FYH®

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MOUNTED BEARING UNITS

NIPPON PILLOW BLOCK CO., LTD.

CAT.NO.3320

FYH®

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fyhbearings.com

Mounted Bearing Units (contents)

FYH

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	4-Bolt Flange Units	
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1 Structure and Features

FYH Ball Bearing Units are manufactured to exacting standards comprising of grease sealed deep groove ball bearings and housings in various forms.

Self-aligning units allow for easy installation and are supplied with grease fittings in order to facilitate quick and convenient re-lubrication.

1.1 Structure

FYH Ball Bearing Units are constructed of high carbon chromium bearing steel and have precision honed raceways and riveted steel cages (**Fig. 1.1**).

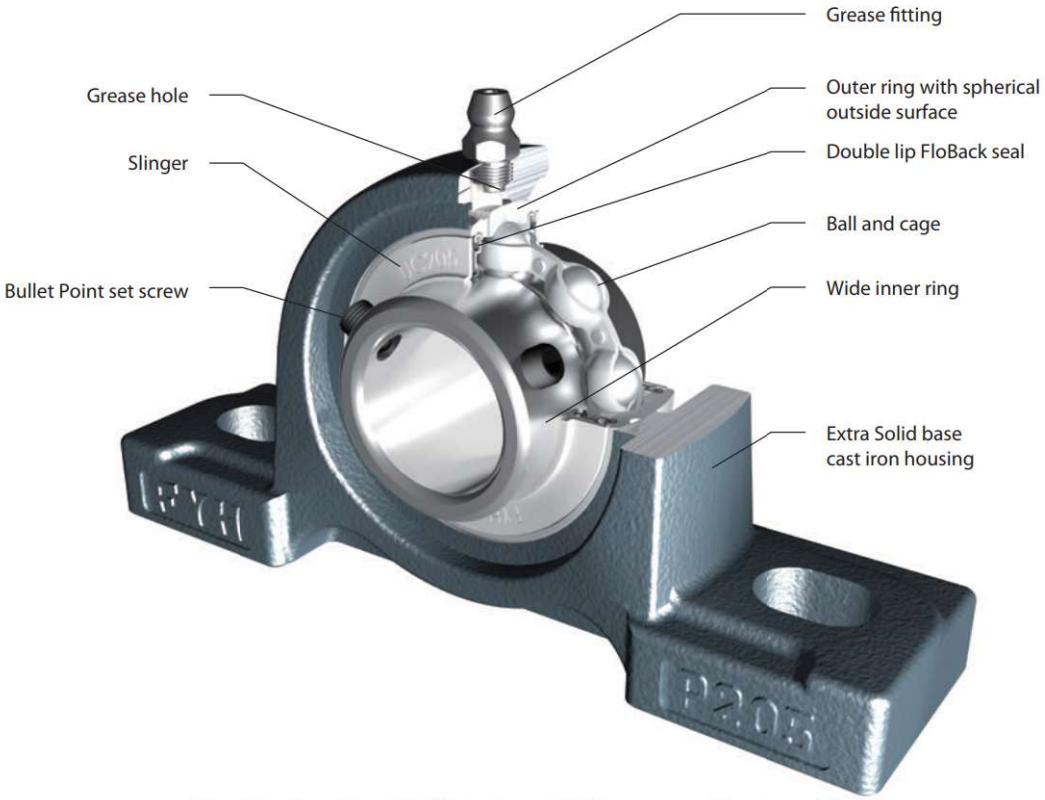

Fig. 1.1 Structure of ball bearing units (representative example)

1.2 Features

FYH Ball Bearing Units have many features and are available in various models. A wide selection of mounted units is offered to fit virtually any application.

1 Supreme load capacity and accuracy

FYH Ball Bearing Units feature an internal structure identical to single row deep groove ball bearings and can bear significant radial load, as well as a great deal of axial load in both directions. The hardened steel balls exhibit a high degree of "roundness" and the races are highly polished to accommodate a smooth ride at a wide range of speeds.

2 Rational self-aligning mechanism and optimal fit

FYH Ball Bearing Units have the special ability to self-align inside the housing because of the spherical shape of the outer diameter of the bearing insert and the concave shape of the inner diameter of the housing into which it fits.

This design allows the bearing unit to self-adjust for shaft deviation and reduce abnormal bearing load. Therefore, the original rated life of the bearing can be guaranteed. Since the spherical outside surface of the bearing is precision ground and the spherical bore of the housing is machined by a boring machine with great accuracy, optimal fitting of the bearing and the housing can be obtained, as well as superior aligning performance. The allowable aligning angle of standard ball bearing units is 3°, while units with covers is 1°.

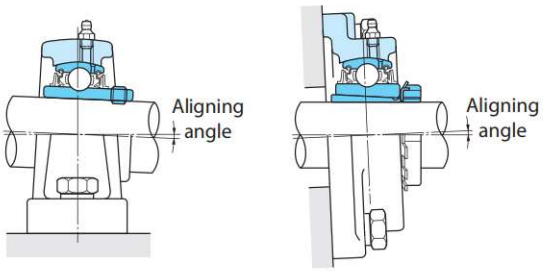

Fig. 1.2 Allowable aligning angle of ball bearing units

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3 Superior sealing performance

FYH Ball Bearing Units efficiently prevent grease from leaking out of the interior of the bearing, and perform extremely well at keeping contaminates, such as dust and water, from entering. This is achieved by installing the seal to the outer ring of the bearing and installing the slinger to the inner ring of the bearing.

The FloBack seal to be used in the standard FYH Ball Bearing units will contribute to the long life of the bearing. It consists of a double-lip seal which is stamped into place in the outer ring of the bearing to reduce the possibility of being pushed out from over-lubrication. The first seal makes contact with the inside of the slinger which provides the first line of defense against contamination. The next seal makes contact with the inner ring to provide another level of contamination resistance. An additional level of protection exists in the extra non-contact inward facing lip which allows grease to flow back towards the balls and raceways during operation thereby improving lubrication performance and extending bearing life.

Allowable rotating speed is the same as the previous seal design while providing more than four times better protection.

4 Simple lubrication

FYH Ball Bearing Units are tapped to accept a grease fitting which is also supplied with every mounted unit. Bearings are pre-lubricated at the factory and do not require additional grease upon installation. When operating in excessively moist, dusty, or hot environments, it is recommended that grease be supplied at regular intervals. If appropriately maintained, the rated life of the bearing can be extended.

FYH Lithium Bearing Grease to be sealed in early bearing grease use are manufactured to accommodate a wide range of operating conditions.

FYH Lithium Bearing Grease can be mixed with of former FYH Bearing grease as it will improve performance, corrosion resistance, loading capability, and promote longer bearing life.

The grease fittings that are supplied with FYH mounted units include 1/4-28 for smaller units and 1/8 PT for larger units. Additional styles are available upon request. FYH Lithium Bearing Grease is also available in automatic lubricators.

Fig. 1.3 Sealing mechanism of ball bearing units

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5 Highly rigid and rugged cast iron housings

FYH Ball Bearing Unit housings are designed so that they are optimized for reduction of deformation due to centralization of stress and load. Only the best material is selected to be cast by a highly advanced technique or press working technique, depending on the housing. Since any abnormal load on the bearing is eliminated by the housing, the life of the bearing can be extended. A Granular material baking finish coating (powder coating) helps resist corrosion and protect the surface of the housing for an extended period of time.

FYH original solid base pillow block housings seat better and produce a more stable mounting configuration that significantly reduces vibration.

The support ribs have been eliminated to make more room for mounting bolts and washers, yet these housings are more than 30% stronger than before while also reducing housing weight. The new housing downward destruction strength means that the inserts break before the housings.

6 Simple installation and handling

FYH Ball Bearing Units interchange with many different models and can be bolted to machinery without any modification. The exact amount of clearance is allowed between the bore and the shaft to allow a perfect fit. Therefore, FYH Ball Bearing Units do not require any additional lubrication or seal installation. As a result, handling and downtime can be drastically reduced. Four different locking mechanisms are available:

(1) Set Screw
(2) Eccentric Locking Collar
(3) Tapered Adapter
(4) Concentric Collar

Mounting the bearing to the shaft can be executed easily and securely by adopting any of these methods.

7 Series and models

FYH Ball Bearing Units are available in various series and models. Reliability of machinery or equipment, used together with these units, can be improved by selecting and using units optimal for the application and operating conditions.

- High / Low Temperature Series

- Corrosion Resistant Series

  Stainless Units
  Plastic Units
  Nickel plated Units

- Air Handling Series

  S3 & S5 Bearing Units
  NU-LOC Units

- Dust Resistant Units

  Triple lip seal inserts
  Felt seal inserts

- Dirt Resistant Units

  Tight Triple lip seal inserts
  Units with Covers

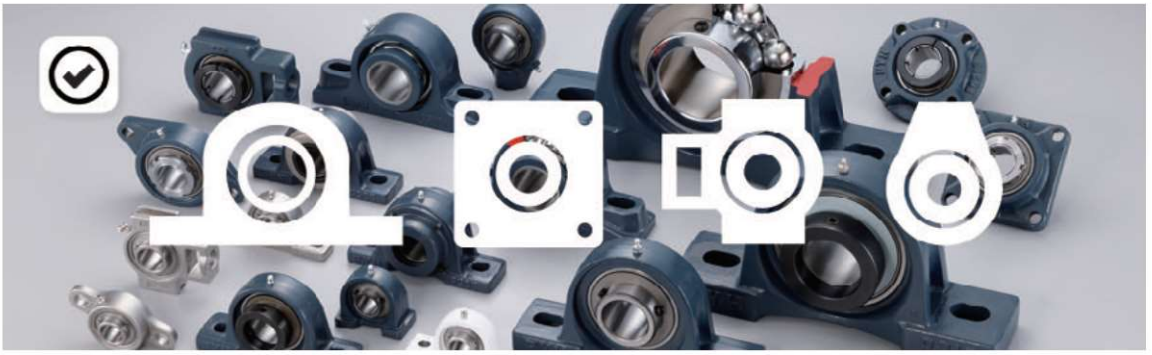
- Tougher casting Series
  Ductile iron housing

- Compact and lightweight Series
  Small die cast Units
  Lightweight casting Units
  Stamped Units

2 Selection Guide

2.1 Selection Guide

1. Select the housing style that best suits your application.



P - PILLOW BLOCK **PA** - TAPPED-BASE **PH** - HIGH-BASE **LP** - LIGHT **IP** - THICK **PP** - STAMPED STEEL
F - 4-BOLT FLANGE **FS** - SQUARE PILOTED
FL - 2-BOLT FLANGE **LF** - LIGHT **PFL** - STAMPED STEEL **FA** - ADJUSTABLE
FB - 3-BOLT FLANGE
FC - 4-BOLT FLANGE CARTRIDGE
T - TAKE-UP
C - CARTRIDGE
H - HANGER

2. Select the shaft size and duty that is needed for your application.

SU - FROM 10 MM TO 30 MM BORE
SA & SB - FROM 12 MM & 1/2" TO 40 MM & 1-9/16" BORE
UC - FROM 12 MM & 1/2" TO 140 MM BORE
NA - FROM 12 MM & 1/2" TO 75 MM & 3" BORE
NC - FROM 20 MM & 3/4" TO 60 MM & 2-7/16" BORE
UK - FROM 20 MM & 3/4" TO 120 MM BORE

3. Do you need to customize the bearing for your application? Select STANDARD as the default.

TEMP - **D2K2** -58°F TO 248°F (-50°C TO 120°C), **D1K2** -40°F TO 356°F (-40°C TO 180°C), **D9K2** -4°F TO 446°F (-20°C TO 230°C)
WASH DOWN - STAINLESS STEEL UNITS, PLASTIC HOUSING UNITS,
AIR HANDLING - **S3** AIR HANDLING FIT UNITS, **S5** NON CONTACT SEAL
DUST - **L3** TRIPLE LIP SEAL, COVERS
DIRT - **LT3** TIGHT TRIPLE LIP SEAL, COVERS

4. Select the locking style type for your insert.

UC - SETSCREW LOCK
NA - ECCENTRIC COLLAR LOCK
NC - CONCENTRIC COLLAR LOCK
UK - ADAPTER SLEEVE LOCK

5. YOUR UNIT

Selection application is available for download in the mobile device.

Available on the App Store

https://itunes.apple.com/us/app/fyh/id807018499?mt=8

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TEMP

2.2 High / Low Temperature Series

(suffix codes - High temperature: D1K2 & D9K2, Low temperature: D2K2)

For applications that require bearing units to be used at a higher or lower temperature range than our standard models FYH offers several options. For high temperature units that require lubrication please specify D1K2 as a suffix to the standard part number. For high temperature units that do not require lubrication specify D9K2.

The D9K2 insert uses a fluoro-grease that allows for excellent heat resistance and operation with minimal maintenance.

Specifications for the high temperature and low temperature units are shown in **Table 2.1**.

Table 2.1 Specifications of High / Low Temperature Series

Specifications of High / Low Temperature Series							
Category	Suffix code	Operating temperature range		Grease	Seal rubber material	Bearing internal clearance	
		(°C)	(°F)			UC type	UK type
Standard	-	−20 to 100	−4 to 212	FYH Lithium Bearing Grease (lithium complex)	Nitrile	CN	C3
Cold resistant	D2K2	−50 to 120	−58 to 248	SH33M (lithium)	Silicone	CN	C3
Heat resistant	D1K2	−40 to 180	−40 to 356	U-RET EDM-1 (diurea)	Silicone	C4	C5
Heat resistant	D9K2	−20 to 230	−4 to 446	Demnum L-200 (fluorinated grease)	Silicone	C4	C5

Specifications of Extreme High Temperature Series							
Category	Suffix code	Operating temperature range		Grease	Seal rubber material	Bearing internal clearance	
		(°C)	(°F)			UC type	UK type
Heat resistant	D9P4S6Y2	−20 to 260	−4 to 500	Demnum L-200 (fluorinated grease)	-	C4	-
Extreme heat resistant	S6Y3	300 to 450	572 to 842	Solid graphite lubricant	-	Special	-

Table 2.2 Grease Schedule of Ball Bearing Units

Grease schedule of ball bearing units						
Operating temperature °C		Grease Intervals			Bearing used	Grease supplied
Over	Incl.	Substantially clean	Excessive dust	Excessive dust and moisture		
	50	(3 months)	(2 months)	(1 month)	(Low temperature D2K2)[1)]	SH33M
		not necessary	1 year	4 months		
50	70	1 year	4 months	1 month	Standard bearing	FYH Lithium -
70	100	6 months	2 months	2 weeks		Bearing Grease
100	120	2 months	2 weeks	5 days	High temperature D1K2	U-RET EDM-1
120	150	2 weeks	5 days	2 days		
150	180	1 week	2 days	1 day		

Note 1) Greasing intervals in parentheses are applicable to low temperature grease (D2K2).
Remark Greasing intervals shown in this table are applicable to a unit operated for 8 to 10 hours per day.
If the time of operation is greater than this range, then a more frequent greasing interval must be specified.
For example, if the unit is operated 16 to 20 hours per day, then the greasing interval must be twice as frequent.

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2.2.1 Rotational speed adjustment due to shaft fit

A marginal degree of clearance is typically used to facilitate easy installation of a bearing to a shaft.

The amount of clearance between the bearing and shaft must be factored in to determine the maximum allowable rotational speed, and as rotational speed is increased, the amount of clearance must be decreased.

Table 2.3 shows the factor that must be used to correct the allowable rotational speed. The maximum rotational speed is determined by multiplying the speed found in **Table 6.1** by the factors below.

Table 2.3 Fitting factor of ball bearing units f_c (recommended)

Type of ball bearing units	Fitting factor f_c					
	Shaft tolerance range class					
	h5, j5	j6	h6	h7	h8	h9
Heat resistant type (Suffix code: D1K2)	–	–	–	1	1	0.7
Cold resistant type (Suffix code: D2K2)	–	–	–	1	1	0.7

2.2.2 Correction of basic load rating due to temperature

If a ball bearing unit is used at a relatively high temperature the physical composition of the bearing material is changed leading to decreased hardness. This decreased hardness leads to the basic dynamic load rating being reduced. Once the structure of the bearing material has been changed, it will remain this way for the life of the unit, even when it returns to room temperature.

When using a ball bearing unit at 150 ℃ or more, the basic load rating must be corrected by multiplying the basic dynamic load rating shown in the dimensional table by the temperature factor shown in **Table 2.4**.

Table 2.4 Temperature factor

Bearing temperature, ℃	125	150	175	200	250
Temperature factor	1	1	0.95	0.9	0.75

2.2.3 Operating temperature range

The operating temperature of a ball bearing unit depends on the type of grease, the material of the seal, and the internal clearance of the bearing. FYH Ball Bearing Units are available in high temperature (D1K2, D9K2) and low temperature (D2K2) series, in addition to the standard models, to allow selection of the correct bearing for your operational temperature (see **Table 2.1**). The correct unit must be chosen for the desired temperature range, and it is equally important to use the appropriate grease according to the specified schedule.

