

SMT

AISI 440C
STAINLESS STEEL
BALL BEARINGS



SMT STAINLESS STEEL BALL BEARINGS

Resistant to Corrosion and High Temperature

As the performance level of precision machinery has risen, the range the applications using ball bearings has become broader, and the demand for higher performance and durability of bearings has increased. Industrial needs for ball bearings having high anti-corrosion technology and the ability to withstand fierce conditions while maintaining the preciseness of ball bearings originally required have also increased. "SMT" brand stainless steel ball bearings are the products to comply with present industrial needs.

■ Special Features

1. High resistance to corrosion
2. High stability in high temperature

● Recommended temperature range

ZZ type	-40 ~ +150°C / -40 ~ +302°F
2RS type	-30 ~ +110°C / -22 ~ +230°F
Open type	Subject to lubrication

3. High resistance to chemicals

■ Materials

AISI 440C martensitic stainless steel is used for inner rings, outer rings and balls. AISI 304 austenitic stainless steel is used for retainers, metal shields, and snaprings. Standard material of rubber seals is nitrile butadiene rubber (NBR), and other materials such as fluorinated rubber, etc. are available upon request. As for balls, ceramic balls (Si3N4) are also available.

*AISI 440C stainless steel is magnetized steel.

■ Preciseness

Dimension tolerance and rotational precision grade over ISO Normal Class or ABMA (used to be AFBMA) ABEC-1 is guaranteed. ISO Class 6 or ABEC-3 and ISO Class 5 or ABEC-5 are also available upon request.

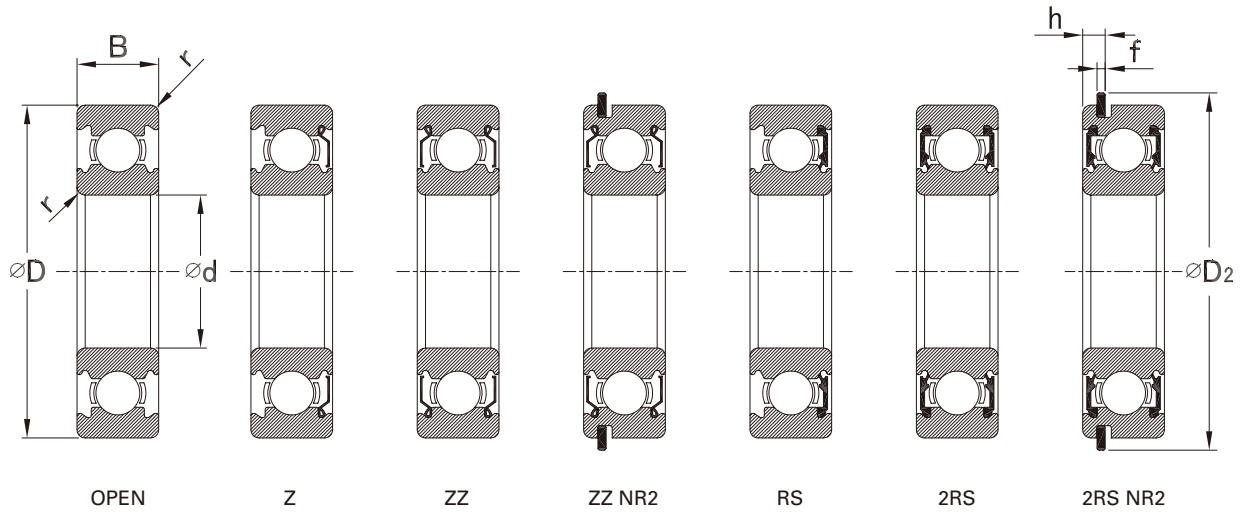
■ Lubrication

Heat-resistant grease is prepacked in SMT's shielded and sealed type stainless steel ball bearings. Special high temperature or chemical resistant grease such as fluorinated grease, etc. is available for special application upon request.

