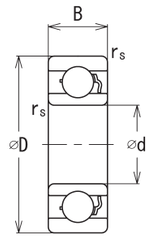
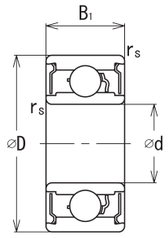
Extra-miniature/miniature/small bearings【SUJ2】

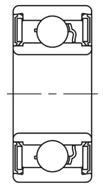




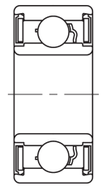
Open



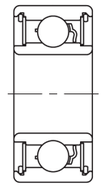
Shielded: ZZ



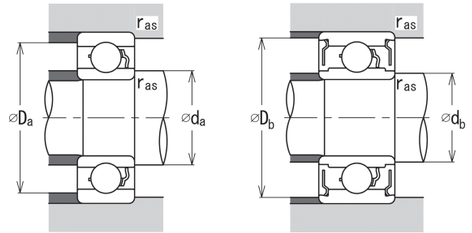
Sealed: 2RS



Sealed: 2RU



Sealed: TTS



Abutment and fillet

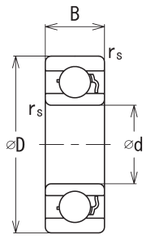
Bore diameter d		Outer diameter D		Width Open B		Width Shielded, Sealed B_1		Chamfer $r_{s\,(min)}$		Bearing number Open	Bearing number 2 Shields[2]	2 Seals[2] 2RS	2 Seals[2] 2RU	2 Seals[2] TTS	Load rating Cr	Load rating Cor	Limiting speed[3] Grease	Limiting speed[3] Oil
mm	inch	mm	inch	mm	inch	mm	inch	mm	inch						N		min^{-1}	
1.5	0.0591	4	0.1575	—	—	2	0.0787	0.05	0.002	—	**681XZZ**	—	—	—	112	33	105 000	124 000
		5	0.1969	2	0.0787	2.6	0.1024	0.15	0.0059	**691X**	**691XZZ**	—	—	—	238	69	94 000	111 000
2	0.0787	5	0.1969	1.5	0.0591	2.3	0.0906	0.08	0.0031	**682**	**682ZZ**	—	—	—	169	50	94 000	111 000
		5	0.1969	2	0.0787	2.5	0.0984	0.10	0.0039	**MR52**	**MR52ZZ**	—	—	—	169	50	94 000	111 000
		6	0.2362	2.3	0.0906	3	0.1181	0.15	0.0059	**692**	**692ZZ**	—	—	—	330	99	86 000	101 000
		6	0.2362	2.5	0.0984	—	—	0.15	0.0059	**MR62**	—	—	—	—	330	99	86 000	101 000
		7	0.2756	2.5	0.0984	—	—	0.15	0.0059	**MR72**	—	—	—	—	386	128	76 000	90 000
		7	0.2756	—	—	3.5	0.1378	0.15	0.0059	—	**602ZZS**	—	—	—	386	128	76 000	90 000
2.5	0.0984	6	0.2362	—	—	2.6	0.1024	0.08	0.0031	—	**682XZZ**	—	—	—	209	73	81 000	96 000
		7	0.2756	2.5	0.0984	3.5	0.1378	0.15	0.0059	**692X**	**692XZZS**	—	—	—	386	128	76 000	90 000
		8	0.3150	2.8	0.1102	4	0.1575	0.15	0.0059	**602X**	**602XZZ**	—	—	—	551	175	72 000	85 000
3	0.1181	6	0.2362	2	0.0787	2.5	0.0984	0.10	0.0039	**MR63**	**MR63ZZ**	—	—	—	209	73	81 000	96 000
		7	0.2756	2	0.0787	3	0.1181	0.10	0.0039	**683**	**683ZZ**	**2RS**	—	—	311	112	74 000	88 000
		8	0.3150	2.5	0.0984	—	—	0.15	0.0059	**MR83**	—	—	—	—	395	140	67 000	79 000
		8	0.3150	—	—	3	0.1181	0.10	0.0039	—	**MR83ZZ**	—	—	—	395	140	67 000	79 000
		8	0.3150	3	0.1181	4	0.1575	0.15	0.0059	**693**	**693ZZ**	**2RS**	—	—	559	179	70 000	82 000
		9	0.3543	2.5	0.0984	—	—	0.20	0.0079	**MR93**	—	—	—	—	572	188	66 000	78 000
		9	0.3543	—	—	4	0.1575	0.15	0.0059	—	**MR93ZZ**	—	—	—	572	188	66 000	78 000
		9	0.3543	3	0.1181	5	0.1969	0.15	0.0059	**603**	**603ZZ**	—	—	—	572	188	66 000	78 000
		10	0.3937	4	0.1575	4	0.1575	0.15	0.0059	**623**[1]	**623ZZ**	**2RS**	**2RU**	—	633	218	66 000	78 000
		13	0.5118	5	0.1969	5	0.1969	0.20	0.0079	**633**[1]	**633ZZ**	**2RS**	—	—	1 300	485	51 000	60 000
4	0.1575	7	0.2756	2	0.0787	—	—	0.10	0.0039	**MR74**	—	—	—	—	312	115	70 000	82 000
		7	0.2756	—	—	2.5	0.0984	0.10	0.0039	—	**MR74ZZ**	—	—	—	255	107	71 000	83 000
		8	0.3150	2	0.0787	—	—	0.15	0.0059	**MR84**	—	—	—	—	395	140	67 000	79 000
		8	0.3150	—	—	3	0.1181	0.10	0.0039	—	**MR84ZZ**	—	—	—	395	140	67 000	79 000
		9	0.3543	2.5	0.0984	4	0.1575	0.10	0.0039	**684**	**684ZZ**	**2RS**	—	—	641	226	63 000	75 000
		10	0.3937	3	0.1181	4	0.1575	0.20	0.0079	**MR104**	**MR104ZZ**	**2RS**	**2RU**	—	711	270	59 000	70 000
		11	0.4331	4	0.1575	4	0.1575	0.15	0.0059	**694**[1]	**694ZZ**	**2RS**	—	—	959	347	57 000	67 000
		12	0.4724	4	0.1575	4	0.1575	0.20	0.0079	**604**[1]	**604ZZ**	**2RS**	—	—	959	347	57 000	67 000
		13	0.5118	5	0.1969	5	0.1969	0.20	0.0079	**624**[1]	**624ZZ**	**2RS**	**2RU**	—	1 300	485	51 000	60 000
		16	0.6299	5	0.1969	5	0.1969	0.30	0.0118	**634**[1]	**634ZZ**	**2RS**	—	—	1 340	517	46 000	54 000
5	0.1969	8	0.3150	2	0.0787	—	—	0.10	0.0039	**MR85**	—	—	—	—	309	121	62 000	74 000
		8	0.3150	—	—	2.5	0.0984	0.10	0.0039	—	**MR85ZZ**	—	—	—	218	91	63 000	75 000
		9	0.3543	2.5	0.0984	3	0.1181	0.15	0.0059	**MR95**	**MR95ZZ**	—	—	—	432	168	60 000	71 000
		9	0.3543	—	—	3	0.1181	0.15	0.0059	—	—	—	—	**TTS**	432	168	47 000	47 000
		10	0.3937	3	0.1181	4	0.1575	0.15	0.0059	**MR105**	**MR105ZZ**	**2RS**	—	—	432	168	60 000	71 000
		11	0.4331	4	0.1575	4	0.1575	0.15	0.0059	**MR115**[1]	**MR115ZZ**	**2RS**	—	—	716	283	54 000	64 000
		11	0.4331	3	0.1181	5	0.1969	0.15	0.0059	**685**	**685ZZ**	**2RS**	—	—	716	283	54 000	64 000
		13	0.5118	4	0.1575	4	0.1575	0.20	0.0079	**695**[1]	**695ZZ**	**2RS**	—	—	1 080	430	50 000	59 000
		14	0.5512	5	0.1969	5	0.1969	0.20	0.0079	**605**[1]	**605ZZ**	**2RS**	—	—	1 330	507	48 000	56 000

