

## Spherical roller bearings

Spherical roller bearings feature a large load rating capacity and self-aligning capability.

This type of bearing is suitable for low- or medium-speed applications which involve heavy or impact loading.

- These bearings are divided into R(RR), RZ and RHA types, which differ in internal structure. (refer to Table 1.)
- Each type can be produced with a cylindrical bore or tapered bore.

Bearings with a tapered bore can be fit and removed easily using an adapter assembly or withdrawal sleeve.

The rate of taper is equivalent among all bearing series.

240 and 241 series ... 1 : 30 (supplementary code "K30")

Others ... 1 : 12 (supplementary code "K")

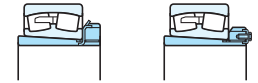
### Spherical roller bearings



Cylindrical bore    Tapered bore

Bore diameter **25 – 500 mm**

### Adapter assemblies

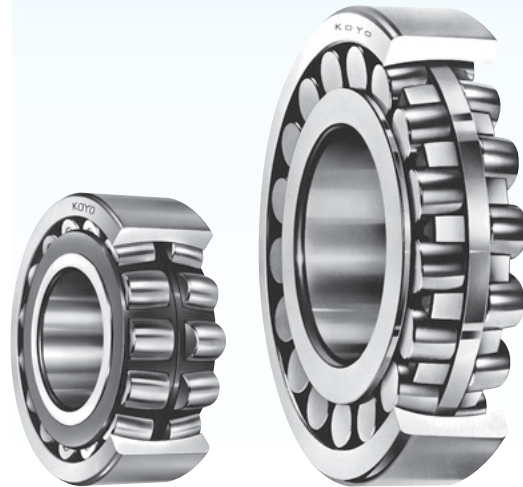


Bore diameter **20 – 470 mm**




### Withdrawal sleeves



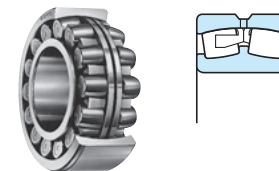
Bore diameter **35 – 480 mm**



**Table 1 Spherical roller bearings : types and structures**

Structure	 R, RR type	 RZ type	 RHA type
Roller	Convex asymmetrical roller	Convex symmetrical roller	Convex symmetrical roller
Cage	Copper alloy prong type machined cage	Pressed cage	Copper alloy integral type machined cage
Inner ring (with or without rib)	With center rib	Without center rib (guide ring)	Without center rib (guide ring)
	With ribs on both sides (to prevent rollers from falling)	Without ribs on both sides	With ribs on both sides (to prevent rollers from falling)
Characteristics	Excellent high-speed properties	Excellent high-speed properties Large load rating capacity Usable at high temperatures (up to 200°C)	Large load rating capacity

### ■ Spherical roller bearings for shaker screens



- These bearings consist of convex asymmetric rollers and a prong type, copper alloy, outer ring guided, machined cage. This cage possesses optimum characteristics for use with shaker screens.
- The bearings most commonly used with shaker screens are 223 series spherical roller bearings. They are identified by the supplementary code "ROVS W502." The outer ring outside diameter tolerance of these bearings is held to a small allowable variation.

■ Bearings with lubrication holes and a lubrication groove

- Outer rings can be provided with lubrication holes, a lubrication groove and an anti-rotation pin hole. (Specifications are given in Table 4.)
- Inner rings can also be provided with lubrication holes and a lubrication groove.

**Table 2 Supplementary codes for identification of bearings with lubrication holes, lubrication groove and anti-rotation pin hole (outer ring)**

Supplementary code		Number of lubrication holes	Hole layout
With lubrication holes and lubrication groove	With lubrication holes, lubrication groove and anti-rotation pin hole		
<b>W33</b>	<b>W3N</b>	3 <sup>1)</sup>	3 equally spaced positions <sup>1)</sup>
W33A	W3NA	4	4 equally spaced positions
—	W3NB	5	6 equally spaced positions <sup>2)</sup>
W33C	W3NC	6	6 equally spaced positions
—	W3ND	7	8 equally spaced positions <sup>2)</sup>
W33T	—	8	8 equally spaced positions

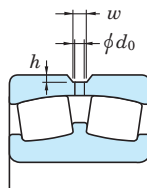
[Notes] 1) Also 4 or 6 holes are provided in smaller size bearings, consult with JTEKT.

2) One hole is used for the antirotation pin.

[Remark] Boldfaced codes indicate JTEKT standards.

**Table 3 Supplementary codes for identification of bearings with lubrication holes and/or lubrication groove**

Supplementary code	Inner ring		Outer ring	
	Number of lubrication holes	Lubrication groove	Number of lubrication holes	Lubrication groove
W513	3	—	3	○
W518	3	—	3	—
W26	3	—	—	—



**Table 4 (1) Lubrication hole and lubrication groove dimensions** Unit : mm

Bore diameter number	Nominal bore diameter d	239			230			240			231			241			222			232			213			223			
		d <sub>0</sub>	w	h	d <sub>0</sub>	w	h	d <sub>0</sub>	w	h	d <sub>0</sub>	w	h	d <sub>0</sub>	w	h	d <sub>0</sub>	w	h	d <sub>0</sub>	w	h	d <sub>0</sub>	w	h	d <sub>0</sub>	w	h	
5	25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6	30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
13	65	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14	70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15	75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
16	80	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
17	85	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
18	90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
19	95	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
20	100	—	—	—	4	5	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
22	110	—	—	—	5	7	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
24	120	—	—	—	5	7	1	5	6	1.4	5	6	1.4	6	8	1.5	5	7	1.5	6	10	1.7	—	—	—	—	—	—	—
26	130	—	—	—	5	7	1.2	6	8	1.5	5	6	1.5	6	8	1.5	5	7	1.5	6	10	1.7	—	—	—	—	—	—	—
28	140	4	5	1	5	7	1.2	6	8	1.5	6	8	1.5	8	10	2	6	8	1.8	8	10	2.5	—	—	—	—	—	—	—
30	150	5	7	1	5	8	1.2	6	8	1.5	6	10	1.5	8	10	2	6	10	1.8	8	10	2.5	—	—	—	—	—	—	—
32	160	5	7	1.2	5	8	1.2	6	8	1.5	8	12	2	10	12	2	10	12	2	10	12	2.5	—	—	—	—	—	—	—
34	170	5	7	1.2	6	10	1.5	8	10	2	8	12	2	10	12	2	12	14	3	10	12	2.5	—	—	—	—	—	—	—
36	180	6	7	1.3	8	12	1.5	10	12	2.5	10	12	2.5	10	12	2	12	14	3	10	12	2.5	—	—	—	—	—	—	—
38	190	5	7	1.2	10	12	2.5	10	12	2.5	10	12	2.5	10	12	2	12	14	3	12	14	3	—	—	—	—	—	—	—
40	200	6	8	1.5	10	12	2.5	10	12	2.5	12	14	3	12	14	3	12	14	3	12	14	3	—	—	—	—	—	—	—
44	220	6	8	1.5	10	12	2.5	10	12	2.5	12	14	3	12	14	3	12	14	3	12	14	3	—	—	—	—	—	—	—
48	240	6	8	1.5	10	12	2.5	10	12	2.5	12	14	3	12	14	3	14	16.5	4	14	16.5	4	—	—	—	—	—	—	—
52	260	10	12	2.5	12	14	3	12	14	3	12	14	3	12	14	3	14	16.5	4	14	16.5	4	—	—	—	—	—	—	—
56	280	10	12	2.5	12	14	3	12	14	3	12	14	3	12	14	3	14	16.5	4	14	16.5	4	—	—	—	—	—	—	—
60	300	10	12	2.5	12	14	3	12	14	3	12	14	3	12	14	3	14	16.5	4	14	16.5	4	—	—	—	—	—	—	—
64	320	10	12	2.5	12	14	3	12	14	3	14	16.5	4	14	16.5	4	14	16.5	4	14	16.5	4	—	—	—	—	—	—	—
68	340	12	14	3	14	16.5	4	14	16.5	4	14	16.5	4	14	16.5	4	14	16.5	4	14	16.5	4	—	—	—	—	—	—	—
72	360	12	14	3	14	16.5	4	14	16.5	4	14	16.5	4	14	16.5	4	14	16.5	4	14	16.5	4	—	—	—	—	—	—	—

**Table 4 (2) Lubrication hole and lubrication groove dimensions** Unit : mm

Bore diameter number	Nominal bore diameter d	239			230			240			231			241			222			232			213			223			
		d <sub>0</sub>	w	h	d <sub>0</sub>	w	h	d <sub>0</sub>	w	h	d <sub>0</sub>	w	h	d <sub>0</sub>	w	h	d <sub>0</sub>	w	h	d <sub>0</sub>	w	h	d <sub>0</sub>	w	h	d <sub>0</sub>	w	h	
76	380	12	14	3	14	16.5	4	14	16.5	4	14	16.5	4	14	16.5	4	—	—	—	14	16.5	4	—	—	—	—	—	—	—
80	400	12	14	3	14	16.5	4	14	16.5	4	14	16.5	4	14	16.5	4	—	—	—	14	16.5	4	—	—	—	—	—	—	—
84	420	12	14	3	14	16.5	4	14	16.5	4	14	16.5	4	14	16.5	4	—	—	—	14	16.5	4	—	—	—	—	—	—	—
88	440	14	16.5	4	14	16.5	4	14	16.5	4	14	16.5	4	14	16.5	4	—	—	—	14	16.5	4	—	—	—	—	—	—	—
92	460	14	16.5	4	14	16.5	4	14	16.5	4	14	16.5	4	14	16.5	4	—	—	—	14	16.5	4	—	—	—	—	—	—	—
96	480	14	16.5	4	14	16.5	4	14	16.5	4	14	16.5	4	14	16.5	4	—	—	—	14	16.5	4	—	—	—	—	—	—	—
/500	500	14	16.5	4	14	16.5	4	14	16.5	4	14	16.5	4	14	16.5	4	—	—	—	14	16.5	4	—	—	—	—	—	—	—

Boundary dimensions	As specified in JIS B 1512.
Tolerances	As specified in JIS B 1514-1, class 0. (refer to Table 7-3 on pp. A 60 – A 63.) Refer to Table 7-11 on p. A 76 for the tolerance of tapered bores.
Radial internal clearance	As specified in JIS B 1520. (refer to Table 10-9 on p. A 108.)
Recommended fits	Refer to Table 9-4 on pp. A 91, 92.
Standard cages	Refer to Table 5.
Allowable aligning angle	Refer to Table 5. (varies depending on bearing series.)
Equivalent radial load	Dynamic equivalent radial load $\left( \text{When } \frac{F_a}{F_r} \leq e \right) P_r = F_r + Y_1 F_a \quad \left( \text{When } \frac{F_a}{F_r} > e \right) P_r = 0.67 F_r + Y_2 F_a$ Static equivalent radial load $P_{0r} = F_r + Y_0 F_a$ [Note] Refer to the specification table for the values of axial load factors $Y_1$ , $Y_2$ and $Y_0$ and of constant $e$ .

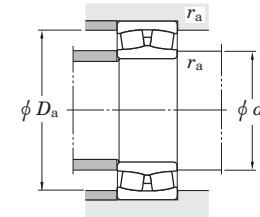
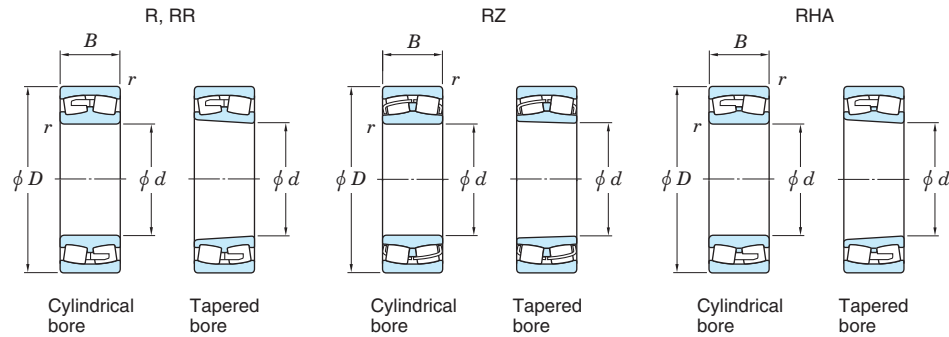
[Remark] If the ratio of axial load to radial load exceeds the value  $e$  given in the specification table ( $F_a/F_r > e$ ), slippage occurs between rollers in rows that are not axial-loaded and the raceway. This may cause smearing, especially when the bearing is large. Consult with JTEKT on the use of bearings under such conditions.

**Table 5 Application of standard cages and allowable aligning angle**

Bearing series	Standard cages		Allowable aligning angle
	Pressed cage	Machined cage	
239 R	—	23930R – 239/500R	0.026 rad (1.5°)
230 R	—	23038R – 230/500R	0.026 rad (1.5°)
RZ	23020RZ – 23036RZ	—	—
RHA	—	23038RHA – 23096RHA	—
240 R(RR)	—	24036RR – 240/500R	0.035 rad (2°)
RZ	24022RZ – 24034RZ	—	—
RHA	—	24038RHA – 24096RHA	—
231 R	—	23136R – 231/500R	0.026 rad (1.5°)
RZ	23120RZ – 23134RZ	—	—
RHA	—	23136RHA – 23196RHA	—
241 R(RR)	—	24132RR – 241/500R	0.044 rad (2.5°)
RZ	24122RZ – 24130RZ	—	—
RHA	—	24136RHA – 24196RHA	—
222 R(RR)	—	22232RR – 222/500R	0.026 rad (1.5°)
RZ	22205RZ – 22230RZ	—	—
RHA	—	22232RHA – 22260RHA	—
232 R	—	23232R – 232/500R	0.044 rad (2.5°)
RZ	23216RZ – 23230RZ	—	—
RHA	—	23232RHA – 23296RHA	—
213 R	—	—	0.017 rad (1°)
RZ	21306RZ – 21322RZ	—	—
223 R(RR)	—	22330R	

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d 25 ~ 70 mm

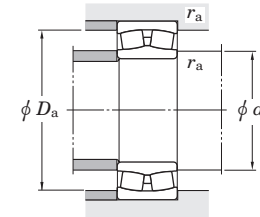
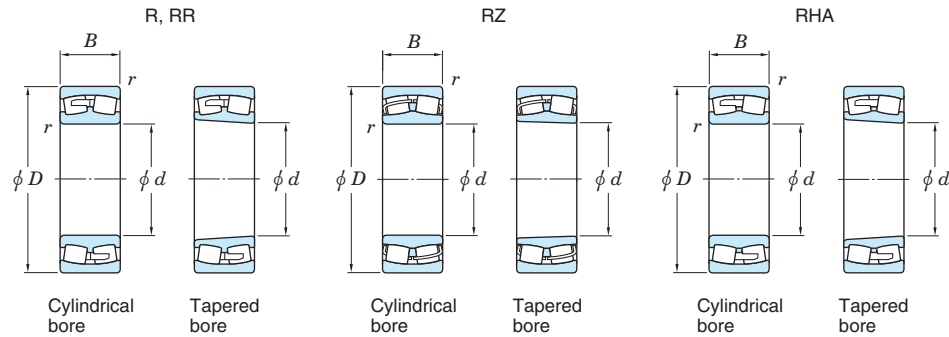


Boundary dimensions (mm)				Basic load ratings (kN)		Fatigue load limit (kN)	Limiting speeds (min <sup>-1</sup> )		Bearing No.		Mounting dimensions (mm)					Constant	Axial load factors			(Refer.) Mass (kg)	
d	D	B	r min.	C <sub>r</sub>	C <sub>0r</sub>	C <sub>u</sub>	Grease lub.	Oil lub.	Cylindrical bore	Tapered bore	d <sub>a</sub> min.	d <sub>a</sub> max.	D <sub>a</sub> max.	D <sub>a</sub> min.	r <sub>a</sub> max.	e	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>0</sub>	Cylindrical bore	Tapered bore
25	52	18	1	56.8	48.1	3.90	9 600	12 800	22205RZ	22205RZK	31	31	46	46	1	0.35	1.91	2.85	1.87	0.188	0.184
30	62	20	1	76.6	65.9	5.30	8 100	10 900	22206RZ	22206RZK	36	36.5	56	55.5	1	0.33	2.04	3.04	2.00	0.296	0.290
	72	19	1.1	74.2	62.7	4.80	7 200	9 600	21306RZ	21306RZK	37	41.5	65	61.5	1	0.27	2.49	3.71	2.43	0.430	0.424
35	72	23	1.1	100	88.7	7.75	6 900	9 200	22207RZ	22207RZK	42	42.5	65	64	1	0.32	2.09	3.11	2.04	0.459	0.449
	80	21	1.5	86.8	75.8	5.90	6 200	8 300	21307RZ	21307RZK	43.5	46.5	71.5	68.5	1.5	0.27	2.49	3.71	2.43	0.572	0.564
40	80	23	1.1	114	102	9.55	6 200	8 300	22208RZ	22208RZK	47	49	73	72.5	1	0.28	2.37	3.53	2.32	0.602	0.591
	90	23	1.5	105	95.5	7.55	5 600	7 600	21308RZ	21308RZK	48.5	53.5	81.5	77	1.5	0.26	2.55	3.80	2.50	0.781	0.770
	90	33	1.5	170	152	11.8	5 600	7 600	22308RZ	22308RZK	48.5	51	81.5	78.5	1.5	0.37	1.83	2.72	1.79	1.08	1.06
45	85	23	1.1	119	110	10.2	5 800	7 700	22209RZ	22209RZK	52	53.5	78	77.5	1	0.26	2.55	3.80	2.50	0.602	0.590
	100	25	1.5	132	124	9.95	5 000	6 700	21309RZ	21309RZK	53.5	60	91.5	86	1.5	0.26	2.62	3.90	2.56	1.05	1.04
	100	36	1.5	208	183	13.8	5 100	6 700	22309RZ	22309RZK	53.5	55.5	91.5	87	1.5	0.37	1.83	2.72	1.79	1.42	1.39
50	90	23	1.1	128	122	12.7	5 400	7 200	22210RZ	22210RZK	57	58.5	83	82.5	1	0.24	2.79	4.15	2.73	0.648	0.634
	110	27	2	157	151	12.0	4 500	6 100	21310RZ	21310RZK	60	67	100	94.5	2	0.25	2.71	4.04	2.65	1.37	1.35
	110	40	2	255	237	17.5	4 500	6 200	22310RZ	22310RZK	60	62.5	100	95.5	2	0.36	1.85	2.76	1.81	1.92	1.88
55	100	25	1.5	154	144	15.0	4 700	6 300	22211RZ	22211RZK	63.5	64	91.5	91.5	1.5	0.24	2.84	4.23	2.78	0.867	0.849
	120	29	2	180	165	13.0	4 100	5 600	21311RZ	21311RZK	65	71.5	110	101.5	2	0.25	2.71	4.03	2.65	1.69	1.67
	120	43	2	296	264	21.1	4 100	5 500	22311RZ	22311RZK	65	66	110	104	2	0.36	1.85	2.76	1.81	2.40	2.35
60	110	28	1.5	190	181	18.7	4 300	5 800	22212RZ	22212RZK	68.5	70	101.5	100	1.5	0.25	2.74	4.08	2.68	1.19	1.17
	130	31	2.1	210	193	15.1	3 900	5 100	21312RZ	21312RZK	72	77.5	118	110	2	0.24	2.78	4.14	2.72	2.11	2.08
	130	46	2.1	354	334	24.9	3 900	5 100	22312RZ	22312RZK	72	73.5	118	113	2	0.36	1.86	2.77	1.82	3.06	2.99
65	120	31	1.5	222	211	20.7	4 000	5 200	22213RZ	22213RZK	73.5	76	111.5	109	1.5	0.25	2.69	4.00	2.63	1.55	1.52
	140	33	2.1	242	232	19.8	3 600	4 700	21313RZ	21313RZK	77	85.5	128	119	2	0.24	2.83	4.21	2.76	2.62	2.58
	140	48	2.1	382	360	30.8	3 600	4 700	22313RZ	22313RZK	77	79.5	128	122	2	0.34	1.98	2.94	1.93	3.66	3.58
70	125	31	1.5	233	222	24.4	3 700	5 000	22214RZ	22214RZK	78.5	80	116.5	114	1.5	0.24	2.87	4.27	2.80	1.64	1.61
	150	35	2.1	268	260	21.6	3 300	4 400	21314RZ	21314RZK	82	91	138	126.5	2	0.24	2.84	4.23	2.78	3.19	3.15
	150	51	2.1	435	413	35.0	3 300	4 400	22314RZ	22314RZK	82	85.5	138	131	2	0.34	1.98	2.94	1.93	4.45	4.36

[Remark] Standard cage types used for the above bearings are shown in Table 5 earlier in this section.

