	14000		EC6202DD	0.044
7650	780	3700	377	20000		6202ZZF2	0.048
7650	780	3700	377	20000		6202UUF2	0.048
11400	1160	5450	556	17000	20000	6302	0.081
13300	1360	5900	601	18000	22000	HC6302	0.082
11400	1160	5450	556	17000		6302ZZ	0.083
11400	1160	5450	556	17000		6302UU	0.083
11400	1160	5450	556	13000		6302DD	0.083
11400	1160	5450	556	13000		EC6302DD	0.083
13650	1390	6600	673	11900		AT303/15DD	0.132
7650	780	3700	377	14000		99502H	0.04
7650	780	3700	377	14000		6202DDF11	0.04
9550	973	4800	489	12000		6203DDF1	0.069
7650	780	3700	377	14000		6202DDF1	0.04
4600	469	2550	260	24000	28000	6903	0.017
4600	469	2550	260	24000		6903ZZ	0.019
4600	469	2550	260	15000		6903DD	0.019
6000	612	3250	331	22000	26000	6003	0.041
6000	612	3250	331	22000		6003ZZ	0.043
6000	612	3250	331	22000		6003UU	0.043
6000	612	3250	331	13000		6003DD	0.043
9550	973	4800	489	17000	20000	6203	0.065
9550	973	4800	489	17000		6203ZZ	0.067
9550	973	4800	489	17000		EC6203ZZ	0.067
9550	973	4800	489	17000		6203UU	0.067
9550	973	4800	489	12000		6203DD	0.067
9550	973	4800	489	12000		6203DDF2	0.071
11400	1160	5450	556	13000		EC6302DDF1	0.072
13600	1390	6600	673	15000	18000	6303	0.11
13600	1390	6600	673	15000		6303ZZ	0.113
13600	1390	6600	673	15000		6303UU	0.113
13600	1390	6600	673	11000		6303DD	0.113
13600	1390	6600	673	11000		6303DDh	0.189

KBC Deep Groove Ball Bearings
Single Row



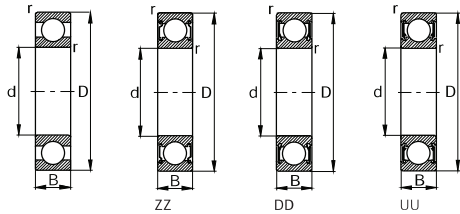
Shaft	Dimensions				Abutment Dimensions		
	d	D	B	r min	D _s min	d _h max	R max
mm							
17	17	52	15	1.1	24	45	1
	17	52	18	1	22.5	46.5	1
19	19	33	7	0.5	22	30	0.5
	19	35	7	0.3	21	33	0.3
	19	35.7	7	0.3	21	34	0.3
19.05	19.05	30	6.35	0.3	21	28	0.3
	19.05	34.15	6.35	0.3	21	32	0.3
20	20	35	8	0.5	22	33	0.5
	20	36	9	0.3	22	34	0.3
	20	37	9	0.3	22	35	0.3
	20	37	9	0.3	22	35	0.3
	20	37	9	0.3	22	35	0.3
	20	42	12	0.6	23.5	38.5	0.6
	20	42	12	0.6	23.5	38.5	0.6
	20	42	12	0.6	23.5	38.5	0.6
	20	42	12	0.6	23.5	38.5	0.6
	20	47	14	1	25.5	41.5	1
	20	47	14	1	25.5	41.5	1
	20	47	14	1	25.5	41.5	1
	20	47	14	1	25.5	41.5	1
	20	47	14	1	25.5	41.5	1
	20	49	16	0.3	22.5	46.5	0.3
	20	52	15	1.1	27	45	1
	20	52	15	1.1	27	45	1
	20	52	15	1.1	27	45	1
	20	52	15	1.1	27	45	1
	20	62	16	0.5	24	57.5	0.5
	20	62	17	1.1	27	55	1
22	22	42	12	0.6	25.5	39	0.6
	22	50	14	1	27.5	44.5	1
	22	50	14	1	27.5	44.5	1
	22	56	15	1.1	29	49	1



