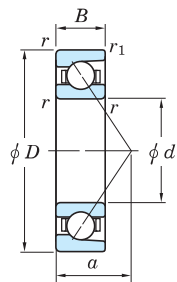
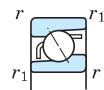


Single-row angular contact ball bearings

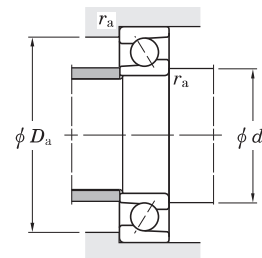
d 10 ~ (17) mm



With machined cage



With pressed cage



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>	Load center (mm) a	Mounting dimensions (mm)			(Refer.) Mass (kg)
d	D	B	r min.	r1 min.	With machined cage		With pressed cage		Ca			Grease lub.	Oil lub.			da min.	Da max.	ra max.	
					Cr	C0r	Cr	C0r	[With machined cage]	[With pressed cage]	f0								
10	22	6	0.3	0.15	3.75	1.50	—	—	0.060	—	14.2	52 000	69 000	7900C	5.1	12.5	19.5	0.3	0.008
	26	8	0.3	0.15	6.25	2.35	—	—	0.120	—	—	34 000	42 000	7000	9.1	12.5	23.5	0.3	0.021
	26	8	0.3	0.15	5.80	2.15	—	—	0.110	—	—	25 000	33 000	7000B	11.6	12.5	23.5	0.3	0.021
	26	8	0.3	0.15	6.60	2.45	—	—	0.130	—	12.5	47 000	62 000	7000C	6.4	12.5	23.5	0.3	0.021
	30	9	0.6	0.3	5.85	2.20	6.75	2.75	0.110	0.140	—	29 000	37 000	7200	10.4	14.5	25.5	0.6	0.031
	30	9	0.6	0.3	5.35	2.00	6.20	2.50	0.100	0.130	—	22 000	29 000	7200B	13.1	14.5	25.5	0.6	0.031
	30	9	0.6	0.3	6.25	2.35	7.25	2.95	0.120	0.150	13.4	40 000	54 000	7200C	7.2	14.5	25.5	0.6	0.031
	35	11	0.6	0.3	10.6	3.75	11.6	4.30	0.300	0.340	—	27 000	33 000	7300	12.0	14.5	30.5	0.6	0.054
12	24	6	0.3	0.15	4.00	1.70	—	—	0.070	—	14.7	48 000	62 000	7901C	5.4	14.5	21.5	0.3	0.010
	28	8	0.3	0.15	6.75	2.75	—	—	0.140	—	—	29 000	37 000	7001	9.9	14.5	25.5	0.3	0.024
	28	8	0.3	0.15	6.20	2.50	—	—	0.130	—	—	22 000	29 000	7001B	12.6	14.5	25.5	0.3	0.024
	28	8	0.3	0.15	7.25	2.95	—	—	0.150	—	13.4	40 000	54 000	7001C	6.7	14.5	25.5	0.3	0.024
	32	10	0.6	0.3	9.30	3.65	10.0	4.05	0.280	0.310	—	27 000	34 000	7201	11.4	16.5	27.5	0.6	0.038
	32	10	0.6	0.3	8.65	3.40	9.30	3.75	0.240	0.270	—	20 000	27 000	7201B	14.2	16.5	27.5	0.6	0.038
	32	10	0.6	0.3	9.90	3.85	10.6	4.30	0.300	0.330	12.5	38 000	50 000	7201C	7.9	16.5	27.5	0.6	0.038
	37	12	1	0.6	12.8	4.60	14.0	5.25	0.360	0.410	—	24 000	31 000	7301	13.1	17.5	31.5	1	0.065
15	28	7	0.3	0.15	5.95	2.65	—	—	0.110	—	14.5	39 000	52 000	7902C	6.4	17.5	25.5	0.3	0.015
	32	9	0.3	0.15	7.65	3.45	—	—	0.180	—	—	26 000	32 000	7002	11.3	17.5	29.5	0.3	0.035
	32	9	0.3	0.15	6.95	3.15	—	—	0.160	—	—	19 000	25 000	7002B	14.6	17.5	29.5	0.3	0.035
	32	9	0.3	0.15	8.25	3.70	—	—	0.190	—	14.1	35 000	47 000	7002C	7.6	17.5	29.5	0.3	0.035
	35	11	0.6	0.3	10.1	4.25	10.1	4.25	0.300	0.300	—	24 000	29 000	7202	12.9	19.5	30.5	0.6	0.048
	35	11	0.6	0.3	9.30	3.95	9.30	3.95	0.260	0.260	—	18 000	24 000	7202B	16.2	19.5	30.5	0.6	0.048
	35	11	0.6	0.3	10.8	4.55	10.8	4.55	0.340	0.340	13.3	33 000	43 000	7202C	8.9	19.5	30.5	0.6	0.048
	42	13	1	0.6	15.7	6.45	16.8	7.20	0.490	0.550	—	20 000	25 000	7302	15.0	20.5	36.5	1	0.088
17	30	7	0.3	0.15	6.25	2.95	—	—	0.120	—	14.9	36 000	47 000	7903C	6.7	19.5	27.5	0.3	0.016
	35	10	0.3	0.15	8.40	4.15	—	—	0.210	—	—	23 000	28 000	7003	12.7	19.5	32.5	0.3	0.045

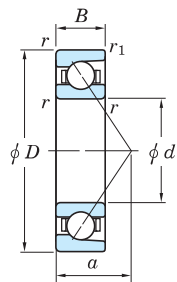
[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cage or molded cage.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively.

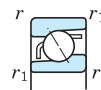
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

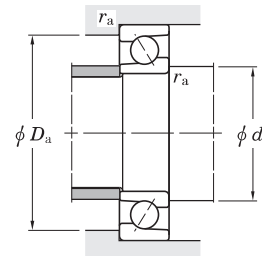
d (17) ~ (25) mm



With machined cage



With pressed cage



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>	Load center (mm) a	Mounting dimensions (mm)			(Refer.) Mass (kg)
d	D	B	r min.	r1 min.	With machined cage		With pressed cage		C <sub>u</sub>			Grease lub.	Oil lub.			d <sub>a</sub> min.	D <sub>a</sub> max.	r <sub>a</sub> max.	
					C <sub>r</sub>	C <sub>0r</sub>	C <sub>r</sub>	C <sub>0r</sub>	[With machined cage]	[With pressed cage]	f <sub>0</sub>								
17	35	10	0.3	0.15	7.60	3.75	—	—	0.190	—	—	17 000	23 000	7003B	16.1	19.5	32.5	0.3	0.045
	35	10	0.3	0.15	9.15	4.45	—	—	0.230	—	14.6	31 000	41 000	7003C	8.6	19.5	32.5	0.3	0.045
	40	12	0.6	0.3	12.7	5.50	12.7	5.50	0.380	0.380	—	21 000	26 000	7203	14.4	21.5	35.5	0.6	0.070
	40	12	0.6	0.3	11.7	5.05	11.7	5.05	0.330	0.330	—	16 000	21 000	7203B	18.2	21.5	35.5	0.6	0.070
	40	12	0.6	0.3	13.6	5.90	13.6	5.90	0.440	0.440	13.4	29 000	38 000	7203C	9.9	21.5	35.5	0.6	0.070
	47	14	1	0.6	18.7	7.90	20.0	8.75	0.590	0.660	—	18 000	23 000	7303	16.5	22.5	41.5	1	0.120
	47	14	1	0.6	17.3	7.30	18.5	8.10	0.510	0.570	—	14 000	18 000	7303B	20.8	22.5	41.5	1	0.120
	47	14	1	0.6	19.8	8.40	19.8	8.40	0.650	0.650	12.6	25 000	33 000	7303C	11.4	22.5	41.5	1	0.120
20	37	9	0.3	0.15	9.10	4.55	—	—	0.240	—	14.9	30 000	39 000	7904C	8.3	22.5	34.5	0.3	0.035
	42	12	0.6	0.3	12.9	6.10	—	—	0.390	—	—	19 000	24 000	7004	15.1	24.5	37.5	0.6	0.079
	42	12	0.6	0.3	11.7	5.55	—	—	0.340	—	—	14 000	19 000	7004B	19.2	24.5	37.5	0.6	0.079
	42	12	0.6	0.3	13.9	6.60	—	—	0.450	—	14.1	26 000	35 000	7004C	10.2	24.5	37.5	0.6	0.079
	47	14	1	0.6	18.1	8.40	19.2	9.15	0.580	0.640	—	17 000	22 000	7204	17.0	25.5	41.5	1	0.112
	47	14	1	0.6	16.6	7.70	17.6	8.40	0.500	0.550	—	13 000	17 000	7204B	21.5	25.5	41.5	1	0.112
	47	14	1	0.6	19.4	9.00	20.6	9.80	0.670	0.730	13.4	24 000	32 000	7204C	11.6	25.5	41.5	1	0.112
	52	15	1.1	0.6	21.8	9.40	23.4	10.4	0.710	0.790	—	17 000	21 000	7304	17.9	27	45	1	0.150
	52	15	1.1	0.6	20.2	8.70	21.7	9.65	0.610	0.680	—	13 000	17 000	7304B	22.6	27	45	1	0.150
	52	15	1.1	0.6	23.1	9.95	24.8	11.1	0.780	0.860	12.6	23 000	31 000	7304C	12.3	27	45	1	0.150
	72	19	1.1	0.6	44.5	19.1	—	—	1.50	—	—	9 600	13 000	7404	23.1	27	65	1	0.395
	72	19	1.1	0.6	41.9	17.9	—	—	1.40	—	—	8 500	12 000	7404B	29.2	27	65	1	0.395
25	42	9	0.3	0.15	10.2	5.45	—	—	0.300	—	15.5	25 000	33 000	7905C	9.1	27.5	39.5	0.3	0.041
	47	12	0.6	0.3	14.1	7.40	—	—	0.450	—	—	17 000	21 000	7005	16.4	29.5	42.5	0.6	0.091
	47	12	0.6	0.3	12.8	6.70	—	—	0.390	—	—	12 000	17 000	7005B	21.1	29.5	42.5	0.6	0.091
	47	12	0.6	0.3	15.4	8.00	—	—	0.510	—	14.7	23 000	30 000	7005C	10.8	29.5	42.5	0.6	0.091
	52	15	1	0.6	19.2	9.50	20.2	10.3	0.620	0.670	—	15 000	19 000	7205	18.8	30.5	46.5	1	0.135
	52	15	1	0.6	17.5	8.70	18.4	9.40	0.530	0.580	—	12 000	15 000	7205B	23.9	30.5	46.5	1	0.135

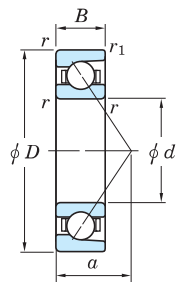
[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cage or molded cage.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively.

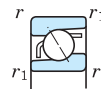
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

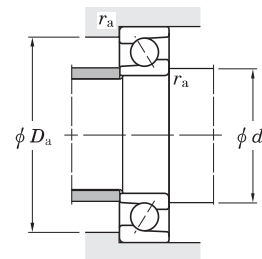
d (25) ~ (35) mm



With machined cage



With pressed cage



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>	Load center (mm) α	Mounting dimensions (mm)			(Refer.) Mass (kg)
d	D	B	r min.	r1 min.	With machined cage		With pressed cage		Ca			Grease lub.	Oil lub.			da min.	Da max.	ra max.	
					Cr	C0r	Cr	C0r	[With machined cage]	[With pressed cage]	f0								
25	52	15	1	0.6	20.7	10.2	21.9	11.1	0.710	0.770	14.0	21 000	28 000	7205C	12.7	30.5	46.5	1	0.135
	62	17	1.1	0.6	31.0	14.4	33.0	15.8	1.05	1.15	—	14 000	17 000	7305	21.1	32	55	1	0.243
	62	17	1.1	0.6	28.6	13.3	30.5	14.6	0.910	1.00	—	10 000	14 000	7305B	26.8	32	55	1	0.243
	62	17	1.1	0.6	33.0	15.3	35.1	16.8	1.20	1.30	12.8	19 000	25 000	7305C	14.3	32	55	1	0.243
	80	21	1.5	1	49.7	23.2	53.3	25.7	1.80	2.00	—	8 200	11 000	7405	26.4	33.5	71.5	1.5	0.527
	80	21	1.5	1	46.1	21.5	49.5	23.9	1.55	1.70	—	7 300	10 000	7405B	33.6	33.5	71.5	1.5	0.527
30	47	9	0.3	0.15	10.4	6.25	—	—	0.320	—	15.9	22 000	29 000	7906C	9.7	32.5	44.5	0.3	0.046
	55	13	1	0.6	18.2	10.1	—	—	0.610	—	—	14 000	18 000	7006	18.8	35.5	49.5	1	0.133
	55	13	1	0.6	16.4	9.20	—	—	0.530	—	—	11 000	14 000	7006B	24.3	35.5	49.5	1	0.133
	55	13	1	0.6	19.8	11.0	—	—	0.690	—	14.9	20 000	26 000	7006C	12.2	35.5	49.5	1	0.133
	62	16	1	0.6	26.7	13.7	28.1	14.8	0.890	0.970	—	13 000	16 000	7206	21.5	35.5	56.5	1	0.208
	62	16	1	0.6	24.3	12.5	25.6	13.6	0.770	0.840	—	9 600	13 000	7206B	27.6	35.5	56.5	1	0.208
	62	16	1	0.6	28.8	14.7	30.4	16.0	1.00	1.10	14.0	18 000	24 000	7206C	14.3	35.5	56.5	1	0.208
	72	19	1.1	0.6	37.6	18.9	39.9	20.6	1.30	1.45	—	12 000	14 000	7306	24.5	37	65	1	0.362
	72	19	1.1	0.6	34.5	17.4	36.6	19.0	1.15	1.25	—	8 700	12 000	7306B	31.3	37	65	1	0.362
	72	19	1.1	0.6	40.4	20.3	42.8	22.1	1.50	1.65	13.4	16 000	21 000	7306C	16.5	37	65	1	0.362
	90	23	1.5	1	59.5	28.4	63.9	31.6	2.20	2.45	—	7 300	9 700	7406	29.3	38.5	81.5	1.5	0.686
	90	23	1.5	1	55.2	26.4	59.3	29.3	1.90	2.10	—	6 500	8 900	7406B	37.3	38.5	81.5	1.5	0.686
35	55	10	0.6	0.3	15.7	9.70	—	—	0.550	—	15.7	19 000	25 000	7907C	11.0	39.5	50.5	0.6	0.074
	62	14	1	0.6	21.9	12.6	—	—	0.740	—	—	12 000	15 000	7007	21.2	40.5	56.5	1	0.170
	62	14	1	0.6	19.7	11.4	—	—	0.640	—	—	9 200	12 000	7007B	27.6	40.5	56.5	1	0.170
	62	14	1	0.6	23.9	13.7	—	—	0.840	—	15.0	17 000	22 000	7007C	13.5	40.5	56.5	1	0.170
	72	17	1.1	0.6	35.2	18.6	37.1	20.2	1.20	1.30	—	11 000	14 000	7207	24.2	42	65	1	0.295
	72	17	1.1	0.6	32.0	17.0	33.8	18.5	1.05	1.15	—	8 300	11 000	7207B	31.4	42	65	1	0.295
	72	17	1.1	0.6	38.0	20.1	40.1	21.7	1.40	1.50	14.0	15 000	20 000	7207C	15.8	42	65	1	0.295
	80	21	1.5	1	44.2	22.0	49.9	26.4	1.55	1.85	—	10 000	13 000	7307	27.4	43.5	71.5	1.5	0.475
	80	21	1.5	1	40.6	20.2	45.8	24.3	1.30	1.60	—	7 700	10 000	7307B	35.0	43.5	71.5	1.5	0.475

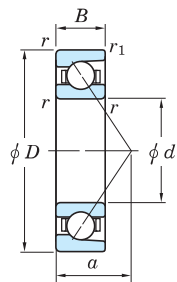
[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cage or molded cage.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively.

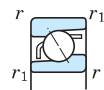
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

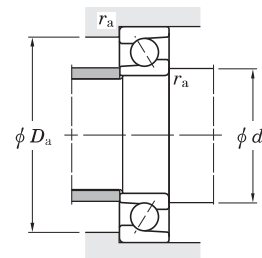
d (35) ~ 45 mm



With machined cage



With pressed cage



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>	Load center (mm) a	Mounting dimensions (mm)			(Refer.) Mass (kg)
d	D	B	r <sub>min.</sub>	r <sub>1 min.</sub>	With machined cage		With pressed cage		C <sub>u</sub>			Grease lub.	Oil lub.			d <sub>a min.</sub>	D <sub>a max.</sub>	r <sub>a max.</sub>	
					C <sub>r</sub>	C <sub>0r</sub>	C <sub>r</sub>	C <sub>0r</sub>	[With machined cage]	[With pressed cage]	f <sub>0</sub>								
35	80	21	1.5	1	47.4	23.6	53.5	28.3	1.75	2.10	13.4	14 000	19 000	7307C	18.3	43.5	71.5	1.5	0.475
	100	25	1.5	1	75.6	37.0	81.1	41.1	2.85	3.20	—	6 500	8 600	7407	32.6	43.5	91.5	1.5	0.950
	100	25	1.5	1	70.2	34.3	75.3	38.1	2.45	2.75	—	5 700	7 900	7407B	41.7	43.5	91.5	1.5	0.950
40	62	12	0.6	0.3	19.7	12.4	—	—	0.710	—	15.7	17 000	22 000	7908C	12.8	44.5	57.5	0.6	0.107
	68	15	1	0.6	23.4	14.6	—	—	0.830	—	—	11 000	14 000	7008	23.2	45.5	62.5	1	0.210
	68	15	1	0.6	21.1	13.2	—	—	0.720	—	—	8 300	11 000	7008B	30.2	45.5	62.5	1	0.210
	68	15	1	0.6	25.7	15.9	—	—	0.940	—	15.4	15 000	20 000	7008C	14.8	45.5	62.5	1	0.210
	80	18	1.1	0.6	42.0	23.3	44.1	25.1	1.50	1.60	—	10 000	12 000	7208	26.3	47	73	1	0.382
	80	18	1.1	0.6	38.2	21.3	40.2	23.0	1.30	1.40	—	7 500	10 000	7208B	34.2	47	73	1	0.382
	80	18	1.1	0.6	45.4	25.2	47.7	27.1	1.70	1.85	14.2	14 000	18 000	7208C	17.0	47	73	1	0.382
	90	23	1.5	1	54.0	27.4	61.0	32.9	1.90	2.30	—	9 200	12 000	7308	30.3	48.5	81.5	1.5	0.657
	90	23	1.5	1	49.6	25.2	56.0	30.3	1.65	2.00	—	6 900	9 200	7308B	38.8	48.5	81.5	1.5	0.657
	90	23	1.5	1	57.9	29.4	65.4	35.3	2.20	2.65	13.4	13 000	17 000	7308C	20.2	48.5	81.5	1.5	0.657
	110	27	2	1	87.4	43.5	93.8	48.4	3.35	3.70	—	5 900	7 900	7408	35.5	50	100	2	1.23
110	27	2	1	81.1	40.4	87.0	44.9	2.90	3.20	—	5 200	7 200	7408B	45.4	50	100	2	1.23	
45	68	12	0.6	0.3	20.8	14.1	—	—	0.770	—	16.0	15 000	20 000	7909C	13.6	49.5	63.5	0.6	0.127
	75	16	1	0.6	27.8	17.7	—	—	1.00	—	—	10 000	12 000	7009	25.3	50.5	69.5	1	0.260
	75	16	1	0.6	25.0	16.0	—	—	0.870	—	—	7 500	10 000	7009B	33.2	50.5	69.5	1	0.260
	75	16	1	0.6	30.5	19.3	—	—	1.15	—	15.4	14 000	18 000	7009C	16.0	50.5	69.5	1	0.260
	85	19	1.1	0.6	47.2	26.6	49.6	28.6	1.70	1.85	—	9 400	12 000	7209	28.0	52	78	1	0.430
	85	19	1.1	0.6	42.9	24.3	45.1	26.1	1.50	1.60	—	7 000	9 400	7209B	36.4	52	78	1	0.430
	85	19	1.1	0.6	51.0	28.7	53.6	30.9	1.95	2.10	14.2	13 000	17 000	7209C	18.1	52	78	1	0.430
	100	25	1.5	1	68.9	37.1	73.1	40.4	2.55	2.80	—	8 200	10 000	7309	33.6	53.5	91.5	1.5	0.875
	100	25	1.5	1	63.2	34.1	67.0	37.2	2.20	2.40	—	6 200	8 200	7309B	43.1	53.5	91.5	1.5	0.875
	100	25	1.5	1	74.0	39.7	78.4	43.4	2.95	3.20	13.5	11 000	15 000	7309C	22.3	53.5	91.5	1.5	0.875
	120	29	2	1	106	53.8	114	59.8	4.20	4.65	—	5 400	7 100	7409	38.6	55	110	2	1.55
120	29	2	1	98.7	50.0	106	55.5	3.60	4.00	—	4 800	6 600	7409B	49.5	55	110	2	1.55	

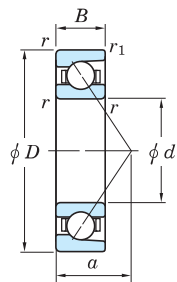
[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cage or molded cage.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively.

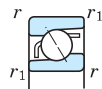
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

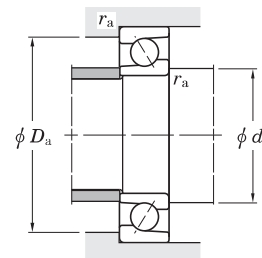
d 50 ~ (60) mm



With machined cage



With pressed cage



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>	Load center (mm) a	Mounting dimensions (mm)			(Refer.) Mass (kg)
d	D	B	r min.	r1 min.	With machined cage		With pressed cage		C <sub>u</sub>			Grease lub.	Oil lub.			d <sub>a</sub> min.	D <sub>a</sub> max.	r <sub>a</sub> max.	
					C <sub>r</sub>	C <sub>0r</sub>	C <sub>r</sub>	C <sub>0r</sub>	[With machined cage]	[With pressed cage]	f <sub>0</sub>								
50	72	12	0.6	0.3	21.8	15.7	—	—	0.840	—	16.2	14 000	18 000	7910C	14.2	54.5	67.5	0.6	0.128
	80	16	1	0.6	29.5	20.1	—	—	1.10	—	—	9 200	11 000	7010	26.9	55.5	74.5	1	0.290
	80	16	1	0.6	26.5	18.1	—	—	0.960	—	—	6 900	9 200	7010B	35.3	55.5	74.5	1	0.290
	80	16	1	0.6	32.5	21.9	—	—	1.25	—	15.7	13 000	17 000	7010C	16.8	55.5	74.5	1	0.290
	90	20	1.1	0.6	49.2	29.4	51.6	31.5	1.80	1.95	—	8 500	11 000	7210	30.4	57	83	1	0.485
	90	20	1.1	0.6	44.6	26.7	46.7	28.6	1.55	1.70	—	6 400	8 500	7210B	39.6	57	83	1	0.485
	90	20	1.1	0.6	53.5	31.8	56.0	34.1	2.05	2.20	14.6	12 000	16 000	7210C	19.4	57	83	1	0.485
	110	27	2	1	87.6	48.1	92.9	52.5	3.35	3.65	—	7 300	9 100	7310	37.2	60	100	2	1.14
	110	27	2	1	80.5	44.3	85.3	48.3	2.90	3.15	—	5 500	7 300	7310B	47.9	60	100	2	1.14
	110	27	2	1	93.9	51.6	99.5	56.2	3.85	4.20	13.4	10 000	13 000	7310C	24.5	60	100	2	1.14
130	31	2.1	1.1	122	65.3	—	—	4.90	—	—	4 900	6 600	7410	41.6	62	118	2	1.92	
130	31	2.1	1.1	113	60.4	—	—	4.20	—	—	4 400	6 000	7410B	53.5	62	118	2	1.92	
55	80	13	1	0.6	24.6	18.5	—	—	0.980	—	16.3	13 000	17 000	7911C	15.5	60.5	74.5	1	0.178
	90	18	1.1	0.6	38.9	26.3	—	—	1.50	—	—	8 300	10 000	7011	29.9	62	83	1	0.420
	90	18	1.1	0.6	34.9	23.7	—	—	1.30	—	—	6 200	8 300	7011B	39.4	62	83	1	0.420
	90	18	1.1	0.6	42.6	28.6	—	—	1.65	—	15.5	11 000	15 000	7011C	18.7	62	83	1	0.420
	100	21	1.5	1	60.9	37.1	63.7	39.8	2.30	2.45	—	7 600	9 500	7211	33.3	63.5	91.5	1.5	0.635
	100	21	1.5	1	55.1	33.8	57.7	36.2	2.00	2.15	—	5 700	7 600	7211B	43.6	63.5	91.5	1.5	0.635
	100	21	1.5	1	66.1	40.2	69.2	43.1	2.60	2.80	14.6	11 000	14 000	7211C	21.1	63.5	91.5	1.5	0.635
	120	29	2	1	101	56.5	107	61.7	3.95	4.30	—	6 700	8 400	7311	40.2	65	110	2	1.45
	120	29	2	1	92.9	52.0	98.4	56.7	3.40	3.70	—	5 000	6 700	7311B	51.8	65	110	2	1.45
	120	29	2	1	108	60.6	115	66.1	4.50	4.90	13.4	9 300	12 000	7311C	26.4	65	110	2	1.45
140	33	2.1	1.1	148	82.4	—	—	6.40	—	—	4 500	6 000	7411	45.0	67	128	2	2.36	
140	33	2.1	1.1	138	76.5	—	—	5.50	—	—	4 000	5 500	7411B	57.8	67	128	2	2.36	
60	85	13	1	0.6	29.0	21.8	—	—	1.15	—	16.3	12 000	16 000	7912C	16.3	65.5	79.5	1	0.187
	95	18	1.1	0.6	39.9	28.1	—	—	1.55	—	—	7 700	9 700	7012	31.4	67	88	1	0.450
	95	18	1.1	0.6	35.7	25.3	—	—	1.35	—	—	5 800	7 700	7012B	41.5	67	88	1	0.450

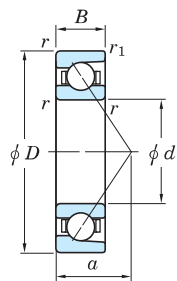
[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cage or molded cage.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively.