Spherical roller bearings

d 75 ~ (110) mm

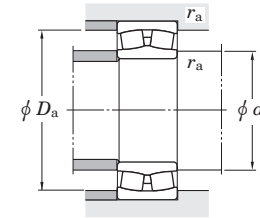
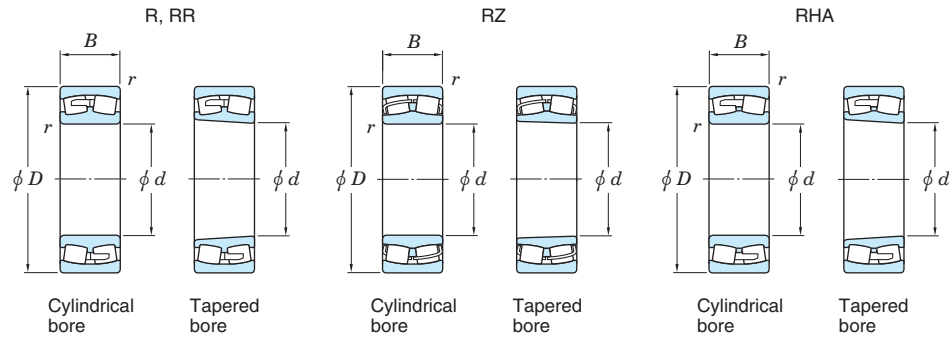


Boundary dimensions (mm)				Basic load ratings (kN)		Fatigue load limit (kN) C <sub>u</sub>	Limiting speeds (min <sup>-1</sup> )		Bearing No.		Mounting dimensions (mm)					Constant e	Axial load factors			(Refer.) Mass (kg)	
d	D	B	r <sub>min.</sub>	C <sub>r</sub>	C <sub>0r</sub>		Grease lub.	Oil lub.	Cylindrical bore	Tapered bore	d <sub>a</sub> min.	d <sub>a</sub> max.	D <sub>a</sub> max.	D <sub>a</sub> min.	r <sub>a</sub> max.		Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>0</sub>	Cylindrical bore	Tapered bore
75	130	31	1.5	241	236	28.2	3 600	4 700	22215RZ	22215RZK	83.5	85.5	121.5	119	1.5	0.22	3.07	4.57	3.00	1.73	1.69
	160	37	2.1	306	298	24.3	3 000	4 100	21315RZ	21315RZK	87	98	148	138	2	0.24	2.87	4.27	2.80	3.81	3.76
	160	55	2.1	492	473	38.4	3 000	4 100	22315RZ	22315RZK	87	91	148	139.5	2	0.35	1.95	2.90	1.91	5.45	5.33
80	140	33	2	271	271	30.5	3 300	4 400	22216RZ	22216RZK	90	92	130	128	2	0.22	3.07	4.57	3.00	2.17	2.13
	140	44.4	2	305	342	31.2	3 300	4 400	23216RZ	23216RZK	90	93	130	124	2	0.29	2.35	3.50	2.30	2.95	2.86
	170	39	2.1	344	339	27.5	2 900	3 900	21316RZ	21316RZK	92	104	158	146	2	0.23	2.88	4.29	2.82	4.53	4.47
	170	58	2.1	539	521	41.7	2 900	3 900	22316RZ	22316RZK	92	97	158	148	2	0.35	1.95	2.90	1.91	6.44	6.30
85	150	36	2	322	324	35.7	3 000	4 100	22217RZ	22217RZK	95	97	140	137	2	0.22	3.01	4.48	2.94	2.75	2.69
	150	49.2	2	358	410	36.2	3 000	4 100	23217RZ	23217RZK	95	99	140	134	2	0.30	2.25	3.34	2.20	3.78	3.67
	180	41	3	374	372	29.6	2 800	3 600	21317RZ	21317RZK	99	109	166	154	2.5	0.23	2.89	4.33	2.83	5.32	5.25
	180	60	3	601	586	47.8	2 800	3 600	22317RZ	22317RZK	99	103	166	157	2.5	0.33	2.02	3.00	1.97	7.47	7.31
90	160	40	2	372	381	39.2	2 900	3 900	22218RZ	22218RZK	100	104	150	145	2	0.24	2.79	4.15	2.73	3.50	3.43
	160	52.4	2	421	482	42.9	2 900	3 900	23218RZ	23218RZK	100	103	150	141	2	0.32	2.14	3.19	2.09	4.63	4.50
	190	43	3	413	416	32.9	2 600	3 400	21318RZ	21318RZK	104	116	176	162	2.5	0.23	2.91	4.30	2.84	6.20	6.11
	190	64	3	672	662	50.5	2 600	3 400	22318RZ	22318RZK	104	108	176	166	2.5	0.34	2.00	2.98	1.96	8.82	8.63
95	170	43	2.1	417	422	42.7	2 800	3 600	22219RZ	22219RZK	107	109	158	154	2	0.24	2.76	4.11	2.70	4.24	4.15
	170	55.6	2.1	457	516	43.9	2 800	3 600	23219RZ	23219RZK	107	110	158	150	2	0.30	2.25	3.34	2.20	5.50	5.35
	200	45	3	452	461	36.3	2 500	3 200	21319RZ	21319RZK	109	123	186	171	2.5	0.23	2.92	4.35	2.86	7.16	7.06
	200	67	3	733	726	55.6	2 500	3 200	22319RZ	22319RZK	109	114	186	174	2.5	0.33	2.02	3.00	1.97	10.2	9.98
100	150	37	1.5	262	332	33.7	2 900	3 900	23020RZ	23020RZK	109	110	141	138	1.5	0.22	3.01	4.48	2.94	2.34	2.27
	165	52	2	412	510	48.5	2 800	3 600	23120RZ	23120RZK	110	114	155	147	2	0.29	2.33	3.47	2.28	4.52	4.38
	180	46	2.1	470	481	47.6	2 600	3 400	22220RZ	22220RZK	112	115	168	163	2	0.25	2.74	4.08	2.68	5.11	5.00
	180	60.3	2.1	533	629	53.5	2 600	3 400	23220RZ	23220RZK	112	116	168	157	2	0.32	2.09	3.11	2.04	6.85	6.66
	215	47	3	519	524	40.2	2 200	3 000	21320RZ	21320RZK	114	131	201	184	2.5	0.22	3.02	4.49	2.95	8.79	8.68
	215	73	3	875	877	63.9	2 200	3 000	22320RZ	22320RZK	114	121	201	187	2.5	0.35	1.95	2.90	1.91	13.2	12.9
110	170	45	2	377	486	48.4	2 600	3 400	23022RZ	23022RZK	120	123	160	156	2	0.24	2.84	4.23	2.78	3.85	3.74

[Remark] Standard cage types used for the above bearings are shown in Table 5 earlier in this section.

Spherical roller bearings

d (110) ~ 140 mm

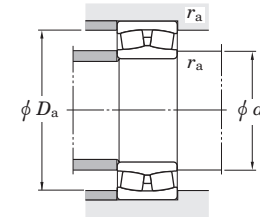
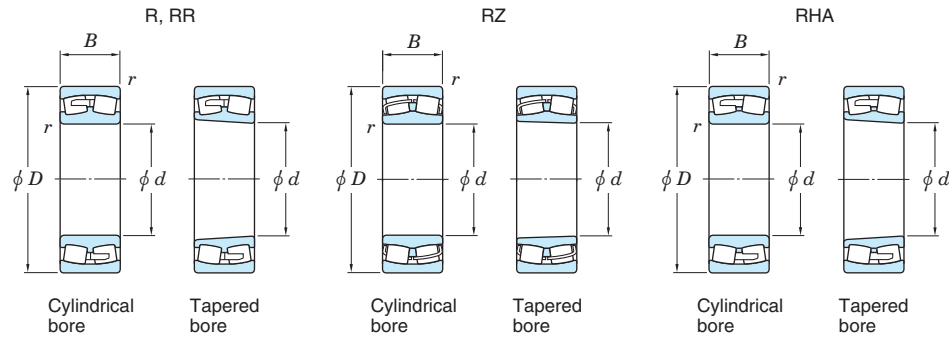


Boundary dimensions (mm)				Basic load ratings (kN)		Fatigue load limit (kN)	Limiting speeds (min <sup>-1</sup> )		Bearing No.		Mounting dimensions (mm)					Constant	Axial load factors			(Refer.) Mass (kg)	
d	D	B	r min.	C <sub>r</sub>	C <sub>0r</sub>	C <sub>u</sub>	Grease lub.	Oil lub.	Cylindrical bore	Tapered bore	d <sub>a</sub> min.	d <sub>a</sub> max.	D <sub>a</sub> max.	D <sub>a</sub> min.	r <sub>a</sub> max.	e	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>0</sub>	Cylindrical bore	Tapered bore
110	170	60	2	472	647	58.6	2 600	3 600	24022RZ	24022RZK30	120	120	160	151	2	0.32	2.08	3.10	2.04	5.07	4.99
	180	56	2	484	605	53.7	2 500	3 300	23122RZ	23122RZK	120	125	170	161	2	0.29	2.36	3.51	2.31	5.72	5.54
	180	69	2	569	778	63.4	2 500	3 300	24122RZ	24122RZK30	120	120	170	154	2	0.37	1.84	2.74	1.80	6.98	6.87
	200	53	2.1	612	642	58.7	2 300	3 000	22222RZ	22222RZK	122	127	188	180	2	0.26	2.64	3.93	2.58	7.37	7.21
	200	69.8	2.1	672	792	65.4	2 300	3 000	23222RZ	23222RZK	122	127	188	173	2	0.34	1.99	2.96	1.94	9.76	9.48
	240	50	3	604	616	46.0	1 900	2 600	21322RZ	21322RZK	124	147	226	205	2.5	0.21	3.19	4.75	3.12	11.8	11.7
	240	80	3	1 040	1 040	77.7	1 900	2 600	22322RZ	22322RZK	124	136	226	208	2.5	0.33	2.03	3.02	1.98	18.1	17.7
120	180	46	2	394	524	51.6	2 300	3 200	23024RZ	23024RZK	130	132	170	165	2	0.23	2.95	4.40	2.89	4.20	4.07
	180	60	2	484	709	61.8	2 300	3 200	24024RZ	24024RZK30	130	130	170	160	2	0.30	2.23	3.32	2.18	5.43	5.34
	200	62	2	571	714	61.2	2 200	3 000	23124RZ	23124RZK	130	137	190	176	2	0.29	2.34	3.49	2.29	7.98	7.74
	200	80	2	733	1 020	78.6	2 200	3 000	24124RZ	24124RZK30	130	133	190	172	2	0.38	1.75	2.61	1.72	10.2	10.0
	215	58	2.1	706	764	67.2	2 100	2 800	22224RZ	22224RZK	132	138	203	193	2	0.26	2.60	3.87	2.54	9.31	9.10
	215	76	2.1	772	956	78.9	2 100	2 900	23224RZ	23224RZK	132	139	203	185	2	0.34	1.97	2.94	1.93	12.2	11.8
	260	86	3	1 120	1 130	87.2	1 800	2 500	22324RZ	22324RZK	134	149	246	228	2.5	0.33	2.03	3.02	1.98	22.8	22.3
130	200	52	2	509	674	63.6	2 200	2 900	23026RZ	23026RZK	140	145	190	182	2	0.24	2.87	4.27	2.80	6.15	5.97
	200	69	2	625	914	77.3	2 200	2 900	24026RZ	24026RZK30	140	143	190	177	2	0.32	2.14	3.18	2.09	8.03	7.90
	210	64	2	621	799	68.4	2 100	2 800	23126RZ	23126RZK	140	147	200	187	2	0.28	2.42	3.61	2.37	8.71	8.44
	210	80	2	754	1 080	91.8	2 100	2 800	24126RZ	24126RZK30	140	145	200	184	2	0.36	1.90	2.83	1.86	10.8	10.6
	230	64	3	821	914	74.4	1 900	2 600	22226RZ	22226RZK	144	148	216	206	2.5	0.26	2.55	3.80	2.50	11.6	11.3
	230	80	3	880	1 090	89.4	1 900	2 600	23226RZ	23226RZK	144	151	216	201	2.5	0.33	2.05	3.05	2.00	14.4	14.0
	280	93	4	1 310	1 340	98.6	1 700	2 200	22326RZ	22326RZK	148	160	262	245	3	0.33	2.03	3.02	1.98	28.5	27.9
140	210	53	2	530	723	67.9	2 100	2 800	23028RZ	23028RZK	150	155	200	192	2	0.23	2.98	4.44	2.92	6.62	6.42
	210	69	2	640	957	81.7	2 100	2 800	24028RZ	24028RZK30	150	153	200	188	2	0.30	2.28	3.39	2.23	8.49	8.35
	225	68	2.1	710	940	79.6	1 900	2 600	23128RZ	23128RZK	152	158	213	201	2	0.28	2.45	3.65	2.40	10.6	10.3
	225	85	2.1	853	1 170	90.7	1 900	2 600	24128RZ	24128RZK30	152	153	213	194	2	0.36	1.89	2.82	1.85	13.1	12.9
	250	68	3	947	1 030	85.2	1 800	2 300	22228RZ	22228RZK	154	158	236	224	2.5	0.26	2.60	3.87	2.54	14.5	14.2
	250	88	3	1 020	1 290	103	1 800	2 300	23228RZ	23228RZK	154	161	236	214	2.5	0.34	1.99	2.96	1.95	19.0	18.4
	300	102	4	1 470	1 570	105	1 500	2 100	22328RZ	22328RZK	158	172	282	255	3	0.35	1.95	2.90	1.90	35.7	34.9

[Remark] Standard cage types used for the above bearings are shown in Table 5 earlier in this section.

Spherical roller bearings

d 150 ~ (170) mm



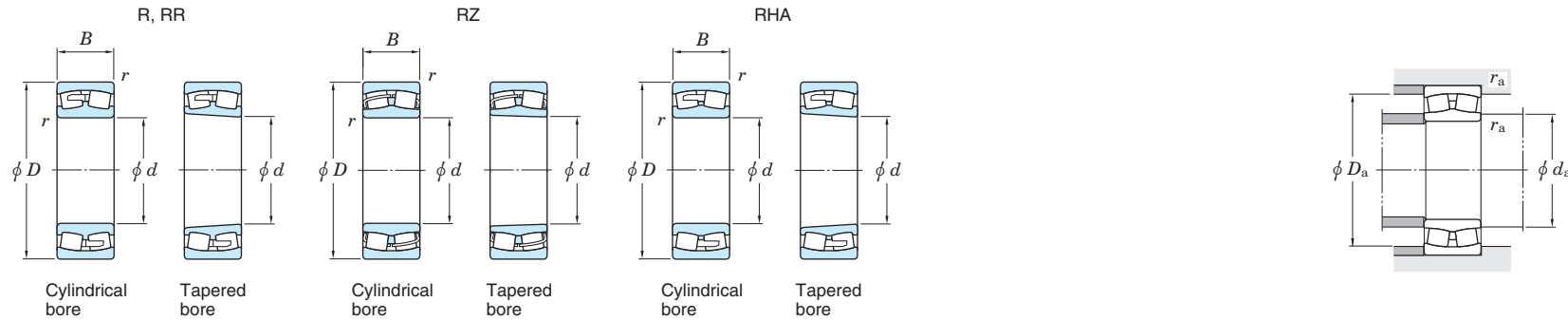
Boundary dimensions (mm)				Basic load ratings (kN)		Fatigue load limit (kN)	Limiting speeds (min <sup>-1</sup> )		Bearing No.		Mounting dimensions (mm)					Constant	Axial load factors			(Refer.) Mass (kg)		
d	D	B	r min.	C <sub>r</sub>	C <sub>0r</sub>	C <sub>u</sub>	Grease lub.	Oil lub.	Cylindrical bore	Tapered bore	d <sub>a</sub> min.	d <sub>a</sub> max.	D <sub>a</sub> max.	D <sub>a</sub> min.	r <sub>a</sub> max.	e	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>0</sub>	Cylindrical bore	Tapered bore	
150	210	45	2	418	622	62.5	1 600	2 100	23930R	23930RK	160	170	200	195	2	0.20	3.44	5.12	3.36	5.09	4.93	
	225	56	2.1	579	797	76.3	1 900	2 500	23030RZ	23030RZK	162	166	213	205	2	0.22	3.04	4.53	2.97	8.01	7.77	
	225	75	2.1	724	1 100	90.3	1 900	2 500	24030RZ	24030RZK	162	163	213	199	2	0.30	2.23	3.32	2.18	10.6	10.4	
	250	80	2.1	902	1 230	102	1 800	2 300	23130RZ	23130RZK	162	171	238	216	2	0.30	2.24	3.34	2.19	16.4	15.9	
	250	100	2.1	1 110	1 590	116	1 800	2 300	24130RZ	24130RZK	162	166	238	213	2	0.38	1.77	2.64	1.73	19.9	19.6	
	270	73	3	1 080	1 200	102	1 700	2 200	22230RZ	22230RZK	164	172	256	243	2.5	0.25	2.69	4.00	2.63	18.9	18.5	
	270	96	3	1 200	1 540	121	1 700	2 200	23230RZ	23230RZK	164	173	256	230	2.5	0.34	1.96	2.93	1.92	24.5	23.8	
	320	108	4	1 540	1 600	175	1 200	1 500	22330R	22330RK	168	195	302	273	3	0.38	1.78	2.64	1.74	43.6	42.7	
	320	108	4	1 620	1 740	121	1 200	1 500	22330RHA	22330RHAK	168	196	302	273	3	0.35	1.93	2.87	1.88	40.3	39.4	
	160	220	45	2	426	649	65.4	1 500	2 000	23932R	23932RK	170	179	210	204	2	0.19	3.60	5.37	3.52	5.37	5.20
240		60	2.1	667	924	86.0	1 800	2 300	23032RZ	23032RZK	172	177	228	219	2	0.22	3.01	4.48	2.94	9.74	9.44	
240		80	2.1	829	1 270	103	1 800	2 300	24032RZ	24032RZK30	172	175	228	215	2	0.30	2.24	3.34	2.19	12.9	12.7	
270		86	2.1	1 070	1 430	117	1 700	2 200	23132RZ	23132RZK	172	182	258	234	2	0.30	2.22	3.30	2.17	20.8	20.2	
270		109	2.1	1 270	1 720	145	1 300	1 700	24132RR	24132RRK30	172	188	258	230	2	0.39	1.72	2.56	1.68	25.9	25.5	
290		80	3	1 110	1 270	127	1 200	1 600	22232R	22232RK	174	199	276	257	2.5	0.28	2.40	3.57	2.35	23.4	22.9	
290		80	3	1 120	1 320	97.1	1 200	1 600	22232RHA	22232RHAK	174	200	276	257	2.5	0.27	2.49	3.71	2.44	21.9	21.4	
290		104	3	1 290	1 650	163	1 200	1 600	23232R	23232RK	174	194	276	245	2.5	0.38	1.79	2.66	1.75	31.0	30.1	
290		104	3	1 370	1 780	139	1 200	1 600	23232RHA	23232RHAK	174	193	276	245	2.5	0.36	1.87	2.78	1.83	29.4	28.5	
340		114	4	1 720	1 790	188	1 100	1 400	22332R	22332RK	178	207	322	290	3	0.38	1.76	2.62	1.72	51.9	51.0	
340		114	4	1 780	1 940	135	1 100	1 400	22332RHA	22332RHAK	178	210	322	290	3	0.35	1.94	2.89	1.90	48.0	47.1	
170		230	45	2	441	691	69.6	1 400	1 900	23934R	23934RK	180	189	220	214	2	0.18	3.78	5.63	3.70	5.67	5.49
		260	67	2.1	795	1 090	97.9	1 700	2 200	23034RZ	23034RZK	182	189	248	236	2	0.23	2.90	4.31	2.83	13.2	12.8
	260	90	2.1	1 010	1 540	120	1 700	2 200	24034RZ	24034RZK30	182	184	248	227	2	0.32	2.11	3.15	2.07	17.5	17.2	
	280	88	2.1	1 150	1 550	124	1 500	2 100	23134RZ	23134RZK	182	194	268	249	2	0.29	2.30	3.43	2.25	21.9	21.2	
	280	109	2.1	1 320	1 820	154	1 200	1 600	24134RR	24134RRK30	182	198	268	241	2	0.37	1.80	2.68	1.76	27.2	26.8	
	310	86	4	1 190	1 390	141	1 100	1 500	22234R	22234RK	188	212	292	271	3	0.29	2.29	3.41	2.24	29.0	28.4	
	310	86	4	1 260	1 490	109	1 100	1 500	22234RHA	22234RHAK	188	210	292	271	3	0.28	2.45	3.64	2.39	27.1	26.5	
	310	110	4	1 560	1 920	127	1 100	1 500	23234RR	23234RRK	188	209	292	268	3	0.37	1.85	2.75	1.80	37.2	36.1	
	310	110	4	1 520	1 940	147	1 100	1 500	23234RHA	23234RHAK	188	207	292	261	3	0.36	1.89	2.82	1.85	35.6	34.6	

