



Ball & Roller Bearings



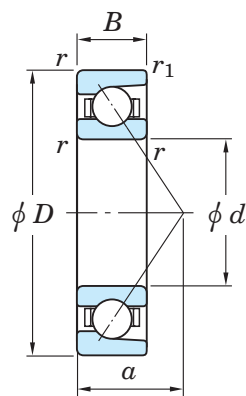
JTEKT

JTEKT CORPORATION

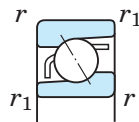
CAT. NO. B2001E-3

Single-row angular contact ball bearings

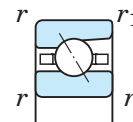
d 10 ~ (17) mm



With machined cage



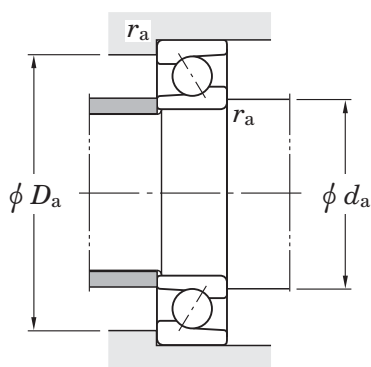
With pressed cage



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Boundary dimensions (mm)					Basic load ratings (kN)				Factor	Limiting speeds ¹⁾ (min ⁻¹)		
					With machined cage		With pressed cage				Grease lub.	
<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}	<i>f</i> ₀			
10	22	6	0.3	0.15	3.00	1.50	—	—	14.2	52 000	69 000	
	26	8	0.3	0.15	5.00	2.35	—	—	—	34 000	42 000	
	26	8	0.3	0.15	4.65	2.15	—	—	—	25 000	33 000	
	26	8	0.3	0.15	5.30	2.45	—	—	12.5	47 000	62 000	
	30	9	0.6	0.3	4.65	2.20	5.40	2.75	—	29 000	37 000	
	30	9	0.6	0.3	4.30	2.00	4.95	2.50	—	22 000	29 000	
	30	9	0.6	0.3	5.00	2.35	5.80	2.95	13.4	40 000	54 000	
	35	11	0.6	0.3	8.50	3.75	9.30	4.30	—	27 000	33 000	
12	24	6	0.3	0.15	3.20	1.70	—	—	14.7	48 000	62 000	
	28	8	0.3	0.15	5.40	2.75	—	—	—	29 000	37 000	
	28	8	0.3	0.15	4.95	2.50	—	—	—	22 000	29 000	
	28	8	0.3	0.15	5.80	2.95	—	—	13.4	40 000	54 000	
	32	10	0.6	0.3	7.45	3.65	8.00	4.05	—	27 000	34 000	
	32	10	0.6	0.3	6.95	3.40	7.40	3.75	—	20 000	27 000	
	32	10	0.6	0.3	7.90	3.85	8.50	4.30	12.5	38 000	50 000	
	37	12	1	0.6	10.2	4.60	11.2	5.25	—	24 000	31 000	
15	28	7	0.3	0.15	4.75	2.65	—	—	14.5	39 000	52 000	
	32	9	0.3	0.15	6.10	3.45	—	—	—	26 000	32 000	
	32	9	0.3	0.15	5.55	3.15	—	—	—	19 000	25 000	
	32	9	0.3	0.15	6.60	3.70	—	—	14.1	35 000	47 000	
	35	11	0.6	0.3	8.10	4.25	8.10	4.25	—	24 000	29 000	
	35	11	0.6	0.3	7.45	3.95	7.45	3.95	—	18 000	24 000	
	35	11	0.6	0.3	8.65	4.55	8.65	4.55	13.3	33 000	43 000	
	42	13	1	0.6	12.5	6.45	13.4	7.20	—	20 000	25 000	
17	30	7	0.3	0.15	5.00	2.95	—	—	14.9	36 000	47 000	
	35	10	0.3	0.15	6.75	4.15	—	—	—	23 000	28 000	

[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.



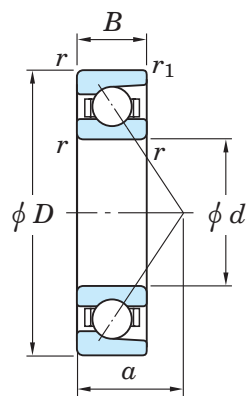
	Bearing No. ²⁾	Load center (mm) <i>a</i>	Mounting dimensions (mm)			(Refer.) Mass (kg)
			<i>d</i> _a min.	<i>D</i> _a max.	<i>r</i> _a max.	
	7900C	5.1	12.5	19.5	0.3	0.008
	7000	9.1	12.5	23.5	0.3	0.021
	7000B	11.6	12.5	23.5	0.3	0.021
	7000C	6.4	12.5	23.5	0.3	0.021
	7200	10.4	14.5	25.5	0.6	0.031
	7200B	13.1	14.5	25.5	0.6	0.031
	7200C	7.2	14.5	25.5	0.6	0.031
	7300	12.0	14.5	30.5	0.6	0.054
	7901C	5.4	14.5	21.5	0.3	0.010
	7001	9.9	14.5	25.5	0.3	0.024
	7001B	12.6	14.5	25.5	0.3	0.024
	7001C	6.7	14.5	25.5	0.3	0.024
	7201	11.4	16.5	27.5	0.6	0.038
	7201B	14.2	16.5	27.5	0.6	0.038
	7201C	7.9	16.5	27.5	0.6	0.038
	7301	13.1	17.5	31.5	1	0.065
	7902C	6.4	17.5	25.5	0.3	0.015
	7002	11.3	17.5	29.5	0.3	0.035
	7002B	14.6	17.5	29.5	0.3	0.035
	7002C	7.6	17.5	29.5	0.3	0.035
	7202	12.9	19.5	30.5	0.6	0.048
	7202B	16.2	19.5	30.5	0.6	0.048
	7202C	8.9	19.5	30.5	0.6	0.048
	7302	15.0	20.5	36.5	1	0.088
	7903C	6.7	19.5	27.5	0.3	0.016
	7003	12.7	19.5	32.5	0.3	0.045

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

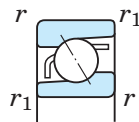
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