2.2.4 Operating temperature and internal clearance of bearings

When bearings are operated in a high ambient temperature environment, or when the operating temperature is high because of rotational speed, differential expansion rates occur within the bearing components. This causes higher friction, grease breakdown, and eventual seizure.

If the temperature difference between the inner and outer ring is known, or can be approximated, then the following **Formula (2.1)** may be applied.

Under these conditions, decrease in the internal clearance must be calculated, and the internal clearance of bearing needs to be selected properly.

$$S_{t1} = \alpha \cdot D_e \cdot \Delta_t \quad \cdots\cdots (2.1)$$

Whereas,

S_{t1}: Decrease in the internal clearance of bearings depending on the difference in the temperatures of the bearing inner ring and the bearing outer ring can be found by formula, mm

α: Line expansion factor of bearing steel, 12.5×10^{-6}

D_e: Raceway dia. of bearing outer ring, mm

Diameter series 2, X ····· $D_e \fallingdotseq 0.92\,D$

Diameter series 3 ····· $D_e \fallingdotseq 0.9\,D$

D: Nominal bearing outer dia., mm

Δ_t: Difference in temperatures of bearing inner ring and outer ring, ℃

If a ball bearing unit is used in a high temperature environment, an abnormal load will result due to thermal expansion of the shaft. This must be compensated for by allowing free movement of one side of the shaft.

(See "**9 Design of shaft and base**")

CERAMIC BALL UNITS

Y2: Ceramic balls with stainless units

Y3: Ceramic balls with a solid self-lubricating lubricant

Ceramic Ball Units features

Reduced maintenance costs
Green bearings
Independent operation
Low friction
High stress resistance
Non-conductive

2.3 Corrosion Resistant Series

The Corrosion Resistant Series is available in a wide array of sizes and styles, and units may be customized with a number of different specialized options to accommodate virtually any application. Federal compliance can be assured with FYH Bearing Units.

WASH DOWN

S6 STAINLESS INSERT

RINGS	Stainless steel (SUS 440C equivalent)
BALLS	SUS 440C
CAGE	SUS304
GREASE	H1 FOOD GRADE (FDA /USDA)
SEALS	NBR
SLINGER	SUS304
ANTI-ROTATION PIN	SUS304
SET SCREWS	SUS304
AVAILABLE SIZES	201X - 203X , 204 - 212
CLEARANCE	C3

S7 PLATED INSERT

RINGS	SUJ2 + (zinc plated + trivalent chromate treatment)
BALLS	SUJ2
CAGE	NYLON
GREASE	H1 FOOD GRADE (FDA /USDA)
SEALS	NBR
SLINGER	SPCC + (zinc plated + trivalent chromate treatment)
ANTI-ROTATION PIN	SUS304
SET SCREWS	SCM435 + (zinc plated + trivalent chromate treatment)
AVAILABLE SIZES	204 - 210
CLEARANCE	C3

VP VF VFL VPA
Thermoplastic Housings

Thermoplastic Polyester

H1, H9
Stainless Steel Housings

Lost Wax Casting
(SUS304 or 316 equivalent)

Z5
Nickel Plated Housings

Cast Iron + Nickel Plating

http://www.fyhbearings.com/html/corrosion.html

AIR HANDLING

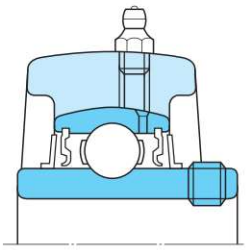
2.4 Air Handing Series

Units for HVAC and air handling (suffix code: S3, S5)

Ball bearing units for blowers must meet the demands of high speed rotation, low vibration, low noise, and decreased temperature output.
To meet these performance needs FYH produces the S3 and S5 series with tighter bore tolerances.
S5 uses non-contact seals as well as an improved machining accuracy to cut down on heat, noise, and vibration.

Table 2.5 Specifications of air handling units

Air Handling Fit	
100% Noise Check	
P11	The anti-rotation pin

Air Handling Fit	
100% Noise Check	
P11	The anti-rotation pin
C2	Internal bearing clearance is defined as the allowable space between the rolling elements and the raceways. **C2** is smaller clearance than the standard, and it reduces the noise and vibration in high speed applications.
P18	**P18** is the suffix code that designates smaller bore tolerance which allows for a tighter fit with the shaft. This, in turn, reduces vibration and noise and dramatically increases bearing life.
K3	Non contact lip seal is available for the lighter torque. 

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2.4.1 Features of the air handring units

The air handling unit is manufactured with original fitting called the air handling fit which exists in the middle with fitting "H" which can be assembled more easily than a standard fit "J." In addition, "J" fit the standard is fit that there is not the need for the anti-rotation pin, but can be very secure in high speed applications by adding the anti-rotation pin.

S3 and S5 bearings are sound tested in order to make sure the noise level is low enough to be suitable for high speed applications such as blowers.

2.4.2 Feature of air handring S5 specification for blowers

(1) Dimensional tolerances of shafts for blowers (used with set screw bearings)

For bearings used in blowers (suffix code: S5), a C2 internal ball clearance is recommended to reduce vibration and noise during operation.

Therefore, the shaft tolerance classes shown in **Table 2.6** are recommended for bearings with set screws.

Refer to (**"11.3 Internal bearing clearance"**) Details of the internal C2 ball clearance.

Table 2.6 Dimensional tolerance of shaft used for bearings (set screw type) for blowers

unit: μm

Shaft dia. (mm)		Dimensional tolerance of shaft			
		h5		j5	
Over	Incl.	Max.	Min.	Max.	Min.
10	**18**	0	− 8	+5	− 3
18	**30**	0	− 9	+5	− 4
30	**50**	0	−11	+6	− 5
50	**80**	0	−13	+6	− 7
80	**120**	0	−15	+6	− 9
120	**180**	0	−18	+7	−11

(2) Tolerance of inner rings of S5 specification

P18 is the suffix code that designates smaller bore tolerance which allows for a tighter fit with the shaft. This, in turn, reduces vibration and noise and dramatically increases bearing life.

Table 2.7 Tolerance and tolerance values of inner rings of P18 suffix (unit: μm)

Nominal bearing bore dia. d (mm)		Variation of tolerance of average bore dia. in plane Δ_{dmp}		Unequal bore dia. in plane V_{dsp}	Radial runout of inner ring K_{ia}
Over	Incl.	Max.	Min.	Max.	Max.
10	**18**	+13	0	6	7
18	**31.75**	+13	0	6	8
31.75	**50.8**	+13	0	10	10
50.8	**80**	+15	0	10	10

Table 2.8 Tolerance and tolerance values of inner rings of ISO standard (unit: μm)

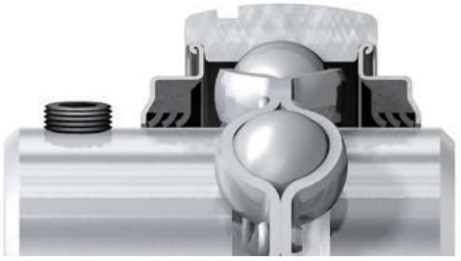
Nominal bearing bore dia. d (mm)		Variation of tolerance of average bore dia. in plane Δ_{dmp}		Unequal bore dia. in plane V_{dsp}	Radial runout of inner ring K_{ia}
Over	Incl.	Max.	Min.	Max.	Max.
10	**18**	+15	0	10	15
18	**31.75**	+18	0	12	18
31.75	**50.8**	+21	0	14	20
50.8	**80**	+24	0	16	25

2.5 Dust Resistant Units

The FYH Dust Resistant Units consists of a variety of supplemental sealing options that function extremely well in the exclusion of foreign matter. These options can work well by themselves or in combination with each other. From food processing and agricultural to wash-down and mining and aggregate, the FYH Dust From food processing and agricultural to wash-down and mining and aggregate, the FYH Dust Resistant Units can stand up to the toughest contamination challenges.

Triple-Lip Seals (suffix code: L3)

The L3 seal consists of a stamped steel shield with a molded NBR try-ply seal affixed to the inner portion of the shield, all of which is attached to the outer ring of the bearing. The triple-lip seal is excellent for resisting all types of contamination and is appropriate for low to moderate speeds.



Tight Triple-Lip Seals (suffix code: LT3)

The LT3 Triple-Lip seal fits tighter than the standard L3 seal. The rotating torque of the LT3 seal is approximately double that of the standard L3 seal, and it is appropriate where contamination or moisture are very high and rotating speeds are very low.

Stamped steel and cast iron covers are available in open or closed versions in a complete range of sizes. They are easy to install and they offer great resistance to wet and dry contaminates, and shocks and heats. Covers protect the entire bearing insert from contamination and they also help to provide a safer working environment.

Stamped Steel Open Covers

Cast Iron Open Covers

BACKSIDE GUARD

The nitrile rubber shields can be mounted on the backside of two and four bolt flange units and the equipment it is bolted onto. The back-side guard protects your bearings from dust and moisture and help lead to longer bearing life in applications where this can be an issue.

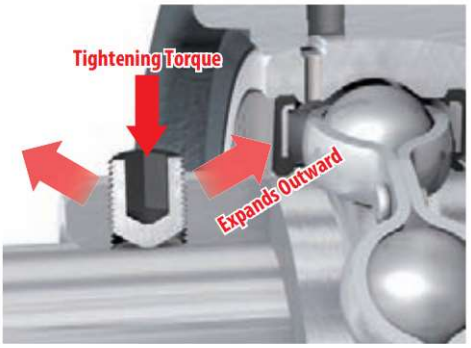
The nitrile rubber on the steel plate come without a drain slot and is designed for dust protection. Some applications where this product could be used include: aggregate applications, fertilizer spreaders, salt spreaders and agricultural applications where dirt can reach the backside of bearing units.
The nitrile rubber on the 304 stainless steel plate with the drain slot is designed to protect your bearing units in applications that are exposed to moisture and where moisture or water build up can create issues. These backside guards can be utilized in food and beverage applications where they are being washed down as well as pharmaceutical applications. The stainless steel core is perfect for situations where regular steel can rust quickly.

ORIGINAL DESIGNED SET SCREW

BULLET POINT®

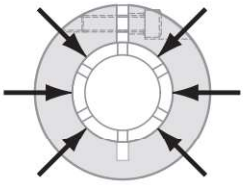
The innovative FYH Bullet Point set screw is a one piece ball point set screw which is designed to expand the threads of the screw as the point of the screw contacts the surface of the shaft.The resulting force creates superior holding power especially where vibration is present. Other set screws have larger contact areas with sharp edges at the point of the screw to bite into the shaft. However, these sharp edges damage more easily from vibration which creates a gap between the point of the set screw and the shaft. Once this gap is established, the set screw will begin to loosen.

When the Bullet Point set screw is tightened, the original shape of the point causes the threads of the screw to expand up to and beyond the elastic limit to achieve the maximum possible holding power. The thickness of the point is also designed to expand easily. This specialized design drastically reduces the potential for damage to both the set screw and shaft from normal use or for severe vibration, shock load, and high speed.



360° SHAFT CONTACT TRUE Concentric-LOC

NU-LOC®



The **FYH NU-LOC** bearing grips the shaft more uniformly, which allows for 360 degrees of equalized locking contact.
Compared to set screw bearings, the roundness of the ball path on the NU-LOC bearings results in better operation and longer life.

NU-LOC concentric locking collars are designed to prevent shafting from becoming marred or burred. A single standard hex head cap screw can be tightened quickly and easily, and NU-LOC bearings can replace either setscrew or eccentric locking collar inserts.

NU-LOC concentric locking collar with a single cap screw provides excellent holding power. The collar is installed over the slotted inner ring on the shaft concentrically.
Quick & Easy Installation with a single hex cap screw.

NU-LOC's standard tolerance specification is designed for air handring applications, and the greater roundness of the ball path enable the use of smaller internal ball clearance.

The bore tolerance is also smaller since NU-LOC has the 360 degrees of equalized locking contact. NU-LOC is not only good for the air handring applications, but great for the other applications as well.

3 Models

3.1 Model List

Table 3.1 and **Table 3.2** shows the models of FYH Ball Bearing Units and ball bearing inserts.

Table 3.1 FYH Ball Bearing Units models

Model	Type	Bearing bore dia. Surface (fixing to shaft)	Model code	Shaft dia. (inch) min.	Shaft dia. (inch) max.	Shaft dia. (mm) min.	Shaft dia. (mm) max.	Dimension table
1 Pillow Block Units	(1) Pillow Block Units	with set screws	**UCP**	1/2	4	12	140	P.82
		with eccentric locking collar	**NAP**	1/2	2 15/16	12	75	P.88
			NAP-E	1 3/16	2 15/16	–	–	P.90
			NAPK	1/2	2 15/16	12	75	P.92
		with concentric locking collar	**NCP**	3/4	2 7/16	20	60	P.94
		Tapered bore (with adapter)	**UKP**	3/4	4 1/2	20	125	P.96
	(2) Thick Pillow Block Units	with set screws	**UCIP**	1 1/2	4	40	140	P.102
		Tapered bore (with adapter)	**UKIP**	1 1/4	4 1/2	35	125	P.104
	(3) Tapped-Base Pillow Block Units	with set screws	**UCPA**	1/2	2	12	50	P.106
			UCPAN	3/4	1 7/16	20	35	P.108
		with concentric locking collar	**NCPA**	3/4	2	20	50	P.110
			NCPAN	3/4	1 7/16	20	35	P.112
	(4) High-Base Pillow Block Units	with set screws	**UCPH**	1/2	2	12	50	P.114
	(5) Narrow Inner Ring Bearing Pillow Block Units	with set screws	**SBP-RKP8**	3/4	1 1/2	20	40	P.116
		with eccentric locking collar	**SAP-FP9**	3/4	2 3/16	20	55	P.116
		with set screws	**SBPAN-RKP8**	3/4	1 7/16	20	35	P.118
		with eccentric locking collar	**SAPAN-FP9**	3/4	1 7/16	20	35	P.118
	(6) Light Pillow Block Units	with set screws	**BLP**	1/2	1 1/2	12	40	P.120
		with eccentric locking collar	**ALP**	1/2	1 9/16	12	40	P.120
	(7) Compact Pillow Block Units	with set screws	**UP**	–	–	10	30	P.122
	(8) Corrosion Resistant Series Pillow Block Units	with set screws	**UCSP-H1S6**	1/2	2 7/16	12	60	P.124
			UCSPA-H1S6	1/2	1 9/16	12	40	P.126
			USP-S6	–	–	10	30	P.128
			UCVP-S6	3/4	2	20	50	P.130
			UCVP-ES7	3/4	2	20	50	P.132
			UCVPAN-ES7	3/4	1 7/16	20	35	P.134
	(9) Stamped Steel Pillow Block Units	with set screws	**SBPP**	1/2	1 1/4	12	30	P.136
		with eccentric locking collar	**SAPP**	1/2	1 1/4	12	30	P.136
2 4-Bolt Flange Units	(1) 4-Bolt Flange Units	with set screws	**UCF**	1/2	4	12	140	P.138
			UCF-E	1/2	3 7/16	12	85	P.144
		with eccentric locking collar	**NANF**	1/2	2 7/16	12	60	P.148
		with concentric locking collar	**NCF**	3/4	2 7/16	20	60	P.150
			NCF-E	3/4	2 7/16	20	60	P.152
		Tapered bore (with adapter)	**UKF**	3/4	4 1/2	20	125	P.154
	(2) Square Piloted 4-Bolt Flange Units	with set screws	**UCFS**	1	4	25	140	P.160
		Tapered bore (with adapter)	**UKFS**	3/4	4 1/2	20	125	P.162
	(3) Narrow Inner Ring Bearing 4-Bolt Flange Units	with set screws	**SBF-RKP8**	3/4	1 1/2	20	40	P.164
		with eccentric locking collar	**SAF-FP9**	3/4	2 3/16	20	55	P.164
	(4) Corrosion Resistant Series 4-Bolt Flange Units	with set screws	**UCSF-H1S6**	3/4	2 7/16	20	60	P.166
			UCSF-EH1S6	3/4	2 7/16	20	60	P.168
			UCVF-S6	3/4	1 9/16	20	40	P.170
			UCVF-ES7	3/4	1 9/16	20	40	P.172
3 Oval Flange Units	(1) 2-Bolt Flange Units	with set screws	**UCFL**	1/2	4	12	120	P.174
			UCFL-E	1/2	3 1/4	12	85	P.180
		with eccentric locking collar	**NANFL**	1/2	2 3/16	12	55	P.184
		with concentric locking collar	**NCFL**	3/4	2 7/16	20	60	P.186
			NCFL-E	3/4	2 7/16	20	60	P.188
		Tapered bore (with adapter)	**UKFL**	3/4	4	20	110	P.190
	(2) Adjustable 2-Bolt Flange Units	with set screws	**UCFA**	1/2	2 3/16	12	55	P.194
	(3) 3-Bolt Flange Units	with set screws	**UCFB**	1/2	2	12	50	P.196
	(4) Narrow Inner Ring Bearing 2-Bolt Flange Units	with set screws	**SBFL-RKP8**	3/4	1 1/2	20	40	P.198
		with eccentric locking collar	**SAFL-FP9**	3/4	2 3/16	20	55	P.198
	(5) Light 3-Bolt Flange Units	with set screws	**SBTFD-H4RKP8**	1/2	1 7/16	12	35	P.200
		with eccentric locking collar	**SATFD-FH4P9**	1/2	1 7/16	12	35	P.200
	(6) Light 2-Bolt Flange Units	with set screws	**BLF**	1/2	1 7/16	12	35	P.202
		with eccentric locking collar	**ALF**	1/2	1 7/16	12	35	P.202
	(7) Compact 2-Bolt Flange Units	with set screws	**UFL**	–	–	8	30	P.204
	(8) Corrosion Resistant Series 2-Bolt Flange Units	with set screws	**UCSFL-H1S6**	1/2	2	12	50	P.206
			UCSFL-EH1S6	1/2	2	12	50	P.208
			USFL-S6	–	–	10	30	P.210
			UCVFL-S6	3/4	1 9/16	20	40	P.212
			UCVFL-ES7	3/4	1 9/16	20	40	P.214
	(9) Corrosion Resistant Series 3-Bolt Flange Units	with set screws	**UCVFB-ES7**	3/4	1 7/16	20	35	P.216

