



Deep groove ball bearings

Deep groove ball bearings are available in a variety of sizes, and are the most popular of all rolling bearings. This type of bearing supports radial load and a certain degree of axial load in both directions simultaneously.

- Shielded / sealed type
 - Simplifies sealing structure of applications.
 - Greasing is not necessary because bearings are pre-lubricated.
 - Table 1 on the next page lists major shielded and sealed bearing types and compares their performance.
- With locating snap ring
 - Bearings with a locating snap ring can be fit to the housing easily, as the locating snap ring facilitates axial positioning.
- Extra-small ball bearings and miniature ball bearings
 - The open type is widely used. Also available are the shielded/sealed type and the flanged type; the latter is easily positioned in the axial direction.

Single-row deep groove ball bearings



Open type

Bore diameter 10 – 500 mm



Shielded/sealed type

Bore diameter 10 – 220 mm



With snap ring groove With locating snap ring

Bore diameter 10 – 130 mm

Extra-small ball bearings and miniature ball bearings



Bore diameter 1 – 9 mm



Flanged type

Bore diameter 1 – 9 mm

Double-row deep groove ball bearings



(with filling slot)

Bore diameter 10 – 75 mm

Table 1 Comparison of shielded and sealed bearing performance

Type	Shielded		Sealed			
	Non-contact type		Contact type		Extremely light contact type	
	ZZ type	2RU type	2RS type	2RK type	2RD type	
Characteristics	 (a) ¹⁾	 (c)	 (d) ²⁾	 (e)	 (f)	 (g)
Friction torque	Small	Small	Large	Large	Small	
High speed performance	Good	Good	Limited because of contact		Good	
Grease sealing property	Good	Better than ZZ type	Better than 2RU type for low-speed applications	Excellent	Excellent	
Dirt resistance	Good	Better than ZZ type	Better than 2RU type	Excellent	Excellent	
Water resistance	Economical	Better than ZZ type but inferior to 2RS, 2RK and 2RD types	Good	Excellent	Better than ZZ and 2RU types	
Operating temperature ³⁾	-30 to +110°C		-30 to +100°C		-30 to +110°C	

[Notes] 1) Illustration (a) of the ZZ type shows the relatively small size bearing.
 2) Illustration (d) of the 2RS type shows the relatively small size bearing.
 3) The operating temperature range listed is for the standard type. It can be widened by using a different type of grease or sealing material. Consult with JTEKT for details.

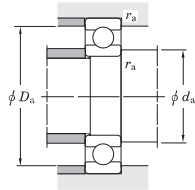
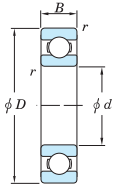
■ Handling instructions

- The shielded/sealed type deep groove ball bearing and the deep groove ball bearing with a locating snap ring are designed for use with the inner ring rotating. Consult with JTEKT on use with the outer ring rotating.
- When the axial load is large, make the shaft shoulder and housing shoulder larger than usual. (Referring to the specification table, make the mounting dimension d_a larger and make D_a smaller.)

Boundary dimensions	The dimensions of standard series are as specified in JIS B 1512. For extra-small and miniature ball bearings, special series (ML) are specified together with those described above.																																																																				
Tolerances	As specified in JIS B 1514-1. (refer to Table 7-3 on pp. A 60 – A 63.)																																																																				
Radial internal clearance	<ul style="list-style-type: none"> ■ Deep groove ball bearings (except extra-small ball bearings and miniature ball bearings) as specified in JIS B 1520 (refer to Table 10-2 on p. A 102.) ■ Extra-small ball bearings and miniature ball bearings (refer to Table 10-3 on p. A 102.) ■ Deep groove ball bearings for motors (refer to Table 10-6 on p. A 105.) 																																																																				
Recommended fits	<ul style="list-style-type: none"> ■ Bearings of classes 0 and 6 (refer to Table 9-4 on pp. A 91, 92.) ■ Precision extra-small ball bearings and miniature ball bearings (refer to Table 9-5 on p. A 93.) 																																																																				
Standard cages	<ul style="list-style-type: none"> ● Synthetic resin molded cage (supplementary code : FG, MG) ● Pressed cage (supplementary code : //) ● Copper alloy machined cage (supplementary code : FY) <p>[Remark] For certain applications, stainless steel sheet pressed cages (YS) may also be used.</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th colspan="4">Application of standard cages</th> </tr> <tr> <th>Bearing series</th> <th>Molded cage</th> <th>Pressed cage</th> <th>Machined cage</th> </tr> </thead> <tbody> <tr><td>68</td><td>683 – 689</td><td>–</td><td>–</td></tr> <tr><td>69</td><td>693 – 699</td><td>–</td><td>–</td></tr> <tr><td>60</td><td>603 – 609</td><td>–</td><td>–</td></tr> <tr><td>62</td><td>623 – 629</td><td>–</td><td>–</td></tr> <tr><td>63</td><td>633 – 639</td><td>–</td><td>–</td></tr> <tr><td>67</td><td>–</td><td>6700 – 6706</td><td>–</td></tr> <tr><td>68</td><td>–</td><td>6800 – 6838</td><td>6840 – 68600</td></tr> <tr><td>69</td><td>–</td><td>6900 – 6918</td><td>6920 – 6980</td></tr> <tr><td>160</td><td>–</td><td>16001 – 16028</td><td>16030 – 16072</td></tr> <tr><td>60</td><td>6000 – 6009</td><td>6010 – 6034</td><td>6036 – 6084</td></tr> <tr><td>62</td><td>6200 – 6208</td><td>6209 – 6230</td><td>6232 – 6248</td></tr> <tr><td>63</td><td>6300 – 6306</td><td>6307 – 6328</td><td>6330 – 6340</td></tr> <tr><td>64</td><td>–</td><td>6403 – 6418</td><td>–</td></tr> <tr><td>42</td><td>–</td><td>4200 – 4215</td><td>–</td></tr> <tr><td>43</td><td>–</td><td>4302 – 4315</td><td>–</td></tr> </tbody> </table>	Application of standard cages				Bearing series	Molded cage	Pressed cage	Machined cage	68	683 – 689	–	–	69	693 – 699	–	–	60	603 – 609	–	–	62	623 – 629	–	–	63	633 – 639	–	–	67	–	6700 – 6706	–	68	–	6800 – 6838	6840 – 68600	69	–	6900 – 6918	6920 – 6980	160	–	16001 – 16028	16030 – 16072	60	6000 – 6009	6010 – 6034	6036 – 6084	62	6200 – 6208	6209 – 6230	6232 – 6248	63	6300 – 6306	6307 – 6328	6330 – 6340	64	–	6403 – 6418	–	42	–	4200 – 4215	–	43	–	4302 – 4315	–
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Allowable misalignment	0.002 3 – 0.003 4 rad (8' – 12')																																																																				
Equivalent radial load (Single/double-row)	<p>Dynamic equivalent radial load</p> $P_r = X F_r + Y F_a$ <p>(refer to the table on the right for values X and Y.)</p> <p>Static equivalent radial load</p> $P_{0r} = 0.6 F_r + 0.5 F_a$ <p>(when the value of $P_{0r} < F_r$, $P_{0r} = F_r$)</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th rowspan="2">$i/6 F_a$</th> <th rowspan="2">e</th> <th colspan="2">$F_a \leq e$</th> <th colspan="2">$F_a > e$</th> </tr> <tr> <th>X</th> <th>Y</th> <th>X</th> <th>Y</th> </tr> </thead> <tbody> <tr><td>0.172</td><td>0.19</td><td></td><td></td><td></td><td>2.30</td></tr> <tr><td>0.345</td><td>0.22</td><td></td><td></td><td></td><td>1.99</td></tr> <tr><td>0.689</td><td>0.26</td><td></td><td></td><td></td><td>1.71</td></tr> <tr><td>1.03</td><td>0.28</td><td></td><td></td><td></td><td>1.55</td></tr> <tr><td>1.38</td><td>0.30</td><td>1</td><td>0</td><td>0.56</td><td>1.45</td></tr> <tr><td>2.07</td><td>0.34</td><td></td><td></td><td></td><td>1.31</td></tr> <tr><td>3.45</td><td>0.38</td><td></td><td></td><td></td><td>1.15</td></tr> <tr><td>5.17</td><td>0.42</td><td></td><td></td><td></td><td>1.04</td></tr> <tr><td>6.89</td><td>0.44</td><td></td><td></td><td></td><td>1.00</td></tr> </tbody> </table> <p>Factor i_0 is shown in the bearing dimension table.</p>	$i/6 F_a$	e	$F_a \leq e$		$F_a > e$		X	Y	X	Y	0.172	0.19				2.30	0.345	0.22				1.99	0.689	0.26				1.71	1.03	0.28				1.55	1.38	0.30	1	0	0.56	1.45	2.07	0.34				1.31	3.45	0.38				1.15	5.17	0.42				1.04	6.89	0.44				1.00				
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Single-row deep groove ball bearings
open type