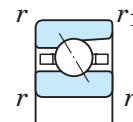
d (17) ~ (25) mm



With machined cage



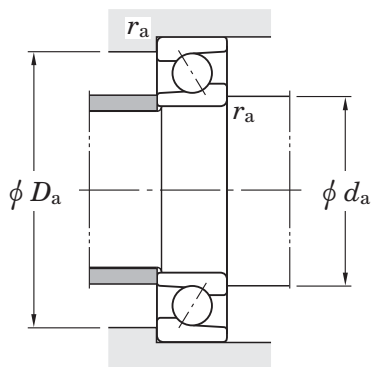
With pressed cage



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Boundary dimensions (mm)					Basic load ratings (kN)				Factor	Limiting speeds ¹⁾ (min ⁻¹)		
<i>d</i>	<i>D</i>	<i>B</i>	<i>r</i> min.	<i>r</i> ₁ min.	With machined cage		With pressed cage			Grease lub.	Oil lub.	
					<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _r	<i>C</i> _{0r}	<i>f</i> ₀			
17	35	10	0.3	0.15	6.10	3.75	—	—	—	17 000	23 000	
	35	10	0.3	0.15	7.30	4.45	—	—	14.6	31 000	41 000	
	40	12	0.6	0.3	10.2	5.50	10.2	5.50	—	21 000	26 000	
	40	12	0.6	0.3	9.35	5.05	9.35	5.05	—	16 000	21 000	
	40	12	0.6	0.3	10.9	5.90	10.9	5.90	13.4	29 000	38 000	
	47	14	1	0.6	14.9	7.90	16.0	8.75	—	18 000	23 000	
	47	14	1	0.6	13.8	7.30	14.8	8.10	—	14 000	18 000	
	47	14	1	0.6	15.8	8.40	15.8	8.40	12.6	25 000	33 000	
20	37	9	0.3	0.15	7.30	4.55	—	—	14.9	30 000	39 000	
	42	12	0.6	0.3	10.3	6.10	—	—	—	19 000	24 000	
	42	12	0.6	0.3	9.35	5.55	—	—	—	14 000	19 000	
	42	12	0.6	0.3	11.1	6.60	—	—	14.1	26 000	35 000	
	47	14	1	0.6	14.5	8.40	15.4	9.15	—	17 000	22 000	
	47	14	1	0.6	13.3	7.70	14.1	8.40	—	13 000	17 000	
	47	14	1	0.6	15.5	9.00	16.5	9.80	13.4	24 000	32 000	
	52	15	1.1	0.6	17.4	9.40	18.7	10.4	—	17 000	21 000	
	52	15	1.1	0.6	16.2	8.70	17.3	9.65	—	13 000	17 000	
	52	15	1.1	0.6	18.5	9.95	19.9	11.1	12.6	23 000	31 000	
	72	19	1.1	0.6	35.6	19.1	—	—	—	9 600	13 000	
	72	19	1.1	0.6	33.5	17.9	—	—	—	8 500	12 000	
25	42	9	0.3	0.15	7.80	5.45	—	—	15.5	25 000	33 000	
	47	12	0.6	0.3	11.3	7.40	—	—	—	17 000	21 000	
	47	12	0.6	0.3	10.2	6.70	—	—	—	12 000	17 000	
	47	12	0.6	0.3	12.3	8.00	—	—	14.7	23 000	30 000	
	52	15	1	0.6	15.3	9.50	16.2	10.3	—	15 000	19 000	
	52	15	1	0.6	14.0	8.70	14.7	9.40	—	12 000	15 000	
	52	15	1	0.6	16.6	10.2	17.5	11.1	14.0	21 000	28 000	

[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.



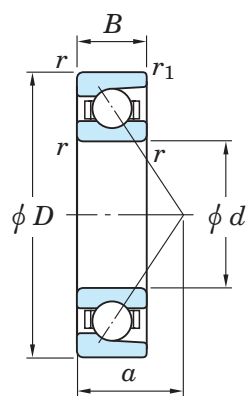
Bearing No. ²⁾	Load center (mm) <i>a</i>	Mounting dimensions (mm)			(Refer.) Mass (kg)
		<i>d</i> _a min.	<i>D</i> _a max.	<i>r</i> _a max.	
7003B	16.1	19.5	32.5	0.3	0.045
7003C	8.6	19.5	32.5	0.3	0.045
7203	14.4	21.5	35.5	0.6	0.070
7203B	18.2	21.5	35.5	0.6	0.070
7203C	9.9	21.5	35.5	0.6	0.070
7303	16.5	22.5	41.5	1	0.120
7303B	20.8	22.5	41.5	1	0.120
7303C	11.4	22.5	41.5	1	0.120
7904C	8.3	22.5	34.5	0.3	0.035
7004	15.1	24.5	37.5	0.6	0.079
7004B	19.2	24.5	37.5	0.6	0.079
7004C	10.2	24.5	37.5	0.6	0.079
7204	17.0	25.5	41.5	1	0.112
7204B	21.5	25.5	41.5	1	0.112
7204C	11.6	25.5	41.5	1	0.112
7304	17.9	27	45	1	0.150
7304B	22.6	27	45	1	0.150
7304C	12.3	27	45	1	0.150
7404	23.1	27	65	1	0.395
7404B	29.2	27	65	1	0.395
7905C	9.1	27.5	39.5	0.3	0.041
7005	16.4	29.5	42.5	0.6	0.091
7005B	21.1	29.5	42.5	0.6	0.091
7005C	10.8	29.5	42.5	0.6	0.091
7205	18.8	30.5	46.5	1	0.135
7205B	23.9	30.5	46.5	1	0.135
7205C	12.7	30.5	46.5	1	0.135

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

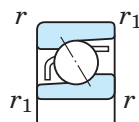
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