■ Materials other than AISI 440C

Bearings might be used in unusual environment, such as rusty, vacuum or high temperature conditions. In such cases where AISI 440C stainless steel would be intolerable or short-lived, we offer high corrosion resistant bearings, that are all made of AISI 304 stainless steel or of which outer and inner rings are made of AISI 630 stainless steel or ASTM Grade 2 B348 pure titanium, and hybrid bearings using ceramic balls (Si3N4). Also, we offer the bearings with solid lubricants in case of vacuum or high temperature conditions where the conventional grease lubrication would be ineffective.





BASIC PART NO.	d	D	B	r(min)	Basic Load Ratings				D ₂ (max)	f(max)	h(max)
					C _r		C _{or}				
					N	kg f	N	kg f			
SS6800	10	19	5	0.3	2120	216	985	100	—	—	
SS6900	10	22	6	0.3	2700	275	1270	130	24.8	0.70	
SS6000	10	26	8	0.3	4600	470	1970	201	28.8	0.84	
SS6200	10	30	9	0.6	5100	520	2390	243	34.7	1.12	
SS6300	10	35	11	0.6	8100	825	3450	350	—	—	
SS6801	12	21	5	0.3	1920	195	1040	106	—	—	
SS6901	12	24	6	0.3	2890	295	1460	149	26.8	0.70	
SS6001	12	28	8	0.3	5100	520	2390	243	30.8	0.85	
SS6201	12	32	10	0.6	6800	695	3050	210	36.7	1.12	
SS6301	12	37	12	1.0	9700	990	4200	430	—	—	
SS6802	15	24	5	0.3	2080	212	1260	128	—	—	
SS6902	15	28	7	0.3	4300	440	2250	230	30.8	0.85	
SS6002	15	32	9	0.3	5600	570	2840	290	36.7	1.12	
SS6202	15	35	11	0.6	7650	780	3750	380	39.7	1.12	
SS6302	15	42	13	1.0	11400	1170	5450	555	—	—	
SS6803	17	26	5	0.3	2630	268	1570	160	—	—	
SS6903	17	30	7	0.3	4600	470	2550	260	32.8	0.85	
SS6003	17	35	10	0.3	6000	610	3250	330	39.7	1.12	
SS6203	17	40	12	0.6	9600	975	4800	490	44.6	1.12	
SS6303	17	47	14	1.0	13600	1390	6600	675	—	—	
SS6804	20	32	7	0.3	4000	410	2460	251	—	—	
SS6904	20	37	9	0.3	6400	650	3700	375	39.8	0.85	
SS6004	20	42	12	0.6	9400	960	5050	515	46.3	1.12	
SS6204	20	47	14	1.0	12800	1310	6650	680	52.7	1.12	
SS6304	20	52	15	1.1	15900	1620	7850	800	—	—	
SS6805	25	37	7	0.3	4300	440	2940	300	—	—	
SS6905	25	42	9	0.3	7000	715	4550	465	44.8	0.85	
SS6005	25	47	12	0.6	10100	1030	5850	600	52.7	1.12	
SS6205	25	52	15	1.0	14000	1430	7900	805	57.9	1.12	
SS6305	25	62	17	1.1	20600	2100	11200	1150	—	—	
SS6806	30	42	7	0.3	4550	465	3400	350	—	—	
SS6906	30	47	9	0.3	7250	740	5000	510	49.8	0.85	
SS6006	30	55	13	1.0	13200	1350	8300	845	60.7	1.12	
SS6206	30	62	16	1.0	19500	1990	11300	1160	67.7	1.70	
SS6306	30	72	19	1.1	26700	2720	15000	1530	—	—	
SS6807	35	47	7	0.3	4750	485	3800	390	—	—	
SS6907	35	55	10	0.6	10400	1060	7200	730	—	—	
SS6007	35	62	14	1.0	16000	1630	10300	1050	67.7	1.70	
SS6207	35	72	17	1.1	25700	2620	15400	1570	—	—	
SS6307	35	80	21	1.5	33300	3400	19100	1950	—	—	
SS6808	40	52	7	0.3	4950	505	4200	425	—	—	
SS6908	40	62	12	0.6	13700	1400	9900	1010	—	—	
SS6008	40	68	15	1.0	16800	1710	11600	1180	74.6	1.70	
SS6208	40	80	18	1.1	29100	2970	17900	1830	—	—	
SS6308	40	90	23	1.5	40700	4150	24000	2440	—	—	
SS6909	45	68	12	0.6	14100	1440	10900	1110	—	—	
SS6009	45	75	16	1.0	21000	2140	15100	1540	—	—	
SS6209	45	85	19	1.1	32700	3340	20500	2090	—	—	
SS6309	45	100	25	1.5	53000	5400	32000	3260	—	—	
SS6910	50	72	12	0.6	14500	1480	11700	1190	—	—	
SS6010	50	80	16	1.0	21800	2220	16600	1690	—	—	
SS6210	50	90	20	1.1	35100	3580	23200	2370	—	—	
SS6310	50	110	27	2.0	62000	6320	38200	3900	—	—	
SS6911	55	80	13	1.0	16600	1700	14100	1440	—	—	
SS6011	55	90	18	1.1	28300	2880	21300	2170	—	—	
SS6211	55	100	21	1.5	43400	4420	29400	2990	—	—	
SS6311	55	120	29	2.0	71600	7300	44800	4570	—	—	
SS6912	60	85	13	1.0	20200	2060	17300	1760	—	—	
SS6012	60	95	18	1.1	29400	3000	23200	2360	—	—	
SS6212	60	110	22	1.5	52400	5350	36100	3680	—	—	
SS6312	60	130	31	2.1	81800	8350	52000	5300	—	—	
SS6013	65	100	18	1.1	30500	3110	25200	2570	—	—	
SS6213	65	120	23	1.5	57200	5830	40000	4080	—	—	
SS6014	70	110	20	1.1	38000	3880	30900	3150	—	—	
SS6214	70	125	24	1.5	62200	6340	44000	4490	—	—	