d 10 ~ (17) mm



d (17) ~ 28 mm

Boundary dimensions (mm)	Basic load ratings (kN)			Factor	Limiting speeds (min ⁻¹)		Mounting dimensions (mm)	(Refer.) Mass (kg)						
	d	D	B		C _r	C _{0r}			f ₀	Grease lub.	Oil lub.	Bearing No.	d _a min.	D _a max.
10	15	3	0.1	1.05	0.430	0.020	15.7	39 000	47 000	6700	10.8	14.2	0.1	0.002
	19	5	0.3	2.15	0.840	0.030	14.8	37 000	43 000	6800	12	17	0.3	0.005
	22	6	0.3	3.35	1.25	0.070	14.0	34 000	41 000	6900	12	20	0.3	0.010
	26	8	0.3	5.70	1.95	0.100	12.3	31 000	36 000	6000	12	24	0.3	0.019
	30	9	0.6	6.40	2.40	0.120	13.2	24 000	29 000	6200	14	26	0.6	0.032
35	11	0.6	10.1	3.45	0.270	11.2	22 000	27 000	6300	14	31	0.6	0.053	
12	18	4	0.2	1.15	0.530	0.023	16.2	34 000	41 000	6701	13.6	16.4	0.2	0.003
	21	5	0.3	2.40	1.05	0.040	15.3	33 000	39 000	6801	14	19	0.3	0.006
	24	6	0.3	3.60	1.45	0.080	14.5	31 000	36 000	6901	14	22	0.3	0.011
	28	7	0.3	6.40	2.40	0.120	13.2	27 000	32 000	16001	14	26	0.3	0.024
	28	8	0.3	6.40	2.40	0.120	13.2	27 000	32 000	6001	14	26	0.3	0.022
	32	10	0.6	8.50	3.05	0.240	12.3	22 000	27 000	6201	16	28	0.6	0.037
	37	12	1	12.1	4.20	0.420	11.1	20 000	25 000	6301	17	32	1	0.060
15	21	4	0.2	1.15	0.580	0.024	16.7	29 000	35 000	6702	16.6	19.4	0.2	0.004
	24	5	0.3	2.60	1.25	0.050	15.8	28 000	33 000	6802	17	22	0.3	0.007
	28	7	0.3	5.40	2.25	0.120	14.3	26 000	30 000	6902	17	26	0.3	0.017
	32	8	0.3	7.00	2.85	0.150	13.9	23 000	28 000	16002	17	30	0.3	0.025
	32	9	0.3	7.00	2.85	0.150	13.9	23 000	27 000	6002	17	30	0.3	0.030
	35	11	0.6	9.55	3.75	0.290	13.2	20 000	24 000	6202	19	31	0.6	0.045
42	13	1	14.3	5.45	0.460	12.3	17 000	20 000	6302	20	37	1	0.082	
17	23	4	0.2	1.25	0.660	0.027	16.9	27 000	32 000	6703	18.6	21.4	0.2	0.005
	26	5	0.3	3.30	1.55	0.060	15.7	26 000	30 000	6803	19	24	0.3	0.008
	30	7	0.3	5.75	2.55	0.130	14.7	23 000	28 000	6903	19	28	0.3	0.018
	35	8	0.3	7.50	3.25	0.170	14.4	21 000	25 000	16003	19	33	0.3	0.032
	35	10	0.3	7.50	3.25	0.170	14.4	21 000	25 000	6003	19	33	0.3	0.039
	40	12	0.6	12.0	4.80	0.370	13.2	17 000	21 000	6203	21	36	0.6	0.065
	47	14	1	17.0	6.65	0.550	12.4	15 000	18 000	6303	22	42	1	0.115
	47	14	1	19.6	7.60	0.680	12.0	15 000	18 000	6303R	22	42	1	0.121

[Remark] Standard cage types used for the above bearings are described earlier in this section.