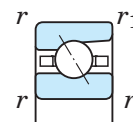
d (25) ~ (35) mm



With machined cage



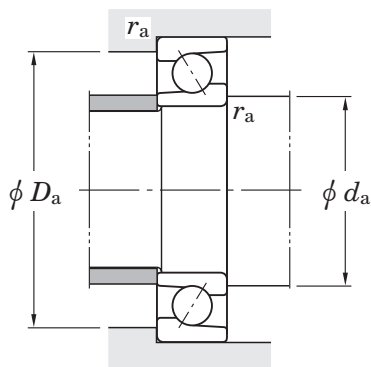
With pressed cage



HAR

Boundary dimensions (mm)					Basic load ratings (kN)				Factor	Limiting speeds ¹⁾ (min ⁻¹)		
<i>d</i>	<i>D</i>	<i>B</i>	<i>r</i> min.	<i>r</i> ₁ min.	With machined cage		With pressed cage			<i>f</i> ₀	Grease lub.	
					<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _r	<i>C</i> _{0r}				
25	62	17	1.1	0.6	24.8	14.4	26.4	15.8	—	14 000	17 000	
	62	17	1.1	0.6	22.9	13.3	24.4	14.6	—	10 000	14 000	
	62	17	1.1	0.6	26.4	15.3	28.1	16.8	12.8	19 000	25 000	
	80	21	1.5	1	39.7	23.2	42.6	25.7	—	8 200	11 000	
	80	21	1.5	1	36.9	21.5	39.6	23.9	—	7 300	10 000	
30	47	9	0.3	0.15	8.30	6.25	—	—	15.9	22 000	29 000	
	55	13	1	0.6	8.70	4.85	—	—	7.9	26 000	40 000	
	55	13	1	0.6	14.5	10.1	—	—	—	14 000	18 000	
	55	13	1	0.6	13.1	9.20	—	—	—	11 000	14 000	
	55	13	1	0.6	15.8	11.0	—	—	14.9	20 000	26 000	
	62	16	1	0.6	21.3	13.7	22.5	14.8	—	13 000	16 000	
	62	16	1	0.6	19.4	12.5	20.5	13.6	—	9 600	13 000	
	62	16	1	0.6	23.0	14.7	24.3	16.0	14.0	18 000	24 000	
	72	19	1.1	0.6	30.1	18.9	31.9	20.6	—	12 000	14 000	
	72	19	1.1	0.6	27.6	17.4	29.3	19.0	—	8 700	12 000	
	72	19	1.1	0.6	32.3	20.3	34.2	22.1	13.4	16 000	21 000	
	90	23	1.5	1	47.6	28.4	51.0	31.6	—	7 300	9 700	
	90	23	1.5	1	44.2	26.4	47.4	29.3	—	6 500	8 900	
35	55	10	0.6	0.3	12.5	9.70	—	—	15.7	19 000	25 000	
	62	14	1	0.6	9.25	5.55	—	—	8.1	23 000	35 000	
	62	14	1	0.6	17.5	12.6	—	—	—	12 000	15 000	
	62	14	1	0.6	15.8	11.4	—	—	—	9 200	12 000	
	62	14	1	0.6	19.1	13.7	—	—	15.0	17 000	22 000	
	72	17	1.1	0.6	28.1	18.6	29.7	20.2	—	11 000	14 000	
	72	17	1.1	0.6	25.6	17.0	27.0	18.5	—	8 300	11 000	
	72	17	1.1	0.6	30.4	20.1	32.1	21.7	14.0	15 000	20 000	
	80	21	1.5	1	35.4	22.0	39.9	26.4	—	10 000	13 000	

[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.



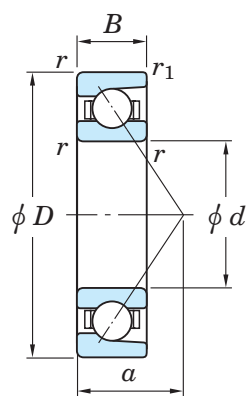
	Bearing No. ²⁾	Load center (mm) a	Mounting dimensions (mm)			(Refer.) Mass (kg)
			d_a min.	D_a max.	r_a max.	
	7305	21.1	32	55	1	0.243
	7305B	26.8	32	55	1	0.243
	7305C	14.3	32	55	1	0.243
	7405	26.4	33.5	71.5	1.5	0.527
	7405B	33.6	33.5	71.5	1.5	0.527
	7906C	9.7	32.5	44.5	0.3	0.046
	HAR006C	12.2	35.5	49.5	1	0.116
	7006	18.8	35.5	49.5	1	0.133
	7006B	24.3	35.5	49.5	1	0.133
	7006C	12.2	35.5	49.5	1	0.133
	7206	21.5	35.5	56.5	1	0.208
	7206B	27.6	35.5	56.5	1	0.208
	7206C	14.3	35.5	56.5	1	0.208
	7306	24.5	37	65	1	0.362
	7306B	31.3	37	65	1	0.362
	7306C	16.5	37	65	1	0.362
	7406	29.3	38.5	81.5	1.5	0.686
	7406B	37.3	38.5	81.5	1.5	0.686
	7907C	11.0	39.5	50.5	0.6	0.074
	HAR007C	13.5	40.5	56.5	1	0.158
	7007	21.2	40.5	56.5	1	0.170
	7007B	27.6	40.5	56.5	1	0.170
	7007C	13.5	40.5	56.5	1	0.170
	7207	24.2	42	65	1	0.295
	7207B	31.4	42	65	1	0.295
	7207C	15.8	42	65	1	0.295
	7307	27.4	43.5	71.5	1.5	0.475

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

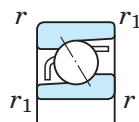
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

