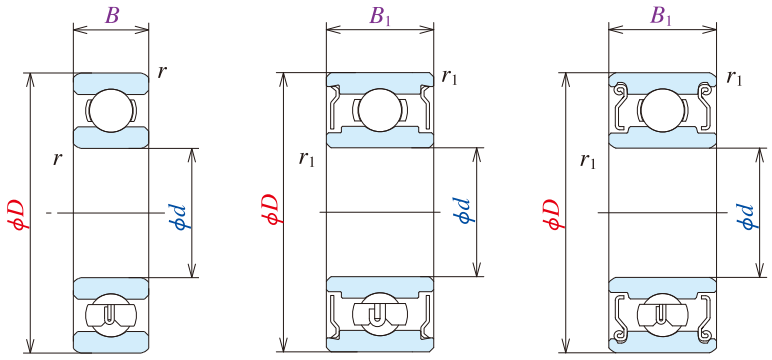
メートル系　単列深溝玉軸受
Single-row deep groove ball bearings (Metric series)

600 形
600,MR

MR 形

内径　1～4mm
Bore diameter 1～4mm



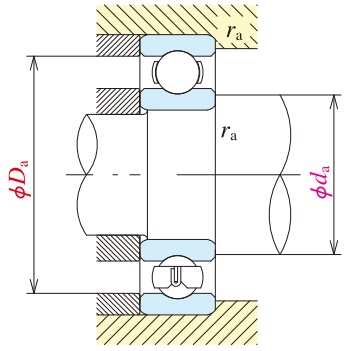
開放形
Open type

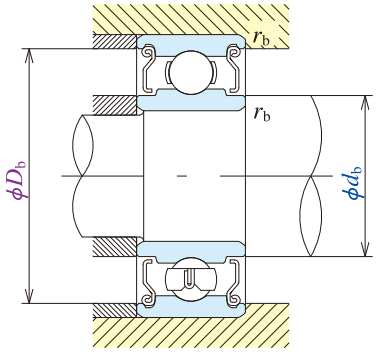
シールド形
Shielded type
ZZ

シールド形
Shielded type
ZZ1

呼び番号 Bearing numbers				主要寸法（mm） Boundary dimensions						基本定格荷重 Basic load ratings			
開放形 Open	シールド形 Shielded	シール形 Sealed		d	D	B	B_1	r (*1) 最小 min	r_1 (*1) 最小 min	(N) C_r	(N) C_{or}	{kgf} C_r	{kgf} C_{or}
681	—	—	—	1	3	1	—	0.05	—	80	23	8	2.5
MR31	—	—	—		3	1.5	—	0.05	—	80	23	8	2.5
691	—	—	—		4	1.6	—	0.1	—	138	35	14	3.5
MR41X	MR41XZZ	—	—	1.2	4	1.8	2.5	0.1	0.1	138	35	14	3.5
681X	681XZZ	—	—	1.5	4	1.2	2	0.05	0.05	112	33	11	3.5
691X	691XZZ	—	—		5	2	2.6	0.15	0.15	237	69	24	7
601X	601XZZ	—	—		6	2.5	3	0.15	0.15	330	98	34	10
682	682ZZ	—	—	2	5	1.5	2.3	0.08	0.08	169	50	17	5
MR52B	MR52BZZ	—	—		5	2	2.5	0.1	0.1	187	58	19	6
692	692ZZ	—	—		6	2.3	3	0.15	0.15	330	98	34	10
MR62	MR62ZZ	—	—		6	2.5	2.5	0.15	0.15	330	98	34	10
MR72	MR72ZZ	—	—		7	2.5	3	0.15	0.15	385	127	39	13
602	602ZZ	—	—		7	2.8	3.5	0.15	0.15	385	127	39	13
682X	682XZZ	—	—	2.5	6	1.8	2.6	0.08	0.08	208	74	21	7.5
692X	692XZZ	—	—		7	2.5	3.5	0.15	0.15	385	127	39	13
MR82X	—	—	—		8	2.5	—	0.2	—	560	179	57	18
602X	602XZZ	—	—		8	2.8	4	0.15	0.15	550	175	56	18
MR63	MR63ZZ	—	—	3	6	2	2.5	0.1	0.1	208	74	21	7.5
683A	683AZZ	—	—		7	2	3	0.1	0.1	390	130	40	13
MR83	—	—	—		8	2.5	—	0.15	—	560	179	57	18
693	693ZZ	—	—		8	3	4	0.15	0.15	560	179	57	18
MR93	MR93ZZ	—	—		9	2.5	4	0.2	0.15	570	187	58	19
603	603ZZ	—	—		9	3	5	0.15	0.15	570	187	58	19
623	623ZZ	—	—		10	4	4	0.15	0.15	630	218	64	22
633	633ZZ1	—	—		13	5	5	0.2	0.2	1300	485	133	49
MR74	—	—	—	4	7	2	—	0.1	—	310	115	32	12
—	MR74ZZ	—	—		7	—	2.5	—	0.1	255	107	26	11
MR84	MR84ZZ	—	—		8	2	3	0.15	0.1	395	139	40	14
684A	684AZZ1	—	—		9	2.5	4	(0.15)*1	(0.15)*1	640	225	65	23
MR104B	MR104BZZ	—	—		10	3	4	0.2	0.15	710	270	73	28
694	694ZZ	—	—		11	4	4	0.15	0.15	960	345	98	35
604	604ZZ	—	—		12	4	4	0.2	0.2	960	345	98	35
624	624ZZ1	—	—		13	5	5	0.2	0.2	1300	485	133	49
634	634ZZ1	—	—		16	5	5	0.3	0.3	1730	670	177	68

注　(*1) (　　) 内の値は、JIS B 1521に準じていません。
Notes　The values in parentheses are not based on ISO 15
(*2) 外径、内径の実寸法を示します。
Actual dimensions of bore and outside diameter only.
(3) ステンレス品の基本動定格荷重は0.85掛けが目安となります。
The rough standard of basic dynamic load rating for stainless products would be15% less than the value appeared in the list.





許容回転数 (min^{-1}) Limiting speeds(rpm) グリース潤滑 Grease 開放形 Open Z・ZZ	油潤滑 Oil 開放形 Open Z	取付関係寸法 (mm) Abutment and fillet dimensions d_a 最小 min	d_b 最大 max	D_a 最大 max	D_b 最小 min	r_a 最大 max	r_b 最大 max	質量(g) Mass (参考) (approx) 開放形 Open	シールド形 Shielded	呼び番号 Bearing numbers 開放形 Open	原寸図(*2) Actual size
130,000	150,000	1.4	—	2.6	—	0.05	—	0.03	—	**681**	
130,000	150,000	1.4	—	2.6	—	0.05	—	0.04	—	**MR31**	
100,000	120,000	1.8	—	3.2	—	0.10	—	0.09	—	**691**	
110,000	130,000	2.0	1.9	3.2	3.5	0.10	0.10	0.10	0.14	**MR41X**	
100,000	120,000	1.9	2.1	3.6	3.6	0.05	0.05	0.07	0.11	**681X**	
85,000	100,000	2.7	2.5	3.8	4.3	0.15	0.15	0.17	0.20	**691X**	
75,000	90,000	2.7	3.0	4.8	5.4	0.15	0.15	0.33	0.38	**601X**	
85,000	100,000	2.6	2.7	4.4	4.2	0.08	0.08	0.12	0.17	**682**	
85,000	100,000	2.8	2.7	4.2	4.4	0.10	0.10	0.16	0.23	**MR52B**	
75,000	90,000	3.2	3.0	4.8	5.4	0.15	0.15	0.28	0.38	**692**	
75,000	90,000	3.2	3.0	4.8	5.4	0.15	0.15	0.30	0.29	**MR62**	
63,000	75,000	3.2	3.8	5.8	6.2	0.15	0.15	0.45	0.49	**MR72**	
63,000	75,000	3.2	3.8	5.8	6.2	0.15	0.15	0.51	0.58	**602**	
71,000	80,000	3.1	3.7	5.4	5.4	0.08	0.08	0.23	0.29	**682X**	
63,000	75,000	3.7	3.8	5.8	6.2	0.15	0.15	0.41	0.55	**692X**	
60,000	67,000	4.1	—	6.4	—	0.20	—	0.56	—	**MR82X**	
60,000	71,000	3.7	4.1	6.8	7.0	0.15	0.15	0.63	0.83	**602X**	
71,000	80,000	3.8	3.7	5.2	5.4	0.10	0.10	0.20	0.27	**MR63**	
63,000	75,000	3.8	4.0	6.2	6.4	0.10	0.10	0.32	0.45	**683A**	
60,000	67,000	4.2	—	6.8	—	0.15	—	0.54	—	**MR83**	
60,000	67,000	4.2	4.3	6.8	7.3	0.15	0.15	0.61	0.83	**693**	
56,000	67,000	4.6	4.3	7.4	7.9	0.20	0.15	0.73	1.18	**MR93**	
56,000	67,000	4.2	4.3	7.8	7.9	0.15	0.15	0.87	1.45	**603**	
50,000	60,000	4.2	4.3	8.8	8.0	0.15	0.15	1.65	1.66	**623**	
40,000	48,000	4.6	6.0	11.4	11.3	0.20	0.20	3.38	3.33	**633**	
60,000	67,000	4.8	—	6.2	—	0.10	—	0.22	—	**MR74**	
60,000	71,000	—	4.8	—	6.3	—	0.10	—	0.29	**MR74**	
56,000	67,000	5.2	5.0	6.8	7.4	0.15	0.10	0.36	0.56	**MR84**	
53,000	63,000	4.8	5.2	8.2	8.1	0.10	0.10	0.63	1.01	**684A**	
50,000	60,000	5.6	5.9	8.4	8.8	0.20	0.15	1.04	1.42	**MR104B**	
48,000	56,000	5.2	5.6	9.8	9.9	0.15	0.15	1.70	1.75	**694**	
48,000	56,000	5.6	5.6	10.4	9.9	0.20	0.20	2.25	2.29	**604**	
40,000	48,000	5.6	6.0	11.4	11.3	0.20	0.20	3.03	3.04	**624**	
36,000	43,000	6.0	7.5	14.0	13.8	0.30	0.30	5.24	5.21	**634**	

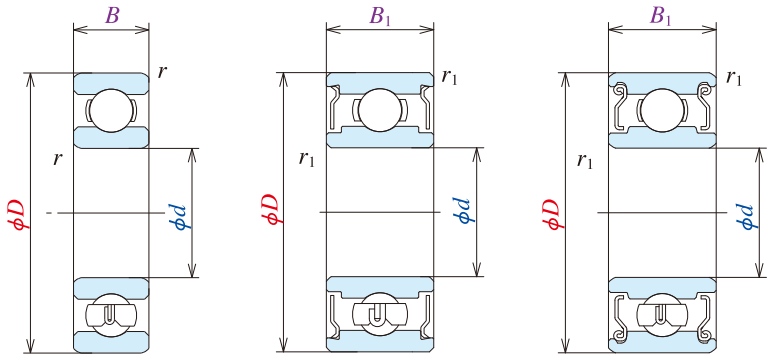
備考 Remarks
1.シールド軸受を外輪回転でご使用の際は、ISCにご相談下さい。
When using bearings with a rotating outer ring,please contact ISC if they are shielded.
2.両シールド形の記載されている軸受については、片シールド軸受も製造しています。
Bearings with double shields (ZZ,ZZ1) are also available with single shields (Z,Z1).