Table 3.1 FYH Ball Bearing Units models (continued)

Model	Type	Bearing bore dia. Surface (fixing to shaft)	Model code	Shaft dia. (inch) min.	Shaft dia. (inch) max.	Shaft dia. (mm) min.	Shaft dia. (mm) max.	Dimension table
4 4-Bolt Flange Cartridge Units	(1) 4-Bolt Flange Cartridge Units	with set screws	**UCFC**	1/2	4	12	100	P.218
			UCFCX-E	1	4	25	100	P.222
			UCFCF	7/8	2 3/16	25	55	P.224
		with concentric locking collar	**NCFC**	3/4	2 7/16	20	60	P.226
		Tapered bore (with adapter)	**UKFC**	3/4	3 1/2	20	90	P.228
	(2) Narrow Inner Ring Bearing 4-Bolt Flange Cartridge Units	with set screws	**SBFC-RKP8**	3/4	1 1/2	20	40	P.232
		with eccentric locking collar	**SAFC-FP9**	3/4	2 3/16	20	55	P.232
	(3) Corrosion Resistant Series 4-Bolt Flange Cartridge Units	with set screws	**UCSFC-H1S6**	3/4	1 9/16	20	40	P.234
5 Stamped Steel Flange Units	(1) Stamped Steel 3-Bolt Flange Cartridge Units	with set screws	**SBPF**	1/2	1 7/16	12	35	P.236
		with eccentric locking collar	**SAPF**	1/2	1 7/16	12	35	P.236
	(2) Stamped Steel 2-Bolt Flange Units	with set screws	**SBPFL**	1/2	1 7/16	12	35	P.238
		with eccentric locking collar	**SAPFL**	1/2	1 7/16	12	35	P.238
6 Take-Up Units	(1) Take-Up Units	with set screws	**UCT**	1/2	4	12	140	P.240
			UCT-E	1/2	3 7/16	12	85	P.246
		with eccentric locking collar	**NAT-E**	1/2	2 15/16	12	75	P.250
		with concentric locking collar	**NCT**	3/4	2 7/16	20	60	P.252
			NCT-E	3/4	2 7/16	20	60	P.254
		Tapered bore (with adapter)	**UKT**	3/4	4 1/2	20	125	P.256
	(2) Narrow Slot Take-Up Units	with set screws	**UCTRS**	7/8	1 7/16	25	35	P.260
	(3) Corrosion Resistant Series Take-Up Units	with set screws	**UCST-H1S6**	3/4	2	20	50	P.262
			UCST-EH1S6	3/4	2	20	50	P.264
	(4) Section Steel Frame Take-Up Units	with set screws	**UCTH**	1/2	2 1/2	12	65	P.266
	(5) Channel Steel Frame Take-Up Units	with set screws	**UCTL**	–	–	20	45	P.268
			UCTU	–	–	40	90	P.270
	(6) Steel Plate Frame Take-Up Units	with set screws	**SBPTH**	–	–	12	25	P.274
			SBNPTH	–	–	12	25	P.276
7 Other Units	(1) Cartridge Units	with set screws	**UCC**	1/2	4	12	140	P.278
		Tapered bore (with adapter)	**UKC**	3/4	4 1/2	20	125	P.282
	(2) Hanger Units	with set screws	**UCHA**	1/2	3	12	75	P.284

Table 3.2 Bearing insert models

Model	Type	Bearing bore dia. Surface (fixing to shaft)	Model code	Shaft dia. (inch) min.	Shaft dia. (inch) max.	Shaft dia. (mm) min.	Shaft dia. (mm) max.	Dimension table
8 Ball Bearing Inserts	(1) UC inserts	with set screws	**UC**	1/2	4	12	140	P.286
	UC inserts (Stainless steel)		**UC-S6**	1/2	2 7/16	12	60	P.294
	(2) UK inserts	Tapered bore (with adapter)	**UK**	3/4	4 1/2	20	125	P.306
	(3) NC inserts	with concentric locking collar	**NC**	3/4	2 7/16	20	60	P.302
	(4) NA inserts	with eccentric locking collar	**NA**	1/2	3	12	75	P.296
	(5) SB inserts (Lightweight)	with set screws	**SB**	1/2	1 1/2	12	40	P.286
			SB-RKP8	1/2	1 1/2	12	40	P.286
	(6) SA inserts (Lightweight)	with eccentric locking collar	**SA**	1/2	1 9/16	12	40	P.296
			SA-F	1/2	2 3/16	12	55	P.296
	(7) SU inserts. Small size	with set screws	**SU**	–	–	8	30	P.286
	SU inserts. Small size (Stainless steel)		**SU-S6**	–	–	10	30	P.294
	(8) Cylindrical O.D.	with set screws	**ER**	1/2	2 7/16	12	60	P.312
	(with lubricating mechanism amd snap ring)	with concentric locking collar	**ERC**	3/4	2 7/16	20	60	P.304
	(9) Cylindrical O.D.	with set screws	**RB**	1/2	1 9/16	12	40	P.312
	(10) Standard	Cylindrical bore	**SC**	–	–	17	40	P.316
	(11) Cylindrical O.D.	with set screws	**SBB-RK**	1/2	1 1/2	12	40	P.314
		with eccentric locking collar	**SAA-F**	1/2	2 3/16	12	55	P.314
	(12) Adapter		**H2300X**	3/4	5	20	125	P.318

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3.2 Models and Features

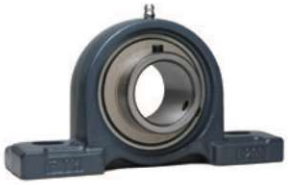
FYH Ball Bearing Units are available in a variety of styles and sizes.
Models and features of the Ball Bearing Units are shown below.

Note [1] Descriptions of codes for units with covers are shown in the table below. (common to all the models)

Diameter series	Code	Descriptions
2	C, CD	Stamped steel plate cover type
	FC, FCD	Cast iron cover type
X	C, CD	From **X05** to **X17**: Stamped steel plate cover type **X18** and **X20**: Cast iron cover type
3	C, CD	Cast iron cover type

1 Pillow Block Units

1 Pillow Block Units

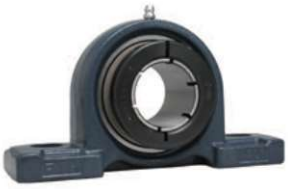


UCP

NAP

NAP-E

NAPK



NCP

UKP+H

UCP-C, CD
UKP-C, CD

UCP-FC, FCD
UKP-FC, FCD

UCP is a pillow block unit with a rigid cast iron housing and two specially designed set screws in the inner-ring spaced at 120 degrees for maximum holding power and reliability for a wide variety of applications and operating conditions.

Duty: Standard, Medium, Heavy

NAP is a pillow block unit with an eccentric locking collar insert that provides a very secure grip to the shaft that becomes even more secure during continued operation. It is specifically used for single-direction/non-reversing rotation.

Duty: Standard, Heavy

NCP is a pillow block unit with a specially designed concentric locking collar that provides 360 degrees of shaft contact. It produces a more concentric lock on the shaft compared to other locking styles and it functions very well for high speed applications.

Duty: Standard

UKP is a pillow block unit with a tapered-bore bearing insert that utilizes an adapter sleeve assembly to produce a highly concentric and secure lock on the shaft to reduce slippage and fretting corrosion even under adverse conditions.

Duty: Standard, Medium, Heavy

2 Thick Pillow Block Units

UCIP

UKIP+H

UCIP is a pillow block unit with a highly rigid and rugged casting for particularly demanding applications. The two bolt holes are round for more accurate positioning and the strength ratings of the housing are substantially improved over standard pillow block housings.
UK style is also available.

Duty: Standard, Heavy

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3 Tapped-Base Pillow Block Units

UCPA

UCPAN

NCPA

NCPAN

UCPA and **UCPAN** are tapped-base pillow blocks with threaded bolt holes in the bottom of the housings. They are ideal for exact unit positioning and limited space applications. They are available in both inch and metric bolt-hole dimensions.
NA, NC & UK style are also available.

Duty: Standard

4 High-Base Pillow Block Units

UCPH

UCPH is a pedestal pillow block unit with an exceptionally high mounting base. It is ideal for applications where a shouldered shaft could create interference with the mounting surface when using a standard pillow block unit.

Duty: Standard

5 Narrow Inner Ring Bearing Pillow Block Units

SBP-RKP8

SAP-FP9

SBPAN-RKP8

SAPAN-FP9

SBP-RKP8 is a lightweight bearing mounted pillow block unit which is ideal for limited space applications and light to moderate duty applications.
SAP-FP9 with SA eccentric locking collar style is also available.

SBPAN-RKP8 is a lightweight bearing mounted tapped-base pillow block unit which is ideal for limited space applications and light to moderate duty applications.
SAPAN-FP9 with SA eccentric locking collar style is also available.

Duty: Standard

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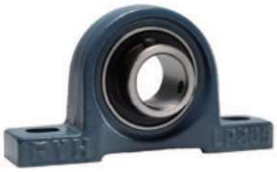
(1 Pillow Block Units)

6 Light Pillow Block Units



BLP

ALP

BLP is a compact and lightweight pillow block unit which is ideal for limited space applications and light to moderate duty applications.
ALP with SA eccentric locking collar style is also available.

Duty: Light

7 Compact Pillow Block Units

UP

UP-C, CD

UP is a light duty pillow block unit that is part of the Clean Series. It has a zinc-alloy housing for a high level of corrosion resistance and it is capable of accepting end covers to increase contamination resistance.

Duty: Light

8 Corrosion Resistant Series Pillow Block Units

UCSP-H1S6

USP-S6

UCSPA-H1S6

UCVP-S6
UCVP-ES7

UCVPAN-ES7

UCSP is a pillow block unit that is made entirely out of stainless steel components for the highest level of corrosion resistance for a mounted bearing unit. It is also pre-filled with food grade grease for food processing applications.

Duty: Standard

USP-S6 is a light duty stainless pillow block unit that is part of the Clean Series. It has a stainless housing for a high level of corrosion resistance and it is capable of accepting end covers to increase contamination resistance.

Duty: Light

UCSPA is a tapped-base pillow block unit with threaded bolt holes in the bottom of the housings. It is made entirely out of stainless steel components for the highest level of corrosion resistance for a mounted bearing unit. It is ideal for exact unit positioning and limited space applications. It is also pre-filled with food grade grease for food processing applications.

Duty: Standard

UCVP and **UCVPAN** is a pillow block unit with a corrosion resistant thermoplastic housing and the option of either a stainless steel bearing insert or a zinc chromate plated bearing insert. Both bearing inserts offer a high level of corrosion resistance and they are factory lubricated with food grade grease.

Duty: Standard

9 Stamped Steel Pillow Block Units

SBPP

SAPP

SBPP is a pillow block unit with a lightweight and compact stamped steel housing for light to moderate duty applications.
SAPP with SA eccentric locking collar style is also available.

Duty: Light

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2 4-Bolt Flange Units

1 4-Bolt Flange Units

UCF
UCF-E

NANF

NCF
NCF-E

UKF+H

UCF is a four-bolt flange unit with a rigid cast iron housing and two specially designed set screws in the inner-ring spaced at 120 degrees for maximum holding power and reliability for a wide variety of applications and operating conditions.
UK style is also available.

Duty: Standard, Medium, Heavy

NANF is a four-bolt flange unit with an eccentric locking collar insert that provides a very secure grip to the shaft that becomes even more secure during continued operation. It is specifically used for single-direction/non-reversing rotation.

Duty: Standard

NCF is a four-bolt flange unit with a specially designed concentric locking collar that provides 360 degrees of shaft contact. It produces a more concentric lock on the shaft compared to other locking styles and it functions very well for high speed applications.

Duty: Standard

2 Square Piloted 4-Bolt Flange Units

UCFS

UKFS+H

UCFS is a piloted four-bolt flange unit available with a heavy duty bearing insert for a demanding operating environment. The pilot on the back of the housing allows for precise mounting where necessary.
UK style is also available.

Duty: Heavy

3 Narrow Inner Ring Bearing 4-Bolt Flange Units

SBF-RKP8

SAF-FP9

SBF-RKP8 is a lightweight bearing mounted four-bolt Flange units which is ideal for limited space applications and light to moderate duty applications.
SAF-FP9 with SA eccentric locking collar style is also available.

Duty: Standard

4 Corrosion Resistant Series 4-Bolt Flange Units

UCSF-H1S6
UCSF-EH1S6

UCVF-S6
UCVF-ES7

UCSF is a four-bolt flange unit that is made entirely out of stainless steel components for the highest level of corrosion resistance for a mounted bearing unit. It is also pre-filled with food grade grease for food processing applications.

UCVF is a four-bolt flange unit with a corrosion resistant thermoplastic housing and the option of either a stainless steel bearing insert or a zinc chromate plated bearing insert. Both bearing inserts offer a high level of corrosion resistance and they are factory lubricated with food grade grease.

Duty: Standard

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3 Oval Flange Units

1 2-Bolt Flange Units

UCFL
UCFL-E

NANFL

NCFL
NCFL-E

UKFL+H

UCFL is a two-bolt flange unit with a rigid cast iron housing and two specially designed set screws in the inner-ring spaced at 120 degrees for maximum holding power and reliability for a wide variety of applications and operating conditions.
UK style is also available.

Duty: Standard, Medium, Heavy

NANFL is a two-bolt flange unit with an eccentric locking collar insert that provides a very secure grip to the shaft that becomes even more secure during continued operation. It is specifically used for single-direction/non-reversing rotation.

Duty: Standard

NCFL is a two-bolt flange unit with a specially designed concentric locking collar that provides 360 degrees of shaft contact. It produces a more concentric lock on the shaft compared to other locking styles and it functions very well for high speed applications.

Duty: Standard

2 Adjustable 2-Bolt Flange Units

UCFA

UCFA is an adjustable two-bolt flange unit with a rigid cast iron housing and two specially designed set screws in the inner-ring spaced at 120 degrees for maximum holding power and reliability for a wide variety of applications and operating conditions.

Duty: Standard

3 3-Bolt Flange Units

UCFB

UCFB are three-bolt flange brackets with rigid cast iron housings and two specially designed set screws in the innerring spaced at 120 degrees for maximum holding power and reliability for a wide variety of applications and operating conditions.
They are available in both inch and metric bolt-hole dimensions.

Duty: Standard

4 Narrow Inner Ring Bearing 2-Bolt Flange Units

SBFL-RKP8

SAFL-FP9

SBFL-RKP8 is a lightweight bearing mounted two-bolt Flange units which is ideal for limited space applications and light to moderate duty applications.
SAFL-FP9 with SA eccentric locking collar style is also available.

Duty: Standard

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5 Light 3-Bolt Flange Units

SBTFD-H4RKP8

SATFD-FH4P9

SATFD is a compact and lightweight three-bolt flange unit with square bolt holes for carriage bolts and a ductile iron housing for added strength. It is ideal for limited space applications and light to moderate duty applications.
with ductile iron housing

Duty: Light

6 Light 2-Bolt Flange Units

BLF

ALF

BLF is a compact and lightweight two-bolt flange unit which is ideal for limited space applications and light to moderate duty applications.
ALF with SA eccentric locking collar style is also available.