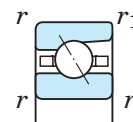
d (35) ~ (45) mm



With machined cage



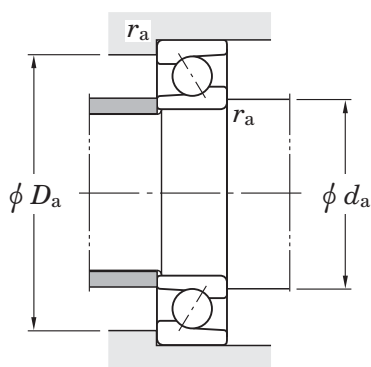
With pressed cage



HAR

Boundary dimensions (mm)					Basic load ratings (kN)				Factor	Limiting speeds ¹⁾ (min ⁻¹)		
<i>d</i>	<i>D</i>	<i>B</i>	<i>r</i> min.	<i>r</i> ₁ min.	With machined cage		With pressed cage			Grease lub.	Oil lub.	
					<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _r	<i>C</i> _{0r}	<i>f</i> ₀			
35	80	21	1.5	1	32.5	20.2	36.6	24.3	—	7 700	10 000	
	80	21	1.5	1	37.9	23.6	42.8	28.3	13.4	14 000	19 000	
	100	25	1.5	1	60.4	37.0	64.8	41.1	—	6 500	8 600	
	100	25	1.5	1	56.2	34.3	60.2	38.1	—	5 700	7 900	
40	62	12	0.6	0.3	15.7	12.4	—	—	15.7	17 000	22 000	
	62	12	0.6	0.3	6.35	4.05	—	—	8.4	22 000	33 000	
	68	15	1	0.6	9.70	6.20	—	—	8.2	20 000	31 000	
	68	15	1	0.6	18.7	14.6	—	—	—	11 000	14 000	
	68	15	1	0.6	16.8	13.2	—	—	—	8 300	11 000	
	68	15	1	0.6	20.5	15.9	—	—	15.4	15 000	20 000	
	80	18	1.1	0.6	33.6	23.3	35.3	25.1	—	10 000	12 000	
	80	18	1.1	0.6	30.6	21.3	32.1	23.0	—	7 500	10 000	
	80	18	1.1	0.6	36.4	25.2	38.2	27.1	14.2	14 000	18 000	
	90	23	1.5	1	43.2	27.4	48.8	32.9	—	9 200	12 000	
	90	23	1.5	1	39.7	25.2	44.8	30.3	—	6 900	9 200	
	90	23	1.5	1	46.3	29.4	52.3	35.3	13.4	13 000	17 000	
	110	27	2	1	69.9	43.5	75.0	48.4	—	5 900	7 900	
	110	27	2	1	64.9	40.4	69.6	44.9	—	5 200	7 200	
45	68	12	0.6	0.3	16.6	14.1	—	—	16.0	15 000	20 000	
	68	12	0.6	0.3	6.80	4.70	—	—	8.5	19 000	30 000	
	75	16	1	0.6	10.9	7.10	—	—	8.3	18 000	28 000	
	75	16	1	0.6	22.2	17.7	—	—	—	10 000	12 000	
	75	16	1	0.6	20.0	16.0	—	—	—	7 500	10 000	
	75	16	1	0.6	24.4	19.3	—	—	15.4	14 000	18 000	
	85	19	1.1	0.6	37.7	26.6	39.6	28.6	—	9 400	12 000	
	85	19	1.1	0.6	34.3	24.3	36.1	26.1	—	7 000	9 400	
	85	19	1.1	0.6	40.8	28.7	42.9	30.9	14.2	13 000	17 000	

[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.



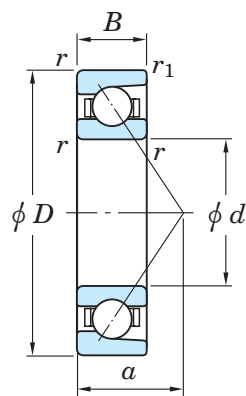
Bearing No. ²⁾	Load center (mm) <i>a</i>	Mounting dimensions (mm)			(Refer.) Mass (kg)
		<i>d_a</i> min.	<i>D_a</i> max.	<i>r_a</i> max.	
7307B	35.0	43.5	71.5	1.5	0.475
7307C	18.3	43.5	71.5	1.5	0.475
7407	32.6	43.5	91.5	1.5	0.950
7407B	41.7	43.5	91.5	1.5	0.950
7908C	12.8	44.5	57.5	0.6	0.107
HAR908C	12.8	44.5	57.5	0.6	0.115
HAR008C	14.7	45.5	62.5	1	0.200
7008	23.2	45.5	62.5	1	0.210
7008B	30.2	45.5	62.5	1	0.210
7008C	14.8	45.5	62.5	1	0.210
7208	26.3	47	73	1	0.382
7208B	34.2	47	73	1	0.382
7208C	17.0	47	73	1	0.382
7308	30.3	48.5	81.5	1.5	0.657
7308B	38.8	48.5	81.5	1.5	0.657
7308C	20.2	48.5	81.5	1.5	0.657
7408	35.5	50	100	2	1.23
7408B	45.4	50	100	2	1.23
7909C	13.6	49.5	63.5	0.6	0.127
HAR909C	13.6	49.5	63.5	0.6	0.136
HAR009C	16.0	50.5	69.5	1	0.251
7009	25.3	50.5	69.5	1	0.260
7009B	33.2	50.5	69.5	1	0.260
7009C	16.0	50.5	69.5	1	0.260
7209	28.0	52	78	1	0.430
7209B	36.4	52	78	1	0.430
7209C	18.1	52	78	1	0.430

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

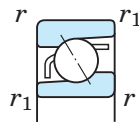
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