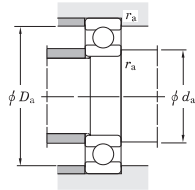
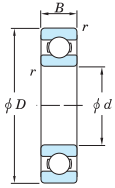
B 8

Boundary dimensions (mm)	Basic load ratings (kN)			Factor	Limiting speeds (min ⁻¹)		Mounting dimensions (mm)	(Refer.) Mass (kg)							
	d	D	B		C _r	C _{0r}			f ₀	Grease lub.	Oil lub.	Bearing No.	d _a min.	D _a max.	r _a max.
17	62	17	1.1	25.9	9.85	0.920	11.6	13 000	15 000	6403	23.5	55.5	1	0.270	
	20	27	4	0.2	1.30	0.730	0.030	16.1	23 000	27 000	6704	21.6	25.4	0.2	0.006
20	32	7	0.3	5.00	2.45	0.100	15.5	21 000	25 000	6804	22	30	0.3	0.018	
	37	9	0.3	7.95	3.70	0.190	14.7	19 000	23 000	6904	22	35	0.3	0.036	
	42	8	0.3	9.90	4.50	0.290	14.4	17 000	21 000	16004	22	40	0.3	0.050	
	42	12	0.6	11.7	5.05	0.350	13.9	17 000	21 000	6004	24	38	0.6	0.069	
	42	12	0.6	14.4	5.85	0.460	13.0	18 000	21 000	6004R	24	38	0.6	0.073	
	47	14	1	16.0	6.65	0.510	13.2	15 000	17 000	6204	25	42	1	0.106	
	47	14	1	19.6	7.60	0.680	12.0	15 000	18 000	6204R	25	42	1	0.114	
	52	15	1.1	19.9	7.85	0.660	12.3	14 000	17 000	6304	26.5	45.5	1	0.144	
	52	15	1.1	22.6	8.95	0.790	12.0	14 000	16 000	6304R	26.5	45.5	1	0.151	
	72	19	1.1	38.7	15.2	1.50	11.1	11 000	13 000	6404	26.5	65.5	1	0.400	
	22	44	12	0.6	11.7	5.15	0.350	14.1	17 000	20 000	60/22	26	40	0.6	0.073
		50	14	1	16.0	6.65	0.510	13.2	15 000	17 000	62/22	27	45	1	0.118
56		16	1.1	23.1	9.40	0.770	12.6	13 000	15 000	63/22	28.5	49.5	1	0.201	
25	32	4	0.2	1.35	0.840	0.035	15.8	19 000	22 000	6705	26.6	30.4	0.2	0.006	
	37	7	0.3	5.40	2.95	0.120	16.0	18 000	21 000	6805	27	35	0.3	0.022	
	42	9	0.3	8.75	4.55	0.230	15.4	16 000	19 000	6905	27	40	0.3	0.041	
	47	8	0.3	11.1	5.60	0.340	15.1	15 000	18 000	16005	27	45	0.3	0.060	
	47	12	0.6	12.6	5.85	0.380	14.5	15 000	18 000	6005	29	43	0.6	0.080	
	52	15	1	17.5	7.85	0.550	13.9	13 000	15 000	6205	30	47	1	0.128	
	52	15	1	22.1	9.30	0.740	12.8	13 000	16 000	6205R	30	47	1	0.138	
	62	17	1.1	25.7	11.3	0.860	13.2	11 000	13 000	6305	31.5	55.5	1	0.232	
62	17	1.1	32.7	13.4	1.20	11.9	11 000	14 000	6305R	31.5	55.5	1	0.255		
80	21	1.5	45.2	19.4	1.65	12.2	9 100	11 000	6405	33	72	1.5	0.530		
28	52	12	0.6	15.6	7.40	0.480	14.5	14 000	16 000	60/28	32	48	0.6	0.097	
	58	16	1	22.4	9.75	0.720	13.4	12 000	14 000	62/28	33	53	1	0.173	
	68	18	1.1	29.4	13.1	0.990	13.3	10 000	12 000	63/28	34.5	61.5	1	0.328	