メートル系　単列深溝玉軸受
Single-row deep groove ball bearings (Metric series)

600 形
600,MR

MR 形

内径　5～9mm
Bore diameter 5～9mm



開放形
Open type

シールド形
Shielded type
ZZ

シールド形
Shielded type
ZZ1

呼び番号 Bearing numbers				主要寸法（mm） Boundary dimensions						基本定格荷重 Basic load ratings			
開放形 Open	シールド形 Shielded	シール形 Sealed		d	D	B	B_1	r (*1) 最小 min	r_1 (*1) 最小 min	(N) C_r	C_{or}	{kgf} C_r	C_{or}
MR85	—	—	—	5	8	2	—	0.10	—	310	120	31	12
—	MR85ZZ	—	—		8	—	2.5	—	0.10	278	131	28	13
MR95	MR95ZZ1	—	—		9	2.5	3	0.15	0.15	430	168	44	17
MR105	MR105ZZ	—	—		10	3	4	0.15	0.15	430	168	44	17
—	MR115ZZ	VV	—		11	—	4	—	0.15	715	276	73	28
685	685ZZ	—	—		11	3	5	0.15	0.15	715	281	73	29
695	695ZZ1	VV	DD		13	4	4	0.20	0.20	1080	430	110	44
605	605ZZ	—	DD		14	5	5	0.20	0.20	1330	505	135	52
625	625ZZ1	VV	DD		16	5	5	0.30	0.30	1730	670	177	68
635	635ZZ1	VV	DD		19	6	6	0.30	0.30	2340	885	238	90
MR106	MR106ZZ1	—	—	6	10	2.5	3	0.15	0.10	495	218	51	22
MR126	MR126ZZ	—	DD		12	3	4	0.20	0.15	715	292	73	30
686A	686AZZ1	VV	DD		13	3.5	5	0.15	0.15	1080	440	110	45
696	696ZZ1	VV	DD		15	5	5	0.20	0.20	1730	670	177	68
606	606ZZ1	VV	DD		17	6	6	0.30	0.30	2260	835	231	85
626	626ZZ1	VV	DD		19	6	6	0.30	0.30	2340	885	238	90
636	636ZZ	VV	DD		22	7	7	0.30	0.30	3300	1370	335	140
MR117	MR117ZZ	—	—	7	11	2.5	3	0.15	0.10	455	201	47	21
MR137	MR137ZZ	—	—		13	3	4	0.20	0.15	540	276	55	28
687	687ZZ1	VV	DD		14	3.5	5	0.15	0.15	1170	510	120	52
697	697ZZ1	VV	DD		17	5	5	0.30	0.30	1610	710	164	73
607B	607BZZ1	VV	DD		19	6	6	0.30	0.30	2340	885	238	90
627	627ZZ	VV	DD		22	7	7	0.30	0.30	3300	1370	335	140
637	637ZZ1	VV	DD		26	9	9	0.30	0.30	4550	1970	465	201
MR128	MR128ZZ1	VV	DD	8	12	2.5	3.5	0.15	0.10	545	274	56	28
MR148	MR148ZZ	VV	DD		14	3.5	4	0.20	0.15	820	385	83	39
688A	688AZZ1	VV	DD		16	4	5	0.20	0.20	1610	710	164	73
698	698ZZ1	VV	DD		19	6	6	0.30	0.30	2240	910	228	93
689	689ZZ	VV	DD	9	17	4	5	0.20	0.20	1330	665	136	68

注　(*1)（　　）内の値は、JIS B 1521に準じていません。
Notes　The values in parentheses are not based on ISO 15
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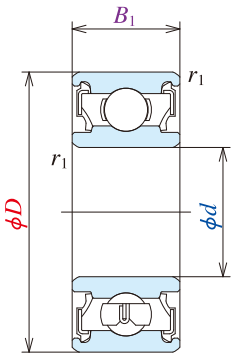
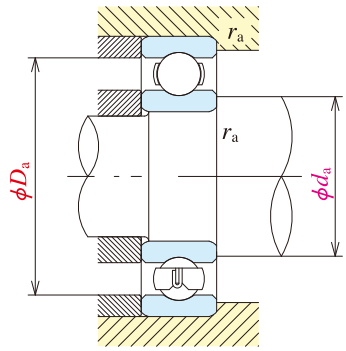
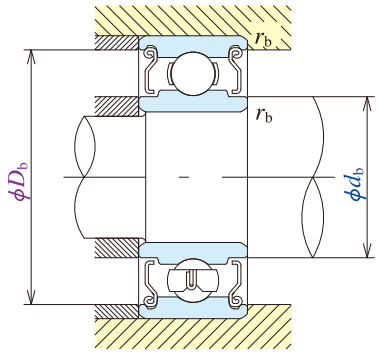
Actual dimensions of bore and outside diameter only.
(3) ステンレス品の基本動定格荷重は0.85掛けが目安となります。
The rough standard of basic dynamic load rating for stainless products would be15% less than the value appeared in the list.

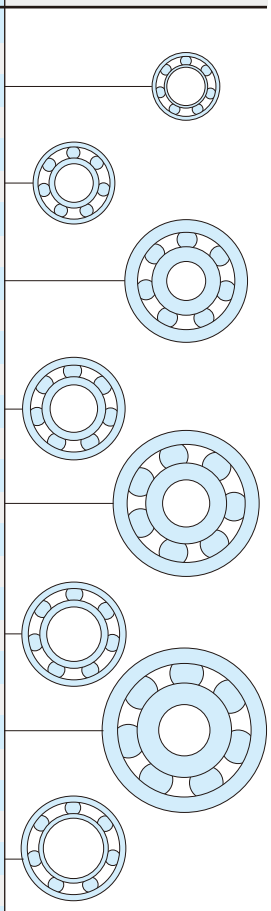






接触シール形
Contact sealed type
DD

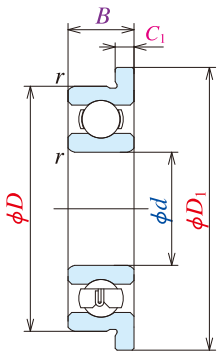
許容回転数 (min^{-1}) Limiting speeds(rpm) グリース潤滑 Grease 開放形 Open Z・ZZ V・VV	D・DD	油潤滑 Oil 開放形 Open Z	取付関係寸法 (mm) Abutment and fillet dimensions d_a 最小 min	d_b 最大 max	D_a 最大 max	D_b 最小 min	r_a 最大 max	r_b 最大 max	質量(g) Mass (参考) (approx) 開放形 Open	シールド形 Shielded	呼び番号 Bearing numbers 開放形 Open	原寸図(*2) Actual size
53,000	—	63,000	5.8	—	7.2	—	0.10	—	0.26	—	**MR85**	
53,000	—	63,000	—	5.8	—	7.4	—	0.10	—	0.34	**MR85**	
50,000	—	60,000	6.2	6.0	7.8	8.2	0.15	0.15	0.50	0.58	**MR95**	
50,000	—	60,000	6.2	6.0	8.8	8.4	0.15	0.15	0.95	1.29	**MR105**	
48,000	—	56,000	—	6.3	—	9.8	—	0.15	—	1.50	**MR115**	
45,000	—	53,000	6.2	6.2	9.8	9.9	0.15	0.15	1.20	1.96	**685**	
43,000	40,000	50,000	6.6	6.6	11.4	11.2	0.20	0.20	2.45	2.50	**695**	
40,000	38,000	50,000	6.6	6.9	12.4	12.2	0.20	0.20	3.54	3.48	**605**	
36,000	32,000	43,000	7.0	7.5	14.0	13.8	0.30	0.30	4.95	4.86	**625**	
32,000	30,000	40,000	7.0	8.5	17.0	16.5	0.30	0.30	8.56	8.34	**635**	
45,000	—	53,000	7.2	7.0	8.8	9.3	0.15	0.10	0.56	0.68	**MR106**	
43,000	40,000	50,000	7.6	7.2	10.4	10.9	0.20	0.15	1.27	1.74	**MR126**	
40,000	38,000	50,000	7.2	7.4	11.8	11.7	0.15	0.15	1.91	2.69	**686A**	
40,000	36,000	45,000	7.6	7.9	13.4	13.3	0.20	0.20	3.88	3.72	**696**	
38,000	34,000	45,000	8.0	8.2	15.0	14.8	0.30	0.30	5.97	6.08	**606**	
32,000	30,000	40,000	8.0	8.5	17.0	16.5	0.30	0.30	8.15	7.94	**626**	
30,000	28,000	36,000	8.0	10.5	20.0	19.0	0.30	0.30	14.00	14.00	**636**	
43,000	—	50,000	8.2	8.0	9.8	10.5	0.15	0.10	0.62	0.72	**MR117**	
40,000	—	48,000	8.6	9.0	11.4	11.6	0.20	0.15	1.58	2.02	**MR137**	
40,000	34,000	45,000	8.2	8.5	12.8	12.7	0.15	0.15	2.13	2.97	**687**	
36,000	28,000	43,000	9.0	10.2	15.0	14.8	0.30	0.30	5.26	5.12	**697**	
36,000	32,000	43,000	9.0	9.1	17.0	16.5	0.30	0.30	7.67	7.51	**607**	
30,000	28,000	36,000	9.0	10.5	20.0	19.0	0.30	0.30	12.70	12.90	**627**	
28,000	22,000	34,000	9.0	12.8	24.0	22.8	0.30	0.30	24.00	25.00	**637**	
40,000	—	48,000	9.2	9.0	10.8	11.3	0.15	0.10	0.71	0.97	**MR128**	
38,000	32,000	45,000	9.6	9.2	12.4	12.8	0.20	0.15	1.86	2.16	**MR148**	
36,000	28,000	43,000	9.6	10.2	14.4	14.2	0.20	0.20	3.12	4.02	**688A**	
36,000	28,000	43,000	10.0	10.0	17.0	16.5	0.30	0.30	7.23	7.18	**698**	
36,000	24,000	43,000	10.6	11.5	15.4	15.2	0.20	0.20	3.53	4.43	**689**	



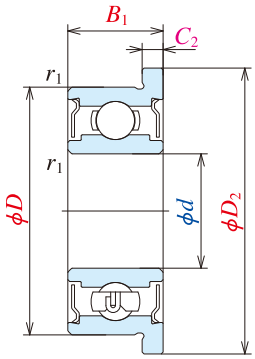
備考 Remarks
1.シール・シールド軸受を外輪回転でご使用の際は、ISCにご相談下さい。
When using bearings with a rotating outer ring,please contact ISC if they are shielded or sealed.
2.両シールド形の記載されている軸受については、片シールド軸受も製造しています。
Bearings with double shields (ZZ,ZZ1) are also available with single shields (Z,Z1).
3.止め輪付き軸受も製作していますので、ISCにご相談下さい。
Bearings with snap rings are also available,please contact ISC.