Cage type[4]	Ball Size	Ball Qty.	Abutment and fillet dimensions Open $d_{a\,(min)}$	Open $d_{a\,(max)}$	Open $D_{a\,(min)}$	Open $D_{a\,(max)}$	Shielded, Sealed $d_{b\,(min)}$	Shielded, Sealed $d_{b\,(max)}$	Shielded, Sealed $D_{b\,(min)}$	Shielded, Sealed $D_{b\,(max)}$	$r_{as\,(max)}$	Mass (Ref.) Open	Mass (Ref.) 2 Shields
	mm	pcs.	mm				mm				mm	g	
W	0.600	7	—	—	—	—	1.90	2.10	3.60	3.70	0.05	—	0.10
W	1.000	6	2.40	2.40	4.10	4.10	2.40	2.40	4.60	4.60	0.15	0.18	0.23
W	0.800	6	2.50	2.60	4.00	4.40	2.50	2.60	4.50	4.50	0.08	0.13	0.18
W	0.800	6	2.60	2.60	4.00	4.20	2.60	2.60	4.50	4.50	0.10	0.17	0.19
W	1.200	6	2.90	2.90	4.90	5.20	2.90	2.90	5.50	5.50	0.15	0.28	0.34
W	1.200	6	2.90	2.90	4.90	5.20	—	—	—	—	0.15	0.30	—
W	1.200	7	3.20	3.80	5.70	6.20	—	—	—	—	0.15	0.46	—
W	1.200	7	—	—	—	—	3.00	3.10	6.30	6.30	0.15	—	0.60
W	0.800	8	—	—	—	—	3.10	3.60	5.50	5.50	0.08	—	0.31
W	1.200	7	3.70	3.80	5.70	6.20	3.70	3.80	6.30	6.30	0.15	0.42	0.56
W	1.588	6	3.70	4.00	6.50	6.80	3.70	4.00	7.10	7.10	0.15	0.63	0.86
W	0.800	8	3.60	3.60	5.00	5.20	3.60	3.60	5.50	5.50	0.10	0.21	0.26
W	1.000	8	3.80	4.20	5.80	6.20	3.70	3.80	6.40	6.40	0.10	0.33	0.44
J	1.200	7	4.20	4.90	6.90	7.20	—	—	—	—	0.15	0.55	—
J	1.200	7	—	—	—	—	3.80	4.90	7.50	7.50	0.10	—	0.65
J	1.588	6	3.90	4.30	6.70	7.20	3.90	4.30	7.30	7.30	0.15	0.60	0.78
W	1.588	6	4.60	4.80	7.30	7.70	—	—	—	—	0.20	0.71	—
W	1.588	6	—	—	—	—	3.90	4.30	8.00	8.20	0.15	—	1.09
W	1.588	6	4.20	4.80	7.30	7.80	3.90	4.30	8.00	8.20	0.15	0.85	1.35
J	1.588	7	3.90	4.30	8.10	8.80	3.90	4.30	8.10	8.80	0.15	1.49	1.57
J	2.381	7	4.60	5.90	11.40	11.70	4.60	5.90	11.40	11.70	0.20	2.95	3.12
W	1.000	8	4.60	4.70	6.30	6.50	—	—	—	—	0.10	0.22	—
W	0.800	11	—	—	—	—	4.60	4.70	6.60	6.60	0.10	—	0.31
J	1.200	7	4.90	4.90	6.90	7.20	—	—	—	—	0.15	0.36	—
J	1.200	7	—	—	—	—	4.80	4.90	7.50	7.50	0.10	—	0.51
W	1.588	7	4.80	5.10	7.60	8.20	4.80	5.10	8.20	8.50	0.10	0.63	0.95
J	1.588	8	5.60	5.80	8.30	8.70	5.60	5.80	8.90	8.90	0.20	1.00	1.30
J	2.000	7	5.20	5.50	9.90	10.20	5.20	5.50	9.90	10.20	0.15	1.49	1.61
J	2.000	7	5.30	5.50	9.90	10.40	5.30	5.50	9.90	10.40	0.20	2.02	2.14
J	2.381	7	5.60	5.90	11.40	11.70	5.60	5.90	11.40	11.70	0.20	2.71	2.89
J	2.381	7	6.00	6.60	13.10	14.00	6.00	6.60	13.10	14.00	0.30	4.86	5.20
W	1.000	8	5.60	5.70	7.30	7.50	—	—	—	—	0.10	0.26	—
W	0.800	9	—	—	—	—	5.60	5.70	7.60	7.60	0.10	—	0.36
W	1.200	8	5.90	5.90	7.90	8.20	5.90	5.90	8.50	8.50	0.15	0.50	0.58
W	1.200	8	—	—	—	—	5.90	5.90	8.30	8.30	0.15	—	0.60
W	1.200	8	5.90	5.90	7.90	8.80	5.90	5.90	8.50	8.80	0.15	0.94	1.23
J	1.588	8	6.20	6.70	10.00	10.20	6.20	6.70	10.00	10.20	0.15	1.44	1.54
J	1.588	8	6.20	6.70	9.30	9.80	5.90	6.10	10.00	10.20	0.15	1.18	1.83
J	2.000	8	6.30	6.50	11.30	11.70	6.30	6.50	11.30	11.70	0.20	2.13	2.28
J	2.381	7	6.60	6.80	12.30	12.70	6.60	6.80	12.30	12.70	0.20	3.09	3.36

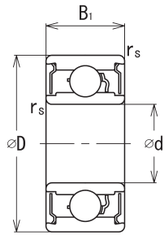
(1) Open bearings have shield/seal grooves.
(2) Single-shielded/single-sealed bearings are also available; suffix Z, RS, RU or TS.
(3) Applicable only for open, single Z, ZZ, single RU and 2RU types in inner ring rotating conditions.
Limiting speeds for the contact rubber seal(s) types can be lower than the above-mentioned values, so please check the detailed values per item on “products” section of our website.
(4) Some items are also available with the TW cage. Please contact us for details.