■ Corrosion Resistance

The following list shows the comparison of corrosion resistance performance between AISI 440C stainless steel and AISI 52100 normal bearing steel. Please consult with us regarding any other chemicals not listed below.

Chemicals	Condition	Temperature	Materials	
			440C	52100
4-chloridated carbon	dry / wet	normal	○	×
Acetic acid			○	×
Acetone		normal	○	—
Air		normal	○	△
Carbonic acid gas			○	×
Chloric gas	dry	normal	△	△
Chloric gas	wet	100°C/212°F	×	×
Hydrochloric acid	75% solution		×	×
Hydrogen peroxide			○	△
Hydrogen sulfide gas	dry		○	△
Hydrogen sulfide gas	wet		○	△
Naphtha		normal	○	—
Natural water		normal	○	×
Nitric acid	thick	normal	○	×
Nitric acid	thick	boiling	×	×
Sea breeze		normal	○	×
Seawater		normal	△	×
Seawater	50% solution	normal / boiling	○	×
Sulfurous acid	thick	normal	○	△
Sulfurous acid	thick	boiling	×	×
Sulfurous acid	50% solution	normal / boiling	×	×
Sulfurous acid gas	dry		○	×
Sulfurous acid gas	wet		○	×
Water vapor		100°C/212°F	○	×

Note : ○ not effected △ slightly effected × effected — no data available

[Remarks]

This comparison list is provided as general guidance for the users. The performance level of corrosion resistance varies, depending upon the conditions of each application. Therefore, we recommend that the user conduct actual testing to see how 440C stainless steel works in the user-specific applications. We are not responsible for any claims taken place in the users' applications without actual testing.

SMT

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