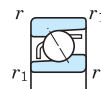
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

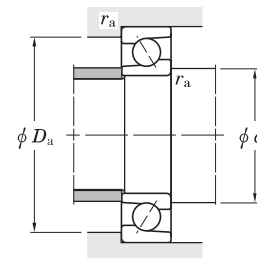
d (60) ~ (70) mm



With machined cage



With pressed cage



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>	Load center (mm) a	Mounting dimensions (mm)			(Refer.) Mass (kg)
d	D	B	r min.	r1 min.	With machined cage		With pressed cage		C <sub>u</sub>			Grease lub.	Oil lub.			d <sub>a</sub> min.	D <sub>a</sub> max.	r <sub>a</sub> max.	
					C <sub>r</sub>	C <sub>0r</sub>	C <sub>r</sub>	C <sub>0r</sub>	[With machined cage]	[With pressed cage]	f <sub>0</sub>								
60	95	18	1.1	0.6	43.8	30.6	—	—	1.75	—	15.7	11 000	14 000	7012C	19.4	67	88	1	0.450
	110	22	1.5	1	73.7	45.7	77.1	49.0	2.85	3.05	—	6 900	8 600	7212	36.1	68.5	101.5	1.5	0.820
	110	22	1.5	1	66.8	41.6	69.9	44.6	2.45	2.60	—	5 100	6 900	7212B	47.5	68.5	101.5	1.5	0.820
	110	22	1.5	1	80.0	49.5	83.8	53.0	3.20	3.45	14.5	9 500	13 000	7212C	22.7	68.5	101.5	1.5	0.820
	130	31	2.1	1.1	116	65.6	123	71.6	4.55	5.00	—	6 200	7 700	7312	43.2	72	118	2	1.81
	130	31	2.1	1.1	106	60.3	113	65.8	3.95	4.30	—	4 600	6 200	7312B	55.8	72	118	2	1.81
	130	31	2.1	1.1	124	70.3	131	76.7	5.25	5.70	13.4	8 600	11 000	7312C	28.4	72	118	2	1.81
	150	35	2.1	1.1	161	93.6	—	—	6.85	—	—	4 100	5 500	7412	48.5	72	138	2	2.85
150	35	2.1	1.1	149	86.7	—	—	5.90	—	—	3 700	5 100	7412B	62.6	72	138	2	2.85	
65	90	13	1	0.6	25.9	21.2	—	—	1.10	—	16.5	11 000	15 000	7913C	16.9	70.5	84.5	1	0.205
	100	18	1.1	0.6	42.1	31.4	—	—	1.70	—	—	7 200	9 000	7013	33.0	72	93	1	0.470
	100	18	1.1	0.6	37.7	28.3	—	—	1.45	—	—	5 400	7 200	7013B	43.8	72	93	1	0.470
	100	18	1.1	0.6	46.3	34.3	—	—	1.90	—	15.9	10 000	13 000	7013C	20.1	72	93	1	0.470
	120	23	1.5	1	84.1	54.2	87.8	57.8	3.35	3.55	—	6 400	8 000	7213	38.2	73.5	111.5	1.5	1.02
	120	23	1.5	1	76.2	49.3	79.5	52.6	2.90	3.10	—	4 800	6 400	7213B	50.3	73.5	111.5	1.5	1.02
	120	23	1.5	1	91.4	58.7	95.4	62.6	3.80	4.05	14.6	8 900	12 000	7213C	23.9	73.5	111.5	1.5	1.02
	140	33	2.1	1.1	131	75.3	139	82.2	5.15	5.65	—	5 800	7 200	7313	46.3	77	128	2	2.22
	140	33	2.1	1.1	120	69.3	127	75.6	4.45	4.85	—	4 300	5 800	7313B	59.7	77	128	2	2.22
	140	33	2.1	1.1	140	80.7	149	88.1	5.90	6.45	13.4	8 000	11 000	7313C	30.3	77	128	2	2.22
	160	37	2.1	1.1	174	104	—	—	7.40	—	—	3 900	5 200	7413	51.4	77	148	2	3.41
	160	37	2.1	1.1	161	96.8	—	—	6.35	—	—	3 500	4 800	7413B	66.3	77	148	2	3.41
70	100	16	1	0.6	36.2	29.0	—	—	1.55	—	16.4	10 000	12 000	7914C	19.4	75.5	94.5	1	0.332
	110	20	1.1	0.6	53.3	39.4	—	—	2.15	—	—	6 600	8 300	7014	36.0	77	103	1	0.660
	110	20	1.1	0.6	47.8	35.5	—	—	1.90	—	—	5 000	6 600	7014B	47.8	77	103	1	0.660
	110	20	1.1	0.6	58.6	43.0	—	—	2.45	—	15.7	9 200	12 000	7014C	22.1	77	103	1	0.660
	125	24	1.5	1	87.3	55.6	95.4	63.5	3.40	3.90	—	6 100	7 600	7214	40.2	78.5	116.5	1.5	1.12
	125	24	1.5	1	79.0	50.6	86.4	57.8	2.95	3.40	—	4 600	6 100	7214B	52.9	78.5	116.5	1.5	1.12

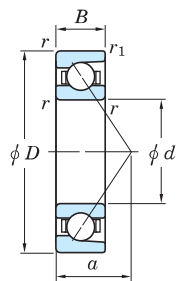
[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cage or molded cage.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively.

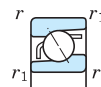
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

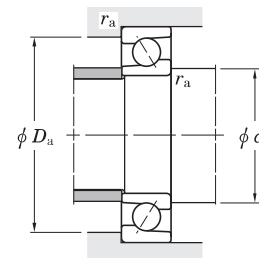
d (70) ~ (80) mm



With machined cage



With pressed cage



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>	Load center (mm) a	Mounting dimensions (mm)			(Refer.) Mass (kg)
d	D	B	r min.	r1 min.	With machined cage		With pressed cage		Ca			Grease lub.	Oil lub.			da min.	Da max.	ra max.	
					Cr	C0r	Cr	C0r	[With machined cage]	[With pressed cage]	f0								
70	125	24	1.5	1	94.9	60.2	104	68.8	3.90	4.45	14.6	8 400	11 000	7214C	25.1	78.5	116.5	1.5	1.12
	150	35	2.1	1.1	147	85.8	156	93.6	5.70	6.20	—	5 400	6 700	7314	49.3	82	138	2	2.70
	150	35	2.1	1.1	135	78.9	143	86.0	4.90	5.35	—	4 000	5 400	7314B	63.7	82	138	2	2.70
	150	35	2.1	1.1	158	91.9	167	100	6.50	7.10	13.4	7 500	9 900	7314C	32.2	82	138	2	2.70
	180	42	3	1.1	187	115	—	—	5.30	—	—	3 500	4 600	7414	57.6	84	166	2.5	4.99
	180	42	3	1.1	185	119	—	—	5.45	—	—	3 100	4 300	7414B	74.2	84	166	2.5	4.99
	180	42	3	1.1	185	119	—	—	5.45	—	—	3 100	4 300	7414B	74.2	84	166	2.5	4.99
75	105	16	1	0.6	36.7	30.5	—	—	1.60	—	16.5	9 300	12 000	7915C	20.1	80.5	99.5	1	0.350
	115	20	1.1	0.6	54.6	41.7	—	—	2.25	—	—	6 300	7 800	7015	37.4	82	108	1	0.690
	115	20	1.1	0.6	48.8	37.6	—	—	1.95	—	—	4 700	6 300	7015B	49.9	82	108	1	0.690
	115	20	1.1	0.6	60.1	45.6	—	—	2.55	—	15.9	8 700	11 000	7015C	22.7	82	108	1	0.690
	130	25	1.5	1	99.0	65.2	103	69.5	3.95	4.20	—	5 800	7 200	7215	42.1	83.5	121.5	1.5	1.23
	130	25	1.5	1	89.6	59.3	93.6	63.3	3.40	3.65	—	4 300	5 800	7215B	55.5	83.5	121.5	1.5	1.23
	130	25	1.5	1	108	70.6	112	75.3	4.50	4.80	14.6	8 000	11 000	7215C	26.2	83.5	121.5	1.5	1.23
	160	37	2.1	1.1	160	97.0	170	106	6.20	6.75	—	5 000	6 300	7315	52.4	87	148	2	3.15
	160	37	2.1	1.1	147	89.2	156	97.3	5.35	5.85	—	3 800	5 000	7315B	67.8	87	148	2	3.15
	160	37	2.1	1.1	172	104	182	113	7.10	7.75	13.4	7 000	9 200	7315C	34.2	87	148	2	3.15
	190	45	3	1.1	214	141	—	—	6.30	—	—	3 300	4 400	7415	61.3	89	176	2.5	5.90
	190	45	3	1.1	198	131	—	—	5.80	—	—	2 900	4 000	7415B	78.9	89	176	2.5	5.90
80	110	16	1	0.6	37.3	31.6	—	—	1.65	—	16.5	8 800	11 000	7916C	20.7	85.5	104.5	1	0.368
	125	22	1.1	0.6	66.7	50.6	—	—	2.75	—	—	5 800	7 200	7016	40.6	87	118	1	0.930
	125	22	1.1	0.6	59.8	45.7	—	—	2.40	—	—	4 300	5 800	7016B	54.0	87	118	1	0.930
	125	22	1.1	0.6	73.3	55.3	—	—	3.10	—	15.7	8 000	11 000	7016C	24.7	87	118	1	0.930
	140	26	2	1	107	71.5	111	76.2	4.10	4.40	—	5 400	6 700	7216	44.8	90	130	2	1.50
	140	26	2	1	96.4	65.0	101	69.3	3.55	3.80	—	4 000	5 400	7216B	59.2	90	130	2	1.50
	140	26	2	1	116	77.5	121	82.7	4.70	5.00	14.7	7 500	9 900	7216C	27.7	90	130	2	1.50
	170	39	2.1	1.1	174	109	184	119	6.75	7.35	—	4 700	5 900	7316	55.6	92	158	2	3.85
	170	39	2.1	1.1	159	100	169	109	5.80	6.35	—	3 500	4 700	7316B	71.9	92	158	2	3.85

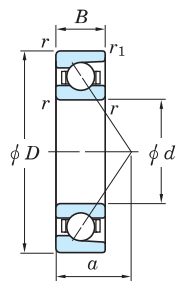
[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cage or molded cage.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively.

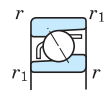
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

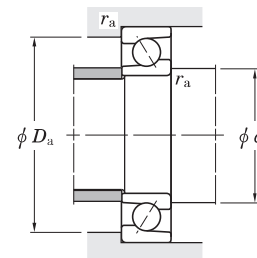
d (80) ~ 90 mm



With machined cage



With pressed cage



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>	Load center (mm) a	Mounting dimensions (mm)			(Refer.) Mass (kg)
d	D	B	r min.	r1 min.	With machined cage		With pressed cage		Ca			Grease lub.	Oil lub.			da min.	Da max.	ra max.	
					Cr	C0r	Cr	C0r	[With machined cage]	[With pressed cage]	f0								
80	170	39	2.1	1.1	186	117	197	127	7.70	8.40	13.5	6 500	8 600	7316C	36.2	92	158	2	3.85
	200	48	3	1.1	241	166	—	—	7.20	—	—	3 100	4 100	7416	65.0	94	186	2.5	6.00
	200	48	3	1.1	223	154	—	—	6.65	—	—	2 700	3 800	7416B	83.6	94	186	2.5	6.00
85	120	18	1.1	0.6	48.6	40.6	—	—	2.10	—	16.5	8 100	11 000	7917C	22.7	92	113	1	0.523
	130	22	1.1	0.6	68.2	53.7	—	—	2.75	—	—	5 500	6 800	7017	42.3	92	123	1	0.970
	130	22	1.1	0.6	61.0	48.4	—	—	2.40	—	—	4 100	5 500	7017B	56.5	92	123	1	0.970
	130	22	1.1	0.6	75.1	58.7	—	—	3.15	—	15.9	7 600	10 000	7017C	25.5	92	123	1	0.970
	150	28	2	1	123	83.6	129	89.2	4.70	5.00	—	5 000	6 300	7217	47.9	95	140	2	1.87
	150	28	2	1	111	76.0	116	81.1	4.05	4.35	—	3 800	5 000	7217B	63.3	95	140	2	1.87
	150	28	2	1	134	90.6	140	96.6	5.35	5.70	14.7	7 000	9 200	7217C	29.7	95	140	2	1.87
	180	41	3	1.1	187	122	198	133	7.30	7.95	—	4 400	5 500	7317	58.8	99	166	2.5	4.53
	180	41	3	1.1	172	112	182	122	6.30	6.85	—	3 300	4 400	7317B	76.1	99	166	2.5	4.53
	180	41	3	1.1	201	130	213	142	8.35	9.10	13.5	6 100	8 100	7317C	38.3	99	166	2.5	4.53
	210	52	4	1.5	255	180	—	—	7.65	—	—	3 000	3 900	7417	68.7	103	192	3	8.54
210	52	4	1.5	236	167	—	—	7.10	—	—	2 600	3 600	7417B	88.1	103	192	3	8.54	
90	125	18	1.1	0.6	49.5	42.6	—	—	2.15	—	16.6	7 800	10 000	7918C	23.4	97	118	1	0.551
	140	24	1.5	1	81.5	63.3	—	—	3.25	—	—	5 100	6 400	7018	45.2	98.5	131.5	1.5	1.26
	140	24	1.5	1	73.0	57.1	—	—	2.80	—	—	3 900	5 100	7018B	60.2	98.5	131.5	1.5	1.26
	140	24	1.5	1	89.6	69.1	—	—	3.65	—	15.7	7 100	9 400	7018C	27.4	98.5	131.5	1.5	1.26
	160	30	2	1	141	96.7	147	103	5.30	5.65	—	4 700	5 900	7218	51.1	100	150	2	2.30
	160	30	2	1	128	88.0	133	93.8	4.60	4.90	—	3 500	4 700	7218B	67.4	100	150	2	2.30
	160	30	2	1	153	105	160	112	6.00	6.40	14.6	6 500	8 600	7218C	31.7	100	150	2	2.30
	190	43	3	1.1	201	135	213	147	5.90	6.40	—	4 200	5 200	7318	61.9	104	176	2.5	5.30
	190	43	3	1.1	184	124	195	135	5.40	5.90	—	3 100	4 200	7318B	80.2	104	176	2.5	5.30
	190	43	3	1.1	216	145	229	158	6.30	6.90	13.5	5 800	7 700	7318C	40.3	104	176	2.5	5.30
	225	54	4	1.5	270	196	—	—	8.10	—	—	2 800	3 700	7418	72.5	108	207	3	11.4
	225	54	4	1.5	250	182	—	—	7.50	—	—	2 500	3 400	7418B	93.1	108	207	3	11.4

[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cage or molded cage.

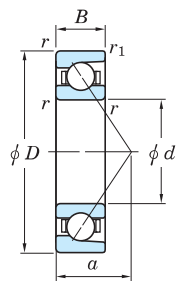
2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively.

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

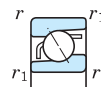


Single-row angular contact ball bearings

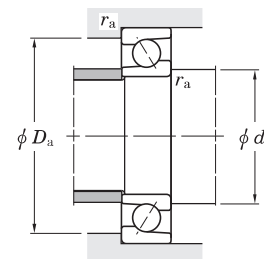
d 95 ~ (105) mm



With machined cage



With pressed cage



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>	Load center (mm) a	Mounting dimensions (mm)			(Refer.) Mass (kg)
d	D	B	r min.	r1 min.	With machined cage		With pressed cage		Ca			Grease lub.	Oil lub.			da min.	Da max.	ra max.	
					Cr	C0r	Cr	C0r	[With machined cage]	[With pressed cage]	f0								
95	130	18	1.1	0.6	50.3	44.1	—	—	2.15	—	16.5	7 400	9 800	7919C	24.1	102	123	1	0.574
	145	24	1.5	1	83.3	67.1	—	—	3.25	—	—	4 800	6 000	7019	47.2	103.5	136.5	1.5	1.32
	145	24	1.5	1	74.5	60.5	—	—	2.85	—	—	3 600	4 800	7019B	63.2	103.5	136.5	1.5	1.32
	145	24	1.5	1	91.7	73.4	—	—	3.70	—	15.9	6 700	8 900	7019C	28.3	103.5	136.5	1.5	1.32
	170	32	2.1	1.1	153	103	160	111	5.50	5.90	—	4 400	5 500	7219	54.3	107	158	2	2.78
	170	32	2.1	1.1	138	94.0	145	101	4.80	5.10	—	3 300	4 400	7219B	71.6	107	158	2	2.78
	170	32	2.1	1.1	166	112	174	120	6.30	6.75	14.6	6 100	8 100	7219C	33.8	107	158	2	2.78
	200	45	3	1.1	215	149	228	162	6.35	6.90	—	4 000	4 900	7319	65.1	109	186	2.5	6.12
	200	45	3	1.1	197	137	209	149	5.80	6.35	—	3 000	4 000	7319B	84.4	109	186	2.5	6.12
200	45	3	1.1	231	160	245	174	6.80	7.40	13.5	5 500	7 300	7319C	42.3	109	186	2.5	6.12	
100	140	20	1.1	0.6	69.4	58.5	—	—	2.85	—	16.3	7 000	9 200	7920C	26.1	107	133	1	0.773
	150	24	1.5	1	85.5	70.6	—	—	3.35	—	—	4 700	5 900	7020	48.1	108.5	141.5	1.5	1.37
	150	24	1.5	1	76.5	63.6	—	—	2.95	—	—	3 500	4 700	7020B	64.4	108.5	141.5	1.5	1.37
	150	24	1.5	1	94.2	77.2	—	—	3.80	—	16.0	6 500	8 600	7020C	28.7	108.5	141.5	1.5	1.37
	180	34	2.1	1.1	171	117	180	126	6.10	6.50	—	4 100	5 200	7220	57.7	112	168	2	3.32
	180	34	2.1	1.1	155	107	163	115	5.25	5.65	—	3 100	4 200	7220B	76.2	112	168	2	3.32
	180	34	2.1	1.1	186	127	195	136	6.95	7.40	14.6	5 700	7 600	7220C	35.9	112	168	2	3.32
	215	47	3	1.1	229	161	259	194	6.60	7.95	—	3 600	4 600	7320	69.4	114	201	2.5	7.53
	215	47	3	1.1	210	148	238	178	6.10	7.30	—	2 700	3 600	7320B	90.2	114	201	2.5	7.53
215	47	3	1.1	246	173	278	208	7.10	8.50	13.4	5 000	6 700	7320C	44.8	114	201	2.5	7.53	
105	145	20	1.1	0.6	70.8	61.5	—	—	2.90	—	16.4	6 700	8 800	7921C	26.7	112	138	1	0.810
	160	26	2	1	99.7	81.9	—	—	3.80	—	—	4 400	5 500	7021	51.8	115	150	2	1.73
	160	26	2	1	89.2	73.8	—	—	3.30	—	—	3 300	4 400	7021B	68.6	115	150	2	1.73
	160	26	2	1	110	89.6	—	—	4.30	—	15.9	6 000	8 000	7021C	31.0	115	150	2	1.73
	190	36	2.1	1.1	187	132	—	—	6.70	—	—	3 900	4 900	7221	61.0	117	178	2	3.95
	190	36	2.1	1.1	169	121	—	—	5.80	—	—	2 900	3 900	7221B	80.5	117	178	2	3.95

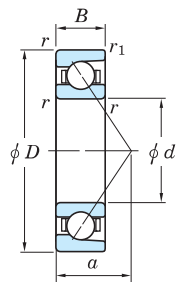
[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cage or molded cage.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively.

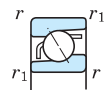
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

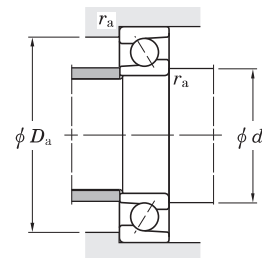
d (105) ~ (130) mm



With machined cage



With pressed cage



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>	Load center (mm) α	Mounting dimensions (mm)			(Refer.) Mass (kg)
d	D	B	r min.	r1 min.	With machined cage		With pressed cage		Ca			Grease lub.	Oil lub.			da min.	Da max.	ra max.	
<b>105</b>	190	36	2.1	1.1	203	143	—	—	7.60	—	14.6	5 400	7 200	<b>7221C</b>	38.0	117	178	2	3.95
	225	49	3	1.1	260	193	—	—	7.75	—	—	3 500	4 400	<b>7321</b>	72.1	119	211	2.5	8.62
	225	49	3	1.1	238	177	—	—	7.15	—	—	2 600	3 500	<b>7321B</b>	93.7	119	211	2.5	8.62
	225	49	3	1.1	278	207	—	—	8.30	—	13.4	4 800	6 400	<b>7321C</b>	46.6	119	211	2.5	8.62
<b>110</b>	150	20	1.1	0.6	72.2	64.4	—	—	2.95	—	16.5	6 400	8 500	<b>7922C</b>	27.4	117	143	1	0.840
	170	28	2	1	115	92.8	—	—	4.30	—	—	4 200	5 200	<b>7022</b>	54.4	120	160	2	2.14
	170	28	2	1	103	83.7	—	—	3.75	—	—	3 100	4 200	<b>7022B</b>	72.7	120	160	2	2.14
	170	28	2	1	126	101	—	—	4.85	—	15.7	5 800	7 700	<b>7022C</b>	32.8	120	160	2	2.14
	200	38	2.1	1.1	202	148	—	—	7.30	—	—	3 700	4 600	<b>7222</b>	64.3	122	188	2	4.65
	200	38	2.1	1.1	183	135	—	—	6.35	—	—	2 800	3 700	<b>7222B</b>	84.9	122	188	2	4.65
	200	38	2.1	1.1	220	160	—	—	8.35	—	14.5	5 100	6 800	<b>7222C</b>	40.0	122	188	2	4.65
	240	50	3	1.1	290	226	—	—	8.75	—	—	3 200	4 000	<b>7322</b>	76.4	124	226	2.5	10.1
	240	50	3	1.1	266	208	—	—	8.05	—	—	2 400	3 200	<b>7322B</b>	99.6	124	226	2.5	10.1
240	50	3	1.1	311	242	—	—	9.40	—	13.4	4 500	5 900	<b>7322C</b>	48.8	124	226	2.5	10.1	
<b>120</b>	165	22	1.1	0.6	89.7	81.2	—	—	3.55	—	16.5	5 900	7 800	<b>7924C</b>	30.1	127	158	1	1.15
	180	28	2	1	121	103	—	—	4.50	—	—	3 900	4 900	<b>7024</b>	57.3	130	170	2	2.27
	180	28	2	1	108	93.0	—	—	3.95	—	—	2 900	3 900	<b>7024B</b>	76.9	130	170	2	2.27
	180	28	2	1	133	113	—	—	5.10	—	16.0	5 400	7 100	<b>7024C</b>	34.1	130	170	2	2.27
	215	40	2.1	1.1	218	166	—	—	7.85	—	—	3 400	4 300	<b>7224</b>	68.5	132	203	2	5.49
	215	40	2.1	1.1	197	151	—	—	6.80	—	—	2 600	3 400	<b>7224B</b>	90.3	132	203	2	5.49
	215	40	2.1	1.1	237	180	—	—	8.95	—	14.6	4 800	6 300	<b>7224C</b>	42.5	132	203	2	5.49
	260	55	3	1.1	308	252	—	—	9.45	—	—	3 000	3 700	<b>7324</b>	82.3	134	246	2.5	12.6
	260	55	3	1.1	282	231	—	—	8.65	—	—	2 200	3 000	<b>7324B</b>	107.2	134	246	2.5	12.6
	260	55	3	1.1	331	271	—	—	10.2	—	13.7	4 100	5 500	<b>7324C</b>	53.0	134	246	2.5	12.6
<b>130</b>	180	24	1.5	1	109	99.9	—	—	4.20	—	16.4	5 400	7 100	<b>7926C</b>	32.8	138.5	171.5	1.5	1.50
	200	33	2	1	147	125	—	—	5.25	—	—	3 500	4 400	<b>7026</b>	64.1	140	190	2	3.43

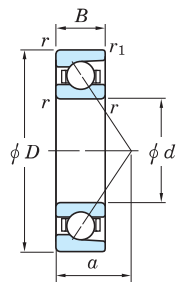
[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cage or molded cage.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively.