Extra-miniature/miniature/small bearings【SUJ2】

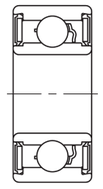




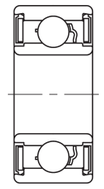
Open



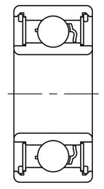
Shielded: ZZ



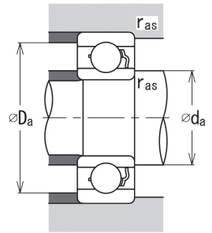
Sealed: 2RS

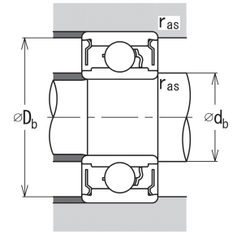


Sealed: 2RU



Sealed: TTS





Abutment and fillet

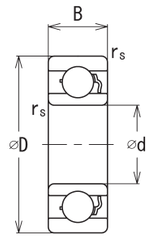
Bore diameter d		Outer diameter D		Width: Open B		Width: Shielded, Sealed B_1		Chamfer $r_{s\,(min)}$		Bearing number: Open	Bearing number: 2 Shields[2]	Bearing number: 2 Seals[2] 2RS	2 Seals[2] 2RU	2 Seals[2] TTS	Load rating: Cr	Load rating: Cor	Limiting speed[3]: Grease	Limiting speed[3]: Oil
mm	inch	mm	inch	mm	inch	mm	inch	mm	inch						N		min^{-1}	
5	0.1969	16	0.6299	5	0.1969	5	0.1969	0.30	0.0118	**625**[1]	**625ZZ**	**2RS**	**2RU**	—	1 730	670	44 000	52 000
		19	0.7480	6	0.2362	6	0.2362	0.30	0.0118	**635**[1]	**635ZZ**	**2RS**	—	—	2 340	889	38 000	45 000
6	0.2362	10	0.3937	2.5	0.0984	—	—	0.15	0.0059	**MR106**	—	—	—	—	497	219	54 000	64 000
		10	0.3937	—	—	3	0.1181	0.10	0.0039	—	**MR106ZZ**	—	—	—	497	218	55 000	64 000
		10	0.3937	3	0.1181	3	0.1181	0.10	0.0039	**676**[1]	—	—	—	**TTS**	373	172	55 000	65 000
		12	0.4724	3	0.1181	4	0.1575	0.20	0.0079	**MR126**	**MR126ZZ**	**2RS**	—	—	716	293	50 000	59 000
		13	0.5118	3.5	0.1378	5	0.1969	0.15	0.0059	**686**	**686ZZ**	**2RS**	**2RU**	—	1 080	438	48 000	56 000
		15	0.5906	5	0.1969	5	0.1969	0.20	0.0079	**696**[1]	**696ZZ**	**2RS**	**2RU**	—	1 340	517	46 000	54 000
		15	0.5906	—	—	5	0.1969	0.20	0.0079	—	—	—	—	**TTS**	1 340	517	38 000	38 000
		16	0.6299	5	0.1969	5	0.1969	0.20	0.0079	**696A**[1]	**696AZZ**	**2RS**	**2RU**	—	1 340	517	46 000	54 000
		17	0.6693	6	0.2362	6	0.2362	0.30	0.0118	**606**[1]	**606ZZ**	**2RS**	**2RU**	—	2 260	838	42 000	49 000
		19	0.7480	6	0.2362	6	0.2362	0.30	0.0118	**626**[1]	**626ZZ**	**2RS**	**2RU**	—	2 340	889	38 000	45 000
		22	0.8661	7	0.2756	7	0.2756	0.30	0.0118	**636**[1]	**636ZZ**	**2RS**	**2RU**	—	3 300	1 370	33 000	39 000
7	0.2756	11	0.4331	2.5	0.0984	3	0.1181	0.15	0.0059	**MR117**	**MR117ZZS**	—	—	—	456	201	50 000	59 000
		13	0.5118	3	0.1181	—	—	0.20	0.0079	**MR137**	—	—	—	—	541	276	45 000	53 000
		13	0.5118	—	—	4	0.1575	0.15	0.0059	—	**MR137ZZ**	—	—	—	541	276	45 000	53 000
		14	0.5512	3.5	0.1378	5	0.1969	0.15	0.0059	**687**	**687ZZ**	**2RS**	—	—	1 180	511	44 000	52 000
		17	0.6693	5	0.1969	5	0.1969	0.30	0.0118	**697**[1]	**697ZZ**	**2RS**	—	—	1 610	716	40 000	47 000
		19	0.7480	6	0.2362	6	0.2362	0.30	0.0118	**607**[1]	**607ZZ**	**2RS**	**2RU**	—	2 340	889	38 000	45 000
		22	0.8661	7	0.2756	7	0.2756	0.30	0.0118	**627**[1]	**627ZZ**	**2RS**	**2RU**	—	3 300	1 370	33 000	39 000
		26	1.0236	9	0.3543	9	0.3543	0.30	0.0118	**637**[1]	**637ZZ**	**2RS**	—	—	4 580	1 970	28 000	33 000
8	0.3150	12	0.4724	2.5	0.0984	—	—	0.15	0.0059	**MR128**	—	—	—	—	544	275	46 000	54 000
		12	0.4724	—	—	3.5	0.1378	0.10	0.0039	—	**MR128ZZ**	**2RS**	—	—	545	274	46 000	54 000
		12	0.4724	—	—	3.5	0.1378	0.10	0.0039	—	—	—	—	**TTS**	544	275	31 000	31 000
		14	0.5512	3.5	0.1378	—	—	0.20	0.0079	**MR148**	—	—	—	—	818	386	42 000	50 000
		14	0.5512	—	—	4	0.1575	0.15	0.0059	—	**MR148ZZ**	**2RS**	—	—	818	386	42 000	50 000
		16	0.6299	4	0.1575	5	0.1969	0.20	0.0079	**688**	**688ZZ**	**2RS**	**2RU**	—	1 260	590	40 000	47 000
		19	0.7480	6	0.2362	6	0.2362	0.30	0.0118	**698**[1]	**698ZZ**	**2RS**	**2RU**	—	2 240	912	37 000	44 000
		22	0.8661	7	0.2756	7	0.2756	0.30	0.0118	**608**[1]	**608ZZ**	**2RS**	**2RU**	—	3 300	1 370	33 000	39 000
		24	0.9449	8	0.315	8	0.315	0.30	0.0118	**628**[1]	**628ZZ**	**2RS**	**2RU**	—	3 330	1 410	31 000	37 000
		28	1.1024	9	0.3543	9	0.3543	0.30	0.0118	**638**[1]	**638ZZ**	**2RS**	**2RU**	—	4 580	1 970	28 000	33 000
9	0.3543	14	0.5512	3	0.1181	—	—	0.10	0.0039	**679**	—	—	—	—	919	467	41 000	48 000
		14	0.5512	—	—	4.5	0.1772	0.10	0.0039	—	**679ZZS**	—	—	—	919	467	41 000	48 000
		17	0.6693	4	0.1575	5	0.1969	0.20	0.0079	**689**	**689ZZ**	**2RS**	—	—	1 330	664	37 000	44 000
		20	0.7874	6	0.2362	6	0.2362	0.30	0.0118	**699**[1]	**699ZZ**	**2RS**	**2RU**	—	2 470	1 070	35 000	42 000
		24	0.9449	7	0.2756	7	0.2756	0.30	0.0118	**609**[1]	**609ZZ**	**2RS**	**2RU**	—	3 350	1 430	30 000	36 000
		26	1.0236	8	0.315	8	0.315	0.60	0.0236	**629**[1]	**629ZZ**	**2RS**	**2RU**	—	4 580	1 970	28 000	33 000
		30	1.1811	10	0.3937	10	0.3937	0.60	0.0236	**639**[1]	**639ZZ**	**2RS**	—	—	5 110	2 390	25 000	30 000

