

NEW

7S Series High-Silicon Stainless Bearings



Corrosion
resistance



Chemicals



Insulation



Using high corrosion resistant, high hardness Silcolloy, which enables better operation under higher loads and rotational speeds when compared to AISI 304 and AISI 630 stainless steels.

Bearing
selection

Products
Series

AISI
440C

AISI
304

AISI
630

High-
Silicon

Pure
Titanium

Ceramic

Heat
Resistance

Grease
Free

Low
Torque

Solid
Grease

Set
Screw

Alignment
Function

Flange
Unit

Guide
Wheel

6800
6900

SS5200
5200

5800

Customization

Examples
of Use

Features

1. Enables operation at high-rotational speed and under high loads in corrosive environments.
2. Provides corrosion resistance equivalent to AISI 630 stainless steel.
3. Offers higher hardness than the AISI 304 or AISI 630 stainless steel.
4. Pre-packed with food-grade grease as a standard specification.
5. Hybrid type using silicon nitride (Si_3N_4) ceramic balls.

[Difference in properties by the material used]

	Unit	SilicolloyXVI	AISI 440C	AISI 630	AISI 304
Density	g/cm^3	7.66	7.8	7.8	7.93
Tensile Strength	N/mm^2	1320	1900-2000	approx.1379	520-600
Elongation	%	—	—	approx.14	45-60
Elastic Modulus	N/mm^2	202000	203000	196000	193000
Hardness	HV	645	700	434	170
	HRC	57.6	60.1	44.0	3.0
Magnetism	—	Magnetic	Magnetic	Magnetic	Non magnetic *

* AISI 304 stainless steel may be magnetized depending on manufacturing process.

Product Specifications

Standard Specifications	
Inner and Outer Rings	SilicolloyXVI
Balls	Silicon nitride ceramics (Si_3N_4)
Retainer	AISI 304
Shield	AISI 304
Seal* ¹	Nitrile rubber
Lubricant* ²	Waterproof and food-grade grease
ISO Tolerance Class	Normal

* Chemical-resistant grease available as an option.

The following special specifications are also available.

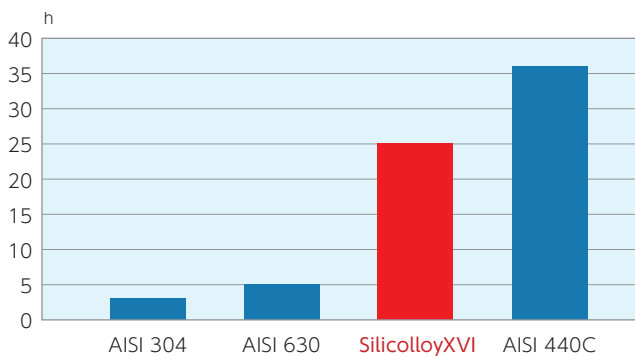
*1 Fluorine rubber seal

*2 Chemical-resistant grease

Applications

Food machinery, cleaning equipment, LCD and semiconductor manufacturing equipment, film transfer equipment, metal plating equipment, other equipment used in environments where the bearings come into contact with acid or alkaline chemicals.

Performance



◎ Test Conditions

Bearing : 6004
 Temperature : 25°C/77°F
 Radial load : 500N
 Rotation speed : 300min⁻¹
 Atmosphere : Underwater,
 without lubricated

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Corrosion Resistance

Chemicals	Conditions	Temp.	Materials			
		°C/°F	SilicolloyXVI	AISI 440C	AISI 630	AISI 304
Hydrochloric Acid	1% solution	40°C/104°F	×	×	×	△
Sulfuric Acid	1% solution	40°C/104°F	△	×	△	△
Hydrogen Peroxide	30% solution	60°C/140°F	○	○	○	○
Citric Acid	15 % solution	40°C/104°F	○	△	○	○
Iodine	0.05mol/l solution	40°C/104°F	×	×	×	×
Sodium Hypochlorite	0.02% solution	40°C/104°F	△	△	△	○
Sodium Hydroxide (Caustic Soda)	5% solution	40°C/104°F	○	○	○	○
Calcium Hydroxide (Limewater)	0.1% solution	40°C/104°F	○	○	○	○
Tap water		40°C/104°F	○	○	○	○
Seawater		40°C/104°F	○	△	○	○
Sodium Chloride	5% solution	40°C/104°F	△	×	△	○
Calcium Chloride	5% solution	40°C/104°F	○	△	○	○
Methylene Chloride (Dichloromethane)		normal	○	○	○	○
Ammonium Chloride	5% solution	40°C/104°F	○	△	△	○
Alkylpolyaminoethylglycine Hydrochloride	0.2% solution	40°C/104°F	○	△	○	○

○ : No significant effect
△ : Slightly affected
× : Affected

Composition of bearing number

7S 6200 ZZ CB

1 2 3 4

- 1 7S : Material SilicolloyXVI
- 2 Basic number
- 3 Blank : Open
ZZ : Double steel plate shields
2RS : Double contact rubber seals
- 4 CB : Silicon nitride ceramic balls

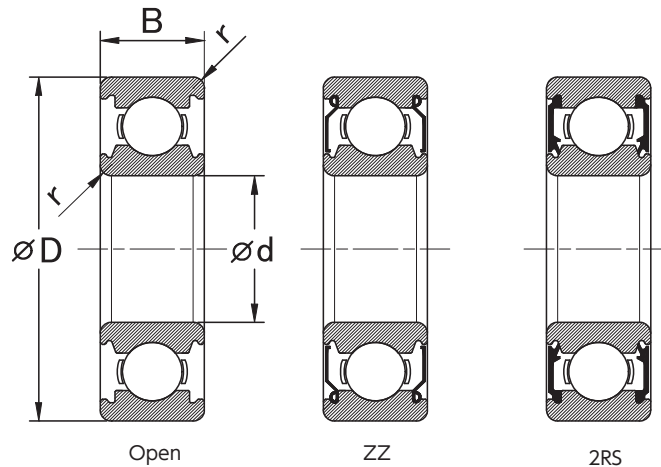


Table of Dimensions

Bearing Numbers	d	D	B	r min.	Basic load ratings		Limiting Speed (min ⁻¹)		
					C _r	C _{or}	Grease		Oil
					N	N	Open-ZZ	2RS	Open
7S 6000 CB	10	26	8	0.3	3850	1660	23000	18000	27000
7S 6200 CB	10	30	9	0.6	4300	2010	20000	15000	24000
7S 6001 CB	12	28	8	0.3	4300	2010	20000	15000	24000
7S 6201 CB	12	32	10	0.6	5700	2560	19000	14000	22000
7S 6002 CB	15	32	9	0.3	4700	2390	17000	12000	21000
7S 6202 CB	15	35	11	0.6	6450	3150	16000	11000	20000
7S 6003 CB	17	35	10	0.3	5050	2730	15000	11000	19000
7S 6203 CB	17	40	12	0.6	8050	4050	14000	10000	17000
7S 6004 CB	20	42	12	0.6	7900	4250	13000	10000	15000
7S 6204 CB	20	47	14	1.0	10800	5600	11000	9200	14000
7S 6005 CB	25	47	12	0.6	8500	4900	11000	8000	14000
7S 6205 CB	25	52	15	1.0	11800	6650	10000	7300	12000
7S 6006 CB	30	55	13	1.0	11100	7000	10000	6800	11000
7S 6206 CB	30	62	16	1.0	16400	9500	9200	6300	10000