Duty: Light

7 Compact 2-Bolt Flange Units

UFL

UFL-C, D

UFL is a light duty two-bolt flange unit that is part of the Clean Series. It has a zinc-alloy housing for a high level of corrosion resistance and it is capable of accepting end covers to increase contamination resistance.

Duty: Light

8 Corrosion Resistant Series 2-Bolt Flange Units

UCSFL-H1S6
UCSFL-EH1S6

USFL-S6

UCVFL-S6
UCVFL-ES7

UCSFL is a two-bolt flange unit that is made entirely out of stainless steel components for the highest level of corrosion resistance for a mounted bearing unit. It is also pre-filled with food grade grease for food processing applications.

Duty: Standard

USFL-S6 is a light duty stainless two-bolt flange unit that is part of the Clean Series. It has a stainless housing for a high level of corrosion resistance and it is capable of accepting end covers to increase contamination resistance.

Duty: Light

UCVFL is a two-bolt flange unit with a corrosion resistant thermoplastic housing and the option of either a stainless steel bearing insert or a zinc chromate plated bearing insert. Both bearing inserts offer a high level of corrosion resistance and they are factory lubricated with food grade grease.

Duty: Standard

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(3 Oval Flange Units)

9 Corrosion Resistant Series 3-Bolt Flange Units

UCVFB-ES7

UCVFB is a three-bolt flange unit that is made entirely out of stainless steel components for the highest level of corrosion resistance for a mounted bearing unit. It is also pre-filled with food grade grease for food processing applications.

Duty: Standard

4 4-Bolt Flange Cartridge Units

1 4-Bolt Flange Cartridge Units

UCFC
UCFCX-E
UCFCF

NCFC

UKFC+H

UCFC is piloted flange cartridge units with rigid cast iron housings and two specially designed set screws in the inner-ring spaced at 120 degrees for maximum holding power and reliability for a wide variety of applications and operating conditions. The pilot on the back of the housing allows for precise mounting where necessary. UK, NA styles are also available.

Duty: Standard, Medium

NCFC is a piloted flange cartridge unit with a specially designed concentric locking collar that provides 360 degrees of shaft contact. It produces a more concentric lock on the shaft compared to other locking styles and it functions very well for high speed.

Duty: Standard

2 Narrow Inner Ring Bearing 4-Bolt Flange Cartridge Units

SBFC-RKP8

SAFC-FP9

SBFC-RKP8 is a lightweight bearing mounted 4-Bolt Flange Cartridge Units which is ideal for limited space applications and light to moderate duty applications.
SAFC-FP9 with SA eccentric locking collar style is also available.

Duty: Standard

3 Corrosion Resistant Series 4-Bolt Flange Cartridge Units

UCSFC-H1S6

UCSFC is a four-Bolt Flange Cartridge Units that is made entirely out of stainless steel components for the highest level of corrosion resistance for a mounted bearing unit. It is also pre-filled with food grade grease for food processing applications.

Duty: Standard

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5 Stamped Steel Plate Flange Units

1 Stamped Steel 3-Bolt Flange Cartridge Units

SBPF

SAPF

SBPF is a round three-bolt flange unit with a lightweight and compact stamped steel housing for light to moderate duty applications.
SAPF with SA eccentric locking collar style is also available.

Duty: Light

2 Stamped Steel 2-Bolt Flange Units

SBPFL

SAPFL

SBPFL is a two-bolt flange unit with a lightweight and compact stamped steel housing for light to moderate duty applications.
SAPFL with SA eccentric locking collar style is also available.

Duty: Light

6 Take-Up Units

1 Take-Up Units

UCT
UCT-E

NAT-E

NCT
NCT-E

UKT+H

UCTRS

UCT is a wide-slot take-up unit suitable for use in a side-mount take-up frame. It has a rigid cast iron housing and two specially designed set screws in the inner-ring spaced at 120 degrees for maximum holding power and reliability for a wide variety of applications and operating conditions.
UK style is also available.

Duty: Standard, Medium, Heavy

NAT is a wide-slot take-up unit with an eccentric locking collar insert that provides a very secure grip to the shaft that becomes even more secure during continued operation. It is specifically used for single-direction/non-reversing rotation.

Duty: Standard

NCT is a wide-slot take-up unit with a specially designed concentric locking collar that provides 360 degrees of shaft contact. It produces a more concentric lock on the shaft compared to other locking styles and it functions very well for high speed applications.

Duty: Standard

UCTRS is a narrow slot take up unit. It has a rigid cast iron housing and two specially designed set screws in the inner-ring spaced at 120 degrees for maximum holding power and reliability for a wide variety of applications and operating conditions.

Duty: Standard

(6 Take-Up Units)

2 Corrosion Resistant Series Take-Up Units

UCST-H1S6
UCST-EH1S6

UCST is a wide-slot take-up unit that is made entirely out of stainless steel components for the highest level of corrosion resistance for a mounted bearing unit. It is also pre-filled with food grade grease for food processing applications.

Duty: Standard

3 Section Steel Frame Take-Up Units

UCTH

UCTH is aTake-Up unit with section a steel frame.

Duty: Standard

4 Channel Steel Frame Take-Up Units

UCTL

UCTU

UCTL is a Take-Up unit with a channel steel frame.
Duty: Standard

UCTU is a Take-Up unit with a channel steel frame.
Duty: Standard, Heavy

5 Steel Plate Frame Take-Up Units

SBPTH

SBNPTH

SBPTH is a Take-Up unit with a steel plate frame.
Duty: Standard

SBNPTH is a Take-Up unit with a steel plate frame.
Duty: Standard

7 Other Units

1 Cartridge Units

UCC

UKC+H

UCC is a cartridge unit with two specially designed set screws in the inner-ring spaced at 120 degrees for maximum holding power and reliability for a wide variety of applications and operating conditions. The cartridge housing allows for precise shaft mounting and expansion capability where necessary.
UK, NA, NC styles are also available.

Duty: Standard, Medium, Heavy

2 Hanger Units

UCHA

UCHA is a hanger unit with a threaded-base for simple installation on a threaded pipe mounting configuration. It has two specially designed set screws in the inner-ring spaced at 120 degrees for maximum holding power and reliability for a wide variety of applications and operating conditions.

Duty: Standard

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8 Ball Bearing Inserts

1 UC inserts

UC

UC-L3

UC-S6

with set screws

UC2 (X, 3)…Standard type — Duty: Standard, Medium, Heavy

UC2 (X, 3) L3…Triple-lip seal type

UC2-S6…Stainless steel series — Duty: Standard

This deep grooved ball bearing insert with rubber seal and metal slinger comes pre-lubricated with FYH grease. This insert incorporates a wide inner ring design with FYH Bullet Point setscrews as a standard, at 120 degrees apart to affix the insert to the shafting. The setscrew locking design with wide inner ring is the most common insert and can be used in a wide variety of applications. The spherical O.D. of the insert has both a grease groove as well as grease holes to re-lubricate the insert when needed. The UC insert can be ordered with a triple lip seal by using a L3 designation in the suffix.

The UC-S6 series incorporates the same design and dimensions as a standard UC insert but is constructed of 316 grade stainless steel for wash down and other corrosive environments. These inserts come with food grade grease as a standard, and a primary used in food, pharmaceutical, fertilizer and demanding applications.

2 UK inserts

UK

UK+H

UK-L3

UK-L3+H

with adapter

UK2 (X, 3)…Standard type — Duty: Standard, Medium, Heavy

UK2 (3) L3…Triple-lip seal type

This deep grooved ball bearing insert with rubber seal and metal slinger comes pre-lubricated with FYH grease. The UK series incorporates a tapered inner ring and uses corresponding adaptors to determine the bore size and affix it to the shaft. The UK series is perfect for applications where shock load can damage other locking devices. The tapered bore with adaptor provides true 360 degree shaft contact that runs the entire length of the inner ring.
The spherical O.D. has a grease groove and grease holes for re-lubrication. The insert and adaptor come as two separate items and must be ordered separately. The insert is also available in a triple lip design by adding the L3 designation to the suffix.

3 NC inserts

NC

with concentric locking collar

NC2 — Duty: Standard

The FYH NU-LOC bearing features a concentric locking collar that allows for 360 degrees of locking contact. This deep groove ball bearing insert uses a grooved inner ring with a collar that incorporates a hex screw that is tightened to squeeze equally against the inner ring. The NU-LOC insert has a spherical O.D. and has grease grooves and grease holes for re-lubricating.
The roundness of the ball path created by the NU-LOC bearing results in better operation and longer life. The collar is designed to prevent shaft marring and burring that can occur with other locking options.

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(8 Ball Bearing Inserts)

4 NA inserts

NA

with eccentric locking collar

NA2 Duty: Standard, Heavy

This deep grooved ball bearing insert with rubber seal and metal slinger comes pre-lubricated with FYH grease. This insert incorporates a wide inner ring design with an eccentric locking collar for securing the insert to the shafting. The insert has grease holes and a grease groove on the outer ring for re-lubrication.
The spherical O.D. allows this insert to be installed in a wide range of housings. When the insert is affixed to the shaft, the eccentric collars' elliptical shape meshes with the elliptical surface of the inner ring.
The turning of the inner ring locks the shafting in place and a setscrew is tightened to keep it from slipping.

5 SB inserts

SB

SB-RKP8

with set screws

SB2 Duty: Light

This is a deep grooved ball bearing insert with spherical O.D. comes from the factory pre-lubricated with FYH grease. This bearing can be ordered in either re-lube style or sealed for life. The re-lube style has a grease groove and grease holes on the O.D. while the lubed for life does not. The SB series has the same load ratings as a UC bearing but has a narrow inner ring, and uses a one piece seal and slinger design rather than a separate seal and slinger. This insert affixes to the shafting using two set screws at 120 degrees apart. To order this same bearing with a cylindrical O.D. use the designation SBB.

6 SA inserts

SA

SA-F

SA-FP9

with eccentric locking collar

SA2, SA2-F Duty: Light

This deep grooved ball bearing unit with spherical O.D. is the same as the SB type insert, but uses an eccentric locking collar for affixing to the shafting. This insert comes from the factory pre-lubricated with FYH grease. This bearing can be ordered in either re-lube style or sealed for life. The re-lube style has a grease groove and grease holes on the O.D. while the lubed for life does not. This series also has a re-lube backside style. The backside re-lube is designated by an F in the suffix to be compatible with others in the industry.
When the insert is affixed to the shaft, the eccentric collars' elliptical shape meshes with the elliptical surface of the inner ring.
The turning of the inner ring locks the shafting in place and a setscrew is tightened to keep it from slipping. To order this same bearing with a cylindrical O.D us the designation SAA.

7 SU inserts (Small size)

SU

SU-S6

with set screws

SU0…Standard type Duty: Light

SU0-S6…Stainless steel

This deep groove ball bearing insert is intended for very light loads and is used in light duty conveying applications as part of our Clean Series. This bearing has a spherical O.D. and comes pre-lubricated from the factory. These inserts have a spherical O.D. with a wider inner ring and have no grease groove or grease holes for re-lubrication. Two setscrews at 120 degrees apart affix this insert to the shafting. The SU-S6 bearing is constructed of stainless steel material and is used as part of our stainless Clean Series. The stainless material is superior in corrosion resistance compared to the normal clean series insert.

8 ER inserts

ER

ERC

with set screws, cylindrical O.D. lubricating mechanism, locating snap ring and snap ring groove

ER2, ERC2 Duty: Standard

This deep groove ball bearing insert with a rubber seal and metal slinger come pre-lubricated with FYH grease. The ER series has a cylindrical O.D. with grease groove and grease holes outer ring for re-lubrication. The ER series uses two FYH Bullet Point type setscrews at 120 degrees apart to affix it to the shafting. The ER bearings have a snap ring on the outer ring to help make locating the bearing a simple task during installation.
ERC with NU-LOC concentric locking collar style is also available.

9 RB inserts

RB

with set screws, cylindrical O.D.

RB2 Duty: Standard

This deep groove ball bearing insert with a rubber seal and metal slinger come pre-lubricated with FYH grease. The RB series has a cylindrical O.D and has the same dimensions as the ER series but does not have a snap ring for locating or a grease groove and grease holes for re-lubrication. The RB series uses two FYH Bullet Point type setscrews at 120 degrees apart to affix it to the shafting.

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(8 Ball Bearing Inserts)

10 SC inserts

SC

SC2 Duty: Light

The SC series is a non-extending inner ring insert with a spherical outer-diameter which allows it to be mounted in a traditional housing. The bore tolerance is more precise than typical mounted bearings so press-fit shaft mounting can be accomplished.

11 SBB, SAA inserts

SBB-RK

SAA-F

with set screws, cylindrical O.D.

SBB2, SAA2-F Duty: Light

The SBB and SAA insert series' both have a cylindrical outer diameter for press-fit mounting directly into component machinery. They are not self-aligning or capable of being mounted into traditional housings.

12 Adapter

H2300X

Adapter

H2300X

The H2300X adapter series' are for use in the tapered-bore UK series. Proper assembly of adapter sleeves can create excellent holding power on the shaft.

4 Rating Life of Bearings

When ball bearing units are installed and operated on a piece of machinery eventually a failure will occur. The period of operation until the unit cannot be used due to failure is called the bearing life.

Bearing failure is caused by two main reasons. The first is fatigue of bearing material, and the second is lubricant degradation. The life is figured on whichever fails first.

Proper bearing lubrication will eliminate grease degradation and allow full bearing life to be achieved. If the bearing units are run without replenishment of the grease the bearing life will have to be factored by either the grease life or the bearing life. During installation, care must be taken not to damage the bearing. Proper bearing maintenance and lubrication will ensure long bearing life.

4.1 Basic Rating Life and Basic Load Rating

4.1.1 Basic rating life

When a bearing is rotated under load the raceways and the rolling elements are continuously exposed to load. Damage, such as scaling (flaking or peeling), eventually appears on the material, and the total rotating frequency until the damage appears is called the "fatigue limit of the bearing". Fatigue limit of the bearing can vary greatly even if the bearings have the same structure, dimensions, materials, machining methods, and are operated under the same conditions.

To account for this variation, a group of the same bearings operating under the same conditions are tested, and the total rotating frequency of 90% of the bearings operating with no damage due to rotating fatigue (90% reliability) is called the basic load rating.

4.1.2 Basic load rating

Dynamic ratings are determined by placing a pure radial load on a radial bearing or by placing a central axial load on a thrust bearing. The dynamic rating is the load that the bearing will withstand for one million cycles before failure of the bearing.

These ratings are referred to as the **basic dynamic radial load rating** (C_r) or the **basic dynamic axial load rating** (C_a). These values are indicated in the catalog as the basic dynamic radial load rating (C_r), and the value is shown in the dimensional table.

4.2 Calculation of Rating Life

The relationship between the basic rating life, the basic dynamic load rating, and the dynamic equivalent load of the ball bearing is indicated in **Formula (4.1)**. If the ball bearing unit is being used at a fixed rotating speed, the life is indicated as time. This is shown in **Formula (4.2)**.

(Total rotating frequency) $$L_{10} = \left(\frac{C_r}{P_r}\right)^3 \quad \cdots\cdots (4.1)$$

(Time) $$L_{10h} = \frac{10^6}{60n}\left(\frac{C_r}{P_r}\right)^3 \quad \cdots\cdots (4.2)$$

Whereas,

L_{10}: Basic rating life, 10^6 rotations

L_{10h}: Basic rating life, hr

C_r: Basic dynamic load rating, N

P_r: Dynamic equivalent load, N (see **"5 Bearing load"**)

n: Rotating speed, min^{-1}

Calculation of the basic rating life using the life factor (f_h) and the speed factor (f_n) in **Formula (4.2)** are shown below.

$$L_{10h} = 500\, f_h^{\,3} \quad \cdots\cdots (4.3)$$

Life factor $$f_h = f_n \cdot \frac{C_r}{P_r} \quad \cdots\cdots (4.4)$$

Speed factor $$f_n = \left(\frac{10^6}{500 \times 60n}\right)^{1/3} = (0.03n)^{-1/3} \quad \cdots\cdots (4.5)$$

Values of f_n, f_h and L_{10h} can be found using the nomogram of **Fig. 4.1**.