Cage type[4]	Ball: Size	Ball: Qty.	Abutment and fillet dimensions: Open $d_{a\,(min)}$	Open $d_{a\,(max)}$	Open $D_{a\,(min)}$	Open $D_{a\,(max)}$	Shielded, Sealed $d_{b\,(min)}$	Shielded, Sealed $d_{b\,(max)}$	Shielded, Sealed $D_{b\,(min)}$	Shielded, Sealed $D_{b\,(max)}$	$r_{as\,(max)}$	Mass (Ref.): Open	2 Shields
	mm	pcs.	mm				mm				mm	g	
J	2.778	7	7.00	7.40	13.90	14.40	7.00	7.40	13.90	14.40	0.30	4.30	4.53
J	3.500	6	7.00	8.40	16.60	17.00	7.00	8.40	16.60	17.00	0.30	7.57	8.11
W	1.200	10	6.90	6.90	9.00	9.20	—	—	—	—	0.15	0.58	—
W	1.200	10	—	—	—	—	6.80	6.90	9.40	9.40	0.10	—	0.71
W	1.000	11	6.80	7.00	8.90	9.20	6.80	7.00	8.90	9.20	0.10	0.73	0.76
J	1.588	8	7.30	7.60	10.30	10.70	7.10	7.10	11.00	11.00	0.20	1.23	1.57
J	2.000	8	7.20	7.90	11.10	11.80	7.20	7.30	11.80	12.20	0.15	1.85	2.50
J	2.381	7	7.30	7.40	13.10	13.40	7.30	7.40	13.10	13.40	0.20	3.52	3.82
J	2.381	7	—	—	—	—	7.30	7.40	12.90	13.40	0.20	—	3.76
J	2.381	7	7.30	7.40	13.10	14.40	7.30	7.40	13.10	14.40	0.20	4.46	4.76
J	3.500	6	7.70	8.10	14.90	15.40	7.70	8.10	14.90	15.40	0.30	5.43	5.94
J	3.500	6	8.00	8.40	16.60	17.00	8.00	8.40	16.60	17.00	0.30	7.18	7.70
J	3.969	7	8.00	10.40	19.10	20.00	8.00	10.40	19.10	20.00	0.30	12.2	12.8
W	1.200	9	7.90	7.90	10.10	10.10	7.90	7.90	10.40	10.40	0.15	0.61	0.75
W	1.200	12	8.60	9.30	11.20	11.40	—	—	—	—	0.20	1.55	—
W	1.200	12	—	—	—	—	8.20	8.90	11.80	12.20	0.15	—	2.00
J	2.000	9	8.20	8.90	12.10	12.80	8.20	8.40	12.80	13.20	0.15	2.04	2.77
J	2.381	9	8.70	9.10	14.40	15.00	8.70	9.10	14.40	15.00	0.30	4.81	5.03
J	3.500	6	8.70	8.90	16.60	17.00	8.70	8.90	16.60	17.00	0.30	6.76	7.26
J	3.969	7	9.00	10.40	19.10	20.00	9.00	10.40	19.10	20.00	0.30	11.6	12.2
J	4.762	7	9.00	13.80	22.50	24.00	9.00	13.80	22.50	24.00	0.30	22.1	23.2
W	1.200	12	9.00	9.00	11.00	11.20	—	—	—	—	0.15	0.71	—
W	1.200	12	—	—	—	—	8.60	8.90	11.40	11.40	0.10	—	1.01
W	1.200	12	—	—	—	—	8.80	9.00	11.40	11.40	0.10	—	0.95
J	1.588	10	9.60	9.80	12.30	12.70	—	—	—	—	0.20	1.80	—
J	1.588	10	—	—	—	—	8.90	9.20	12.90	13.20	0.15	—	2.00
J	2.000	10	9.60	10.40	13.60	14.40	9.50	9.60	14.30	14.70	0.20	3.16	3.79
J	3.175	7	9.70	9.70	16.80	17.00	9.70	9.70	16.80	17.00	0.30	6.21	6.72
J	3.969	7	10.00	10.40	19.10	20.00	10.00	10.40	19.10	20.00	0.30	11.0	11.6
J	3.969	7	10.00	11.80	20.00	22.00	10.00	11.80	20.00	22.00	0.30	16.5	17.2
J	4.762	7	10.00	13.80	22.50	26.00	10.00	13.80	22.50	26.00	0.30	27.2	28.3
J	1.588	12	9.80	10.30	12.70	13.20	—	—	—	—	0.10	1.29	—
W	1.588	12	—	—	—	—	9.80	10.20	13.30	13.50	0.10	—	1.84
J	2.000	11	10.60	11.40	14.60	15.40	10.30	10.60	15.30	15.70	0.20	3.43	4.12
J	3.175	8	11.00	11.50	17.50	18.00	11.00	11.50	17.50	18.00	0.30	7.09	7.59
J	3.969	7	11.00	12.00	20.60	22.00	11.00	12.00	20.60	22.00	0.30	13.3	14.0
J	4.762	7	13.00	13.80	22.50	22.60	13.00	13.80	22.50	22.60	0.60	17.8	18.9
RJ	4.762	8	13.00	15.20	25.40	26.00	13.00	15.20	25.40	26.00	0.60	33.3	34.8

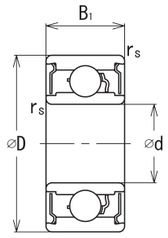
(1) Open bearings have shield/seal grooves.
(2) Single-shielded/single-sealed bearings are also available; suffix Z, RS, RU or TS.
(3) Applicable only for open, single Z, ZZ, single RU and 2RU types in inner ring rotating conditions.
Limiting speeds for the contact rubber seal(s) types can be lower than the above-mentioned values, so please check the detailed values per item on “products” section of our website.
(4) Some items are also available with the TW cage. Please contact us for details.