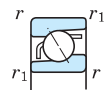
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

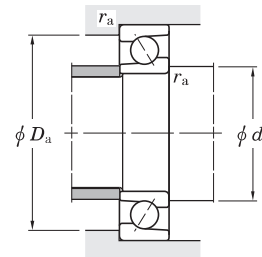
$d$  (130) ~ (150) mm



With machined cage



With pressed cage



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>	Load center (mm) $a$	Mounting dimensions (mm)			(Refer.) Mass (kg)
$d$	$D$	$B$	$r_{min.}$	$r_{1min.}$	With machined cage		With pressed cage		$C_u$			Grease lub.	Oil lub.			$d_a$ min.	$D_a$ max.	$r_a$ max.	
					$C_r$	$C_{0r}$	$C_r$	$C_{0r}$	[With machined cage]	[With pressed cage]	$f_0$								
130	200	33	2	1	131	113	—	—	4.60	—	—	2 600	3 500	7026B	85.7	140	190	2	3.43
	200	33	2	1	161	137	—	—	5.95	—	15.9	4 800	6 400	7026C	38.6	140	190	2	3.43
	230	40	3	1.1	245	198	—	—	7.60	—	—	3 200	4 000	7226	72.0	144	216	2.5	6.21
	230	40	3	1.1	222	180	—	—	6.95	—	—	2 400	3 200	7226B	95.5	144	216	2.5	6.21
	230	40	3	1.1	266	214	—	—	8.25	—	14.7	4 400	5 800	7226C	44.1	144	216	2.5	6.21
	280	58	4	1.5	376	329	—	—	11.8	—	—	2 700	3 400	7326	88.8	148	262	3	15.4
	280	58	4	1.5	312	268	—	—	9.70	—	—	2 100	2 700	7326B	115.0	148	262	3	15.4
	280	58	4	1.5	368	314	—	—	11.3	—	13.7	3 800	5 000	7326C	56.5	148	262	3	15.4
140	190	24	1.5	1	110	105	—	—	4.20	—	16.6	5 100	6 700	7928C	34.1	148.5	181.5	1.5	1.59
	210	33	2	1	150	133	—	—	5.30	—	—	3 300	4 100	7028	67.0	150	200	2	3.64
	210	33	2	1	134	119	—	—	4.65	—	—	2 500	3 300	7028B	89.9	150	200	2	3.64
	210	33	2	1	165	145	—	—	6.00	—	16.0	4 500	6 000	7028C	39.9	150	200	2	3.64
	250	42	3	1.1	273	234	—	—	8.65	—	—	2 900	3 600	7228	77.3	154	236	2.5	7.76
	250	42	3	1.1	247	213	—	—	7.85	—	—	2 200	2 900	7228B	102.8	154	236	2.5	7.76
	250	42	3	1.1	297	254	—	—	9.40	—	14.8	4 000	5 300	7228C	47.1	154	236	2.5	7.76
	300	62	4	1.5	411	374	—	—	13.0	—	—	2 500	3 200	7328	94.5	158	282	3	18.8
	300	62	4	1.5	378	344	—	—	12.0	—	—	1 900	2 500	7328B	123.3	158	282	3	18.8
	300	62	4	1.5	441	401	—	—	14.0	—	13.4	3 500	4 600	7328C	60.5	158	282	3	18.8
150	210	28	2	1	148	132	—	—	5.45	—	16.3	4 700	6 200	7930C	38.1	160	200	2	2.47
	225	35	2.1	1.1	171	154	—	—	5.95	—	—	3 000	3 800	7030	72.1	162	213	2	4.43
	225	35	2.1	1.1	153	138	—	—	5.20	—	—	2 300	3 000	7030B	96.2	162	213	2	4.43
	225	35	2.1	1.1	188	169	—	—	6.70	—	16.1	4 200	5 500	7030C	42.8	162	213	2	4.43
	270	45	3	1.1	310	280	—	—	9.95	—	—	2 700	3 300	7230	83.1	164	256	2.5	9.75
	270	45	3	1.1	281	254	—	—	9.05	—	—	2 000	2 700	7230B	110.6	164	256	2.5	9.75
	270	45	3	1.1	338	303	—	—	10.8	—	14.7	3 700	4 900	7230C	50.6	164	256	2.5	9.75
	320	65	4	1.5	434	414	—	—	14.0	—	—	2 300	2 900	7330	100.3	168	302	3	22.4
	320	65	4	1.5	397	380	—	—	12.8	—	—	1 800	2 300	7330B	131.1	168	302	3	22.4

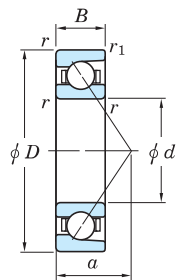
[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cage or molded cage.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively.

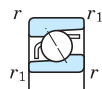
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

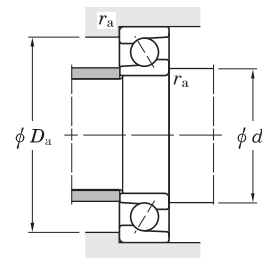
d (150) ~ (180) mm



With machined cage



With pressed cage



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>	Load center (mm) a	Mounting dimensions (mm)			(Refer.) Mass (kg)
d	D	B	r min.	r1 min.	With machined cage		With pressed cage		Ca			Grease lub.	Oil lub.			da min.	Da max.	ra max.	
					Cr	C0r	Cr	C0r	[With machined cage]	[With pressed cage]	f0								
150	320	65	4	1.5	468	445	—	—	15.0	—	13.7	3 200	4 300	7330C	64.0	168	302	3	22.4
160	220	28	2	1	151	144	—	—	5.45	—	16.5	4 400	5 800	7932C	39.5	170	210	2	2.60
	240	38	2.1	1.1	194	176	—	—	6.65	—	—	2 800	3 500	7032	76.8	172	228	2	5.45
	240	38	2.1	1.1	173	158	—	—	5.80	—	—	2 100	2 800	7032B	102.9	172	228	2	5.45
	240	38	2.1	1.1	214	193	—	—	7.50	—	16.0	3 900	5 200	7032C	45.8	172	228	2	5.45
	290	48	3	1.1	288	263	—	—	9.05	—	—	2 500	3 100	7232	89.0	174	276	2.5	12.1
	290	48	3	1.1	297	279	—	—	9.60	—	—	1 800	2 500	7232B	118.4	174	276	2.5	12.1
	290	48	3	1.1	315	333	—	—	9.85	—	15.2	3 400	4 500	7232C	54.1	174	276	2.5	12.1
	340	68	4	1.5	456	455	—	—	14.9	—	—	2 200	2 700	7332	106.2	178	322	3	26.4
340	68	4	1.5	415	416	—	—	13.6	—	—	1 600	2 200	7332B	138.9	178	322	3	26.4	
340	68	4	1.5	492	490	—	—	16.0	—	14.0	3 000	4 000	7332C	67.5	168.5	322	3	26.4	
170	230	28	2	1	157	151	—	—	5.75	—	16.6	3 900	5 100	7934C	40.8	180	220	2	3.21
	260	42	2.1	1.1	232	214	—	—	7.90	—	—	2 600	3 200	7034	83.1	182	248	2	7.58
	260	42	2.1	1.1	208	193	—	—	6.90	—	—	1 900	2 600	7034B	111.2	182	248	2	7.77
	260	42	2.1	1.1	256	234	—	—	8.95	—	15.9	3 600	4 800	7034C	49.8	182	248	2	7.57
	310	52	4	1.5	340	331	—	—	11.0	—	—	2 300	2 800	7234	95.3	188	292	3	15.1
	310	52	4	1.5	306	300	—	—	10.0	—	—	1 700	2 300	7234B	126.7	188	292	3	15.1
	310	52	4	1.5	371	359	—	—	12.0	—	15.1	3 100	4 200	7234C	58.2	188	292	3	15.1
	360	72	4	1.5	486	485	—	—	15.4	—	—	2 000	2 500	7334	112.5	188	342	3	31.2
	360	72	4	1.5	444	444	—	—	14.1	—	—	1 500	2 000	7334B	147.2	188	342	3	31.2
	360	72	4	1.5	523	521	—	—	16.5	—	13.8	2 800	3 700	7334C	71.5	188	342	3	31.2
180	250	33	2	1	200	188	—	—	7.05	—	16.4	3 600	4 700	7936C	45.3	190	240	2	4.68
	280	46	2.1	1.1	265	253	—	—	9.15	—	—	2 400	3 000	7036	89.4	192	268	2	10.1
	280	46	2.1	1.1	237	228	—	—	7.95	—	—	1 800	2 400	7036B	119.5	192	268	2	10.2
	280	46	2.1	1.1	291	276	—	—	10.4	—	15.7	3 300	4 400	7036C	53.8	192	268	2	9.96
	320	52	4	1.5	367	362	—	—	11.8	—	—	2 200	2 700	7236	98.2	198	302	3	15.7

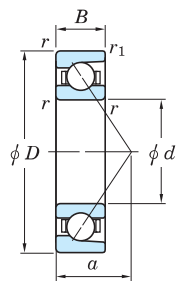
[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cage or molded cage.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively.

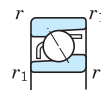
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

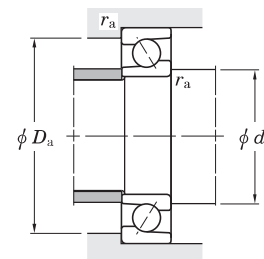
d (180) ~ (240) mm



With machined cage



With pressed cage



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>	Load center (mm) a	Mounting dimensions (mm)			(Refer.) Mass (kg)
d	D	B	r min.	r1 min.	With machined cage		With pressed cage		Ca			Grease lub.	Oil lub.			da min.	Da max.	ra max.	
					Cr	C0r	Cr	C0r	[With machined cage]	[With pressed cage]	f0								
<b>180</b>	320	52	4	1.5	331	329	—	—	10.7	—	—	1 600	2 200	<b>7236B</b>	130.9	198	302	3	15.7
	320	52	4	1.5	400	393	—	—	12.8	—	14.9	3 000	4 000	<b>7236C</b>	59.5	198	302	3	15.7
	380	75	4	1.5	512	534	—	—	16.5	—	—	1 900	2 400	<b>7336</b>	118.3	198	362	3	40.0
	380	75	4	1.5	466	488	—	—	15.1	—	—	1 400	1 900	<b>7336B</b>	155.0	198	362	3	40.0
<b>190</b>	260	33	2	1	198	197	—	—	6.85	—	16.5	3 300	4 500	<b>7938C</b>	46.6	200	250	2	4.83
	290	46	2.1	1.1	271	268	—	—	9.35	—	—	2 300	2 800	<b>7038</b>	92.3	202	278	2	10.8
	290	46	2.1	1.1	243	241	—	—	8.15	—	—	1 700	2 300	<b>7038B</b>	123.7	202	278	2	10.8
	290	46	2.1	1.1	299	293	—	—	10.6	—	15.9	3 100	4 200	<b>7038C</b>	55.2	202	278	2	10.8
	340	55	4	1.5	379	390	—	—	12.4	—	—	2 000	2 500	<b>7238</b>	104.0	208	322	3	18.8
	340	55	4	1.5	341	353	—	—	11.2	—	—	1 500	2 000	<b>7238B</b>	138.7	208	322	3	18.8
	340	55	4	1.5	414	424	—	—	13.5	—	15.1	2 800	3 700	<b>7238C</b>	63.0	208	322	3	18.8
	400	78	5	2	563	598	—	—	18.0	—	—	1 800	2 200	<b>7338</b>	124.2	212	378	4	45.5
400	78	5	2	514	548	—	—	16.5	—	—	1 300	1 800	<b>7338B</b>	162.8	212	378	4	45.5	
<b>200</b>	280	38	2.1	1.1	256	255	—	—	8.70	—	16.3	3 100	4 100	<b>7940C</b>	51.2	212	268	2	6.85
	310	51	2.1	1.1	304	309	—	—	10.0	—	—	2 100	2 600	<b>7040</b>	99.1	212	298	2	12.7
	310	51	2.1	1.1	273	279	—	—	9.05	—	—	1 600	2 100	<b>7040B</b>	132.5	212	298	2	12.7
	310	51	2.1	1.1	335	338	—	—	10.9	—	15.7	2 900	3 900	<b>7040C</b>	59.7	212	298	2	12.7
	360	58	4	1.5	405	423	—	—	13.1	—	—	1 900	2 400	<b>7240</b>	109.8	218	342	3	22.4
	360	58	4	1.5	365	384	—	—	11.9	—	—	1 400	1 900	<b>7240B</b>	146.5	218	342	3	22.4
	360	58	4	1.5	442	460	—	—	14.2	—	15.1	2 600	3 500	<b>7240C</b>	66.5	218	342	3	22.4
	420	80	5	2	593	658	—	—	19.3	—	—	1 700	2 100	<b>7340</b>	129.5	222	398	4	52.0
	420	80	5	2	541	602	—	—	17.7	—	—	1 200	1 700	<b>7340B</b>	170.1	222	398	4	52.0
<b>220</b>	340	56	3	1.1	334	353	—	—	10.9	—	—	1 900	2 400	<b>7044</b>	108.9	234	326	2.5	18.5
	340	56	3	1.1	299	318	—	—	9.80	—	—	1 400	1 900	<b>7044B</b>	145.5	234	326	2.5	18.9
<b>240</b>	360	56	3	1.1	364	375	—	—	12.3	—	—	1 700	2 200	<b>7048</b>	114.6	254	346	2.5	19.7
	360	56	3	1.1	325	338	—	—	11.1	—	—	1 300	1 700	<b>7048B</b>	153.9	254	346	2.5	20.1

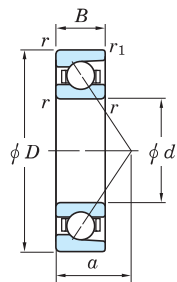
[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cage or molded cage.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively.

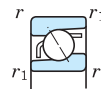
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

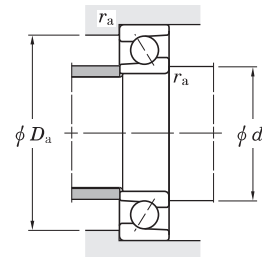
$d$  (240) ~ 380 mm



With machined cage



With pressed cage



$d$	Boundary dimensions (mm)				Basic load ratings (kN)				Fatigue load limits (kN)		Factor $f_0$	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>	Load center (mm) $a$	Mounting dimensions (mm)			(Refer.) Mass (kg)
	$D$	$B$	$r_{\min.}$	$r_{1\min.}$	With machined cage		With pressed cage		$C_u$			Grease lub.	Oil lub.			$d_a$ min.	$D_a$ max.	$r_a$ max.	
240	440	72	4	1.5	504	595	—	—	16.7	—	—	1 500	1 800	7248	134.2	258	422	3	51.8
	440	72	4	1.5	453	539	—	—	15.1	—	—	1 100	1 500	7248B	178.6	258	422	3	52.8
260	400	65	4	1.5	407	478	—	—	13.6	—	—	1 500	1 900	7052	128.4	278	382	3	28.7
	400	65	4	1.5	364	431	—	—	12.2	—	—	1 100	1 500	7052B	171.0	278	382	3	29.3
280	420	65	4	1.5	415	507	—	—	14.0	—	—	1 400	1 800	7056	133.5	298	402	3	30.4
	420	65	4	1.5	384	453	—	—	13.1	—	—	1 100	1 400	7056B	179.3	298	402	3	31.0
300	460	74	4	1.5	533	680	—	—	18.0	—	—	1 300	1 600	7060	146.7	318	442	3	43.7
	460	74	4	1.5	478	613	—	—	16.3	—	—	960	1 300	7060B	196.4	318	442	3	44.9
320	480	74	4	1.5	546	722	—	—	18.6	—	—	1 200	1 500	7064	152.5	338	462	3	46.0
	480	74	4	1.5	489	651	—	—	16.8	—	—	890	1 200	7064B	204.8	338	462	3	47.2
340	520	82	5	2	628	861	—	—	21.4	—	—	1 100	1 300	7068	165.1	362	498	4	61.8
	520	82	5	2	563	777	—	—	19.4	—	—	800	1 100	7068B	221.4	362	498	4	63.3
360	540	82	5	2	644	913	—	—	22.2	—	—	1 000	1 300	7072	170.9	382	518	4	64.6
	540	82	5	2	577	824	—	—	20.1	—	—	750	1 000	7072B	229.8	382	518	4	66.2
380	560	82	5	2	660	966	—	—	23.0	—	—	940	1 200	7076	176.7	402	538	4	67.2
	560	82	5	2	590	870	—	—	20.7	—	—	700	940	7076B	238.2	402	538	4	69.1

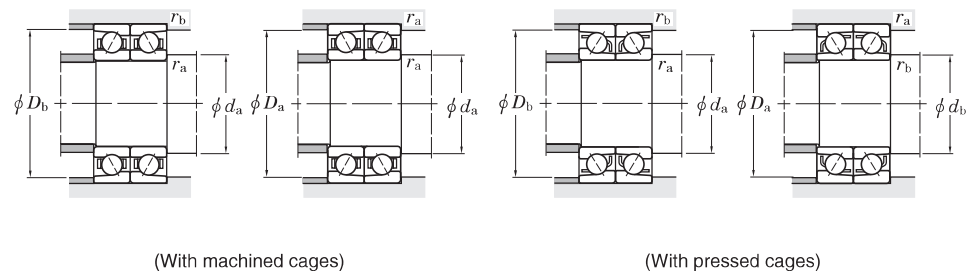
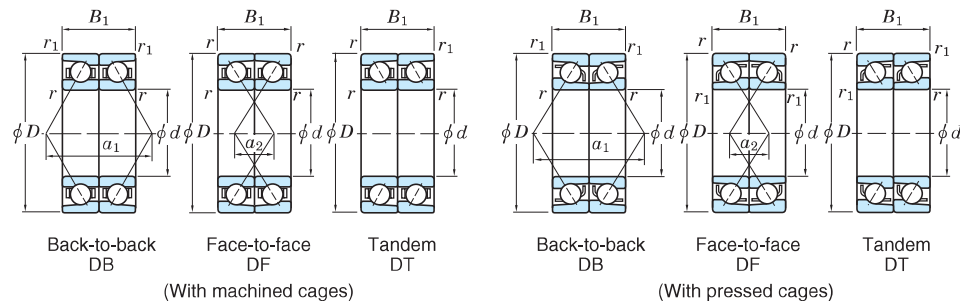
[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cage or molded cage.

2) B or no indication after the bearing number indicates nominal contact angle of 15° and 30° respectively.

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

Angular contact ball bearings (matched pair)

d 10 ~ (17) mm



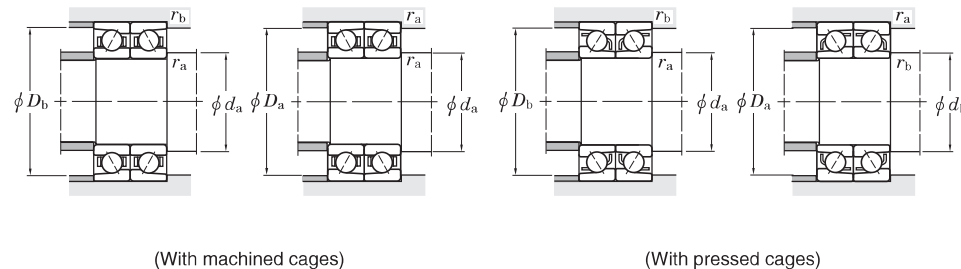
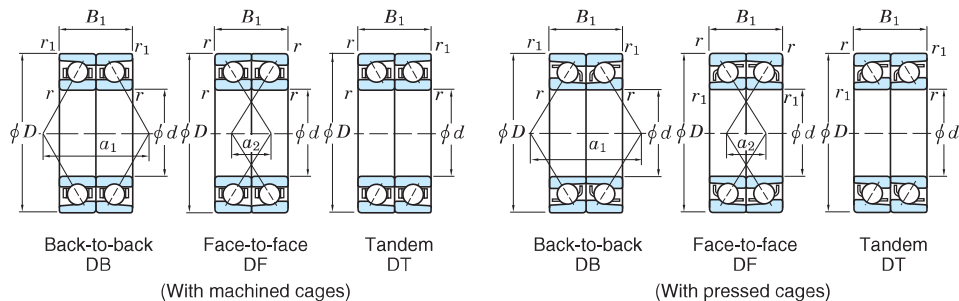
Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor $f_0$	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>			Load center spread (mm)		Mounting dimensions (mm)						(Refer.) Mass (kg)
d	D	B <sub>1</sub>	r min.	r <sub>1</sub> min.	With machined cages		With pressed cages		C <sub>u</sub>	C <sub>10</sub>		C <sub>0r</sub>	Grease lub.	Oil lub.	Back-to-back DB	Face-to-face DF	Tandem DT	a <sub>1</sub>	a <sub>2</sub>	d <sub>a</sub> min.	d <sub>b</sub> min.	D <sub>a</sub> max.	D <sub>b</sub> max.	r <sub>a</sub> max.	
10	22	12	0.3	0.15	6.10	3.05	—	—	0.120	—	14.2	42 000	55 000	<b>7900CDB</b>	<b>7900CDF</b>	<b>7900CDT</b>	10.3	1.7	12.5	—	19.5	20.8	0.3	0.15	0.016
	26	16	0.3	0.15	10.1	4.65	—	—	0.240	—	—	27 000	34 000	<b>7000DB</b>	<b>7000DF</b>	<b>7000DT</b>	18.2	2.2	12.5	—	23.5	24.8	0.3	0.15	0.042
	26	16	0.3	0.15	9.40	4.35	—	—	0.220	—	—	20 000	27 000	<b>7000BDB</b>	<b>7000BDF</b>	<b>7000BDT</b>	23.1	7.1	12.5	—	23.5	24.8	0.3	0.15	0.042
	26	16	0.3	0.15	10.7	4.95	—	—	0.250	—	12.5	37 000	50 000	<b>7000CDB</b>	<b>7000CDF</b>	<b>7000CDT</b>	12.7	3.3	12.5	—	23.5	24.8	0.3	0.15	0.042
	30	18	0.6	0.3	9.50	4.40	11.0	5.45	0.230	0.280	—	23 000	29 000	<b>7200DB</b>	<b>7200DF</b>	<b>7200DT</b>	20.8	2.8	14.5	12.5	25.5	27.5	0.6	0.3	0.062
	30	18	0.6	0.3	8.70	4.05	10.1	5.05	0.210	0.260	—	18 000	23 000	<b>7200BDB</b>	<b>7200BDF</b>	<b>7200BDT</b>	26.2	8.2	14.5	12.5	25.5	27.5	0.6	0.3	0.062
	30	18	0.6	0.3	10.2	4.70	11.8	5.85	0.240	0.300	13.4	32 000	43 000	<b>7200CDB</b>	<b>7200CDF</b>	<b>7200CDT</b>	14.5	3.5	14.5	12.5	25.5	27.5	0.6	0.3	0.062
	35	22	0.6	0.3	17.3	7.55	18.9	8.60	0.590	0.680	—	21 000	27 000	<b>7300DB</b>	<b>7300DF</b>	<b>7300DT</b>	24.0	2.0	14.5	12.5	30.5	32.5	0.6	0.3	0.108
12	24	12	0.3	0.15	6.45	3.45	—	—	0.140	—	14.7	37 000	49 000	<b>7901CDB</b>	<b>7901CDF</b>	<b>7901CDT</b>	10.8	1.2	14.5	—	21.5	22.8	0.3	0.15	0.020
	28	16	0.3	0.15	11.0	5.45	—	—	0.280	—	—	23 000	29 000	<b>7001DB</b>	<b>7001DF</b>	<b>7001DT</b>	19.9	3.9	14.5	—	25.5	26.8	0.3	0.15	0.048
	28	16	0.3	0.15	10.1	5.05	—	—	0.260	—	—	18 000	23 000	<b>7001BDB</b>	<b>7001BDF</b>	<b>7001BDT</b>	25.2	9.2	14.5	—	25.5	26.8	0.3	0.15	0.048
	28	16	0.3	0.15	11.8	5.85	—	—	0.300	—	13.4	32 000	43 000	<b>7001CDB</b>	<b>7001CDF</b>	<b>7001CDT</b>	13.5	2.5	14.5	—	25.5	26.8	0.3	0.15	0.048
	32	20	0.6	0.3	15.1	7.25	16.2	8.05	0.560	0.620	—	22 000	27 000	<b>7201DB</b>	<b>7201DF</b>	<b>7201DT</b>	22.7	2.7	16.5	14.5	27.5	29.5	0.6	0.3	0.076
	32	20	0.6	0.3	14.0	6.80	15.1	7.50	0.480	0.530	—	16 000	22 000	<b>7201BDB</b>	<b>7201BDF</b>	<b>7201BDT</b>	28.5	8.5	16.5	14.5	27.5	29.5	0.6	0.3	0.076
	32	20	0.6	0.3	16.0	7.70	17.2	8.55	0.600	0.670	12.5	30 000	40 000	<b>7201CDB</b>	<b>7201CDF</b>	<b>7201CDT</b>	15.9	4.1	16.5	14.5	27.5	29.5	0.6	0.3	0.076
	37	24	1	0.6	20.7	9.20	22.7	10.5	0.720	0.820	—	20 000	24 000	<b>7301DB</b>	<b>7301DF</b>	<b>7301DT</b>	26.2	2.2	17.5	16.5	31.5	32.5	1	0.6	0.130
15	28	14	0.3	0.15	9.65	5.30	—	—	0.210	—	14.5	31 000	41 000	<b>7902CDB</b>	<b>7902CDF</b>	<b>7902CDT</b>	12.8	1.2	17.5	—	25.5	26.8	0.3	0.15	0.030
	32	18	0.3	0.15	12.4	6.85	—	—	0.350	—	—	20 000	26 000	<b>7002DB</b>	<b>7002DF</b>	<b>7002DT</b>	22.6	4.6	17.5	—	29.5	30.8	0.3	0.15	0.070
	32	18	0.3	0.15	11.3	6.30	—	—	0.320	—	—	15 000	20 000	<b>7002BDB</b>	<b>7002BDF</b>	<b>7002BDT</b>	29.1	11.1	17.5	—	29.5	30.8	0.3	0.15	0.070
	32	18	0.3	0.15	13.4	7.40	—	—	0.380	—	14.1	28 000	37 000	<b>7002CDB</b>	<b>7002CDF</b>	<b>7002CDT</b>	15.3	2.7	17.5	—	29.5	30.8	0.3	0.15	0.070
	35	22	0.6	0.3	16.4	8.55	16.4	8.55	0.600	0.600	—	19 000	24 000	<b>7202DB</b>	<b>7202DF</b>	<b>7202DT</b>	25.7	3.7	19.5	17.5	30.5	32.5	0.6	0.3	0.096
	35	22	0.6	0.3	15.1	7.85	15.1	7.85	0.520	0.520	—	14 000	19 000	<b>7202BDB</b>	<b>7202BDF</b>	<b>7202BDT</b>	32.4	10.4	19.5	17.5	30.5	32.5	0.6	0.3	0.096
	35	22	0.6	0.3	17.6	9.15	17.6	9.15	0.680	0.680	13.3	26 000	35 000	<b>7202CDB</b>	<b>7202CDF</b>	<b>7202CDT</b>	17.8	4.2	19.5	17.5	30.5	32.5	0.6	0.3	0.096
	42	26	1	0.6	25.4	12.9	27.3	14.4	0.990	1.10	—	16 000	20 000	<b>7302DB</b>	<b>7302DF</b>	<b>7302DT</b>	30.0	4.0	20.5	19.5	36.5	37.5	1	0.6	0.176
17	30	14	0.3	0.15	10.1	5.90	—	—	0.240	—	14.9	28 000	38 000	<b>7903CDB</b>	<b>7903CDF</b>	<b>7903CDT</b>	13.4	0.6	19.5	—	27.5	28.8	0.3	0.15	0.032
	35	20	0.3	0.15	13.7	8.25	—	—	0.430	—	—	18 000	23 000	<b>7003DB</b>	<b>7003DF</b>	<b>7003DT</b>	25.3	5.3	19.5	—	32.5	33.8	0.3	0.15	0.090
	35	20	0.3	0.15	12.4	7.50	—	—	0.390	—	—	14 000	18 000	<b>7003BDB</b>	<b>7003BDF</b>	<b>7003BDT</b>	32.2	12.2	19.5	—	32.5	33.8	0.3	0.15	0.090

[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cages or molded cages.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively. [Remark] Standard cage types used for the above bearings are described earlier in this section.