メートル系　フランジ付き単列深溝玉軸受
Single-row deep groove ball bearings with flanged outer ring (Metric series)

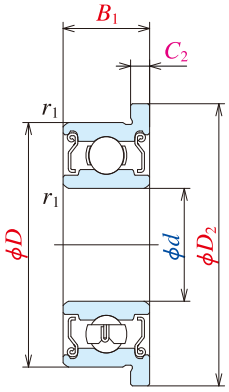
F600 形
600,FR
MF 形
内径　1～4mm
Bore diameter 1～4mm



開放形
Open type



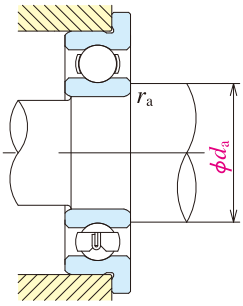
シールド形
Shielded type
ZZ

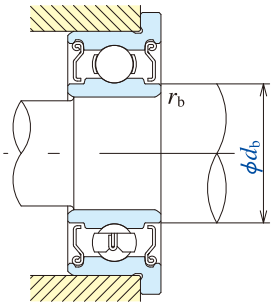


シールド形
Shielded type
ZZ1

呼び番号 Bearing numbers				主要寸法（mm） Boundary dimensions										基本定格荷重 Basic load ratings			
開放形 Open	シールド形 Shielded	シール形 Sealed		d	D	D_1	D_2	B	B_1	C_1	C_2	r (*1) 最小 min	r_1 (*1) 最小 min	(N) C_r	(N) C_{or}	{kgf} C_r	{kgf} C_{or}
F681	—	—	—	1	3	3.8	—	1	—	0.3	—	0.05	—	80	23	8	2.5
F691	—	—	—		4	5	—	1.6	—	0.5	—	0.1	—	138	35	14	3.5
MF41X	—	—	—	1.2	4	4.8	—	1.8	—	0.4	—	0.1	—	138	35	14	3.5
F681X	F681XZZ	—	—	1.5	4	5	5	1.2	2	0.4	0.6	0.05	0.05	112	33	11	3.5
F691X	F691XZZ	—	—		5	6.5	6.5	2	2.6	0.6	0.8	0.15	0.15	237	69	24	7
F601X	F601XZZ	—	—		6	7.5	7.5	2.5	3	0.6	0.8	0.15	0.15	330	98	34	10
F682	F682ZZ	—	—	2	5	6.1	6.1	1.5	2.3	0.5	0.6	0.08	0.08	169	50	17	5
MF52B	MF52BZZ	—	—		5	6.2	6.2	2	2.5	0.6	0.6	0.1	0.1	187	58	19	6
F692	F692ZZ	—	—		6	7.5	7.5	2.3	3	0.6	0.8	0.15	0.15	330	98	34	10
MF62	—	—	—		6	7.2	—	2.5	—	0.6	—	0.15	—	330	98	34	10
MF72	MF72ZZ	—	—		7	8.2	8.2	2.5	3	0.6	0.6	0.15	0.15	385	127	39	13
F602	F602ZZ	—	—		7	8.5	8.5	2.8	3.5	0.7	0.9	0.15	0.15	385	127	39	13
F682X	F682XZZ	—	—	2.5	6	7.1	7.1	1.8	2.6	0.5	0.8	0.08	0.08	208	74	21	7.5
F692X	F692XZZ	—	—		7	8.5	8.5	2.5	3.5	0.7	0.9	0.15	0.15	385	127	39	13
MF82X	—	—	—		8	9.2	—	2.5	—	0.6	—	0.2	—	560	179	57	18
F602X	F602XZZ	—	—		8	9.5	9.5	2.8	4	0.7	0.9	0.15	0.15	550	175	56	18
MF63	MF63ZZ	—	—	3	6	7.2	7.2	2	2.5	0.6	0.6	0.1	0.1	208	74	21	7.5
F683A	F683AZZ	—	—		7	8.1	8.1	2	3	0.5	0.8	0.1	0.1	390	130	40	13
MF83	—	—	—		8	9.2	—	2.5	—	0.6	—	0.15	—	560	179	57	18
F693	F693ZZ	—	—		8	9.5	9.5	3	4	0.7	0.9	0.15	0.15	560	179	57	18
MF93	MF93ZZ	—	—		9	10.2	10.6	2.5	4	0.6	0.8	0.2	0.15	570	187	58	19
F603	F603ZZ	—	—		9	10.5	10.5	3	5	0.7	1	0.15	0.15	570	187	58	19
F623	F623ZZ	—	—		10	11.5	11.5	4	4	1	1	0.15	0.15	630	218	64	22
MF74	—	—	—	4	7	8.2	—	2	—	0.6	—	0.1	—	310	115	32	12
—	MF74ZZ	—	—		7	—	8.2	—	2.5	—	0.6	—	0.1	255	107	26	11
MF84	MF84ZZ	—	—		8	9.2	9.2	2	3	0.6	0.6	0.15	0.1	395	139	40	14
F684	F684ZZ	—	—		9	10.3	10.3	2.5	4	0.6	1	(0.15)(*1)	(0.15)(*1)	640	225	65	23
MF104B	MF104BZZ	—	—		10	11.2	11.6	3	4	0.6	0.8	0.2	0.15	710	270	73	28
F694	F694ZZ	—	—		11	12.5	12.5	4	4	1	1	0.15	0.15	960	345	98	35
F604	F604ZZ	—	—		12	13.5	13.5	4	4	1	1	0.2	0.2	960	345	98	35
F624	F624ZZ1	—	—		13	15	15	5	5	1	1	0.2	0.2	1300	485	133	49
F634	F634ZZ1	—	—		16	18	18	5	5	1	1	0.3	0.3	1730	670	177	68

注　(*1)（　）内の値は、JIS B 1521に準じていません。
Notes　The values in parentheses are not based on ISO 15
(*2) 外径、内径の実寸法を示します。
Actual dimensions of bore and outside diameter only.
(3) ステンレス品の基本動定格荷重は0.85掛けが目安となります。
The rough standard of basic dynamic load rating for stainless products would be15% less than the value appeared in the list.





許容回転数 (min^{-1}) Limiting speeds(rpm) グリース潤滑 Grease 開放形 Open Z・ZZ	油潤滑 Oil 開放形 Open Z	取付関係寸法 (mm) Abutment and fillet dimensions d_a 最小 min	d_b 最大 max	r_a 最大 max	r_b 最大 max	質量(g)Mass (参考) (approx) 開放形 Open	シールド形 Shielded	呼び番号 Bearing numbers 開放形 Open	原寸図(*2) Actual size
130,000	150,000	1.4	—	0.05	—	0.04	—	**F681**	
100,000	120,000	1.8	—	0.10	—	0.14	—	**F691**	
110,000	130,000	2.0	—	0.10	—	0.12	—	**MF41X**	
100,000	120,000	1.9	2.1	0.05	0.05	0.09	0.14	**F681X**	
85,000	100,000	2.7	2.5	0.15	0.15	0.21	0.28	**F691X**	
75,000	90,000	2.7	3.0	0.15	0.15	0.42	0.52	**F601X**	
85,000	100,000	2.6	2.7	0.08	0.08	0.16	0.22	**F682**	
85,000	100,000	2.8	2.7	0.10	0.10	0.21	0.27	**MF52B**	
75,000	90,000	3.2	3.0	0.15	0.15	0.35	0.48	**F692**	
75,000	90,000	3.2	—	0.15	—	0.36	—	**MF62**	
63,000	75,000	3.2	3.8	0.15	0.15	0.52	0.56	**MF72**	
63,000	75,000	3.2	3.8	0.15	0.15	0.60	0.71	**F602**	
71,000	80,000	3.1	3.7	0.08	0.08	0.25	0.36	**F682X**	
63,000	67,000	3.7	3.8	0.15	0.15	0.51	0.68	**F692X**	
60,000	71,000	4.1	—	0.20	—	0.62	—	**MF82X**	
60,000	71,000	3.7	4.1	0.15	0.15	0.74	0.98	**F602X**	
71,000	80,000	3.8	3.7	0.10	0.10	0.27	0.33	**MF63**	
63,000	75,000	3.8	4.0	0.10	0.10	0.37	0.53	**F683A**	
60,000	67,000	4.2	—	0.15	—	0.56	—	**MF83**	
60,000	67,000	4.2	4.3	0.15	0.15	0.70	0.97	**F693**	
56,000	67,000	4.6	4.3	0.20	0.15	0.81	1.34	**MF93**	
56,000	67,000	4.2	4.3	0.15	0.15	1.00	1.63	**F603**	
50,000	60,000	4.2	4.3	0.15	0.15	1.85	1.86	**F623**	
60,000	67,000	4.8	—	0.10	—	0.29	—	**MF74**	
60,000	71,000	—	4.8	—	0.10	—	0.35	**MF74**	
56,000	67,000	5.2	5.0	0.15	0.10	0.44	0.63	**MF84**	
53,000	63,000	4.8	5.2	0.10	0.10	0.70	1.14	**F684**	
50,000	60,000	5.6	5.9	0.20	0.15	1.13	1.59	**MF104B**	
48,000	56,000	5.2	5.6	0.15	0.15	1.91	1.96	**F694**	
48,000	56,000	5.6	5.6	0.20	0.20	2.53	2.53	**F604**	
40,000	48,000	5.6	6.0	0.20	0.20	3.38	3.53	**F624**	
36,000	43,000	6.0	7.5	0.30	0.30	5.73	5.65	**F634**	

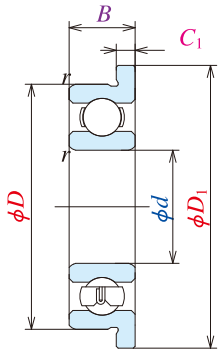
備考 Remarks
1.シールド軸受を外輪回転でご使用の際は、ISCにご相談下さい。
When using bearings with a rotating outer ring,please contact ISC if they are shielded.
2.両シールド形の記載されている軸受については、片シールド軸受も製造しています。
Bearings with double shields (ZZ,ZZ1) are also available with single shields (Z,Z1).

メートル系　フランジ付き単列深溝玉軸受
Single-row deep groove ball bearings with flanged outer ring (Metric series)