Extra-miniature/miniature/small bearings【Stainless-steel】

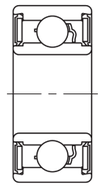




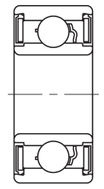
Open



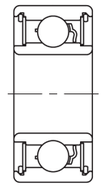
Shielded: ZZ



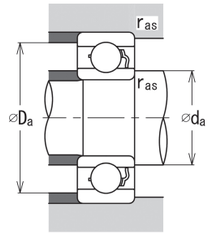
Sealed: 2RS

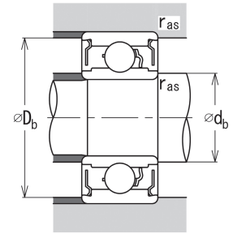


Sealed: 2RU



Sealed: TTS





Abutment and fillet

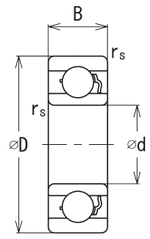
Bore diameter d		Outer diameter D		Width				Chamfer $r_{s\,(min)}$		Bearing number					Load rating		Limiting speed(3)	
				Open B		Shielded, Sealed B_1				Open	2 Shields(2)	2 Seals(2)			Cr	Cor	Grease	Oil
mm	inch	mm	inch	mm	inch	mm	inch	mm	inch			2RS	2RU	TTS	N		min^{-1}	
0.6	0.0236	2.5	0.0984	1	0.0394	—	—	0.05	0.0020	**68/0.6H**	—	—	—	—	50	11	128 000	152 000
1	0.0394	3	0.1181	1	0.0394	—	—	0.05	0.0020	**681H**	—	—	—	—	81	20	117 000	139 000
		3	0.1181	1.5	0.0591	—	—	0.05	0.0020	**SMR31**	—	—	—	—	81	20	117 000	139 000
		4	0.1575	1.6	0.0630	—	—	0.10	0.0039	**691H**	—	—	—	—	120	29	105 000	124 000
1.2	0.0472	4	0.1575	1.8	0.0709	2.5	0.0984	0.10	0.0039	**SMR41X**	**SMR41XZZ**	—	—	—	96	27	105 000	124 000
1.5	0.0591	4	0.1575	1.2	0.0472	2	0.0787	0.05	0.0020	**681XH**	**681XHZZ**	—	—	—	96	27	105 000	124 000
		5	0.1969	2	0.0787	2.6	0.1024	0.15	0.0059	**691XH**	**691XHZZ**	—	—	—	202	55	94 000	111 000
		6	0.2362	2.5	0.0984	3	0.1181	0.15	0.0059	**601XH**	**601XHZZ**	—	—	—	281	79	86 000	101 000
2	0.0787	4	0.1575	1.2	0.0472	2	0.0787	0.05	0.0020	**672H**	**672HZZ**	—	—	—	106	32	98 000	116 000
		5	0.1969	1.5	0.0591	2.3	0.0906	0.08	0.0031	**682H**	**682HZZ**	—	—	—	144	40	94 000	111 000
		5	0.1969	2	0.0787	2.5	0.0984	0.10	0.0039	**SMR52**	**SMR52ZZ**	—	—	—	144	40	94 000	111 000
		6	0.2362	2.3	0.0906	3	0.1181	0.15	0.0059	**692H**	**692HZZ**	—	—	—	281	79	86 000	101 000
		6	0.2362	2.5	0.0984	2.5	0.0984	0.15	0.0059	**SMR62**	**SMR62ZZ**	—	—	—	281	79	86 000	101 000
		7	0.2756	2.5	0.0984	3	0.1181	0.15	0.0059	**SMR72**	**SMR72ZZS**	—	—	—	328	102	76 000	90 000
		7	0.2756	2.8	0.1102	3.5	0.1378	0.15	0.0059	**602H**	**602HZZS**	—	—	—	328	102	76 000	90 000
2.5	0.0984	6	0.2362	1.8	0.0709	2.6	0.1024	0.08	0.0031	**682XH**	**682XHZZ**	—	—	—	177	58	81 000	96 000
		7	0.2756	2.5	0.0984	3.5	0.1378	0.15	0.0059	**692XH**	**692XHZZS**	—	—	—	328	102	76 000	90 000
		8	0.3150	2.5	0.0984	—	—	0.20	0.0079	**SMR82X**	—	—	—	—	475	143	70 000	82 000
		8	0.3150	2.8	0.1102	4	0.1575	0.15	0.0059	**602XH**	**602XHZZ**	—	—	—	469	140	72 000	85 000
3	0.1181	6	0.2362	2	0.0787	2.5	0.0984	0.10	0.0039	**SMR63**	**SMR63ZZ**	—	—	—	177	58	81 000	96 000
		7	0.2756	2	0.0787	3	0.1181	0.10	0.0039	**683H**	**683HZZ**	**2RS**	—	—	265	90	74 000	88 000
		8	0.3150	2.5	0.0984	—	—	0.15	0.0059	**SMR83**	—	—	—	—	336	112	67 000	79 000
		8	0.3150	—	—	3	0.1181	0.10	0.0039	—	**SMR83ZZ**	—	—	—	336	112	67 000	79 000
		8	0.3150	3	0.1181	4	0.1575	0.15	0.0059	**693H**	**693HZZ**	**2RS**	—	—	475	143	70 000	82 000
		9	0.3543	2.5	0.0984	—	—	0.20	0.0079	**SMR93**	—	—	—	—	486	150	66 000	78 000
		9	0.3543	—	—	4	0.1575	0.15	0.0059	—	**SMR93ZZ**	—	—	—	486	150	66 000	78 000
		9	0.3543	3	0.1181	5	0.1969	0.15	0.0059	**603H**	**603HZZ**	—	—	—	486	150	66 000	78 000
		10	0.3937	4	0.1575	4	0.1575	0.15	0.0059	**623H**(1)	**623HZZ**	**2RS**	**2RU**	**TTS**	538	175	66 000	78 000
		13	0.5118	5	0.1969	5	0.1969	0.20	0.0079	**633H**(1)	**633HZZ**	**2RS**	—	—	1 110	388	51 000	60 000
4	0.1575	7	0.2756	2	0.0787	—	—	0.10	0.0039	**SMR74**	—	—	—	—	265	92	70 000	82 000
		7	0.2756	—	—	2.5	0.0984	0.10	0.0039	—	**SMR74ZZ**	—	—	—	217	86	71 000	83 000
		8	0.3150	2	0.0787	—	—	0.15	0.0059	**SMR84**	—	—	—	—	336	112	67 000	79 000
		8	0.3150	—	—	3	0.1181	0.10	0.0039	—	**SMR84ZZ**	—	—	—	336	112	67 000	79 000
		9	0.3543	2.5	0.0984	4	0.1575	0.10	0.0039	**684H**	**684HZZ**	**2RS**	—	**TTS**	545	181	63 000	75 000
		10	0.3937	3	0.1181	4	0.1575	0.20	0.0079	**SMR104**	**SMR104ZZ**	**2RS**	**2RU**	—	604	216	59 000	70 000
		11	0.4331	4	0.1575	4	0.1575	0.15	0.0059	**694H**(1)	**694HZZ**	**2RS**	—	—	815	277	57 000	67 000
		12	0.4724	4	0.1575	4	0.1575	0.20	0.0079	**604H**(1)	**604HZZ**	**2RS**	—	—	815	277	57 000	67 000
		13	0.5118	5	0.1969	5	0.1969	0.20	0.0079	**624H**(1)	**624HZZ**	**2RS**	**2RU**	—	1 110	388	51 000	60 000
		16	0.6299	5	0.1969	5	0.1969	0.30	0.0118	**634H**(1)	**634HZZ**	**2RS**	—	—	1 140	414	46 000	54 000