[Remark] Standard cage types used for the above bearings are shown in Table 5 earlier in this section.



Spherical roller bearings

d (170) ~ (190) mm

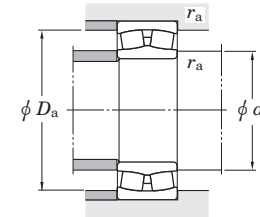
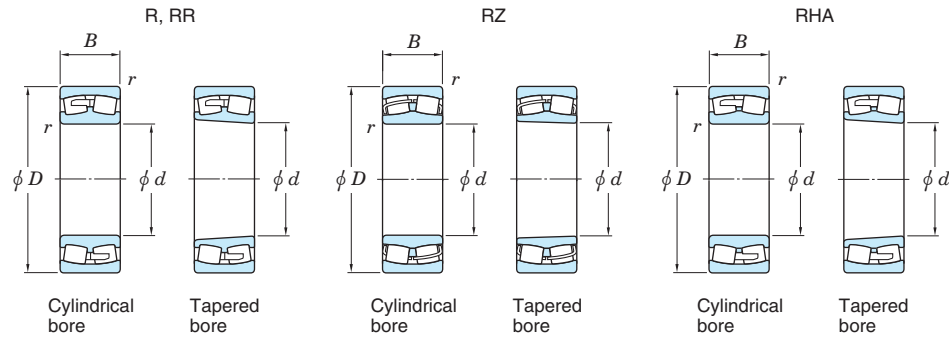


Boundary dimensions (mm)				Basic load ratings (kN)		Fatigue load limit (kN)	Limiting speeds (min <sup>-1</sup> )		Bearing No.		Mounting dimensions (mm)					Constant	Axial load factors			(Refer.) Mass (kg)		
d	D	B	r min.	C <sub>r</sub>	C <sub>0r</sub>	C <sub>u</sub>	Grease lub.	Oil lub.	Cylindrical bore	Tapered bore	d <sub>a</sub> min.	d <sub>a</sub> max.	D <sub>a</sub> max.	D <sub>a</sub> min.	r <sub>a</sub> max.	e	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>0</sub>	Cylindrical bore	Tapered bore	
170	360	120	4	1 830	1 920	206	1 000	1 300	22334R	22334RK	188	221	342	307	3	0.38	1.77	2.64	1.73	62.0	60.8	
	360	120	4	1 990	2 200	150	1 000	1 300	22334RHA	22334RHAK	188	222	342	307	3	0.35	1.95	2.91	1.91	57.3	56.1	
180	250	52	2	599	939	88.9	1 300	1 700	23936R	23936RK	190	203	240	232	2	0.19	3.55	5.29	3.48	8.22	7.97	
	280	74	2.1	966	1 330	118	1 500	1 900	23036RZ	23036RZK	192	202	268	253	2	0.24	2.84	4.23	2.78	17.4	16.9	
	280	100	2.1	1 170	1 710	138	1 200	1 600	24036RR	24036RRK30	192	206	268	246	2	0.34	2.00	2.98	1.96	23.4	23.0	
	300	96	3	1 260	1 800	165	1 100	1 500	23136R	23136RK	194	214	286	259	2.5	0.33	2.04	3.04	2.00	28.4	27.5	
	300	96	3	1 330	1 790	139	1 100	1 500	23136RHA	23136RHAK	194	215	286	265	2.5	0.31	2.19	3.25	2.14	26.5	25.6	
	300	118	3	1 530	2 120	176	1 100	1 500	24136RR	24136RRK30	194	211	286	258	2.5	0.38	1.78	2.65	1.74	34.4	33.9	
	300	118	3	1 510	2 240	155	1 100	1 500	24136RHA	24136RHAK30	194	207	286	255	2.5	0.38	1.79	2.66	1.75	31.8	31.2	
	320	86	4	1 220	1 450	165	1 100	1 400	22236R	22236RK	198	222	302	281	3	0.28	2.37	3.53	2.32	30.5	29.8	
	320	86	4	1 320	1 610	118	1 100	1 400	22236RHA	22236RHAK	198	221	302	281	3	0.26	2.55	3.80	2.50	28.5	27.8	
	320	112	4	1 640	2 100	134	1 100	1 400	23236RR	23236RRK	198	219	302	279	3	0.36	1.87	2.78	1.83	39.8	38.6	
	320	112	4	1 660	2 170	166	1 100	1 400	23236RHA	23236RHAK	198	220	302	277	3	0.34	1.97	2.93	1.92	37.7	36.5	
	380	126	4	2 180	2 360	263	920	1 200	22336R	22336RK	198	237	362	327	3	0.36	1.89	2.81	1.84	71.4	69.9	
	380	126	4	2 180	2 410	163	930	1 200	22336RHA	22336RHAK	198	235	362	323	3	0.34	1.97	2.94	1.93	66.0	64.5	
	190	260	52	2	608	969	90.7	1 200	1 600	23938R	23938RK	200	212	250	241	2	0.18	3.69	5.50	3.61	8.40	8.10
		290	75	2.1	923	1 370	132	1 100	1 500	23038R	23038RK	202	221	278	260	2	0.25	2.67	3.97	2.61	18.8	18.2
		290	75	2.1	992	1 430	115	1 100	1 500	23038RHA	23038RHAK	202	219	278	260	2	0.25	2.75	4.10	2.69	17.2	16.6
290		100	2.1	1 240	1 840	161	1 100	1 500	24038RR	24038RRK30	202	215	278	257	2	0.33	2.06	3.07	2.02	24.5	24.1	
290		100	2.1	1 230	1 920	152	1 100	1 500	24038RHA	24038RHAK30	202	215	278	256	2	0.32	2.14	3.19	2.09	22.4	22.0	
320		104	3	1 370	2 000	162	1 000	1 400	23138R	23138RK	204	229	306	275	2.5	0.34	1.96	2.92	1.92	35.5	34.4	
320		104	3	1 520	2 080	161	1 000	1 400	23138RHA	23138RHAK	204	227	306	281	2.5	0.31	2.14	3.19	2.10	33.2	32.1	
320		128	3	1 750	2 470	198	1 000	1 400	24138RR	24138RRK30	204	223	306	272	2.5	0.39	1.74	2.59	1.70	43.0	42.4	
320		128	3	1 770	2 630	179	1 000	1 400	24138RHA	24138RHAK30	204	222	306	272	2.5	0.38	1.76	2.63	1.72	40.1	39.5	
340		92	4	1 390	1 730	172	1 000	1 300	22238R	22238RK	208	236	322	296	3	0.29	2.29	3.41	2.24	37.4	36.6	
340		92	4	1 420	1 770	128	1 000	1 300	22238RHA	22238RHAK	208	234	322	296	3	0.27	2.52	3.76	2.46	34.9	34.1	
340		120	4	1 830	2 370	160	1 000	1 300	23238RR	23238RRK	208	233	322	294	3	0.36	1.86	2.76	1.81	48.5	47.1	
340		120	4	1 870	2 470	185	990	1 300	23238RHA	23238RHAK	208	233	322	293	3	0.35	1.94	2.89	1.90	44.9	43.5	
400		132	5	2 380	2 610	258	880	1 200	22338R	22338RK	212	248	378	342	4	0.38	1.79	2.66	1.75	84.1	82.4	

[Remark] Standard cage types used for the above bearings are shown in Table 5 earlier in this section.

Spherical roller bearings

d (190) ~ (220) mm



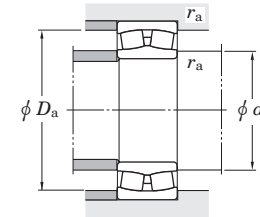
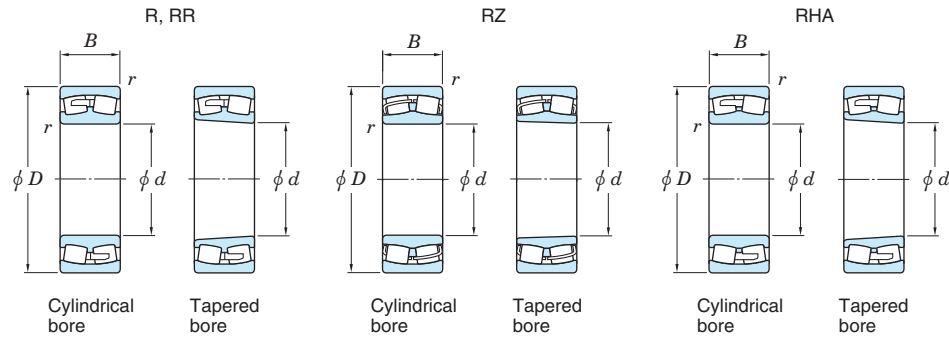
Boundary dimensions (mm)				Basic load ratings (kN)		Fatigue load limit (kN) C <sub>u</sub>	Limiting speeds (min <sup>-1</sup> )		Bearing No.		Mounting dimensions (mm)					Constant e	Axial load factors			(Refer.) Mass (kg)	
d	D	B	r <sub>min.</sub>	C <sub>r</sub>	C <sub>0r</sub>		Grease lub.	Oil lub.	Cylindrical bore	Tapered bore	d <sub>a</sub> min.	d <sub>a</sub> max.	D <sub>a</sub> max.	D <sub>a</sub> min.	r <sub>a</sub> max.		Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>0</sub>	Cylindrical bore	Tapered bore
<b>190</b>	400	132	5	2 430	2 810	192	870	1 200	<b>22338RHA</b>	<b>22338RHAK</b>	212	251	378	342	4	0.34	1.99	2.97	1.95	77.7	76.0
<b>200</b>	280	60	2.1	753	1 190	109	1 100	1 500	<b>23940R</b>	<b>23940RK</b>	212	226	268	259	2	0.20	3.44	5.13	3.37	12.0	11.6
	310	82	2.1	1 120	1 670	155	1 000	1 400	<b>23040R</b>	<b>23040RK</b>	212	235	298	278	2	0.26	2.62	3.90	2.56	24.1	23.4
	310	82	2.1	1 180	1 680	133	1 100	1 400	<b>23040RHA</b>	<b>23040RHAK</b>	212	231	298	278	2	0.25	2.68	3.99	2.62	22.0	21.3
	310	109	2.1	1 430	2 110	180	1 100	1 400	<b>24040RR</b>	<b>24040RRK30</b>	212	228	298	273	2	0.33	2.02	3.00	1.97	31.2	30.7
	310	109	2.1	1 440	2 230	173	1 100	1 400	<b>24040RHA</b>	<b>24040RHAK30</b>	212	227	298	272	2	0.33	2.06	3.07	2.02	28.5	28.0
	340	112	3	1 740	2 350	186	980	1 300	<b>23140RR</b>	<b>23140RRK</b>	214	241	326	298	2.5	0.33	2.04	3.03	1.99	43.3	42.0
	340	112	3	1 730	2 340	178	970	1 300	<b>23140RHA</b>	<b>23140RHAK</b>	214	239	326	297	2.5	0.32	2.10	3.13	2.06	40.8	39.5
	340	140	3	2 030	2 820	222	990	1 300	<b>24140RR</b>	<b>24140RRK30</b>	214	234	326	289	2.5	0.40	1.68	2.49	1.64	53.3	52.5
	340	140	3	2 000	2 970	196	990	1 300	<b>24140RHA</b>	<b>24140RHAK30</b>	214	232	326	286	2.5	0.41	1.65	2.46	1.62	49.5	48.7
	360	98	4	1 620	2 050	138	930	1 200	<b>22240RR</b>	<b>22240RRK</b>	218	252	342	316	3	0.30	2.26	3.36	2.21	45.0	44.0
	360	98	4	1 630	2 030	146	940	1 300	<b>22240RHA</b>	<b>22240RHAK</b>	218	247	342	316	3	0.27	2.50	3.72	2.45	42.0	41.0
	360	128	4	1 950	2 610	228	940	1 300	<b>23240R</b>	<b>23240RK</b>	218	244	342	306	3	0.38	1.79	2.67	1.75	58.1	56.4
	360	128	4	2 080	2 780	209	930	1 200	<b>23240RHA</b>	<b>23240RHAK</b>	218	245	342	309	3	0.35	1.92	2.86	1.88	55.1	53.4
	420	138	5	2 510	2 750	288	830	1 100	<b>22340R</b>	<b>22340RK</b>	222	260	398	359	4	0.38	1.80	2.68	1.76	95.4	93.5
420	138	5	2 570	2 920	193	820	1 100	<b>22340RHA</b>	<b>22340RHAK</b>	222	262	398	356	4	0.34	1.99	2.97	1.95	88.1	86.2	
<b>220</b>	300	60	2.1	792	1 300	119	1 000	1 400	<b>23944R</b>	<b>23944RK</b>	232	246	288	279	2	0.18	3.70	5.50	3.61	13.0	12.6
	340	90	3	1 230	1 890	173	940	1 300	<b>23044R</b>	<b>23044RK</b>	234	256	326	301	2.5	0.26	2.55	3.80	2.50	31.5	30.6
	340	90	3	1 370	1 950	148	940	1 200	<b>23044RHA</b>	<b>23044RHAK</b>	234	255	326	307	2.5	0.25	2.69	4.01	2.63	28.8	27.9
	340	118	3	1 660	2 480	208	950	1 300	<b>24044RR</b>	<b>24044RRK30</b>	234	251	326	300	2.5	0.33	2.04	3.04	2.00	40.5	39.8
	340	118	3	1 680	2 630	199	950	1 300	<b>24044RHA</b>	<b>24044RHAK30</b>	234	248	326	297	2.5	0.33	2.08	3.09	2.03	37.0	36.4
	370	120	4	1 810	2 700	205	880	1 200	<b>23144R</b>	<b>23144RK</b>	238	266	352	319	3	0.34	2.00	2.98	1.96	54.8	53.2
	370	120	4	2 000	2 790	208	870	1 200	<b>23144RHA</b>	<b>23144RHAK</b>	238	263	352	324	3	0.31	2.15	3.20	2.10	51.2	49.6
	370	150	4	2 360	3 390	258	880	1 200	<b>24144RR</b>	<b>24144RRK30</b>	238	258	352	315	3	0.39	1.71	2.55	1.67	67.3	66.2
	370	150	4	2 330	3 550	229	880	1 200	<b>24144RHA</b>	<b>24144RHAK30</b>	238	255	352	313	3	0.40	1.69	2.52	1.65	62.0	61.0
	400	108	4	2 000	2 410	257	820	1 100	<b>22244RR</b>	<b>22244RRK</b>	238	276	382	355	3	0.28	2.40	3.57	2.34	60.3	59.0
	400	108	4	1 980	2 440	168	820	1 100	<b>22244RHA</b>	<b>22244RHAK</b>	238	274	382	349	3	0.27	2.52	3.76	2.47	58.8	57.5
	400	144	4	2 350	3 200	259	830	1 100	<b>23244R</b>	<b>23244RK</b>	238	268	382	336	3	0.39	1.71	2.55	1.68	81.6	79.2
	400	144	4	2 520	3 350	239	810	1 100	<b>23244RHA</b>	<b>23244RHAK</b>	238	272	382	346	3	0.36	1.89	2.81	1.85	77.4	75.0

[Remark] Standard cage types used for the above bearings are shown in Table 5 earlier in this section.