Angular contact ball bearings (matched pair)

d (17) ~ (25) mm



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor $f_0$	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>			Load center spread (mm)		Mounting dimensions (mm)						(Refer.) Mass (kg)	
d	D	B <sub>1</sub>	r <sub>min.</sub>	r <sub>1 min.</sub>	With machined cages		With pressed cages		$C_u$	$C_{0r}$		$C_r$	$C_{0r}$	Grease lub.	Oil lub.	Back-to-back DB	Face-to-face DF	Tandem DT	a <sub>1</sub>	a <sub>2</sub>	d <sub>a min.</sub>	d <sub>b min.</sub>	D <sub>a max.</sub>	D <sub>b max.</sub>		r <sub>a max.</sub>
17	35	20	0.3	0.15	14.8	8.95	—	—	0.460	—	14.6	25 000	33 000		7003CDB	7003CDF	7003CDT	17.1	2.9	19.5	—	32.5	33.8	0.3	0.15	0.090
	40	24	0.6	0.3	20.6	11.0	20.6	11.0	0.770	0.770	—	17 000	21 000		7203DB	7203DF	7203DT	28.8	4.8	21.5	19.5	35.5	37.5	0.6	0.3	0.140
	40	24	0.6	0.3	19.0	10.1	19.0	10.1	0.660	0.660	—	12 000	17 000		7203BDB	7203BDF	7203BDT	36.3	12.3	21.5	19.5	35.5	37.5	0.6	0.3	0.140
	40	24	0.6	0.3	22.1	11.8	22.1	11.8	0.880	0.880	13.4	23 000	30 000		7203CDB	7203CDF	7203CDT	19.8	4.2	21.5	19.5	35.5	37.5	0.6	0.3	0.140
	47	28	1	0.6	30.3	15.8	32.5	17.5	1.20	1.30	—	15 000	18 000		7303DB	7303DF	7303DT	33.1	5.1	22.5	21.5	41.5	42.5	1	0.6	0.240
	47	28	1	0.6	28.1	14.6	30.1	16.2	1.00	1.15	—	11 000	15 000		7303BDB	7303BDF	7303BDT	41.7	13.7	22.5	21.5	41.5	42.5	1	0.6	0.240
	47	28	1	0.6	32.2	16.8	32.2	16.8	1.30	1.30	12.6	20 000	27 000		7303CDB	7303CDF	7303CDT	22.8	5.2	22.5	21.5	41.5	42.5	1	0.6	0.240
20	37	18	0.3	0.15	14.8	9.15	—	—	0.470	—	14.9	24 000	31 000		7904CDB	7904CDF	7904CDT	16.6	1.4	22.5	—	34.5	35.8	0.3	0.15	0.070
	42	24	0.6	0.3	20.9	12.2	—	—	0.790	—	—	15 000	19 000		7004DB	7004DF	7004DT	30.2	6.2	24.5	—	37.5	39.5	0.6	0.3	0.158
	42	24	0.6	0.3	19.0	11.1	—	—	0.680	—	—	11 000	15 000		7004BDB	7004BDF	7004BDT	38.4	14.4	24.5	—	37.5	39.5	0.6	0.3	0.158
	42	24	0.6	0.3	22.6	13.2	—	—	0.900	—	14.1	21 000	28 000		7004CDB	7004CDF	7004CDT	20.4	3.6	24.5	—	37.5	39.5	0.6	0.3	0.158
	47	28	1	0.6	29.4	16.8	31.2	18.3	1.15	1.25	—	14 000	17 000		7204DB	7204DF	7204DT	33.9	5.9	25.5	24.5	41.5	42.5	1	0.6	0.224
	47	28	1	0.6	27.0	15.4	28.6	16.8	1.00	1.10	—	10 000	14 000		7204BDB	7204BDF	7204BDT	42.9	14.9	25.5	24.5	41.5	42.5	1	0.6	0.224
	47	28	1	0.6	31.5	18.0	33.4	19.6	1.35	1.45	13.4	19 000	26 000		7204CDB	7204CDF	7204CDT	23.2	4.8	25.5	24.5	41.5	42.5	1	0.6	0.224
	52	30	1.1	0.6	35.4	18.8	38.0	20.8	1.40	1.60	—	13 000	17 000		7304DB	7304DF	7304DT	35.8	5.8	27	24.5	45	47.5	1	0.6	0.300
	52	30	1.1	0.6	32.8	17.4	35.2	19.3	1.20	1.35	—	10 000	13 000		7304BDB	7304BDF	7304BDT	45.2	15.2	27	24.5	45	47.5	1	0.6	0.300
	52	30	1.1	0.6	37.6	19.9	40.3	22.2	1.55	1.75	12.6	18 000	24 000		7304CDB	7304CDF	7304CDT	24.6	5.4	27	24.5	45	47.5	1	0.6	0.300
	72	38	1.1	0.6	72.3	38.2	—	—	3.00	—	—	7 400	11 000		7404DB	7404DF	7404DT	46.1	8.1	27	—	65	67.5	1	0.6	0.790
72	38	1.1	0.6	68.1	35.9	—	—	2.80	—	—	6 400	9 600		7404BDB	7404BDF	7404BDT	58.4	20.4	27	—	65	67.5	1	0.6	0.790	
25	42	18	0.3	0.15	16.5	10.9	—	—	0.600	—	15.5	20 000	27 000		7905CDB	7905CDF	7905CDT	18.2	0.2	27.5	—	39.5	40.8	0.3	0.15	0.082
	47	24	0.6	0.3	22.9	14.8	—	—	0.900	—	—	13 000	17 000		7005DB	7005DF	7005DT	32.9	8.9	29.5	—	42.5	44.5	0.6	0.3	0.182
	47	24	0.6	0.3	20.7	13.4	—	—	0.780	—	—	10 000	13 000		7005BDB	7005BDF	7005BDT	42.3	18.3	29.5	—	42.5	44.5	0.6	0.3	0.182
	47	24	0.6	0.3	24.9	16.0	—	—	1.00	—	14.7	18 000	24 000		7005CDB	7005CDF	7005CDT	21.7	2.3	29.5	—	42.5	44.5	0.6	0.3	0.182
	52	30	1	0.6	31.2	19.0	32.9	20.6	1.25	1.35	—	12 000	15 000		7205DB	7205DF	7205DT	37.5	7.5	30.5	29.5	46.5	47.5	1	0.6	0.270
	52	30	1	0.6	28.4	17.4	29.9	18.8	1.05	1.15	—	9 200	12 000		7205BDB	7205BDF	7205BDT	47.7	17.7	30.5	29.5	46.5	47.5	1	0.6	0.270
	52	30	1	0.6	33.7	20.5	35.5	22.2	1.40	1.55	14.0	17 000	23 000		7205CDB	7205CDF	7205CDT	25.5	4.5	30.5	29.5	46.5	47.5	1	0.6	0.270
	62	34	1.1	0.6	50.3	28.8	53.6	31.6	2.10	2.35	—	11 000	14 000		7305DB	7305DF	7305DT	42.1	8.1	32	29.5	55	57.5	1	0.6	0.486

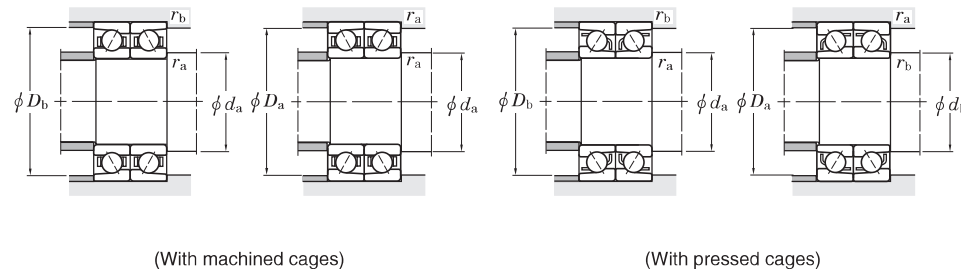
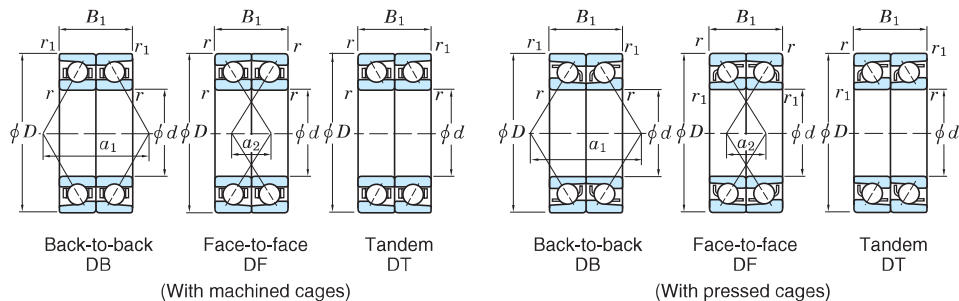
[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cages or molded cages.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively. [Remark] Standard cage types used for the above bearings are described earlier in this section.



Angular contact ball bearings (matched pair)

d (25) ~ (35) mm



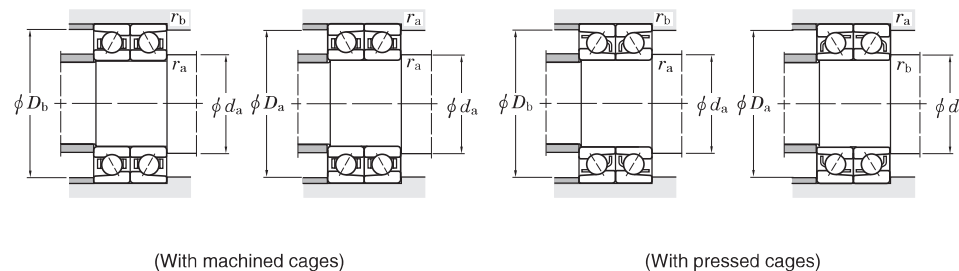
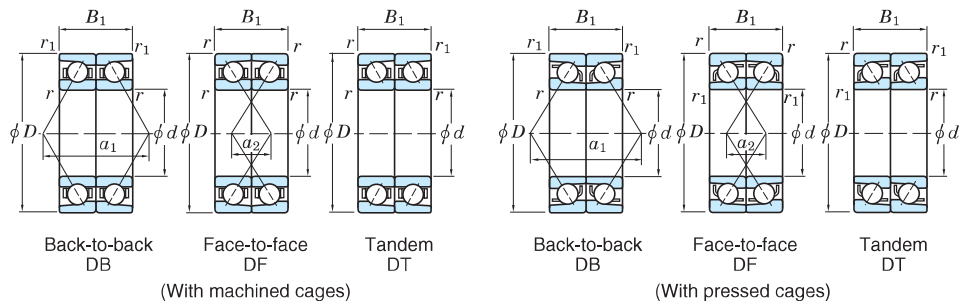
Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>			Load center spread (mm)		Mounting dimensions (mm)						(Refer.) Mass (kg)
d	D	B <sub>1</sub>	r <sub>min.</sub>	r <sub>1 min.</sub>	With machined cages		With pressed cages		C <sub>u</sub>	C <sub>0r</sub>		f <sub>0</sub>	Grease lub.	Oil lub.	Back-to-back DB	Face-to-face DF	Tandem DT	a <sub>1</sub>	a <sub>2</sub>	d <sub>a min.</sub>	d <sub>b min.</sub>	D <sub>a max.</sub>	D <sub>b max.</sub>	r <sub>a max.</sub>	
25	62	34	1.1	0.6	46.5	26.6	49.5	29.2	1.85	2.00	—	8 300	11 000	<b>7305BDB</b>	<b>7305BDF</b>	<b>7305BDT</b>	53.5	19.5	32	29.5	55	57.5	1	0.6	0.486
	62	34	1.1	0.6	53.5	30.6	57.0	33.7	2.40	2.65	12.8	15 000	20 000	<b>7305CDB</b>	<b>7305CDF</b>	<b>7305CDT</b>	28.7	5.3	32	29.5	55	57.5	1	0.6	0.486
	80	42	1.5	1	80.7	46.3	86.6	51.5	3.60	4.00	—	6 400	9 100	<b>7405DB</b>	<b>7405DF</b>	<b>7405DT</b>	52.8	10.8	33.5	30.5	71.5	74.5	1.5	1	1.05
	80	42	1.5	1	74.9	43.0	80.4	47.8	3.10	3.40	—	5 500	8 200	<b>7405BDB</b>	<b>7405BDF</b>	<b>7405BDT</b>	67.2	25.2	33.5	30.5	71.5	74.5	1.5	1	1.05
30	47	18	0.3	0.15	16.8	12.5	—	—	0.650	—	15.9	18 000	23 000	<b>7906CDB</b>	<b>7906CDF</b>	<b>7906CDT</b>	19.3	1.3	32.5	—	44.5	45.8	0.3	0.15	0.092
	55	26	1	0.6	29.5	20.2	—	—	1.20	—	—	11 000	14 000	<b>7006DB</b>	<b>7006DF</b>	<b>7006DT</b>	37.5	11.5	35.5	—	49.5	50.5	1	0.6	0.266
	55	26	1	0.6	26.7	18.4	—	—	1.05	—	—	8 500	11 000	<b>7006BDB</b>	<b>7006BDF</b>	<b>7006BDT</b>	48.7	22.7	35.5	—	49.5	50.5	1	0.6	0.266
	55	26	1	0.6	32.2	22.0	—	—	1.40	—	14.9	16 000	21 000	<b>7006CDB</b>	<b>7006CDF</b>	<b>7006CDT</b>	24.4	1.6	35.5	—	49.5	50.5	1	0.6	0.266
	62	32	1	0.6	43.3	27.4	45.7	29.7	1.80	1.95	—	10 000	13 000	<b>7206DB</b>	<b>7206DF</b>	<b>7206DT</b>	43.0	11.0	35.5	34.5	56.5	57.5	1	0.6	0.416
	62	32	1	0.6	39.5	25.0	41.6	27.1	1.55	1.65	—	7 700	10 000	<b>7206BDB</b>	<b>7206BDF</b>	<b>7206BDT</b>	55.2	23.2	35.5	34.5	56.5	57.5	1	0.6	0.416
	62	32	1	0.6	46.8	29.5	49.4	32.0	2.05	2.20	14.0	14 000	19 000	<b>7206CDB</b>	<b>7206CDF</b>	<b>7206CDT</b>	28.5	3.5	35.5	34.5	56.5	57.5	1	0.6	0.416
	72	38	1.1	0.6	61.1	37.8	64.8	41.2	2.60	2.85	—	9 200	12 000	<b>7306DB</b>	<b>7306DF</b>	<b>7306DT</b>	49.0	11.0	37	34.5	65	67.5	1	0.6	0.724
	72	38	1.1	0.6	56.1	34.7	59.4	37.9	2.25	2.45	—	6 900	9 200	<b>7306BDB</b>	<b>7306BDF</b>	<b>7306BDT</b>	62.6	24.6	37	34.5	65	67.5	1	0.6	0.724
	72	38	1.1	0.6	65.6	40.5	69.5	44.2	3.00	3.25	13.4	13 000	17 000	<b>7306CDB</b>	<b>7306CDF</b>	<b>7306CDT</b>	32.9	5.1	37	34.5	65	67.5	1	0.6	0.724
	90	46	1.5	1	96.7	56.9	104	63.2	4.35	4.85	—	5 700	8 100	<b>7406DB</b>	<b>7406DF</b>	<b>7406DT</b>	58.5	12.5	38.5	35.5	81.5	84.5	1.5	1	1.37
	90	46	1.5	1	89.7	52.8	96.3	58.6	3.75	4.15	—	4 900	7 300	<b>7406BDB</b>	<b>7406BDF</b>	<b>7406BDT</b>	74.6	28.6	38.5	35.5	81.5	84.5	1.5	1	1.37
35	55	20	0.6	0.3	25.5	19.4	—	—	1.10	—	15.7	15 000	20 000	<b>7907CDB</b>	<b>7907CDF</b>	<b>7907CDT</b>	22.1	2.1	39.5	—	50.5	52.5	0.6	0.3	0.148
	62	28	1	0.6	35.5	25.2	—	—	1.50	—	—	9 800	12 000	<b>7007DB</b>	<b>7007DF</b>	<b>7007DT</b>	42.3	14.3	40.5	—	56.5	57.5	1	0.6	0.340
	62	28	1	0.6	32.0	22.8	—	—	1.30	—	—	7 300	9 800	<b>7007BDB</b>	<b>7007BDF</b>	<b>7007BDT</b>	55.1	27.1	40.5	—	56.5	57.5	1	0.6	0.340
	62	28	1	0.6	38.8	27.4	—	—	1.70	—	15.0	13 000	18 000	<b>7007CDB</b>	<b>7007CDF</b>	<b>7007CDT</b>	27.0	1.0	40.5	—	56.5	57.5	1	0.6	0.340
	72	34	1.1	0.6	57.1	37.3	60.3	40.4	2.45	2.65	—	8 800	11 000	<b>7207DB</b>	<b>7207DF</b>	<b>7207DT</b>	48.5	14.5	42	39.5	65	67.5	1	0.6	0.590
	72	34	1.1	0.6	52.1	34.1	54.9	36.9	2.10	2.25	—	6 600	8 800	<b>7207BDB</b>	<b>7207BDF</b>	<b>7207BDT</b>	62.7	28.7	42	39.5	65	67.5	1	0.6	0.590
	72	34	1.1	0.6	61.7	40.2	65.1	43.5	2.75	3.00	14.0	12 000	16 000	<b>7207CDB</b>	<b>7207CDF</b>	<b>7207CDT</b>	31.6	2.4	42	39.5	65	67.5	1	0.6	0.590
	80	42	1.5	1	71.8	44.0	81.1	52.8	3.05	3.65	—	8 200	10 000	<b>7307DB</b>	<b>7307DF</b>	<b>7307DT</b>	54.8	12.8	43.5	40.5	71.5	74.5	1.5	1	0.950
	80	42	1.5	1	65.9	40.5	74.4	48.6	2.65	3.15	—	6 200	8 200	<b>7307BDB</b>	<b>7307BDF</b>	<b>7307BDT</b>	70.1	28.1	43.5	40.5	71.5	74.5	1.5	1	0.950
	80	42	1.5	1	77.0	47.2	86.9	56.6	3.50	4.20	13.4	11 000	15 000	<b>7307CDB</b>	<b>7307CDF</b>	<b>7307CDT</b>	36.7	5.3	43.5	40.5	71.5	74.5	1.5	1	0.950
	100	50	1.5	1	123	73.9	132	82.1	5.70	6.35	—	5 000	7 200	<b>7407DB</b>	<b>7407DF</b>	<b>7407DT</b>	65.2	15.2	43.5	40.5	91.5	94.5	1.5	1	1.90

[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cages or molded cages.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively. [Remark] Standard cage types used for the above bearings are described earlier in this section.