Cage type(4)	Ball		Abutment and fillet dimensions								$r_{as\,(max)}$	Mass (Ref.)	
			Open				Shielded, Sealed					Open	2 Shields
	Size	Qty.	$d_{a\,(min)}$	$d_{a\,(max)}$	$D_{a\,(min)}$	$D_{a\,(max)}$	$d_{b\,(min)}$	$d_{b\,(max)}$	$D_{b\,(min)}$	$D_{b\,(max)}$			
	mm	pcs.	mm				mm				mm	g	
W	0.500	5	1.00	1.10	2.00	2.10	—	—	—	—	0.05	0.02	—
W	0.600	6	1.40	1.50	2.60	2.70	—	—	—	—	0.05	0.03	—
W	0.600	6	1.40	1.50	2.60	2.70	—	—	—	—	0.05	0.04	—
W	0.800	5	1.80	1.90	3.30	3.50	—	—	—	—	0.10	0.09	—
W	0.600	7	2.00	2.10	3.10	3.20	2.00	2.10	3.60	3.60	0.10	0.11	0.14
W	0.600	7	1.90	2.10	3.10	3.60	1.90	2.10	3.60	3.70	0.05	0.07	0.10
W	1.000	6	2.40	2.40	4.10	4.10	2.40	2.40	4.60	4.60	0.15	0.17	0.22
W	1.200	6	2.70	2.90	4.90	5.20	2.70	2.90	5.50	5.50	0.15	0.32	0.37
W	0.600	8	2.40	2.50	3.50	3.60	2.40	2.50	3.70	3.70	0.05	0.05	0.08
W	0.800	6	2.50	2.60	4.00	4.40	2.50	2.60	4.50	4.50	0.08	0.13	0.18
W	0.800	6	2.60	2.60	4.00	4.20	2.60	2.60	4.50	4.50	0.10	0.16	0.19
W	1.200	6	2.90	2.90	4.90	5.20	2.90	2.90	5.50	5.50	0.15	0.28	0.33
W	1.200	6	2.90	2.90	4.90	5.20	2.90	2.90	5.50	5.50	0.15	0.29	0.29
W	1.200	7	3.20	3.80	5.70	6.20	3.00	3.10	6.30	6.30	0.15	0.45	0.51
W	1.200	7	3.20	3.80	5.70	6.20	3.00	3.10	6.30	6.30	0.15	0.50	0.59
W	0.800	8	3.10	3.60	5.00	5.40	3.10	3.60	5.50	5.50	0.08	0.22	0.30
W	1.200	7	3.70	3.80	5.70	6.20	3.70	3.80	6.30	6.30	0.15	0.42	0.56
W	1.588	6	4.10	4.30	6.70	6.70	—	—	—	—	0.20	0.52	—
W	1.588	6	3.70	4.00	6.50	6.80	3.70	4.00	7.10	7.10	0.15	0.62	0.85
W	0.800	8	3.60	3.60	5.00	5.20	3.60	3.60	5.50	5.50	0.10	0.21	0.25
W	1.000	8	3.80	4.20	5.80	6.20	3.70	3.80	6.40	6.40	0.10	0.33	0.44
J	1.200	7	4.20	4.90	6.90	7.20	—	—	—	—	0.15	0.55	—
J	1.200	7	—	—	—	—	3.80	4.90	7.50	7.50	0.10	—	0.64
J	1.588	6	3.90	4.30	6.70	7.20	3.90	4.30	7.30	7.30	0.15	0.60	0.77
W	1.588	6	4.60	4.80	7.30	7.70	—	—	—	—	0.20	0.70	—
W	1.588	6	—	—	—	—	3.90	4.30	8.00	8.20	0.15	—	1.07
W	1.588	6	4.20	4.80	7.30	7.80	3.90	4.30	8.00	8.20	0.15	0.84	1.33
J	1.588	7	3.90	4.30	8.10	8.80	3.90	4.30	8.10	8.80	0.15	1.47	1.56
J	2.381	7	4.60	5.90	11.40	11.70	4.60	5.90	11.40	11.70	0.20	2.91	3.08
W	1.000	8	4.60	4.70	6.30	6.50	—	—	—	—	0.10	0.22	—
W	0.800	11	—	—	—	—	4.60	4.70	6.60	6.60	0.10	—	0.30
J	1.200	7	4.90	4.90	6.90	7.20	—	—	—	—	0.15	0.36	—
J	1.200	7	—	—	—	—	4.80	4.90	7.50	7.50	0.10	—	0.51
W	1.588	7	4.80	5.10	7.60	8.20	4.80	5.10	8.20	8.50	0.10	0.62	0.93
J	1.588	8	5.60	5.80	8.30	8.70	5.60	5.80	8.90	8.90	0.20	0.99	1.29
J	2.000	7	5.20	5.50	9.90	10.20	5.20	5.50	9.90	10.20	0.15	1.47	1.59
J	2.000	7	5.30	5.50	9.90	10.40	5.30	5.50	9.90	10.40	0.20	1.99	2.11
J	2.381	7	5.60	5.90	11.40	11.70	5.60	5.90	11.40	11.70	0.20	2.78	2.95
J	2.381	7	6.00	6.60	13.10	14.00	6.00	6.60	13.10	14.00	0.30	4.80	5.14

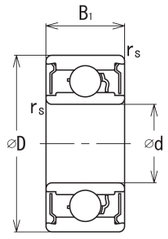
(1) Open bearings have shield/seal grooves.
(2) Single-shielded/single-sealed bearings are also available; suffix Z, RS, RU or TS.
(3) Applicable only for open, single Z, ZZ, single RU and 2RU types in inner ring rotating conditions.
Limiting speeds for the contact rubber seal(s) types can be lower than the above-mentioned values, so please check the detailed values per item on “products” section of our website.
(4) Some items are also available with the TW cage. Please contact us for details.