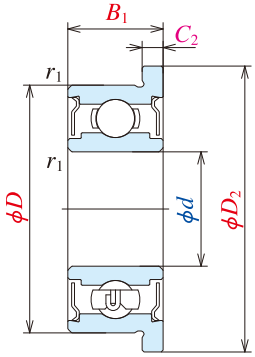
F600 形
F600,MF

MF 形

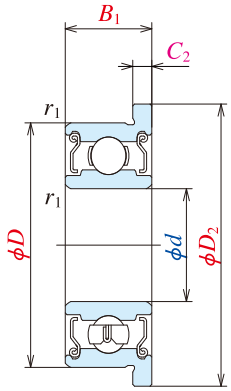
内径　5～9mm
Bore diameter 5～9mm



開放形
Open type



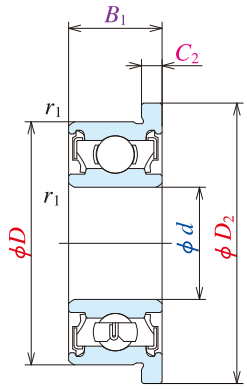
シールド形
Shielded type
ZZ

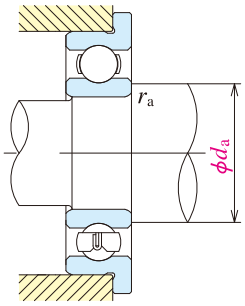


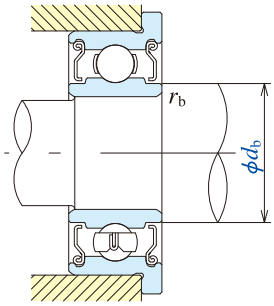
シールド形
Shielded type
ZZ1

呼び番号 Bearing numbers				主要寸法（mm） Boundary dimensions								基本定格荷重 Basic load ratings			
												(N)		{kgf}	
開放形 Open	シールド形 Shielded	シール形 Sealed		d	D	D_1	D_2	B	B_1	C_1	C_2	r 最小 min	r_1 最小 min	C_r	C_{or}	C_r	C_{or}
MF85	—	—	—	5	8	9.2	—	2	—	0.6	—	0.10	—	310	120	31	12
—	MF85ZZ	—	—		8	—	9.2	—	2.5	—	0.6	—	0.10	278	131	28	13
MF95	MF95ZZ	—	—		9	10.2	10.2	2.5	3	0.6	0.6	0.15	0.15	430	168	44	17
MF105	MF105ZZ	—	—		10	11.2	11.6	3	4	0.6	0.8	0.15	0.15	430	168	44	17
F685	F685ZZ	—	—		11	12.5	12.5	3	5	0.8	1	0.15	0.15	715	281	73	29
F695	F695ZZ1	VV	DD		13	15	15	4	4	1	1	0.20	0.20	1080	430	110	44
F605	F605ZZ	—	DD		14	16	16	5	5	1	1	0.20	0.20	1330	505	135	52
F625	F625ZZ1	VV	DD		16	18	18	5	5	1	1	0.30	0.30	1730	670	177	68
F635	F635ZZ1	VV	DD		19	22	22	6	6	1.5	1.5	0.30	0.30	2340	885	238	90
MF106	MF106ZZ1	—	—	6	10	11.2	11.2	2.5	3	0.6	0.6	0.15	0.10	495	218	51	22
MF126	MF126ZZ	—	DD		12	13.2	13.6	3	4	0.6	0.8	0.20	0.15	715	292	73	30
F686A	F686AZZ1	VV	DD		13	15	15	3.5	5	1	1.1	0.15	0.15	1080	440	110	45
F696	F696ZZ1	VV	DD		15	17	17	5	5	1.2	1.2	0.20	0.20	1730	670	177	68
F606	F606ZZ	VV	DD		17	19	19	6	6	1.2	1.2	0.30	0.30	2260	835	231	85
F626	F626ZZ1	VV	DD		19	22	22	6	6	1.5	1.5	0.30	0.30	2340	885	238	90
F636	F636ZZ	VV	DD		22	25	25	7	7	1.5	1.5	0.30	0.30	3300	1370	335	140
MF117	MF117ZZ	—	—	7	11	12.2	12.2	2.5	3	0.6	0.6	0.15	0.10	455	201	47	21
MF137	MF137ZZ	—	—		13	14.2	14.6	3	4	0.6	0.8	0.20	0.15	540	276	55	28
F687	F687ZZ1	VV	DD		14	16	16	3.5	5	1	1.1	0.15	0.15	1170	510	120	52
F697	F697ZZ1	VV	DD		17	19	19	5	5	1.2	1.2	0.30	0.30	1610	710	164	73
F607	F607ZZ1	VV	DD		19	22	22	6	6	1.5	1.5	0.30	0.30	2340	885	238	90
F627	F627ZZ	VV	DD		22	25	25	7	7	1.5	1.5	0.30	0.30	3300	1370	335	140
MF128	MF128ZZ1	VV	DD	8	12	13.2	13.6	2.5	3.5	0.6	0.8	0.15	0.10	545	274	56	28
MF148	MF148ZZ	VV	DD		14	15.6	15.6	3.5	4	0.8	0.8	0.20	0.15	820	385	83	39
F688A	F688AZZ1	VV	DD		16	18	18	4	5	1	1.1	0.20	0.20	1610	710	164	73
F698	F698ZZ1	VV	DD		19	22	22	6	6	1.5	1.5	0.30	0.30	2240	910	228	93
F689	F689ZZ	VV	DD	9	17	19	19	4	5	1	1.1	0.20	0.20	1330	665	136	68

注　（*1）外径、内径の実寸法を示します。
Notes　Actual dimensions of bore and outside diameter only.
（2）ステンレス品の基本動定格荷重は0.85掛けが目安となります。
The rough standard of basic dynamic load rating for stainless products would be15% less than the value appeared in the list.

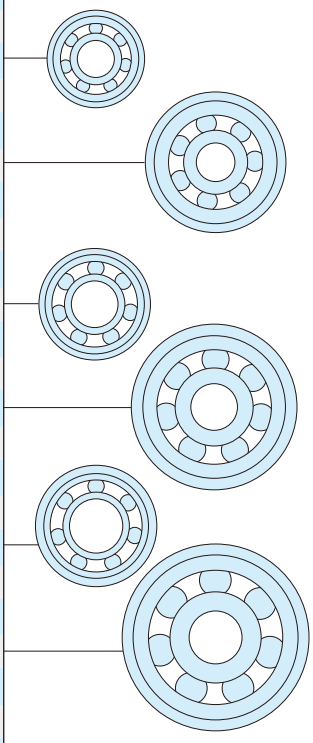






接触シール形
Contact sealed type
DD

許容回転数(min^{-1}) Limiting speeds(rpm) グリース潤滑 Grease 開放形 Open Z・ZZ	D・DD	油潤滑 Oil 開放形 Open Z	取付関係寸法(mm) Abutment and fillet dimensions d_a 最小 min	d_b 最大 max	r_a 最大 max	r_b 最大 max	質量(g)Mass (参考) (approx) 開放形 Open	シールド形 Shielded	呼び番号 Bearing numbers 開放形 Open	原寸図(*1) Actual size
53,000	—	63,000	5.8	—	0.10	—	0.33	—	**MF85**	
53,000	—	63,000	—	5.8	—	0.10	—	0.41	**MF85**	
50,000	—	60,000	6.2	6.0	0.15	0.15	0.59	0.66	**MF95**	
50,000	—	60,000	6.2	6.0	0.15	0.15	1.05	1.46	**MF105**	
45,000	—	53,000	6.2	6.2	0.15	0.15	1.37	2.18	**F685**	
43,000	40,000	50,000	6.6	6.6	0.20	0.20	2.79	2.84	**F695**	
40,000	38,000	50,000	6.6	6.9	0.20	0.20	3.90	3.85	**F605**	
36,000	32,000	43,000	7.0	7.5	0.30	0.30	5.37	5.30	**F625**	
32,000	30,000	40,000	7.0	8.5	0.30	0.30	9.49	9.49	**F635**	
45,000	—	53,000	7.2	7.0	0.15	0.10	0.65	0.77	**MF106**	
43,000	40,000	50,000	7.6	7.2	0.20	0.15	1.38	1.94	**MF126**	
40,000	38,000	50,000	7.2	7.4	0.15	0.15	2.25	3.04	**F686A**	
40,000	36,000	45,000	7.6	7.9	0.20	0.20	4.34	4.26	**F696**	
38,000	34,000	45,000	8.0	8.2	0.30	0.30	6.58	6.61	**F606**	
32,000	30,000	40,000	8.0	8.5	0.30	0.30	9.09	9.09	**F626**	
30,000	28,000	36,000	8.0	10.5	0.30	0.30	14.60	14.70	**F636**	
43,000	—	50,000	8.2	8.0	0.15	0.10	0.72	0.82	**MF117**	
40,000	—	48,000	8.6	9.0	0.20	0.15	1.70	2.23	**MF137**	
40,000	34,000	45,000	8.2	8.5	0.15	0.15	2.48	3.37	**F687**	
36,000	28,000	43,000	9.0	10.2	0.30	0.30	5.65	5.65	**F697**	
36,000	32,000	43,000	9.0	9.1	0.30	0.30	8.66	8.66	**F607**	
30,000	28,000	36,000	9.0	10.5	0.30	0.30	14.20	14.20	**F627**	
40,000	—	48,000	9.2	9.0	0.15	0.10	0.82	1.15	**MF128**	
38,000	32,000	45,000	9.6	9.2	0.20	0.15	2.09	2.39	**MF148**	
36,000	30,000	43,000	9.6	10.2	0.20	0.20	3.54	4.47	**F688A**	
36,000	28,000	43,000	10.0	10.0	0.30	0.30	8.35	8.30	**F698**	
36,000	24,000	43,000	10.6	11.5	0.20	0.20	3.97	4.91	**F689**	

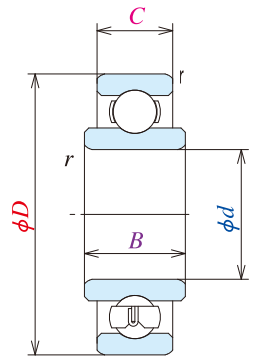


備考 Remarks
1.シール・シールド軸受を外輪回転でご使用の際は、ISCにご相談下さい。
When using bearings with a rotating outer ring,please contact ISC if they are shielded or sealed.
2.両シールド形の記載されている軸受については、片シールド軸受も製造しています。
Bearings with double shields (ZZ,ZZ1) are also available with single shields (Z,Z1).

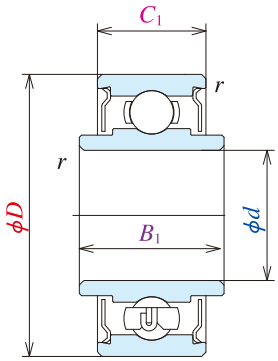
インチ系　内輪広幅形深溝玉軸受
Deep groove ball bearings with extended inner ring (Inch series)