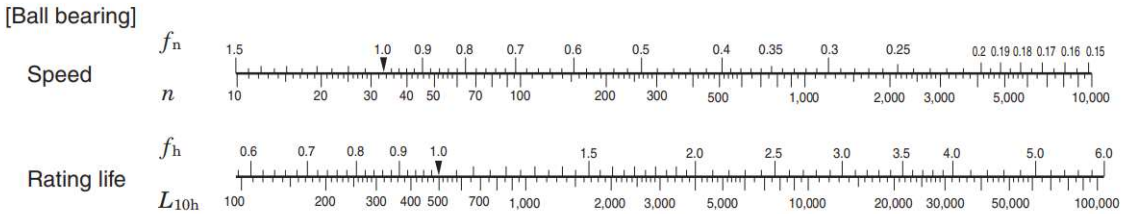

Fig. 4.1 Relation between basic rating life (L_{10h}) and rotating speed (n), speed factor (f_n), and life factor (f_h)

4.2.1 Correction of basic load rating due to temperature

If a ball bearing unit is used at a relatively high temperature the physical composition of the bearing material is changed leading to decreased hardness. This decreased hardness leads to the basic dynamic load rating being reduced. Once the structure of the bearing material has been changed, it will remain this way for the life of the unit, even when it returns to room temperature.

When using a ball bearing unit at 150 ℃ or more, the basic load rating must be corrected by multiplying the basic dynamic load rating shown in the dimensional table by the temperature factor shown in **Table 4.1**.

Table 4.1 Temperature factor

Bearing temperature, ℃	125	150	175	200	250
Temperature factor	1	1	0.95	0.9	0.75

4.2.2 Corrected rating life

The basic L_{10} rating life shown in **Formula (4.1)** is the fatigue life of a bearing with 90% reliability however; there are circumstances where bearings need greater reliability. The bearing life may be extended by using special materials.

Other conditions, including lubrication, may influence the bearing life.

The corrected rating life is found by taking the basic rating life and taking the factors in **Formula (4.6)** into consideration.

$$L_{na} = a_1 a_2 a_3 L_{10} \quad \cdots\cdots (4.6)$$

Whereas,

L_{na}: Corrected rating life, 10^6 rotations
Bearing characteristics and operating conditions are taken into consideration with reliability 100–n% (breakage probability)

L_{10}: Basic load rating, 10^6 rotations
Life with 90% reliability

a_1: Reliability factor ..... see (1)

a_2: Bearing characterization factor ..... see (2)

a_3: Operating condition factor ..... see (3)

(1) Reliability factor a_1

Table 4.2 shows the values used when a corrected bearing life that has less than a 10% breakage probability is necessary.

Table 4.2 Reliability factor a_1

Reliability, %	L_{na}	a_1
90	L_{10a}	1
95	L_{5a}	0.62
96	L_{4a}	0.53
97	L_{3a}	0.44
98	L_{2a}	0.33
99	L_{1a}	0.21

(2) Bearing characterization factor a_2

The material make-up of a bearing can have an affect on its basic rating life. Factors that can influence the bearing include bearing material (type of steel), production procedures, and bearing design. Bearing characterization is shown as factor a_2.

FYH ball bearing inserts use high quality vacuum degassed bearing steel as standard material, and this material allows for a longer rating life. For FYH ball bearing units, the bearing characterization factor a_2 is 1 ($a_2 = 1$). When bearings with special materials are used for a longer fatigue limit the characterization factor can be shown as a_2 being greater than 1 ($a_2 > 1$).

(3) Operating condition factor a_3

Operating conditions may directly influence the life of the bearing (especially proper or improper lubrication). The basic rating life should be corrected using the operating condition factor a_3. If lubrication is being maintained the factor $a_3 = 1$. If excellent re-lubrication practices are being maintained the factor $a_3 > 1$ should be applied.

If any of the following operating conditions are applicable the condition should be applied as $a_3 < 1$.

(1) Kinematic viscosity of lubricant during operation is low:
Ball bearing: 13 mm^2/s or less,
Roller bearing: 20 mm^2/s or less

(2) Rotating speed is low:
$d_m n$: 10,000 or less

Note: d_m (Pitch dia. of ball set in mm) × n (Rotating speed)

(3) Foreign matters are mixed in lubricant

Even if the bearing characterization factor is improved i.e., $a_2 > 1$, the life of the bearing must still be down-rated if the combination, $a_2 \times a_3 > 1$.

4.2.3 Required lifetime of bearings

At some point, the economical nature of a ball bearing begins to decline. The operating conditions, type of bearing used, and type of machine the bearing is used on all influence the operational life of the bearing.

The required lifetime of the ball bearing is shown in **Table 4.3**.

Table 4.3 Required life time of ball bearing units (reference)

Operating conditions	Machines used	Required life time, hrs
Operated in short periods or intermittently	Home electric appliances, electric tools, agricultural machinery, hoist, etc.	4,000 – 8,000
Operated for several minutes or hours at a time, but less than 8 hours per day	Factory motor, ordinary gearing, etc.	12,000 – 20,000
Constantly operated for 8 hours or longer per day or operated continuously for long periods	General machinery, blowers, etc.	20,000 – 30,000
Operated continuously for 24 hours, no fault is allowed	Power plants, mine drainage facility, etc.	100,000 –200,000

4.3 Grease Life

The grease life for ball bearing units is influenced by: the level of the load, rotating speed of the bearing, and the operating temperature.

The grease life for ball bearing units being used under appropriate operating conditions can be found by the formula shown below.

$$\log L = 6.10 - 4.40 \times 10^{-6}\, d_m n - 2.50 \left(\frac{P_r}{C_r} - 0.05\right) - (0.021 - 1.80 \times 10^{-8}\, d_m n)\, T \quad \cdots\cdots (4.7)$$

Whereas,

L: Grease life, hr

d_m: Pitch dia. of ball set, mm

$$d_m = \frac{(D+d)}{2}$$

(D: Nominal bearing outer dia., d: Nominal bearing bore dia.)

n: Rotating speed of bearing, min^{-1}

P_r: Dynamic equivalent radial load, N (see "**5 Bearing load**")

C_r: Basic dynamic radial load rating of bearing, N

T: Operating temperature of bearing, °C

Applicable conditions for the **Formula (4.7)** are shown below.

1) Operating temperature of bearing: T °C

To be applied if the following condition is satisfied: $T \leq 100$

(If T is smaller than 50 ($T < 50$), following condition should be applied: $T = 50$.)

If T is larger than 100 ($T > 100$), contact FYH.

2) Rotating speed of bearing: $d_m n$

To be applied if the following condition is satisfied: $d_m n \leq 30 \times 10^4$

(If $d_m n$ is smaller than 12.5×10^4 ($d_m n < 12.5 \times 10^4$), following condition should be applied: $d_m n = 12.5 \times 10^4$)

If $d_m n$ is larger than 30×10^4 ($d_m n > 30 \times 10^4$), contact FYH.

3) Load condition of bearing: $\frac{P_r}{C_r}$

To be applied if the following condition is satisfied: $\frac{P_r}{C_r} \leq 0.2$

(If $\frac{P_r}{C_r}$ is smaller than 0.05 ($\frac{P_r}{C_r} < 0.05$), following condition should be applied: $\frac{P_r}{C_r} = 0.05$)

If $\frac{P_r}{C_r}$ is larger than 0.2 ($\frac{P_r}{C_r} > 0.2$), contact FYH.

Reference figure of grease life obtained by the **Formula (4.7)** is shown in **Fig. 4.2**.

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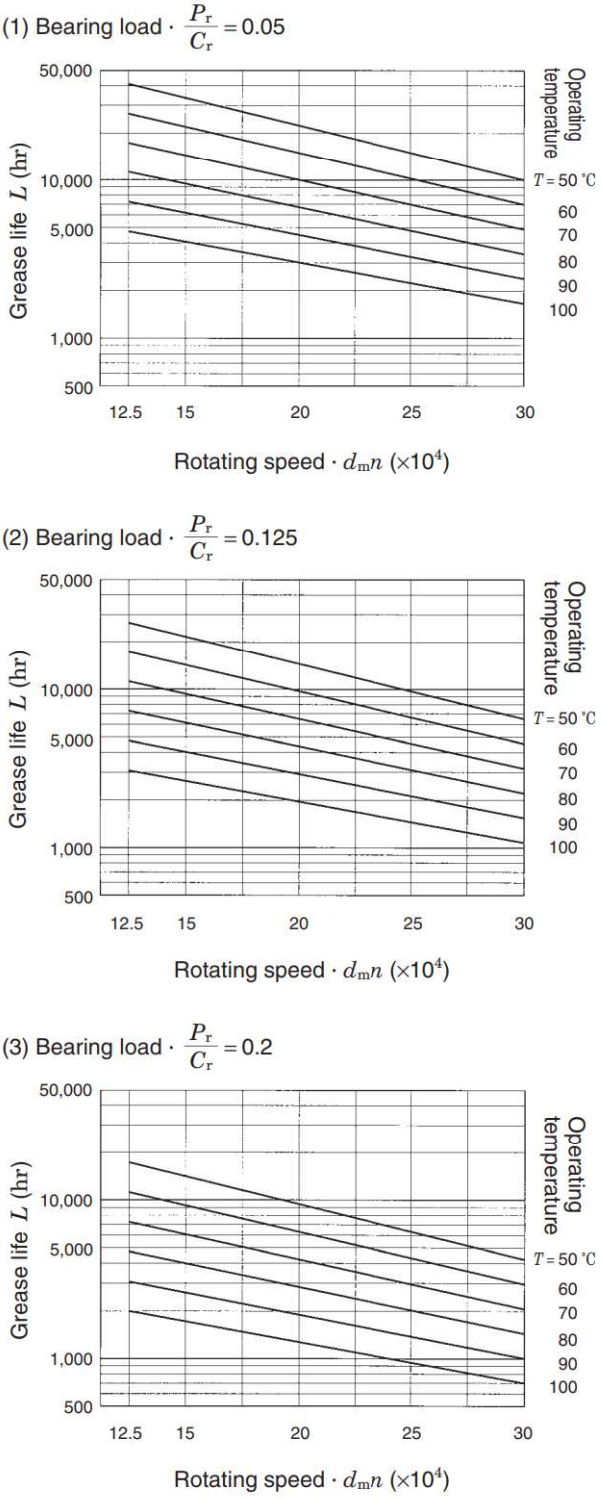

Fig. 4.2 Relation of grease life to bearing load, rotating speed, and operating temperature (reference)

5 Bearing Load

Loads that are applied to bearings come from a variety of sources.

In addition to the primary load, other resultant loads include the weight of complementary objects including shafting, gears, pulleys, torsion from chain and belts, and so on. Shock or dynamic load can also be derived from these sources.

In many cases, these loads cannot be determined by a simple or single calculation; and since these loads often fluctuate in intensity, it is difficult to determine the exact magnitude of them prior to actual lab or field measurements on the machinery in question.

However, in order to approximate the loads involved prior to putting a machine into operation, the technique shown below should be used. This technique uses multiplication factors that have been determined empirically from sample measurements taken on actual machines in operation.

5.1 Loads Applied to Bearings

5.1.1 Load factor

Even if the static radial load and the axial load can be accurately calculated, the actual loads are generally greater than the calculated figures. This is due to the presence of vibration and shock load during actual machine operation.

To find the loads actually applied to a bearing, multiply the values determined for the static load by the following load factors.

$$F = f_w \cdot F_c \quad \cdots\cdots (5.1)$$

Whereas,

F: Load actually applied to bearing, N

F_c: Theoretically calculated load, N

f_w: Load factor (see **Table 5.1**)

Table 5.1 Load factor f_w

Operating conditions	Applications	f_w
Virtually no vibration or impact	Electric machines and instruments	1 –1.2
Ordinary operation (light impact)	Agricultural machines and blower	1.2–2
Great vibration and impact	Construction machines and grinders	2 –3

5.1.2 Loads from belts or chain drives

The load calculated for the bearing is equal to the tensile load of the belt. However, this load must be multiplied by the load factor (f_w), which accounts for vibration and impact of the machine and a belt factor (f_b), which accounts for the vibration and impact generated through the belt.

When calculating loads for a chain drive, use the same factor (f_b) as used for belt drives.

$$F_b = \frac{2M}{D_p} \cdot f_w \cdot f_b$$

$$= \frac{19.1 \times 10^6 W}{D_p \cdot n} \cdot f_w \cdot f_b \quad \cdots\cdots (5.2)$$

Whereas,

F_b: Load actually applied to pulley shaft or sprocket shaft, N

M: Torque applied to pulley or sprocket, mN · m

W: Transmitted power, kW

D_p: Pitch circle dia. of pulley or sprocket, mm

n: Rotating speed, min^{-1}

f_w: Load factor (see **Table 5.1**)

f_b: Belt factor (see **Table 5.2**)

Table 5.2 Belt factor f_b

Belt type	f_b
Toothed belt	1.3–2
V belt	2 –2.5
Flat belt (with tension pulley)	2.5–3
Flat belt	4 –5
Chain	1.2–1.5

5.1.3 Load of gear transmissions

Gear transmissions have a load in the tangential direction (K_t), a load in the radial direction (K_r), and an axial load (K_a). Different types of gears are calculated differently.

The following is a sample of a calculation for an ordinary spur gear arrangement. A flat spur gear will not support an axial load.

(1) Load applied to gear in tangential direction (tangential line force)

$$K_t = \frac{2M}{D_p} = \frac{19.1 \times 10^6 W}{D_p n} \quad \cdots\cdots (5.3)$$

(2) Load applied to gear in radius direction (separating force)

$$K_r = K_t \tan \alpha \quad \cdots\cdots (5.4)$$

(3) Synthetic load applied to gear

$$K_g = \sqrt{K_t^2 + K_r^2} = K_t \sec\alpha \quad \cdots\cdots (5.5)$$

Whereas,

K_t: Load applied to gear in tangential direction (tangential line force), N

K_r: Load applied to gear in radius direction (separating force), N

K_g: Synthetic load applied to gear, N

M: Torque applied to gear, mN · m

D_p: Pitch circle dia. of gear, mm

W: Transmission power, kW

n: Rotating speed, min^{-1}

α: Pressure angle of gear, °

Note that the actual gear load must be found by multiplying the theoretical load by the load factor (f_w) obtained by taking into consideration the vibration and impact loads generated while the machine is in operation. The gear factor (f_g) is determined by taking into consideration the accuracy of machining and the finish of the gears.

$$F_g = f_w \cdot f_g \cdot K_g \quad \cdots\cdots (5.6)$$

Whereas,

F_g: Load actually applied to gear, N

K_g: Theoretical synthetic load applied to gear, N

f_w: Load factor (see **Table 5.1**)

f_g: Gear factor (see **Table 5.3**)

Table 5.3 Gear factor f_g

Gear type	f_g
Precision gear (both pitch error and tooth profile error should be 0.02 mm or less)	1 –1.1
Ordinary gear (both pitch error and tooth profile error should be 0.1 mm or less)	1.1–1.3

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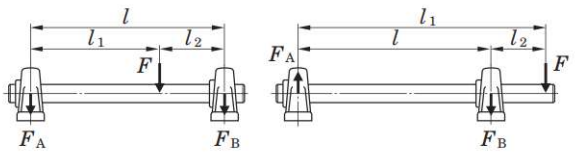
5.2 Distribution of Bearing Load

In order to determine the radial load distribution to each bearing attached to a shaft, use the procedure shown below. Use the load factors shown in **Table 5.1** to account for vibration and impact.

A standard radial ball bearing bears an axial load component in addition to the radial component. The total vectored load can be calculated by taking the square root of the sum of the squares of each load as shown in the previous calculation.



$$F_A = \frac{l_2}{l} \cdot F \quad \cdots\cdots (5.7)$$

$$F_B = \frac{l_1}{l} \cdot F \quad \cdots\cdots (5.8)$$

Fig. 5.1 Distribution of load to bearings

5.3 Dynamic Equivalent Load

In many cases, a bearing is exposed to the combined vector load of both radial and axial load components. It may also be used under more severe conditions such as vibration and shock load. In this case, a direct comparison to the dynamic load rating is not appropriate.

In such a case, find the load equivalent to a direct radial load only and compare this with the basic dynamic load rating.

The converted virtual load is called dynamic equivalent load (P).

5.3.1 Calculation of dynamic equivalent load

The dynamic equivalent radial load (P_r) of a bearing that bears radial and axial loads as well as vibration and impact is found by the following formula.

$$P_r = XF_r + YF_a \quad \cdots\cdots (5.9)$$

Whereas,

P_r: Dynamic equivalent radial load, N
F_r: Radial load, N
F_a: Axial load, N
X: Radial load factor (see **Table 5.4**)
Y: Axial load factor (see **Table 5.4**)

Table 5.4 Radial load factor (X) and axial load factor (Y)

$\frac{f_0 F_a}{C_{0r}}$	e	$F_a / F_r \le e$		$F_a / F_r > e$	
		X	Y	X	Y
0.172	0.19				2.30
0.345	0.22				1.99
0.689	0.26				1.71
1.03	0.28				1.55
1.38	0.30	1	0	0.56	1.45
2.07	0.34				1.31
3.45	0.38				1.15
5.17	0.42				1.04
6.89	0.44				1.00

Remarks 1. C_{0r} (basic static radial load rating) and f_0 (factor) are shown in the dimensional tables.
2. If $f_0 F_a / C_{0r}$ does not conform to the table above, find by interpolation.