Extra-miniature/miniature/small bearings【Stainless-steel】

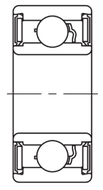




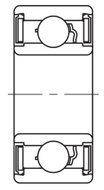
Open



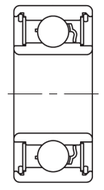
Shielded: ZZ



Sealed: 2RS



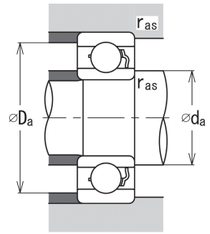
Sealed: 2RU

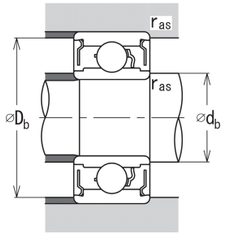


Sealed: TTS

Bore diameter d		Outer diameter D		Width Open B		Width Shielded, Sealed B_1		Chamfer $r_{s\,(min)}$		Bearing number					Load rating		Limiting speed[3]	
										Open	2 Shields[2]	2 Seals[2]			Cr	Cor	Grease	Oil
												2RS	2RU	TTS	N		min^{-1}	
mm	inch	mm	inch	mm	inch	mm	inch	mm	inch									
5	0.1969	8	0.3150	2	0.0787	—	—	0.10	0.0039	**SMR85**	—	—	—	—	263	97	62 000	74 000
		8	0.3150	—	—	2.5	0.0984	0.10	0.0039	—	**SMR85ZZ**	—	—	—	185	73	63 000	75 000
		9	0.3543	2.5	0.0984	3	0.1181	0.15	0.0059	**SMR95**	**SMR95ZZ**	—	—	**TTS**	367	134	60 000	71 000
		10	0.3937	3	0.1181	4	0.1575	0.15	0.0059	**SMR105**	**SMR105ZZ**	**2RS**	—	—	367	134	60 000	71 000
		11	0.4331	4	0.1575	4	0.1575	0.15	0.0059	**SMR115**[1]	**SMR115ZZ**	**2RS**	—	—	609	226	54 000	64 000
		11	0.4331	3	0.1181	5	0.1969	0.15	0.0059	**685H**	**685HZZ**	**2RS**	—	—	609	226	54 000	64 000
		13	0.5118	4	0.1575	4	0.1575	0.20	0.0079	**695H**[1]	**695HZZ**	**2RS**	—	—	916	344	50 000	59 000
		14	0.5512	5	0.1969	5	0.1969	0.20	0.0079	**605H**[1]	**605HZZ**	**2RS**	—	—	1 130	405	48 000	56 000
		16	0.6299	5	0.1969	5	0.1969	0.30	0.0118	**625H**[1]	**625HZZ**	**2RS**	—	—	1 470	536	44 000	52 000
		19	0.7480	6	0.2362	6	0.2362	0.30	0.0118	**635H**[1]	**635HZZ**	**2RS**	—	—	1 990	711	38 000	45 000
6	0.2362	10	0.3937	2.5	0.0984	—	—	0.15	0.0059	**SMR106**	—	—	—	—	422	175	54 000	64 000
		10	0.3937	—	—	3	0.1181	0.10	0.0039	—	**SMR106ZZ**	—	—	—	423	174	55 000	64 000
		12	0.4724	3	0.1181	4	0.1575	0.20	0.0079	**SMR126**	**SMR126ZZ**	**2RS**	—	—	608	234	50 000	59 000
		13	0.5118	3.5	0.1378	5	0.1969	0.15	0.0059	**686H**	**686HZZ**	**2RS**	**2RU**	—	920	350	48 000	56 000
		13	0.5118	—	—	5	0.1969	0.15	0.0059	—	—	—	—	**TTS**	920	350	38 000	38 000
		15	0.5906	5	0.1969	5	0.1969	0.20	0.0079	**696H**[1]	**696HZZ**	**2RS**	**2RU**	—	1 140	414	46 000	54 000
		15	0.5906	—	—	5	0.1969	0.20	0.0079	—	—	—	—	**TTS**	1 140	414	38 000	38 000
		16	0.6299	5	0.1969	5	0.1969	0.20	0.0079	**696AH**[1]	**696AHZZ**	**2RS**	**2RU**	—	1 140	414	46 000	54 000
		17	0.6693	6	0.2362	6	0.2362	0.30	0.0118	**606H**[1]	**606HZZ**	**2RS**	**2RU**	—	1 920	670	42 000	49 000
		19	0.7480	6	0.2362	6	0.2362	0.30	0.0118	**626H**[1]	**626HZZ**	**2RS**	**2RU**	—	1 990	711	38 000	45 000
		22	0.8661	7	0.2756	7	0.2756	0.30	0.0118	**636H**[1]	**636HZZ**	**2RS**	**2RU**	—	2 800	1 090	33 000	39 000
7	0.2756	11	0.4331	2.5	0.0984	3	0.1181	0.15	0.0059	**SMR117**	**SMR117ZZS**	—	—	—	388	161	50 000	59 000
		13	0.5118	3	0.1181	—	—	0.20	0.0079	**SMR137**	—	—	—	—	460	221	45 000	53 000
		13	0.5118	—	—	4	0.1575	0.15	0.0059	—	**SMR137ZZ**	—	—	—	460	221	45 000	53 000
		14	0.5512	3.5	0.1378	5	0.1969	0.15	0.0059	**687H**	**687HZZ**	**2RS**	—	—	999	409	44 000	52 000
		17	0.6693	5	0.1969	5	0.1969	0.30	0.0118	**697H**[1]	**697HZZ**	**2RS**	—	—	1 370	573	40 000	47 000
		19	0.7480	6	0.2362	6	0.2362	0.30	0.0118	**607H**[1]	**607HZZ**	**2RS**	**2RU**	—	1 990	711	38 000	45 000
		19	0.7480	—	—	6	0.2362	0.30	0.0118	—	—	—	—	**TTS**	1 900	729	29 000	29 000
		22	0.8661	7	0.2756	7	0.2756	0.30	0.0118	**627H**[1]	**627HZZ**	**2RS**	**2RU**	—	2 800	1 090	33 000	39 000
		22	0.8661	—	—	7	0.2756	0.30	0.0118	—	—	—	—	**TTS**	2 800	1 090	27 000	27 000
8	0.3150	12	0.4724	2.5	0.0984	—	—	0.15	0.0059	**SMR128**	—	—	—	—	462	220	46 000	54 000
		12	0.4724	—	—	3.5	0.1378	0.10	0.0039	—	**SMR128ZZ**	**2RS**	—	—	463	219	46 000	54 000
		12	0.4724	—	—	3.5	0.1378	0.10	0.0039	—	—	—	—	**TTS**	462	220	31 000	31 000
		14	0.5512	3.5	0.1378	—	—	0.20	0.0079	**SMR148**	—	—	—	—	696	309	42 000	50 000
		14	0.5512	—	—	4	0.1575	0.15	0.0059	—	**SMR148ZZ**	**2RS**	—	—	696	309	42 000	50 000
		16	0.6299	4	0.1575	5	0.1969	0.20	0.0079	**688H**	**688HZZ**	**2RS**	**2RU**	—	1 070	472	40 000	47 000
		16	0.6299	—	—	5	0.1969	0.20	0.0079	—	—	—	—	**TTS**	1 070	472	29 000	29 000
		19	0.7480	6	0.2362	6	0.2362	0.30	0.0118	**698H**[1]	**698HZZ**	**2RS**	**2RU**	—	1 900	729	37 000	44 000
		22	0.8661	7	0.2756	7	0.2756	0.30	0.0118	**608H**[1]	**608HZZ**	**2RS**	**2RU**	—	2 800	1 090	33 000	39 000
8	0.3150	22	0.8661	—	—	7	0.2756	0.30	0.0118	—	—	—	—	**TTS**	2 800	1 090	27 000	27 000
		24	0.9449	8	0.3150	8	0.3150	0.30	0.0118	**628H**[1]	**628HZZ**	**2RS**	**2RU**	—	2 830	1 130	31 000	37 000
		28	1.1024	9	0.3543	9	0.3543	0.30	0.0118	**638H**[1]	**638HZZ**	**2RS**	**2RU**	—	3 890	1 570	28 000	33 000
9	0.3543	14	0.5512	3	0.1181	4.5	0.1772	0.10	0.0039	**679H**	**679HZZS**	—	—	—	781	374	41 000	48 000
		17	0.6693	4	0.1575	5	0.1969	0.20	0.0079	**689H**	**689HZZ**	**2RS**	—	—	1 130	531	37 000	44 000
		20	0.7874	6	0.2362	6	0.2362	0.30	0.0118	**699H**[1]	**699HZZ**	**2RS**	**2RU**	—	2 100	855	35 000	42 000
		24	0.9449	7	0.2756	7	0.2756	0.30	0.0118	**609H**[1]	**609HZZ**	**2RS**	**2RU**	—	2 850	1 150	30 000	36 000
		26	1.0236	8	0.3150	8	0.3150	0.60	0.0236	**629H**[1]	**629HZZ**	**2RS**	**2RU**	—	3 890	1 570	28 000	33 000
		30	1.1811	10	0.3937	10	0.3937	0.60	0.0236	**639H**[1]	**639HZZ**	**2RS**	—	—	4 350	1 910	25 000	30 000

(1) Open bearings have shield/seal grooves.
(2) Single-shielded/single-sealed bearings are also available; suffix Z, RS, RU or TS.
(3) Applicable only for open, single Z, ZZ, single RU and 2RU types in inner ring rotating conditions.
Limiting speeds for the contact rubber seal(s) types can be lower than the above-mentioned values, so please check the detailed values per item on “products” section of our website.
(4) Some items are also available with the TW cage. Please contact us for details.