B 9

Single-row deep groove ball bearings
open type

d 30 ~ (40) mm



d (40) ~ (60) mm

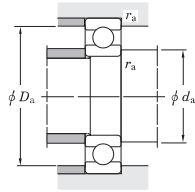
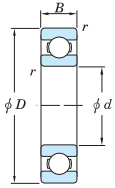
Boundary dimensions (mm)	Basic load ratings (kN)			Fatigue load limit (kN)	Factor	Limiting speeds (min ⁻¹)		Bearing No.	Mounting dimensions (mm)			(Refer.) Mass (kg)		
						Grease lub.	Oil lub.		d _a min.	D _a max.	r _a max.			
d D B	r min.	C _r	C _{0r}	C _u	f ₀									
30	37	4	0.2	1.45	0.950	0.040	15.7	16 000	19 000	6706	31.6	35.4	0.2	0.008
	42	7	0.3	5.65	3.40	0.140	16.4	15 000	18 000	6806	32	40	0.3	0.026
	47	9	0.3	9.05	5.00	0.260	15.8	14 000	17 000	6906	32	45	0.3	0.045
	55	9	0.3	14.1	7.35	0.440	15.2	13 000	15 000	16006	32	53	0.3	0.085
	55	13	1	16.5	8.25	0.530	14.7	13 000	15 000	6006	35	50	1	0.116
	62	16	1	24.3	11.3	0.800	13.9	11 000	13 000	6206	35	57	1	0.199
	62	16	1	29.2	12.8	1.00	13.0	11 000	13 000	6206R	35	57	1	0.212
	72	19	1.1	33.3	15.0	1.15	13.3	9 600	12 000	6306	36.5	65.5	1	0.346
	72	19	1.1	41.7	17.7	1.55	12.0	9 800	12 000	6306R	36.5	65.5	1	0.379
	90	23	1.5	54.2	23.9	2.05	12.3	8 100	9 700	6406	38	82	1.5	0.735
32	58	13	1	18.8	9.15	0.600	14.5	12 000	14 000	60/32	37	53	1	0.127
	65	17	1	29.4	13.1	0.990	13.3	10 000	12 000	62/32	37	60	1	0.228
	75	20	1.1	37.6	16.2	1.30	12.7	9 300	11 000	63/32	38.5	68.5	1	0.437
35	47	7	0.3	5.95	3.85	0.160	16.5	13 000	16 000	6807	37	45	0.3	0.030
	55	10	0.6	13.6	7.75	0.440	15.7	12 000	14 000	6907	39	51	0.6	0.073
	62	9	0.3	15.3	8.85	0.500	15.7	11 000	13 000	16007	37	60	0.3	0.110
	62	14	1	19.9	10.3	0.640	14.9	11 000	13 000	6007	40	58	1	0.155
	72	17	1.1	32.1	15.4	1.10	13.9	9 200	11 000	6207	41.5	65.5	1	0.288
	72	17	1.1	38.7	17.5	1.40	12.9	9 300	11 000	6207R	41.5	65.5	1	0.309
	80	21	1.5	41.7	19.3	1.45	13.2	8 500	10 000	6307	43	72	1.5	0.457
	80	21	1.5	50.0	21.7	1.90	12.1	8 700	10 000	6307R	43	72	1.5	0.494
	100	25	1.5	68.8	31.0	2.65	12.2	7 200	8 600	6407	43	92	1.5	0.952
40	52	7	0.3	6.15	4.20	0.180	16.3	12 000	14 000	6808	42	50	0.3	0.033
	62	12	0.6	17.1	9.95	0.570	15.6	11 000	13 000	6908	44	58	0.6	0.112
	68	9	0.3	15.8	9.65	0.530	16.0	9 800	12 000	16008	42	66	0.3	0.125
	68	15	1	20.9	11.5	0.690	15.2	10 000	12 000	6008	45	63	1	0.192
	80	18	1.1	36.4	17.8	1.25	14.0	8 300	10 000	6208	46.5	73.5	1	0.366
	90	23	1.5	50.9	24.0	1.85	13.2	7 700	9 200	6308	48	82	1.5	0.633

[Remark] Standard cage types used for the above bearings are described earlier in this section.

Boundary dimensions (mm)	Basic load ratings (kN)			Fatigue load limit (kN)	Factor	Limiting speeds (min ⁻¹)		Bearing No.	Mounting dimensions (mm)			(Refer.) Mass (kg)			
						Grease lub.	Oil lub.		d _a min.	D _a max.	r _a max.				
d D B	r min.	C _r	C _{0r}	C _u	f ₀										
40	110	27	2	79.6	36.6	3.15	12.3	6 600	7 900	6408	49	101	2	1.23	
	45	58	7	0.3	7.75	5.40	0.230	16.3	11 000	13 000	6809	47	56	0.3	0.040
		68	12	0.6	17.7	10.9	0.600	15.9	9 700	11 000	6909	49	64	0.6	0.132
		75	10	0.6	19.4	12.3	0.670	16.0	8 900	10 000	16009	49	71	0.6	0.170
		75	16	1	26.2	15.1	0.900	15.3	9 200	11 000	6009	50	70	1	0.245
		85	19	1.1	40.9	20.3	1.40	14.0	7 700	9 200	6209	51.5	78.5	1	0.407
	100	25	1.5	61.1	29.5	2.25	13.3	6 800	8 100	6309	53	92	1.5	0.833	
	120	29	2	96.5	45.1	3.90	12.2	6 000	7 200	6409	54	111	2	1.53	
	50	65	7	0.3	8.20	6.10	0.260	16.1	9 600	11 000	6810	52	63	0.3	0.052
		72	12	0.6	18.2	11.7	0.640	16.1	9 000	11 000	6910	54	68	0.6	0.133
80		10	0.6	20.0	13.3	0.710	16.2	8 200	9 700	16010	54	76	0.6	0.180	
80		16	1	27.3	16.6	0.960	15.6	8 400	9 900	6010	55	75	1	0.261	
90		20	1.1	43.9	23.3	1.55	14.4	7 100	8 500	6210	56.5	83.5	1	0.463	
90		20	1.1	50.5	25.5	1.80	13.9	7 100	8 600	6210R	56.5	83.5	1	0.487	
110		27	2	77.5	38.3	2.90	13.2	6 100	7 300	6310	59	101	2	1.07	
130	31	2.1	104	49.5	4.10	12.5	5 500	6 600	6410	61	119	2	1.88		
55	72	9	0.3	11.0	8.10	0.420	16.2	8 700	10 000	6811	57	70	0.3	0.083	
	80	13	1	20.8	14.1	0.760	16.2	8 100	9 600	6911	60	75	1	0.185	
	90	11	0.6	24.2	16.3	0.880	16.2	7 400	8 800	16011	59	86	0.6	0.260	
	90	18	1.1	35.3	21.2	1.25	15.3	7 600	8 900	6011	61.5	83.5	1	0.385	
	100	21	1.5	54.2	29.4	1.95	14.4	6 300	7 600	6211	63	92	1.5	0.607	
	120	29	2	89.5	45.0	3.45	13.2	5 600	6 700	6311	64	111	2	1.37	
	140	33	2.1	126	62.3	5.35	12.2	5 000	6 000	6411	66	129	2	2.29	
60	78	10	0.3	14.3	10.6	0.550	16.3	8 000	9 400	6812	62	76	0.3	0.104	
	85	13	1	25.2	17.3	0.940	16.2	7 500	8 900	6912	65	80	1	0.192	
	95	11	0.6	24.8	17.6	0.930	16.4	6 900	8 100	16012	64	91	0.6	0.280	
	95	18	1.1	36.8	23.2	1.35	15.6	7 100	8 400	6012	66.5	88.5	1	0.415	