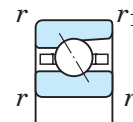
d (45) ~ (55) mm



With machined cage



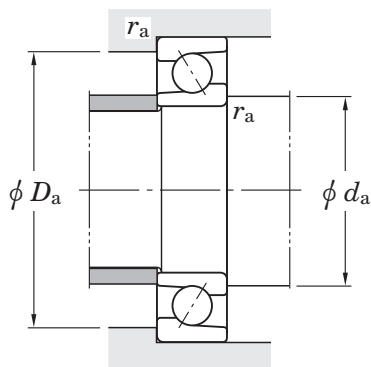
With pressed cage



HAR

Boundary dimensions (mm)					Basic load ratings (kN)				Factor	Limiting speeds ¹⁾ (min ⁻¹)		
<i>d</i>	<i>D</i>	<i>B</i>	<i>r</i> min.	<i>r</i> ₁ min.	With machined cage		With pressed cage			<i>f</i> ₀	Grease lub.	
					<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _r	<i>C</i> _{0r}				
45	100	25	1.5	1	55.1	37.1	58.4	40.4	—	8 200	10 000	
	100	25	1.5	1	50.6	34.1	53.6	37.2	—	6 200	8 200	
	100	25	1.5	1	59.2	39.7	62.7	43.4	13.5	11 000	15 000	
	120	29	2	1	84.9	53.8	91.1	59.8	—	5 400	7 100	
	120	29	2	1	78.9	50.0	84.7	55.5	—	4 800	6 600	
50	72	12	0.6	0.3	17.4	15.7	—	—	16.2	14 000	18 000	
	72	12	0.6	0.3	9.10	6.30	—	—	8.5	18 000	28 000	
	80	16	1	0.6	11.4	7.85	—	—	8.4	17 000	26 000	
	80	16	1	0.6	23.6	20.1	—	—	—	9 200	11 000	
	80	16	1	0.6	21.2	18.1	—	—	—	6 900	9 200	
	80	16	1	0.6	26.0	21.9	—	—	15.7	13 000	17 000	
	90	20	1.1	0.6	39.4	29.4	41.3	31.5	—	8 500	11 000	
	90	20	1.1	0.6	35.7	26.7	37.4	28.6	—	6 400	8 500	
	90	20	1.1	0.6	42.8	31.8	44.8	34.1	14.6	12 000	16 000	
	110	27	2	1	70.1	48.1	74.3	52.5	—	7 300	9 100	
	110	27	2	1	64.4	44.3	68.2	48.3	—	5 500	7 300	
	110	27	2	1	75.1	51.6	79.6	56.2	13.4	10 000	13 000	
	130	31	2.1	1.1	97.4	65.3	—	—	—	4 900	6 600	
	130	31	2.1	1.1	90.2	60.4	—	—	—	4 400	6 000	
55	80	13	1	0.6	19.7	18.5	—	—	16.3	13 000	17 000	
	80	13	1	0.6	10.1	7.65	—	—	8.6	16 000	25 000	
	90	18	1.1	0.6	14.1	9.90	—	—	8.4	15 000	23 000	
	90	18	1.1	0.6	31.1	26.3	—	—	—	8 300	10 000	
	90	18	1.1	0.6	27.9	23.7	—	—	—	6 200	8 300	
	90	18	1.1	0.6	34.1	28.6	—	—	15.5	11 000	15 000	
	100	21	1.5	1	48.7	37.1	51.0	39.8	—	7 600	9 500	
	100	21	1.5	1	44.1	33.8	46.2	36.2	—	5 700	7 600	

[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.



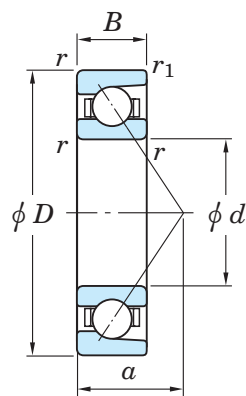
	Bearing No. ²⁾	Load center (mm) a	Mounting dimensions (mm)			(Refer.) Mass (kg)
			d_a min.	D_a max.	r_a max.	
	7309	33.6	53.5	91.5	1.5	0.875
	7309B	43.1	53.5	91.5	1.5	0.875
	7309C	22.3	53.5	91.5	1.5	0.875
	7409	38.6	55	110	2	1.55
	7409B	49.5	55	110	2	1.55
	7910C	14.2	54.5	67.5	0.6	0.128
	HAR910C	14.2	54.5	67.5	0.6	0.131
	HAR010C	16.7	55.5	74.5	1	0.273
	7010	26.9	55.5	74.5	1	0.290
	7010B	35.3	55.5	74.5	1	0.290
	7010C	16.8	55.5	74.5	1	0.290
	7210	30.4	57	83	1	0.485
	7210B	39.6	57	83	1	0.485
	7210C	19.4	57	83	1	0.485
	7310	37.2	60	100	2	1.14
	7310B	47.9	60	100	2	1.14
	7310C	24.5	60	100	2	1.14
	7410	41.6	62	118	2	1.92
	7410B	53.5	62	118	2	1.92
	7911C	15.5	60.5	74.5	1	0.178
	HAR911C	15.5	60.5	74.5	1	0.189
	HAR011C	18.7	62	83	1	0.403
	7011	29.9	62	83	1	0.420
	7011B	39.4	62	83	1	0.420
	7011C	18.7	62	83	1	0.420
	7211	33.3	63.5	91.5	1.5	0.635
	7211B	43.6	63.5	91.5	1.5	0.635

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

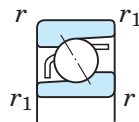
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

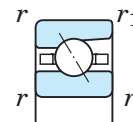
d (55) ~ (65) mm



With machined cage



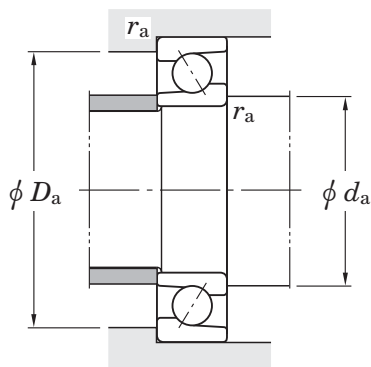
With pressed cage



HAR

Boundary dimensions (mm)					Basic load ratings (kN)				Factor	Limiting speeds ¹⁾ (min ⁻¹)		
<i>d</i>	<i>D</i>	<i>B</i>	<i>r</i> min.	<i>r</i> ₁ min.	With machined cage		With pressed cage			<i>f</i> ₀	Grease lub.	
					<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _r	<i>C</i> _{0r}				
55	100	21	1.5	1	52.9	40.2	55.4	43.1	14.6	11 000	14 000	
	120	29	2	1	80.9	56.5	85.8	61.7	—	6 700	8 400	
	120	29	2	1	74.3	52.0	78.7	56.7	—	5 000	6 700	
	120	29	2	1	86.8	60.6	91.9	66.1	13.4	9 300	12 000	
	140	33	2.1	1.1	118	82.4	—	—	—	4 500	6 000	
	140	33	2.1	1.1	110	76.5	—	—	—	4 000	5 500	
60	85	13	1	0.6	23.2	21.8	—	—	16.3	12 000	16 000	
	85	13	1	0.6	9.95	7.75	—	—	8.6	15 000	23 000	
	95	18	1.1	0.6	14.7	10.8	—	—	8.5	14 000	22 000	
	95	18	1.1	0.6	31.9	28.1	—	—	—	7 700	9 700	
	95	18	1.1	0.6	28.6	25.3	—	—	—	5 800	7 700	
	95	18	1.1	0.6	35.0	30.6	—	—	15.7	11 000	14 000	
	110	22	1.5	1	58.9	45.7	61.7	49.0	—	6 900	8 600	
	110	22	1.5	1	53.4	41.6	55.9	44.6	—	5 100	6 900	
	110	22	1.5	1	64.0	49.5	67.0	53.0	14.5	9 500	13 000	
	130	31	2.1	1.1	92.5	65.6	98.1	71.6	—	6 200	7 700	
	130	31	2.1	1.1	84.9	60.3	90.0	65.8	—	4 600	6 200	
	130	31	2.1	1.1	99.2	70.3	105	76.7	13.4	8 600	11 000	
	150	35	2.1	1.1	129	93.6	—	—	—	4 100	5 500	
	150	35	2.1	1.1	119	86.7	—	—	—	3 700	5 100	
65	90	13	1	0.6	20.8	21.2	—	—	16.5	11 000	15 000	
	90	13	1	0.6	11.8	9.45	—	—	8.6	14 000	22 000	
	100	18	1.1	0.6	15.3	11.8	—	—	8.5	13 000	21 000	
	100	18	1.1	0.6	33.7	31.4	—	—	—	7 200	9 000	
	100	18	1.1	0.6	30.1	28.3	—	—	—	5 400	7 200	
	100	18	1.1	0.6	37.1	34.3	—	—	15.9	10 000	13 000	
	120	23	1.5	1	67.3	54.2	70.2	57.8	—	6 400	8 000	