Abutment and fillet

Cage type[4]	Ball		Abutment and fillet dimensions								$r_{as\,(max)}$	Mass (Ref.)	
			Open				Shielded, Sealed					Open	2 Shields
	Size	Qty.	$d_{a\,(min)}$	$d_{a\,(max)}$	$D_{a\,(min)}$	$D_{a\,(max)}$	$d_{b\,(min)}$	$d_{b\,(max)}$	$D_{b\,(min)}$	$D_{b\,(max)}$			
	mm	pcs.	mm				mm				mm	g	
W	1.000	8	5.60	5.70	7.30	7.50	—	—	—	—	0.10	0.26	—
W	0.800	9	—	—	—	—	5.60	5.70	7.60	7.60	0.10	—	0.35
W	1.200	8	5.90	5.90	7.90	8.20	5.90	5.90	8.50	8.50	0.15	0.50	0.57
W	1.200	8	5.90	5.90	7.90	8.80	5.90	5.90	8.50	8.80	0.15	0.93	1.21
J	1.588	8	6.20	6.70	10.00	10.20	6.20	6.70	10.00	10.20	0.15	1.42	1.52
J	1.588	8	6.20	6.70	9.30	9.80	5.90	6.10	10.00	10.20	0.15	1.17	1.81
J	2.000	8	6.30	6.50	11.30	11.70	6.30	6.50	11.30	11.70	0.20	2.11	2.26
J	2.381	7	6.60	6.80	12.30	12.70	6.60	6.80	12.30	12.70	0.20	3.14	3.33
J	2.778	7	7.00	7.40	13.50	14.00	7.00	7.40	13.50	14.00	0.30	4.44	4.77
J	3.500	6	7.00	8.40	16.60	17.00	7.00	8.40	16.60	17.00	0.30	7.48	8.00
W	1.200	10	6.90	6.90	9.00	9.20	—	—	—	—	0.15	0.57	—
W	1.200	10	—	—	—	—	6.80	6.90	9.40	9.40	0.10	—	0.70
J	1.588	8	7.30	7.60	10.30	10.70	7.10	7.10	11.00	11.00	0.20	1.22	1.56
J	2.000	8	7.20	7.90	11.10	11.80	7.20	7.30	11.80	12.20	0.15	1.83	2.47
J	2.000	8	—	—	—	—	7.20	7.30	11.70	12.20	0.15	—	2.38
J	2.381	7	7.30	7.40	13.10	13.40	7.30	7.40	13.10	13.40	0.20	3.48	3.78
J	2.381	7	—	—	—	—	7.30	7.40	12.90	13.40	0.20	—	3.71
J	2.381	7	7.30	7.40	13.10	14.40	7.30	7.40	13.10	14.40	0.20	4.40	4.70
J	3.500	6	7.70	8.10	14.90	15.40	7.70	8.10	14.90	15.40	0.30	5.37	5.87
J	3.500	6	8.00	8.40	16.60	17.00	8.00	8.40	16.60	17.00	0.30	7.09	7.62
J	3.969	7	8.00	10.40	19.10	20.00	8.00	10.40	19.10	20.00	0.30	12.0	12.6
W	1.200	9	7.90	7.90	10.10	10.10	7.90	7.90	10.40	10.40	0.15	0.60	0.74
W	1.200	12	8.60	9.30	11.20	11.40	—	—	—	—	0.20	1.53	—
W	1.200	12	—	—	—	—	8.20	8.90	11.80	12.20	0.15	—	1.98
J	2.000	9	8.20	8.90	12.10	12.80	8.20	8.40	12.80	13.20	0.15	2.02	2.74
J	2.381	9	8.70	9.10	14.40	15.00	8.70	9.10	14.40	15.00	0.30	4.75	4.98
J	3.500	6	8.70	8.90	16.60	17.00	8.70	8.90	16.60	17.00	0.30	6.67	7.18
J	3.175	7	—	—	—	—	9.00	9.70	16.60	17.00	0.30	—	7.02
J	3.969	7	9.00	10.40	19.10	20.00	9.00	10.40	19.10	20.00	0.30	11.5	12.1
J	3.969	7	—	—	—	—	9.00	10.40	19.40	20.00	0.30	—	11.6
W	1.200	12	9.00	9.00	11.00	11.20	—	—	—	—	0.15	0.70	—
W	1.200	12	—	—	—	—	8.60	8.90	11.40	11.40	0.10	—	1.00
W	1.200	12	—	—	—	—	8.80	9.00	11.40	11.40	0.10	—	0.94
J	1.588	10	9.60	9.80	12.30	12.70	—	—	—	—	0.20	1.77	—
J	1.588	10	—	—	—	—	8.90	9.20	12.90	13.20	0.15	—	1.98
J	2.000	10	9.60	10.40	13.60	14.40	9.50	9.60	14.30	14.70	0.20	3.13	3.75
J	2.000	10	—	—	—	—	9.50	9.60	14.20	14.40	0.20	—	3.62
J	3.175	7	9.70	9.70	16.80	17.00	9.70	9.70	16.80	17.00	0.30	6.13	6.64
J	3.969	7	10.00	10.40	19.10	20.00	10.00	10.40	19.10	20.00	0.30	10.9	11.5
J	3.969	7	—	—	—	—	10.00	10.40	19.40	20.00	0.30	—	11.0
J	3.969	7	10.00	11.80	20.00	22.00	10.00	11.80	20.00	22.00	0.30	16.3	17.0
J	4.762	7	10.00	13.80	22.50	26.00	10.00	13.80	22.50	26.00	0.30	26.9	28.0
W	1.588	12	9.80	10.30	12.70	13.20	9.80	10.20	13.30	13.50	0.10	1.27	1.81
J	2.000	11	10.60	11.40	14.60	15.40	10.30	10.60	15.30	15.70	0.20	3.39	4.08
J	3.175	8	11.00	11.50	17.50	18.00	11.00	11.50	17.50	18.00	0.30	7.01	7.51
J	3.969	7	11.00	12.00	20.60	22.00	11.00	12.00	20.60	22.00	0.30	13.1	13.9
J	4.762	7	13.00	13.80	22.50	22.60	13.00	13.80	22.50	22.60	0.60	17.5	18.7
RJ	4.762	8	13.00	15.20	25.40	26.00	13.00	15.20	25.40	26.00	0.60	32.9	34.3