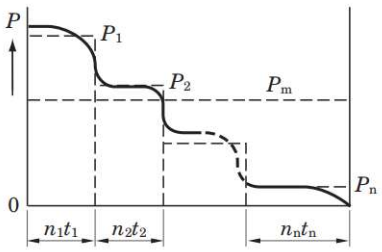
5.3.2 Average dynamic equivalent load in the case of fluctuating loads

If the level or direction of the load applied to a bearing is fluctuating, it is necessary to find the average dynamic equivalent load to calculate the bearing life.

Table 5.5 shows the method of finding the average dynamic equivalent load under various types of fluctuating conditions.

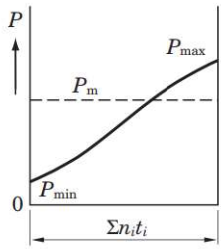
Table 5.5 Calculation of average dynamic equivalent load in case of fluctuated load

(1) Graduated fluctuation



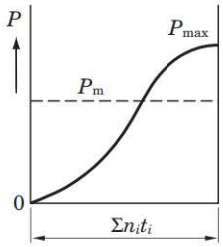
$$P_m = \sqrt[p]{\frac{P_1^p\, n_1t_1 + P_2^p\, n_2t_2 + \cdots\cdots + P_n^p\, n_nt_n}{n_1t_1 + n_2t_2 + \cdots\cdots + n_nt_n}} \quad \cdots\cdots (5.10)$$

(2) Monotone fluctuation



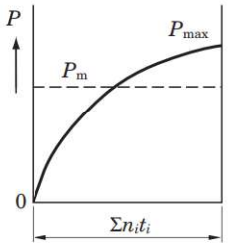
$$P_m = \frac{P_{min} + 2\,P_{max}}{3} \quad \cdots\cdots (5.11)$$

(3) Sine curve fluctuation



$$P_m = 0.68\,P_{max} \quad \cdots\cdots (5.12)$$

(4) Sine curve fluctuation (upper half of sine curve)



$$P_m = 0.75\,P_{max} \quad \cdots\cdots (5.13)$$

Whereas,

P_m: Average dynamic equivalent load, N

P_1: Dynamic equivalent load actuating for t_1 hours at rotating speed of n_1, N

P_2: Dynamic equivalent load actuating for t_2 hours at rotating speed of n_2, N

.

.

.

P_n: Dynamic equivalent load actuating for t_n hours at rotating speed of n_n, N

P_{min}: Minimum dynamic equivalent load, N

P_{max}: Maximum dynamic equivalent load, N

Σn_it_i: Total rotating frequency for t_1 to t_i hours

5.4 Basic Static Load Rating and Static Equivalent Load

5.4.1 Basic static load rating

If a bearing is exposed to excessive static or impact load even when running at low rotational speed, partial permanent deformation occurs to the contact surface of the raceways of the bearing. The amount of permanent deformation increases with increased loads, and at some point, the bearing will no longer rotate smoothly.

The basic static load rating of a bearing is the static load that generates the calculated contact stresses shown below at the center of the contact surfaces of the raceways.

(1) Self aligning ball bearings ..... 4,600 MPa
(2) Other ball bearings
(mounted ball bearings included) ..... 4,200 MPa
(3) Roller bearings ..... 4,000 MPa

The total permanent deformation that occurs to the raceways and the balls under the above critical contact stresses is 0.0001 times the diameter of the ball.

In ball bearing units, this is indicated as the basic static radial load rating (C_{0r}) and these values are shown in the dimensional tables.

5.4.2 Static equivalent loads

Static equivalent load is the equivalent of the combined (vectored) load converted to the equivalent direct radial load. The term "static" refers to no rotation or very little rotation.

Static equivalent radial load (P_{0r}) can be calculated by using the formula below.

$$P_{0r} = 0.6F_r + 0.5F_a \quad \cdots\cdots (5.14)$$

$$P_{0r} = F_r \quad \cdots\cdots (5.15)$$

Whereas,

P_{0r}: Static equivalent radial load, N

F_r: Radial load, N

F_a: Axial load, N

5.4.3 Safety factor

The static equivalent load that can be withstood by a bearing, in addition to the above considerations, is sometimes dependent upon unforeseen conditions in the operating environment. Therefore, a safety factor is always built in to insure success in the application.

$$f_s = \frac{C_{0r}}{P_{0r}} \quad \cdots\cdots (5.16)$$

Whereas,

f_s: Safety factor (see **Table 5.6**)

C_{0r}: Basic static radial load rating, N

P_{0r}: Static equivalent radial load, N

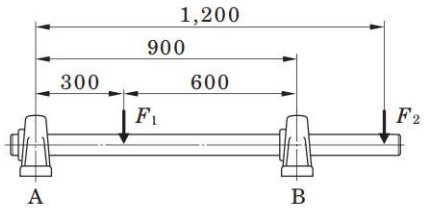
Table 5.6 Safety factor f_s (recommended)

Operating conditions		f_s (Min.)
Being rotated	High rotating accuracy is required	2
	Ordinary operating conditions	1
	Impact	1.5
Not always being rotated (sometimes oscillated)	Ordinary operating conditions	0.5
	Impact, unevenly distributed load	1

5.5 Example of Applied Calculation

Example 1 Distributing load

Find the load applied to the bearing A and bearing B, if the radial load F_1 (F_1 = 1.5 kN) and F_2 (F_2 = 4.5 kN) are applied.



(1) Find the radial load F_{1A} applied to the bearing A by F_1, with **Formula (5.7)** and **Formula (5.8)**.

$$F_{1A} = \frac{600}{900} \times 1.5 = 1.0 \text{ (kN)}$$

In a similar manner, find the radial load F_{2A} applied to the bearing A by F_2.

$$F_{2A} = -\frac{1{,}200 - 900}{900} \times 4.5 = -1.5 \text{ (kN)}$$

Remark: Negative load is the upward load.

Radial load F_A applied to the bearing A:

$$F_A = F_{1A} + F_{2A} = 1.0 + (-1.5) = -0.5 \text{ (kN)}$$

(2) In a similar manner to (1), find the radial load F_B applied to the bearing B.

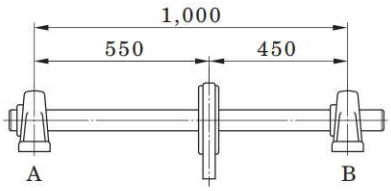
$$F_{1B} = \frac{300}{900} \times 1.5 = 0.5 \text{ (kN)}$$

$$F_{2B} = \frac{1{,}200}{900} \times 4.5 = 6.0 \text{ (kN)}$$

$$F_B = F_{1B} + F_{2B} = 0.5 + 6.0 = 6.5 \text{ (kN)}$$

Example 2 Calculating load by V-belt transmission

Find the load applied to the bearing A and bearing B when the shaft is driven by the V-belt, transmission power W is 7.5 kw (W = 7.5 kW), rotating speed n is 300 min^{-1} (n = 300 min^{-1}), effective diameter of pulley D_p is 300 mm (D_p = 300 mm).



(1) Find the load actually applied to the pulley shaft F_b with **Formula (5.2)**.

From **Table 5.1**, load factor f_w is 1.2 (f_w = 1.2), and the belt factor f_b is 2.5 (f_b = 2.5), from **Table 5.2**.

$$F_b = \frac{19.1 \times 10^6\, W}{D_p \cdot n} \cdot f_w \cdot f_b$$

$$= \frac{19.1 \times 10^6 \times 7.5}{300 \times 300} \times 1.2 \times 2.5 = 4.78 \text{ (kN)}$$

(2) Find the load actually applied to the bearing A and bearing B (F_A and F_B) with **Formulas (5.7)** and **(5.8)**.

$$F_A = \frac{450}{1{,}000} \times 4.78 = 2.15 \text{ (kN)}$$

$$F_B = \frac{550}{1{,}000} \times 4.78 = 2.63 \text{ (kN)}$$

Example 3 Calculating dynamic equivalent radial load

Find the dynamic equivalent radial load P_r when the radial load F_r, 1.5 kN (F_r = 1.5 kN), and the axial load F_a, 0.85 kN, (F_a = 0.85 kN) are applied to the pillow type unit UCP306J (bearing UC306).

(1) Find the radial load factor (X) and the axial load factor (Y) with using the static radial load rating C_{0r} of UCP306J (bearing UC306), 15.0 kN (C_{0r} = 15.0 kN), and **Table 5.4**.

Find the solutions of the following formulas:

$$\frac{f_0 F_a}{C_{0r}} = \frac{13.3 \times 0.85}{15.0} = 0.754,\ e = 0.264$$

$$\frac{F_a}{F_r} = \frac{0.85}{1.5} = 0.567 > e\ (0.264)$$

Therefore, X = 0.56, Y = 1.68

(2) Find the dynamic equivalent radial load P_r with **Formula (5.9)**.

$$P_r = XF_r + YF_a = 0.56 \times 1.5 + 1.68 \times 0.85$$

$$= 2.27 \text{ (kN)}$$

Example 4 Calculating bearing life

Under the conditions shown in **Example 3**, find the bearing life L_{10h} when a bearing is used for a blower with a rotating speed n, 1,000 min^{-1}.

(1) Select the load factor f_w is 1.2 (f_w = 1.2) from **Table 5.1**, and find the bearing load P_r.

$$P_r = f_w \cdot F = 1.2 \times 2.27 = 2.72 \text{ (kN)}$$

(2) The dynamic radial load rating of UCP306J (bearing UC306), C_r, is 26.7 kN (C_r = 26.7 kN), and calculate the bearing life L_{10h} with the **Formula (4.2)**.

$$L_{10h} = \frac{10^6}{60n} \cdot \left(\frac{C_r}{P_r}\right)^3 = \frac{10^6}{60 \times 1{,}000} \times \left(\frac{26.7}{2.72}\right)^3$$

$$\approx 15{,}800 \text{ (hr)}$$

(3) Calculate bearing life L_{10h} with the nomogram shown in **Fig. 4.1**.

When the rotating speed n is 1,000 min^{-1} (n = 1,000 min^{-1}), rotating factor f_n is 0.32 (f_n = 0.32). Next, find the life factor f_h by speed factor f_n, dynamic radial load rating of bearing C_r, and the bearing load P_r.

$$\text{Life factor } f_h = f_n \cdot \frac{C_r}{P_r} = 0.32 \times \frac{26.7}{2.72} = 3.14$$

From life factor f_h, bearing life $L_{10h} \approx$ 16,000 hours.

Example 5 Selecting ball bearing units

If a bearing is operated under the following conditions, select the flange type unit (UCF) with at least two years (5,000 hours) or longer rating life: rotating speed of shaft n is 1,500 min^{-1} (n = 1,500 min^{-1}), and radial load F_r is 5 kN (F_r = 5 kN). The radial load F_r includes the load factor and gear factor.

(1) From the nomogram shown in **Fig. 4.1**, when life time L_h is 5,000 hr (L_h = 5,000 hr), life factor f_h can be found as 2.16 ($f_h \approx$ 2.16), and speed factor f_n can be found as 0.28 ($f_n \approx$ 0.28) when the rotating speed n is 1,500 min^{-1} (n = 1,500 min^{-1}).

$$\text{Dynamic radial load rating } C_r = F_r \cdot \frac{f_h}{f_n} = 5 \times \frac{2.16}{0.28}$$

$$\approx 38.6 \text{ (kN)}$$

(2) Find the flange type unit that meets the following condition: dynamic radial load rating C_r is 38.6 kN (C_r = 38.6 kN). For the 200 series. UCF211J (dynamic radial load rating C_r is 43.4 kN (C_r = 43.4 kN)) can be selected.

Example 6 Selecting pillow type units for low speed

If a bearing is used for a dolly under the following conditions, select the pillow type unit (UCP) with 10,000 hours rating life: radial load F_r is 12 kN (F_r = 12 kN), and rotating speed is 8 min^{-1}.

(1) Find the required dynamic radial load rating C_r with using **Formulas (4.4)** and **(4.5)**.

Speed factor $f_n = (0.03n)^{-1/p} = (0.03 \times 8)^{-1/3} \approx 1.61$

Life factor $f_h = \left(\frac{L_{10h}}{500}\right)^{1/p} = \left(\frac{10{,}000}{500}\right)^{1/3} \approx 2.71$

Dynamic radial load rating $C_r = P_r \cdot \frac{f_h}{f_n} = 12 \times \frac{2.71}{1.61}$

≈ 20.2 (kN)

(2) From **Table 5.6**, define safe factor f_s as 2 (f_s = 2), and find the static radial load rating of bearing required C_{0r}.

$C_{0r} = f_s \cdot P_r = 2 \times 12 = 24$ (kN)

(3) The unit is used for a dolly, and vibration or impact may occur. Thus, select UCP308J (C_r = 40.7 kN, C_{0r} = 24.0 kN).

Example 7 Calculating bearing life in high temperature applications

Find the bearing life if the heat resistant pillow type unit (UCP215D1K2) is operated under the following conditions: operating temperature is 175 °C, radial load F_r is 4 kN (F_r = 4 kN), and the rotating speed n is 800 min^{-1} (n = 800 min^{-1}). Note that the radial load F_r includes load factor and gear factor.

(1) From **Table 4.1**, find the dynamic load rating C_r in the case that a bearing is used at 175 °C.

$C_r = 67.4 \times 0.95 = 64.0$ (kN)

Find the bearing life L_{10h} using **Formula (4.2)**.

$$L_{10h} = \frac{10^6}{60n} \cdot \left(\frac{C_r}{P_r}\right)^3 = \frac{10^6}{60 \times 800} \times \left(\frac{64.0}{4}\right)^3$$

$\approx 85{,}000$ (hr)

(2) If a bearing unit is operated at 175 °C, grease is degraded faster, and it cannot be used without lubrication. Supply grease at intervals specified in **Table 14.4**.

(3) If the shaft experiences axial expansion due to heat, install a fixed bearing unit on one end of the assembly and install floating bearing unit on the other side that allows the shaft to move freely through the bore of the bearing. More information is offered in **Section 9**. (see **"9 Design of shaft and base"**).

Example 8 Calculating grease life

Find the grease life for pillow type unit UCP204J (bearing UC204) under the following conditions: radial load F_r is 1 kN (F_r = 1 kN), and rotating speed n is 800 min^{-1} (n = 800 min^{-1}). Note that the radial load F_r includes load factor and belt factor. Operating temperature of the bearing should be 40 °C.

Find the grease life L using **Formula (4.7)**.

$$\log L = 6.10 - 4.40 \times 10^{-6}\, d_m n - 2.50 \left(\frac{P_r}{C_r} - 0.05\right)$$
$$- (0.021 - 1.80 \times 10^{-8}\, d_m n)\, T$$
$$= 6.10 - 4.40 \times 10^{-6} \times 12.5 \times 10^4$$
$$- 2.50 \left(\frac{1}{12.8} - 0.05\right)$$
$$- (0.021 - 1.80 \times 10^{-8} \times 12.5 \times 10^4) \times 50$$
$$= 4.542$$
$$L \approx 34{,}800 \text{ (hr)}$$

Example 9 Calculating life of bearing units in case of non-lubrication

Find the life of a bearing unit in the case that it is operated under the conditions shown in **Example 8**, but without lubrication.

(1) Find the rating life of bearings L_{10h} using **Formula (4.2)**.

$$L_{10h} = \frac{10^6}{60n} \cdot \left(\frac{C_r}{P_r}\right)^3 = \frac{10^6}{60 \times 800} \times \left(\frac{12.8}{1}\right)^3$$

$\approx 43{,}700$ (hr)

(2) Compare the grease life L shown in **Example 8** to the rating life of bearings L_h. Then, grease life L is shorter than the bearing rating life. Therefore, life of a bearing unit should be the same as the grease life L, 34,800 hours (L = 34,800 hours).