RW 形
RW

内径　**1.016～9.525mm**
Bore diameter 1.016～9.525mm



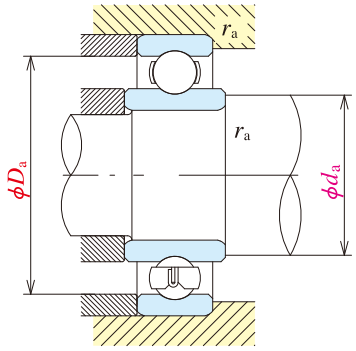
開放形
Open type

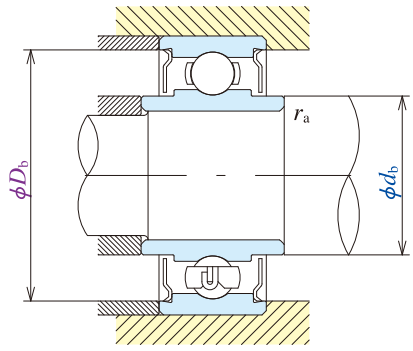


シールド形
Shielded type
ZZ

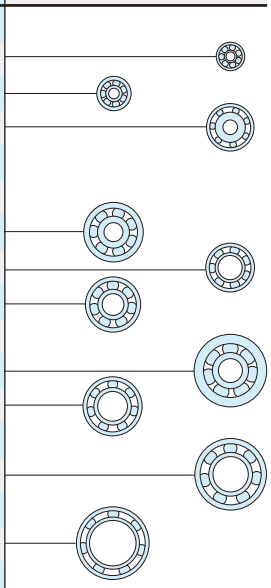
呼び番号 Bearing numbers		主要寸法（mm） Boundary dimensions							基本定格荷重 Basic load ratings			
開放形 Open	シールド形 Shielded	d	D	B	B_1	C	C_1	r 最小 min	(N) C_r	C_{or}	{kgf} C_r	C_{or}
RW09	**—**	**1.016**	3.175	1.984	—	1.191	—	0.10	80	23	8	2.5
RW0	**RW0ZZ**	**1.191**	3.967	2.380	3.175	1.588	2.380	0.10	138	35	14	3.5
RW1	**RW1ZZ**	**1.397**	4.762	2.779	3.571	1.984	2.779	0.10	231	66	24	6.5
RW1-4	**RW1-4ZZ**	**1.984**	6.350	3.175	4.366	2.380	3.571	0.10	310	108	32	11
RW133	**—**	**2.380**	4.762	2.380	—	1.588	—	0.10	188	60	19	6
—	**RW133ZZ**		4.762	—	3.175	—	2.380	0.10	143	52	15	5.5
RW1-5	**RW1-5ZZ**		7.938	3.571	4.366	2.779	3.571	0.15	550	175	56	18
RW144	**RW144ZZ**	**3.175**	6.350	3.175	3.571	2.380	2.779	0.10	283	95	29	9.5
RW2-5	**RW2-5ZZ**		7.938	3.571	4.366	2.779	3.571	0.10	560	179	57	18
RW2-6	**RW2-6ZZ**		9.525	3.571	4.366	2.779	3.571	0.15	640	225	65	23
RW2	**RW2ZZ**		9.525	4.762	4.762	3.967	3.967	0.30	630	218	64	22
RW155	**RW155ZZ**	**3.967**	7.938	3.571	3.967	2.779	3.175	0.10	360	149	37	15
RW156	**RW156ZZ**	**4.762**	7.938	3.571	3.967	2.779	3.175	0.10	360	149	37	15
RW166	**RW166ZZ**		9.525	3.967	3.967	3.175	3.175	0.10	710	270	73	28
RW3	**RW3ZZ**		12.700	4.762	5.771	3.967	4.978	0.30	1300	485	133	49
RW168B	**RW168BZZ**	**6.350**	9.525	3.967	3.967	3.175	3.175	0.10	420	204	43	21
RW188	**RW188ZZ**		12.700	3.967	5.558	3.175	4.762	0.15	1080	440	110	45
RW4B	**RW4BZZ**		15.875	5.771	5.771	4.978	4.978	0.30	1610	660	164	68
RW1810	**RW1810ZZ**	**7.938**	12.700	4.762	4.762	3.967	3.967	0.15	540	276	55	28

注　（*1）外径、内径の実寸法を示します。
Notes　Actual dimensions of bore and outside diameter only.
（2）ステンレス品の基本動定格荷重は0.85掛けが目安となります。
The rough standard of basic dynamic load rating for stainless products would be15% less than the value appeared in the list.





許容回転数(min^{-1}) Limiting speeds(rpm)		取付関係寸法(mm) Abutment and fillet dimensions					質量(g)Mass (参考) (approx)		呼び番号 Bearing numbers	原寸図(*1) Actual size
グリース潤滑 Grease 開放形 Open Z・ZZ	油潤滑 Oil 開放形 Open Z	d_a 最小 min	d_b 最大 max	D_a 最大 max	D_b 最小 min	r_a 最大 max	開放形 Open	シールド形 Shielded	開放形 Open	
130,000	150,000	1.9	—	2.3	—	0.10	0.05	—	**RW09**	
110,000	130,000	2.0	1.9	3.1	3.5	0.10	0.11	0.16	**RW0**	
90,000	110,000	2.2	2.3	3.9	4.1	0.10	0.17	0.25	**RW1**	
67,000	80,000	2.8	3.9	5.5	5.9	0.10	0.46	0.46	**RW1-4**	
80,000	95,000	3.2	—	3.9	—	0.10	0.12	—	**RW133**	
80,000	95,000	—	3.0	—	4.2	0.10	—	0.17	**RW133**	
60,000	71,000	3.6	4.1	6.7	7.0	0.15	0.63	0.73	**RW1-5**	
67,000	80,000	4.0	3.9	5.5	5.9	0.10	0.30	0.33	**RW144**	
60,000	67,000	4.0	4.3	7.1	7.3	0.10	0.74	0.74	**RW2-5**	
53,000	63,000	4.4	4.6	8.3	8.2	0.15	1.00	1.10	**RW2-6**	
56,000	67,000	5.2	4.8	7.5	8.0	0.30	1.40	1.30	**RW2**	
53,000	63,000	4.8	5.5	7.1	7.3	0.10	0.56	0.62	**RW155**	
53,000	63,000	5.6	5.5	7.1	7.3	0.10	0.44	0.49	**RW156**	
50,000	60,000	5.6	5.9	8.7	8.8	0.10	0.82	0.87	**RW166**	
43,000	53,000	6.8	6.5	10.7	11.2	0.30	2.33	2.90	**RW3**	
48,000	56,000	7.2	7.0	8.7	8.9	0.10	0.62	0.66	**RW168B**	
40,000	50,000	7.6	7.4	11.5	11.6	0.15	1.70	2.10	**RW188**	
38,000	45,000	8.4	8.4	13.8	13.8	0.30	4.72	4.62	**RW4B**	
40,000	48,000	9.2	9.0	11.5	11.6	0.15	1.90	1.60	**RW1810**	

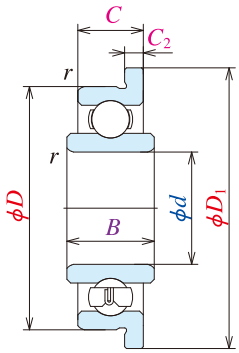


備考 Remarks
1.シールド軸受を外輪回転でご使用の際は、ISCにご相談下さい。
When using bearings with a rotating outer ring,please contact ISC if they are shielded.
2.両シールド形の記載されている軸受については、片シールド軸受も製造しています。
Bearings with double shields (ZZ,ZZ1) are also available with single shields (Z,Z1).

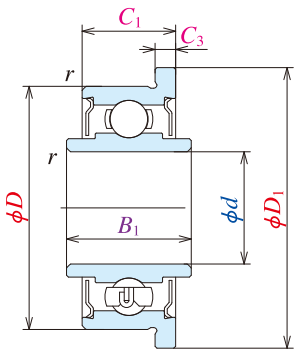
インチ系　フランジ付き内輪広幅形深溝玉軸受
Deep groove ball bearings with extended inner ring, flanged (Inch series)

FRW 形
FRW

内径　1.191～7.938mm
Bore diameter 1.191～7.938mm



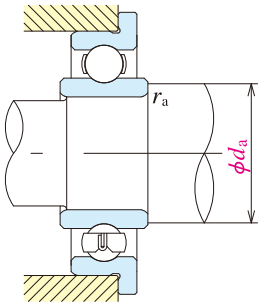
開放形
Open type

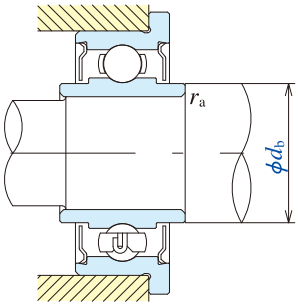


シールド形
Shielded type
ZZ

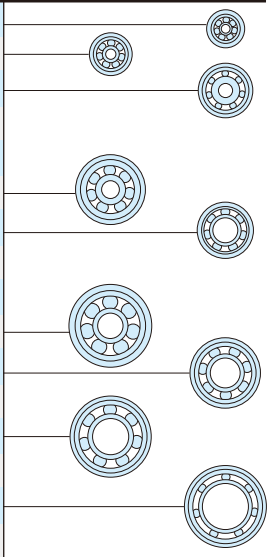
呼び番号 Bearing numbers		主要寸法(mm) Boundary dimensions										基本定格荷重 Basic load ratings			
												(N)		{kgf}	
開放形 Open	シールド形 Shielded	d	D	D_1	B	B_1	C	C_1	C_2	C_3	r 最小 min	C_r	C_{or}	C_r	C_{or}
FRW0	**FRW0ZZ**	**1.191**	3.967	5.156	2.380	3.175	1.588	2.380	0.330	0.790	0.10	138	35	14	3.5
FRW1	**FRW1ZZ**	**1.397**	4.762	5.944	2.779	3.571	1.984	2.779	0.580	0.790	0.10	231	66	24	6.5
FRW1-4	**FRW1-4ZZ**	**1.984**	6.350	7.518	3.175	4.366	2.380	3.571	0.580	0.790	0.10	310	108	32	11
FRW133	**—**	**2.380**	4.762	5.944	2.380	—	1.588	—	0.460	—	0.10	188	60	19	6
—	**FRW133ZZ**		4.762	5.944	—	3.175	—	2.380	—	0.790	0.10	143	52	15	5.5
FRW1-5	**FRW1-5ZZ**		7.938	9.119	3.571	4.366	2.779	3.571	0.580	0.790	0.15	550	175	56	18
FRW144	**FRW144ZZ**	**3.175**	6.350	7.518	3.175	3.571	2.380	2.779	0.580	0.790	0.10	283	95	29	9.5
FRW2-5	**FRW2-5ZZ**		7.983	9.119	3.571	4.366	2.779	3.571	0.580	0.790	0.10	560	179	57	18
FRW2-6	**FRW2-6ZZ**		9.525	10.719	3.571	4.366	2.779	3.571	0.580	0.790	0.15	640	225	65	23
FRW2	**FRW2ZZ**		9.525	11.176	4.762	4.762	3.967	3.967	0.760	0.760	0.30	630	218	64	22
FRW155	**FRW155ZZ**	**3.967**	7.938	9.119	3.571	3.967	2.779	3.175	0.580	0.910	0.10	360	149	37	15
FRW156	**FRW156ZZ**	**4.762**	7.938	9.119	3.571	3.967	2.779	3.175	0.580	0.910	0.10	360	149	37	15
FRW166	**FRW166ZZ**		9.525	10.719	3.967	3.967	3.175	3.175	0.580	0.790	0.10	710	270	73	28
FRW3	**FRW3ZZ**		12.700	14.351	4.762	5.771	3.967	4.978	1.070	1.070	0.30	1300	485	133	49
FRW168B	**FRW168BZZ**	**6.350**	9.525	10.719	3.967	3.967	3.175	3.175	0.580	0.910	0.10	420	204	43	21
FRW188	**FRW188ZZ**		12.700	13.894	3.967	5.558	3.175	4.762	0.580	1.140	0.15	1080	440	110	45
FRW4B	**FRW4BZZ**		15.875	17.526	5.771	5.771	4.978	4.978	1.070	1.070	0.30	1610	660	164	68
FRW1810	**—**	**7.938**	12.700	13.894	4.762	4.762	3.967	3.967	0.790	0.790	0.15	540	276	55	28

注　(*1) 外径、内径の実寸法を示します。
Notes　Actual dimensions of bore and outside diameter only.
(2) ステンレス品の基本動定格荷重は0.85掛けが目安となります。
The rough standard of basic dynamic load rating for stainless products would be15% less than the value appeared in the list.





