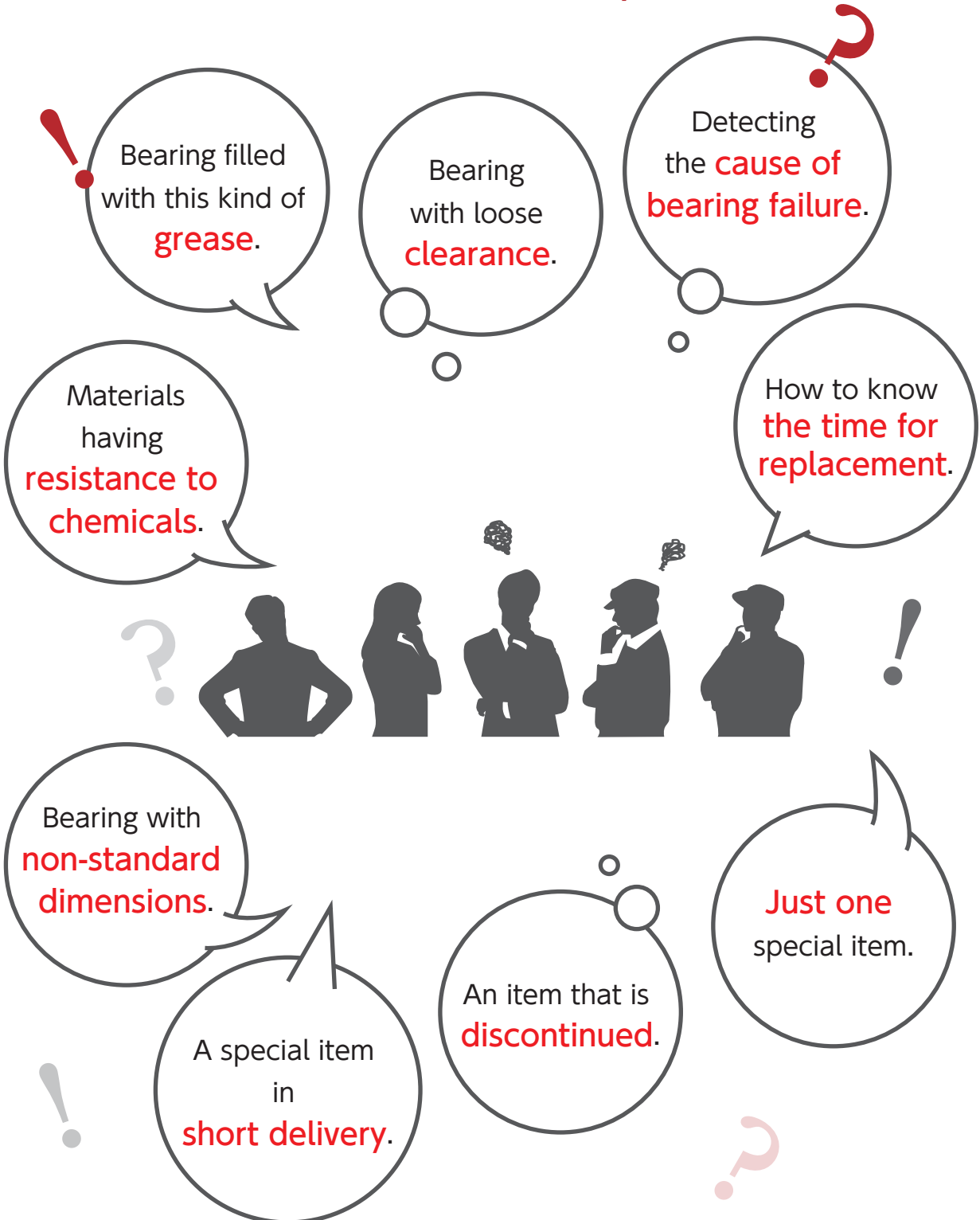


Customizations

Please let us know what you need.



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

SMT has established a high-mix, low-volume production system, to respond quickly to diverse user needs. We can manufacture with high precision customized bearings of special designs, with a variety of materials, specified greases, and other features.



