

# 6S Series AISI 304 Stainless Steel Bearings



Corrosion  
resistance



Chemicals



Non-magnetic

Bearing  
selection

Products  
Series

AISI  
440C

AISI  
304

AISI  
630

Pure  
Titanium

Ceramic

Heat  
Resistance

Grease  
Free

Low  
Torque

Solid  
Grease

Set  
Screw

Alignment  
Function

Flange  
Unit

Guide  
Wheel

6890

6800

6800

6800

6800

6800

6800

Customization

Examples  
of Use

AISI 304 stainless steel is widely used as a corrosion- and heat-resistant steel and is also a nonmagnetic steel. It is most suitable in corrosive environments where AISI 440C stainless steel cannot be used.

## Features

1. Higher corrosion resistance than AISI 440C stainless steel bearings.
2. Non-magnetic \*.
3. Heat-resistant temperature of standard specifications is the same as SS series.

[Difference in properties by the material used]

	Unit	AISI 304	AISI 440C	SAE 52100
Density	g/cm <sup>3</sup>	7.93	7.8	7.8
Tensile Strength	N/mm <sup>2</sup>	520 - 600	1900 - 2000	1680
Elongation	%	45 - 60	—	—
Elastic Modulus	N/mm <sup>2</sup>	193000	203000	212000
Hardness	HV	170	700	740
	HRC	3.0	60.1	61.8
Magnetism	—	Non magnetic *	Magnetic	Magnetic

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

## Product Specifications

Standard Specifications	
Inner and Outer Rings	AISI 304
Balls*1	AISI 304
Retainer	AISI 304
Shield	AISI 304
Seal*2	Nitrile rubber
Lubricant*3	Heat-resistant grease
Precision Grade	See "Dimensions"

The following special specifications are also available.

\*1 Ceramic balls (Silicon Nitride Si<sub>3</sub>N<sub>4</sub>)

\*2 Fluorine rubber seal

\*3 Heat- and chemical-resistant fluorine grease, food grade grease, and other special greases

## Applications

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

## Corrosion Resistance

Chemicals	Conditions	Temperature	Material
		°C/°F	AISI 304
Chlorine	dry	dry ≤ 30°C/86°F	○
	wet		×
Methylene Chloride	dry		○
	wet		○
Ammonium Chloride	50% solution		△
Sodium Chloride	saturation	100°C/212°F	○
Lithium Chloride	saturation	boiling point	○
Sulfuric Acid	solution up to 50%	60°C/140°F	○
	95% - 100% solution	149°C/300°F	○
Sulfurous Acid Gas	dry		×
	wet		○
Nitric Acid	0.5% - 40% solution	up to boiling point	○
	40% - 95% solution	70°C/158°F	○
Acetic Acid	solution up to 100%	up to boiling point	○
Citric Acid	solution up to 100%	≤ 30°C/86°F	○
	solution up to 15%	65°C/149°F	△
Phosphoric Acid	≤ 65%	≤ 30°C/86°F	○
Ethanol(Ethyl Alcohol)		≤ 30°C/86°F	○
Cresol(Cresylic Acid)	dry		○
Sea Water			△
Caustic Soda	10% solution		○
Ammonium Sulfate	50.4% solution	120°C/248°F	○
Carbon Tetrachloride	dry		△

\* ○ No effects  
△ Slightly affected  
× Affected  
— No data

\* Results may differ from the data on the left depending on the environments and conditions.

## Precautions

For light load and low rotation, AISI 304 stainless steel is not suitable for use under heavy load or at medium to high rotation where SAE 52100 chrome steel and AISI 440C stainless steel are usable, due to the characteristics of the material.

Bearing selection

Products Series

AISI 440C

AISI 304

AISI 630

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

## Composition of bearing number

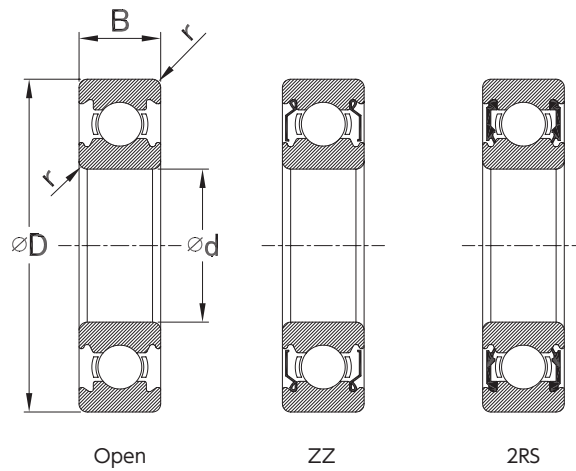
**6S 6800 B 2RS**

1 2 3 4

- 1 6S : Material AISI 304
- 2 Basic number
- 3 B : Raceway turning finish
- 4 Blank : Open  
ZZ : Double steel plate shields  
2RS : Double contact rubber seals