[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.



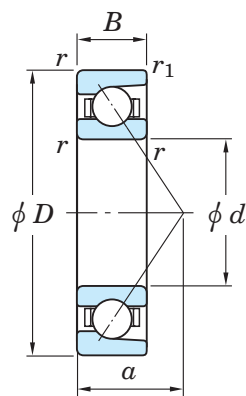
Bearing No. ²⁾	Load center (mm) <i>a</i>	Mounting dimensions (mm)			(Refer.) Mass (kg)
		<i>d</i> _a min.	<i>D</i> _a max.	<i>r</i> _a max.	
7211C	21.1	63.5	91.5	1.5	0.635
7311	40.2	65	110	2	1.45
7311B	51.8	65	110	2	1.45
7311C	26.4	65	110	2	1.45
7411	45.0	67	128	2	2.36
7411B	57.8	67	128	2	2.36
7912C	16.3	65.5	79.5	1	0.187
HAR912C	16.2	65.5	79.5	1	0.202
HAR012C	19.4	67	88	1	0.433
7012	31.4	67	88	1	0.450
7012B	41.5	67	88	1	0.450
7012C	19.4	67	88	1	0.450
7212	36.1	68.5	101.5	1.5	0.820
7212B	47.5	68.5	101.5	1.5	0.820
7212C	22.7	68.5	101.5	1.5	0.820
7312	43.2	72	118	2	1.81
7312B	55.8	72	118	2	1.81
7312C	28.4	72	118	2	1.81
7412	48.5	72	138	2	2.85
7412B	62.6	72	138	2	2.85
7913C	16.9	70.5	84.5	1	0.205
HAR913C	16.9	70.5	84.5	1	0.212
HAR013C	20.1	72	93	1	0.462
7013	33.0	72	93	1	0.470
7013B	43.8	72	93	1	0.470
7013C	20.1	72	93	1	0.470
7213	38.2	73.5	111.5	1.5	1.02

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

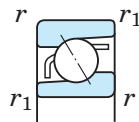
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

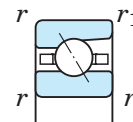
d (65) ~ (75) mm



With machined cage



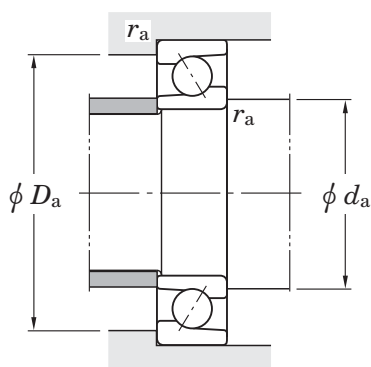
With pressed cage



HAR

Boundary dimensions (mm)					Basic load ratings (kN)				Factor	Limiting speeds ¹⁾ (min ⁻¹)		
					With machined cage		With pressed cage					
<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}	<i>f</i> ₀	Grease lub.	Oil lub.	
65	120	23	1.5	1	60.9	49.3	63.6	52.6	—	4 800	6 400	
	120	23	1.5	1	73.1	58.7	76.3	62.6	14.6	8 900	12 000	
	140	33	2.1	1.1	105	75.3	111	82.2	—	5 800	7 200	
	140	33	2.1	1.1	96.1	69.3	102	75.6	—	4 300	5 800	
	140	33	2.1	1.1	112	80.7	119	88.1	13.4	8 000	11 000	
	160	37	2.1	1.1	139	104	—	—	—	3 900	5 200	
	160	37	2.1	1.1	129	96.8	—	—	—	3 500	4 800	
70	100	16	1	0.6	28.9	29.0	—	—	16.4	10 000	12 000	
	100	16	1	0.6	12.9	10.5	—	—	8.7	13 000	20 000	
	110	20	1.1	0.6	20.7	15.5	—	—	8.4	12 000	19 000	
	110	20	1.1	0.6	42.7	39.4	—	—	—	6 600	8 300	
	110	20	1.1	0.6	38.3	35.5	—	—	—	5 000	6 600	
	110	20	1.1	0.6	46.9	43.0	—	—	15.7	9 200	12 000	
	125	24	1.5	1	69.8	55.6	76.3	63.5	—	6 100	7 600	
	125	24	1.5	1	63.2	50.6	69.1	57.8	—	4 600	6 100	
	125	24	1.5	1	75.9	60.2	83.0	68.8	14.6	8 400	11 000	
	150	35	2.1	1.1	118	85.8	125	93.6	—	5 400	6 700	
	150	35	2.1	1.1	108	78.9	114	86.0	—	4 000	5 400	
	150	35	2.1	1.1	126	91.9	134	100	13.4	7 500	9 900	
	180	42	3	1.1	149	115	—	—	—	3 500	4 600	
	180	42	3	1.1	148	119	—	—	—	3 100	4 300	
75	105	16	1	0.6	29.4	30.5	—	—	16.5	9 300	12 000	
	105	16	1	0.6	13.3	11.2	—	—	8.7	12 000	19 000	
	115	20	1.1	0.6	21.1	16.2	—	—	8.5	12 000	18 000	
	115	20	1.1	0.6	43.6	41.7	—	—	—	6 300	7 800	
	115	20	1.1	0.6	39.1	37.6	—	—	—	4 700	6 300	
	115	20	1.1	0.6	48.0	45.6	—	—	15.9	8 700	11 000	

[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.