許容回転数 (min^{-1}) Limiting speeds(rpm)		取付関係寸法 (mm) Abutment and fillet dimensions			質量(g)Mass (参考) (approx)		呼び番号 Bearing numbers	原寸図(*1) Actual size
グリース潤滑 Grease 開放形 Open Z・ZZ	油潤滑 Oil 開放形 Open Z	d_a 最小 min	d_b 最大 max	r_a 最大 max	開放形 Open	シールド形 Shielded	開放形 Open	
110,000	130,000	2.0	1.9	0.10	0.14	0.19	**FRW0**	
90,000	110,000	2.2	2.3	0.10	0.24	0.32	**FRW1**	
67,000	80,000	2.8	3.9	0.10	0.59	0.59	**FRW1-4**	
80,000	95,000	3.2	—	0.10	0.17	—	**FRW133**	
80,000	95,000	—	3.0	0.10	—	0.22	**FRW133**	
60,000	71,000	3.6	4.1	0.15	0.83	0.93	**FRW1-5**	
67,000	80,000	4.0	3.9	0.10	0.44	0.47	**FRW144**	
60,000	67,000	4.0	4.3	0.10	0.93	0.93	**FRW2-5**	
53,000	63,000	4.4	4.6	0.15	1.30	1.40	**FRW2-6**	
56,000	67,000	5.2	4.8	0.30	1.80	1.70	**FRW2**	
53,000	63,000	4.8	5.5	0.10	0.73	0.79	**FRW155**	
53,000	63,000	5.6	5.5	0.10	0.58	0.63	**FRW156**	
50,000	60,000	5.6	5.9	0.10	1.20	1.20	**FRW166**	
43,000	53,000	6.8	6.5	0.30	3.10	3.20	**FRW3**	
48,000	56,000	7.2	7.0	0.10	0.70	0.79	**FRW168B**	
40,000	50,000	7.6	7.4	0.15	2.10	2.50	**FRW188**	
38,000	45,000	8.4	8.4	0.30	5.08	4.98	**FRW4B**	
40,000	48,000	9.2	9.0	0.15	2.30	2.10	**FRW1810**	

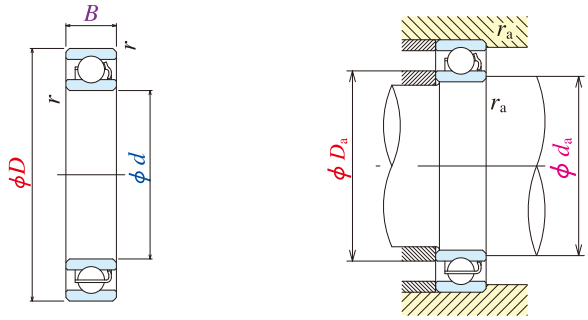


備考 Remarks
1.シールド軸受を外輪回転でご使用の際は、ISCにご相談下さい。
When using bearings with a rotating outer ring,please contact ISC if they are shielded.
2.両シールド形の記載されている軸受については、片シールド軸受も製造しています。
Bearings with double shields (ZZ,ZZ1) are also available with single shields (Z,Z1).

メートル系　薄肉形深溝玉軸受
Extra-thin-section deep groove ball bearings (Metric series)

SMT 形
SMT

内径　10～15mm
Bore diameter 10～15mm



呼び番号 Bearing numbers	主要寸法(mm) Boundary dimensions d	D	B	r 最小 min	基本定格荷重 Basic load ratings (N) C_r	C_{or}	{kgf} C_r	C_{or}
SMT1510	10	15	3	0.15	815	410	83	42
SMT2015	15	20	3.5	0.15	800	470	82	48

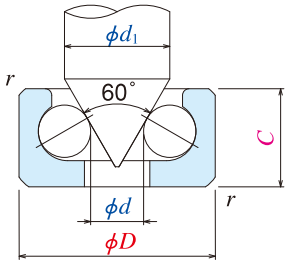
呼び番号 Bearing numbers	許容回転数(min-1) Limiting speeds(rpm) グリース潤滑 Grease 開放形 Open	油潤滑 Oil 開放形 Open	取付関係寸法(mm) Abutment and fillet dimensions d_a 最小 min	D_a 最大 max	r_a 最大 max	質量(g) Mass (参考) (approx)
SMT1510	36,000	43,000	11.2	13.8	0.15	1.40
SMT2015	30,000	36,000	16.2	18.8	0.15	2.20

備考 Remarks
1.薄肉形単列深溝玉軸受の材料はステンレス鋼を標準としている。 These bearings are made of stainless steel.
2.適用する精度等級はJIS　0級及び6級である。 The tolerance classes for this type of bearing are normal and class 6..
3.ラジアルすきまはJISを適用している。 The radial internal clearance for this type of bearing is specified by ISO 5593 Rolling bearings-Radial internal clearance.

ピボット玉軸受
Pivot ball bearings

BCF 形
BCF

内径 0.81～8.12mm
Bore diameter 0.81～8.12mm

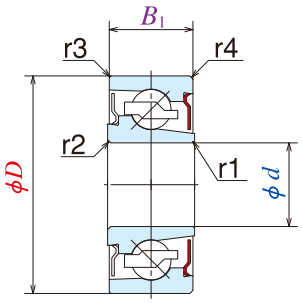


呼び番号 Bearing numbers	主要寸法(mm) Boundary dimensions d	D	C	r 最小 min	基本定格荷重 Basic load ratings (N) C_r	C_{or}	{kgf} C_r	C_{or}	最小軸径 Min. shaft dia. d_1
BCF3	0.81	3	1.5	0.1	31	7	3	0.5	1
BCF4X	1.31	4	2.2	0.15	57	13	6	1.5	1.5
BCF5	1.58	5	2.4	0.15	79	19	8	2	1.8
BCF6	1.60	6	2.5	0.15	107	27	11	3	1.9
BCF7	2.09	7	3	0.2	131	34	13	3.5	2.3
BCF8	2.40	8	3.5	0.3	222	62	23	6.5	2.7
BCF9	3.13	9	3.5	0.2	273	75	28	7.5	3.5
BCF10	3.13	10	4	0.2	460	75	28	7.5	3.5
BCF12	4.18	12	4.5	0.2	430	134	47	14	4.6
BCF12X	6.09	12	3.5	0.2	535	130	54	13	6.8
BCF13	5.16	13	4.5	0.2	535	159	54	16	5.7
BCF14	6.13	14	4.5	0.3	600	183	61	19	6.8
BCF16	8.12	16	4.5	0.3	720	232	73	24	9

注 Notes
(1) ステンレス品の基本動定格荷重は0.85掛けが目安となります。
The rough standard of basic dynamic load rating for stainless products would be15% less than the value appeared in the list.

ミニチュアスラストアンギュラ玉軸受（クロクシー）
Miniature Thrust Angular Contact Ball Bearings

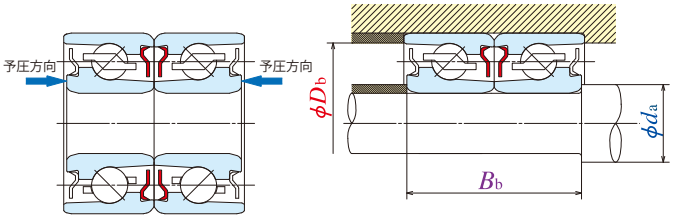
内径　2～8mm
Bore diameter 2～8mm



呼び番号	主要寸法(mm) d	D	B1 外輪幅	r1	r2	r3	r4	基本定格荷重(N) アキシアル 動定格荷重Ca SUJ2	ステンレス	静定格荷重Coa SUJ2	ステンレス	ラジアル 動定格荷重Cr SUJ2	ステンレス	静定格荷重Cor SUJ2	ステンレス	許容アキシアル荷重(N)	許容回転数(min-1)
				面取り(最小)													
MTA02-06	2	6	3	0.1	0.1	0.04	0.1	555	470	450	360	288	245	92	75	87	26,000
MTA03-08	3	8	4	0.1	0.1	0.03	0.1	960	820	840	670	480	410	172	138	164	22,000
MTA04-11	4	11	4.5	0.2	0.2	0.1	0.2	1470	1250	1410	1130	745	635	282	227	464	17,000
MTA05-13	5	13	5	0.2	0.2	0.1	0.2	2090	1777	2170	1740	1080	915	440	355	549	16,000
MTA06-15	6	15	5.5	0.2	0.2	0.2	0.2	2760	2350	2950	2360	1390	1180	580	465	854	14,000
MTA08-19	8	19	6.5	0.2	0.2	0.3	0.3	4000	3400	4350	3480	2030	1730	870	700	1520	13,000

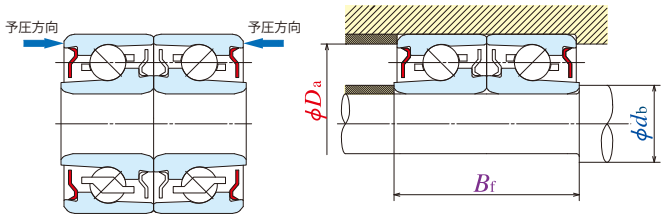
※許容アキアシル荷重: 乗り上げ荷重もしくはブリネル圧痕が発生する荷重

DB組合せ



内輪予圧(ブロンズ色を合わせる)

DF組合せ



外輪予圧(シルバー色を合わせる)

	組合せ DB組合せ(mm) 取り付け部 軸φda最小	ハウジング φDb最大	組合せ 内輪幅Bb	DF組合せ(mm) 取り付け部 軸φdb最小	ハウジング φDa最大	組合せ 内輪幅Bf	アキシアル剛性 (N/μm)	セット質量(参考) (g)	推奨予圧 (N)	締付けトルク(N・cm) DB組合せ	DF組合せ
MTA02-06	3.0	5.3	5.80	2.8	5.0	6.20	21	0.8	7	7	20
MTA03-08	4.4	7.2	7.72	3.9	6.7	8.28	28	1.7	12	7	50
MTA04-11	6.2	9.5	8.60	5.1	8.9	9.40	39	3.7	20	10	50
MTA05-13	7.2	11.3	9.60	6.1	10.8	10.40	52	5.5	34	25	50
MTA06-15	8.6	13.2	10.50	7.2	12.5	11.50	60	7.7	45	30	80
MTA08-19	11.4	16.8	12.36	9.4	15.8	13.64	76	14.0	70	60	80

MTA シリーズ　呼び番号構成
MTA Series Bearing Number Formulation

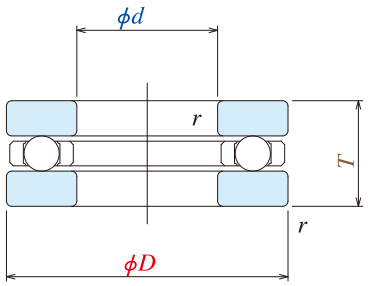
MTA | 04 | － | 11 | -H-26 | T21 | Z2ZB | CG75 | P5 | DB | EA7L

- MTA：ミニチュア・スラスト・アンギュラ Miniature・Thrust・Angular
- 04：内径寸法 Inner Diameter
- 11：外径寸法 Outer Diameter
- -H-26：材料記号 Material Symbol
- T21：保持器記号 Cage Type
- Z2ZB：シールド板記号 Seal Type
- CG75：ラジアルすきま Radial Clearance
- P5：精度記号 Accuracy Class
- DB：組合せ記号(DB・DF) Matching Type
- EA7L：潤滑剤記号 Lubrication Symbol

スラスト玉軸受
Thrust ball bearings

F 形
F

内径 2～10mm
Bore diameter 2～10mm

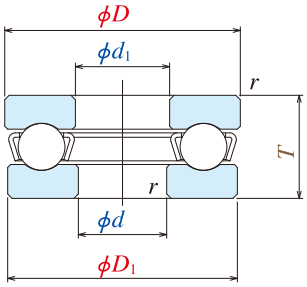


呼び番号 Bearing numbers	主要寸法(mm) Boundary dimensions				質量 Mass (参考)	基本定格荷重 Basic load ratings			
	d	D	T	r 最小 min		(N) C_a	C_{oa}	{kgf} C_a	C_{oa}
F 2-6	2	6	3.0	0.1	0.49	143	83	15	8.5
F 2x-7	2.5	7	3.5	0.1	0.81	199	120	20	12
F 3-8	3	8	3.5	0.15	1.21	212	140	22	14
F 4-9	4	9	4.0	0.15	1.37	221	160	22	16
F 4-10	4	10	4.5	0.15	1.93	355	245	36	25
F 5-11	5	11	4.5	0.15	2.22	340	245	35	25
F 6-12	6	12	4.5	0.15	2.48	390	315	40	32
F 7-15	7	15	5.0	0.2	4.22	795	630	81	64
F 8-16	8	16	5.0	0.2	4.81	535	445	55	45
F 9-17	9	17	5.0	0.2	4.99	815	710	83	72
F 10-18	10	18	5.5	0.2	6.01	800	710	81	72