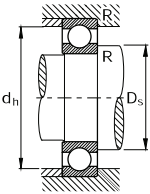
Load Rating				Permissible Speed		Standards	Weight ≈
Dynamic C		static C ₀		Grease Lubrication	Oil		
N	kgf	N	kgf	min ⁻¹		Bearing	kg
KBC							
15900	1620	7850	800	11000		6304DDF11	0.198
18200	1860	9050	923	11000		BR1752DD	0.174
4850	494	2860	292	20000	23000	BR1933	0.021
4550	464	2620	267	19000	23000	BR1935	0.026
6000	612	3250	331	19000	23000	BR1936	0.026
3500	357	2210	225	21000	25000	BR1930	0.017
4850	494	2860	292	20000	23000	BR1934	0.024
4550	464	2620	267	19000	22000	BR2035	0.027
6350	647	3700	377	19000	22000	6904F2	0.033
6350	647	3700	377	19000	22000	6904	0.037
6350	647	3700	377	19000		6904ZZ	0.039
6350	647	3700	377	12000		6904DD	0.039
9400	958	5000	510	18000	20000	6004	0.067
9400	958	5000	510	18000		6004ZZ	0.07
9400	958	5000	510	18000		6004UU	0.07
9400	958	5000	510	11000		6004DD	0.07
12800	1310	6650	678	15000	18000	6204	0.104
15700	1600	7700	785	15000	18000	HC6204	0.105
12800	1310	6650	678	15000		6204ZZ	0.108
12800	1310	6650	678	15000		6204UU	0.108
12800	1310	6650	678	11000		6204DD	0.108
14700	1500	7150	729	11000		BR2049DD	0.13
15900	1620	7850	800	14000	17000	6304	0.141
15900	1620	7850	800	14000		6304ZZ	0.145
15900	1620	7850	800	14000		6304UU	0.145
15900	1620	7850	800	10000		6304DD	0.145
19400	1980	11300	1150	13000	15000	6206/20	0.245
20600	2100	11200	1140	8000		6305DDF11	0.288
9400	958	5000	510	18000	20000	6004/22	0.061
12900	1320	6800	693	14000	16000	62/22	0.116
12900	1320	6800	693	9500		62/22DD	0.119
18500	1890	9350	953	13000	16000	63/22h	0.165

Bearings of different designs can be custom-made on request.

KBC Deep Groove Ball Bearings
Single Row



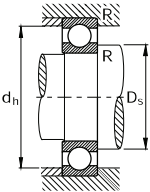
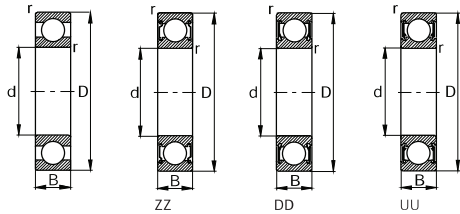
Shaft	Dimensions				Abutment Dimensions		
	d	D	B	r min	D _s min	d _h max	R max
mm							
22	22	56	16	1.1	29	49	1
	22	56	16	1.1	29	49	1
24	24	40	8	0.3	26.5	37.5	0.3
	24	40	8	0.3	26.5	37.5	0.3
25	25	42	9	0.3	27	40	0.3
	25	42	9	0.3	27	40	0.3
25	25	47	12	0.6	28	43.5	0.6
	25	47	12	0.6	28	43.5	0.6
25	25	47	12	0.6	28	43.5	0.6
	25	47	12	0.6	28	43.5	0.6
25	25	52	15	1	30	47	1
	25	52	15	1	30	47	1
25	25	52	15	1	30	47	1
	25	52	15	1	30	47	1
25	25	52	15	1	30	47	1
	25	52	15	1	30	47	1
25	25	62	17	1.1	32	55	1
	25	62	17	1.1	32	55	1
25	25	62	17	1.1	32	55	1
	25	62	17	1.1	32	55	1
25	25	63	18	0.6	29	59	0.6
	25	63	18	0.6	29	59	0.6
25	25	68	18	0.6	29	64	0.6
	25	68	18	0.6	29	64	0.6
25	25	68	21	0.6	29	64	0.6
	25	68	21	0.6	29	64	0.6
27	27	58	16	1	32.5	52.5	1
	27	58	16	1	32.5	52.5	1
27	27	68	18	1.1	29.5	61	1
	27	68	18	1.1	29.5	61	1
28	28	52	16	0.6	32	48	0.6
	28	52	16	0.6	32	48	0.6
28	28	58	16	1	33.5	52.5	1
	28	58	16	1	33.5	52.5	1
28	28	58	16	1	33.5	52.5	1
	28	58	16	1	33.5	52.5	1
28	28	65	19	2	39	54	2
	28	65	19	2	39	54	2
28	28	68	18	1.1	35	61	1
	28	68	18	1.1	35	61	1
28	28	70	20	0.3	30	68	0.3
	28	70	20	0.3	30	68	0.3
28	28	72	20	0.3	30	70	0.3
	28	72	20	0.3	30	70	0.3
28	28	80	21	1.5	37	71	1.5
	28	80	21	1.5	37	71	1.5