Single-row deep groove ball bearings
open type

d (60) ~ (80) mm



d (80) ~ (100) mm

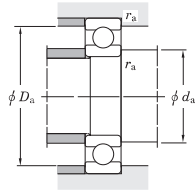
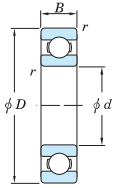
Boundary dimensions (mm)			Basic load ratings (kN)		Factor	Limiting speeds (min ⁻¹)	Fatigue load limit (kN)	Bearing No.	Mounting dimensions (mm)			(Refer.) Mass (kg)		
d	D	B	C _r	C _{0r}					d _a min.	D _n max.	r _a max.			
60	110	22	1.5	65.6	36.2	2.40	14.4	5 700	6 900	6212	68	102	1.5	0.783
	130	31	2.1	102	52.2	3.95	13.2	5 200	6 200	6312	71	119	2	1.70
	150	35	2.1	137	70.8	5.75	12.4	4 600	5 500	6412	71	139	2	2.77
65	85	10	0.6	14.9	11.5	0.590	16.2	7 300	8 600	6813	69	81	0.6	0.126
	90	13	1	21.7	16.1	0.830	16.6	7 100	8 400	6913	70	85	1	0.211
	100	11	0.6	21.4	16.0	0.830	16.5	6 600	7 800	16013	69	96	0.6	0.300
	100	18	1.1	38.1	25.2	1.40	15.8	6 600	7 800	6013	71.5	93.5	1	0.435
	120	23	1.5	71.5	40.1	2.65	14.4	5 400	6 400	6213	73	112	1.5	0.990
	140	33	2.1	116	59.9	4.50	13.2	4 800	5 800	6313	76	129	2	2.08
	160	37	2.1	148	79.2	6.20	12.4	4 300	5 200	6413	76	149	2	3.30
70	90	10	0.6	15.1	11.9	0.620	16.1	6 800	8 100	6814	74	86	0.6	0.134
	100	16	1	29.7	21.2	1.10	16.3	6 400	7 600	6914	75	95	1	0.342
	110	13	0.6	37.6	25.6	1.40	16.0	6 100	7 200	16014	74	106	0.6	0.433
	110	20	1.1	47.6	30.9	1.80	15.6	6 100	7 200	6014	76.5	103.5	1	0.602
	125	24	1.5	77.8	44.1	2.90	14.5	5 100	6 100	6214	78	117	1.5	1.07
	150	35	2.1	130	68.2	4.95	13.2	4 500	5 400	6314	81	139	2	2.52
	180	42	3	181	104	10.2	12.2	3 900	4 600	6414	83	167	2.5	4.83
75	95	10	0.6	15.7	12.9	0.660	16.0	6 400	7 600	6815	79	91	0.6	0.142
	105	16	1	30.5	22.6	1.20	16.5	6 100	7 200	6915	80	100	1	0.363
	115	13	0.6	34.4	25.3	1.35	16.4	5 700	6 700	16015	79	111	0.6	0.457
	115	20	1.1	49.4	33.5	1.90	15.8	5 700	6 800	6015	81.5	108.5	1	0.638
	130	25	1.5	84.3	48.3	3.10	14.5	4 800	5 800	6215	83	122	1.5	1.18
	160	37	2.1	142	77.2	5.40	13.2	4 200	5 000	6315	86	149	2	3.02
	190	45	3	192	115	10.9	12.3	3 600	4 400	6415	88	177	2.5	5.87
80	100	10	0.6	15.9	13.3	0.690	16.0	6 100	7 200	6816	84	96	0.6	0.150
	110	16	1	31.2	24.0	1.25	16.6	5 700	6 800	6916	85	105	1	0.382
	125	14	0.6	39.7	29.7	1.50	16.4	5 200	6 100	16016	84	121	0.6	0.597

[Remark] Standard cage types used for the above bearings are described earlier in this section.

Boundary dimensions (mm)			Basic load ratings (kN)		Factor	Limiting speeds (min ⁻¹)	Fatigue load limit (kN)	Bearing No.	Mounting dimensions (mm)			(Refer.) Mass (kg)		
d	D	B	C _r	C _{0r}					d _a min.	D _n max.	r _a max.			
80	125	22	1.1	59.5	39.8	2.25	15.6	5 300	6 300	6016	86.5	118.5	1	0.850
	140	26	2	90.9	53.0	3.25	14.6	4 500	5 400	6216	89	131	2	1.40
	170	39	2.1	154	86.7	5.85	13.3	3 900	4 700	6316	91	159	2	3.59
	200	48	3	205	125	11.5	12.3	3 400	4 100	6416	93	187	2.5	6.84
85	110	13	1	23.4	19.0	0.980	16.2	5 600	6 600	6817	90	105	1	0.266
	120	18	1.1	39.9	29.6	1.55	16.4	5 300	6 300	6917	91.5	113.5	1	0.535
	130	14	0.6	40.8	31.7	1.55	16.5	4 900	5 800	16017	89	126	0.6	0.626
	130	22	1.1	61.8	43.1	2.35	15.8	5 000	5 900	6017	91.5	123.5	1	0.890
	150	28	2	105	61.9	3.70	14.5	4 200	5 000	6217	94	141	2	1.79
	180	41	3	166	96.8	6.35	13.3	3 700	4 400	6317	98	167	2.5	4.23
	210	52	4	217	136	12.2	12.3	3 300	3 900	6417	101	194	3	8.07
90	115	13	1	23.8	19.7	1.00	16.1	5 300	6 300	6818	95	110	1	0.279
	125	18	1.1	41.0	31.6	1.60	16.5	5 100	6 000	6918	96.5	118.5	1	0.565
	140	16	1	49.9	37.0	1.85	16.3	4 700	5 600	16018	95	135	1	0.848
	140	24	1.5	72.8	49.7	2.85	15.6	4 700	5 600	6018	98	132	1.5	1.16
	160	30	2	120	71.5	4.20	14.5	3 900	4 700	6218	99	151	2	2.15
	190	43	3	178	107	8.80	13.3	3 500	4 200	6318	103	177	2.5	4.91
	225	54	4	230	149	12.7	12.5	3 100	3 700	6418	106	209	3	9.78
95	130	18	1.1	42.1	33.5	1.85	16.6	4 800	5 700	6919	101.5	123.5	1	0.705
	145	16	1	51.5	39.6	1.90	16.4	4 500	5 300	16019	100	140	1	0.885
	145	24	1.5	75.5	53.9	2.75	15.8	4 400	5 200	6019	103	137	1.5	1.21
	170	32	2.1	136	81.9	4.65	14.4	3 700	4 400	6219	106	159	2	2.62
	200	45	3	191	119	9.45	13.3	3 300	4 000	6319	108	187	2.5	5.67
100	125	13	1	24.5	21.2	1.05	16.0	4 800	5 700	6820	105	120	1	0.309
	140	20	1.1	56.2	41.9	2.05	16.2	4 500	5 300	6920	106.5	133.5	1	0.960
	150	16	1	53.0	42.1	1.95	16.5	4 300	5 100	16020	105	145	1	0.910
	150	24	1.5	75.2	54.2	2.70	15.9	4 300	5 100	6020	108	142	1.5	1.25