Spherical roller bearings

d (220) ~ (260) mm

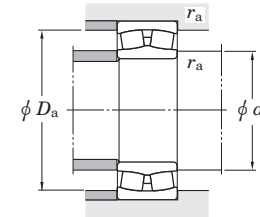
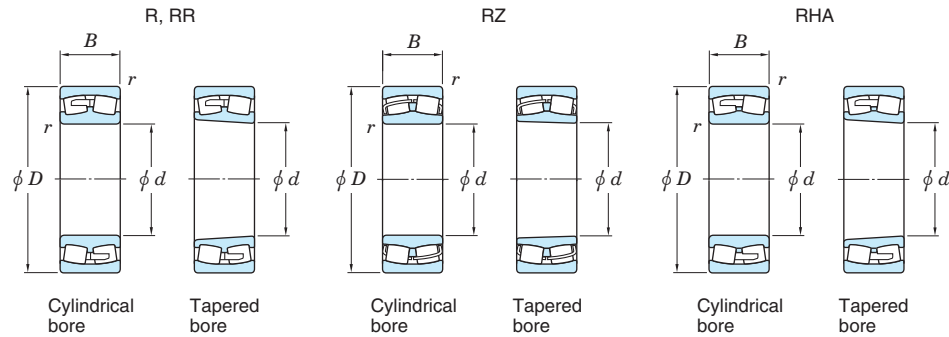


Boundary dimensions (mm)				Basic load ratings (kN)		Fatigue load limit (kN)	Limiting speeds (min <sup>-1</sup> )		Bearing No.		Mounting dimensions (mm)					Constant	Axial load factors			(Refer.) Mass (kg)	
d	D	B	r <sub>min.</sub>	C <sub>r</sub>	C <sub>0r</sub>	C <sub>u</sub>	Grease lub.	Oil lub.	Cylindrical bore	Tapered bore	d <sub>a</sub> min.	d <sub>a</sub> max.	D <sub>a</sub> max.	D <sub>a</sub> min.	r <sub>a</sub> max.	e	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>0</sub>	Cylindrical bore	Tapered bore
220	460	145	5	2 980	3 380	359	720	960	<b>22344R</b>	<b>22344RK</b>	242	290	438	393	4	0.34	2.00	2.99	1.96	124	122
	460	145	5	2 960	3 470	226	730	970	<b>22344RHA</b>	<b>22344RHAK</b>	242	290	438	390	4	0.32	2.08	3.09	2.03	115	113
240	320	60	2.1	814	1 380	128	940	1 300	<b>23948R</b>	<b>23948RK</b>	252	265	308	298	2	0.17	3.95	5.88	3.86	14.0	13.5
	360	92	3	1 480	2 190	161	860	1 100	<b>23048RR</b>	<b>23048RRK</b>	254	276	346	327	2.5	0.25	2.73	4.07	2.67	33.9	32.9
	360	92	3	1 470	2 180	166	860	1 100	<b>23048RHA</b>	<b>23048RHAK</b>	254	275	346	327	2.5	0.24	2.83	4.21	2.77	31.9	30.9
	360	118	3	1 750	2 710	228	870	1 200	<b>24048RR</b>	<b>24048RRK30</b>	254	272	346	321	2.5	0.31	2.20	3.27	2.15	43.5	42.9
	360	118	3	1 750	2 840	215	870	1 200	<b>24048RHA</b>	<b>24048RHAK30</b>	254	269	346	321	2.5	0.30	2.24	3.33	2.19	39.6	39.0
	400	128	4	2 280	3 220	213	790	1 100	<b>23148RR</b>	<b>23148RRK</b>	258	287	382	353	3	0.32	2.11	3.14	2.06	67.2	65.1
	400	128	4	2 270	3 200	233	790	1 000	<b>23148RHA</b>	<b>23148RHAK</b>	258	286	382	353	3	0.31	2.19	3.25	2.14	63.1	61.1
	400	160	4	2 640	3 850	287	800	1 100	<b>24148RR</b>	<b>24148RRK30</b>	258	280	382	340	3	0.39	1.75	2.60	1.71	82.7	81.4
	400	160	4	2 670	4 130	262	800	1 100	<b>24148RHA</b>	<b>24148RHAK30</b>	258	278	382	340	3	0.39	1.72	2.56	1.68	76.6	75.3
	440	120	4	2 390	2 940	295	730	970	<b>22248R</b>	<b>22248RK</b>	258	299	422	384	3	0.29	2.35	3.50	2.30	85.0	83.2
	440	120	4	2 400	2 990	202	730	970	<b>22248RHA</b>	<b>22248RHAK</b>	258	299	422	384	3	0.27	2.49	3.71	2.43	79.4	77.6
	440	160	4	3 050	3 970	310	730	970	<b>23248RR</b>	<b>23248RRK</b>	258	295	422	376	3	0.38	1.78	2.64	1.74	110	107
	440	160	4	3 080	4 130	289	730	970	<b>23248RHA</b>	<b>23248RHAK</b>	258	295	422	376	3	0.36	1.87	2.78	1.83	104	101
	500	155	5	3 360	4 020	347	650	870	<b>22348R</b>	<b>22348RK</b>	262	320	478	420	4	0.35	1.94	2.89	1.90	157	154
	500	155	5	3 400	3 990	255	650	870	<b>22348RHA</b>	<b>22348RHAK</b>	262	315	478	426	4	0.32	2.12	3.16	2.07	145	142
260	360	75	2.1	1 140	1 880	160	820	1 100	<b>23952R</b>	<b>23952RK</b>	272	292	348	333	2	0.19	3.54	5.27	3.46	24.0	23.3
	400	104	4	1 670	2 570	212	760	1 000	<b>23052R</b>	<b>23052RK</b>	278	304	382	359	3	0.25	2.65	3.95	2.59	50.7	49.3
	400	104	4	1 850	2 720	201	760	1 000	<b>23052RHA</b>	<b>23052RHAK</b>	278	302	382	359	3	0.25	2.75	4.10	2.69	46.3	44.9
	400	140	4	2 280	3 570	282	770	1 000	<b>24052RR</b>	<b>24052RRK30</b>	278	296	382	352	3	0.33	2.02	3.01	1.98	66.3	65.2
	400	140	4	2 270	3 670	265	770	1 000	<b>24052RHA</b>	<b>24052RHAK30</b>	278	292	382	347	3	0.33	2.06	3.07	2.02	60.3	59.4
	440	144	4	2 760	3 850	231	710	940	<b>23152RR</b>	<b>23152RRK</b>	278	313	422	387	3	0.33	2.05	3.06	2.01	92.2	89.4
	440	144	4	2 790	4 000	285	700	930	<b>23152RHA</b>	<b>23152RHAK</b>	278	311	422	384	3	0.32	2.12	3.16	2.08	87.4	84.6
	440	180	4	3 250	4 700	345	720	950	<b>24152RR</b>	<b>24152RRK30</b>	278	304	422	374	3	0.40	1.69	2.51	1.65	114	112
	440	180	4	3 210	4 950	309	720	950	<b>24152RHA</b>	<b>24152RHAK30</b>	278	299	422	368	3	0.41	1.66	2.47	1.62	106	105
	480	130	5	2 800	3 460	347	650	870	<b>22252R</b>	<b>22252RK</b>	282	326	458	419	4	0.28	2.40	3.57	2.35	110	108
	480	130	5	2 790	3 430	226	650	870	<b>22252RHA</b>	<b>22252RHAK</b>	282	324	458	418	4	0.27	2.50	3.72	2.44	103	101
	480	174	5	3 440	4 640	326	640	860	<b>23252R</b>	<b>23252RK</b>	282	325	458	408	4	0.40	1.69	2.51	1.65	144	140

[Remark] Standard cage types used for the above bearings are shown in Table 5 earlier in this section.

Spherical roller bearings

d (260) ~ (300) mm

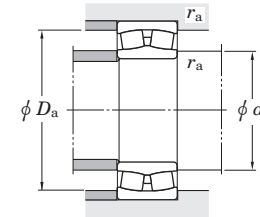
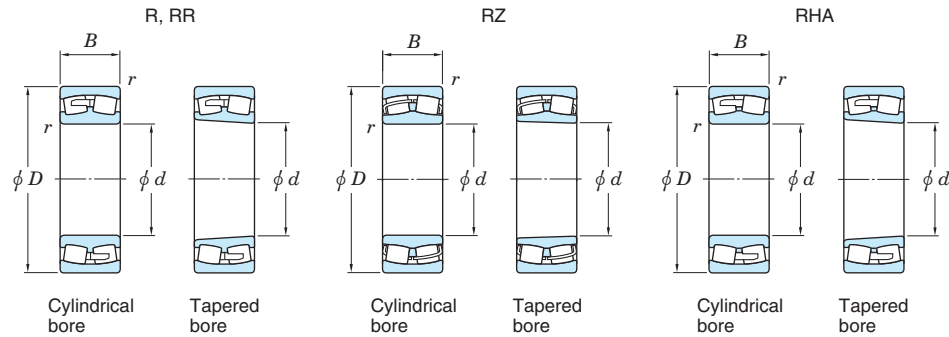


Boundary dimensions (mm)				Basic load ratings (kN)		Fatigue load limit (kN) C <sub>u</sub>	Limiting speeds (min <sup>-1</sup> )		Bearing No.		Mounting dimensions (mm)					Constant e	Axial load factors			(Refer.) Mass (kg)	
d	D	B	r <sub>min.</sub>	C <sub>r</sub>	C <sub>0r</sub>		Grease lub.	Oil lub.	Cylindrical bore	Tapered bore	d <sub>a</sub> min.	d <sub>a</sub> max.	D <sub>a</sub> max.	D <sub>a</sub> min.	r <sub>a</sub> max.		Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>0</sub>	Cylindrical bore	Tapered bore
260	480	174	5	3 590	4 900	280	650	860	23252RHA	23252RHAK	282	322	458	408	4	0.36	1.87	2.78	1.83	137	133
	540	165	6	3 540	4 380	363	590	780	22352R	22352RK	288	346	512	453	5	0.35	1.94	2.89	1.90	196	192
	540	165	6	3 900	4 620	290	580	780	22352RHA	22352RHAK	288	342	512	461	5	0.31	2.15	3.21	2.11	181	177
280	380	75	2.1	1 160	1 960	165	760	1 000	23956R	23956RK	292	312	368	353	2	0.18	3.74	5.57	3.66	26.0	25.2
	420	106	4	1 790	2 860	235	710	950	23056R	23056RK	298	322	402	377	3	0.25	2.74	4.08	2.68	54.5	52.9
	420	106	4	1 940	2 950	218	700	940	23056RHA	23056RHAK	298	322	402	380	3	0.24	2.87	4.27	2.80	49.8	48.2
	420	140	4	2 370	3 780	291	710	950	24056RR	24056RRK30	298	316	402	373	3	0.31	2.15	3.21	2.11	70.2	69.1
	420	140	4	2 390	4 000	287	710	950	24056RHA	24056RHAK30	298	314	402	372	3	0.31	2.20	3.28	2.15	64.0	62.9
	460	146	5	2 910	4 160	250	660	880	23156RR	23156RRK	302	332	438	407	4	0.32	2.14	3.18	2.09	98.8	95.7
	460	146	5	2 940	4 290	304	650	870	23156RHA	23156RHAK	302	331	438	406	4	0.30	2.22	3.30	2.17	93.4	90.3
	460	180	5	3 390	5 140	370	660	880	24156RR	24156RRK30	302	326	438	396	4	0.38	1.79	2.67	1.75	122	120
	460	180	5	3 320	5 240	322	660	880	24156RHA	24156RHAK30	302	321	438	390	4	0.38	1.76	2.62	1.72	113	112
	500	130	5	2 640	3 380	308	610	810	22256R	22256RK	302	347	478	438	4	0.28	2.42	3.60	2.37	114	112
	500	130	5	2 900	3 670	240	610	810	22256RHA	22256RHAK	302	346	478	440	4	0.26	2.64	3.93	2.58	106	104
	500	176	5	3 370	4 910	323	610	820	23256R	23256RK	302	345	478	421	4	0.37	1.83	2.72	1.79	153	149
	500	176	5	3 770	5 300	365	600	800	23256RHA	23256RHAK	302	343	478	430	4	0.35	1.95	2.91	1.91	145	141
	580	175	6	3 930	4 910	407	530	710	22356R	22356RK	308	372	552	486	5	0.34	1.98	2.95	1.93	229	225
	580	175	6	4 390	5 260	325	530	700	22356RHA	22356RHAK	308	367	552	495	5	0.31	2.19	3.25	2.14	212	208
300	420	90	3	1 610	2 610	220	680	910	23960R	23960RK	314	336	406	387	2.5	0.20	3.42	5.09	3.34	40.0	38.8
	460	118	4	2 190	3 480	286	630	840	23060R	23060RK	318	351	442	412	3	0.25	2.69	4.00	2.63	75.8	73.7
	460	118	4	2 370	3 700	255	630	840	23060RHA	23060RHAK	318	347	442	416	3	0.24	2.79	4.16	2.73	68.9	66.8
	460	160	4	2 950	4 690	354	640	850	24060RR	24060RRK30	318	342	442	406	3	0.33	2.04	3.04	2.00	99.5	97.9
	460	160	4	2 950	4 910	350	640	850	24060RHA	24060RHAK30	318	338	442	404	3	0.32	2.09	3.11	2.04	90.7	89.1
	500	160	5	3 450	5 030	351	590	790	23160RR	23160RRK	322	358	478	439	4	0.32	2.09	3.11	2.04	131	127
	500	160	5	3 430	4 970	345	580	780	23160RHA	23160RHAK	322	357	478	439	4	0.31	2.18	3.25	2.13	123	119
	500	200	5	4 160	6 280	433	590	790	24160RR	24160RRK30	322	349	478	425	4	0.40	1.67	2.49	1.63	162	160
	500	200	5	4 030	6 420	385	590	790	24160RHA	24160RHAK30	322	347	478	424	4	0.39	1.72	2.56	1.68	150	148
	540	140	5	3 360	4 330	412	550	740	22260R	22260RK	322	368	518	467	4	0.27	2.48	3.69	2.43	145	142
	540	140	5	3 320	4 360	284	550	740	22260RHA	22260RHAK	322	370	518	467	4	0.26	2.62	3.90	2.56	135	132

[Remark] Standard cage types used for the above bearings are shown in Table 5 earlier in this section.

Spherical roller bearings

d (300) ~ (360) mm

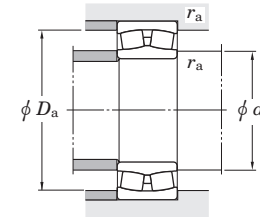
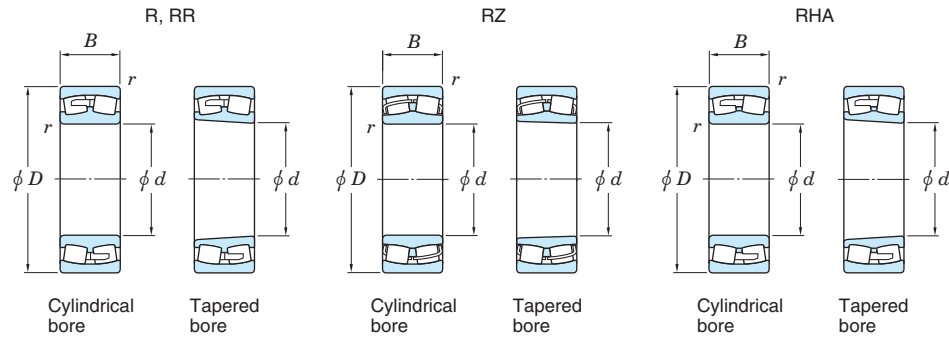


Boundary dimensions (mm)				Basic load ratings (kN)		Fatigue load limit (kN)	Limiting speeds (min <sup>-1</sup> )		Bearing No.		Mounting dimensions (mm)					Constant	Axial load factors			(Refer.) Mass (kg)	
d	D	B	r <sub>min.</sub>	C <sub>r</sub>	C <sub>0r</sub>	C <sub>u</sub>	Grease lub.	Oil lub.	Cylindrical bore	Tapered bore	d <sub>a</sub> min.	d <sub>a</sub> max.	D <sub>a</sub> max.	D <sub>a</sub> min.	r <sub>a</sub> max.	e	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>0</sub>	Cylindrical bore	Tapered bore
300	540	192	5	4 300	5 910	401	540	720	23260R	23260RK	322	370	518	464	4	0.37	1.83	2.72	1.79	197	192
	540	192	5	4 440	6 310	429	540	720	23260RHA	23260RHAK	322	371	518	464	4	0.35	1.93	2.88	1.89	187	182
	620	185	7.5	4 890	5 430	555	470	630	22360R	22360RK	336	390	584	547	6	0.32	2.09	3.10	2.04	289	284
320	440	90	3	1 670	2 870	233	630	840	23964R	23964RK	334	358	426	408	2.5	0.19	3.61	5.38	3.53	43.0	41.7
	480	121	4	2 290	3 740	295	590	790	23064R	23064RK	338	369	462	431	3	0.24	2.76	4.11	2.70	81.2	78.8
	480	121	4	2 490	3 850	278	590	780	23064RHA	23064RHAK	338	367	462	436	3	0.24	2.87	4.27	2.80	74.5	72.1
	480	160	4	3 020	4 920	382	590	790	24064RR	24064RRK30	338	363	462	427	3	0.31	2.16	3.22	2.11	105	103
	480	160	4	3 060	5 230	363	590	790	24064RHA	24064RHAK30	338	360	462	425	3	0.31	2.21	3.29	2.16	93.4	91.4
	540	176	5	3 650	5 700	366	530	700	23164R	23164RK	342	389	518	467	4	0.33	2.04	3.04	2.00	171	166
	540	176	5	4 040	5 960	404	530	700	23164RHA	23164RHAK	342	383	518	472	4	0.32	2.13	3.17	2.08	160	155
	540	218	5	4 680	6 950	486	530	710	24164RR	24164RRK30	342	373	518	460	4	0.39	1.72	2.56	1.68	208	205
	540	218	5	4 550	7 190	429	530	710	24164RHA	24164RHAK30	342	371	518	458	4	0.40	1.70	2.52	1.66	199	196
	580	150	5	3 420	4 540	385	490	660	22264R	22264RK	342	402	558	504	4	0.28	2.41	3.59	2.35	175	171
	580	208	5	4 550	6 550	496	500	670	23264R	23264RK	342	394	558	488	4	0.38	1.76	2.62	1.72	249	242
580	208	5	5 020	7 030	464	490	650	23264RHA	23264RHAK	342	392	558	495	4	0.36	1.90	2.83	1.86	236	229	
340	460	90	3	1 680	2 980	242	590	790	23968R	23968RK	354	377	446	426	2.5	0.18	3.82	5.69	3.74	45.0	43.6
	520	133	5	2 670	4 330	353	530	710	23068R	23068RK	362	397	498	465	4	0.25	2.69	4.00	2.63	108	105
	520	133	5	2 930	4 470	312	530	710	23068RHA	23068RHAK	362	393	498	468	4	0.24	2.80	4.18	2.74	98.7	95.7
	520	180	5	3 680	5 970	432	530	710	24068RR	24068RRK30	362	387	498	460	4	0.33	2.06	3.06	2.01	142	140
	520	180	5	3 720	6 330	430	530	710	24068RHA	24068RHAK30	362	385	498	459	4	0.32	2.11	3.14	2.06	130	128
	580	190	5	4 130	6 430	472	480	640	23168R	23168RK	362	413	558	497	4	0.34	1.97	2.93	1.93	216	210
	580	190	5	4 620	6 720	449	480	640	23168RHA	23168RHAK	362	407	558	503	4	0.32	2.11	3.14	2.06	202	196
	580	243	5	5 570	8 400	564	490	650	24168RR	24168RRK30	362	396	558	490	4	0.41	1.64	2.45	1.61	270	266
	580	243	5	5 490	8 810	449	490	650	24168RHA	24168RHAK30	362	390	558	482	4	0.42	1.61	2.39	1.57	259	255
	620	165	6	4 430	5 430	551	440	590	22268R	22268RK	368	424	592	551	5	0.28	2.43	3.61	2.37	221	216
	620	224	6	5 130	7 560	526	450	600	23268R	23268RK	368	423	592	521	5	0.38	1.77	2.63	1.73	306	297
	620	224	6	5 690	8 030	517	440	590	23268RHA	23268RHAK	368	418	592	532	5	0.36	1.88	2.81	1.84	290	281
	360	480	90	3	1 710	3 060	248	550	730	23972R	23972RK	374	399	466	447	2.5	0.17	3.95	5.88	3.86	46.5

[Remark] Standard cage types used for the above bearings are shown in Table 5 earlier in this section.