Load Rating				Permissible Speed		Standards	Weight
Dynamic C		static C ₀		Grease Lubrication	Oil	Bearing	≈
N	kgf	N	kgf	min ⁻¹		KBC	kg
18500	1890	9350	953	13000	16000	63/22	0.175
18500	1890	9350	953	9500		63/22DD	0.177
6700	683	4150	423	16000	19000	BR2440	0.05
7050	719	4550	464	16000	19000	6905	0.042
10100	1030	5800	591	15000	18000	6005	0.078
10100	1030	5800	591	15000		6005ZZ	0.08
10100	1030	5800	591	15000		6005UU	0.08
10100	1030	5800	591	9500		6005DD	0.08
14000	1430	7900	805	13000	15000	6205	0.126
14000	1430	7900	805	13000		6205ZZ	0.13
14000	1430	7900	805	13000		6205UU	0.13
14000	1430	7900	805	9000		6205DD	0.13
17700	1800	9350	953	9100		HC6205DD	0.127
20600	2100	11200	1140	11000	13000	6305	0.23
20600	2100	11200	1140	11000		6305ZZ	0.236
20600	2100	11200	1140	11000		6305UU	0.236
20600	2100	11200	1140	8000		6305DD	0.236
23700	2420	12200	1240	12000	14000	B25-63	0.252
23700	2420	12200	1240			B25-63DD	0.257
31000	3160	15200	1550	11000	13000	B25-157	0.286
31000	3160	15200	1550	7700		B25-157DDh	0.312
16600	1690	95500	973	8000		62/28DDF1	0.192
26700	2720	14000	1430	7500		63/28DDF11	0.298
14000	1430	7900	805	8800		BR2852DD	0.133
16600	1690	9550	973	12000	14000	62/28	0.172
16600	1690	9550	973	8000		62/28DD	0.174
17900	1830	9750	994	8200		HC62/28DD	0.173
26500	2700	13800	1410	7600		BR2865DD	0.256
26700	2720	14000	1430	10000	13000	63/28	0.281
26700	2720	14000	1430	7500		63/28DD	0.283
29700	3030	15700	1600	7200		BR2870DD	0.34
29800	3040	16900	1720	7000		BR2872DD	0.374
39500	4030	21600	2200	9300	12000	HC6307F11	0.507

Bearings of different designs can be custom-made on request.