溝付きスラスト玉軸受
Thrust ball bearings with groove

F-M 形
F-M

内径 3.2～10.2mm
Bore diameter 3.2～10.2mm



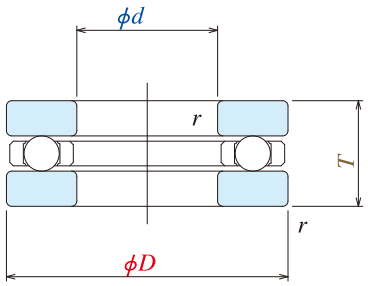
呼び番号 Bearing numbers	主要寸法(mm) Boundary dimensions						質量 Mass (参考)	基本定格荷重 Basic load ratings			
	d	d_1	D	D_1	T	r 最小 min		(N) C_a	C_{oa}	{kgf} C_a	C_{oa}
F3-7M	3	3.2	7	6.8	3	0.05	0.47	497	440	51	45
F3-8M	3	3.2	8	7.8	3.5	0.05	0.86	859	771	88	79
F4-9M	4	4.2	9	8.8	4	0.05	1.12	816	771	83	79
F4-10M	4	4.2	10	9.8	4	0.1	1.47	799	771	82	79
F5-10M	5	5.2	10	9.8	4	0.1	1.33	1025	1156	105	118
F5-12M	5	5.2	12	11.8	4	0.1	2.05	912	1028	93	105
F6-12M	6	6.2	12	11.8	4.5	0.15	2.16	1579	1835	161	187
F6-14M	6	6.25	14	13.8	5	0.15	3.53	1883	2023	192	206
F7-15M	7	7.2	15	14.8	5.5	0.15	4.10	3484	4128	356	421
F7-17M	7	7.2	17	16.8	6	0.15	6.41	2645	3146	270	321
F8-19M	8	8.2	19	18.8	7	0.2	9.27	3399	4110	347	419
F9-17M	9	9.2	17	16.8	5	0.2	4.05	3313	4128	338	421
F9-20M	9	9.2	20	19.8	7	0.2	9.92	3327	4110	340	419
F10-20M	10	10.2	20	19.8	6.5	0.15	8.45	4707	6243	480	637

注　(1) ステンレス品の基本動定格荷重は0.85掛けが目安となります。
Notes　The rough standard of basic dynamic load rating for stainless products would be15% less than the value appeared in the list.

スラスト玉軸受
Thrust ball bearings

F 形
F

内径 2～10mm
Bore diameter 2～10mm

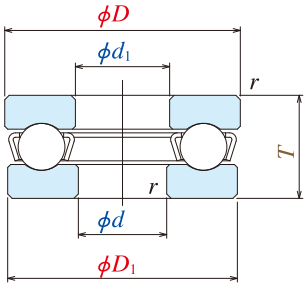


呼び番号 Bearing numbers	主要寸法(mm) Boundary dimensions				質量 Mass (参考)	基本定格荷重 Basic load ratings			
	d	D	T	r 最小 min		(N) C_a	C_{oa}	{kgf} C_a	C_{oa}
F 2-6	2	6	3.0	0.1	0.49	143	83	15	8.5
F 2x-7	2.5	7	3.5	0.1	0.81	199	120	20	12
F 3-8	3	8	3.5	0.15	1.21	212	140	22	14
F 4-9	4	9	4.0	0.15	1.37	221	160	22	16
F 4-10	4	10	4.5	0.15	1.93	355	245	36	25
F 5-11	5	11	4.5	0.15	2.22	340	245	35	25
F 6-12	6	12	4.5	0.15	2.48	390	315	40	32
F 7-15	7	15	5.0	0.2	4.22	795	630	81	64
F 8-16	8	16	5.0	0.2	4.81	535	445	55	45
F 9-17	9	17	5.0	0.2	4.99	815	710	83	72
F 10-18	10	18	5.5	0.2	6.01	800	710	81	72

溝付きスラスト玉軸受
Thrust ball bearings with groove

F-M 形
F-M

内径 3.2～10.2mm
Bore diameter 3.2～10.2mm



呼び番号 Bearing numbers	主要寸法(mm) Boundary dimensions						質量 Mass (参考)	基本定格荷重 Basic load ratings			
	d	d_1	D	D_1	T	r 最小 min		(N) C_a	C_{oa}	{kgf} C_a	C_{oa}
F3-7M	3	3.2	7	6.8	3	0.05	0.47	497	440	51	45
F3-8M	3	3.2	8	7.8	3.5	0.05	0.86	859	771	88	79
F4-9M	4	4.2	9	8.8	4	0.05	1.12	816	771	83	79
F4-10M	4	4.2	10	9.8	4	0.1	1.47	799	771	82	79
F5-10M	5	5.2	10	9.8	4	0.1	1.33	1025	1156	105	118
F5-12M	5	5.2	12	11.8	4	0.1	2.05	912	1028	93	105
F6-12M	6	6.2	12	11.8	4.5	0.15	2.16	1579	1835	161	187
F6-14M	6	6.25	14	13.8	5	0.15	3.53	1883	2023	192	206
F7-15M	7	7.2	15	14.8	5.5	0.15	4.10	3484	4128	356	421
F7-17M	7	7.2	17	16.8	6	0.15	6.41	2645	3146	270	321
F8-19M	8	8.2	19	18.8	7	0.2	9.27	3399	4110	347	419
F9-17M	9	9.2	17	16.8	5	0.2	4.05	3313	4128	338	421
F9-20M	9	9.2	20	19.8	7	0.2	9.92	3327	4110	340	419
F10-20M	10	10.2	20	19.8	6.5	0.15	8.45	4707	6243	480	637

注　(1) ステンレス品の基本動定格荷重は0.85掛けが目安となります。
Notes　The rough standard of basic dynamic load rating for stainless products would be15% less than the value appeared in the list.

CASSTOP

Available for Chemical Solution
Environment Ranged from pH3～pH12

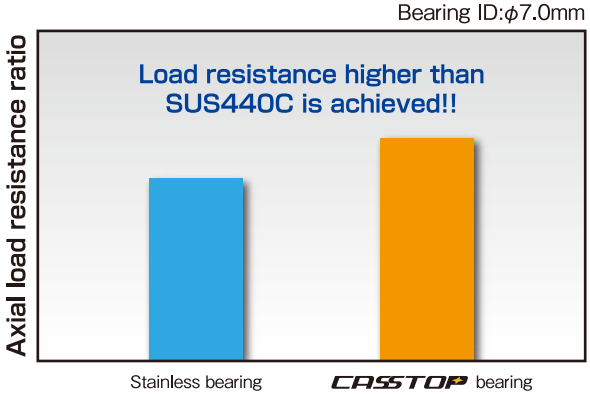
CASSTOP

High corrosion resistance bearing made by newly developed higher corrosion resistance martensitic stainless steel:TBN-6H. The material performs an epoch-making high corrosion resistance and high load resistance.

Applications

◎Machinery with salt water environment (Sea crafts, various equipment at port location, fishing tools)
◎Machinery used in outside
◎Environment with antiseptic solution
◎Fan motor for special environment
◎Environment with pH3～pH12 chemical solution (Medical equipment, food processing equipment)

Load Resistance rate fo CASSTOP



A MEMBER OF NSK GROUP
ISC
MINIATURE BALL BEARINGS

Characteristics

Much higher corrosion resistance over SUS440C is achieved by the optimum addition of four chemical elements and fine adjustment on the content of other minimal elements.
Moreover, innovative heat treatment technology gives this material a hardness of HRC59. Optimum internal design also enable this material to carry same or higher load resistance than SUS440C.
CASSTOP provides you higher stability and longer life to various machineries which are used in the environment such as salt water, rain and alkali.

Part Number	Boundary dimensions (mm)		
	Inner diameter	Outer diameter	Width
692A-H-X1ZZ	2	6	3
SMR63A2-H-X1ZZ	3	6	2.5
693A10-H-X1ZZ		8	4
623A3-H-X1ZZ		10	4
SMR74A2-H-X1ZZ	4	7	2.5
SMR84A1-H-X1ZZ		8	3
SMR104B-H-X1ZZ		10	4
694A1-H-X1ZZ		11	4
604A2-H-X1ZZ		12	4
624A5-H-X1ZZ		13	4
SMR85A12-H-X1ZZ	5	8	2.5
SMR95A5-H-X1ZZ		9	3
SMR105A2-H-X1ZZ		10	4
SMR115B-H-X1ZZ		11	4
695A12-H-X1ZZ		13	4
625A6-H-X1ZZ1		16	5
SMR106A4-H-X1ZZ	6	10	3
SMR126A4-H-X1ZZ		12	4
686A6-H-X1ZZ		13	5
696A6-H-X1ZZ		15	5
606-H-X1ZZ		17	6
626B-H-X1ZZ1		19	6
SMR117A-H-X1ZZ	7	11	3
SMR137B-H-X1ZZ		13	4
687A5-H-X1ZZ		14	5
697A2-H-X1ZZ		17	5
607B-H-X1ZZ		19	6
SMR128A5-H-X1ZZ	8	12	3.5
SMR148A2-H-X1ZZ		14	4
698-H-X1ZZ		19	6
689A3-H-X1ZZ	9	17	5

Corrosion Resistance Data for New Material:TBN-6H

Conducted at Nagano Prefecture Industrial Center

◎Salt spray test

Condition :
Sodium chloride (Den.=50±5g/ℓ)
ph=6.5～7.2
Temp.: 35℃±2℃ 10days

Anti-corrosion Bearing CASSTOP

SUS440C

SUJ2

◎CASS Test

Condition :
Sodium chloride (Den.=50±5g/ℓ)
Copper chloride (Ⅱ)
(Den.=0.205±0.015g/ℓ)
ph=3.1～3.3
Temp.: 50℃±2℃ 10days

Anti-corrosion Bearing CASSTOP

SUS440C

SUJ2

NSK Micro Precision Co., Ltd.
http://www.nskmicro.co.jp/english (Please visit our English site for details)
Head office/Sales Division Headquarters
6F, Hirose Building, 3-17, Kanda-Nishikicho, Chiyoda-ku, Tokyo 101-0054 Japan
Tel:+81-3-5283-7420 Fax:+81-3-5259-0882
Osaka Sales Office
301 Wakita-Tenmabashi Building, 2-13, Tenmabashi-Kyoumachi,
Chuo-ku, Osaka-shi, Osaka 540-0032 Japan
Tel:+81-6-6942-0858 Fax:+81-6-6942-9113
Matsumoto Sales Office
2953 Moto-ojima, Matsukawa-machi, Shimonina-gun, Nagano 399-3303 Japan
Tel:+81-265-48-6022 Fax:+81-265-48-6023

※Contents may be revised without prior notice

ISC
MINIATURE BALL BEARINGS

High Precision Dental Bearing

Ultra High Speed, Low Vibration Dental Bearing

ISC dental bearing performs exceptionally as the critical part for dental hand piece in which super high precision and ultra high speed rotation are required.