Spherical roller bearings

d (360) ~ (400) mm

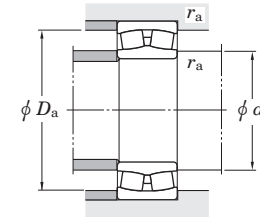
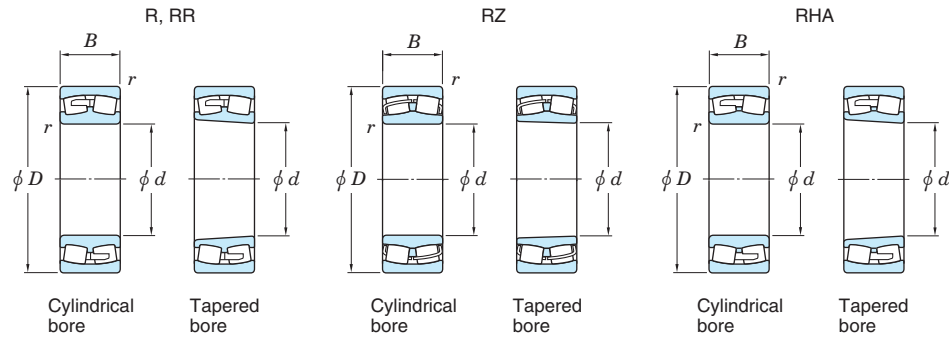


Boundary dimensions (mm)				Basic load ratings (kN)		Fatigue load limit (kN)	Limiting speeds (min <sup>-1</sup> )		Bearing No.		Mounting dimensions (mm)					Constant	Axial load factors			(Refer.) Mass (kg)	
d	D	B	r <sub>min.</sub>	C <sub>r</sub>	C <sub>0r</sub>	C <sub>u</sub>	Grease lub.	Oil lub.	Cylindrical bore	Tapered bore	d <sub>a</sub> min.	d <sub>a</sub> max.	D <sub>a</sub> max.	D <sub>a</sub> min.	r <sub>a</sub> max.	e	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>0</sub>	Cylindrical bore	Tapered bore
360	540	134	5	2 860	4 800	375	500	660	23072R	23072RK	382	416	518	484	4	0.24	2.76	4.11	2.70	115	111
	540	134	5	3 040	4 770	334	500	660	23072RHA	23072RHAK	382	414	518	489	4	0.23	2.92	4.34	2.85	105	101
	540	180	5	3 810	6 300	465	500	660	24072RR	24072RRK30	382	407	518	481	4	0.31	2.15	3.21	2.11	149	147
	540	180	5	3 810	6 620	446	500	660	24072RHA	24072RHAK30	382	406	518	480	4	0.30	2.22	3.30	2.17	135	133
	600	192	5	4 740	7 040	459	440	590	23172R	23172RK	382	431	578	527	4	0.33	2.07	3.09	2.03	228	221
	600	192	5	4 830	7 210	474	450	590	23172RHA	23172RHAK	382	429	578	527	4	0.31	2.19	3.25	2.14	213	206
	600	243	5	5 080	7 690	437	450	600	24172R	24172RK30	382	420	578	512	4	0.39	1.74	2.59	1.70	287	283
	600	243	5	5 580	9 180	517	460	610	24172RHA	24172RHAK30	382	413	578	505	4	0.40	1.69	2.51	1.65	274	270
	650	170	6	4 710	5 830	583	410	550	22272R	22272RK	388	447	622	579	5	0.27	2.47	3.68	2.42	248	243
	650	232	6	6 080	8 810	548	410	540	23272R	23272RK	388	446	622	555	5	0.37	1.83	2.72	1.79	346	336
650	232	6	6 220	9 050	591	410	550	23272RHA	23272RHAK	388	442	622	558	5	0.35	1.92	2.85	1.87	328	318	
380	520	106	4	2 220	3 940	295	500	660	23976R	23976RK	398	425	502	481	3	0.19	3.62	5.39	3.54	70.0	67.9
	560	135	5	2 910	4 970	355	470	630	23076R	23076RK	402	433	538	503	4	0.24	2.79	4.16	2.73	122	118
	560	135	5	3 160	5 080	354	460	620	23076RHA	23076RHAK	402	434	538	512	4	0.22	3.03	4.51	2.96	112	108
	560	180	5	3 900	6 590	486	470	620	24076RR	24076RRK30	402	428	538	502	4	0.30	2.26	3.36	2.21	156	154
	560	180	5	3 900	6 910	454	470	620	24076RHA	24076RHAK30	402	426	538	502	4	0.29	2.32	3.45	2.27	142	139
	620	194	5	4 520	7 320	442	420	560	23176R	23176RK	402	454	598	540	4	0.31	2.18	3.24	2.13	240	233
	620	194	5	5 030	7 700	503	420	560	23176RHA	23176RHAK	402	450	598	547	4	0.30	2.26	3.36	2.21	224	217
	620	243	5	5 300	8 220	467	430	570	24176R	24176RK30	402	439	598	529	4	0.38	1.78	2.65	1.74	302	297
	620	243	5	5 870	9 840	561	420	560	24176RHA	24176RHAK30	402	438	598	534	4	0.38	1.78	2.65	1.74	288	283
	680	240	6	6 510	9 500	590	380	500	23276R	23276RK	408	469	652	583	5	0.36	1.85	2.76	1.81	386	375
	680	240	6	6 660	9 760	622	380	510	23276RHA	23276RHAK	408	466	652	586	5	0.35	1.94	2.89	1.90	365	354
	400	540	106	4	2 350	4 300	320	470	620	23980R	23980RK	418	443	522	500	3	0.18	3.76	5.59	3.67	73.0
600		148	5	3 390	5 790	408	420	560	23080R	23080RK	422	462	578	540	4	0.24	2.84	4.23	2.78	155	151
600		148	5	3 690	5 860	398	420	560	23080RHA	23080RHAK	422	460	578	543	4	0.23	2.94	4.37	2.87	142	138
600		200	5	4 820	8 110	444	430	570	24080R	24080RK30	422	450	578	531	4	0.32	2.09	3.12	2.05	206	203
600		200	5	4 620	8 140	535	420	570	24080RHA	24080RHAK30	422	450	578	534	4	0.31	2.21	3.29	2.16	192	189
650		200	6	4 730	7 780	521	390	520	23180R	23180RK	428	476	622	564	5	0.31	2.19	3.25	2.14	273	265

[Remark] Standard cage types used for the above bearings are shown in Table 5 earlier in this section.

Spherical roller bearings

d (400) ~ (460) mm

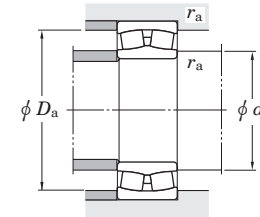
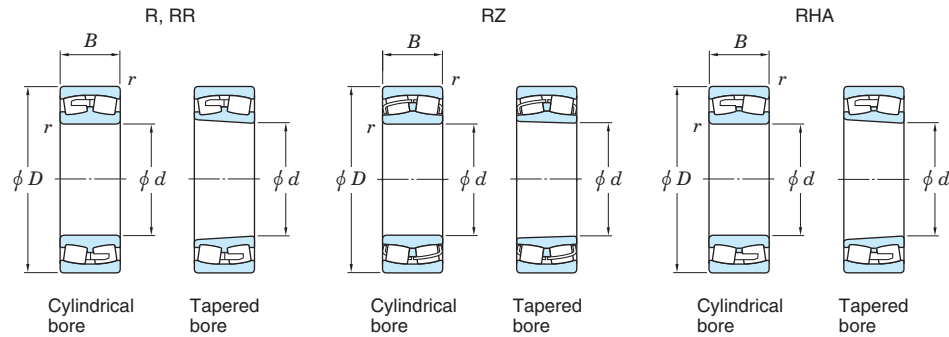


Boundary dimensions (mm)				Basic load ratings (kN)		Fatigue load limit (kN) C <sub>u</sub>	Limiting speeds (min <sup>-1</sup> )		Bearing No.		Mounting dimensions (mm)					Constant e	Axial load factors			(Refer.) Mass (kg)	
d	D	B	r <sub>min.</sub>	C <sub>r</sub>	C <sub>0r</sub>		Grease lub.	Oil lub.	Cylindrical bore	Tapered bore	d <sub>a</sub> min.	d <sub>a</sub> max.	D <sub>a</sub> max.	D <sub>a</sub> min.	r <sub>a</sub> max.		Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>0</sub>	Cylindrical bore	Tapered bore
400	650	200	6	5 410	8 300	542	390	520	23180RHA	23180RHAK	428	473	622	574	5	0.29	2.30	3.43	2.25	255	247
	650	250	6	5 840	9 140	499	390	530	24180R	24180RK30	428	461	622	558	5	0.37	1.82	2.70	1.78	338	333
	650	250	6	6 290	10 600	600	390	520	24180RHA	24180RHAK30	428	462	622	558	5	0.37	1.82	2.71	1.78	322	317
	720	256	6	6 540	9 850	590	350	470	23280R	23280RK	428	496	692	605	5	0.37	1.80	2.69	1.76	468	454
	720	256	6	7 320	10 600	665	350	460	23280RHA	23280RHAK	428	489	692	619	5	0.35	1.92	2.86	1.88	441	427
	420	560	106	4	2 330	4 320	331	430	580	23984R	23984RK	438	465	542	522	3	0.17	3.91	5.82	3.82	76.0
620		150	5	3 500	6 120	412	400	530	23084R	23084RK	442	483	598	560	4	0.23	2.90	4.31	2.83	164	159
620		150	5	3 820	6 230	425	400	530	23084RHA	23084RHAK	442	480	598	563	4	0.22	3.02	4.49	2.95	150	145
620		200	5	4 510	7 600	438	400	530	24084R	24084RK30	442	471	598	554	4	0.30	2.23	3.32	2.18	212	209
620		200	5	4 730	8 490	555	400	530	24084RHA	24084RHAK30	442	471	598	554	4	0.29	2.31	3.44	2.26	198	195
700		224	6	5 620	9 110	583	350	470	23184R	23184RK	448	506	672	604	5	0.33	2.03	3.02	1.98	363	352
700		224	6	6 330	9 630	616	350	470	23184RHA	23184RHAK	448	500	672	615	5	0.31	2.19	3.25	2.14	339	328
700		280	6	6 840	10 600	574	360	480	24184R	24184RK30	448	486	672	593	5	0.40	1.71	2.54	1.67	445	438
700		280	6	7 420	12 400	685	350	470	24184RHA	24184RHAK30	448	486	672	596	5	0.39	1.72	2.56	1.68	425	418
760		272	7.5	8 130	11 500	754	320	430	23284R	23284RK	456	514	724	652	6	0.37	1.84	2.74	1.80	556	540
760		272	7.5	8 230	11 900	735	320	430	23284RHA	23284RHAK	456	512	724	652	6	0.36	1.90	2.83	1.86	525	508
440		600	118	4	2 910	5 330	387	400	530	23988R	23988RK	458	490	582	554	3	0.18	3.75	5.58	3.66	101
	650	157	6	3 790	6 540	455	370	500	23088R	23088RK	468	501	622	584	5	0.24	2.76	4.11	2.70	188	183
	650	157	6	4 230	6 910	465	370	490	23088RHA	23088RHAK	468	504	622	591	5	0.22	3.04	4.53	2.97	172	167
	650	212	6	4 910	8 320	475	370	490	24088R	24088RK30	468	494	622	579	5	0.29	2.35	3.50	2.30	247	243
	650	212	6	5 290	9 560	618	370	490	24088RHA	24088RHAK30	468	492	622	575	5	0.30	2.28	3.39	2.23	231	227
	720	226	6	5 800	9 600	591	330	440	23188R	23188RK	468	526	692	625	5	0.33	2.08	3.09	2.03	378	366
	720	226	6	6 590	10 300	655	330	440	23188RHA	23188RHAK	468	521	692	636	5	0.30	2.25	3.34	2.20	353	341
	720	280	6	7 080	11 200	589	340	450	24188R	24188RK30	468	507	692	615	5	0.38	1.76	2.62	1.72	460	453
	720	280	6	7 540	12 900	707	330	440	24188RHA	24188RHAK30	468	509	692	616	5	0.38	1.79	2.67	1.75	439	432
	790	280	7.5	8 580	12 300	793	300	400	23288R	23288RK	476	540	754	684	6	0.36	1.86	2.77	1.82	613	595
	790	280	7.5	8 670	12 700	776	300	390	23288RHA	23288RHAK	476	539	754	682	6	0.35	1.93	2.88	1.89	580	562
	460	600	90	3	1 800	3 660	306	350	460	23896R	23896RK	476	519	586	568	2.5	0.13	5.06	7.53	4.95	60.4

[Remark] Standard cage types used for the above bearings are shown in Table 5 earlier in this section.

Spherical roller bearings

d (460) ~ 500 mm



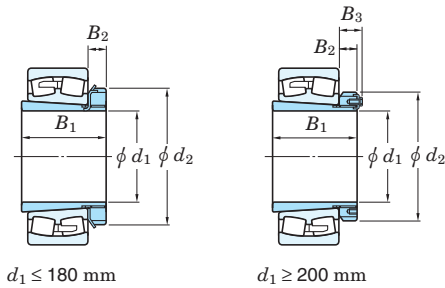
Boundary dimensions (mm)				Basic load ratings (kN)		Fatigue load limit (kN) C <sub>u</sub>	Limiting speeds (min <sup>-1</sup> )		Bearing No.		Mounting dimensions (mm)					Constant e	Axial load factors			(Refer.) Mass (kg)	
d	D	B	r <sub>min.</sub>	C <sub>r</sub>	C <sub>0r</sub>		Grease lub.	Oil lub.	Cylindrical bore	Tapered bore	d <sub>a</sub> min.	d <sub>a</sub> max.	D <sub>a</sub> max.	D <sub>a</sub> min.	r <sub>a</sub> max.		Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>0</sub>	Cylindrical bore	Tapered bore
460	620	118	4	2 890	5 350	404	370	500	23992R	23992RK	478	512	602	577	3	0.17	3.89	5.79	3.80	107	104
	680	163	6	4 060	7 170	480	340	460	23092R	23092RK	488	529	652	613	5	0.23	2.92	4.34	2.85	215	209
	680	163	6	4 520	7 430	497	340	460	23092RHA	23092RHAK	488	527	652	618	5	0.22	3.04	4.53	2.97	197	191
	680	218	6	5 740	10 100	536	340	460	24092R	24092RK30	488	519	652	607	5	0.30	2.23	3.32	2.18	277	272
	680	218	6	5 660	10 300	656	340	460	24092RHA	24092RHAK30	488	518	652	604	5	0.29	2.33	3.46	2.27	259	254
	760	240	7.5	6 510	10 800	648	310	410	23192R	23192RK	496	552	724	656	6	0.33	2.07	3.09	2.03	450	436
	760	240	7.5	7 240	11 200	697	300	400	23192RHA	23192RHAK	496	546	724	669	6	0.30	2.22	3.31	2.17	420	406
	760	300	7.5	7 320	12 200	597	310	410	24192R	24192RK30	496	537	724	647	6	0.35	1.95	2.90	1.91	550	541
	760	300	7.5	8 390	14 200	746	310	410	24192RHA	24192RHAK30	496	535	724	651	6	0.38	1.75	2.61	1.72	525	516
	830	296	7.5	9 520	13 700	867	270	370	23292R	23292RK	496	567	794	718	6	0.36	1.85	2.76	1.81	720	699
	830	296	7.5	9 600	14 200	856	270	360	23292RHA	23292RHAK	496	564	794	714	6	0.35	1.92	2.85	1.87	679	658
	480	650	128	5	3 290	6 130	446	350	460	23996R	23996RK	502	534	628	603	4	0.18	3.75	5.59	3.67	123
700		165	6	4 190	7 540	505	320	430	23096R	23096RK	508	549	672	633	5	0.22	3.01	4.47	2.94	225	218
700		165	6	4 670	7 860	532	320	430	23096RHA	23096RHAK	508	548	672	639	5	0.22	3.12	4.64	3.05	206	199
700		218	6	5 540	9 650	514	320	430	24096R	24096RK30	508	539	672	626	5	0.29	2.32	3.45	2.26	287	282
700		218	6	5 800	10 700	492	320	430	24096RHA	24096RHAK30	508	537	672	626	5	0.28	2.41	3.59	2.35	268	263
790		248	7.5	6 840	11 500	698	280	380	23196R	23196RK	516	579	754	685	6	0.32	2.09	3.12	2.05	503	488
790		248	7.5	7 740	12 000	638	280	380	23196RHA	23196RHAK	516	570	754	697	6	0.30	2.24	3.34	2.19	470	455
790		308	7.5	8 730	14 800	707	280	380	24196R	24196RK30	516	560	754	678	6	0.39	1.74	2.59	1.70	606	597
790		308	7.5	9 880	15 900	792	290	380	24196RHA	24196RHAK30	516	553	754	684	6	0.38	1.78	2.65	1.74	580	568
870		310	7.5	10 500	15 100	953	250	340	23296R	23296RK	516	588	834	745	6	0.36	1.85	2.75	1.81	831	807
870		310	7.5	10 600	15 700	791	250	340	23296RHA	23296RHAK	516	589	834	748	6	0.35	1.91	2.85	1.87	785	761
500		670	128	5	3 330	6 310	447	330	440	239/500R	239/500RK	522	553	648	622	4	0.17	3.87	5.76	3.79	131
	720	167	6	4 490	8 090	561	310	410	230/500R	230/500RK	528	568	692	656	5	0.23	2.94	4.37	2.87	235	228
	720	218	6	5 620	10 300	545	310	410	240/500R	240/500RK30	528	561	692	647	5	0.28	2.39	3.56	2.34	297	292
	830	264	7.5	7 750	13 000	708	260	350	231/500R	231/500RK	536	601	794	714	6	0.33	2.05	3.05	2.00	595	577
	830	325	7.5	9 350	15 900	763	260	350	241/500R	241/500RK30	536	591	794	712	6	0.36	1.85	2.76	1.81	712	701
	920	336	7.5	11 000	16 700	908	230	310	232/500R	232/500RK	536	622	884	774	6	0.39	1.74	2.59	1.70	1 020	992

[Remark] Standard cage types used for the above bearings are shown in Table 5 earlier in this section.