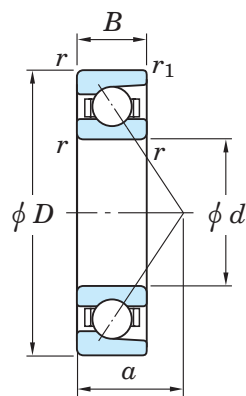
	Bearing No. ²⁾	Load center (mm) <i>a</i>	Mounting dimensions (mm)			(Refer.) Mass (kg)
			<i>d</i> _a min.	<i>D</i> _a max.	<i>r</i> _a max.	
	7213B	50.3	73.5	111.5	1.5	1.02
	7213C	23.9	73.5	111.5	1.5	1.02
	7313	46.3	77	128	2	2.22
	7313B	59.7	77	128	2	2.22
	7313C	30.3	77	128	2	2.22
	7413	51.4	77	148	2	3.41
	7413B	66.3	77	148	2	3.41
	7914C	19.4	75.5	94.5	1	0.332
	HAR914C	19.4	75.5	94.5	1	0.356
	HAR014C	22.1	77	103	1	0.629
	7014	36.0	77	103	1	0.660
	7014B	47.8	77	103	1	0.660
	7014C	22.1	77	103	1	0.660
	7214	40.2	78.5	116.5	1.5	1.12
	7214B	52.9	78.5	116.5	1.5	1.12
	7214C	25.1	78.5	116.5	1.5	1.12
	7314	49.3	82	138	2	2.70
	7314B	63.7	82	138	2	2.70
	7314C	32.2	82	138	2	2.70
	7414	57.6	84	166	2.5	4.99
	7414B	74.2	84	166	2.5	4.99
	7915C	20.1	80.5	99.5	1	0.350
	HAR915C	20.1	80.5	99.5	1	0.370
	HAR015C	22.7	82	108	1	0.665
	7015	37.4	82	108	1	0.690
	7015B	49.9	82	108	1	0.690
	7015C	22.7	82	108	1	0.690

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

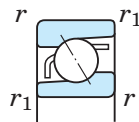
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

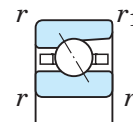
d (85) ~ (95) mm



With machined cage



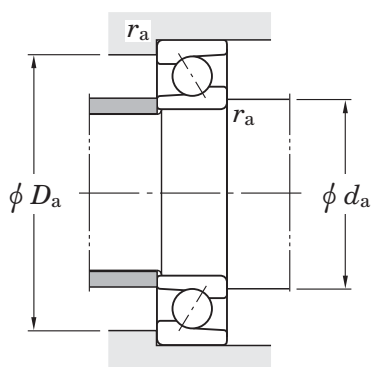
With pressed cage



HAR

Boundary dimensions (mm)					Basic load ratings (kN)				Factor	Limiting speeds ¹⁾ (min ⁻¹)		
<i>d</i>	<i>D</i>	<i>B</i>	<i>r</i> min.	<i>r</i> ₁ min.	With machined cage		With pressed cage			Grease lub.	Oil lub.	
					<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _r	<i>C</i> _{0r}	<i>f</i> ₀			
85	130	22	1.1	0.6	60.1	58.7	—	—	15.9	7 600	10 000	
	150	28	2	1	98.6	83.6	103	89.2	—	5 000	6 300	
	150	28	2	1	89.2	76.0	93.1	81.1	—	3 800	5 000	
	150	28	2	1	107	90.6	112	96.6	14.7	7 000	9 200	
	180	41	3	1.1	150	122	159	133	—	4 400	5 500	
	180	41	3	1.1	137	112	145	122	—	3 300	4 400	
	180	41	3	1.1	161	130	170	142	13.5	6 100	8 100	
	210	52	4	1.5	204	180	—	—	—	3 000	3 900	
	210	52	4	1.5	189	167	—	—	—	2 600	3 600	
90	125	18	1.1	0.6	39.6	42.6	—	—	16.6	7 800	10 000	
	125	18	1.1	0.6	16.8	15.1	—	—	8.8	9 700	15 000	
	140	24	1.5	1	32.8	26.1	—	—	8.4	9 100	14 000	
	140	24	1.5	1	65.2	63.3	—	—	—	5 100	6 400	
	140	24	1.5	1	58.4	57.1	—	—	—	3 900	5 100	
	140	24	1.5	1	71.7	69.1	—	—	15.7	7 100	9 400	
	160	30	2	1	113	96.7	118	103	—	4 700	5 900	
	160	30	2	1	102	88.0	107	93.8	—	3 500	4 700	
	160	30	2	1	123	105	128	112	14.6	6 500	8 600	
	190	43	3	1.1	161	135	171	147	—	4 200	5 200	
	190	43	3	1.1	148	124	156	135	—	3 100	4 200	
	190	43	3	1.1	173	145	183	158	13.5	5 800	7 700	
	225	54	4	1.5	216	196	—	—	—	2 800	3 700	
	225	54	4	1.5	200	182	—	—	—	2 500	3 400	
95	130	18	1.1	0.6	40.2	44.1	—	—	16.5	7 400	9 800	
	130	18	1.1	0.6	17.3	16.0	—	—	8.8	9 300	14 000	
	145	24	1.5	1	33.4	27.2	—	—	8.5	8 700	13 000	
	145	24	1.5	1	66.6	67.1	—	—	—	4 800	6 000	

[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.