Bearing selection

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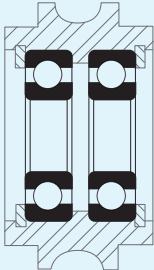

SS5200
5200

5800

Customization

Examples of Use

Examples of responding to user needs

User need	Customized bearing
Bearing for HACCP-compliant food machines and production equipment.	(1) AISI 440C stainless steel bearing with NSF H1 standard grease for food machines (2) AISI 304 stainless steel bearing with NSF H1 standard grease for food machines
Bearing suitable for use in a hot environment.	(1) AISI 440C stainless steel bearing with a heat-resistant fluorine grease (2) Change to a C4 clearance that is larger than the standard clearance
Bearing turning lightly.	(1) Fill with low-torque grease (2) Change to a small amount of grease for lower torque (3) Switch to special low torque lubricant bearings
Bearing suitable for use underwater.	(1) AISI 304 stainless steel bearing with contact rubber seals (2) Fill with water-resistant grease that does not easily flow in water
Bearing integrated with peripheral parts for compactness and precision.	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>Current status Two bearings are used for the U-grooved housing</p> </div> <div style="text-align: center;">  <p>Improvement • The housing and bearings are integrated into double-row angular bearings • Compact and space-saving</p> </div> </div>

Specified Grease and Clearance

The selection of grease and clearance is a key factor in demonstrating the features of the bearing. SMT will respond to requests and changes in grease filling and clearances according to the operating environment with **short delivery times and small lots from as little as one unit.**

Grease

■ We meet these needs

- Grease for food machines compatible with H1 grade (compatible with HACCP).
- Low-dust generation grease suitable for use in clean rooms.
- Grease suitable for use in a vacuum environment.
- Grease for a low torque to reduce the starting torque.
- Grease suitable for use in hot and cold environments.
- Water-resistant grease.
- Filling the grease you have.

■ Examples of greases

Characteristics	Brand	Manufacturer	Thickener	Base oil	Penetration	Operating temperature range
Low temperature	AeroShell 7	Shell	Microgel	Organic ester	296	-73 to 149°C/ -100 to 300°F
Food grade Water-resistant	SHC Polyree 462	Mobil	Polyurea	Synthetic	NLGI No.2	-20 to 170°C/ -4 to 338°F
Conductive	Multemp ELP	Kyodo Yushi	Carbon Black	Synthetic hydrocarbon	254	-50 to 150°C/ -58 to 302°F
High temperature Chemical-resistant Food grade	Barrierta L55/2 H1	NOK Klüber	PTFE	Fluoric	NLGI No.2	-30 to 260°C/ -22 to 500°F
High temperature Chemical-resistant	Noxlub BF 4026	NOK Klüber	PTFE	Fluoric	NLGI No.2	-30 to 260°C/ -22 to 500°F
High temperature Chemical-resistant Vacuum	Noxlub KF 2024	NOK Klüber	PTFE	Fluoric	NLGI No.2	-50 to 260°C/ -58 to 500°F
Low torque High speed rotation	Klüberspeed BF 72 -22	NOK Klüber	Urea	Ester	NLGI No.2 to No.3	-50 to 120°C/ -58 to 248°F
Low dust generation	AFE-CA	THK	Urea	Synthetic	280	-40 to 180°C/ -40 to 356°F

*The product characteristic values above are the grease manufacturer catalog values. Please note that the specifications are subject to change without notice.

A variety of greases are available in addition to those listed. You can also supply us your specific grease.

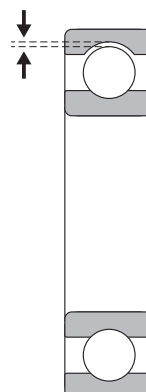
Clearance

■ We meet these needs

- Proper clearance for eliminating thermal expansion caused by a high temperature environment.
- Proper clearance for reducing vibration during high-speed rotation.
- Non-standard clearance.

■ Examples of clearance

Applications	Clearance
Hot environment	C3, C4, C5
High-speed rotation	C2, CM



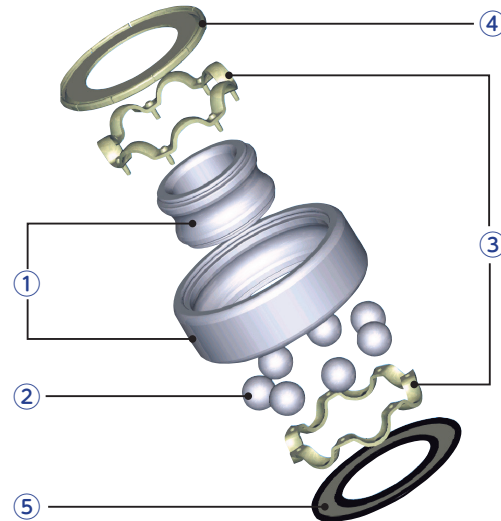
Material Types

In addition to inner and outer ring materials, various materials are prepared for each component of the bearing.