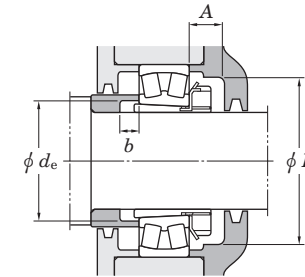


Adapter assemblies for spherical roller bearings

$d_1$  20 ~ 65 mm



$d_1$  70 ~ 110 mm

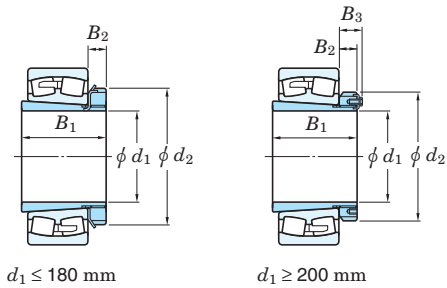


Boundary dimensions (mm)					Brg. bore $d$ (mm)	Designations Bearing + adapter ass'y	Mounting dimensions (mm)				Mass Brg.+adapter ass'y (kg)	(Refer.)	
$d_1$	$B_1$	$d_2$	$B_2$	$B_3$			A min.	K min.	$d_e$ min.	$b$ min.		Adapter sleeve No.	Locknut No.
20	29	38	8	—	25	22205RZK+H305X	15	45	29	5	0.269	A305X	AN05
25	31	45	8	—	30	22206RZK+H306X	15	50	34	5	0.404	A306X	AN06
	31	45	8	—	30	21306RZK+H306X	15	50	34	6	0.538	A306X	AN06
30	35	52	9	—	35	22207RZK+H307X	17	58	39	5	0.610	A307X	AN07
	35	52	9	—	35	21307RZK+H307X	17	58	39	7	0.725	A307X	AN07
35	36	58	10	—	40	22208RZK+H308X	17	65	44	5	0.793	A308X	AN08
	36	58	10	—	40	21308RZK+H308X	17	65	44	5	0.972	A308X	AN08
	46	58	10	—	40	22308RZK+H2308X	17	65	45	5	1.30	A2308X	AN08
40	39	65	11	—	45	22209RZK+H309X	17	72	49	8	0.855	A309X	AN09
	39	65	11	—	45	21309RZK+H309X	17	72	49	5	1.31	A309X	AN09
	50	65	11	—	45	22309RZK+H2309X	17	72	50	5	1.70	A2309X	AN09
45	42	70	12	—	50	22210RZK+H310X	19	76	54	10	0.953	A310X	AN10
	42	70	12	—	50	21310RZK+H310X	19	76	54	5	1.67	A310X	AN10
	55	70	12	—	50	22310RZK+H2310X	19	76	56	5	2.26	A2310X	AN10
50	45	75	12	—	55	22211RZK+H311X	19	85	60	11	1.22	A311X	AN11
	45	75	12	—	55	21311RZK+H311X	19	85	60	6	2.04	A311X	AN11
	59	75	12	—	55	22311RZK+H2311X	19	85	61	6	2.80	A2311X	AN11
55	47	80	13	—	60	22212RZK+H312X	20	90	65	9	1.59	A312X	AN12
	47	80	13	—	60	21312RZK+H312X	20	90	65	5	2.50	A312X	AN12
	62	80	13	—	60	22312RZK+H2312X	20	90	66	5	3.50	A2312X	AN12
60	50	85	14	—	65	22213RZK+H313X	21	96	70	8	2.01	A313X	AN13
	50	85	14	—	65	21313RZK+H313X	21	96	70	5	3.07	A313X	AN13
	65	85	14	—	65	22313RZK+H2313X	21	96	72	5	4.17	A2313X	AN13
65	55	98	15	—	75	22215RZK+H315X	23	110	80	12	2.58	A315X	AN15
	55	98	15	—	75	21315RZK+H315X	23	110	80	5	4.65	A315X	AN15
	73	98	15	—	75	22315RZK+H2315X	23	110	82	5	6.44	A2315X	AN15

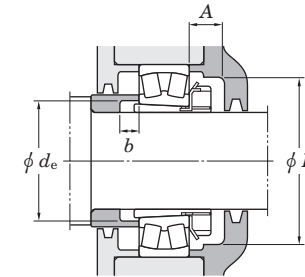
Boundary dimensions (mm)					Brg. bore $d$ (mm)	Designations Bearing + adapter ass'y	Mounting dimensions (mm)				Mass Brg.+adapter ass'y (kg)	(Refer.)	
$d_1$	$B_1$	$d_2$	$B_2$	$B_3$			A min.	K min.	$d_e$ min.	$b$ min.		Adapter sleeve No.	Locknut No.
70	59	105	17	—	80	22216RZK+H316X	25	120	86	12	3.22	A316X	AN16
	59	105	17	—	80	21316RZK+H316X	25	120	86	5	5.56	A316X	AN16
	78	105	17	—	80	22316RZK+H2316X	25	120	87	5	7.64	A2316X	AN16
75	63	110	18	—	85	22217RZK+H317X	27	128	91	12	3.93	A317X	AN17
	63	110	18	—	85	21317RZK+H317X	27	128	91	6	6.49	A317X	AN17
	82	110	18	—	85	22317RZK+H2317X	27	128	94	6	8.83	A2317X	AN17
80	65	120	18	—	90	22218RZK+H318X	28	139	96	10	4.88	A318X	AN18
	86	120	18	—	90	23218RZK+H2318X	28	139	99	18	6.20	A2318X	AN18
	65	120	18	—	90	21318RZK+H318X	28	139	96	6	7.56	A318X	AN18
	86	120	18	—	90	22318RZK+H2318X	28	139	99	6	10.3	A2318X	AN18
85	68	125	19	—	95	22219RZK+H319X	29	145	102	9	5.77	A319X	AN19
	68	125	19	—	95	21319RZK+H319X	29	145	102	7	8.68	A319X	AN19
	90	125	19	—	95	22319RZK+H2319X	29	145	105	7	12.0	A2319X	AN19
90	71	130	20	—	100	22220RZK+H320X	30	150	107	8	6.80	A320X	AN20
	97	130	20	—	100	23220RZK+H2320X	30	150	110	19	8.94	A2320X	AN20
	71	130	20	—	100	21320RZK+H320X	30	150	107	7	10.5	A320X	AN20
	97	130	20	—	100	22320RZK+H2320X	30	150	110	7	15.2	A2320X	AN20
100	81	145	21	—	110	23122RZK+H3122X	32	170	117	7	7.91	A3122X	AN22
	77	145	21	—	110	22222RZK+H3222X	32	170	117	6	9.50	A322X	AN22
	105	145	21	—	110	23222RZK+H2322X	32	170	121	17	12.4	A2322X	AN22
	77	145	21	—	110	21322RZK+H3222X	32	170	117	9	14.0	A322X	AN22
	105	145	21	—	110	22322RZK+H2322X	32	170	121	7	20.6	A2322X	AN22
110	72	145	22	—	120	23024RZK+H3024X	33	180	127	7	6.12	A3024	ANL24
	88	155	22	—	120	23124RZK+H3124X	33	180	128	7	10.5	A3124	AN24
	88	155	22	—	120	22224RZK+H3124X	33	180	128	11	11.9	A3124	AN24
	112	155	22	—	120	23224RZK+H2324X	33	180	131	17	15.1	A2324	AN24
	112	155	22	—	120	22324RZK+H2324X	33	180	131	7	25.6	A2324	AN24

Adapter assemblies for spherical roller bearings

$d_1$  115 ~ (150) mm



$d_1$  (150) ~ (180) mm

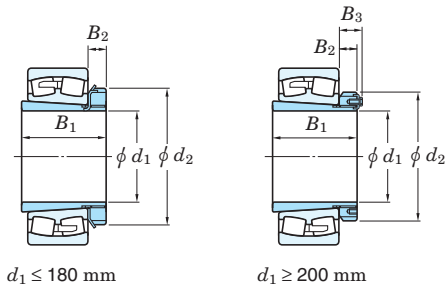


Boundary dimensions (mm)					Brg. bore $d$ (mm)	Designations Bearing + adapter ass'y	Mounting dimensions (mm)				Mass Brg.+adapter ass'y (kg)	(Refer.)	
$d_1$	$B_1$	$d_2$	$B_2$	$B_3$			A min.	K min.	$d_e$ min.	$b$ min.		Adapter sleeve No.	Locknut No.
<b>115</b>	80	155	23	—	130	23026RZK+H3026	34	190	137	8	9.01	A3026	ANL26
	92	165	23	—	130	23126RZK+H3126	34	190	138	8	12.3	A3126	AN26
	92	165	23	—	130	22226RZK+H3126	34	190	138	8	15.1	A3126	AN26
	121	165	23	—	130	23226RZK+H2326	34	190	142	21	18.8	A2326	AN26
	121	165	23	—	130	22326RZK+H2326	34	190	142	8	32.7	A2326	AN26
<b>125</b>	82	165	24	—	140	23028RZK+H3028	36	205	147	8	9.79	A3028	ANL28
	97	180	24	—	140	23128RZK+H3128	36	205	149	8	14.9	A3128	AN28
	97	180	24	—	140	22228RZK+H3128	36	205	149	8	18.8	A3128	AN28
	131	180	24	—	140	23228RZK+H2328	36	205	152	22	24.3	A2328	AN28
	131	180	24	—	140	22328RZK+H2328	36	205	152	8	40.8	A2328	AN28
<b>135</b>	87	180	26	—	150	23030RZK+H3030	37	220	158	8	11.9	A3030	ANL30
	111	195	26	—	150	23130RZK+H3130	37	220	160	8	21.7	A3130	AN30
	111	195	26	—	150	22230RZK+H3130	37	220	160	15	24.3	A3130	AN30
	139	195	26	—	150	23230RZK+H2330	37	220	163	20	30.8	A2330	AN30
	139	195	26	—	150	22330RK+H2330	37	220	163	8	49.7	A2330	AN30
<b>140</b>	93	190	28	—	160	23032RZK+H3032	39	230	168	8	15.0	A3032	ANL32
	119	210	28	—	160	23132RZK+H3132	39	230	170	8	27.9	A3132	AN32
	119	210	28	—	160	22232RK+H3132	39	230	170	14	30.6	A3132	AN32
	119	210	28	—	160	22232RHAK+H3132	39	230	170	14	29.1	A3132	AN32
	147	210	28	—	160	23232RK+H2332	39	230	174	18	39.6	A2332	AN32
	147	210	28	—	160	23232RHAK+H2332	39	230	174	18	38.0	A2332	AN32
	147	210	28	—	160	22332RK+H2332	39	230	174	8	60.5	A2332	AN32
	147	210	28	—	160	22332RHAK+H2332	39	230	174	8	56.6	A2332	AN32
	<b>150</b>	101	200	29	—	170	23034RZK+H3034	40	250	179	8	19.2	A3034
122		220	29	—	170	23134RZK+H3134	40	250	180	8	30.0	A3134	AN34
122		220	29	—	170	22234RK+H3134	40	250	180	10	37.2	A3134	AN34
122		220	29	—	170	22234RHAK+H3134	40	250	180	10	35.3	A3134	AN34

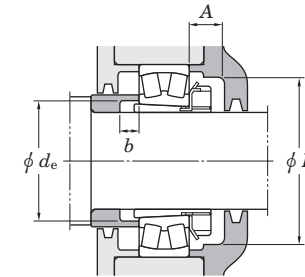
Boundary dimensions (mm)					Brg. bore $d$ (mm)	Designations Bearing + adapter ass'y	Mounting dimensions (mm)				Mass Brg.+adapter ass'y (kg)	(Refer.)		
$d_1$	$B_1$	$d_2$	$B_2$	$B_3$			A min.	K min.	$d_e$ min.	$b$ min.		Adapter sleeve No.	Locknut No.	
<b>150</b>	154	220	29	—	170	23234RRK+H2334	40	250	185	18	47.2	A2334	AN34	
	154	220	29	—	170	23234RHAK+H2334	40	250	185	18	45.3	A2334	AN34	
	154	220	29	—	170	22334RK+H2334	40	250	185	8	71.5	A2334	AN34	
	154	220	29	—	170	22334RHAK+H2334	40	250	185	8	66.8	A2334	AN34	
<b>160</b>	109	210	30	—	180	23036RZK+H3036	41	260	189	8	24.2	A3036	ANL36	
	131	230	30	—	180	23136RK+H3136	41	260	191	8	37.1	A3136	AN36	
	131	230	30	—	180	23136RHAK+H3136	41	260	191	8	35.2	A3136	AN36	
	131	230	30	—	180	22236RK+H3136	41	260	191	18	39.4	A3136	AN36	
	131	230	30	—	180	22236RHAK+H3136	41	260	191	18	37.4	A3136	AN36	
	161	230	30	—	180	23236RRK+H2336	41	260	195	22	50.5	A2336	AN36	
	161	230	30	—	180	23236RHAK+H2336	41	260	195	22	48.4	A2336	AN36	
	161	230	30	—	180	22336RK+H2336	41	260	195	8	81.8	A2336	AN36	
<b>170</b>	112	220	31	—	190	23038RK+H3038	43	270	199	9	26.1	A3038	ANL38	
	112	220	31	—	190	23038RHAK+H3038	43	270	199	9	24.5	A3038	ANL38	
	141	240	31	—	190	23138RK+H3138	43	270	202	9	45.3	A3138	AN38	
	141	240	31	—	190	23138RHAK+H3138	43	270	202	9	43.0	A3138	AN38	
	141	240	31	—	190	22238RK+H3138	43	270	202	21	47.5	A3138	AN38	
	141	240	31	—	190	22238RHAK+H3138	43	270	202	21	45.0	A3138	AN38	
	169	240	31	—	190	23238RRK+H2338	43	270	206	21	59.2	A2338	AN38	
	169	240	31	—	190	23238RHAK+H2338	43	270	206	21	56.7	A2338	AN38	
	169	240	31	—	190	22338RK+H2338	43	270	206	9	95.6	A2338	AN38	
	169	240	31	—	190	22338RHAK+H2338	43	270	206	9	89.2	A2338	AN38	
	<b>180</b>	120	240	32	—	200	23040RK+H3040	46	280	210	10	32.8	A3040	ANL40
		120	240	32	—	200	23040RHAK+H3040	46	280	210	10	30.7	A3040	ANL40
150		250	32	—	200	23140RRK+H3140	46	280	212	10	54.7	A3140	AN40	
150		250	32	—	200	23140RHAK+H3140	46	280	212	10	51.8	A3140	AN40	
150		250	32	—	200	22240RRK+H3140	46	280	212	24	56.3	A3140	AN40	

Adapter assemblies for spherical roller bearings

$d_1$  (180) ~ (240) mm



$d_1$  (240) ~ (300) mm

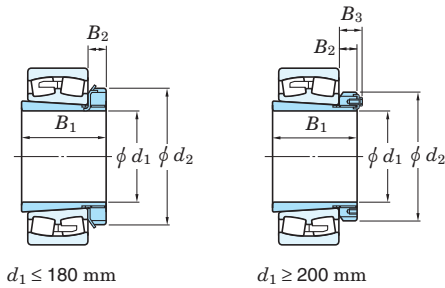


Boundary dimensions (mm)					Brg. bore $d$ (mm)	Designations Bearing + adapter ass'y	Mounting dimensions (mm)				Mass Brg.+adapter ass'y (kg)	(Refer.)		
$d_1$	$B_1$	$d_2$	$B_2$	$B_3$			A min.	K min.	$d_e$ min.	$b$ min.		Adapter sleeve No.	Locknut No.	
<b>180</b>	150	250	32	—	200	22240RHAK+H3140	46	280	212	24	53.3	A3140	AN40	
	176	250	32	—	200	23240RK+H2340	46	280	216	20	71.0	A2340	AN40	
	176	250	32	—	200	23240RHAK+H2340	46	280	216	20	68.0	A2340	AN40	
	176	250	32	—	200	22340RK+H2340	46	280	216	10	108	A2340	AN40	
	176	250	32	—	200	22340RHAK+H2340	46	280	216	10	101	A2340	AN40	
<b>200</b>	128	260	30	41	220	23044RK+H3044	—	—	231	12	41.4	A3044	ANL44	
	128	260	30	41	220	23044RHAK+H3044	—	—	231	12	38.7	A3044	ANL44	
	158	280	32	44	220	23144RK+H3144	—	—	233	10	68.4	A3144	AN44	
	158	280	32	44	220	23144RHAK+H3144	—	—	233	10	64.8	A3144	AN44	
	158	280	32	44	220	22244RRK+H3144	—	—	233	22	76.9	A3144	AN44	
	158	280	32	44	220	22244RHAK+H3144	—	—	233	22	72.7	A3144	AN44	
	183	280	32	44	220	23244RK+H2344	—	—	236	11	96.5	A2344	AN44	
	183	280	32	44	220	23244RHAK+H2344	—	—	236	11	92.3	A2344	AN44	
	183	280	32	44	220	22344RK+H2344	—	—	236	10	139	A2344	AN44	
	183	280	32	44	220	22344RHAK+H2344	—	—	236	10	130	A2344	AN44	
<b>220</b>	133	290	34	46	240	23048RRK+H3048	—	—	251	11	47.7	A3048	ANL48	
	133	290	34	46	240	23048RHAK+H3048	—	—	251	11	44.8	A3048	ANL48	
	169	300	34	46	240	23148RRK+H3148	—	—	254	11	83.6	A3148	AN48	
	169	300	34	46	240	23148RHAK+H3148	—	—	254	11	79.1	A3148	AN48	
	169	300	34	46	240	22248RK+H3148	—	—	254	19	101	A3148	AN48	
	169	300	34	46	240	22248RHAK+H3148	—	—	254	19	95.6	A3148	AN48	
	196	300	34	46	240	23248RRK+H2348	—	—	257	6	128	A2348	AN48	
	196	300	34	46	240	23248RHAK+H2348	—	—	257	6	122	A2348	AN48	
	196	300	34	46	240	22348RK+H2348	—	—	257	11	175	A2348	AN48	
	196	300	34	46	240	22348RHAK+H2348	—	—	257	11	163	A2348	AN48	
	<b>240</b>	147	310	34	46	260	23052RK+H3052	—	—	272	13	65.4	A3052	ANL52
		147	310	34	46	260	23052RHAK+H3052	—	—	272	13	61.0	A3052	ANL52
187		330	36	49	260	23152RRK+H3152	—	—	276	11	114	A3152	AN52	