KBC Deep Groove Ball Bearings
Single Row

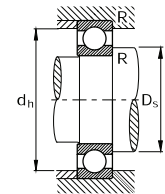
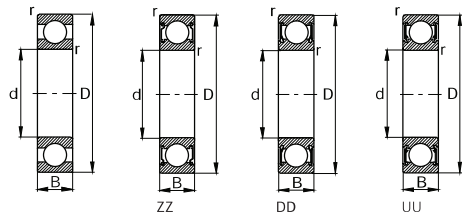


Shaft	Dimensions				Abutment Dimensions		
	d	D	B	r min	D _s min	d _h max	R max
mm							
30	30	55	9	0.3	32	53	0.3
	30	55	11.6	1	35	50	1
	30	55	13	1	35	50	1
	30	55	13	1	35	50	1
	30	55	13	1	35	50	1
	30	62	10	0.6	34	58	0.6
	30	62	16	1	35	57	1
	30	62	16	1	35	57	1
	30	62	16	1	35	57	1
	30	62	16	1	35	57	1
	30	62	16	1	35	57	1
	30	62	16	1	35	57	1
	30	62	17	1	35	57	1
	30	72	19	1.1	37	65	1
	30	72	19	1.1	37	65	1
	30	72	19	1.1	37	65	1
	30	72	19	1.1	37	65	1
	30	72	19	1.1	37	65	1
	30	75	20	1.1	37	68	1
	30	80	22	1.5	39	71	1.5
32	32	75	20	1.1	39	68	1
	32	90	23	1.5	41	81	1.5
	32	90	25	1.5	41	81	1.5
35	35	62	9	0.3	37	60	0.3
	35	62	14	1	40	57	1
	35	62	14	1	40	57	1
	35	62	14	1	40	57	1
	35	62	14	1	40	57	1
	35	66	15	1	40.5	60.5	1
	35	72	16	1.1	41.5	65.5	1
	35	72	17	1.1	41.5	65.5	1
	35	72	17	1.1	41.5	65.5	1
	35	72	17	1.1	41.5	65.5	1
	35	72	17	1.1	41.5	65.5	1
	35	72	18.25	1.1	41.5	65.5	1
	35	80	21	1.5	43	72	1.5

Load Rating				Permissible Speed		Standards	Weight ≈ kg
Dynamic C		Static C ₀		Grease Lubrication	Oil		
N	kgf	N	kgf	min ⁻¹		Bearing	
KBC							
11200	1140	7350	749	13000	15000	16006	0.081
13200	1350	8300	846	13000		6006UUh1	0.096
13200	1350	8300	846	13000	15000	6006	0.113
13200	1350	8300	846	13000		6006ZZ	0.117
13200	1350	8300	846	8000		6006DD	0.117
15000	1530	9200	938	11000	13000	68206	0.127
19400	1980	11300	1150	11000	13000	6206	0.196
23400	2390	12900	1320	11000	14000	HC6206	0.197
19400	1980	11300	1150	11000		6206ZZ	0.202
19400	1980	11300	1150	11000		6206UU	0.202
19400	1980	11300	1150	7500		6206DD	0.202
23400	2390	12900	1320	7700		HC6206DDh	0.197
26600	2710	15000	1530	9500	12000	6306	0.339
32500	3310	17300	1760	9900	12000	HC6306	0.34
26600	2710	15000	1530	9500		6306ZZ	0.328
26600	2710	15000	1530	9500		6306UU	0.328
26600	2710	15000	1530	6700		6306DD	0.328
29800	3040	16900	1720	6300		63/32DDF1	0.42
39500	4030	21600	2200	6400		HC6307DDF1h	0.51
29800	3040	16900	1720	6300		63/32DD	0.383
40500	4130	23900	2440	5700		6308/32DD	0.702
47000	4790	26300	2680	5800		HC6308/32DDh	0.713
12200	1240	8900	907	11000	13000	16007	0.115
16000	1630	10300	1050	11000	13000	6007	0.147
16000	1630	10300	1050	11000		6007ZZ	0.15
16000	1630	10300	1050	11000		6007UU	0.15
16000	1630	10300	1050	6700		6007DD	0.15
18900	1930	11700	1190	7000		BR3566DD	0.2
25700	2620	15400	1570	9500	11000	6207h2	0.264
25700	2620	15400	1570	9500	11000	6207	0.279
25700	2620	15400	1570	9500		6207ZZ	0.285
25700	2620	15400	1570	9500		6207UU	0.285
25700	2620	15400	1570	6300		6207DD	0.285
25700	2620	15400	1570	9500	11000	6207h	0.298
33500	3420	19200	1960	8500	10000	6307	0.449

Bearings of different designs can be custom-made on request.