Features

- 450,000min^{-1} ～ up to 500,000min^{-1}
- Higher anti-corrosion has been achieved with newly developed material (ES-1)
- Torlon cage sustains higher stability against autoclave.
- Available with ceramic balls

Standard (Unit:mm)

Bearing Number	Boundary Dimensions				
	d	D	B	D_1	C
SR144X10Ah26T52YZS	3.175	6.350	2.779	-	-
SR144X12Ah26T52CZS	3.175	6.350	2.380	-	-
SFR144X10Ah26T52YZS	3.175	6.350	2.779	7.518	0.787
SFR144X12Ah26T52CZS	3.175	6.350	2.380	7.518	0.584

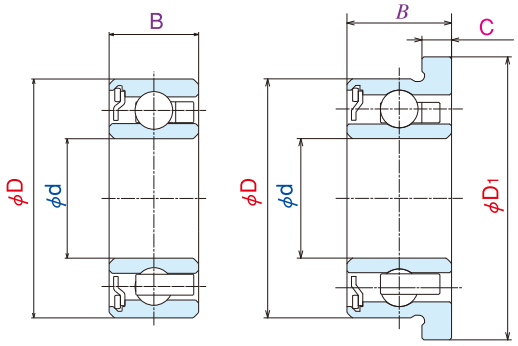
Customized

Bearing Number	Boundary Dimensions				
	d	D	B	D_1	C
SFR144X010Ah26T52YZS	3.175	6.350	2.779	7.518	0.450
SR144X11h26T52CZS	3.175	6.350	2.779	-	-

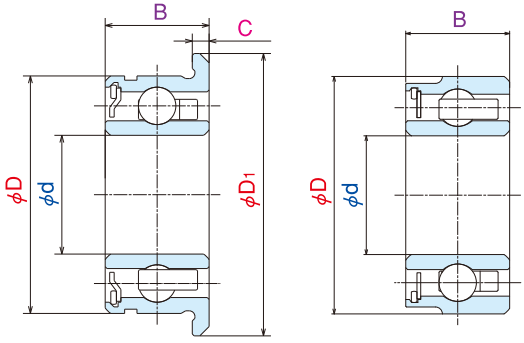
*Please consult with ISC for special dimensions and materials

Straight Type

Flange Type



Standard Types



Customized Types

NSK Micro Precision Co., Ltd.

http://www.nskmicro.co.jp/english (Please visit our English site for details)

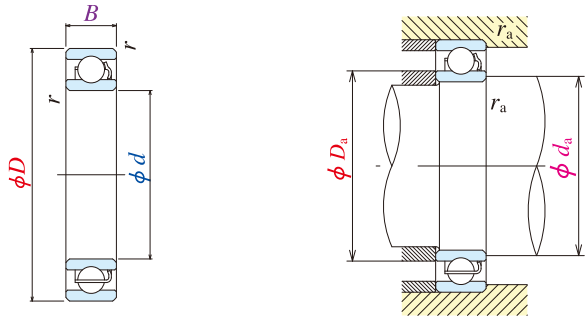
Head office/Sales Division Headquarters
No.1202, Nippon Building, 2-6-2 Otemachi, Chiyoda-ku, Tokyo 100-0004 Japan
Tel: +81-3-3270-2431 Fax: +81-3-3245-1372
Osaka Sales Office
301 Wakita-Tenmabashi Building, 2-13, Tenmabashi-Kyoumachi,
Chuo-ku, Osaka-shi, Osaka 540-0032 Japan
Tel: +81-6-6942-0858 Fax: +81-6-6941-9113
Matsumoto Sales Office
2953 Moto-oshima, Matsukawa-cho, Shimoina-gun, Nagano 399-3303 Japan
Tel: +81-265-48-6022 Fax: +81-265-48-6023

※Contents may be revised without prior notice.

メートル系　薄肉形深溝玉軸受
Extra-thin-section deep groove ball bearings (Metric series)

SMT 形
SMT

内径　10～15mm
Bore diameter 10～15mm



呼び番号 Bearing numbers	主要寸法(mm) Boundary dimensions d	D	B	r 最小 min	基本定格荷重 Basic load ratings (N) C_r	C_{or}	{kgf} C_r	C_{or}
SMT1510	10	15	3	0.15	815	410	83	42
SMT2015	15	20	3.5	0.15	800	470	82	48

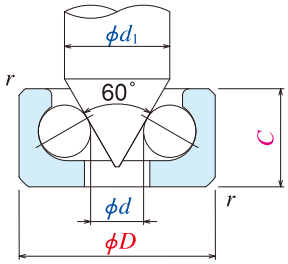
呼び番号 Bearing numbers	許容回転数(min-1) Limiting speeds(rpm) グリース潤滑 Grease 開放形 Open	油潤滑 Oil 開放形 Open	取付関係寸法(mm) Abutment and fillet dimensions d_a 最小 min	D_a 最大 max	r_a 最大 max	質量(g) Mass (参考) (approx)
SMT1510	36,000	43,000	11.2	13.8	0.15	1.40
SMT2015	30,000	36,000	16.2	18.8	0.15	2.20

備考 Remarks
1.薄肉形単列深溝玉軸受の材料はステンレス鋼を標準としている。 These bearings are made of stainless steel.
2.適用する精度等級はJIS　0級及び6級である。 The tolerance classes for this type of bearing are normal and class 6..
3.ラジアルすきまはJISを適用している。 The radial internal clearance for this type of bearing is specified by ISO 5593 Rolling bearings-Radial internal clearance.

ピボット玉軸受
Pivot ball bearings

BCF 形
BCF

内径 0.81～8.12mm
Bore diameter 0.81～8.12mm



呼び番号 Bearing numbers	主要寸法(mm) Boundary dimensions d	D	C	r 最小 min	基本定格荷重 Basic load ratings (N) C_r	C_{or}	{kgf} C_r	C_{or}	最小軸径 Min. shaft dia. d_1
BCF3	0.81	3	1.5	0.1	31	7	3	0.5	1
BCF4X	1.31	4	2.2	0.15	57	13	6	1.5	1.5
BCF5	1.58	5	2.4	0.15	79	19	8	2	1.8
BCF6	1.60	6	2.5	0.15	107	27	11	3	1.9
BCF7	2.09	7	3	0.2	131	34	13	3.5	2.3
BCF8	2.40	8	3.5	0.3	222	62	23	6.5	2.7
BCF9	3.13	9	3.5	0.2	273	75	28	7.5	3.5
BCF10	3.13	10	4	0.2	460	75	28	7.5	3.5
BCF12	4.18	12	4.5	0.2	430	134	47	14	4.6
BCF12X	6.09	12	3.5	0.2	535	130	54	13	6.8
BCF13	5.16	13	4.5	0.2	535	159	54	16	5.7
BCF14	6.13	14	4.5	0.3	600	183	61	19	6.8
BCF16	8.12	16	4.5	0.3	720	232	73	24	9

注 Notes
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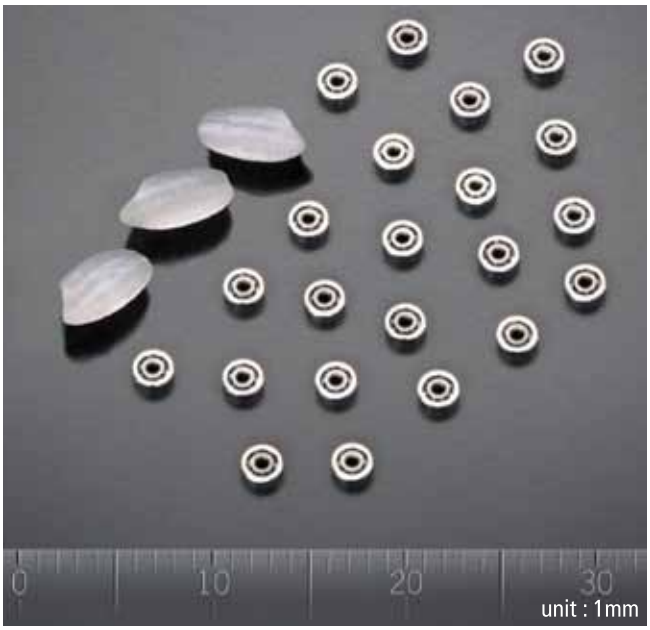
The rough standard of basic dynamic load rating for stainless products would be15% less than the value appeared in the list.

ISC
MINIATURE BALL BEARINGS

The world's smallest miniature ball bearing

Succeeded in Manufacturing the World's Smallest Radial Deep Groove Ball Bearing



Recommended applications

◎**Extra small machinery unit**

Features

- **Super high precision low noise bearing**
- **Satisfies international standard of AFBMA ABEC-5 (JIS P5 class)**

No.	B0.6-1h26
Outside diameter	ϕ2.0 mm (0.0787 in.)
Bore diameter	ϕ0.6 mm (0.0236 in.)
Width	ϕ0.8 mm (0.0314 in.)
Ball diameter	ϕ0.3 mm (0.0118 in.) x 7 pieces
Material	ϕMartensitic Stainless steel

2005.11.10

ISC employee honored and awarded "A person of prominent skill"(A modern master craftsperson) by Ministry of Health, Labour and Welfare. Details are as follows

Reason
He has been engaged solely for the groove grinding and its super finish process, those of which are the most important process of miniature ball bearing for applications like motors and computers. He has established a process method for super precision ultra small bearing, which used to be considered as nearly impossible. With his prominent skill, he managed to produce the world's smallest ball bearing*(OD: 2mm, ID: 0.6mm) and have made a breakthrough for size minimization for application such as IT and medical field.
*:as of 2005/11

A person of prominent skill(A modern master craftsperson)commendation
Denomination: A person of prominent skill(A modern master craftsperson)commendation (commended by Minister of Health, Labour and Welfare)
Aim: To infiltrate the respect to a prominent manufacturing skill and also to aim the uplift of the position of skilled worker and skill standard as well, this award had been founded, also to raise the motivation to become a devoted worker in the skilled manufacturing fields

2006.11.03

ISC employee honored and awarded "the Medal with a Yellow Ribbon (for industriousness)", on Fall, 2006.Details are as follows

Reason
By being admitted that the processing technique of the world's smallest ball bearing was established in last summer, he has been awarded the Medal with a Yellow Ribbon (for industriousness), followed by the award of a person of prominent skill(A modern master craftsperson) by Ministry of Health, Labour and Welfare in Fall, 2006.

A Medal with a Yellow Ribbon commendation
Aim: An individual or the group with prominent achievement on the field of society, public and culture are commended with the medal of honor. Founded on 1955 along with the privilege system revision, the Medal with a Yellow Ribbon has been awarded to an individual or group who is diligent for duties, and is considered as a person/group of role model. With the privilege system revision on 2003, the award has been intended additionally, in order to increase the number of award winner, to the "the person who is diligent for duties in the first line and holds a prominent skill and technological achievement that should be a role model for others.

NSK Micro Precision Co., Ltd.

http://www.nskmicro.co.jp/english (Please visit our English site for details)

Head office/Sales Division Headquarters
No.1202, Nippon Building, 2-6-2 Otemachi, Chiyoda-ku, Tokyo 100-0004 Japan
Tel: +81-3-3270-2431 Fax: +81-3-3245-1372
Osaka Sales Office
301 Wakita-Tenmabashi Building, 2-13, Tenmabashi-Kyoumachi, Chuo-ku, Osaka-shi, Osaka 540-0032 Japan
Tel: +81-6-6942-0858 Fax: +81-6-6941-9113
Matsumoto Sales Office
2953 Moto-oshima, Matsukawa-cho, Shimoina-gun, Nagano 399-3303 Japan
Tel: +81-265-48-6022 Fax: +81-265-48-6023

※Contents may be revised without prior notice.