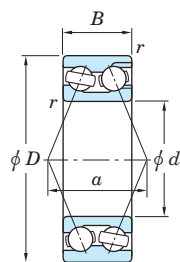
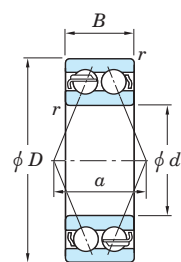


Double-row angular contact ball bearings

d 10 ~ (40) mm



32, 33 series
(With filling slot)

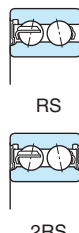


Open



ZZ

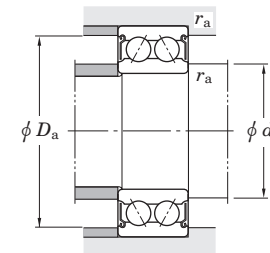
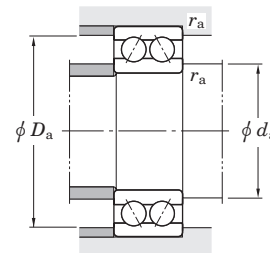
Shielded



2RS

Contact
sealed

52, 53 series
(Without filling slot)



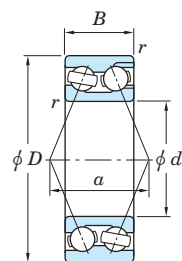
Boundary dimensions (mm)				Basic load ratings (kN)				Fatigue load limits (kN)		Limiting speeds (min ⁻¹)			Bearing No.			Load center spread (mm)	Mounting dimensions ¹⁾ (mm)				(Refer.) Mass (kg)	
<i>d</i>	<i>D</i>	<i>B</i>	<i>r</i> min.	<i>C</i> _r	<i>C</i> _{0r}	Shielded/sealed		<i>C</i> _u		Grease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

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

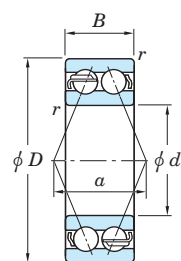
[Remark] Standard cage types used for the above bearings are described earlier in this section.

Double-row angular contact ball bearings

d (40) ~ 70 mm



32, 33 series
(With filling slot)



Open



ZZ

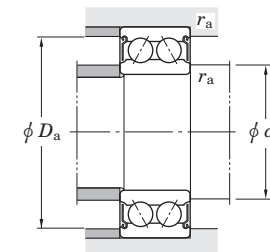
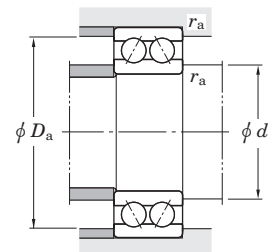
Shielded



2RS

Contact
sealed

52, 53 series
(Without filling slot)