KBC Deep Groove Ball Bearings
Single Row

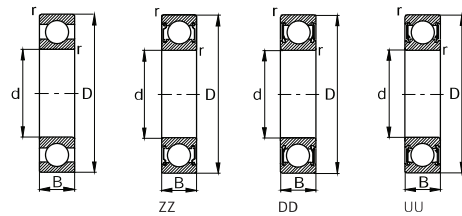


Shaft	Dimensions				Abutment Dimensions		
	d	D	B	r min	D _s min	d _h max	R max
mm							
35	35	80	21	1.5	43	72	1.5
	35	80	21	1.5	43	72	1.5
	35	80	21	1.5	43	72	1.5
	35	80	24	1.5	43	72	1.5
	35	85	23	0.3	37.5	82.5	0.3
40	40	68	9	0.3	42	66	0.3
	40	68	15	1	45	63	1
	40	68	15	1	45	63	1
	40	68	15	1	45	63	1
	40	68	15	1	45	63	1
	40	80	18	1.1	46.5	73.5	1
	40	80	18	1.1	46.5	73.5	1
	40	80	18	1.1	46.5	73.5	1
	40	80	18	1.1	46.5	73.5	1
	40	80	18	1.1	46.5	73.5	1
	40	85	20	1	45.5	79.5	1
	40	90	23	1.5	48	82	1.5
	40	90	23	1.5	48	82	1.5
	40	90	23	1.5	48	82	1.5
	40	90	23	1.5	48	82	1.5
	40	90	23	1.5	48	82	1.5
	40	90	25	1.5	48	82	1.5
	42	68	15	1	46.5	63.5	1
	43	90	25	1.5	52	81	1.5
45	45	75	16	1	50	70	1
	45	75	16	1	50	70	1
	45	75	16	1	50	70	1
	45	75	16	1	50	70	1
	45	80	16	1	50	75	1
	45	85	19	1.1	51.5	78.5	1
	45	85	19	1.1	51.5	78.5	1
	45	85	19	1.1	51.5	78.5	1
	45	85	19	1.1	51.5	78.5	1
	45	100	25	1.5	53	92	1.5
	45	100	25	1.5	53	92	1.5
	45	100	25	1.5	53	92	1.5
	45	100	25	1.5	53	92	1.5

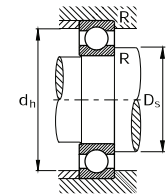
Load Rating				Permissible Speed Grease Lubrication	Oil	Standards Bearing	Weight ≈ kg
Dynamic C		Static C ₀					
N	kgf	N	kgf	min ⁻¹		KBC	
33500	3420	19200	1960	8500		6307ZZ	0.459
33500	3420	19200	1960	8500		6307UU	0.459
33500	3420	19200	1960	6000		6307DD	0.459
39500	4030	21600	2200	6100		HC6307DDh1	0.505
43000	4380	23600	2410	5900		BR3585DD	0.583
12600	1280	9650	984	10000	12000	16008	0.147
16800	1710	11500	1170	10000	12000	6008	0.186
16800	1710	11500	1170	10000		6008ZZ	0.194
16800	1710	11500	1170	10000		6008UU	0.194
16800	1710	11500	1170	6000		6008DD	0.194
29100	2970	17800	1810	8500	10000	6208	0.359
32500	3310	20000	2040	8400	10000	HC6208	0.36
29100	2970	17800	1810	8500		6208ZZ	0.369
29100	2970	17800	1810	8500		6208UU	0.369
29100	2970	17800	1810	5600		6208DD	0.369
36500	3720	22600	2300	6200		HC6209DDF1h	0.483
40500	4130	23900	2440	7500	9000	6308	0.62
47000	4790	26300	2680	7700	9300	HC6308	0.621
40500	4130	23900	2440	7500		6308ZZ	0.632
40500	4130	23900	2440	7500		6308UU	0.632
40500	4130	23900	2440	5300		6308DD	0.632
47000	4790	26300	2680	5400		HC6308DDh	0.668
16800	1710	11500	1170	10000	12000	6008/42	0.171
40500	4130	23900	2440	5300		6308DDF1h	0.641
19900	2030	14000	1430	9000	11000	6009	0.236
19900	2030	14000	1430	9000		6009ZZ	0.249
19900	2030	14000	1430	9000		6009UU	0.249
19900	2030	14000	1430	5300		6009DD	0.249
27600	2810	17900	1830	8800	10000	6009F2	0.312
32500	3310	20400	2080	7500	9000	6209	0.413
32500	3310	20400	2080	7500		6209ZZ	0.425
32500	3310	20400	2080	7500		6209UU	0.425
32500	3310	20400	2080	5300		6209DD	0.425
53000	5400	32000	3260	6700	8000	6309	0.811
53000	5400	32000	3260	6700		6309ZZ	0.831
53000	5400	32000	3260	6700		6309UU	0.831
53000	5400	32000	3260	4800		6309DD	0.831