Single-row deep groove ball bearings
open type

d (100) ~ (140) mm



d (140) ~ (190) mm

Boundary dimensions (mm)			Basic load ratings (kN)		Fatigue load limit (kN)	Factor	Limiting speeds (min ⁻¹)		Bearing No.	Mounting dimensions (mm)			(Refer.) Mass (kg)	
d	D	B	C _r	C _{0r}	C _u	f ₀	Grease lub.	Oil lub.		d _a min.	D _n max.	r _a max.		
100	180	34	2.1	153	93.1	5.15	14.4	3 500	4 200	6220	111	169	2	3.14
	215	47	3	216	141	10.9	13.2	3 000	3 600	6320	113	202	2.5	7.00
105	145	20	1.1	58.1	44.8	2.10	16.4	4 300	5 100	6921	111.5	138.5	1	1.00
	160	18	1	52.3	42.2	1.90	16.5	4 100	4 800	16021	110	155	1	1.20
	160	26	2	90.4	65.8	3.20	15.8	4 000	4 700	6021	114	151	2	1.59
	190	36	2.1	166	105	5.70	14.4	3 300	3 900	6221	116	179	2	3.70
110	225	49	3	230	153	11.7	13.2	2 900	3 500	6321	118	212	2.5	8.05
	140	16	1	35.1	30.7	1.40	16.1	4 300	5 100	6822	115	135	1	0.606
	150	20	1.1	59.9	47.8	2.20	16.4	4 100	4 900	6922	116.5	143.5	1	1.04
	170	19	1	71.8	56.7	2.55	16.3	3 800	4 500	16022	115	165	1	1.46
120	170	28	2	103	73.0	3.55	15.6	3 800	4 500	6022	119	161	2	1.96
	200	38	2.1	180	117	6.20	14.4	3 100	3 700	6222	121	189	2	4.36
	240	50	3	257	180	13.3	13.2	2 700	3 200	6322	123	227	2.5	9.54
	150	16	1	36.2	33.0	1.45	16.0	4 000	4 700	6824	125	145	1	0.655
130	165	22	1.1	71.6	56.9	2.50	16.4	3 800	4 400	6924	126.5	158.5	1	1.41
	180	19	1	79.0	63.3	2.75	16.4	3 600	4 200	16024	125	175	1	1.80
	180	28	2	106	79.3	3.60	15.9	3 600	4 200	6024	129	171	2	2.07
	215	40	2.1	194	131	6.65	14.4	2 900	3 400	6224	131	204	2	5.15
140	260	55	3	258	185	12.6	13.5	2 500	3 000	6324	133	247	2.5	12.5
	165	18	1.1	46.1	41.2	1.75	16.1	3 600	4 300	6826	136.5	158.5	1	0.939
	180	24	1.5	86.9	67.4	3.00	16.3	3 400	4 100	6926	138	172	1.5	1.86
	200	22	1.1	89.1	74.8	3.05	11.2	3 000	3 600	16026	136.5	193.5	1	2.69
	200	33	2	133	101	4.45	15.8	3 200	3 800	6026	139	191	2	3.16
	230	40	3	209	146	9.15	14.5	2 700	3 200	6226	143	217	2.5	5.82
140	280	58	4	287	214	14.1	13.6	2 300	2 700	6326	146	264	3	15.1
	175	18	1.1	47.8	44.4	1.85	16.0	3 400	4 000	6828	146.5	168.5	1	1.00
	190	24	1.5	89.1	74.8	3.05	16.5	3 200	3 800	6928	148	182	1.5	1.98
210	22	1.1	82.2	71.1	2.80	16.5	2 900	3 400	16028	146.5	203.5	1	2.86	

[Remark] Standard cage types used for the above bearings are described earlier in this section.

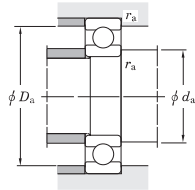
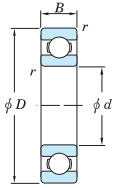
B 14