Optimum bearings can be manufactured by combining materials according to the application.

Examples of materials

	Parts	Material Examples
①	Inner and outer rings	<ul style="list-style-type: none"> • SAE 52100 • AISI 440C • AISI 304, AISI 316L, AISI 630 • Titanium, Hastelloy-equivalent material • Ceramics, resins
②	Balls	<ul style="list-style-type: none"> • SAE 52100, AISI 440C, AISI 304 • Ceramics, special coatings
③	Retainer	<ul style="list-style-type: none"> • SPCC • S55C • AISI 304 • Special coating, polyamide resin • Fluorine resin, solid lubricant
④	Shield	<ul style="list-style-type: none"> • SECC, AISI 304
⑤	Seal	<ul style="list-style-type: none"> • Nitrile rubber, acrylic rubber • Fluorine rubber, fluorine resin



Special Designs

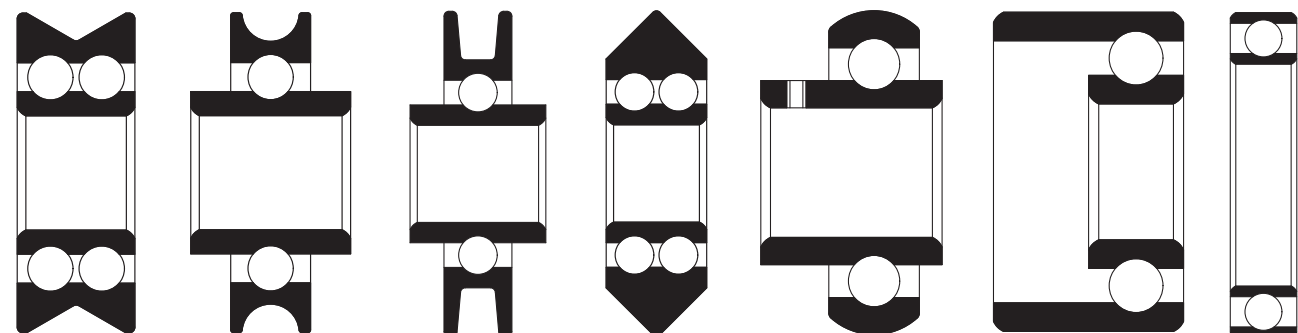
Bearings with special designs are available according to the application, such as V- or U-grooved outer diameter, wide or thin-walled type.

We also cater to customers who want to integrate bearings and peripheral parts.

Manufacturable dimensions

Dimensions	
Inner diameter	4mm to 250mm
Outer diameter	12mm to 280mm
Width	4mm to 75mm

*Depending on the specifications, the range of manufacturable dimensions may change.



Bearing selection

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AISI 304

AISI 630

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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