Angular contact ball bearings (matched pair)

d (35) ~ (50) mm



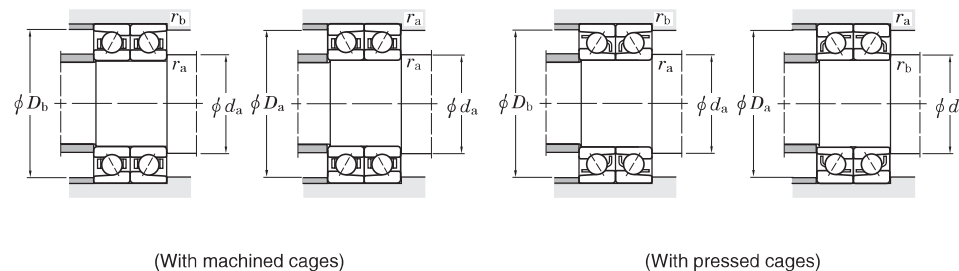
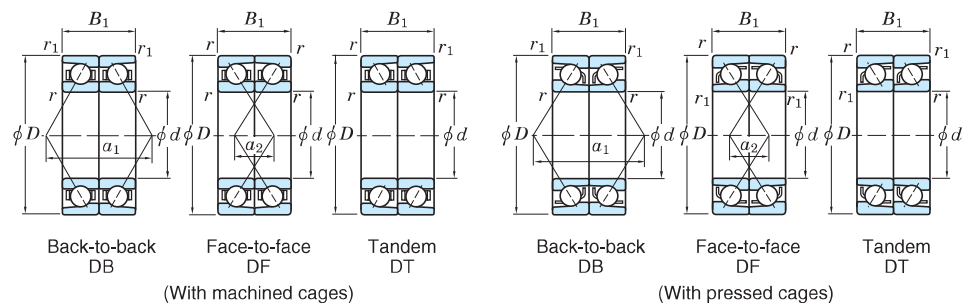
Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>			Load center spread (mm)		Mounting dimensions (mm)						(Refer.) Mass (kg)
d	D	B <sub>1</sub>	r <sub>min.</sub>	r <sub>1 min.</sub>	With machined cages		With pressed cages		C <sub>u</sub>	f <sub>0</sub>	Grease lub.	Oil lub.	Back-to-back DB	Face-to-face DF	Tandem DT	a <sub>1</sub>	a <sub>2</sub>	d <sub>a min.</sub>	d <sub>b min.</sub>	D <sub>a max.</sub>	D <sub>b max.</sub>	r <sub>a max.</sub>	r <sub>b max.</sub>		
35	100	50	1.5	1	114	68.6	122	76.2	4.90	5.45	—	4 300	6 500	<b>7407BDB</b>	<b>7407BDF</b>	<b>7407BDT</b>	83.3	33.3	43.5	40.5	91.5	94.5	1.5	1	1.90
40	62	24	0.6	0.3	32.0	24.9	—	—	1.40	—	15.7	13 000	18 000	<b>7908CDB</b>	<b>7908CDF</b>	<b>7908CDT</b>	25.7	1.7	44.5	—	57.5	59.5	0.6	0.3	0.214
	68	30	1	0.6	38.1	29.2	—	—	1.65	—	—	8 900	11 000	<b>7008DB</b>	<b>7008DF</b>	<b>7008DT</b>	46.3	16.3	45.5	—	62.5	63.5	1	0.6	0.420
	68	30	1	0.6	34.2	26.4	—	—	1.45	—	—	6 600	8 900	<b>7008BDB</b>	<b>7008BDF</b>	<b>7008BDT</b>	60.5	30.5	45.5	—	62.5	63.5	1	0.6	0.420
	68	30	1	0.6	41.7	31.8	—	—	1.90	—	15.4	12 000	16 000	<b>7008CDB</b>	<b>7008CDF</b>	<b>7008CDT</b>	29.5	0.5	45.5	—	62.5	63.5	1	0.6	0.420
	80	36	1.1	0.6	68.2	46.7	71.7	50.3	3.00	3.25	—	8 000	10 000	<b>7208DB</b>	<b>7208DF</b>	<b>7208DT</b>	52.7	16.7	47	44.5	73	75.5	1	0.6	0.764
	80	36	1.1	0.6	62.1	42.7	65.2	45.9	2.60	2.80	—	6 000	8 000	<b>7208BDB</b>	<b>7208BDF</b>	<b>7208BDT</b>	68.3	32.3	47	44.5	73	75.5	1	0.6	0.764
	80	36	1.1	0.6	73.8	50.4	77.6	54.3	3.45	3.70	14.2	11 000	15 000	<b>7208CDB</b>	<b>7208CDF</b>	<b>7208CDT</b>	34.1	1.9	47	44.5	73	75.5	1	0.6	0.764
	90	46	1.5	1	87.8	54.9	99.1	65.9	3.85	4.60	—	7 400	9 200	<b>7308DB</b>	<b>7308DF</b>	<b>7308DT</b>	60.5	14.5	48.5	45.5	81.5	84.5	1.5	1	1.31
	90	46	1.5	1	80.6	50.5	91.0	60.6	3.30	3.95	—	5 500	7 400	<b>7308BDB</b>	<b>7308BDF</b>	<b>7308BDT</b>	77.5	31.5	48.5	45.5	81.5	84.5	1.5	1	1.31
	90	46	1.5	1	94.1	58.8	106	70.5	4.40	5.25	13.4	10 000	14 000	<b>7308CDB</b>	<b>7308CDF</b>	<b>7308CDT</b>	40.4	5.6	48.5	45.5	81.5	84.5	1.5	1	1.31
110	54	2	1	142	87.1	152	96.8	6.70	7.45	—	4 600	6 600	<b>7408DB</b>	<b>7408DF</b>	<b>7408DT</b>	70.9	16.9	50	45.5	100	104.5	2	1	2.46	
110	54	2	1	132	80.8	141	89.8	5.75	6.40	—	3 900	5 900	<b>7408BDB</b>	<b>7408BDF</b>	<b>7408BDT</b>	90.8	36.8	50	45.5	100	104.5	2	1	2.46	
45	68	24	0.6	0.3	33.7	28.2	—	—	1.55	—	16.0	12 000	16 000	<b>7909CDB</b>	<b>7909CDF</b>	<b>7909CDT</b>	27.1	3.1	49.5	—	63.5	65.5	0.6	0.3	0.254
	75	32	1	0.6	45.2	35.4	—	—	2.00	—	—	8 000	10 000	<b>7009DB</b>	<b>7009DF</b>	<b>7009DT</b>	50.7	18.7	50.5	—	69.5	70.5	1	0.6	0.520
	75	32	1	0.6	40.6	32.0	—	—	1.75	—	—	6 000	8 000	<b>7009BDB</b>	<b>7009BDF</b>	<b>7009BDT</b>	66.3	34.3	50.5	—	69.5	70.5	1	0.6	0.520
	75	32	1	0.6	49.6	38.5	—	—	2.25	—	15.4	11 000	15 000	<b>7009CDB</b>	<b>7009CDF</b>	<b>7009CDT</b>	32.1	0.1	50.5	—	69.5	70.5	1	0.6	0.520
	85	38	1.1	0.6	76.6	53.2	80.5	57.2	3.40	3.70	—	7 500	9 400	<b>7209DB</b>	<b>7209DF</b>	<b>7209DT</b>	56.0	18.0	52	49.5	78	80.5	1	0.6	0.860
	85	38	1.1	0.6	69.7	48.6	73.2	52.3	2.95	3.20	—	5 600	7 500	<b>7209BDB</b>	<b>7209BDF</b>	<b>7209BDT</b>	72.8	34.8	52	49.5	78	80.5	1	0.6	0.860
	85	38	1.1	0.6	82.9	57.4	87.1	61.8	3.90	4.20	14.2	10 000	14 000	<b>7209CDB</b>	<b>7209CDF</b>	<b>7209CDT</b>	36.2	1.8	52	49.5	78	80.5	1	0.6	0.860
	100	50	1.5	1	112	74.2	119	80.9	5.15	5.60	—	6 600	8 200	<b>7309DB</b>	<b>7309DF</b>	<b>7309DT</b>	67.2	17.2	53.5	50.5	91.5	94.5	1.5	1	1.75
	100	50	1.5	1	103	68.2	109	74.3	4.40	4.85	—	4 900	6 600	<b>7309BDB</b>	<b>7309BDF</b>	<b>7309BDT</b>	86.3	36.3	53.5	50.5	91.5	94.5	1.5	1	1.75
	100	50	1.5	1	120	79.5	127	86.7	5.85	6.40	13.5	9 000	12 000	<b>7309CDB</b>	<b>7309CDF</b>	<b>7309CDT</b>	44.6	5.4	53.5	50.5	91.5	94.5	1.5	1	1.75
120	58	2	1	173	108	185	120	8.35	9.30	—	4 200	6 000	<b>7409DB</b>	<b>7409DF</b>	<b>7409DT</b>	77.2	19.2	55	50.5	110	114.5	2	1	3.10	
120	58	2	1	160	100	172	111	7.20	8.00	—	3 600	5 400	<b>7409BDB</b>	<b>7409BDF</b>	<b>7409BDT</b>	99.1	41.1	55	50.5	110	114.5	2	1	3.10	
50	72	24	0.6	0.3	35.4	31.4	—	—	1.70	—	16.2	11 000	15 000	<b>7910CDB</b>	<b>7910CDF</b>	<b>7910CDT</b>	28.3	4.3	54.5	—	67.5	69.5	0.6	0.3	0.256
	80	32	1	0.6	48.0	40.2	—	—	2.20	—	—	7 300	9 200	<b>7010DB</b>	<b>7010DF</b>	<b>7010DT</b>	53.8	21.8	55.5	—	74.5	75.5	1	0.6	0.580

[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cages or molded cages.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively. [Remark] Standard cage types used for the above bearings are described earlier in this section.

# Angular contact ball bearings (matched pair)

$d$  (50) ~ (60) mm



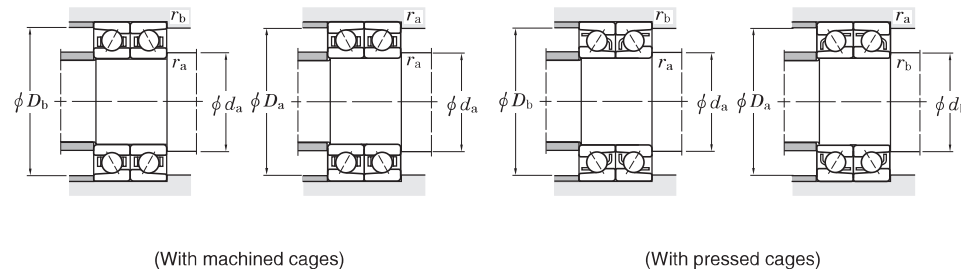
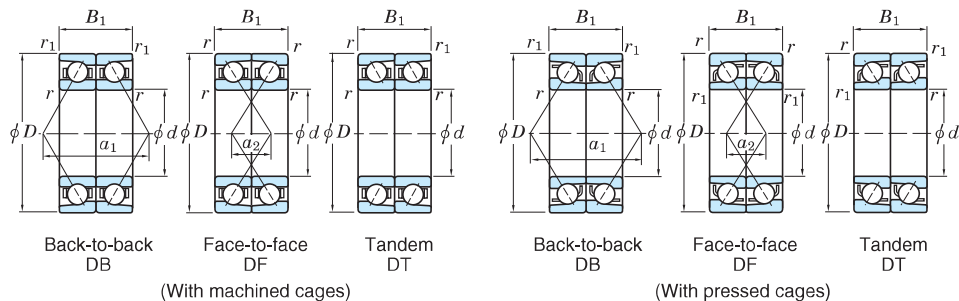
Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor $f_0$	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>			Load center spread (mm)		Mounting dimensions (mm)						(Refer.) Mass (kg)
$d$	$D$	$B_1$	$r_{min.}$	$r_{1 min.}$	With machined cages		With pressed cages		$C_u$	$C_{0r}$		$f_0$	Grease lub.	Oil lub.	Back-to-back DB	Face-to-face DF	Tandem DT	$a_1$	$a_2$	$d_a$ min.	$d_b$ min.	$D_a$ max.	$D_b$ max.	$r_a$ max.	
50	80	32	1	0.6	43.1	36.2	—	—	1.90	—	—	5 500	7 400	7010BDB	7010BDF	7010BDT	70.5	38.5	55.5	—	74.5	75.5	1	0.6	0.580
	80	32	1	0.6	52.7	43.9	—	—	2.50	—	15.7	10 000	13 000	7010CDB	7010CDF	7010CDT	33.6	1.6	55.5	—	74.5	75.5	1	0.6	0.580
	90	40	1.1	0.6	80.0	58.7	83.8	62.9	3.60	3.85	—	6 800	8 500	7210DB	7210DF	7210DT	60.7	20.7	57	54.5	83	85.5	1	0.6	0.970
	90	40	1.1	0.6	72.5	53.5	75.9	57.3	3.15	3.35	—	5 100	6 800	7210BDB	7210BDF	7210BDT	79.2	39.2	57	54.5	83	85.5	1	0.6	0.970
	90	40	1.1	0.6	86.9	63.6	91.0	68.1	4.10	4.40	14.6	9 400	12 000	7210CDB	7210CDF	7210CDT	38.9	1.1	57	54.5	83	85.5	1	0.6	0.970
	110	54	2	1	142	96.3	151	105	6.70	7.35	—	5 800	7 300	7310DB	7310DF	7310DT	74.4	20.4	60	55.5	100	104.5	2	1	2.28
	110	54	2	1	131	88.6	138	96.6	5.80	6.30	—	4 400	5 800	7310BDB	7310BDF	7310BDT	95.8	41.8	60	55.5	100	104.5	2	1	2.28
	110	54	2	1	153	103	162	112	7.70	8.40	13.4	8 000	11 000	7310CDB	7310CDF	7310CDT	49.0	5.0	60	55.5	100	104.5	2	1	2.28
	130	62	2.1	1.1	198	131	—	—	9.85	—	—	3 800	5 500	7410DB	7410DF	7410DT	83.3	21.3	62	—	118	123	2	1	3.84
	130	62	2.1	1.1	183	121	—	—	8.45	—	—	3 300	4 900	7410BDB	7410BDF	7410BDT	106.9	44.9	62	—	118	123	2	1	3.84
55	80	26	1	0.6	40.0	37.0	—	—	1.95	—	16.3	10 000	14 000	7911CDB	7911CDF	7911CDT	31.1	5.1	60.5	—	74.5	75.5	1	0.6	0.356
	90	36	1.1	0.6	63.2	52.5	—	—	2.95	—	—	6 600	8 300	7011DB	7011DF	7011DT	59.9	23.9	62	—	83	85.5	1	0.6	0.840
	90	36	1.1	0.6	56.7	47.5	—	—	2.55	—	—	5 000	6 600	7011BDB	7011BDF	7011BDT	78.8	42.8	62	—	83	85.5	1	0.6	0.840
	90	36	1.1	0.6	69.3	57.3	—	—	3.35	—	15.5	9 100	12 000	7011CDB	7011CDF	7011CDT	37.4	1.4	62	—	83	85.5	1	0.6	0.840
	100	42	1.5	1	98.9	74.2	104	79.6	4.60	4.90	—	6 100	7 600	7211DB	7211DF	7211DT	66.6	24.6	63.5	60.5	91.5	94.5	1.5	1	1.27
	100	42	1.5	1	89.6	67.6	93.8	72.4	3.95	4.25	—	4 600	6 100	7211BDB	7211BDF	7211BDT	87.3	45.3	63.5	60.5	91.5	94.5	1.5	1	1.27
	100	42	1.5	1	107	80.4	112	86.1	5.20	5.60	14.6	8 400	11 000	7211CDB	7211CDF	7211CDT	42.2	0.2	63.5	60.5	91.5	94.5	1.5	1	1.27
	120	58	2	1	164	113	174	123	7.90	8.60	—	5 400	6 700	7311DB	7311DF	7311DT	80.4	22.4	65	60.5	110	114.5	2	1	2.90
	120	58	2	1	151	104	160	113	6.80	7.40	—	4 000	5 400	7311BDB	7311BDF	7311BDT	103.7	45.7	65	60.5	110	114.5	2	1	2.90
	120	58	2	1	176	121	187	132	9.00	9.85	13.4	7 400	9 800	7311CDB	7311CDF	7311CDT	52.9	5.1	65	60.5	110	114.5	2	1	2.90
	140	66	2.1	1.1	241	165	—	—	12.8	—	—	3 500	5 000	7411DB	7411DF	7411DT	89.9	23.9	67	—	128	133	2	1	4.72
	140	66	2.1	1.1	224	153	—	—	11.0	—	—	3 000	4 500	7411BDB	7411BDF	7411BDT	115.7	49.7	67	—	128	133	2	1	4.72
60	85	26	1	0.6	47.2	43.6	—	—	2.35	—	16.3	9 100	13 000	7912CDB	7912CDF	7912CDT	32.6	6.6	65.5	—	79.5	80.5	1	0.6	0.374
	95	36	1.1	0.6	64.8	56.1	—	—	3.10	—	—	6 200	7 700	7012DB	7012DF	7012DT	62.8	26.8	67	—	88	90.5	1	0.6	0.900
	95	36	1.1	0.6	58.1	50.7	—	—	2.70	—	—	4 600	6 200	7012BDB	7012BDF	7012BDT	83.0	47.0	67	—	88	90.5	1	0.6	0.900
	95	36	1.1	0.6	71.2	61.3	—	—	3.50	—	15.7	8 500	11 000	7012CDB	7012CDF	7012CDT	38.8	2.8	67	—	88	90.5	1	0.6	0.900
	110	44	1.5	1	120	91.5	125	98.0	5.65	6.05	—	5 500	6 900	7212DB	7212DF	7212DT	72.3	28.3	68.5	65.5	101.5	104.5	1.5	1	1.64

[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cages or molded cages.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively. [Remark] Standard cage types used for the above bearings are described earlier in this section.

Angular contact ball bearings (matched pair)

d (60) ~ (70) mm



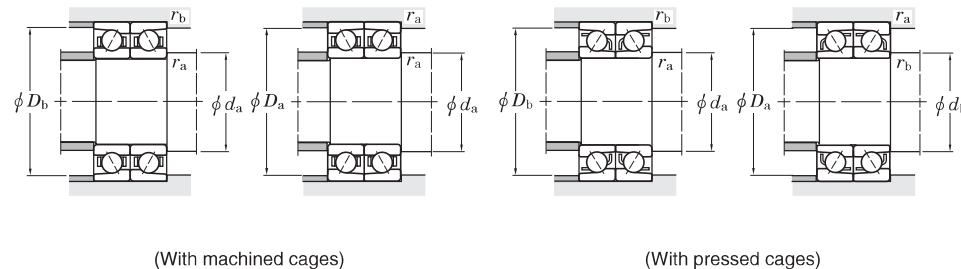
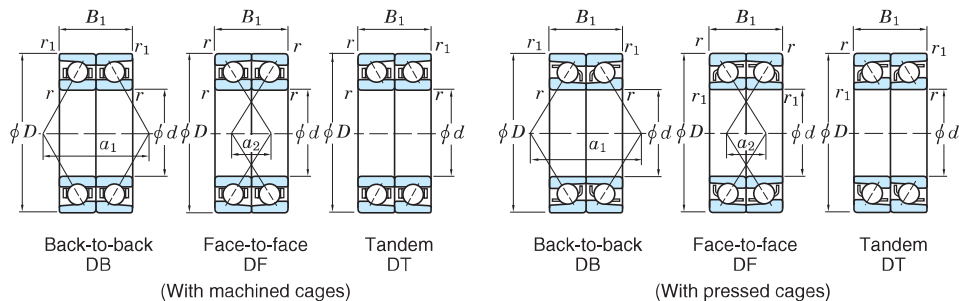
Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor $f_0$	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>			Load center spread (mm)		Mounting dimensions (mm)						(Refer.) Mass (kg)
d	D	B <sub>1</sub>	r <sub>min.</sub>	r <sub>1 min.</sub>	With machined cages		With pressed cages		C <sub>u</sub>	C <sub>0r</sub>		C <sub>r</sub>	C <sub>0r</sub>	Grease lub.	Oil lub.	Back-to-back DB	Face-to-face DF	Tandem DT	a <sub>1</sub>	a <sub>2</sub>	d <sub>a min.</sub>	d <sub>b min.</sub>	D <sub>a max.</sub>	D <sub>b max.</sub>	
60	110	44	1.5	1	108	83.3	114	89.2	4.90	5.25	—	4 100	5 500	7212BDB	7212BDF	7212BDT	95.0	51.0	68.5	65.5	101.5	104.5	1.5	1	1.64
	110	44	1.5	1	130	99.0	136	106	6.45	6.90	14.5	7 500	10 000	7212CDB	7212CDF	7212CDT	45.3	1.3	68.5	65.5	101.5	104.5	1.5	1	1.64
	130	62	2.1	1.1	188	131	199	143	9.15	10.0	—	5 000	6 200	7312DB	7312DF	7312DT	86.5	24.5	72	67	118	123	2	1	3.62
	130	62	2.1	1.1	172	121	183	132	7.90	8.60	—	3 700	5 000	7312BDB	7312BDF	7312BDT	111.6	49.6	72	67	118	123	2	1	3.62
	130	62	2.1	1.1	201	141	213	153	10.5	11.4	13.4	6 800	9 100	7312CDB	7312CDF	7312CDT	56.7	5.3	72	67	118	123	2	1	3.62
	150	70	2.1	1.1	262	187	—	—	13.7	—	—	3 200	4 600	7412DB	7412DF	7412DT	97.0	27.0	72	—	138	143	2	1	5.70
	150	70	2.1	1.1	243	173	—	—	11.8	—	—	2 800	4 100	7412BDB	7412BDF	7412BDT	125.1	55.1	72	—	138	143	2	1	5.70
65	90	26	1	0.6	42.2	42.3	—	—	2.20	—	16.5	8 600	12 000	7913CDB	7913CDF	7913CDT	33.8	7.8	70.5	—	84.5	85.5	1	0.6	0.410
	100	36	1.1	0.6	68.3	62.8	—	—	3.40	—	—	5 800	7 200	7013DB	7013DF	7013DT	65.9	29.9	72	—	93	95.5	1	0.6	0.940
	100	36	1.1	0.6	61.2	56.6	—	—	2.95	—	—	4 300	5 800	7013BDB	7013BDF	7013BDT	87.6	51.6	72	—	93	95.5	1	0.6	0.940
	100	36	1.1	0.6	75.2	68.7	—	—	3.85	—	15.9	7 900	11 000	7013CDB	7013CDF	7013CDT	40.2	4.2	72	—	93	95.5	1	0.6	0.940
	120	46	1.5	1	137	108	143	116	6.65	7.10	—	5 200	6 400	7213DB	7213DF	7213DT	76.4	30.4	73.5	70.5	111.5	114.5	1.5	1	2.04
	120	46	1.5	1	124	98.7	129	105	5.80	6.15	—	3 900	5 200	7213BDB	7213BDF	7213BDT	100.6	54.6	73.5	70.5	111.5	114.5	1.5	1	2.04
	120	46	1.5	1	148	117	155	125	7.60	8.10	14.6	7 100	9 400	7213CDB	7213CDF	7213CDT	47.8	1.8	73.5	70.5	111.5	114.5	1.5	1	2.04
	140	66	2.1	1.1	213	151	225	164	10.3	11.3	—	4 600	5 800	7313DB	7313DF	7313DT	92.5	26.5	77	72	128	133	2	1	4.44
	140	66	2.1	1.1	195	139	207	151	8.90	9.70	—	3 500	4 600	7313BDB	7313BDF	7313BDT	119.4	53.4	77	72	128	133	2	1	4.44
	140	66	2.1	1.1	228	161	242	176	11.8	12.9	13.4	6 300	8 500	7313CDB	7313CDF	7313CDT	60.6	5.4	77	72	128	133	2	1	4.44
	160	74	2.1	1.1	282	209	—	—	14.8	—	—	3 000	4 300	7413DB	7413DF	7413DT	102.9	28.9	77	—	148	153	2	1	6.82
	160	74	2.1	1.1	262	194	—	—	12.7	—	—	2 600	3 900	7413BDB	7413BDF	7413BDT	132.7	58.7	77	—	148	153	2	1	6.82
	70	100	32	1	0.6	58.8	58.0	—	—	3.05	—	16.4	7 800	11 000	7914CDB	7914CDF	7914CDT	38.8	6.8	75.5	—	94.5	95.5	1	0.6
110		40	1.1	0.6	86.7	78.7	—	—	4.30	—	—	5 300	6 600	7014DB	7014DF	7014DT	72.0	32.0	77	—	103	105.5	1	0.6	1.32
110		40	1.1	0.6	77.7	71.1	—	—	3.75	—	—	4 000	5 300	7014BDB	7014BDF	7014BDT	95.5	55.5	77	—	103	105.5	1	0.6	1.32
110		40	1.1	0.6	95.3	86.0	—	—	4.90	—	15.7	7 300	9 700	7014CDB	7014CDF	7014CDT	44.1	4.1	77	—	103	105.5	1	0.6	1.32
125		48	1.5	1	142	111	155	127	6.85	7.80	—	4 900	6 100	7214DB	7214DF	7214DT	80.3	32.3	78.5	75.5	116.5	119.5	1.5	1	2.24
125		48	1.5	1	128	101	140	116	5.90	6.75	—	3 700	4 900	7214BDB	7214BDF	7214BDT	105.8	57.8	78.5	75.5	116.5	119.5	1.5	1	2.24
125		48	1.5	1	154	120	168	138	7.75	8.90	14.6	6 700	8 900	7214CDB	7214CDF	7214CDT	50.1	2.1	78.5	75.5	116.5	119.5	1.5	1	2.24
150		70	2.1	1.1	239	172	253	187	11.4	12.4	—	4 300	5 400	7314DB	7314DF	7314DT	98.5	28.5	82	77	138	143	2	1	5.40

[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cages or molded cages.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively. [Remark] Standard cage types used for the above bearings are described earlier in this section.