Boundary dimensions (mm)			Basic load ratings (kN)		Fatigue load limit (kN)	Factor	Limiting speeds (min ⁻¹)		Bearing No.	Mounting dimensions (mm)			(Refer.) Mass (kg)	
d	D	B	C _r	C _{0r}	C _u	f ₀	Grease lub.	Oil lub.		d _a min.	D _n max.	r _a max.		
140	210	33	2	137	109	4.55	15.9	3 000	3 600	6028	149	201	2	3.55
	250	42	3	208	150	8.65	14.8	2 400	2 900	6228	153	237	2.5	7.45
	300	62	4	316	246	15.6	13.6	2 100	2 500	6328	156	284	3	19.4
150	190	20	1.1	59.7	54.9	2.20	16.1	3 100	3 700	6830	156.5	183.5	1	1.40
	210	28	2	117	94.3	3.75	16.2	2 900	3 400	6930	159	201	2	3.05
	225	24	1.1	114	99.3	3.70	16.6	2 700	3 100	16030	156.5	218.5	1	3.58
	225	35	2.1	157	126	5.10	16.0	2 800	3 300	6030	161	214	2	4.22
	270	45	3	220	168	9.05	15.1	2 200	2 700	6230	163	257	2.5	9.41
160	320	65	4	343	284	16.6	13.9	1 900	2 300	6330	166	304	3	26.2
	200	20	1.1	60.5	56.9	2.20	16.1	2 900	3 400	6832	166.5	193.5	1	1.45
	220	28	2	120	101	3.85	16.4	2 700	3 200	6932	169	211	2	3.20
	240	25	1.5	124	108	3.95	16.5	2 600	3 100	16032	168	232	1.5	4.25
170	240	38	2.1	171	135	5.30	15.9	2 600	3 000	6032	171	229	2	5.22
	290	48	3	231	186	9.45	15.4	2 100	2 500	6232	173	277	2.5	14.3
	340	68	4	347	286	16.4	13.9	1 800	2 200	6332	176	324	3	29.0
	215	22	1.1	74.8	70.5	2.60	16.1	2 700	3 200	6834	176.5	208.5	1	1.90
180	230	28	2	124	108	3.95	16.5	2 600	3 100	6934	179	221	2	3.35
	260	28	1.5	142	127	4.45	16.5	2 300	2 700	16034	178	252	1.5	5.75
	260	42	2.1	201	161	6.20	15.8	2 400	2 800	6034	181	249	2	6.80
	310	52	4	265	223	11.1	15.3	1 900	2 300	6234	186	294	3	17.5
180	360	72	4	408	355	20.5	13.6	1 700	2 000	6334	186	344	3	38.6
	225	22	1.1	75.8	73.1	2.65	16.1	2 600	3 000	6836	186.5	218.5	1	2.00
	250	33	2	153	129	4.70	16.3	2 400	2 800	6936	189	241	2	4.90
	280	31	2	169	148	5.15	16.4	2 100	2 500	16036	189	271	2	7.55
	280	46	2.1	227	194	7.15	15.8	2 200	2 600	6036	191	269	2	10.3
	320	52	4	284	241	12.0	15.1	1 800	2 200	6236	196	304	3	18.3
190	380	75	4	443	407	22.1	13.9	1 600	1 900	6336	196	364	3	44.7
	240	24	1.5	91.4	88.1	3.10	16.1	2 400	2 800	6838	198	232	1.5	2.60

B 15

Single-row deep groove ball bearings
open type

d (190) ~ (260) mm



d (260) ~ (360) mm

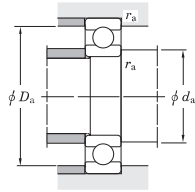
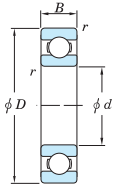
Boundary dimensions (mm)	Basic load ratings (kN)			Fatigue load limit (kN) C_u	Factor f_0	Limiting speeds (min ⁻¹)		Bearing No.	Mounting dimensions (mm)			(Refer.) Mass (kg)		
						Grease lub.	Oil lub.		d_a min.	D_a max.	r_a max.			
190	260	33	2	158	138	4.85	16.4	2 300	2 700	6938	199	251	2	5.20
	290	31	2	173	158	5.20	16.6	2 000	2 400	16038	199	281	2	7.85
	290	46	2.1	235	201	7.35	15.8	2 100	2 500	6038	201	279	2	10.8
	340	55	4	319	281	13.7	15.0	1 700	2 000	6238	206	324	3	23.0
	400	78	5	443	415	21.3	14.1	1 500	1 800	6338	210	380	4	51.5
200	250	24	1.5	97.6	93.6	3.20	16.1	2 300	2 700	6840	208	242	1.5	2.70
	280	38	2.1	196	168	5.80	16.2	2 100	2 500	6940	211	269	2	7.30
	310	34	2	201	180	5.95	16.4	1 900	2 300	16040	209	301	2	10.1
	310	51	2.1	272	243	11.3	15.6	1 900	2 300	6040	211	299	2	14.0
	360	58	4	336	311	14.4	15.2	1 600	1 900	6240	216	344	3	28.2
420	80	5	513	506	25.5	14.0	1 300	1 600	6340	220	400	4	58.0	
220	270	24	1.5	101	101	3.35	16.0	2 000	2 400	6844	228	262	1.5	3.00
	300	38	2.1	201	180	5.85	16.4	1 900	2 200	6944	231	289	2	7.90
	340	37	2.1	225	217	6.65	16.5	1 700	2 000	16044	231	329	2	13.2
	340	56	3	294	271	12.0	15.6	1 700	2 000	6044	233	327	2.5	18.3
	400	65	4	389	376	16.8	15.1	1 400	1 700	6244	236	384	3	37.0
460	88	5	542	539	26.7	13.8	1 200	1 500	6344	240	440	4	71.6	
240	300	28	2	135	135	4.25	16.1	1 800	2 100	6848	249	291	2	4.50
	320	38	2.1	205	192	5.95	16.5	1 700	2 000	6948	251	309	2	8.50
	360	37	2.1	230	228	6.75	16.5	1 600	1 800	16048	251	349	2	14.1
	360	56	3	305	296	12.3	15.9	1 600	1 900	6048	253	347	2.5	19.7
	440	72	4	424	431	18.2	15.2	1 200	1 500	6248	256	424	3	51.0
500	95	5	587	624	28.2	14.2	1 100	1 300	6348	260	480	4	93.3	
260	320	28	2	141	146	4.40	16.0	1 700	2 000	6852	269	311	2	4.80
	360	46	2.1	266	263	10.2	16.3	1 500	1 800	6952	271	349	2	14.4
	400	44	3	295	310	11.5	16.4	1 400	1 600	16052	273	387	2.5	21.6
	400	65	4	364	377	15.0	15.8	1 400	1 700	6052	276	384	3	29.3
	480	80	5	502	541	22.2	15.1	1 100	1 300	6252	280	460	4	68.2

[Remark] Standard cage types used for the above bearings are described earlier in this section.