Bearings of different designs can be custom-made on request.

KBC Deep Groove Ball Bearings
Single Row

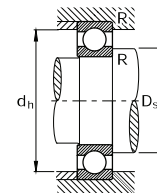
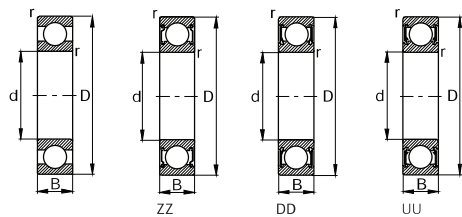


Shaft	Dimensions				Abutment Dimensions		
	d	D	B	r min	D _s min	d _h max	R max
	mm						
50	50	80	10	0.6	54	76	0.6
	50	80	16	1	55	75	1
	50	80	16	1	55	75	1
	50	80	16	1	55	75	1
	50	80	16	1	55	75	1
	50	90	20	1.1	56.5	83.5	1
	50	90	20	1.1	56.5	83.5	1
	50	90	20	1.1	56.5	83.5	1
	50	90	20	1.1	56.5	83.5	1
	50	110	27	2	59	101	2
	50	110	27	2	59	101	2
	50	110	27	2	59	101	2
	50	110	27	2	59	101	2
	50	110	27	2	59	101	2
	50	110	27	2	59	101	2
	50	110	27	2	59	101	2
55	55	90	18	1.1	61.5	83.5	1
	55	90	18	1.1	61.5	83.5	1
	55	90	18	1.1	61.5	83.5	1
	55	90	18	1.1	61.5	83.5	1
	55	95	17	0.3	57	93	0.3
	55	100	21	1.5	63	92	1.5
	55	100	21	1.5	63	92	1.5
	55	100	21	1.5	63	92	1.5
	55	100	21	1.5	63	92	1.5
	55	120	29	2	64	111	2
	55	120	29	2	64	111	2
	55	120	29	2	64	111	2
	55	120	29	2	64	111	2
	55	120	29	2	64	111	2
	55	120	29	2	64	111	2
	55	120	29	2	64	111	2
60	60	95	18	1.1	66.5	88.5	1
	60	95	18	1.1	66.5	88.5	1
	60	95	18	1.1	66.5	88.5	1
	60	95	18	1.1	66.5	88.5	1
	60	110	22	1.5	68	102	1.5
	60	110	22	1.5	68	102	1.5
	60	110	22	1.5	68	102	1.5
	60	110	22	1.5	68	102	1.5
	60	130	31	2.1	71	119	2
	60	130	31	2.1	71	119	2
	60	130	31	2.1	71	119	2
	60	130	31	2.1	71	119	2
	60	130	31	2.1	71	119	2
	60	130	31	2.1	71	119	2
	60	130	31	2.1	71	119	2
	60	130	31	2.1	71	119	2
65	65	100	18	1.1	71.5	93.5	1
	65	100	18	1.1	71.5	93.5	1
	65	100	18	1.1	71.5	93.5	1