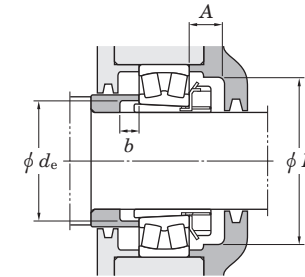
Boundary dimensions (mm)					Brg. bore $d$ (mm)	Designations Bearing + adapter ass'y	Mounting dimensions (mm)				Mass Brg.+adapter ass'y (kg)	(Refer.)		
$d_1$	$B_1$	$d_2$	$B_2$	$B_3$			A min.	K min.	$d_e$ min.	$b$ min.		Adapter sleeve No.	Locknut No.	
<b>240</b>	187	330	36	49	260	23152RHAK+H3152	—	—	276	11	108	A3152	AN52	
	187	330	36	49	260	22252RK+H3152	—	—	276	25	131	A3152	AN52	
	187	330	36	49	260	22252RHAK+H3152	—	—	276	25	124	A3152	AN52	
	208	330	36	49	260	23252RK+H2352	—	—	278	2	165	A2352	AN52	
	208	330	36	49	260	23252RHAK+H2352	—	—	278	2	158	A2352	AN52	
	208	330	36	49	260	22352RK+H2352	—	—	278	11	217	A2352	AN52	
	208	330	36	49	260	22352RHAK+H2352	—	—	278	11	202	A2352	AN52	
	<b>260</b>	152	330	38	50	280	23056RK+H3056	—	—	292	12	71.5	A3056	ANL56
152		330	38	50	280	23056RHAK+H3056	—	—	292	12	66.8	A3056	ANL56	
192		350	38	51	280	23156RRK+H3156	—	—	296	12	123	A3156	AN56	
192		350	38	51	280	23156RHAK+H3156	—	—	296	12	116	A3156	AN56	
192		350	38	51	280	22256RK+H3156	—	—	296	28	138	A3156	AN56	
192		350	38	51	280	22256RHAK+H3156	—	—	296	28	130	A3156	AN56	
221		350	38	51	280	23256RK+H2356	—	—	299	11	178	A2356	AN56	
221		350	38	51	280	23256RHAK+H2356	—	—	299	11	170	A2356	AN56	
221		350	38	51	280	22356RK+H2356	—	—	299	12	254	A2356	AN56	
221		350	38	51	280	22356RHAK+H2356	—	—	299	12	237	A2356	AN56	
<b>280</b>	168	360	42	54	300	23060RK+H3060	—	—	313	12	97.7	A3060	ANL60	
	168	360	42	54	300	23060RHAK+H3060	—	—	313	12	90.8	A3060	ANL60	
	208	380	40	53	300	23160RRK+H3160	—	—	317	12	159	A3160	AN60	
	208	380	40	53	300	23160RHAK+H3160	—	—	317	12	150	A3160	AN60	
	208	380	40	53	300	22260RK+H3160	—	—	317	32	173	A3160	AN60	
	208	380	40	53	300	22260RHAK+H3160	—	—	317	32	163	A3160	AN60	
	240	380	40	53	300	23260RK+H3260	—	—	321	12	227	A3260	AN60	
	240	380	40	53	300	23260RHAK+H3260	—	—	321	12	217	A3260	AN60	
	<b>300</b>	171	380	42	55	320	23064RK+H3064	—	—	334	13	105	A3064	ANL64
		171	380	42	55	320	23064RHAK+H3064	—	—	334	13	98.1	A3064	ANL64
226		400	42	56	320	23164RK+H3164	—	—	339	13	202	A3164	AN64	

Adapter assemblies for spherical roller bearings

$d_1$  (300) ~ 380 mm



$d_1$  400 ~ 470 mm



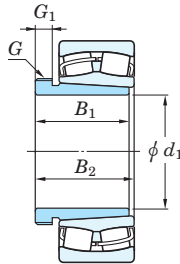
Boundary dimensions (mm)					Brg. bore $d$ (mm)	Designations Bearing + adapter ass'y	Mounting dimensions (mm)				Mass Brg.+adapter ass'y (kg)	(Refer.)	
$d_1$	$B_1$	$d_2$	$B_2$	$B_3$			A min.	K min.	$d_e$ min.	$b$ min.		Adapter sleeve No.	Locknut No.
<b>300</b>	226	400	42	56	320	23164RHAK+H3164	—	—	339	13	191	A3164	AN64
	226	400	42	56	320	22264RK+H3164	—	—	339	39	207	A3164	AN64
	258	400	42	56	320	23264RK+H3264	—	—	343	13	283	A3264	AN64
	258	400	42	56	320	23264RHAK+H3264	—	—	343	13	270	A3264	AN64
<b>320</b>	187	400	45	58	340	23068RK+H3068	—	—	355	14	135	A3068	ANL68
	187	400	45	58	340	23068RHAK+H3068	—	—	355	14	126	A3068	ANL68
	254	440	55	72	340	23168RK+H3168	—	—	360	14	262	A3168	AN68
	254	440	55	72	340	23168RHAK+H3168	—	—	360	14	248	A3168	AN68
	288	440	55	72	340	23268RK+H3268	—	—	364	14	355	A3268	AN68
	288	440	55	72	340	23268RHAK+H3268	—	—	364	14	339	A3268	AN68
<b>340</b>	188	420	45	58	360	23072RK+H3072	—	—	375	14	143	A3072	ANL72
	188	420	45	58	360	23072RHAK+H3072	—	—	375	14	133	A3072	ANL72
	259	460	58	75	360	23172RK+H3172	—	—	380	14	278	A3172	AN72
	259	460	58	75	360	23172RHAK+H3172	—	—	380	14	263	A3172	AN72
	299	460	58	75	360	23272RK+H3272	—	—	385	14	400	A3272	AN72
	299	460	58	75	360	23272RHAK+H3272	—	—	385	14	382	A3272	AN72
<b>360</b>	193	450	48	62	380	23076RK+H3076	—	—	396	15	156	A3076	ANL76
	193	450	48	62	380	23076RHAK+H3076	—	—	396	15	146	A3076	ANL76
	264	490	60	77	380	23176RK+H3176	—	—	401	15	298	A3176	AN76
	264	490	60	77	380	23176RHAK+H3176	—	—	401	15	282	A3176	AN76
	310	490	60	77	380	23276RK+H3276	—	—	405	15	448	A3276	AN76
	310	490	60	77	380	23276RHAK+H3276	—	—	405	15	427	A3276	AN76
<b>380</b>	210	470	52	66	400	23080RK+H3080	—	—	417	15	195	A3080	ANL80
	210	470	52	66	400	23080RHAK+H3080	—	—	417	15	182	A3080	ANL80
	272	520	62	82	400	23180RK+H3180	—	—	421	15	339	A3180	AN80
	272	520	62	82	400	23180RHAK+H3180	—	—	421	15	321	A3180	AN80
	328	520	62	82	400	23280RK+H3280	—	—	427	15	539	A3280	AN80
	328	520	62	82	400	23280RHAK+H3280	—	—	427	15	512	A3280	AN80

Boundary dimensions (mm)					Brg. bore $d$ (mm)	Designations Bearing + adapter ass'y	Mounting dimensions (mm)				Mass Brg.+adapter ass'y (kg)	(Refer.)	
$d_1$	$B_1$	$d_2$	$B_2$	$B_3$			A min.	K min.	$d_e$ min.	$b$ min.		Adapter sleeve No.	Locknut No.
<b>400</b>	212	490	52	66	420	23084RK+H3084	—	—	437	16	205	A3084	ANL84
	212	490	52	66	420	23084RHAK+H3084	—	—	437	16	191	A3084	ANL84
	304	540	70	90	420	23184RK+H3184	—	—	443	16	441	A3184	AN84
	304	540	70	90	420	23184RHAK+H3184	—	—	443	16	417	A3184	AN84
	352	540	70	90	420	23284RK+H3284	—	—	448	16	639	A3284	AN84
	352	540	70	90	420	23284RHAK+H3284	—	—	448	16	607	A3284	AN84
<b>410</b>	228	520	60	77	440	23088RK+H3088	—	—	458	17	252	A3088	ANL88
	228	520	60	77	440	23088RHAK+H3088	—	—	458	17	236	A3088	ANL88
	307	560	70	90	440	23188RK+H3188	—	—	464	17	474	A3188	AN88
	307	560	70	90	440	23188RHAK+H3188	—	—	464	17	449	A3188	AN88
	361	560	70	90	440	23288RK+H3288	—	—	469	17	718	A3288	AN88
	361	560	70	90	440	23288RHAK+H3288	—	—	469	17	685	A3288	AN88
<b>430</b>	234	540	60	77	460	23092RK+H3092	—	—	478	17	283	A3092	ANL92
	234	540	60	77	460	23092RHAK+H3092	—	—	478	17	265	A3092	ANL92
	326	580	75	95	460	23192RK+H3192	—	—	485	17	559	A3192	AN92
	326	580	75	95	460	23192RHAK+H3192	—	—	485	17	529	A3192	AN92
	382	580	75	95	460	23292RK+H3292	—	—	491	17	838	A3292	AN92
	382	580	75	95	460	23292RHAK+H3292	—	—	491	17	797	A3292	AN92
<b>450</b>	237	560	60	77	480	23096RK+H3096	—	—	499	18	295	A3096	ANL96
	237	560	60	77	480	23096RHAK+H3096	—	—	499	18	276	A3096	ANL96
	335	620	75	95	480	23196RK+H3196	—	—	505	18	628	A3196	AN96
	335	620	75	95	480	23196RHAK+H3196	—	—	505	18	595	A3196	AN96
	397	620	75	95	480	23296RK+H3296	—	—	512	18	966	A3296	AN96
	397	620	75	95	480	23296RHAK+H3296	—	—	512	18	920	A3296	AN96
<b>470</b>	247	580	68	85	500	230/500RK+H30/500	—	—	519	18	315	A30/500	ANL100
	356	630	80	100	500	231/500RK+H31/500	—	—	527	18	727	A31/500	AN100
	428	630	80	100	500	232/500RK+H32/500	—	—	534	18	1 167	A32/500	AN100

Withdrawal sleeves for spherical roller bearings

$d_1$  35 ~ (75) mm

$d_1$  (75) ~ (115) mm



$d_1$	Boundary dimensions (mm)			$G_1$	Brg. bore $d$ (mm)	Designations Bearing + withdrawal sleeve	Mass Brg.+withdrawal sleeve (kg)	(Refer.) Applicable locknut No.
	$B_1$	$B_2$	$G^{1)}$ Screw size					
35	29	32	M45×1.5	6	40	22208RZK+AH308	0.681	AN09
	29	32	M45×1.5	6	40	21308RZK+AH308	0.860	AN09
	40	43	M45×1.5	7	40	22308RZK+AH2308	1.19	AN09
40	31	34	M50×1.5	6	45	22209RZK+AH309	0.699	AN10
	31	34	M50×1.5	6	45	21309RZK+AH309	1.14	AN10
	44	47	M50×1.5	7	45	22309RZK+AH2309	1.55	AN10
45	35	38	M55×2	7	50	22210RZK+AHX310	0.771	AN11
	35	38	M55×2	7	50	21310RZK+AHX310	1.49	AN11
	50	53	M55×2	9	50	22310RZK+AHX2310	2.09	AN11
50	37	40	M60×2	7	55	22211RZK+AHX311	1.01	AN12
	37	40	M60×2	7	55	21311RZK+AHX311	1.83	AN12
	54	57	M60×2	10	55	22311RZK+AHX2311	2.60	AN12
55	40	43	M65×2	8	60	22212RZK+AHX312	1.35	AN13
	40	43	M65×2	8	60	21312RZK+AHX312	2.27	AN13
	58	61	M65×2	11	60	22312RZK+AHX2312	3.29	AN13
60	42	45	M75×2	8	65	22213RZK+AH313	1.77	AN15
	42	45	M75×2	8	65	21313RZK+AH313	2.84	AN15
	61	64	M75×2	12	65	22313RZK+AH2313	3.98	AN15
65	43	47	M80×2	8	70	22214RZK+AH314	1.89	AN16
	43	47	M80×2	8	70	21314RZK+AH314	3.43	AN16
	64	68	M80×2	12	70	22314RZK+AHX2314	4.82	AN16
70	45	49	M85×2	8	75	22215RZK+AH315	2.01	AN17
	45	49	M85×2	8	75	21315RZK+AH315	4.07	AN17
	68	72	M85×2	12	75	22315RZK+AHX2315	5.87	AN17
75	48	52	M90×2	8	80	22216RZK+AH316	2.49	AN18
	48	52	M90×2	8	80	21316RZK+AH316	4.83	AN18

$d_1$	Boundary dimensions (mm)			$G_1$	Brg. bore $d$ (mm)	Designations Bearing + withdrawal sleeve	Mass Brg.+withdrawal sleeve (kg)	(Refer.) Applicable locknut No.
	$B_1$	$B_2$	$G^{1)}$ Screw size					
75	71	75	M90×2	12	80	22316RZK+AHX2316	6.90	AN18
80	52	56	M95×2	9	85	22217RZK+AHX317	3.12	AN19
	52	56	M95×2	9	85	21317RZK+AHX317	5.68	AN19
	74	78	M95×2	13	85	22317RZK+AHX2317	7.98	AN19
85	53	57	M100×2	9	90	22218RZK+AHX318	3.89	AN20
	63	67	M100×2	10	90	23218RZK+AHX3218	5.08	AN20
	53	57	M100×2	9	90	21318RZK+AHX318	6.58	AN20
	79	83	M100×2	14	90	22318RZK+AHX2318	9.41	AN20
90	57	61	M105×2	10	95	22219RZK+AHX319	4.68	AN21
	57	61	M105×2	10	95	21319RZK+AHX319	7.59	AN21
	85	89	M105×2	16	95	22319RZK+AHX2319	10.9	AN21
95	59	63	M110×2	10	100	22220RZK+AHX320	5.58	AN22
	73	77	M110×2	11	100	23220RZK+AHX3220	7.43	AN22
	59	63	M110×2	10	100	21320RZK+AHX320	9.26	AN22
	90	94	M110×2	16	100	22320RZK+AHX2320	13.9	AN22
105	68	72	M120×2	11	110	23122RZK+AHX3122	6.30	AN24
	82	91	M115×2	13	110	24122RZK30+AH24122	7.60	AN23
	68	72	M120×2	11	110	22222RZK+AHX3122	7.97	AN24
	82	86	M125×2	11	110	23222RZK+AHX3222	10.5	AN25
	63	67	M120×2	12	110	21322RZK+AHX322	12.3	AN24
115	98	102	M125×2	16	110	22322RZK+AHX2322	19.1	AN25
	60	64	M130×2	13	120	23024RZK+AHX3024	4.82	AN26
	73	82	M125×2	13	120	24024RZK30+AH24024	5.99	AN25
	75	79	M130×2	12	120	23124RZK+AHX3124	8.69	AN26
	93	102	M130×2	13	120	24124RZK30+AH24124	11.0	AN26
75	79	M130×2	12	120	22224RZK+AHX3124	10.1	AN26	

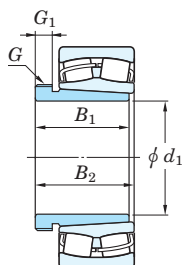
[Note] 1) Basic profile and dimensions of screw thread identified by prefix M are in accordance with JIS B 0205.  
Basic profile and dimensions of screw thread identified by prefix Tr are in accordance with JIS B 0216.



Withdrawal sleeves for spherical roller bearings

$d_1$  (115) ~ (150) mm

$d_1$  (150) ~ 170 mm



$d_1$	Boundary dimensions (mm)			$G_1$	Brg. bore $d$ (mm)	Designations Bearing + withdrawal sleeve	Mass Brg.+withdrawal sleeve (kg)	(Refer.) Applicable locknut No.
	$B_1$	$B_2$	$G^{1)}$ Screw size					
<b>115</b>	90	94	M135×2	13	120	23224RZK+ <b>AHX3224</b>	13.1	AN27
	105	109	M135×2	17	120	22324RZK+ <b>AHX2324</b>	23.9	AN27
<b>125</b>	67	71	M140×2	14	130	23026RZK+ <b>AHX3026</b>	6.90	AN28
	83	93	M135×2	14	130	24026RZK30+ <b>AH24026</b>	8.74	AN27
	78	82	M140×2	12	130	23126RZK+ <b>AHX3126</b>	9.52	AN28
	94	104	M140×2	14	130	24126RZK30+ <b>AH24126</b>	11.7	AN28
	78	82	M140×2	12	130	22226RZK+ <b>AHX3126</b>	12.4	AN28
	98	102	M145×2	15	130	23226RZK+ <b>AHX3226</b>	15.6	AN29
	115	119	M145×2	19	130	22326RZK+ <b>AHX2326</b>	29.9	AN29
<b>135</b>	68	73	M150×2	14	140	23028RZK+ <b>AHX3028</b>	7.43	AN30
	83	93	M145×2	14	140	24028RZK30+ <b>AH24028</b>	9.26	AN29
	83	88	M150×2	14	140	23128RZK+ <b>AHX3128</b>	11.5	AN30
	99	109	M150×2	14	140	24128RZK30+ <b>AH24128</b>	14.1	AN30
	83	88	M150×2	14	140	22228RZK+ <b>AHX3128</b>	15.4	AN30
	104	109	M155×3	15	140	23228RZK+ <b>AHX3228</b>	20.3	AN31
	125	130	M155×3	20	140	22328RZK+ <b>AHX2328</b>	35.0	AN31
<b>145</b>	72	77	M160×3	15	150	23030RZK+ <b>AHX3030</b>	8.92	AN32
	90	101	M155×3	15	150	24030RZK30+ <b>AH24030</b>	11.4	AN31
	96	101	M165×3	15	150	23130RZK+ <b>AHX3130</b>	17.7	AN33
	115	126	M160×3	15	150	24130RZK30+ <b>AH24130</b>	21.2	AN32
	96	101	M165×3	15	150	22230RZK+ <b>AHX3130</b>	20.3	AN33
	114	119	M165×3	17	150	23230RZK+ <b>AHX3230</b>	26.0	AN33
	135	140	M165×3	24	150	22330RK+ <b>AHX2330</b>	45.5	AN33
	135	140	M165×3	24	150	22330RHAK+ <b>AHX2330</b>	42.2	AN33
<b>150</b>	77	82	M170×3	16	160	23032RZK+ <b>AH3032</b>	11.5	AN34
	95	106	M170×3	15	160	24032RZK30+ <b>AH24032</b>	15.0	AN34
	103	108	M180×3	16	160	23132RZK+ <b>AH3132</b>	23.4	AN36

$d_1$	Boundary dimensions (mm)			$G_1$	Brg. bore $d$ (mm)	Designations Bearing + withdrawal sleeve	Mass Brg.+withdrawal sleeve (kg)	(Refer.) Applicable locknut No.
	$B_1$	$B_2$	$G^{1)}$ Screw size					
<b>150</b>	103	108	M180×3	16	160	22232RK+ <b>AH3132</b>	26.1	AN36
	103	108	M180×3	16	160	22232RHAK+ <b>AH3132</b>	24.6	AN36
	124	130	M180×3	20	160	23232RK+ <b>AH3232</b>	35.1	AN36
	124	130	M180×3	20	160	23232RHAK+ <b>AH3232</b>	32.6	AN36
	140	146	M180×3	24	160	22332RK+ <b>AH2332</b>	55.7	AN36
	140	146	M180×3	24	160	22332RHAK+ <b>AH2332</b>	51.8	AN36
<b>160</b>	85	90	M180×3	17	170	23034RZK+ <b>AH3034</b>	15.2	AN36
	106	117	M180×3	16	170	24034RZK30+ <b>AH24034</b>	20.0	AN36
	104	109	M190×3	16	170	23134RZK+ <b>AH3134</b>	24.6	AN38
	125	136	M180×3	16	170	24134RRK30+ <b>AH24134</b>	30.0	AN36
	104	109	M190×3	16	170	22234RK+ <b>AH3134</b>	31.8	AN38
	104	109	M190×3	16	170	22234RHAK+ <b>AH3134</b>	29.9	AN38
	134	140	M190×3	24	170	23234RRK+ <b>AH3234</b>	42.3	AN38
	134	140	M190×3	24	170	23234RHAK+ <b>AH3234</b>	39.4	AN38
	146	152	M190×3	24	170	22334RK+ <b>AH2334</b>	66.1	AN38
	146	152	M190×3	24	170	22334RHAK+ <b>AH2334</b>	61.4	AN38
<b>170</b>	92	98	M190×3	17	180	23036RZK+ <b>AH3036</b>	19.7	AN38
	116	127	M190×3	16	180	24036RRK30+ <b>AH24036</b>	26.1	AN38
	116	122	M200×3	19	180	23136RK+ <b>AH3136</b>	31.7	AN40
	116	122	M200×3	19	180	23136RHAK+ <b>AH3136</b>	29.8	AN40
	134	145	M190×3	16	180	24136RRK30+ <b>AH24136</b>	37.6	AN38
	134	145	M190×3	16	180	24136RHAK30+ <b>AH24136</b>	34.9	AN38
	105	110	M200×3	17	180	22236RK+ <b>AH2236</b>	33.5	AN40
	105	110	M200×3	17	180	22236RHAK+ <b>AH2236</b>	31.5	AN40
	140	146	M200×3	24	180	23236RRK+ <b>AH3236</b>	45.1	AN40
	140	146	M200×3	24	180	23236RHAK+ <b>AH3236</b>	41.8	AN40
	154	160	M200×3	24	180	22336RK+ <b>AH2336</b>	75.7	AN40
	154	160	M200×3	24	180	22336RHAK+ <b>AH2336</b>	70.3	AN40

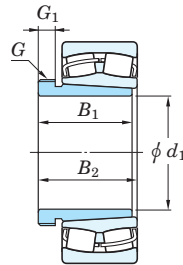
[Note] 1) Basic profile and dimensions of screw thread identified by prefix M are in accordance with JIS B 0205.  
Basic profile and dimensions of screw thread identified by prefix Tr are in accordance with JIS B 0216.