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Table 5.7 (1) Radial Load/Speed Chart

Normal Duty **Unit : lbf**

SHAFT SIZE	L_{10} hours	Allowable Radial Load at Various RPM																					
		RPM (min^{-1})																					
		50	100	150	300	500	750	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
1/2" 5/8" 3/4" 12 mm - 20 mm	10000	927	736	643	510	430	376	341	298	271	252	237	225	215	207	200	193	188	183	179	174	171	167
	25000	683	542	474	376	317	277	252	220	200	185	174	166	158	152	147	143	138	135	132	129	126	123
	50000	542	430	376	298	252	220	200	174	158	147	138	132	126	121	117	113	110	107	104	102	100	98
	70000	485	385	336	267	225	196	179	156	142	132	124	118	112	108	104	101	98	96	93	91	89	87
	100000	430	341	298	237	200	174	158	138	126	117	110	104	100	96	93	90	87	85	83	81	79	78
7/8" 15/16" 1" 25 mm	10000	1014	805	703	558	471	411	373	326	296	275	259	246	235	226	218	212	206	200	195	191		
	25000	747	593	518	411	347	303	275	240	218	203	191	181	173	167	161	156	151	147	144	141		
	50000	593	471	411	326	275	240	218	191	173	161	151	144	138	132	128	124	120	117	114	112		
	70000	530	421	367	292	246	215	195	171	155	144	135	129	123	118	114	111	107	105	102	100		
	100000	471	373	326	259	218	191	173	151	138	128	120	114	109	105	101	98	95	93	91	89		
1-1/8" 1-3/16" 1-1/4" 30 mm	10000	1412	1121	979	777	655	573	520	454	413	383	361	343	328	315	304	295	286					
	25000	1040	826	721	573	483	422	383	335	304	282	266	252	241	232	224	217	211					
	50000	826	655	573	454	383	335	304	266	241	224	211	200	192	184	178	172	167					
	70000	738	586	512	406	343	299	272	238	216	200	189	179	171	165	159	154	150					
	100000	655	520	454	361	304	266	241	211	192	178	167	159	152	146	141	137	133					
1-1/4" 1-5/16" 1-3/8" 1-7/16" 35 mm	10000	1861	1477	1290	1024	864	755	686	599	544	505	475	452	432	415	401	388						
	25000	1371	1088	951	755	636	556	505	441	401	372	350	333	318	306	295	286						
	50000	1088	864	755	599	505	441	401	350	318	295	278	264	253	243	234	227						
	70000	973	772	675	535	452	394	358	313	284	264	248	236	226	217	210	203						
	100000	864	686	599	475	401	350	318	278	253	234	221	210	200	193	186	180						
1-1/2" 1-9/16" 40 mm	10000	2107	1672	1461	1160	978	854	776	678	616	572	538	511	489	470	454							
	25000	1553	1232	1077	854	721	630	572	500	454	421	397	377	360	346	334							
	50000	1232	978	854	678	572	500	454	397	360	334	315	299	286	275	265							
	70000	1102	874	764	606	511	447	406	355	322	299	281	267	256	246	237							
	100000	978	776	678	538	454	397	360	315	286	265	250	237	227	218	211							
1-5/8" 1-11/16" 1-3/4" 45 mm	10000	2469	1960	1712	1359	1146	1001	910	795	722	670	631	599	573	551								
	25000	1819	1444	1261	1001	844	738	670	586	532	494	465	441	422	406								
	50000	1444	1146	1001	795	670	586	532	465	422	392	369	350	335	322								
	70000	1291	1025	895	710	599	523	476	415	377	350	330	313	300	288								
	100000	1146	910	795	631	532	465	422	369	335	311	293	278	266	256								
1-7/8" 1-15/16" 2" 50 mm	10000	2542	2017	1762	1399	1180	1031	936	818	743	690	649	617	590									
	25000	1873	1486	1298	1031	869	759	690	603	548	508	478	454	435									
	50000	1486	1180	1031	818	690	603	548	478	435	403	380	361	345									
	70000	1329	1055	921	731	617	539	489	428	389	361	339	322	308									
	100000	1180	936	818	649	548	478	435	380	345	320	301	286	274									
2" 2-1/8" 2-3/16" 55 mm	10000	3143	2494	2179	1729	1459	1274	1158	1011	919	853	803	763										
	25000	2316	1838	1606	1274	1075	939	853	745	677	629	591	562										
	50000	1838	1459	1274	1011	853	745	677	591	537	499	469	446										
	70000	1643	1304	1139	904	763	666	605	529	480	446	420	399										
	100000	1459	1158	1011	803	677	591	537	469	427	396	373	354										
2-1/4" 2-3/8" 2-7/16" 60 mm	10000	3794	3012	2631	2088	1761	1539	1398	1221	1109	1030	969	921										
	25000	2796	2219	1938	1539	1298	1134	1030	900	817	759	714	678										
	50000	2219	1761	1539	1221	1030	900	817	714	649	602	567	538										
	70000	1984	1574	1375	1092	921	804	731	638	580	538	507	481										
	100000	1761	1398	1221	969	817	714	649	567	515	478	450	427										
2-1/2" 65 mm	10000	4142	3287	2872	2279	1923	1679	1526	1333	1211	1124	1058											
	25000	3052	2422	2116	1679	1417	1237	1124	982	892	828	780											
	50000	2422	1923	1679	1333	1124	982	892	780	708	657	619											
	70000	2165	1719	1501	1192	1005	878	798	697	633	588	553											
	100000	1923	1526	1333	1058	892	780	708	619	562	522	491											
2-3/4" 70 mm	10000	4504	3575	3123	2479	2091	1826	1659	1450	1317	1223	1150											
	25000	3319	2634	2301	1826	1540	1346	1223	1068	970	901	848											
	50000	2634	2091	1826	1450	1223	1068	970	848	770	715	673											
	70000	2355	1869	1633	1296	1093	955	867	758	688	639	601											
	100000	2091	1659	1450	1150	970	848	770	673	611	567	534											
2-15/16" 3" 75 mm	10000	4881	3874	3384	2686	2265	1979	1798	1571	1427	1325												
	25000	3596	2854	2493	1979	1669	1458	1325	1157	1051	976												
	50000	2854	2265	1979	1571	1325	1157	1051	919	835	775												
	70000	2551	2025	1769	1404	1184	1035	940	821	746	693												
	100000	2265	1798	1571	1247	1051	919	835	729	662	615												
3-1/8" 80 mm	10000	5264	4178	3650	2897	2443	2135	1939	1694	1539	1429												
	25000	3879	3079	2689	2135	1800	1573	1429	1248	1134	1053												
	50000	3079	2443	2135	1694	1429	1248	1134	991	900	836												
	70000	2752	2184	1908	1514	1277	1116	1014	886	805	747												
	100000	2443	1939	1694	1345	1134	991	900	786	714	663												
3-1/4" 85 mm	10000	6083	4828	4217	3347	2823	2466	2241	1958	1779	1651												
	25000	4482	3557	3107	2466	2080	1817	1651	1442	1310	1217												
	50000	3557	2823	2466	1958	1651	1442	1310	1145	1040	966												
	70000	3180	2524	2205	1750	1476	1289	1171	1023	930	863												
	100000	2823	2241	1958	1554	1310	1145	1040	909	826	766												
3-1/2" 90 mm	10000	6959	5523	4825	3830	3230	2822	2564	2240	2035													
	25000	5127	4070	3555	2822	2380	2079	1889	1650	1499													
	50000	4070	3230	2822	2240	1889	1650	1499	1310	1190													
	70000	3638	2887	2522	2002	1688	1475	1340	1171	1064													
	100000	3230	2564	2240	1778	1499	1310	1190	1040	944													

1 . Shaded area A non-contact seal is used.

If the bearing with set screws is exposed
to a heavy load (Pr / Cr > 0.12), vibration,
or heavy inpact, use a tighter shaft tolerance than normal.

Table 5.7 (2) Radial Load/Speed Chart

Medium Duty **Unit : lbf**

SHAFT SIZE	L_{10} hours	Allowable Radial Load at Various RPM																
		RPM (min^{-1})																
		50	100	150	300	500	750	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000
1″ 25 mm	10000	1412	1121	979	777	655	573	520	454	413	383	361	343	328	315	304	295	286
	25000	1040	826	721	573	483	422	383	335	304	282	266	252	241	232	224	217	211
	50000	826	655	573	454	383	335	304	266	241	224	211	200	192	184	178	172	167
	70000	738	586	512	406	343	299	272	238	216	200	189	179	171	165	159	154	150
	100000	655	520	454	361	304	266	241	211	192	178	167	159	152	146	141	137	133
1-3/16″ 1-1/4″ 30 mm	10000	1861	1477	1290	1024	864	755	686	599	544	505	475	452	432	415	401	388	
	25000	1371	1088	951	755	636	556	505	441	401	372	350	333	318	306	295	286	
	50000	1088	864	755	599	505	441	401	350	318	295	278	264	253	243	234	227	
	70000	973	772	675	535	452	394	358	313	284	264	248	236	226	217	210	203	
	100000	864	686	599	475	401	350	318	278	253	234	221	210	200	193	186	180	
1-3/8″ 1-7/16″ 35 mm	10000	2107	1672	1461	1160	978	854	776	678	616	572	538	511	489	470	454		
	25000	1553	1232	1077	854	721	630	572	500	454	421	397	377	360	346	334		
	50000	1232	978	854	678	572	500	454	397	360	334	315	299	286	275	265		
	70000	1102	874	764	606	511	447	406	355	322	299	281	267	256	246	237		
	100000	978	776	678	538	454	397	360	315	286	265	250	237	227	218	211		
1-1/2″ 40 mm	10000	2469	1960	1712	1359	1146	1001	910	795	722	670	631	599	573	551			
	25000	1819	1444	1261	1001	844	738	670	586	532	494	465	441	422	406			
	50000	1444	1146	1001	795	670	586	532	465	422	392	369	350	335	322			
	70000	1291	1025	895	710	599	523	476	415	377	350	330	313	300	288			
	100000	1146	910	795	631	532	465	422	369	335	311	293	278	266	256			
1-3/4″ 45 mm	10000	2542	2017	1762	1399	1180	1031	936	818	743	690	649	617	590				
	25000	1873	1486	1298	1031	869	759	690	603	548	508	478	454	435				
	50000	1486	1180	1031	818	690	603	548	478	435	403	380	361	345				
	70000	1329	1055	921	731	617	539	489	428	389	361	339	322	308				
	100000	1180	936	818	649	548	478	435	380	345	320	301	286	274				
1-15/16″ 2″ 50 mm	10000	3143	2494	2179	1729	1459	1274	1158	1011	919	853	803	763					
	25000	2316	1838	1606	1274	1075	939	853	745	677	629	591	562					
	50000	1838	1459	1274	1011	853	745	677	591	537	499	469	446					
	70000	1643	1304	1139	904	763	666	605	529	480	446	420	399					
	100000	1459	1158	1011	803	677	591	537	469	427	396	373	354					
2-3/16″ 2-1/4″ 55 mm	10000	3794	3012	2631	2088	1761	1539	1398	1221	1109	1030	969	921					
	25000	2796	2219	1938	1539	1298	1134	1030	900	817	759	714	678					
	50000	2219	1761	1539	1221	1030	900	817	714	649	602	567	538					
	70000	1984	1574	1375	1092	921	804	731	638	580	538	507	481					
	100000	1761	1398	1221	969	817	714	649	567	515	478	450	427					
2-7/16″ 60 mm	10000	4142	3287	2872	2279	1923	1679	1526	1333	1211	1124	1058						
	25000	3052	2422	2116	1679	1417	1237	1124	982	892	828	780						
	50000	2422	1923	1679	1333	1124	982	892	780	708	657	619						
	70000	2165	1719	1501	1192	1005	878	798	697	633	588	553						
	100000	1923	1526	1333	1058	892	780	708	619	562	522	491						
2-1/2″ 65 mm	10000	4504	3575	3123	2479	2091	1826	1659	1450	1317	1223	1150						
	25000	3319	2634	2301	1826	1540	1346	1223	1068	970	901	848						
	50000	2634	2091	1826	1450	1223	1068	970	848	770	715	673						
	70000	2355	1869	1633	1296	1093	955	867	758	688	639	601						
	100000	2091	1659	1450	1150	970	848	770	673	611	567	534						
2-3/4″ 70 mm	10000	4881	3874	3384	2686	2265	1979	1798	1571	1427	1325							
	25000	3596	2854	2493	1979	1669	1458	1325	1157	1051	976							
	50000	2854	2265	1979	1571	1325	1157	1051	919	835	775							
	70000	2551	2025	1769	1404	1184	1035	940	821	746	693							
	100000	2265	1798	1571	1247	1051	919	835	729	662	615							
2-15/16″ 3″ 75 mm	10000	5264	4178	3650	2897	2443	2135	1939	1694	1539	1429							
	25000	3879	3079	2689	2135	1800	1573	1429	1248	1134	1053							
	50000	3079	2443	2135	1694	1429	1248	1134	991	900	836							
	70000	2752	2184	1908	1514	1277	1116	1014	886	805	747							
	100000	2443	1939	1694	1345	1134	991	900	786	714	663							
80 mm	10000	6083	4828	4217	3347	2823	2466	2241	1958	1779	1651							
	25000	4482	3557	3107	2466	2080	1817	1651	1442	1310	1217							
	50000	3557	2823	2466	1958	1651	1442	1310	1145	1040	966							
	70000	3180	2524	2205	1750	1476	1289	1171	1023	930	863							
	100000	2823	2241	1958	1554	1310	1145	1040	909	826	766							
3-7/16″ 85 mm	10000	6959	5523	4825	3830	3230	2822	2564	2240	2035								
	25000	5127	4070	3555	2822	2380	2079	1889	1650	1499								
	50000	4070	3230	2822	2240	1889	1650	1499	1310	1190								
	70000	3638	2887	2522	2002	1688	1475	1340	1171	1064								
	100000	3230	2564	2240	1778	1499	1310	1190	1040	944								
90 mm	10000	7893	6265	5473	4344	3664	3200	2908	2540	2308								
	25000	5816	4616	4032	3200	2699	2358	2142	1872	1700								
	50000	4616	3664	3200	2540	2142	1872	1700	1485	1350								
	70000	4126	3275	2861	2271	1915	1673	1520	1328	1206								
	100000	3664	2908	2540	2016	1700	1485	1350	1179	1071								
3-15/16″ 4″ 100 mm	10000	9631	7644	6678	5300	4470	3905	3548	3099	2816								
	25000	7096	5632	4920	3905	3294	2877	2614	2284	2075								
	50000	5632	4470	3905	3099	2614	2284	2075	1813	1647								
	70000	5035	3996	3491	2771	2337	2041	1855	1620	1472								
	100000	4470	3548	3099	2460	2075	1813	1647	1439	1307								

1 . Shaded area A non-contact seal is used.

If the bearing with set screws is exposed
to a heavy load (Pr / Cr > 0.12), vibration,
or heavy inpact, use a tighter shaft tolerance than normal.