Angular contact ball bearings (matched pair)

d (70) ~ (80) mm



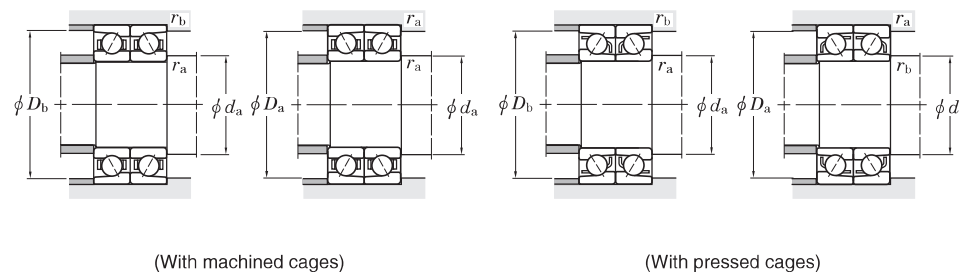
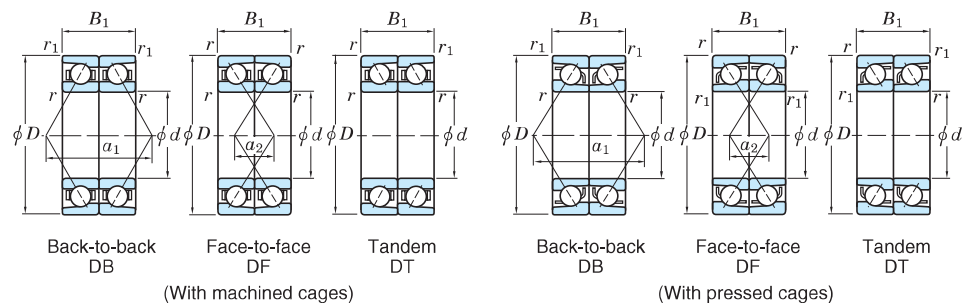
Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>			Load center spread (mm)		Mounting dimensions (mm)						(Refer.) Mass (kg)
d	D	B <sub>1</sub>	r <sub>min.</sub>	r <sub>1 min.</sub>	With machined cages		With pressed cages		C <sub>u</sub>	f <sub>0</sub>		Grease lub.	Oil lub.	Back-to-back DB	Face-to-face DF	Tandem DT	a <sub>1</sub>	a <sub>2</sub>	d <sub>a min.</sub>	d <sub>b min.</sub>	D <sub>a max.</sub>	D <sub>b max.</sub>	r <sub>a max.</sub>	r <sub>b max.</sub>	
70	150	70	2.1	1.1	219	158	232	172	9.80	10.7	—	3 200	4 300	7314BDB	7314BDF	7314BDT	127.3	57.3	82	77	138	143	2	1	5.40
	150	70	2.1	1.1	256	184	272	200	13.0	14.2	13.4	5 900	7 900	7314CDB	7314CDF	7314CDT	64.5	5.5	82	77	138	143	2	1	5.40
	180	84	3	1.1	303	230	—	—	10.6	—	—	2 700	3 900	7414DB	7414DF	7414DT	115.3	31.3	84	—	166	173	2.5	1	9.98
	180	84	3	1.1	301	237	—	—	10.9	—	—	2 300	3 500	7414BDB	7414BDF	7414BDT	148.4	64.4	84	—	166	173	2.5	1	9.98
75	105	32	1	0.6	59.7	60.9	—	—	3.15	—	16.5	7 400	9 800	7915CDB	7915CDF	7915CDT	40.1	8.1	80.5	—	99.5	100.5	1	0.6	0.700
	115	40	1.1	0.6	88.6	83.4	—	—	4.50	—	—	5 000	6 300	7015DB	7015DF	7015DT	74.9	34.9	82	—	108	110.5	1	0.6	1.38
	115	40	1.1	0.6	79.3	75.2	—	—	3.95	—	—	3 800	5 000	7015BDB	7015BDF	7015BDT	99.7	59.7	82	—	108	110.5	1	0.6	1.38
	115	40	1.1	0.6	97.6	91.3	—	—	5.10	—	15.9	6 900	9 200	7015CDB	7015CDF	7015CDT	45.5	5.5	82	—	108	110.5	1	0.6	1.38
	130	50	1.5	1	161	130	168	139	7.90	8.40	—	4 600	5 800	7215DB	7215DF	7215DT	84.2	34.2	83.5	80.5	121.5	124.5	1.5	1	2.46
	130	50	1.5	1	146	119	152	127	6.85	7.30	—	3 500	4 600	7215BDB	7215BDF	7215BDT	111.0	61.0	83.5	80.5	121.5	124.5	1.5	1	2.46
	130	50	1.5	1	175	141	183	151	8.95	9.55	14.6	6 400	8 500	7215CDB	7215CDF	7215CDT	52.5	2.5	83.5	80.5	121.5	124.5	1.5	1	2.46
	160	74	2.1	1.1	260	194	276	212	12.4	13.5	—	4 000	5 000	7315DB	7315DF	7315DT	104.9	30.9	87	82	148	153	2	1	6.30
	160	74	2.1	1.1	239	178	253	195	10.7	11.7	—	3 000	4 000	7315BDB	7315BDF	7315BDT	135.6	61.6	87	82	148	153	2	1	6.30
	160	74	2.1	1.1	279	208	296	227	14.2	15.5	13.4	5 500	7 400	7315CDB	7315CDF	7315CDT	68.5	5.5	87	82	148	153	2	1	6.30
	190	90	3	1.1	348	282	—	—	12.6	—	—	2 500	3 600	7415DB	7415DF	7415DT	122.7	32.7	89	—	176	183	2.5	1	11.8
	190	90	3	1.1	322	261	—	—	11.6	—	—	2 200	3 300	7415BDB	7415BDF	7415BDT	157.9	67.9	89	—	176	183	2.5	1	11.8
80	110	32	1	0.6	60.5	63.2	—	—	3.25	—	16.5	7 000	9 300	7916CDB	7916CDF	7916CDT	41.5	9.5	85.5	—	104.5	105.5	1	0.6	0.736
	125	44	1.1	0.6	108	101	—	—	5.50	—	—	4 600	5 800	7016DB	7016DF	7016DT	81.2	37.2	87	—	118	120.5	1	0.6	1.86
	125	44	1.1	0.6	97.1	91.3	—	—	4.75	—	—	3 500	4 600	7016BDB	7016BDF	7016BDT	108.0	64.0	87	—	118	120.5	1	0.6	1.86
	125	44	1.1	0.6	119	111	—	—	6.20	—	15.7	6 400	8 500	7016CDB	7016CDF	7016CDT	49.5	5.5	87	—	118	120.5	1	0.6	1.86
	140	52	2	1	173	143	181	152	8.25	8.80	—	4 300	5 400	7216DB	7216DF	7216DT	89.5	37.5	90	85.5	130	134.5	2	1	3.00
	140	52	2	1	157	130	163	139	7.15	7.60	—	3 200	4 300	7216BDB	7216BDF	7216BDT	118.3	66.3	90	85.5	130	134.5	2	1	3.00
	140	52	2	1	189	155	197	165	9.40	10.0	14.7	5 900	7 900	7216CDB	7216CDF	7216CDT	55.5	3.5	90	85.5	130	134.5	2	1	3.00
	170	78	2.1	1.1	282	218	299	238	13.5	14.7	—	3 800	4 700	7316DB	7316DF	7316DT	111.2	33.2	92	87	158	163	2	1	7.70
	170	78	2.1	1.1	259	200	274	218	11.6	12.7	—	2 800	3 800	7316BDB	7316BDF	7316BDT	143.9	65.9	92	87	158	163	2	1	7.70
	170	78	2.1	1.1	302	233	321	255	15.4	16.8	13.5	5 200	6 900	7316CDB	7316CDF	7316CDT	72.5	5.5	92	87	158	163	2	1	7.70
	200	96	3	1.1	391	332	—	—	14.4	—	—	2 400	3 400	7416DB	7416DF	7416DT	130.0	34.0	94	—	186	193	2.5	1	12.0

[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cages or molded cages.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively. [Remark] Standard cage types used for the above bearings are described earlier in this section.

# Angular contact ball bearings (matched pair)

$d$  (80) ~ (95) mm



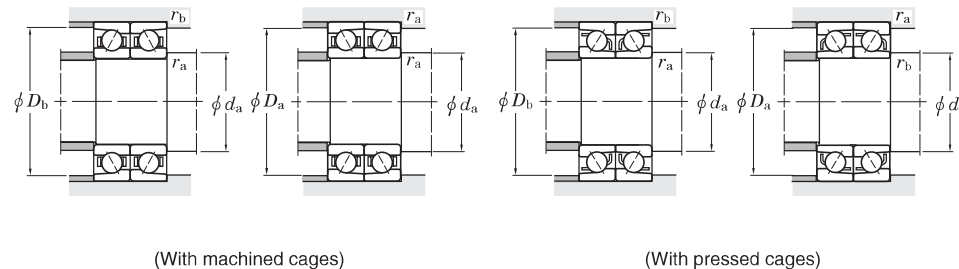
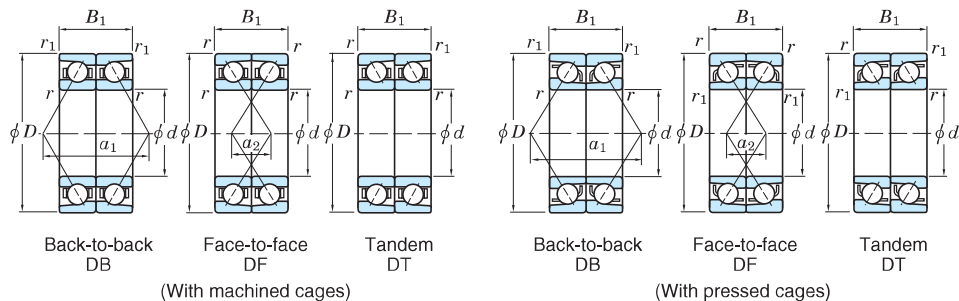
Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor $f_0$	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>			Load center spread (mm)		Mounting dimensions (mm)						(Refer.) Mass (kg)
$d$	$D$	$B_1$	$r_{min.}$	$r_{1min.}$	With machined cages		With pressed cages		$C_u$	$C_{0u}$		$f_0$	Grease lub.	Oil lub.	Back-to-back DB	Face-to-face DF	Tandem DT	$a_1$	$a_2$	$d_a$ min.	$d_b$ min.	$D_a$ max.	$D_b$ max.	$r_a$ max.	
<b>80</b>	200	96	3	1.1	363	307	—	—	13.3	—	—	2 100	3 100	<b>7416BDB</b>	<b>7416BDF</b>	<b>7416BDT</b>	167.2	71.2	94	—	186	193	2.5	1	12.0
<b>85</b>	120	36	1.1	0.6	79.0	81.3	—	—	4.20	—	16.5	6 500	8 600	<b>7917CDB</b>	<b>7917CDF</b>	<b>7917CDT</b>	45.5	9.5	92	—	113	115.5	1	0.6	1.05
	130	44	1.1	0.6	111	107	—	—	5.55	—	—	4 400	5 500	<b>7017DB</b>	<b>7017DF</b>	<b>7017DT</b>	84.7	40.7	92	—	123	125.5	1	0.6	1.94
	130	44	1.1	0.6	99.2	96.7	—	—	4.85	—	—	3 300	4 400	<b>7017BDB</b>	<b>7017BDF</b>	<b>7017BDT</b>	113.0	69.0	92	—	123	125.5	1	0.6	1.94
	130	44	1.1	0.6	122	117	—	—	6.30	—	15.9	6 000	8 000	<b>7017CDB</b>	<b>7017CDF</b>	<b>7017CDT</b>	51.1	7.1	92	—	123	125.5	1	0.6	1.94
	150	56	2	1	200	167	209	178	9.40	10.0	—	4 000	5 000	<b>7217DB</b>	<b>7217DF</b>	<b>7217DT</b>	95.9	39.9	95	90.5	140	144.5	2	1	3.74
	150	56	2	1	181	152	189	162	8.15	8.70	—	3 000	4 000	<b>7217BDB</b>	<b>7217BDF</b>	<b>7217BDT</b>	126.6	70.6	95	90.5	140	144.5	2	1	3.74
	150	56	2	1	218	181	227	193	10.7	11.4	14.7	5 500	7 400	<b>7217CDB</b>	<b>7217CDF</b>	<b>7217CDT</b>	59.5	3.5	95	90.5	140	144.5	2	1	3.74
	180	82	3	1.1	304	243	322	265	14.6	15.9	—	3 500	4 400	<b>7317DB</b>	<b>7317DF</b>	<b>7317DT</b>	117.5	35.5	99	92	166	173	2.5	1	9.06
	180	82	3	1.1	279	223	295	244	12.6	13.7	—	2 700	3 500	<b>7317BDB</b>	<b>7317BDF</b>	<b>7317BDT</b>	152.2	70.2	99	92	166	173	2.5	1	9.06
	180	82	3	1.1	326	261	346	284	16.7	18.2	13.5	4 900	6 500	<b>7317CDB</b>	<b>7317CDF</b>	<b>7317CDT</b>	76.5	5.5	99	92	166	173	2.5	1	9.06
	210	104	4	1.5	414	360	—	—	15.3	—	—	2 300	3 300	<b>7417DB</b>	<b>7417DF</b>	<b>7417DT</b>	137.5	33.5	103	—	192	201.5	3	1.5	17.1
	210	104	4	1.5	384	334	—	—	14.2	—	—	2 000	3 000	<b>7417BDB</b>	<b>7417BDF</b>	<b>7417BDT</b>	176.2	72.2	103	—	192	201.5	3	1.5	17.1
<b>90</b>	125	36	1.1	0.6	80.3	85.2	—	—	4.25	—	16.6	6 200	8 200	<b>7918CDB</b>	<b>7918CDF</b>	<b>7918CDT</b>	46.8	10.8	97	—	118	120.5	1	0.6	1.10
	140	48	1.5	1	132	127	—	—	6.45	—	—	4 100	5 100	<b>7018DB</b>	<b>7018DF</b>	<b>7018DT</b>	90.4	42.4	98.5	—	131.5	134.5	1.5	1	2.52
	140	48	1.5	1	119	114	—	—	5.60	—	—	3 100	4 100	<b>7018BDB</b>	<b>7018BDF</b>	<b>7018BDT</b>	120.5	72.5	98.5	—	131.5	134.5	1.5	1	2.52
	140	48	1.5	1	146	138	—	—	7.30	—	15.7	5 700	7 500	<b>7018CDB</b>	<b>7018CDF</b>	<b>7018CDT</b>	54.8	6.8	98.5	—	131.5	134.5	1.5	1	2.52
	160	60	2	1	229	193	239	206	10.6	11.3	—	3 800	4 700	<b>7218DB</b>	<b>7218DF</b>	<b>7218DT</b>	102.2	42.2	100	95.5	150	154.5	2	1	4.60
	160	60	2	1	207	176	217	188	9.15	9.80	—	2 800	3 800	<b>7218BDB</b>	<b>7218BDF</b>	<b>7218BDT</b>	134.9	74.9	100	95.5	150	154.5	2	1	4.60
	160	60	2	1	249	209	260	223	12.0	12.8	14.6	5 200	6 900	<b>7218CDB</b>	<b>7218CDF</b>	<b>7218CDT</b>	63.5	3.5	100	95.5	150	154.5	2	1	4.60
	190	86	3	1.1	327	270	346	294	11.8	12.8	—	3 300	4 200	<b>7318DB</b>	<b>7318DF</b>	<b>7318DT</b>	123.9	37.9	104	97	176	183	2.5	1	10.6
	190	86	3	1.1	300	248	317	270	10.8	11.8	—	2 500	3 300	<b>7318BDB</b>	<b>7318BDF</b>	<b>7318BDT</b>	160.5	74.5	104	97	176	183	2.5	1	10.6
	190	86	3	1.1	351	289	372	315	12.6	13.8	13.5	4 600	6 100	<b>7318CDB</b>	<b>7318CDF</b>	<b>7318CDT</b>	80.5	5.5	104	97	176	183	2.5	1	10.6
	225	108	4	1.5	439	393	—	—	16.2	—	—	2 100	3 100	<b>7418DB</b>	<b>7418DF</b>	<b>7418DT</b>	145.0	37.0	108	—	207	216.5	3	1.5	22.8
	225	108	4	1.5	406	364	—	—	15.0	—	—	1 800	2 800	<b>7418BDB</b>	<b>7418BDF</b>	<b>7418BDT</b>	186.2	78.2	108	—	207	216.5	3	1.5	22.8
<b>95</b>	130	36	1.1	0.6	81.6	88.3	—	—	4.30	—	16.5	5 900	7 900	<b>7919CDB</b>	<b>7919CDF</b>	<b>7919CDT</b>	48.1	12.1	102	—	123	125.5	1	0.6	1.15
	145	48	1.5	1	135	134	—	—	6.55	—	—	3 900	4 800	<b>7019DB</b>	<b>7019DF</b>	<b>7019DT</b>	94.5	46.5	103.5	—	136.5	139.5	1.5	1	2.64

[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cages or molded cages.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively. [Remark] Standard cage types used for the above bearings are described earlier in this section.

Angular contact ball bearings (matched pair)

d (95) ~ (105) mm



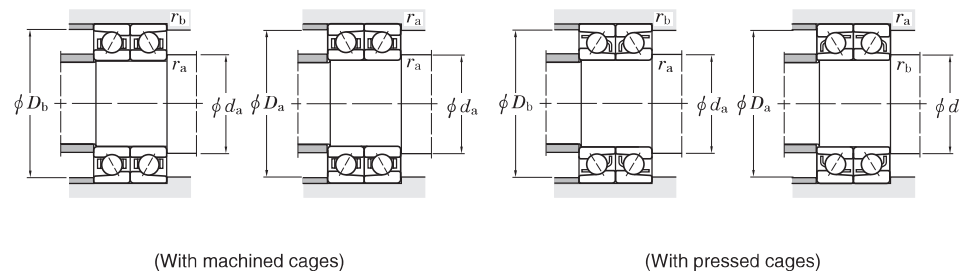
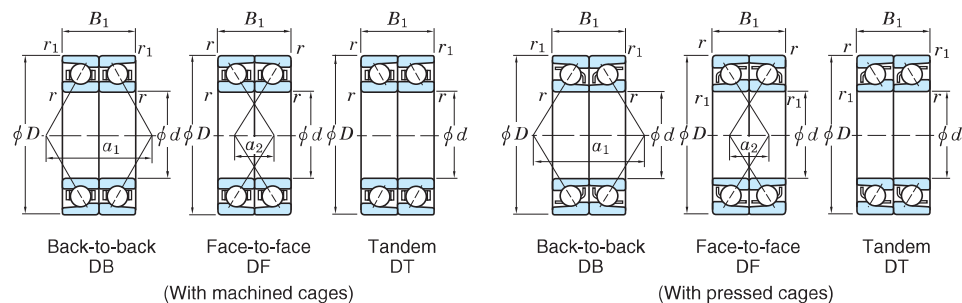
Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor $f_0$	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>			Load center spread (mm)		Mounting dimensions (mm)						(Refer.) Mass (kg)		
d	D	B <sub>1</sub>	r <sub>min.</sub>	r <sub>1 min.</sub>	With machined cages		With pressed cages		C <sub>u</sub>	C <sub>0r</sub>		C <sub>r</sub>	C <sub>0r</sub>	Grease lub.	Oil lub.	Back-to-back DB	Face-to-face DF	Tandem DT	a <sub>1</sub>	a <sub>2</sub>	d <sub>a min.</sub>	d <sub>b min.</sub>	D <sub>a max.</sub>	D <sub>b max.</sub>		r <sub>a max.</sub>	r <sub>b max.</sub>
95	145	48	1.5	1	121	121	—	—	5.70	—	—	—	2 900	3 900	7019BDB	7019BDF	7019BDT	126.4	78.4	103.5	—	136.5	139.5	1.5	1	2.64	
	145	48	1.5	1	149	147	—	—	7.40	—	—	15.9	5 300	7 100	7019CDB	7019CDF	7019CDT	56.7	8.7	103.5	—	136.5	139.5	1.5	1	2.64	
	170	64	2.1	1.1	248	207	260	221	11.0	11.8	—	—	3 500	4 400	7219DB	7219DF	7219DT	108.5	44.5	107	102	158	163	2	1	5.56	
	170	64	2.1	1.1	224	188	235	201	9.55	10.2	—	—	2 700	3 500	7219BDB	7219BDF	7219BDT	143.2	79.2	107	102	158	163	2	1	5.56	
	170	64	2.1	1.1	269	224	282	240	12.6	13.5	14.6	—	4 900	6 500	7219CDB	7219CDF	7219CDT	67.5	3.5	107	102	158	163	2	1	5.56	
	200	90	3	1.1	350	298	371	325	12.7	13.8	—	—	3 200	4 000	7319DB	7319DF	7319DT	130.2	40.2	109	102	186	193	2.5	1	12.2	
	200	90	3	1.1	321	273	340	298	11.6	12.7	—	—	2 400	3 200	7319BDB	7319BDF	7319BDT	168.8	78.8	109	102	186	193	2.5	1	12.2	
	200	90	3	1.1	376	319	398	348	13.6	14.8	13.5	—	4 400	5 800	7319CDB	7319CDF	7319CDT	84.5	5.5	109	102	186	193	2.5	1	12.2	
100	140	40	1.1	0.6	113	117	—	—	5.65	—	16.3	—	5 500	7 400	7920CDB	7920CDF	7920CDT	52.1	12.1	107	—	133	135.5	1	0.6	1.55	
	150	48	1.5	1	139	141	—	—	6.75	—	—	—	3 800	4 700	7020DB	7020DF	7020DT	96.2	48.2	108.5	—	141.5	144.5	1.5	1	2.74	
	150	48	1.5	1	124	127	—	—	5.90	—	—	—	2 800	3 800	7020BDB	7020BDF	7020BDT	128.9	80.9	108.5	—	141.5	144.5	1.5	1	2.74	
	150	48	1.5	1	153	154	—	—	7.65	—	16.0	—	5 200	6 900	7020CDB	7020CDF	7020CDT	57.5	9.5	108.5	—	141.5	144.5	1.5	1	2.74	
	180	68	2.1	1.1	279	235	292	252	12.2	13.0	—	—	3 300	4 100	7220DB	7220DF	7220DT	115.4	47.4	112	—	168	173	2	1	6.64	
	180	68	2.1	1.1	252	214	264	229	10.5	11.3	—	—	2 500	3 300	7220BDB	7220BDF	7220BDT	152.3	84.3	112	—	168	173	2	1	6.64	
	180	68	2.1	1.1	303	254	317	273	13.9	14.8	14.6	—	4 600	6 100	7220CDB	7220CDF	7220CDT	71.8	3.8	112	107	168	173	2	1	6.64	
	215	94	3	1.1	373	323	421	387	13.2	15.9	—	—	2 900	3 600	7320DB	7320DF	7320DT	138.8	44.8	114	—	201	208	2.5	1	15.1	
	215	94	3	1.1	342	297	386	356	12.2	14.6	—	—	2 200	2 900	7320BDB	7320BDF	7320BDT	180.4	86.4	114	—	201	208	2.5	1	15.1	
	215	94	3	1.1	400	346	451	415	14.2	17.0	13.4	—	4 000	5 300	7320CDB	7320CDF	7320CDT	89.6	4.4	114	107	201	208	2.5	1	15.1	
	105	145	40	1.1	0.6	115	123	—	—	5.75	—	16.4	—	5 300	7 100	7921CDB	7921CDF	7921CDT	53.5	13.5	112	—	138	140.5	1	0.6	1.62
		160	52	2	1	162	164	—	—	7.60	—	—	—	3 500	4 400	7021DB	7021DF	7021DT	103.7	51.7	115	—	150	154.5	2	1	3.46
160		52	2	1	145	148	—	—	6.65	—	—	—	2 600	3 500	7021BDB	7021BDF	7021BDT	137.2	85.2	115	—	150	154.5	2	1	3.46	
160		52	2	1	178	179	—	—	8.60	—	15.9	—	4 800	6 400	7021CDB	7021CDF	7021CDT	62.0	10.0	115	—	150	154.5	2	1	3.46	
190		72	2.1	1.1	303	265	—	—	13.4	—	—	—	3 100	3 900	7221DB	7221DF	7221DT	122.1	50.1	117	—	178	183	2	1	7.90	
190		72	2.1	1.1	275	241	—	—	11.6	—	—	—	2 300	3 100	7221BDB	7221BDF	7221BDT	161.0	89.0	117	—	178	183	2	1	7.90	
190		72	2.1	1.1	330	287	—	—	15.2	—	14.6	—	4 300	5 700	7221CDB	7221CDF	7221CDT	75.9	3.9	117	—	178	183	2	1	7.90	
225		98	3	1.1	422	386	—	—	15.5	—	—	—	2 800	3 500	7321DB	7321DF	7321DT	144.3	46.3	119	—	211	218	2.5	1	17.2	
225		98	3	1.1	387	355	—	—	14.3	—	—	—	2 100	2 800	7321BDB	7321BDF	7321BDT	187.5	89.5	119	—	211	218	2.5	1	17.2	

[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cages or molded cages.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively. [Remark] Standard cage types used for the above bearings are described earlier in this section.