Boundary dimensions (mm)	Basic load ratings (kN)			Fatigue load limit (kN) C_u	Factor f_0	Limiting speeds (min ⁻¹)		Bearing No.	Mounting dimensions (mm)			(Refer.) Mass (kg)		
						Grease lub.	Oil lub.		d_a min.	D_a max.	r_a max.			
260	540	102	6	663	741	32.4	14.2	990	1 200	6352	284	516	5	116
	280	350	33	2	179	183	5.35	16.1	1 500	1 800	6856	289	341	2
280	380	46	2.1	273	283	10.5	16.5	1 400	1 700	6956	291	369	2	15.1
	420	44	3	302	331	11.7	14.7	1 300	1 500	16056	293	407	2.5	22.9
	420	65	4	377	408	15.5	16.0	1 300	1 500	6056	296	404	3	31.0
	500	80	5	529	599	23.2	15.3	1 000	1 200	6256	300	480	4	71.8
	580	108	6	711	845	33.9	14.5	880	1 100	6356	304	556	5	145
300	380	38	2.1	224	230	6.45	16.2	1 400	1 600	6860	311	369	2	10.5
	420	56	3	345	377	13.7	16.2	1 300	1 500	6960	313	407	2.5	24.1
	460	50	4	355	405	14.0	16.4	1 100	1 400	16060	316	447	3	32.2
	460	74	4	444	482	18.4	15.6	1 200	1 400	6060	316	444	3	44.0
	540	85	5	551	663	23.5	15.6	880	1 100	6260	320	520	4	89.5
620	109	7.5	741	886	35.0	14.4	810	970	6360	332	588	6	169	
320	400	38	2.1	227	239	6.50	16.1	1 300	1 500	6864	331	389	2	11.0
	440	56	3	356	404	14.1	16.4	1 200	1 400	6964	333	427	2.5	25.5
	480	50	4	364	432	14.3	16.5	1 100	1 300	16064	336	467	3	33.9
	480	74	4	441	487	17.8	15.7	1 100	1 300	6064	336	464	3	46.0
	580	92	5	612	745	26.7	15.4	840	1 000	6264	340	560	4	113
670	112	7.5	793	1 010	36.9	14.8	720	870	6364	352	638	6	207	
340	420	38	2.1	231	249	6.60	16.1	1 200	1 400	6868	351	409	2	11.5
	460	56	3	352	407	13.7	16.5	1 100	1 300	6968	353	447	2.5	26.8
	520	57	4	419	512	16.8	16.4	980	1 200	16068	356	507	3	46.8
	520	82	5	552	661	23.7	15.6	980	1 200	6068	360	500	4	61.8
	620	92	6	639	817	27.7	15.6	760	910	6268	364	596	5	131
710	118	7.5	880	1 160	41.7	14.7	660	790	6368	372	678	6	238	
360	440	38	2.1	240	268	6.95	16.0	1 100	1 300	6872	371	429	2	12.0
	480	56	3	362	432	14.0	16.5	1 000	1 200	6972	373	467	2.5	28.2
	540	57	4	431	546	17.2	16.5	900	1 100	16072	376	527	3	49.0

Single-row deep groove ball bearings
open type

d (360) ~ (500) mm



d (500) mm

Boundary dimensions (mm)	Basic load ratings (kN)			Fatigue load limit (kN) C _u	Factor f ₀	Limiting speeds (min ⁻¹)		Bearing No.	Mounting dimensions (mm)			(Refer.) Mass (kg)		
	d	D	B			r min.	C _r		C _{0r}	Grease lub.	Oil lub.		d _a min.	D _a max.
360	540	82	5	548	668	23.0	15.7	920	1 100	6072	380	520	4	64.7
	650	95	6	696	904	30.4	15.4	700	840	6272	384	626	5	144
380	480	46	2.1	305	359	8.95	16.2	980	1 200	6876	391	469	2	20.0
	520	65	4	440	552	17.6	16.4	920	1 100	6976	396	504	3	40.8
	560	82	5	572	725	24.1	15.9	860	1 000	6076	400	540	4	67.6
	680	95	6	730	990	31.9	15.6	650	780	6276	404	656	5	162
400	500	46	2.1	311	374	9.10	16.1	920	1 100	6880	411	489	2	20.5
	540	65	4	453	588	18.1	16.5	860	1 000	6980	416	524	3	42.7
	600	63	5	447	587	17.5	16.5	780	920	16080	420	580	4	65.0
	600	90	5	635	824	27.0	15.7	780	920	6080	420	580	4	87.7
	720	103	6	785	1 080	34.2	15.5	590	710	6280	424	696	5	197
420	520	46	2.1	316	389	9.25	16.1	860	1 000	6884	431	509	2	21.5
	560	65	4	449	588	17.7	16.5	810	950	6984	436	544	3	43.5
	620	63	5	459	617	18.0	16.4	740	870	16084	440	600	4	69.9
	620	90	5	663	894	28.3	15.8	740	870	6084	440	600	4	91.2
440	540	46	2.1	321	404	9.40	16.0	810	950	6888	451	529	2	22.5
	600	74	4	529	676	21.4	16.4	740	870	6988	456	584	3	61.3
	650	67	5	508	710	20.2	16.5	680	810	16088	460	630	4	81.7
460	580	56	3	393	517	11.7	16.2	740	870	6892	473	567	2.5	35.0
	620	74	4	509	711	20.3	16.5	690	820	6992	476	604	3	61.7
	680	71	5	539	767	21.4	16.5	630	750	16092	480	660	4	91.2
480	600	56	3	401	539	12.0	16.1	690	820	6896	493	587	2.5	36.5
	650	78	5	540	768	21.5	16.5	640	760	6996	500	630	4	72.5
	700	71	5	554	807	22.1	16.5	600	710	16096	500	680	4	98.5
500	620	56	3	409	561	12.2	16.1	650	770	68/500	513	607	2.5	37.5
	670	78	5	556	807	22.2	16.5	610	720	69/500	520	650	4	75.2

[Remark] Standard cage types used for the above bearings are described earlier in this section.

Boundary dimensions (mm)	Basic load ratings (kN)			Fatigue load limit (kN) C _u	Factor f ₀	Limiting speeds (min ⁻¹)		Bearing No.	Mounting dimensions (mm)			(Refer.) Mass (kg)		
	d	D	B			r min.	C _r		C _{0r}	Grease lub.	Oil lub.		d _a min.	D _a max.
500	720	71	5	568	846	22.7	16.4	560	660	160/500	520	700	4	102
	720	100	6	749	1 100	31.3	16.0	570	670	60/500	524	696	5	128