	Load Rating				Permissible Speed		Standards	Weight
	Dynamic C		Static C ₀		Grease Lubrication	Oil	Bearing	≈
	N	kgf	N	kgf	min ⁻¹		KBC	kg
	16000	1630	13200	1350	8500	10000	16010	0.24
	20800	2120	15400	1570	8500	10000	6010	0.256
	20800	2120	15400	1570	8500		6010ZZ	0.263
	20800	2120	15400	1570	8500		6010UU	0.263
	20800	2120	15400	1570	4800		6010DD	0.263
	35000	3570	23200	2370	7100	8500	6210	0.451
	35000	3570	23200	2370	7100		6210ZZ	0.463
	35000	3570	23200	2370	7100		6210UU	0.463
	35000	3570	23200	2370	4800		6210DD	0.463
	62000	6320	38000	3870	6000	7500	6310	1.05
	62000	6320	38000	3870	6000		6310ZZ	1.07
	62000	6320	38000	3870	6000		6310UU	1.07
	62000	6320	38000	3870	4300		6310DD	1.07
	31000	3160	22500	2290	7500	9000	6011	0.373
	31000	3160	22500	2290	7500		6011ZZ	0.384
	31000	3160	22500	2290	7500		6011UU	0.384
	31000	3160	22500	2290	4500		6011DD	0.384
	39000	3980	26200	2670	4700		BR5595	0.43
	43500	4430	29200	2980	6300	7500	6211	0.599
	43500	4430	29200	2980	6300		6211ZZ	0.615
	43500	4430	29200	2980	6300		6211UU	0.615
	43500	4430	29200	2980	4300		6211DD	0.615
	71500	7290	44500	4540	5600	6700	6311	1.35
	71500	7290	44500	4540	5600		6311ZZ	1.38
	71500	7290	44500	4540	5600		6311UU	1.38
	71500	7290	44500	4540	4000		6311DD	1.38
	29400	3000	23200	2370	7100	8500	6012	0.403
	29400	3000	23200	2370	7100		6012ZZ	0.412
	29400	3000	23200	2370	7100		6012UU	0.412
	29400	3000	23200	2370	4000		6012DD	0.412
	52500	5350	36000	3670	5600	7100	6212	0.762
	52500	5350	36000	3670	5600		6212ZZ	0.782
	52500	5350	36000	3670	5600		6212UU	0.782
	52500	5350	36000	3670	3800		6212DD	0.782
	82000	8360	52000	5300	5300	6300	6312	1.7
	82000	8360	52000	5300	5300		6312ZZ	1.72
	82000	8360	52000	5300	5300		6312UU	1.72
	82000	8360	52000	5300	3600		6312DD	1.72
	30500	3110	25200	2570	6700	8000	6013	0.43
	30500	3110	25200	2570	6700		6013ZZ	0.44
	30500	3110	25200	2570	6700		6013UU	0.44

KBC Deep Groove Ball Bearings
Single Row

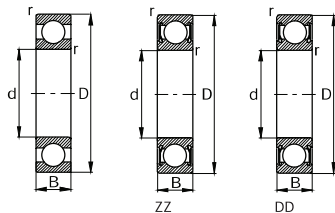
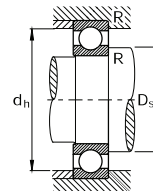


