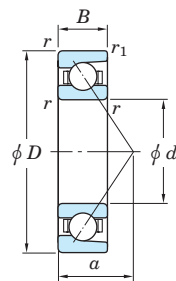
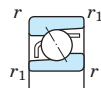


Single-row angular contact ball bearings

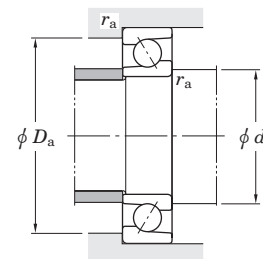
d 10 ~ (17) mm



With machined cage



With pressed cage



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds ¹⁾ (min ⁻¹)		Bearing No. ²⁾	Load center (mm) a	Mounting dimensions (mm)			(Refer.) Mass (kg)
d	D	B	$r_{min.}$	$r_{1 min.}$	With machined cage		With pressed cage		C_u		f_0	Grease lub.	Oil lub.			d_a min.	D_a max.	r_a max.	
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

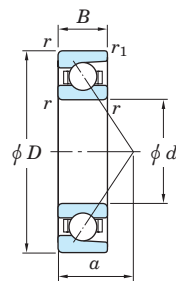
[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings.
Limiting speeds of pressed cage bearings should be kept to under 80% of this value.
For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined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

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

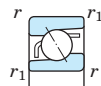
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

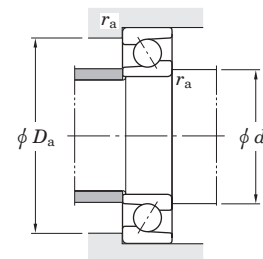
d (17) ~ (25) mm



With machined cage



With pressed cage



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor		Limiting speeds ¹⁾ (min ⁻¹)		Bearing No. ²⁾	Load center (mm) a	Mounting dimensions (mm)			(Refer.) Mass (kg)
d	D	B	r min.	r_1 min.	With machined cage		With pressed cage		C_u		f_0		Grease lub.	Oil lub.			d_a min.	D_a max.	r_a max.	
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

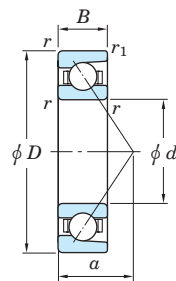
[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings.
Limiting speeds of pressed cage bearings should be kept to under 80% of this value.
For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined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

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

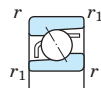
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

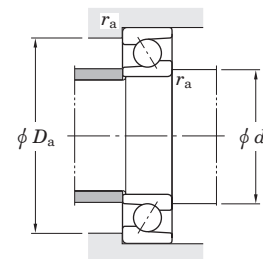
d (25) ~ (35) mm



With machined cage



With pressed cage



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor		Limiting speeds ¹⁾ (min ⁻¹)		Bearing No. ²⁾	Load center (mm) a	Mounting dimensions (mm)			(Refer.) Mass (kg)
d	D	B	r min.	r_1 min.	With machined cage		With pressed cage		C_u		f_0		Grease lub.	Oil lub.			d_a min.	D_a max.	r_a max.	
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

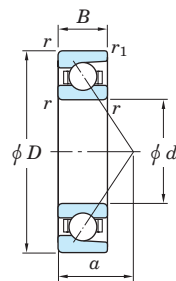
[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings.
Limiting speeds of pressed cage bearings should be kept to under 80% of this value.
For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined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

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

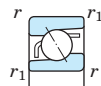
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