Boundary dimensions (mm)				Basic load ratings (kN) Open Shielded/sealed				Fatigue load limits (kN) C _u		Limiting speeds (min ⁻¹) Grease lub. Oil lub.				Bearing No.			Load center spread (mm) Open a	Mounting dimensions ¹⁾ (mm)				(Refer.) Mass (kg)
d	D	B	r min.	C _r	C _{0r}	C _r	C _{0r}	(Open)	(Shielded/sealed)	Open Z, ZZ	(RS, 2RS)	Open Z		Open	Shielded	Sealed		d _a min.	max.	D _a max.	r _a max.	
40	90	36.5	1.5	67.6	53.8	—	—	2.80	—	4 600	—	6 100		3308	—	—	58.9	48.5	—	81.5	1.5	1.07
	90	36.5	1.5	78.3	45.4	64.3	37.8	2.35	1.95	4 600	4 600	6 100		5308	5308 ZZ	5308 2RS	44.9	48.5	52.1	81.5	1.5	1.05
45	85	30.2	1.1	56.8	51.4	—	—	2.65	—	4 600	—	6 100		3209	—	—	56.3	52	—	78	1	0.710
	85	30.2	1.1	62.3	38.4	52.1	33.9	2.00	1.75	4 600	4 600	6 100		5209	5209 ZZ	5209 2RS	42.2	52	55.3	78	1	0.620
	100	39.7	1.5	82.6	67.3	—	—	3.50	—	4 100	—	5 500		3309	—	—	65.6	53.5	—	91.5	1.5	1.42
	100	39.7	1.5	93.8	55.7	86.1	51.4	2.90	2.65	4 100	4 100	5 500		5309	5309 ZZ	5309 2RS	51.0	53.5	58.2	91.5	1.5	1.42
50	90	30.2	1.1	56.4	52.1	—	—	2.70	—	4 300	—	5 700		3210	—	—	58.8	57	—	83	1	0.760
	90	30.2	1.1	66.7	43.6	55.2	37.9	2.25	1.95	4 300	4 300	5 600		5210	5210 ZZ	5210 2RS	44.5	57	58.9	83	1	0.670
	110	44.4	2	108	88.6	—	—	4.60	—	3 800	—	5 000		3310	—	—	71.7	60	—	100	2	1.95
	110	44.4	2	111	67.0	102	62.2	3.45	3.20	3 600	3 600	4 800		5310	5310 ZZ	5310 2RS	56.6	60	64.4	100	2	1.93
55	100	33.3	1.5	63.6	60.2	—	—	3.10	—	3 900	—	5 100		3211	—	—	65.0	63.5	—	91.5	1.5	1.05
	100	33.3	1.5	82.3	55.2	66.1	44.7	2.85	2.30	3 800	3 800	5 100		5211	5211 ZZ	5211 2RS	50.2	63.5	66.2	91.5	1.5	0.960
	120	49.2	2	126	106	—	—	5.45	—	3 400	—	4 500		3311	—	—	79.3	65	—	110	2	2.53
	120	49.2	2	138	85.1	120	74.3	4.40	3.85	3 300	3 300	4 500		5311	5311 ZZ	5311 2RS	61.6	65	71.8	110	2	2.30
60	110	36.5	1.5	80.0	76.8	—	—	3.95	—	3 500	—	4 700		3212	—	—	71.3	68.5	—	101.5	1.5	1.40
	110	36.5	1.5	93.0	60.8	78.3	55.9	3.15	2.90	3 500	3 500	4 700		5212	5212 ZZ	5212 2RS	53.8	68.5	74.1	101.5	1.5	1.36
	130	54	2.1	156	132	—	—	6.85	—	3 100	—	4 200		3312	—	—	87.4	72	—	118	2	3.24
	130	54	2.1	157	98.7	138	87.1	5.10	4.50	3 100	3 100	4 100		5312	5312 ZZ	5312 2RS	67.2	72	79.2	118	2	3.16
65	120	38.1	1.5	95.5	97.4	—	—	5.05	—	3 200	—	4 300		3213	—	—	76.8	73.5	—	111.5	1.5	1.75
	120	38.1	1.5	109	75.3	86.5	63.1	3.90	3.25	3 200	3 200	4 300		5213	5213 ZZ	5213 2RS	58.8	73.5	79.0	111.5	1.5	1.66
	140	58.7	2.1	177	153	—	—	7.80	—	2 900	—	3 900		3313	—	—	92.7	77	—	128	2	4.08
	140	58.7	2.1	178	113	178	113	5.75	5.75	2 900	2 900	3 900		5313	5313 ZZ	5313 2RS	70.9	77	85.9	128	2	3.91
70	125	39.7	1.5	97.4	96.4	—	—	5.00	—	3 100	—	4 100		3214	—	—	80.7	78.5	—	116.5	1.5	1.92
	125	39.7	1.5	118	82.6	95.4	70.3	4.25	3.65	3 100	3 100	4 100		5214	5214 ZZ	5214 2RS	61.4	78.5	83.5	116.5	1.5	1.81
	150	63.5	2.1	188	160	—	—	7.90	—	2 700	—	3 600		3314	—	—	99.7	82	—	138	2	5.04
	150	63.5	2.1	200	129	200	129	6.35	6.35	2 700	2 700	3 600		5314	5314 ZZ	5314 2RS	76.0	82	92.9	138	2	4.89

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

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