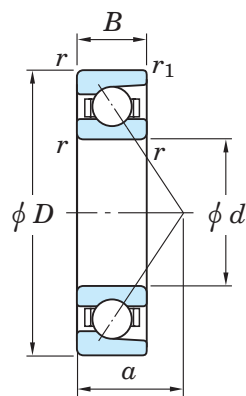
Bearing No. ²⁾	Load center (mm) <i>a</i>	Mounting dimensions (mm)			(Refer.) Mass (kg)
		<i>d_a</i> min.	<i>D_a</i> max.	<i>r_a</i> max.	
7017C	25.5	92	123	1	0.970
7217	47.9	95	140	2	1.87
7217B	63.3	95	140	2	1.87
7217C	29.7	95	140	2	1.87
7317	58.8	99	166	2.5	4.53
7317B	76.1	99	166	2.5	4.53
7317C	38.3	99	166	2.5	4.53
7417	68.7	103	192	3	8.54
7417B	88.1	103	192	3	8.54
7918C	23.4	97	118	1	0.551
HAR918C	23.4	97	118	1	0.598
HAR018C	27.4	98.5	131.5	1.5	1.21
7018	45.2	98.5	131.5	1.5	1.26
7018B	60.2	98.5	131.5	1.5	1.26
7018C	27.4	98.5	131.5	1.5	1.26
7218	51.1	100	150	2	2.30
7218B	67.4	100	150	2	2.30
7218C	31.7	100	150	2	2.30
7318	61.9	104	176	2.5	5.30
7318B	80.2	104	176	2.5	5.30
7318C	40.3	104	176	2.5	5.30
7418	72.5	108	207	3	11.4
7418B	93.1	108	207	3	11.4
7919C	24.1	102	123	1	0.574
HAR919C	24.1	102	123	1	0.626
HAR019C	28.1	103.5	136.5	1.5	1.28
7019	47.2	103.5	136.5	1.5	1.32

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

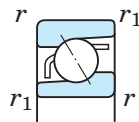
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Single-row angular contact ball bearings

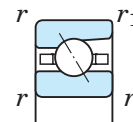
d (95) ~ (105) mm



With machined cage



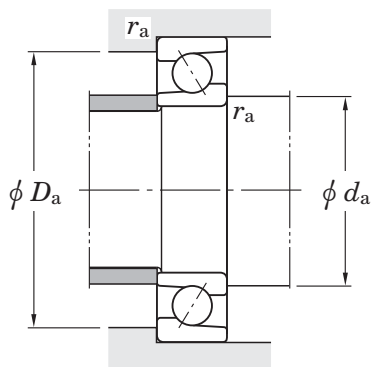
With pressed cage



HAR

Boundary dimensions (mm)					Basic load ratings (kN)				Factor	Limiting speeds ¹⁾ (min ⁻¹)			
<i>d</i>	<i>D</i>	<i>B</i>	<i>r</i> min.	<i>r</i> ₁ min.	With machined cage		With pressed cage			<i>f</i> ₀	Grease lub.		Oil lub.
					<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _r	<i>C</i> _{0r}					
95	145	24	1.5	1	59.6	60.5	—	—	—	3 600	4 800		
	145	24	1.5	1	73.4	73.4	—	—	15.9	6 700	8 900		
	170	32	2.1	1.1	122	103	128	111	—	4 400	5 500		
	170	32	2.1	1.1	111	94.0	116	101	—	3 300	4 400		
	170	32	2.1	1.1	133	112	139	120	14.6	6 100	8 100		
	200	45	3	1.1	172	149	183	162	—	4 000	4 900		
	200	45	3	1.1	158	137	167	149	—	3 000	4 000		
	200	45	3	1.1	185	160	196	174	13.5	5 500	7 300		
100	140	20	1.1	0.6	55.6	58.5	—	—	16.3	7 000	9 200		
	140	20	1.1	0.6	24.2	21.7	—	—	8.7	8 700	13 000		
	150	24	1.5	1	34.0	28.4	—	—	8.5	8 400	13 000		
	150	24	1.5	1	68.4	70.6	—	—	—	4 700	5 900		
	150	24	1.5	1	61.2	63.6	—	—	—	3 500	4 700		
	150	24	1.5	1	75.3	77.2	—	—	16.0	6 500	8 600		
	180	34	2.1	1.1	137	117	144	126	—	4 100	5 200		
	180	34	2.1	1.1	124	107	130	115	—	3 100	4 200		
	180	34	2.1	1.1	149	127	156	136	14.6	5 700	7 600		
	215	47	3	1.1	184	161	207	194	—	3 600	4 600		
	215	47	3	1.1	168	148	190	178	—	2 700	3 600		
	215	47	3	1.1	197	173	222	208	13.4	5 000	6 700		
105	145	20	1.1	0.6	56.7	61.5	—	—	16.4	6 700	8 800		
	145	20	1.1	0.6	24.9	23.1	—	—	8.7	8 400	13 000		
	160	26	2	1	38.6	32.5	—	—	8.5	7 900	12 000		
	160	26	2	1	79.8	81.9	—	—	—	4 400	5 500		
	160	26	2	1	71.4	73.8	—	—	—	3 300	4 400		
	160	26	2	1	87.8	89.6	—	—	15.9	6 000	8 000		
	190	36	2.1	1.1	149	132	—	—	—	3 900	4 900		

[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.



Bearing No. ²⁾	Load center (mm) <i>a</i>	Mounting dimensions (mm)			(Refer.) Mass (kg)
		<i>d_a</i> min.	<i>D_a</i> max.	<i>r_a</i> max.	
7019B	63.2	103.5	136.5	1.5	1.32
7019C	28.3	103.5	136.5	1.5	1.32
7219	54.3	107	158	2	2.78
7219B	71.6	107	158	2	2.78
7219C	33.8	107	158	2	2.78
7319	65.1	109	186	2.5	6.12
7319B	84.4	109	186	2.5	6.12
7319C	42.3	109	186	2.5	6.12
7920C	26.1	107	133	1	0.773
HAR920C	26.1	107	133	1	0.839
HAR020C	28.7	108.5	141.5	1.5	1.32
7020	48.1	108.5	141.5	1.5	1.37
7020B	64.4	108.5	141.5	1.5	1.37
7020C	28.7	108.5	141.5	1.5	1.37
7220	57.7	112	168	2	3.32
7220B	76.2	112	168	2	3.32
7220C	35.9	112	168	2	3.32
7320	69.4	114	201	2.5	7.53
7320B	90.2	114	201	2.5	7.53
7320C	44.8	114	201	2.5	7.53
7921C	26.7	112	138	1	0.810
HAR921C	26.7	112	138	1	0.874
HAR021C	30.8	115	150	2	1.68
7021	51.8	115	150	2	1.73
7021B	68.6	115	150	2	1.73
7021C	31.0	115	150	2	1.73
7221	61.0	117	178	2	3.95

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.