# Angular contact ball bearings (matched pair)

$d$  (105) ~ (130) mm



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor $f_0$	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>			Load center spread (mm)		Mounting dimensions (mm)						(Refer.) Mass (kg)
$d$	$D$	$B_1$	$r_{min.}$	$r_{1 min.}$	With machined cages		With pressed cages		$C_u$	$C_{0r}$		$f_0$	Grease lub.	Oil lub.	Back-to-back DB	Face-to-face DF	Tandem DT	$a_1$	$a_2$	$d_a$ min.	$d_b$ min.	$D_a$ max.	$D_b$ max.	$r_a$ max.	
<b>105</b>	225	98	3	1.1	452	413	—	—	16.6	—	13.4	3 900	5 100	<b>7321CDB</b>	<b>7321CDF</b>	<b>7321CDT</b>	93.2	4.8	119	—	211	218	2.5	1	17.2
<b>110</b>	150	40	1.1	0.6	117	129	—	—	5.85	—	16.5	5 100	6 800	<b>7922CDB</b>	<b>7922CDF</b>	<b>7922CDT</b>	54.8	14.8	117	—	143	145.5	1	0.6	1.68
	170	56	2	1	187	186	—	—	8.55	—	—	3 300	4 200	<b>7022DB</b>	<b>7022DF</b>	<b>7022DT</b>	108.9	52.9	120	—	160	164.5	2	1	4.28
	170	56	2	1	167	167	—	—	7.45	—	—	2 500	3 300	<b>7022BDB</b>	<b>7022BDF</b>	<b>7022BDT</b>	145.5	89.5	120	—	160	164.5	2	1	4.28
	170	56	2	1	205	203	—	—	9.70	—	15.7	4 600	6 100	<b>7022CDB</b>	<b>7022CDF</b>	<b>7022CDT</b>	65.5	9.5	120	—	160	164.5	2	1	4.28
	200	76	2.1	1.1	329	297	—	—	14.6	—	—	3 000	3 700	<b>7222DB</b>	<b>7222DF</b>	<b>7222DT</b>	128.7	52.7	122	—	188	193	2	1	9.30
	200	76	2.1	1.1	298	270	—	—	12.7	—	—	2 200	3 000	<b>7222BDB</b>	<b>7222BDF</b>	<b>7222BDT</b>	169.7	93.7	122	—	188	193	2	1	9.30
	200	76	2.1	1.1	357	321	—	—	16.7	—	14.5	4 100	5 400	<b>7222CDB</b>	<b>7222CDF</b>	<b>7222CDT</b>	80.1	4.1	122	—	188	193	2	1	9.30
	240	100	3	1.1	472	452	—	—	17.5	—	—	2 600	3 200	<b>7322DB</b>	<b>7322DF</b>	<b>7322DT</b>	152.7	52.7	124	—	226	233	2.5	1	20.2
	240	100	3	1.1	433	416	—	—	16.1	—	—	1 900	2 600	<b>7322BDB</b>	<b>7322BDF</b>	<b>7322BDT</b>	199.3	99.3	124	—	226	233	2.5	1	20.2
	240	100	3	1.1	505	484	—	—	18.8	—	13.4	3 500	4 700	<b>7322CDB</b>	<b>7322CDF</b>	<b>7322CDT</b>	97.7	2.3	124	—	226	233	2.5	1	20.2
<b>120</b>	165	44	1.1	0.6	146	162	—	—	7.10	—	16.5	4 700	6 200	<b>7924CDB</b>	<b>7924CDF</b>	<b>7924CDT</b>	60.2	16.2	127	—	158	160.5	1	0.6	2.30
	180	56	2	1	196	206	—	—	9.00	—	—	3 100	3 900	<b>7024DB</b>	<b>7024DF</b>	<b>7024DT</b>	114.6	58.6	130	—	170	174.5	2	1	4.54
	180	56	2	1	176	186	—	—	7.85	—	—	2 300	3 100	<b>7024BDB</b>	<b>7024BDF</b>	<b>7024BDT</b>	153.9	97.9	130	—	170	174.5	2	1	4.54
	180	56	2	1	216	226	—	—	10.2	—	16.0	4 300	5 700	<b>7024CDB</b>	<b>7024CDF</b>	<b>7024CDT</b>	68.2	12.2	130	—	170	174.5	2	1	4.54
	215	80	2.1	1.1	354	332	—	—	15.7	—	—	2 700	3 400	<b>7224DB</b>	<b>7224DF</b>	<b>7224DT</b>	137.0	57.0	132	—	203	208	2	1	11.0
	215	80	2.1	1.1	321	302	—	—	13.6	—	—	2 100	2 800	<b>7224BDB</b>	<b>7224BDF</b>	<b>7224BDT</b>	180.5	100.5	132	—	203	208	2	1	11.0
	215	80	2.1	1.1	385	359	—	—	17.9	—	14.6	3 800	5 000	<b>7224CDB</b>	<b>7224CDF</b>	<b>7224CDT</b>	85.0	5.0	132	—	203	208	2	1	11.0
	260	110	3	1.1	500	504	—	—	18.9	—	—	2 400	3 000	<b>7324DB</b>	<b>7324DF</b>	<b>7324DT</b>	164.7	54.7	134	—	246	253	2.5	1	25.2
	260	110	3	1.1	457	462	—	—	17.3	—	—	1 800	2 400	<b>7324BDB</b>	<b>7324BDF</b>	<b>7324BDT</b>	214.4	104.4	134	—	246	253	2.5	1	25.2
	260	110	3	1.1	538	542	—	—	20.3	—	13.7	3 300	4 400	<b>7324CDB</b>	<b>7324CDF</b>	<b>7324CDT</b>	105.9	4.1	134	—	246	253	2.5	1	25.2
<b>130</b>	180	48	1.5	1	177	200	—	—	8.45	—	16.4	4 300	5 700	<b>7926CDB</b>	<b>7926CDF</b>	<b>7926CDT</b>	65.5	17.5	138.5	—	171.5	174.5	1.5	1	3.00
	200	66	2	1	238	251	—	—	10.5	—	—	2 800	3 500	<b>7026DB</b>	<b>7026DF</b>	<b>7026DT</b>	128.3	62.3	140	—	190	194.5	2	1	6.86
	200	66	2	1	213	226	—	—	9.20	—	—	2 100	2 800	<b>7026BDB</b>	<b>7026BDF</b>	<b>7026BDT</b>	171.5	105.5	140	—	190	194.5	2	1	6.86
	200	66	2	1	262	274	—	—	11.9	—	15.9	3 900	5 100	<b>7026CDB</b>	<b>7026CDF</b>	<b>7026CDT</b>	77.2	11.2	140	—	190	194.5	2	1	6.86
	230	80	3	1.1	398	395	—	—	15.2	—	—	2 500	3 200	<b>7226DB</b>	<b>7226DF</b>	<b>7226DT</b>	143.9	63.9	144	—	216	223	2.5	1	12.4

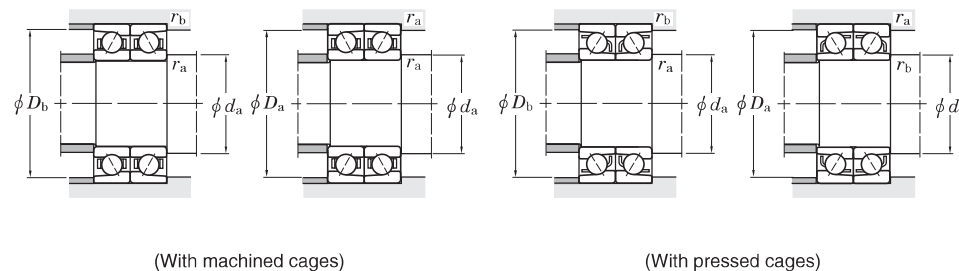
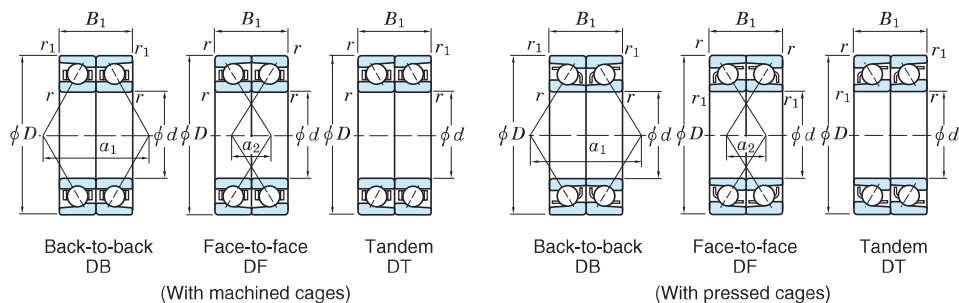
[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cages or molded cages.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively. [Remark] Standard cage types used for the above bearings are described earlier in this section.



# Angular contact ball bearings (matched pair)

$d$  (130) ~ (160) mm



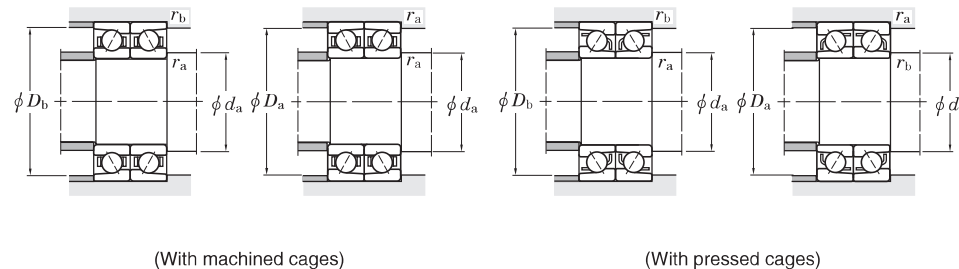
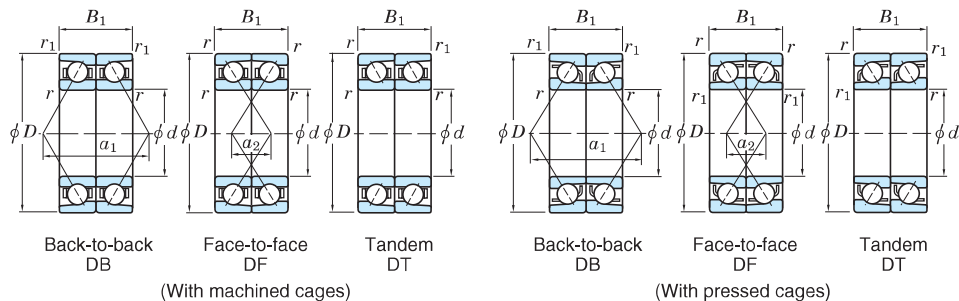
Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor $f_0$	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>			Load center spread (mm)		Mounting dimensions (mm)						(Refer.) Mass (kg)	
$d$	$D$	$B_1$	$r_{min.}$	$r_{1 min.}$	With machined cages		With pressed cages		$C_u$	$C_{0r}$		$f_0$	Grease lub.	Oil lub.	Back-to-back DB	Face-to-face DF	Tandem DT	$a_1$	$a_2$	$d_a$ min.	$d_b$ min.	$D_a$ max.	$D_b$ max.	$r_a$ max.		$r_b$ max.
130	230	80	3	1.1	360	360	—	—	13.9	—	—	1 900	2 500	7226BDB	7226BDF	7226BDT	191.0	111.0	144	—	216	223	2.5	1	12.4	
	230	80	3	1.1	433	428	—	—	16.5	—	14.7	3 500	4 700	7226CDB	7226CDF	7226CDT	88.2	8.2	144	—	216	223	2.5	1	12.4	
	280	116	4	1.5	611	659	—	—	23.7	—	—	2 200	2 700	7326DB	7326DF	7326DT	177.5	61.5	148	—	262	271.5	3	1.5	30.8	
	280	116	4	1.5	507	536	—	—	19.4	—	—	1 600	2 200	7326BDB	7326BDF	7326BDT	230.0	114.0	148	—	262	271.5	3	1.5	30.8	
	280	116	4	1.5	597	629	—	—	22.7	—	13.7	3 000	4 000	7326CDB	7326CDF	7326CDT	112.9	3.1	148	—	262	271.5	3	1.5	30.8	
	140	190	48	1.5	1	179	210	—	—	8.45	—	16.6	4 000	5 400	7928CDB	7928CDF	7928CDT	68.2	20.2	148.5	—	181.5	184.5	1.5	1	3.18
210		66	2	1	243	265	—	—	10.6	—	—	2 600	3 300	7028DB	7028DF	7028DT	134.1	68.1	150	—	200	204.5	2	1	7.28	
210		66	2	1	217	237	—	—	9.25	—	—	2 000	2 600	7028BDB	7028BDF	7028BDT	179.8	113.8	150	—	200	204.5	2	1	7.28	
210		66	2	1	268	290	—	—	12.0	—	16.0	3 600	4 800	7028CDB	7028CDF	7028CDT	79.9	13.9	150	—	200	204.5	2	1	7.28	
250		84	3	1.1	443	468	—	—	17.3	—	—	2 300	2 900	7228DB	7228DF	7228DT	154.6	70.6	154	—	236	243	2.5	1	15.5	
250		84	3	1.1	401	426	—	—	15.7	—	—	1 700	2 300	7228BDB	7228BDF	7228BDT	205.6	121.6	154	—	236	243	2.5	1	15.5	
250		84	3	1.1	483	508	—	—	18.8	—	14.8	3 200	4 300	7228CDB	7228CDF	7228CDT	94.2	10.2	154	—	236	243	2.5	1	15.5	
300		124	4	1.5	668	748	—	—	26.1	—	—	2 000	2 500	7328DB	7328DF	7328DT	189.0	65.0	158	—	282	291.5	3	1.5	37.6	
300		124	4	1.5	613	688	—	—	24.0	—	—	1 500	2 000	7328BDB	7328BDF	7328BDT	246.6	122.6	158	—	282	291.5	3	1.5	37.6	
300		124	4	1.5	717	802	—	—	27.9	—	13.4	2 800	3 700	7328CDB	7328CDF	7328CDT	120.9	3.1	158	—	282	291.5	3	1.5	37.6	
150		210	56	2	1	241	263	—	—	10.9	—	16.3	3 700	4 900	7930CDB	7930CDF	7930CDT	76.2	20.2	160	—	200	204.5	2	1	4.94
		225	70	2.1	1.1	278	308	—	—	11.9	—	—	2 400	3 000	7030DB	7030DF	7030DT	144.2	74.2	162	—	213	218	2	1	8.86
	225	70	2.1	1.1	249	275	—	—	10.4	—	—	1 800	2 400	7030BDB	7030BDF	7030BDT	192.3	122.3	162	—	213	218	2	1	8.86	
	225	70	2.1	1.1	306	337	—	—	13.4	—	16.1	3 300	4 400	7030CDB	7030CDF	7030CDT	85.6	15.6	162	—	213	218	2	1	8.86	
	270	90	3	1.1	504	560	—	—	19.9	—	—	2 100	2 700	7230DB	7230DF	7230DT	166.3	76.3	164	—	256	263	2.5	1	19.5	
	270	90	3	1.1	456	509	—	—	18.1	—	—	1 600	2 100	7230BDB	7230BDF	7230BDT	221.2	131.2	164	—	256	263	2.5	1	19.5	
	270	90	3	1.1	549	607	—	—	21.6	—	14.7	2 900	3 900	7230CDB	7230CDF	7230CDT	101.3	11.3	164	—	256	263	2.5	1	19.5	
	320	130	4	1.5	706	829	—	—	27.9	—	—	1 900	2 300	7330DB	7330DF	7330DT	200.7	70.7	168	—	302	311.5	3	1.5	44.8	
	320	130	4	1.5	645	760	—	—	25.6	—	—	1 400	1 900	7330BDB	7330BDF	7330BDT	262.2	132.2	168	—	302	311.5	3	1.5	44.8	
	320	130	4	1.5	760	891	—	—	30.0	—	13.7	2 600	3 400	7330CDB	7330CDF	7330CDT	128.0	2.0	168	—	302	311.5	3	1.5	44.8	
	160	220	56	2	1	245	289	—	—	10.9	—	16.5	3 500	4 700	7932CDB	7932CDF	7932CDT	78.9	22.9	170	—	210	214.5	2	1	5.20

[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cages or molded cages.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively. [Remark] Standard cage types used for the above bearings are described earlier in this section.

Angular contact ball bearings (matched pair)

d (160) ~ (180) mm



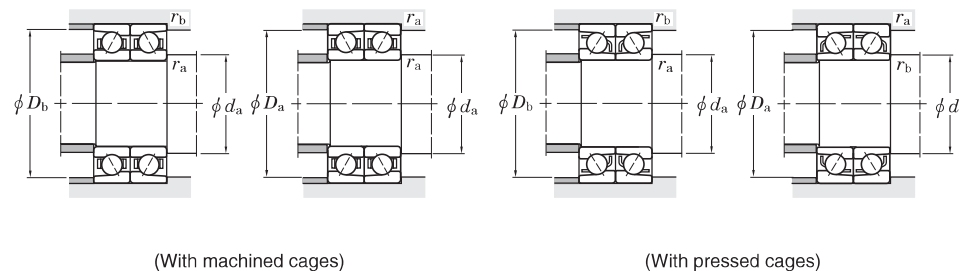
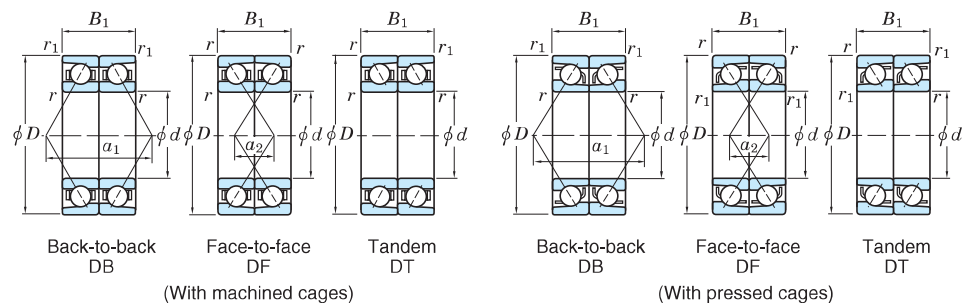
Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>			Load center spread (mm)		Mounting dimensions (mm)						(Refer.)
d	D	B <sub>1</sub>	r <sub>min.</sub>	r <sub>1 min.</sub>	With machined cages		With pressed cages		C <sub>u</sub>	f <sub>0</sub>	Grease lub.	Oil lub.	Back-to-back DB	Face-to-face DF	Tandem DT	a <sub>1</sub>	a <sub>2</sub>	d <sub>a min.</sub>	d <sub>b min.</sub>	D <sub>a max.</sub>	D <sub>b max.</sub>	r <sub>a max.</sub>	r <sub>b max.</sub>	Mass (kg)	
160	240	76	2.1	1.1	315	353	—	—	13.3	—	2 300	2 800	7032DB	7032DF	7032DT	153.5	77.5	172	—	228	233	2	1	10.9	
	240	76	2.1	1.1	282	316	—	—	11.6	—	1 700	2 300	7032BDB	7032BDF	7032BDT	205.8	129.8	172	—	228	233	2	1	10.9	
	240	76	2.1	1.1	347	386	—	—	15.0	16.0	3 100	4 100	7032CDB	7032CDF	7032CDT	91.6	15.6	172	—	228	233	2	1	10.9	
	290	96	3	1.1	468	525	—	—	18.1	—	2 000	2 500	7232DB	7232DF	7232DT	177.9	81.9	174	—	276	283	2.5	1	24.2	
	290	96	3	1.1	482	557	—	—	19.2	—	1 500	2 000	7232BDB	7232BDF	7232BDT	236.8	140.8	174	—	276	283	2.5	1	24.2	
	290	96	3	1.1	511	665	—	—	19.7	15.2	2 700	3 600	7232CDB	7232CDF	7232CDT	108.3	12.3	174	—	276	283	2.5	1	24.2	
	340	136	4	1.5	741	909	—	—	29.7	—	1 700	2 200	7332DB	7332DF	7332DT	212.3	76.3	178	—	322	331.5	3	1.5	52.8	
	340	136	4	1.5	675	831	—	—	27.2	—	1 300	1 700	7332BDB	7332BDF	7332BDT	277.8	141.8	178	—	322	331.5	3	1.5	52.8	
	340	136	4	1.5	800	980	—	—	32.0	14.0	2 400	3 200	7332CDB	7332CDF	7332CDT	135.0	1.0	168.5	—	322	331.5	3	1.5	52.8	
	170	230	56	2	1	255	302	—	—	11.5	16.6	3 100	4 100	7934CDB	7934CDF	7934CDT	81.6	25.6	180	—	220	224.5	2	1	6.42
260		84	2.1	1.1	377	429	—	—	15.8	—	2 100	2 600	7034DB	7034DF	7034DT	166.2	82.2	182	—	248	253	2	1	15.2	
260		84	2.1	1.1	338	386	—	—	13.8	—	1 600	2 100	7034BDB	7034BDF	7034BDT	222.4	138.4	182	—	248	253	2	1	15.5	
260		84	2.1	1.1	415	469	—	—	17.9	15.9	2 900	3 800	7034CDB	7034CDF	7034CDT	99.6	15.6	182	—	248	253	2	1	15.1	
310		104	4	1.5	552	661	—	—	22.0	—	1 800	2 300	7234DB	7234DF	7234DT	190.6	86.6	188	—	292	301.5	3	1.5	30.2	
310		104	4	1.5	497	600	—	—	20.0	—	1 400	1 800	7234BDB	7234BDF	7234BDT	253.4	149.4	188	—	292	301.5	3	1.5	30.2	
310		104	4	1.5	603	719	—	—	24.0	15.1	2 500	3 300	7234CDB	7234CDF	7234CDT	116.3	12.3	188	—	292	301.5	3	1.5	30.2	
360		144	4	1.5	789	969	—	—	30.7	—	1 600	2 000	7334DB	7334DF	7334DT	225.0	81.0	188	—	342	351.5	3	1.5	62.4	
360		144	4	1.5	721	888	—	—	28.2	—	1 200	1 600	7334BDB	7334BDF	7334BDT	294.4	150.4	188	—	342	351.5	3	1.5	62.4	
360		144	4	1.5	849	1 040	—	—	33.1	13.8	2 200	3 000	7334CDB	7334CDF	7334CDT	143.0	1.0	188	—	342	351.5	3	1.5	62.4	
180	250	66	2	1	325	375	—	—	14.1	16.4	2 800	3 700	7936CDB	7936CDF	7936CDT	90.6	24.6	190	—	240	244.5	2	1	9.36	
	280	92	2.1	1.1	430	506	—	—	18.3	—	1 900	2 400	7036DB	7036DF	7036DT	178.8	86.8	192	—	268	273	2	1	20.2	
	280	92	2.1	1.1	385	457	—	—	15.9	—	1 400	1 900	7036BDB	7036BDF	7036BDT	239.0	147.0	192	—	268	273	2	1	20.4	
	280	92	2.1	1.1	473	553	—	—	20.7	15.7	2 600	3 500	7036CDB	7036CDF	7036CDT	107.6	15.6	192	—	268	273	2	1	19.9	
	320	104	4	1.5	596	724	—	—	23.7	—	1 700	2 200	7236DB	7236DF	7236DT	196.3	92.3	198	—	302	311.5	3	1.5	31.4	
	320	104	4	1.5	538	657	—	—	21.5	—	1 300	1 700	7236BDB	7236BDF	7236BDT	261.8	157.8	198	—	302	311.5	3	1.5	31.4	
	320	104	4	1.5	650	786	—	—	25.7	14.9	2 400	3 200	7236CDB	7236CDF	7236CDT	119.0	15.0	198	—	302	311.5	3	1.5	31.4	
	380	150	4	1.5	831	1 070	—	—	33.0	—	1 500	1 900	7336DB	7336DF	7336DT	236.7	86.7	198	—	362	371.5	3	1.5	80.0	

[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cages or molded cages.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively. [Remark] Standard cage types used for the above bearings are described earlier in this section.