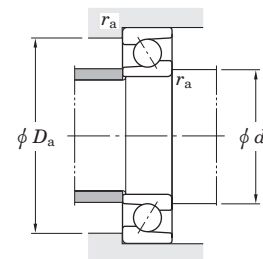
d (35) ~ 45 mm



With machined cage



With pressed cage



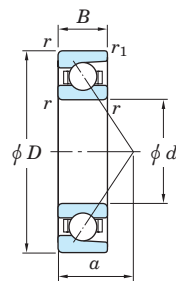
Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds ¹⁾ (min ⁻¹)		Bearing No. ²⁾	Load center (mm) <i>a</i>	Mounting dimensions (mm)			(Refer.) Mass (kg)	
					With machined cage		With pressed cage		<i>C</i> _u							<i>d</i> _a min.	<i>D</i> _a max.	<i>r</i> _a max.		
<i>d</i>	<i>D</i>	<i>B</i>	<i>r</i> min.	<i>r</i> ₁ min.	<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _r	<i>C</i> _{0r}	(With machined cage)	(With pressed cage)	<i>f</i> ₀	Grease lub.	Oil lub.							
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.

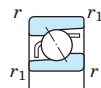
2) B, C or no indication after the bearing number indicates nominal contact angle of 40°, 15° and 30° respectively.
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

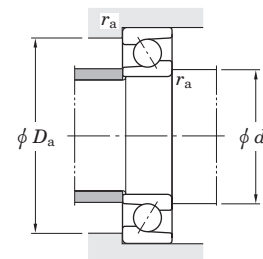
d 50 ~ (60) mm



With machined cage



With pressed cage



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds ¹⁾ (min ⁻¹)		Bearing No. ²⁾	Load center (mm) a	Mounting dimensions (mm)			(Refer.) Mass (kg)
d	D	B	r min.	r1 min.	With machined cage Cr	With pressed cage C0r	Cr	C0r	With (With machined cage)	With (With pressed cage)	f0	Grease lub.	Oil lub.			da min.	Da max.	ra max.	
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
55	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
	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
60	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
	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

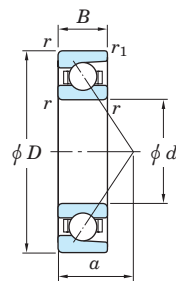
[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings.
Limiting speeds of pressed cage bearings should be kept to under 80% of this value.
For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined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

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

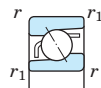
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

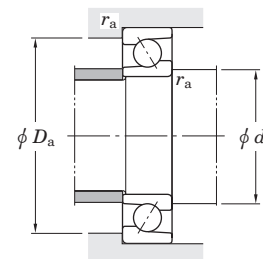
d (60) ~ (70) mm



With machined cage



With pressed cage



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds ¹⁾ (min ⁻¹)		Bearing No. ²⁾	Load center (mm) a	Mounting dimensions (mm)			(Refer.) Mass (kg)
d	D	B	r min.	r_1 min.	With machined cage		With pressed cage		C_u		f_0	Grease lub.	Oil lub.			d_a min.	D_a max.	r_a max.	
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

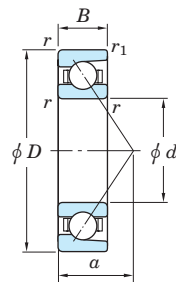
[Notes] 1) Limiting speeds shown above are applicable to machined cage bearings.
Limiting speeds of pressed cage bearings should be kept to under 80% of this value.
For bearings with 15° contact angle, this figure is applied to the high precision bearings ranked higher than class 5, used with machined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

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

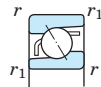
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

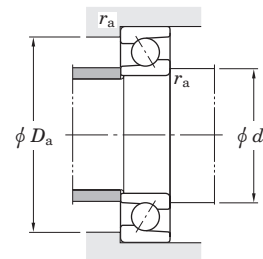
d (70) ~ (80) mm



With machined cage



With pressed cage



Boundary dimensions (mm)					Basic load ratings (kN)				Fatigue load limits (kN)		Factor	Limiting speeds ¹⁾ (min ⁻¹)		Bearing No. ²⁾	Load center (mm) a	Mounting dimensions (mm)			(Refer.) Mass (kg)
d	D	B	r min.	r1 min.	With machined cage Cr	With pressed cage C0r	Cr	C0r	With (machined cage)	With (pressed cage)	f0	Grease lub.	Oil lub.			da min.	Da max.	ra max.	
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
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.