Withdrawal sleeves for spherical roller bearings

$d_1$  180 ~ 190 mm

$d_1$  200 ~ 220 mm



$d_1$	Boundary dimensions (mm)			$G_1$	Brg. bore $d$ (mm)	Designations Bearing + withdrawal sleeve	Mass Brg.+withdrawal sleeve (kg)	(Refer.) Applicable locknut No.	
	$B_1$	$B_2$	$G^{1)}$ Screw size						
<b>180</b>	96	102	Tr205×4	18	190	23038RK+ <b>AH3038</b>	21.5	HNL41	
	96	102	Tr205×4	18	190	23038RHAK+ <b>AH3038</b>	19.9	HNL41	
	118	131	M200×3	18	190	24038RRK30+ <b>AH24038</b>	27.6	AN40	
	118	131	M200×3	18	190	24038RHAK30+ <b>AH24038</b>	25.5	AN40	
	125	131	Tr210×4	20	190	23138RK+ <b>AH3138</b>	39.3	HN42	
	125	131	Tr210×4	20	190	23138RHAK+ <b>AH3138</b>	37.0	HN42	
	146	159	M200×3	18	190	24138RRK30+ <b>AH24138</b>	46.7	AN40	
	146	159	M200×3	18	190	24138RHAK30+ <b>AH24138</b>	43.8	AN40	
	112	117	Tr210×4	18	190	22238RK+ <b>AH2238</b>	40.9	HN42	
	112	117	Tr210×4	18	190	22238RHAK+ <b>AH2238</b>	38.4	HN42	
	145	152	Tr210×4	25	190	23238RRK+ <b>AH3238</b>	53.3	HN42	
	145	152	Tr210×4	25	190	23238RHAK+ <b>AH3238</b>	49.4	HN42	
	160	167	Tr210×4	26	190	22338RK+ <b>AH2338</b>	89.0	HN42	
	160	167	Tr210×4	26	190	22338RHAK+ <b>AH2338</b>	82.6	HN42	
	<b>190</b>	102	108	Tr215×4	19	200	23040RK+ <b>AH3040</b>	27.2	HNL43
		102	108	Tr215×4	19	200	23040RHAK+ <b>AH3040</b>	25.1	HNL43
127		140	Tr210×4	18	200	24040RRK30+ <b>AH24040</b>	34.6	HN42	
127		140	Tr210×4	18	200	24040RHAK30+ <b>AH24040</b>	31.9	HN42	
134		140	Tr220×4	21	200	23140RRK+ <b>AH3140</b>	47.9	HN44	
134		140	Tr220×4	21	200	23140RHAK+ <b>AH3140</b>	45.0	HN44	
158		171	Tr210×4	18	200	24140RRK30+ <b>AH24140</b>	57.6	HN42	
158		171	Tr210×4	18	200	24140RHAK30+ <b>AH24140</b>	53.8	HN42	
118		123	Tr220×4	19	200	22240RRK+ <b>AH2240</b>	48.7	HN44	
118		123	Tr220×4	19	200	22240RHAK+ <b>AH2240</b>	45.7	HN44	
153		160	Tr220×4	25	200	23240RK+ <b>AH3240</b>	64.7	HN44	
153		160	Tr220×4	25	200	23240RHAK+ <b>AH3240</b>	60.1	HN44	
170		177	Tr220×4	26	200	22340RK+ <b>AH2340</b>	101	HN44	
170		177	Tr220×4	26	200	22340RHAK+ <b>AH2340</b>	93.4	HN44	

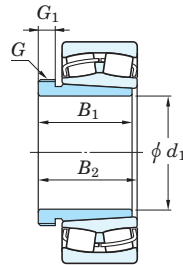
$d_1$	Boundary dimensions (mm)			$G_1$	Brg. bore $d$ (mm)	Designations Bearing + withdrawal sleeve	Mass Brg.+withdrawal sleeve (kg)	(Refer.) Applicable locknut No.
	$B_1$	$B_2$	$G^{1)}$ Screw size					
<b>200</b>	111	117	Tr235×4	20	220	23044RK+ <b>AH3044</b>	38.0	HNL47
	111	117	Tr235×4	20	220	23044RHAK+ <b>AH3044</b>	35.3	HNL47
	138	152	Tr230×4	20	220	24044RRK30+ <b>AH24044</b>	48.1	—
	138	152	Tr230×4	20	220	24044RHAK30+ <b>AH24044</b>	44.7	—
	145	151	Tr240×4	23	220	23144RK+ <b>AH3144</b>	63.6	HN48
	145	151	Tr240×4	23	220	23144RHAK+ <b>AH3144</b>	60.0	HN48
	170	184	Tr230×4	20	220	24144RRK30+ <b>AH24144</b>	76.4	—
	170	184	Tr230×4	20	220	24144RHAK30+ <b>AH24144</b>	71.2	—
	130	136	Tr240×4	20	220	22244RRK+ <b>AH2244</b>	70.8	HN48
	130	136	Tr240×4	20	220	22244RHAK+ <b>AH2244</b>	66.6	HN48
	181	189	Tr240×4	30	220	23244RK+ <b>AH2344</b>	95.1	HN48
	181	189	Tr240×4	30	220	23244RHAK+ <b>AH2344</b>	88.5	HN48
<b>220</b>	181	189	Tr240×4	30	220	22344RK+ <b>AH2344</b>	136	HN48
	181	189	Tr240×4	30	220	22344RHAK+ <b>AH2344</b>	127	HN48
	116	123	Tr260×4	21	240	23048RRK+ <b>AH3048</b>	42.6	HNL52
	116	123	Tr260×4	21	240	23048RHAK+ <b>AH3048</b>	39.7	HNL52
	138	153	Tr250×4	20	240	24048RRK30+ <b>AH24048</b>	51.9	—
	138	153	Tr250×4	20	240	24048RHAK30+ <b>AH24048</b>	48.0	—
	154	161	Tr260×4	25	240	23148RRK+ <b>AH3148</b>	77.6	HN52
	154	161	Tr260×4	25	240	23148RHAK+ <b>AH3148</b>	73.1	HN52
	180	195	Tr260×4	20	240	24148RRK30+ <b>AH24148</b>	94.0	HN52
	180	195	Tr260×4	20	240	24148RHAK30+ <b>AH24148</b>	87.9	HN52
	144	150	Tr260×4	21	240	22248RK+ <b>AH2248</b>	94.3	HN52
	144	150	Tr260×4	21	240	22248RHAK+ <b>AH2248</b>	88.7	HN52
189	197	Tr260×4	30	240	23248RRK+ <b>AH2348</b>	126	HN52	
189	197	Tr260×4	30	240	23248RHAK+ <b>AH2348</b>	117	HN52	
189	197	Tr260×4	30	240	22348RK+ <b>AH2348</b>	170	HN52	
189	197	Tr260×4	30	240	22348RHAK+ <b>AH2348</b>	158	HN52	

[Note] 1) Basic profile and dimensions of screw thread identified by prefix M are in accordance with JIS B 0205.  
Basic profile and dimensions of screw thread identified by prefix Tr are in accordance with JIS B 0216.

Withdrawal sleeves for spherical roller bearings

$d_1$  240 ~ 260 mm

$d_1$  280 ~ (320) mm



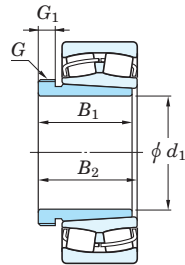
$d_1$	Boundary dimensions (mm)			$G_1$	Brg. bore $d$ (mm)	Designations Bearing + withdrawal sleeve	Mass Brg.+withdrawal sleeve (kg)	(Refer.) Applicable locknut No.
	$B_1$	$B_2$	$G^{(1)}$ Screw size					
240	128	135	Tr280×4	23	260	23052RK+AH3052	60.0	HNL56
	128	135	Tr280×4	23	260	23052RHAK+AH3052	55.6	HNL56
	162	178	Tr270×4	22	260	24052RRK30+AH24052	77.0	—
	162	178	Tr270×4	22	260	24052RHAK30+AH24052	71.2	—
	172	179	Tr290×4	26	260	23152RK+AH3152	107	HN58
	172	179	Tr290×4	26	260	23152RHAK+AH3152	101	HN58
	202	218	Tr280×4	22	260	24152RRK30+AH24152	128	—
	202	218	Tr280×4	22	260	24152RHAK30+AH24152	120	—
	155	161	Tr290×4	23	260	22252RK+AH2252	122	HN58
	155	161	Tr290×4	23	260	22252RHAK+AH2252	115	HN58
	205	213	Tr290×4	30	260	23252RK+AH2352	164	HN58
	205	213	Tr290×4	30	260	23252RHAK+AH2352	153	HN58
	205	213	Tr290×4	30	260	22352RK+AH2352	212	HN58
	205	213	Tr290×4	30	260	22352RHAK+AH2352	197	HN58
260	131	139	Tr300×4	24	280	23056RK+AH3056	64.9	HNL60
	131	139	Tr300×4	24	280	23056RHAK+AH3056	60.2	HNL60
	162	179	Tr290×4	22	280	24056RRK30+AH24056	81.9	HN58
	162	179	Tr290×4	22	280	24056RHAK30+AH24056	75.7	HN58
	175	183	Tr310×5	28	280	23156RRK+AH3156	114	HN62
	175	183	Tr310×5	28	280	23156RHAK+AH3156	108	HN62
	202	219	Tr300×4	22	280	24156RRK30+AH24156	136	—
	202	219	Tr300×4	22	280	24156RHAK30+AH24156	128	—
	155	163	Tr310×5	24	280	22256RK+AH2256	127	HN62
	155	163	Tr310×5	24	280	22256RHAK+AH2256	119	HN62
	212	220	Tr310×5	30	280	23256RK+AH2356	175	HN62
	212	220	Tr310×5	30	280	23256RHAK+AH2356	163	HN62
	212	220	Tr310×5	30	280	22356RK+AH2356	247	HN62
	212	220	Tr310×5	30	280	22356RHAK+AH2356	230	HN62

$d_1$	Boundary dimensions (mm)			$G_1$	Brg. bore $d$ (mm)	Designations Bearing + withdrawal sleeve	Mass Brg.+withdrawal sleeve (kg)	(Refer.) Applicable locknut No.
	$B_1$	$B_2$	$G^{(1)}$ Screw size					
280	145	153	Tr320×5	26	300	23060RK+AH3060	88.1	HNL64
	145	153	Tr320×5	26	300	23060RHAK+AH3060	81.2	HNL64
	184	202	Tr310×5	24	300	24060RRK30+AH24060	112	HN62
	184	202	Tr310×5	24	300	24060RHAK30+AH24060	105	HN62
	192	200	Tr330×5	30	300	23160RRK+AH3160	149	HN66
	192	200	Tr330×5	30	300	23160RHAK+AH3160	140	HN66
	224	242	Tr320×5	24	300	24160RRK30+AH24160	180	—
	224	242	Tr320×5	24	300	24160RHAK30+AH24160	168	—
	170	178	Tr330×5	26	300	22260RK+AH2260	160	HN66
	170	178	Tr330×5	26	300	22260RHAK+AH2260	150	HN66
300	228	236	Tr330×5	34	300	23260RK+AH3260	223	HN66
	228	236	Tr330×5	34	300	23260RHAK+AH3260	208	HN66
	149	157	Tr345×5	27	320	23064RK+AH3064	94.8	HNL69
	149	157	Tr345×5	27	320	23064RHAK+AH3064	88.1	HNL69
	184	202	Tr330×5	24	320	24064RRK30+AH24064	120	HN66
	184	202	Tr330×5	24	320	24064RHAK30+AH24064	108	HN66
	209	217	Tr350×5	31	320	23164RK+AH3164	191	HN70
	209	217	Tr350×5	31	320	23164RHAK+AH3164	180	HN70
	242	260	Tr340×5	24	320	24164RRK30+AH24164	226	—
	242	260	Tr340×5	24	320	24164RHAK30+AH24164	217	—
320	180	190	Tr350×5	27	320	22264RK+AH2264	191	HN70
	246	254	Tr350×5	36	320	23264RK+AH3264	280	HN70
	246	254	Tr350×5	36	320	23264RHAK+AH3264	260	HN70
	162	171	Tr365×5	28	340	23068RK+AH3068	125	HNL73
	162	171	Tr365×5	28	340	23068RHAK+AH3068	115	HNL73
	225	234	Tr370×5	33	340	23168RK+AH3168	239	HN74
340	225	234	Tr370×5	33	340	23168RHAK+AH3168	225	HN74
	269	288	Tr360×5	26	340	24168RRK30+AH24168	293	—

[Note] 1) Basic profile and dimensions of screw thread identified by prefix M are in accordance with JIS B 0205.  
Basic profile and dimensions of screw thread identified by prefix Tr are in accordance with JIS B 0216.

Withdrawal sleeves for spherical roller bearings

$d_1$  (320) ~ 380 mm



$d_1$  400 ~ 480 mm

$d_1$	Boundary dimensions (mm)			$G_1$	Brg. bore $d$ (mm)	Designations Bearing + withdrawal sleeve	Mass Brg.+withdrawal sleeve (kg)	(Refer.) Applicable locknut No.
	$B_1$	$B_2$	$G^{1)}$ Screw size					
320	269	288	Tr360×5	26	340	24168RHAK30+AH24168	282	—
	264	273	Tr370×5	38	340	23268RK+AH3268	342	HN74
	264	273	Tr370×5	38	340	23268RHAK+AH3268	317	HN74
340	167	176	Tr385×5	30	360	23072RK+AH3072	132	HNL77
	167	176	Tr385×5	30	360	23072RHAK+AH3072	122	HNL77
	229	238	Tr400×5	35	360	23172RK+AH3172	254	HN80
	232	238	Tr400×5	35	360	23172RHAK+AH3172	239	HN80
	269	289	Tr380×5	26	360	24172RK30+AH24172	313	—
	269	289	Tr380×5	26	360	24172RHAK30+AH24172	300	—
	274	283	Tr400×5	40	360	23272RK+AH3272	388	HN80
	274	283	Tr400×5	40	360	23272RHAK+AH3272	360	HN80
360	170	180	Tr410×5	31	380	23076RK+AH3076	141	HNL82
	170	180	Tr410×5	31	380	23076RHAK+AH3076	131	HNL82
	232	242	Tr420×5	36	380	23176RK+AH3176	269	HN84
	240	242	Tr420×5	36	380	23176RHAK+AH3176	253	HN84
	271	291	Tr400×5	28	380	24176RK30+AH24176	328	HN80
	271	291	Tr400×5	28	380	24176RHAK30+AH24176	314	HN80
	284	294	Tr420×5	42	380	23276RK+AH3276	432	HN84
	284	294	Tr420×5	42	380	23276RHAK+AH3276	400	HN84
380	183	193	Tr430×5	33	400	23080RK+AH3080	178	HNL86
	183	193	Tr430×5	33	400	23080RHAK+AH3080	165	HNL86
	240	250	Tr440×5	38	400	23180RK+AH3180	305	HN88
	266	250	Tr440×5	38	400	23180RHAK+AH3180	287	HN88
	278	298	Tr420×5	28	400	24180RK30+AH24180	368	HN84
	278	298	Tr420×5	28	400	24180RHAK30+AH24180	352	HN84
	302	312	Tr440×5	44	400	23280RK+AH3280	521	HN88
	302	312	Tr440×5	44	400	23280RHAK+AH3280	480	HN88

$d_1$	Boundary dimensions (mm)			$G_1$	Brg. bore $d$ (mm)	Designations Bearing + withdrawal sleeve	Mass Brg.+withdrawal sleeve (kg)	(Refer.) Applicable locknut No.
	$B_1$	$B_2$	$G^{1)}$ Screw size					
400	186	196	Tr450×5	34	420	23084RK+AH3084	188	HNL90
	186	196	Tr450×5	34	420	23084RHAK+AH3084	174	HNL90
	266	276	Tr460×5	40	420	23184RK+AH3184	399	HN92
	270	276	Tr460×5	40	420	23184RHAK+AH3184	375	HN92
	321	331	Tr460×5	46	420	23284RK+AH3284	673	HN92
420	321	331	Tr460×5	46	420	23284RHAK+AH3284	568	HN92
	194	205	Tr470×5	35	440	23088RK+AHX3088	215	HNL94
	194	205	Tr470×5	35	440	23088RHAK+AHX3088	199	HNL94
	270	281	Tr480×5	42	440	23188RK+AHX3188	416	HN96
	285	281	Tr480×5	42	440	23188RHAK+AHX3188	391	HN96
440	330	341	Tr480×5	48	440	23288RK+AHX3288	678	HN96
	330	341	Tr480×5	48	440	23288RHAK+AHX3288	627	HN96
	202	213	Tr490×5	37	460	23092RK+AHX3092	244	HNL98
	202	213	Tr490×5	37	460	23092RHAK+AHX3092	226	HNL98
	285	296	Tr510×6	43	460	23192RK+AHX3192	494	HN102
460	295	296	Tr510×6	43	460	23192RHAK+AHX3192	464	HN102
	349	360	Tr510×6	50	460	23292RK+AHX3292	795	HN102
	349	360	Tr510×6	50	460	23292RHAK+AHX3292	733	HN102
	205	217	Tr520×6	38	480	23096RK+AHX3096	257	HNL104
	205	217	Tr520×6	38	480	23096RHAK+AHX3096	238	HNL104
480	295	307	Tr530×6	45	480	23196RK+AHX3196	551	HN106
	313	307	Tr530×6	45	480	23196RHAK+AHX3196	518	HN106
	364	376	Tr530×6	52	480	23296RK+AHX3296	914	HN106
	364	376	Tr530×6	52	480	23296RHAK+AHX3296	844	HN106
	209	221	Tr540×6	40	500	230/500RK+AHX30/500	271	HNL108
313	325	Tr550×6	47	500	231/500RK+AHX31/500	648	HN110	
393	405	Tr550×6	54	500	232/500RK+AHX32/500	1 015	HN110	

[Note] 1) Basic profile and dimensions of screw thread identified by prefix M are in accordance with JIS B 0205.  
Basic profile and dimensions of screw thread identified by prefix Tr are in accordance with JIS B 0216.