Bearing
selection

Table of Simple Customization Support by Series

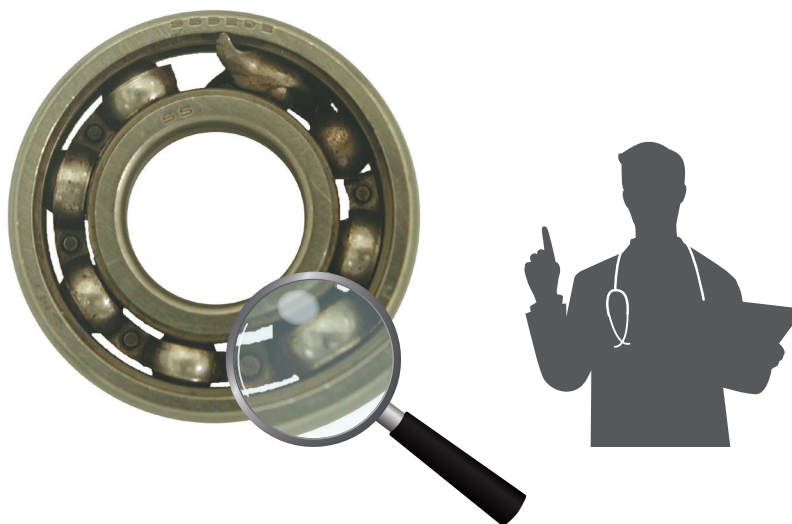
Products Series	Series Name	Customization Contents			
		Grease change	Clearance change	Fluorine rubber seal	Silicon nitride ceramic ball
AISI 440C	AISI 440C Stainless Steel Bearings	○	○	○	○
AISI 304	AISI 304 Stainless Steel Bearings	○	×	○	○
AISI 630	AISI 630 Stainless Steel Bearings	○	×	○	—
Pure Titanium	Pure Titanium Bearings	×	×	×	—
Ceramic	Ceramic Bearings	×	×	×	—
Heat Resistance	Heat-Resistant Stainless Bearings	×	○	—	×
Grease Free	Heat-Resistant Hybrid Bearings	×	△	—	—
Low Torque	Grease-Free Bearings	×	△	○	○
Solid Grease	Special Low Torque Lubricant Bearings	×	○	×	○
Set Screw	Solid Grease Bearings	×	○	○	○
Alignment Function	Stainless Bearings with Set Screw	○	△	×	○
Flange Unit	Stainless Bearings with Aligning Ring	○	△	△	○
Guide Wheel	Flanged Bearing Units	○	△	△	○
6800 6900	Guide Wheel Bearings	○	×	×	×
SS5200 5200	Thin-Wall Bearings 6800 / 6900	○	△	○	○
5800	Double Row Angular Contact Bearings SS5200 / 5200	○	△	○	○
Customization	Double Row Angular Contact Bearings 5800	○	△	○	○
Examples of Use					

○ : Modifiable
 △ : Partially unmodifiable
 × : Unmodifiable
 — : Standard specification

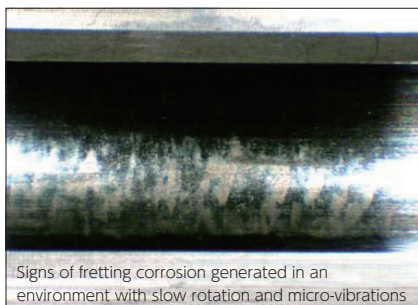
Support for Bearing Improvement

We offer free diagnosis of bearings.

We can help you solve problems with bearings used in all special environments.



Internal raceway observation



Signs of fretting corrosion generated in an environment with slow rotation and micro-vibrations

Examination of main dimensions, grease, acoustics, and clearance

表 2. SS 6805 ZZ 調査結果

測定項目	設計規格	No.1	No.2
回転遊隙	—	分解状態	良好
音響値 (A) 参照バンド	30	測定不能	45
ラジアル遊隙 (mm)	0.038~0.022	測定不能	0.011
グリース量 (g)	0.38~0.54	—	0.45
硬度	内輪	HRC 57~64	62.3
	外輪	HRC 57~64	60.5
寸法 (mm)	内径	φ25 ±0.012	再測:0.007, 中央:0.041
	外径	φ42 ±0.011	再測:0.005, 中央:-0.055
	幅 (内)	9 ±0.102	-0.015
外観状況	内輪	—	全面に剥離、強い圧痕あり
	外輪	—	真円性に乱れあり
	ボール	—	反異常摩耗面に強い摩耗痕あり
	保持器	—	全面に強い摩耗痕あり
シール (F)	—	分解時破損	良好

Lifespan and internal clearance calculation

表 3. 寿命計算結果

項目	値	単位
軸径	25	mm
外径	42	mm
軸回転数	1000	rpm
軸荷重	1000	N
軸径公差	±0.012	mm
外径公差	±0.011	mm
軸径公差	±0.012	mm
外径公差	±0.011	mm
軸径公差	±0.012	mm
外径公差	±0.011	mm
軸径公差	±0.012	mm
外径公差	±0.011	mm

The cause of most failures can be inferred by examining the inside of the bearing.

Based on the examination results, we suggest the best countermeasures using our company's extensive experience in manufacturing and marketing technology, which has been cultivated through the manufacture of customized bearings.

We hope that using our diagnostic support will resolve your bearing problem as soon as possible.

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Examples of Use