## Table of Dimensions

Bearing Numbers	d		D		B		r min.	Limiting Radial Load	Limiting Speed	Mass	
	Dimensions	Tolerance	Dimensions	Tolerance	Dimensions	Tolerance					
	mm		mm		mm						
6S 696B	6	+0.050 0	15	<sup>0</sup> -0.025	5	-0.120	0.2	60	2300	4	
6S 626B <sup>*)</sup>	6		19	<sup>0</sup> -0.030	6		0.3	130	2100	8	
6S 698B <sup>*)</sup>	8		19		6		0.3	110	2100	7	
6S 608B <sup>*)</sup>	8		22		7		0.3	165	2000	12	
6S 628B	8		24		8		0.3	165	2000	18	
6S 6800B	10		19		5		0.3	105	2200	5	
6S 6900B	10		22		6		0.3	135	2000	10	
6S 6000B	10		26		8		0.3	230	1800	19	
6S 6200B	10		30		9		0.6	255	1600	31	
6S 6300B	10		35		<sup>0</sup> -0.035		11	0.6	405	1400	53
6S 6801B	12		21		5		0.3	95	1900	6	
6S 6901B	12		24		<sup>0</sup> -0.030		6	0.3	145	1800	11
6S 6001B	12		28		8		0.3	255	1600	21	
6S 6201B	12		32		<sup>0</sup> -0.035		10	0.6	340	1500	37
6S 6802B	15		24		5		0.3	105	1600	7	
6S 6902B	15	28	<sup>0</sup> -0.030		7	0.3	215	1500	16		
6S 6002B	15	32	9	0.3	280	1400	31				
6S 6202B	15	35	<sup>0</sup> -0.035	11	0.6	380	1300	46			
6S 6302B	15	42	13	1.0	570	1100	83				



Bearing selection

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AISI 304

AISI 630

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Ceramic

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Grease Free

Low Torque

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Set Screw

Alignment Function

Flange Unit

Guide Wheel

6800  
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SS5200  
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Customization

Examples of Use

Bearing Numbers	d		D		B		r min.	Limiting Radial Load	Limiting Speed	Mass
	Dimensions	Tolerance	Dimensions	Tolerance	Dimensions	Tolerance				
	mm		mm		mm					
6S 6903B	17	$\begin{matrix} +0.050 \\ 0 \end{matrix}$	30	$\begin{matrix} 0 \\ -0.030 \end{matrix}$	7	$\begin{matrix} 0 \\ -0.120 \end{matrix}$	0.3	230	1300	17
6S 6003B	17		35		10		0.3	300	1200	40
6S 6203B	17		40		12		0.6	475	1100	65
6S 6804B	20		32		7		0.3	200	1200	18
6S 6904B	20		37		9		0.3	320	1100	38
6S 6004B	20		42	$\begin{matrix} 0 \\ -0.035 \end{matrix}$	12		0.6	470	1000	67
6S 6204B	20		47		14		1.0	640	930	104
6S 6805B	25		37		7		0.3	215	1000	21
6S 6905B	25		42		9		0.3	350	940	43
6S 6005B	25		47		12		0.6	500	890	79
6S 6205B	25		52		15		1.0	700	820	131
6S 6006B	30		55		13		1.0	660	750	116
6S 6206B	30		62		16		1.0	975	690	196
6S 6007B	35		62	$\begin{matrix} 0 \\ -0.040 \end{matrix}$	14		1.0	800	650	152
6S 6207B	35		72		17		1.1	1285	590	283
6S 6008B	40		68		15		1.0	835	590	191
6S 6208B	40		80		18		1.1	1450	530	374

\* Limiting radial load and limiting speed are provided for reference only.  
 Limiting radial load is estimated to have a total rotation speed of 1 million revolutions.  
 \* 1) Open & ZZ types only.