Shaft	Dimensions				Abutment Dimensions		
	d	D	B	r min	D _s min	d _h max	R max
mm							
65	65	100	18	1.1	71.5	93.5	1
	65	120	23	1.5	73	112	1.5
	65	120	23	1.5	73	112	1.5
	65	120	23	1.5	73	112	1.5
	65	140	33	2.1	76	129	2
	65	140	33	2.1	76	129	2
	65	140	33	2.1	76	129	2
	65	140	33	2.1	76	129	2
	70	110	20	1.1	76.5	103.5	1
	70	110	20	1.1	76.5	103.5	1
	70	110	20	1.1	76.5	103.5	1
	70	110	20	1.1	76.5	103.5	1
70	70	125	24	1.5	78	117	1.5
	70	125	24	1.5	78	117	1.5
	70	125	24	1.5	78	117	1.5
	70	150	35	2.1	81	139	2
	70	150	35	2.1	81	139	2
	70	150	35	2.1	81	139	2
	70	150	35	2.1	81	139	2
	75	115	20	1.1	81.5	108.5	1
	75	115	20	1.1	81.5	108.5	1
	75	115	20	1.1	81.5	108.5	1
	75	130	25	1.5	83	122	1.5
	75	130	25	1.5	83	122	1.5
75	75	130	25	1.5	83	122	1.5
	75	160	37	2.1	86	149	2
	75	160	37	2.1	86	149	2
	75	160	37	2.1	86	149	2
	80	125	22	1.1	86.5	118.5	1
	80	125	22	1.1	86.5	118.5	1
	80	125	22	1.1	86.5	118.5	1
	80	140	26	2	89	131	2
	80	140	26	2	89	131	2
	80	140	26	2	89	131	2
	80	170	39	2.1	91	159	2
	80	170	39	2.1	91	159	2
85	85	130	22	1.1	91.5	123.5	1
	85	130	22	1.1	91.5	123.5	1

Load Rating				Permissible Speed		Standards		Weight
Dynamic C		Static C ₀		Grease Lubrication	Oil	Bearing		≈
N	kgf	N	kgf	min ⁻¹		KBC		kg
30500	3110	25200	2570	4000		6013DD		0.44
57000	5810	38500	3930	5300	6300	6213		0.98
57000	5810	38500	3930	5300		6213ZZ		1.01
57000	5810	38500	3930	3600		6213DD		1.01
92500	9430	59500	6070	4800	6000	6313		2.08
92500	9430	59500	6070	4800		6313ZZ		2.13
92500	9430	59500	6070	4800		6313UU		2.13
92500	9430	59500	6070	3400		6313DD		2.13
38000	3870	31000	3160	6000	7100	6014		0.598
38000	3870	31000	3160	6000		6014ZZ		0.615
38000	3870	31000	3160	6000		6014UU		0.615
38000	3870	31000	3160	3600		6014DD		0.615
62000	6320	44000	4490	5000	6300	6214		1.07
62000	6320	44000	4490	5000		6214ZZ		1.1
62000	6320	44000	4490	3400		6214DD		1.1
104000	10600	68000	6930	4500	5300	6314		2.53
104000	10600	68000	6930	4500		6314ZZ		2.58
104000	10600	68000	6930	4500		6314UU		2.58
104000	10600	68000	6930	3200		6314DD		2.58
39500	4030	33500	3420	5600	6700	6015		0.638
39500	4030	33500	3420	5600		6015ZZ		0.673
39500	4030	33500	3420	3400		6015DD		0.673
66000	6730	49500	5050	4800	5600	6215		1.17
66000	6730	49500	5050	4800		6215ZZ		1.2
66000	6730	49500	5050	3200		6215DD		1.2
113000	11500	77000	7850	4300	5000	6315		3.03
113000	11500	77000	7850	4300		6315ZZ		3.08
113000	11500	77000	7850	2800		6315DD		3.08
47500	4840	40000	4080	5300	6300	6016		0.854
47500	4840	40000	4080	5300		6016ZZ		0.894
47500	4840	40000	4080	3200		6016DD		0.894
77500	7900	58500	5960	4500	5300	6216		1.38
77500	7900	58500	5960	4500		6216ZZ		1.41
77500	7900	58500	5960	3000		6216DD		1.41
123000	12500	86500	8820	4000	4800	6316		3.67
123000	12500	86500	8820	4000		6316ZZ		3.73
123000	12500	86500	8820	2800		6316DD		3.73
49500	5050	43000	4380	5000	6000	6017		0.899
49500	5050	43000	4380	5000		6017ZZ		0.93

KBC Deep Groove Ball Bearings

Single Row

[illegible][illegible]

Bearings of different designs can be custom-made on request.