# Angular contact ball bearings (matched pair)

$d$  (180) ~ 240 mm



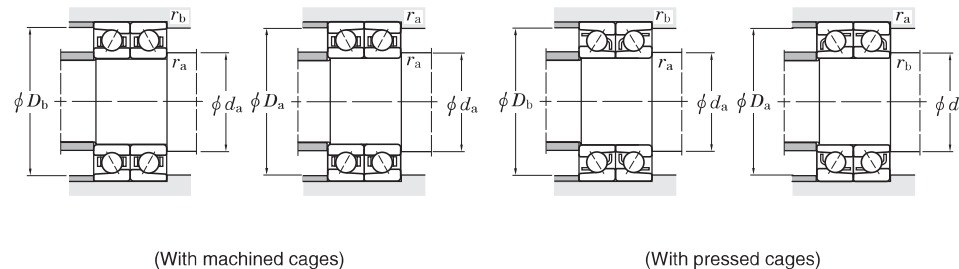
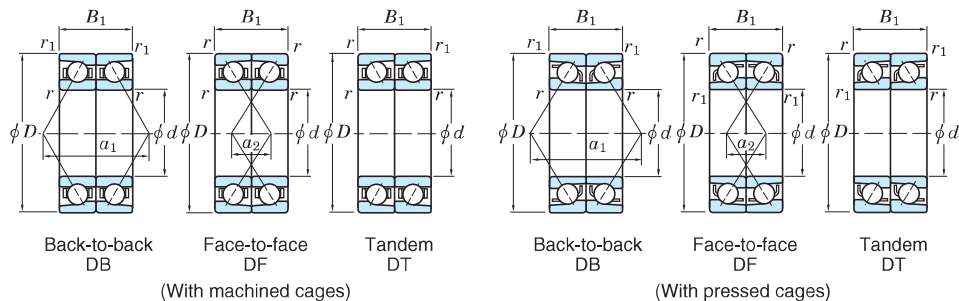
Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor $f_0$	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>			Load center spread (mm)		Mounting dimensions (mm)						(Refer.) Mass (kg)	
$d$	$D$	$B_1$	$r_{min.}$	$r_{1 min.}$	With machined cages		With pressed cages		$C_u$	$C_{0u}$		$f_0$	Grease lub.	Oil lub.	Back-to-back DB	Face-to-face DF	Tandem DT	$a_1$	$a_2$	$d_a$ min.	$d_b$ min.	$D_a$ max.	$D_b$ max.	$r_a$ max.		$r_b$ max.
180	380	150	4	1.5	757	976	—	—	30.1	—	—	1 100	1 500	<b>7336BDB</b>	<b>7336BDF</b>	<b>7336BDT</b>	309.9	159.9	198	—	362	371.5	3	1.5	80.0	
	260	66	2	1	322	394	—	—	13.7	—	16.5	2 700	3 600	<b>7938CDB</b>	<b>7938CDF</b>	<b>7938CDT</b>	93.3	27.3	200	—	250	254.5	2	1	9.66	
190	290	92	2.1	1.1	441	535	—	—	18.7	—	—	1 800	2 300	<b>7038DB</b>	<b>7038DF</b>	<b>7038DT</b>	184.6	92.6	202	—	278	283	2	1	21.6	
	290	92	2.1	1.1	395	483	—	—	16.3	—	—	1 400	1 800	<b>7038BDB</b>	<b>7038BDF</b>	<b>7038BDT</b>	247.4	155.4	202	—	278	283	2	1	21.6	
	290	92	2.1	1.1	485	585	—	—	21.1	—	15.9	2 500	3 300	<b>7038CDB</b>	<b>7038CDF</b>	<b>7038CDT</b>	110.3	18.3	202	—	278	283	2	1	21.6	
	340	110	4	1.5	616	779	—	—	24.7	—	—	1 600	2 000	<b>7238DB</b>	<b>7238DF</b>	<b>7238DT</b>	208.0	98.0	208	—	322	331.5	3	1.5	37.6	
	340	110	4	1.5	555	706	—	—	22.4	—	—	1 200	1 600	<b>7238BDB</b>	<b>7238BDF</b>	<b>7238BDT</b>	277.4	167.4	208	—	322	331.5	3	1.5	37.6	
	340	110	4	1.5	673	848	—	—	26.9	—	15.1	2 200	3 000	<b>7238CDB</b>	<b>7238CDF</b>	<b>7238CDT</b>	126.0	16.0	208	—	322	331.5	3	1.5	37.6	
	400	156	5	2	914	1 200	—	—	36.0	—	—	1 400	1 800	<b>7338DB</b>	<b>7338DF</b>	<b>7338DT</b>	248.3	92.3	212	—	378	390	4	2	91.0	
	400	156	5	2	835	1 100	—	—	33.0	—	—	1 100	1 400	<b>7338BDB</b>	<b>7338BDF</b>	<b>7338BDT</b>	325.5	169.5	212	—	378	390	4	2	91.0	
	200	280	76	2.1	1.1	415	509	—	—	17.4	—	16.3	2 500	3 300	<b>7940CDB</b>	<b>7940CDF</b>	<b>7940CDT</b>	102.3	26.3	212	—	268	273	2	1	13.7
		310	102	2.1	1.1	495	618	—	—	20.0	—	—	1 700	2 100	<b>7040DB</b>	<b>7040DF</b>	<b>7040DT</b>	198.3	96.3	212	—	298	303	2	1	25.4
310		102	2.1	1.1	443	558	—	—	18.1	—	—	1 300	1 700	<b>7040BDB</b>	<b>7040BDF</b>	<b>7040BDT</b>	265.0	163.0	212	—	298	303	2	1	25.4	
310		102	2.1	1.1	544	676	—	—	21.9	—	15.7	2 300	3 100	<b>7040CDB</b>	<b>7040CDF</b>	<b>7040CDT</b>	119.3	17.3	212	—	298	303	2	1	25.4	
360		116	4	1.5	658	847	—	—	26.2	—	—	1 500	1 900	<b>7240DB</b>	<b>7240DF</b>	<b>7240DT</b>	219.7	103.7	218	—	342	351.5	3	1.5	44.8	
360		116	4	1.5	593	768	—	—	23.7	—	—	1 100	1 500	<b>7240BDB</b>	<b>7240BDF</b>	<b>7240BDT</b>	292.9	176.9	218	—	342	351.5	3	1.5	44.8	
360		116	4	1.5	718	921	—	—	28.4	—	15.1	2 100	2 800	<b>7240CDB</b>	<b>7240CDF</b>	<b>7240CDT</b>	133.0	17.0	218	—	342	351.5	3	1.5	44.8	
420		160	5	2	964	1 320	—	—	38.6	—	—	1 300	1 700	<b>7340DB</b>	<b>7340DF</b>	<b>7340DT</b>	259.0	99.0	222	—	398	410	4	2	104	
420		160	5	2	878	1 200	—	—	35.3	—	—	1 000	1 300	<b>7340BDB</b>	<b>7340BDF</b>	<b>7340BDT</b>	340.1	180.1	222	—	398	410	4	2	104	
220		340	112	3	1.1	543	705	—	—	21.8	—	—	1 500	1 900	<b>7044DB</b>	<b>7044DF</b>	—	217.8	105.8	234	—	326	333	2.5	1	37.0
	340	112	3	1.1	486	636	—	—	19.6	—	—	1 100	1 500	<b>7044BDB</b>	<b>7044BDF</b>	—	290.9	178.9	234	—	326	333	2.5	1	37.8	
240	360	112	3	1.1	591	751	—	—	24.6	—	—	1 400	1 700	<b>7048DB</b>	<b>7048DF</b>	—	229.2	117.2	254	—	346	353	2.5	1	39.4	
	360	112	3	1.1	528	677	—	—	22.2	—	—	1 000	1 400	<b>7048BDB</b>	<b>7048BDF</b>	—	307.7	195.7	254	—	346	353	2.5	1	40.2	
	440	144	4	1.5	819	1 190	—	—	33.4	—	—	1 200	1 500	<b>7248DB</b>	<b>7248DF</b>	—	268.3	124.3	258	—	422	431.5	3	1.5	104	
	440	144	4	1.5	736	1 080	—	—	30.2	—	—	890	1 200	<b>7248BDB</b>	<b>7248BDF</b>	—	357.3	213.3	258	—	422	431.5	3	1.5	106	

[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cages or molded cages.

2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively. [Remark] Standard cage types used for the above bearings are described earlier in this section.

Angular contact ball bearings (matched pair)

d 260 ~ 380 mm



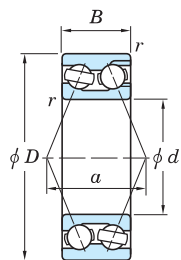
Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor $f_0$	Limiting speeds <sup>1)</sup> (min <sup>-1</sup> )		Bearing No. <sup>2)</sup>			Load center spread (mm)		Mounting dimensions (mm)						(Refer.) Mass (kg)
d	D	B <sub>1</sub>	r <sub>min.</sub>	r <sub>1 min.</sub>	With machined cages		With pressed cages		C <sub>u</sub>	C <sub>u</sub>		Grease lub.	Oil lub.	Back-to-back DB	Face-to-face DF	Tandem DT	a <sub>1</sub>	a <sub>2</sub>	d <sub>a min.</sub>	d <sub>b min.</sub>	D <sub>a max.</sub>	D <sub>b max.</sub>	r <sub>a max.</sub>	r <sub>b max.</sub>	
260	400	130	4	1.5	661	956	—	—	27.1	—	—			1 200	1 500	7052DB	7052DF	—	256.7	126.7	278	—	382	391.5	3
	400	130	4	1.5	592	862	—	—	24.4	—	—	910	1 200	7052BDB	7052BDF	—	341.9	211.9	278	—	382	391.5	3	1.5	58.6
280	420	130	4	1.5	675	1 010	—	—	27.9	—	—	1 100	1 400	7056DB	7056DF	—	267.1	137.1	298	—	402	411.5	3	1.5	60.8
	420	130	4	1.5	623	906	—	—	26.2	—	—	850	1 100	7056BDB	7056BDF	—	358.7	228.7	298	—	402	411.5	3	1.5	62.0
300	460	148	4	1.5	866	1 360	—	—	36.0	—	—	1 000	1 300	7060DB	7060DF	—	293.4	145.4	318	—	442	451.5	3	1.5	87.4
	460	148	4	1.5	776	1 230	—	—	32.5	—	—	770	1 000	7060BDB	7060BDF	—	392.9	244.9	318	—	442	451.5	3	1.5	89.8
320	480	148	4	1.5	887	1 440	—	—	37.3	—	—	950	1 200	7064DB	7064DF	—	304.9	156.9	338	—	462	471.5	3	1.5	92.0
	480	148	4	1.5	795	1 300	—	—	33.6	—	—	710	950	7064BDB	7064BDF	—	409.6	261.6	338	—	462	471.5	3	1.5	94.4
340	520	164	5	2	1 020	1 720	—	—	42.9	—	—	860	1 100	7068DB	7068DF	—	330.3	166.3	362	—	498	510	4	2	124
	520	164	5	2	914	1 550	—	—	38.7	—	—	640	860	7068BDB	7068BDF	—	442.8	278.8	362	—	498	510	4	2	127
360	540	164	5	2	1 050	1 830	—	—	44.5	—	—	800	1 000	7072DB	7072DF	—	341.8	177.8	382	—	518	530	4	2	129
	540	164	5	2	937	1 650	—	—	40.1	—	—	600	800	7072BDB	7072BDF	—	459.6	295.6	382	—	518	530	4	2	132
380	560	164	5	2	1 070	1 930	—	—	46.0	—	—	750	940	7076DB	7076DF	—	353.4	189.4	402	—	538	550	4	2	134
	560	164	5	2	959	1 740	—	—	41.5	—	—	560	750	7076BDB	7076BDF	—	476.4	312.4	402	—	538	550	4	2	138

[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings. Limiting speeds of pressed cage bearings should be kept to under 80% of this value. For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined cages or molded cages.

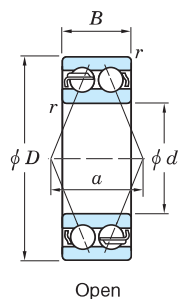
2) B or no indication after the bearing number indicates nominal contact angle of 40° and 30° respectively. [Remark] Standard cage types used for the above bearings are described earlier in this section.

# Double-row angular contact ball bearings

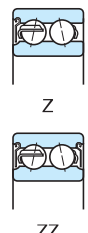
$d$  10 ~ (40) mm



32, 33 series  
(With filling slot)



Open



Z

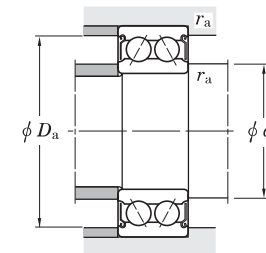
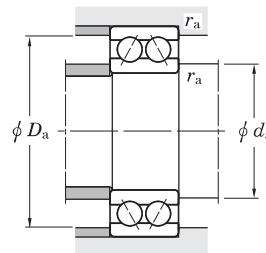
Shielded



RS

Contact sealed

52, 53 series  
(Without filling slot)



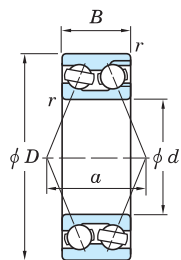
Boundary dimensions (mm)				Basic load ratings (kN)		Fatigue load limits (kN)		Limiting speeds (min <sup>-1</sup> )			Bearing No.			Load center spread (mm)	Mounting dimensions <sup>1)</sup> (mm)			(Refer.) Mass (kg)			
$d$	$D$	$B$	$r_{min.}$	Open		Shielded/sealed		$C_u$		Grease lub. Oil lub.			Open	Shielded	Sealed	Open $a$	$d_a$			Mass	
				$C_r$	$C_{0r}$	$C_r$	$C_{0r}$	(Open)	(Shielded/sealed)	[Open Z, ZZ]	(RS, 2RS)	[Open Z]					min.	max.	$D_a$ max.		$r_a$ max.
10	30	14.3	0.6	9.15	5.35	—	—	0.280	—	15 000	—	20 000	3200	—	—	19.5	14.5	—	25.5	0.6	0.052
12	32	15.9	0.6	12.1	7.15	—	—	0.370	—	14 000	—	18 000	3201	—	—	21.7	16.5	—	27.5	0.6	0.063
15	35	15.9	0.6	12.1	7.45	—	—	0.390	—	12 000	—	16 000	3202	—	—	23.6	19.5	—	30.5	0.6	0.072
	42	19	1	19.0	11.9	—	—	0.610	—	10 000	—	14 000	3302	—	—	27.6	20.5	—	36.5	1	0.132
17	40	17.5	0.6	17.2	10.8	—	—	0.560	—	11 000	—	14 000	3203	—	—	26.6	21.5	—	35.5	0.6	0.100
	40	17.5	0.6	16.5	8.15	15.9	8.35	0.420	0.430	11 000	11 000	14 000	5203	5203 ZZ	5203 2RS	20.0	21.5	23.5	35.5	0.6	0.091
	47	22.2	1	23.0	17.1	—	—	0.760	—	9 400	—	13 000	3303	—	—	31.0	22.5	—	41.5	1	0.192
20	47	20.6	1	21.5	15.0	—	—	0.770	—	9 000	—	12 000	3204	—	—	31.5	25.5	—	41.5	1	0.170
	47	20.6	1	24.6	12.5	20.0	10.8	0.640	0.560	8 800	8 800	12 000	5204	5204 ZZ	5204 2RS	23.5	25.5	26.6	41.5	1	0.158
	52	22.2	1.1	26.0	18.4	—	—	0.950	—	8 200	—	11 000	3304	—	—	33.8	27	—	45	1	0.230
	52	22.2	1.1	30.9	15.0	24.7	12.8	0.780	0.660	8 300	8 300	11 000	5304	5304 ZZ	5304 2RS	25.9	27	28.3	45	1	0.230
25	52	20.6	1	23.7	18.2	—	—	0.940	—	7 800	—	10 000	3205	—	—	34.4	30.5	—	46.5	1	0.190
	52	20.6	1	26.7	14.8	23.6	13.8	0.760	0.710	7 700	7 700	10 000	5205	5205 ZZ	5205 2RS	26.1	30.5	32.3	46.5	1	0.190
	62	25.4	1.1	36.2	26.5	—	—	1.35	—	6 800	—	9 100	3305	—	—	40.5	32	—	55	1	0.369
	62	25.4	1.1	40.9	20.8	34.3	18.5	1.05	0.960	6 900	6 900	9 200	5305	5305 ZZ	5305 2RS	31.1	32	33.4	55	1	0.340
30	62	23.8	1	34.1	27.0	—	—	1.40	—	6 500	—	8 700	3206	—	—	40.7	35.5	—	56.5	1	0.320
	62	23.8	1	37.2	21.3	31.7	18.3	1.10	0.950	6 400	6 400	8 600	5206	5206 ZZ	5206 2RS	30.8	35.5	38.6	56.5	1	0.290
	72	30.2	1.1	47.7	36.1	—	—	1.85	—	5 800	—	7 800	3306	—	—	47.2	37	—	65	1	0.585
	72	30.2	1.1	51.2	28.5	42.9	25.2	1.45	1.30	5 800	5 800	7 700	5306	5306 ZZ	5306 2RS	36.2	37	41.3	65	1	0.510
35	72	27	1.1	46.0	37.5	—	—	1.95	—	5 600	—	7 500	3207	—	—	46.9	42	—	65	1	0.480
	72	27	1.1	49.0	29.0	39.7	24.6	1.50	1.25	5 500	5 500	7 300	5207	5207 ZZ	5207 2RS	36.1	42	43.9	65	1	0.430
	80	34.9	1.5	60.7	46.8	—	—	2.40	—	5 200	—	7 000	3307	—	—	53.4	43.5	—	71.5	1.5	0.816
	80	34.9	1.5	64.0	36.2	57.6	32.8	1.85	1.70	5 100	5 100	6 800	5307	5307 ZZ	5307 2RS	41.0	43.5	45.5	71.5	1.5	0.790
40	80	30.2	1.1	52.4	43.9	—	—	2.25	—	5 000	—	6 700	3208	—	—	52.6	47	—	73	1	0.650
	80	30.2	1.1	55.5	33.6	45.7	29.1	1.75	1.50	5 000	5 000	6 700	5208	5208 ZZ	5208 2RS	39.2	47	49.5	73	1	0.570

[Note] 1) The maximum value of  $d_a$  is applied to shielded and sealed type bearings.

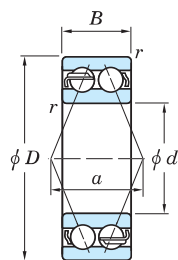
[Remark] Standard cage types used for the above bearings are described earlier in this section.

# Double-row angular contact ball bearings

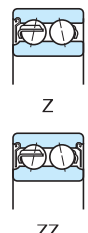
$d$  (40) ~ 70 mm



32, 33 series  
(With filling slot)



Open



Z

ZZ

Shielded

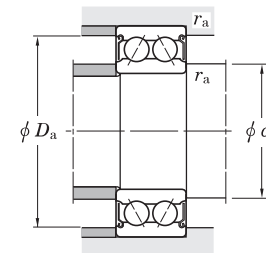
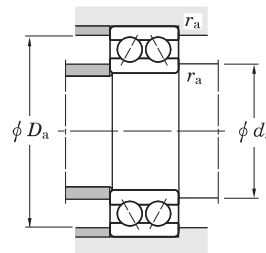


RS

2RS

Contact sealed

52, 53 series  
(Without filling slot)



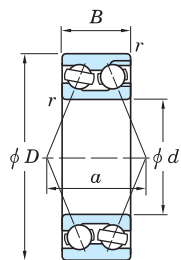
Boundary dimensions (mm)	Basic load ratings (kN)				Fatigue load limits (kN)		Limiting speeds (min <sup>-1</sup> )			Bearing No.			Load center spread (mm)	Mounting dimensions <sup>1)</sup> (mm)				(Refer.) Mass (kg)	
	$d$	$D$	$B$	$r_{min.}$	Open	Shielded/sealed	$C_u$	Grease lub.	Oil lub.	Open	Shielded	Sealed		Open $a$	$d_a$ min.	$d_a$ max.	$D_a$ max.		$r_a$ max.
40	90	36.5	1.5	67.6	53.8	—	—	—	—	4 600	—	6 100	3308	—	—	—	—	1.07	
	90	36.5	1.5	78.3	45.4	64.3	37.8	2.80	—	4 600	4 600	6 100	5308	5308 ZZ	5308 2RS	58.9	48.5	81.5	1.5
45	85	30.2	1.1	56.8	51.4	—	—	2.65	—	4 600	—	6 100	3209	—	—	—	—	0.710	
	85	30.2	1.1	62.3	38.4	52.1	33.9	2.00	—	4 600	4 600	6 100	5209	5209 ZZ	5209 2RS	44.9	48.5	52.1	1.5
	100	39.7	1.5	82.6	67.3	—	—	3.50	—	4 100	—	5 500	3309	—	—	—	—	1.42	
	100	39.7	1.5	93.8	55.7	86.1	51.4	2.90	—	4 100	4 100	5 500	5309	5309 ZZ	5309 2RS	51.0	53.5	58.2	1.5
50	90	30.2	1.1	56.4	52.1	—	—	2.70	—	4 300	—	5 700	3210	—	—	—	—	0.760	
	90	30.2	1.1	66.7	43.6	55.2	37.9	2.25	—	4 300	4 300	5 600	5210	5210 ZZ	5210 2RS	44.5	57	58.9	1
	110	44.4	2	108	88.6	—	—	4.60	—	3 800	—	5 000	3310	—	—	—	—	1.95	
	110	44.4	2	111	67.0	102	62.2	3.45	—	3 600	3 600	4 800	5310	5310 ZZ	5310 2RS	71.7	60	100	2
55	100	33.3	1.5	63.6	60.2	—	—	3.10	—	3 900	—	5 100	3211	—	—	—	—	1.05	
	100	33.3	1.5	82.3	55.2	66.1	44.7	2.85	—	3 800	3 800	5 100	5211	5211 ZZ	5211 2RS	50.2	63.5	66.2	1.5
	120	49.2	2	126	106	—	—	5.45	—	3 400	—	4 500	3311	—	—	—	—	2.53	
	120	49.2	2	138	85.1	120	74.3	4.40	—	3 300	3 300	4 500	5311	5311 ZZ	5311 2RS	79.3	65	110	2
60	110	36.5	1.5	80.0	76.8	—	—	3.95	—	3 500	—	4 700	3212	—	—	—	—	1.40	
	110	36.5	1.5	93.0	60.8	78.3	55.9	3.15	—	3 500	3 500	4 700	5212	5212 ZZ	5212 2RS	53.8	68.5	74.1	1.5
	130	54	2.1	156	132	—	—	6.85	—	3 100	—	4 200	3312	—	—	—	—	3.24	
	130	54	2.1	157	98.7	138	87.1	5.10	—	3 100	3 100	4 100	5312	5312 ZZ	5312 2RS	67.2	72	118	2
65	120	38.1	1.5	95.5	97.4	—	—	5.05	—	3 200	—	4 300	3213	—	—	—	—	1.75	
	120	38.1	1.5	109	75.3	86.5	63.1	3.90	—	3 200	3 200	4 300	5213	5213 ZZ	5213 2RS	58.8	73.5	79.0	1.5
	140	58.7	2.1	177	153	—	—	7.80	—	2 900	—	3 900	3313	—	—	—	—	4.08	
	140	58.7	2.1	178	113	178	113	5.75	—	2 900	2 900	3 900	5313	5313 ZZ	5313 2RS	92.7	77	128	2
70	125	39.7	1.5	97.4	96.4	—	—	5.00	—	3 100	—	4 100	3214	—	—	—	—	1.92	
	125	39.7	1.5	118	82.6	95.4	70.3	4.25	—	3 100	3 100	4 100	5214	5214 ZZ	5214 2RS	61.4	78.5	83.5	1.5
	150	63.5	2.1	188	160	—	—	7.90	—	2 700	—	3 600	3314	—	—	—	—	5.04	
	150	63.5	2.1	200	129	200	129	6.35	—	2 700	2 700	3 600	5314	5314 ZZ	5314 2RS	99.7	82	138	2

[Note] 1) The maximum value of  $d_a$  is applied to shielded and sealed type bearings.

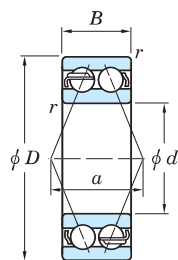
[Remark] Standard cage types used for the above bearings are described earlier in this section.

# Double-row angular contact ball bearings

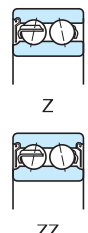
$d$  75 ~ 110 mm



32, 33 series  
(With filling slot)



Open



Shielded

52, 53 series  
(Without filling slot)

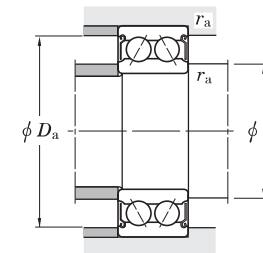
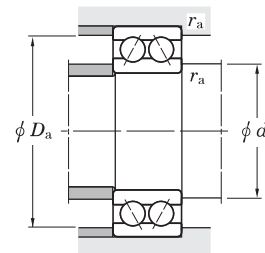


RS

Contact sealed

ZZ

2RS



Boundary dimensions (mm)				Basic load ratings (kN)				Fatigue load limits (kN)		Limiting speeds ( $\text{min}^{-1}$ )			Bearing No.	Load center spread (mm)	Mounting dimensions <sup>1)</sup> (mm)				(Refer.) Mass (kg)							
$d$	$D$	$B$	$r_{\text{min}}$	Open		Shielded/sealed		$C_u$	Grease lub.		Oil lub.	Open			Shielded	Sealed	$a$	$d_a$ min.		$d_a$ max.	$D_a$ max.	$r_a$ max.				
75	130	41.3	1.5	116	120	—	—	6.15	—	2 900	—	3 900	3215	84.7	83.5	—	121.5	1.5	2.10							
	160	68.3	2.1	211	189	—	—	9.00	—	2 500	—	3 300								3315	108.7	87	—	148	2	6.16
	160	68.3	2.1	218	147	218	147	6.95	6.95	2 500	2 500	3 300														
80	140	44.4	2	122	121	—	—	5.95	—	2 700	—	3 600	3216	90.7	90	—	130	2	2.64							
	170	68.3	2.1	230	213	—	—	9.85	—	2 400	—	3 100								3316	113.1	92	—	158	2	6.93
85	150	49.2	2	143	143	—	—	6.80	—	2 500	—	3 400	3217	98.4	95	—	140	2	3.39							
	180	73	3	235	219	—	—	9.80	—	2 200	—	3 000								3317	118.8	99	—	166	2.5	8.30
90	160	52.4	2	165	167	—	—	7.70	—	2 400	—	3 100	3218	104.1	100	—	150	2	4.14							
	190	73	3	256	242	—	—	10.6	—	2 100	—	2 800								3318	125.5	104	—	176	2.5	9.23
95	170	55.6	2.1	189	193	—	—	8.65	—	2 200	—	3 000	3219	110.6	107	—	158	2	5.00							
	200	77.8	3	273	270	—	—	14.9	—	2 000	—	2 600								3319	132.2	109	—	186	2.5	10.9
100	180	60.3	2.1	215	221	—	—	9.65	—	2 100	—	2 800	3220	116.8	112	—	168	2	6.10							
	215	82.6	3	312	324	—	—	17.4	—	1 800	—	2 500								3320	140.4	114	—	201	2.5	13.5
105	190	65.1	2.1	227	237	—	—	11.5	—	2 000	—	2 600	3221	124.2	117	—	178	2	7.37							
	225	87.3	3	331	354	—	—	18.5	—	1 800	—	2 300								3321	148.1	119	—	211	2.5	15.6
110	200	69.8	2.1	251	263	—	—	10.9	—	1 900	—	2 500	3222	131.4	122	—	188	2	8.80							
	240	92.1	3	352	388	—	—	15.1	—	1 600	—	2 200								3322	156.4	124	—	226	2.5	18.9

[Note] 1) The maximum value of  $d_a$  is applied to shielded and sealed type bearings.

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