Table 5.7 (3) Radial Load/Speed Chart

Heavy Duty

Unit : lbf

SHAFT SIZE	L_{10} hours	Allowable Radial Load at Various RPM — RPM (min⁻¹) 50	100	150	300	500	750	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500
1" 25 mm	10000	1535	1218	1064	845	713	622	566	494	449	417	392	372	356	343	331	320	311	303
	25000	1131	898	784	622	525	459	417	364	331	307	289	274	263	252	244	236	229	223
	50000	898	713	622	494	417	364	331	289	263	244	229	218	208	200	193	187	182	177
	70000	803	637	556	442	372	325	296	258	235	218	205	195	186	179	173	167	163	158
	100000	713	566	494	392	331	289	263	229	208	193	182	173	165	159	154	149	144	141
30 mm	10000	1933	1535	1341	1064	897	784	712	622	565	525	494	469	449	431	417	404		
	25000	1425	1131	988	784	661	578	525	458	417	387	364	346	331	318	307	297		
	50000	1131	897	784	622	525	458	417	364	331	307	289	274	262	252	244	236		
	70000	1011	802	701	556	469	410	372	325	296	274	258	245	235	226	218	211		
	100000	897	712	622	494	417	364	331	289	262	244	229	218	208	200	193	187		
35 mm	10000	2419	1920	1677	1331	1123	981	891	778	707	656	618	587	561	540	521			
	25000	1782	1414	1236	981	827	723	656	574	521	484	455	432	414	398	384			
	50000	1414	1123	981	778	656	574	521	455	414	384	361	343	328	316	305			
	70000	1264	1003	877	696	587	513	466	407	370	343	323	307	293	282	272			
	100000	1123	891	778	618	521	455	414	361	328	305	287	272	261	251	242			
1-1/2" 40 mm	10000	2947	2339	2043	1622	1368	1195	1086	948	862	800	753	715	684	658				
	25000	2171	1724	1506	1195	1008	880	800	699	635	589	555	527	504	485				
	50000	1724	1368	1195	948	800	699	635	555	504	468	440	418	400	385				
	70000	1541	1223	1068	848	715	625	568	496	450	418	394	374	358	344				
	100000	1368	1086	948	753	635	555	504	440	400	371	349	332	317	305				
1-3/4" 45 mm	10000	3541	2810	2455	1949	1644	1436	1304	1140	1035	961	904	859	822					
	25000	2609	2071	1809	1436	1211	1058	961	840	763	708	666	633	605					
	50000	2071	1644	1436	1140	961	840	763	666	605	562	529	502	481					
	70000	1851	1469	1283	1019	859	751	682	596	541	502	473	449	430					
	100000	1644	1304	1140	904	763	666	605	529	481	446	420	399	381					
50 mm	10000	4490	3563	3113	2471	2084	1820	1654	1445	1313	1219	1147	1089						
	25000	3308	2625	2294	1820	1535	1341	1219	1065	967	898	845	803						
	50000	2625	2084	1820	1445	1219	1065	967	845	768	713	671	637						
	70000	2347	1863	1627	1292	1089	952	865	755	686	637	599	569						
	100000	2084	1654	1445	1147	967	845	768	671	609	566	532	506						
2" 2-3/16" 55 mm	10000	5185	4115	3595	2853	2407	2102	1910	1669	1516	1407	1324							
	25000	3820	3032	2649	2102	1773	1549	1407	1229	1117	1037	976							
	50000	3032	2407	2102	1669	1407	1229	1117	976	887	823	774							
	70000	2710	2151	1879	1492	1258	1099	998	872	793	736	692							
	100000	2407	1910	1669	1324	1117	976	887	774	704	653	615							
2-7/16" 60 mm	10000	5931	4707	4112	3264	2753	2405	2185	1909	1734	1610	1515							
	25000	4370	3468	3030	2405	2028	1772	1610	1406	1278	1186	1116							
	50000	3468	2753	2405	1909	1610	1406	1278	1116	1014	941	886							
	70000	3100	2461	2150	1706	1439	1257	1142	998	907	842	792							
	100000	2753	2185	1909	1515	1278	1116	1014	886	805	747	703							
2-1/2" 65 mm	10000	6713	5328	4654	3694	3116	2722	2473	2160	1963	1822								
	25000	4946	3926	3429	2722	2296	2005	1822	1592	1446	1343								
	50000	3926	3116	2722	2160	1822	1592	1446	1263	1148	1066								
	70000	3509	2785	2433	1931	1629	1423	1293	1129	1026	953								
	100000	3116	2473	2160	1715	1446	1263	1148	1003	911	846								
2-3/4" 70 mm	10000	7531	5977	5222	4144	3495	3054	2774	2424	2202	2044								
	25000	5549	4404	3847	3054	2576	2250	2044	1786	1622	1506								
	50000	4404	3495	3054	2424	2044	1786	1622	1417	1288	1195								
	70000	3937	3125	2730	2167	1827	1596	1450	1267	1151	1069								
	100000	3495	2774	2424	1924	1622	1417	1288	1125	1022	949								
2-15/16" 3" 75 mm	10000	8183	6494	5673	4503	3798	3318	3014	2633	2393	2221								
	25000	6029	4785	4180	3318	2798	2445	2221	1940	1763	1637								
	50000	4785	3798	3318	2633	2221	1940	1763	1540	1399	1299								
	70000	4277	3395	2966	2354	1985	1734	1576	1377	1251	1161								
	100000	3798	3014	2633	2090	1763	1540	1399	1222	1111	1031								

SHAFT SIZE	L_{10} hours	Allowable Radial Load at Various RPM — RPM (min⁻¹) 50	100	150	300	500	750	1000	1500	2000
80 mm	10000	8907	7069	6176	4902	4134	3611	3281	2866	2604
	25000	6562	5209	4550	3611	3046	2661	2418	2112	1919
	50000	5209	4134	3611	2866	2418	2112	1919	1676	1523
	70000	4656	3695	3228	2562	2161	1888	1715	1498	1361
	100000	4134	3281	2866	2275	1919	1676	1523	1330	1209
85 mm	10000	9631	7644	6678	5300	4470	3905	3548	3099	2816
	25000	7096	5632	4920	3905	3294	2877	2614	2284	2075
	50000	5632	4470	3905	3099	2614	2284	2075	1813	1647
	70000	5035	3996	3491	2771	2337	2041	1855	1620	1472
	100000	4470	3548	3099	2460	2075	1813	1647	1439	1307
3-1/2" 90 mm	10000	10355	8219	7180	5699	4806	4199	3815	3333	3028
	25000	7630	6056	5290	4199	3541	3094	2811	2455	2231
	50000	6056	4806	4199	3333	2811	2455	2231	1949	1771
	70000	5413	4296	3753	2979	2513	2195	1994	1742	1583
	100000	4806	3815	3333	2645	2231	1949	1771	1547	1405
95 mm	10000	11079	8793	7682	6097	5142	4492	4082	3566	3240
	25000	8163	6479	5660	4492	3789	3310	3007	2627	2387
	50000	6479	5142	4492	3566	3007	2627	2387	2085	1894
	70000	5792	4597	4016	3187	2688	2348	2134	1864	1693
	100000	5142	4082	3566	2830	2387	2085	1894	1655	1504
3-15/16" 4" 100 mm	10000	12527	9943	8686	6894	5815	5080	4615	4032	
	25000	9230	7326	6400	5080	4284	3743	3400	2971	
	50000	7326	5815	5080	4032	3400	2971	2699	2358	
	70000	6549	5198	4541	3604	3040	2655	2413	2108	
	100000	5815	4615	4032	3200	2699	2358	2142	1871	
105 mm	10000	13324	10575	9238	7332	6184	5403	4909	4288	
	25000	9817	7792	6807	5403	4557	3981	3617	3159	
	50000	7792	6184	5403	4288	3617	3159	2871	2508	
	70000	6965	5528	4829	3833	3233	2824	2566	2242	
	100000	6184	4909	4288	3403	2871	2508	2278	1990	
110 mm	10000	14844	11782	10293	8169	6890	6019	5469	4777	
	25000	10937	8681	7584	6019	5077	4435	4029	3520	
	50000	8681	6890	6019	4777	4029	3520	3198	2794	
	70000	7760	6159	5381	4271	3602	3147	2859	2497	
	100000	6890	5469	4777	3792	3198	2794	2538	2217	
120 mm	10000	14989	11897	10393	8249	6957	6078	5522	4824	
	25000	11044	8766	7658	6078	5126	4478	4069	3554	
	50000	8766	6957	6078	4824	4069	3554	3229	2821	
	70000	7836	6219	5433	4312	3637	3177	2887	2522	
	100000	6957	5522	4824	3829	3229	2821	2563	2239	
130 mm	10000	16582	13161	11498	9126	7697	6724	6109	5337	
	25000	12218	9697	8471	6724	5671	4954	4501	3932	
	50000	9697	7697	6724	5337	4501	3932	3573	3121	
	70000	8669	6880	6010	4770	4024	3515	3194	2790	
	100000	7697	6109	5337	4236	3573	3121	2836	2477	
140 mm	10000	18320	14541	12702	10082	8503	7428	6749		
	25000	13498	10714	9359	7428	6265	5473	4973		
	50000	10714	8503	7428	5896	4973	4344	3947		
	70000	9577	7601	6640	5270	4445	3883	3528		
	100000	8503	6749	5896	4680	3947	3448	3133		

1 . Shaded area A non-contact seal is used.

If the bearing with set screws is exposed to a heavy load (Pr / Cr > 0.12), vibration, or heavy inpact, use a tighter shaft tolerance than normal.

Ball Bearing Life Calculations

The relationship between the basic rating life, the basic dynamic load rating, and the dynamic equivalent load of the ball bearing is indicated in Formula 1.
If the ball bearing unit is being used at a fixed rotating speed, the life is indicated as time. This is shown in Formula 2.

1. $$L_{10} = \left(\frac{Cr}{Pr}\right)^3$$

2. $$L_{10h} = \frac{10^6 L_{10}}{60n} = \frac{10^6}{60n} \cdot \left(\frac{Cr}{Pr}\right)^3$$

L_{10} : Basic Rating Life 10^6rotations
L_{10h} : Rated Life (hr)
Cr : Basic Dynamic Load Rating (kN)
Pr : Dynamic equivalent Load (kN)
n : Speed (min-¹)

Basic Loads (lbf)		
SIZE	Dynamic Load (C_r)	Static Load (C_{0r})
UC201	2880	1496
UC202	2880	1496
UC203	2880	1496
UC204	2880	1496
UC205	3150	1766
UC206	4388	2543
UC207	5783	3465
UC208	6548	4005
UC209	7673	4793
UC210	7898	5243
UC211	9765	6615
UC212	11790	8145
UC213	12870	9023
UC214	13995	9923
UC215	15165	10868
UC216	16358	11925
UC217	18900	13928
UC218	21623	16088

Basic Loads (lbf)		
SIZE	Dynamic Load (C_r)	Static Load (C_{0r})
UC305	4770	2453
UC306	6008	3375
UC307	7515	4343
UC308	9158	5400
UC309	11003	6638
UC310	13950	8618
UC311	16110	10125
UC312	18428	11745
UC313	20858	13478
UC314	23400	15345
UC315	25425	17370
UC316	27675	19508
UC317	29925	21780
UC318	32175	24075
UC319	34425	26775
UC320	38925	31725
UC321	41400	34425
UC322	46125	40500
UC324	46575	41625
UC326	51525	48150
UC328	56925	55350

Basic Loads (lbf)		
SIZE	Dynamic Load (C_r)	Static Load (C_{0r})
UCX05	4388	2543
UCX06	5783	3465
UCX07	6548	4005
UCX08	7673	4793
UCX09	7898	5243
UCX10	9765	6615
UCX11	11790	8145
UCX12	12870	9023
UCX13	13995	9923
UCX14	15165	10868
UCX15	16358	11925
UCX16	18900	13928
UCX17	21623	16088
UCX18	24525	18428
UCX20	29925	23625

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6 Allowable Rotating Speed

6.1 Allowable Rotating Speed

The rotational speed of a bearing is limited by the temperature increase, mainly due to friction. When the bearing reaches the speed limits shown below, it will seize if operated continuously at these levels.

The limiting rotational speed is the maximum speed at which the bearing can be safely operated continuously.

These allowable rotational speeds of a ball bearing unit are dependent upon the dimensions of the bearing, type of seal, and the fit of the bearing inner ring to the shaft.

Table 6.1 shows the standard allowable rotating speeds of ball bearing units.

Table 6.1 Allowable rotating speed of ball bearing units (standard value)

Unit: min^{-1}

Bore dia. code	UC type bearing, UC-S6 type bearing, UK type bearing, NC type bearing, NA type bearing, ER, RB type bearing									SA type bearing SB type bearing	SU type bearing SU-S6 type bearing
	Standard type, heat resistant (D1K2), cold resistant type (D2K2) Standard blowers (S3), Heat-resistant (D9K2)			Triple lip seal type (L3)			Non contact seal (K3), Non contact seal for blowers (S5)				
	Diameter series[3)]			Diameter series[3)]			Diameter series[3)]			Diameter series[3)]	Diameter series[3)]
	2	X	3	2	X	3	2	X	3	2	0
8											10,000
00	–			–			–			–	10,000
01	5,800			2,300			8,700			6,800	8,000
02	5,800			2,300			8,700			6,800	6,600
03	5,800			2,300			8,700			6,800	5,800
04	5,800	–	–	2,300	–		8,700	–	–	5,800	5,000
05	5,100	4,300	4,600	2,100	960		7,700	6,400	6,700	5,100	4,000
06	4,300	3,700	3,900	960	830	–	6,400	5,500	5,800	4,300	3,300
07	3,700	3,300	3,400	830	750	770	5,500	5,000	5,100	3,700	–
08	3,300	3,100	3,100	750	690	690	5,000	4,600	4,600	3,300	
09	3,100	2,800	2,700	690	640	620	4,600	4,300	4,100	3,100	
10	2,800	2,500	2,400	640	570	550	4,300	3,800	3,700	2,800	
11	2,500	2,300	2,300	570	520	510	3,800	3,500	3,400		
12	2,300	2,200	2,100	520	490	470	3,500	3,200	3,100		
13	2,200	2,100	1,900	490	460	440	3,200	3,100	2,900		
14	2,100	2,000	1,800	460	440	410	3,100	2,900	2,700		
15	2,000	1,800	1,700	440	410	380	2,900	2,700	2,600		
16	1,800	1,700	1,600	410	380	360	2,700	2,600	2,400		
17	1,700	1,600	1,500	380	360	340	2,600	2,400	2,300		
18	1,600	1,500	1,400	360	340	320	2,400	2,300	2,100		
19	–	–	1,400	–	–	310	–	–	2,000		
20		1,300	1,300		300	280		2,000	1,900		
21		–	1,200		–	–		–	1,800		
22			1,100			250			1,700		
24			1,100			240			1,600		
26			1,000			220			1,500		
28			910			200			1,400		

Remarks 1. Allowable rotating speed of the units with covers is 80% of the value shown in the table above.

2. If a bearing unit is used with an excessively loose fit, allowable rotating speed must be corrected by multiplying it by the fitting factor f_c shown in **Table 6.2**.

3. The basic bearing size number consists of the duty code (2, X, or 3) followed by the inner ring size code (07, 10, 24, etc.)

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6.2 Rotational Speed Adjustment Due to Shaft Fit

A marginal degree of clearance is typically used to facilitate easy installation of a bearing to a shaft. The amount of clearance between the bearing and shaft must be factored in to determine the maximum allowable rotational speed, and as rotational speed is increased, the amount of clearance must be decreased.

Table 6.2 shows the factor that must be used to correct the allowable rotational speed. The maximum rotational speed is determined by multiplying the speed found in **Table 6.1** by the factors below. This table includes the multiplying factors for set screw bearings as well as bearings with adapters and eccentric locking collars. Due to the characteristics of bearings with adapters, a loose fit, h8 or h9, is acceptable. Bearings with eccentric locking collars function optimally with less clearance and therefore, an h5 or j5 fit is recommended to achieve the maximum allowable speed.

Table 6.2 Fitting factor of ball bearing units f_c (recommended)

Type of ball bearing units	Fitting factor f_c					
	Shaft tolerance range class					
	h5, j5	j6	h6	h7	h8	h9
With set screws						
Standard type	–	1	1	0.8	0.5	0.2
LⅢ type (Suffix code: L3)	–	–	–	1	1	0.9
Heat resistant type (Suffix code: D1K2)	–	–	–	1	1	0.7
Cold resistant type (Suffix code: D2K2)	–	–	–	1	1	0.7
For high speed (Suffix code: K3)	–	1	0.8	0.6	–	–
For blower (Suffix code: S3 · S5)	1	–	0.8	0.6	–	–
With adapters	–	–	–	–	1	1
With eccentric locking collar	1	–	–	–	–	–
NU concentric locking collar						

7 Operating Temperature and Bearing Specifications

7.1 Operating Temperature Range

The operating temperature of a ball bearing unit depends on the type of grease, the material of the seal, and the internal clearance of the bearing.

FYH Ball Bearing Units are available in high temperature (D1K2, D9K2) and low temperature (D2K2) series, in addition to the standard models, to allow selection of the correct bearing for your operational temperature (see **Table 2.1**).

The correct unit must be chosen for the desired temperature range, and it is equally important to use the appropriate grease according to the specified schedule.

7.2 Operating Temperature and Internal Clearance of Bearings

When bearings are operated in a high ambient temperature environment, or when the operating temperature is high because of rotational speed, differential expansion rates occur within the bearing components. This causes higher friction, grease breakdown, and eventual seizure.

If the temperature difference between the inner and outer ring is known, or can be approximated, then the following **Formula (7.1)** may be applied.

Under these conditions, decrease in the internal clearance must be calculated, and the internal clearance of bearing needs to be selected properly.

$$S_{t1} = \alpha \cdot D_e \cdot \Delta_t \quad \cdots\cdots (7.1)$$

Whereas,

S_{t1}: Decrease in the internal clearance of bearings depending on the difference in the temperatures of the bearing inner ring and the bearing outer ring can be found by formula, mm

α: Line expansion factor of bearing steel, 12.5×10^{-6}

D_e: Raceway dia. of bearing outer ring, mm

Diameter series 2, X ····· $D_e \approx 0.92\,D$

Diameter series 3 ····· $D_e \approx 0.9\,D$

D: Nominal bearing outer dia., mm

Δ_t: Difference in temperatures of bearing inner ring and outer ring, °C

If a ball bearing unit is used in a high temperature environment, an abnormal load will result due to thermal expansion of the shaft. This must be compensated for by allowing free movement of one side of the shaft.

(See **"9 Design of Shaft and Base"**)

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8 Strength of Housings

FYH bearings can withstand very high loads due to the use of only high quality material and excellent design. However, when high static or impact loads are encountered, the load capacity of the bearing must be determined.

The housing design is such that it can withstand loads from any angle; however the bearing is strongest with a direct downward load through the base of the unit. For loads in other directions, the allowable load must be determined specifically for the direction in question.

Rigidity of the base and flatness of the mounting surface also influence the housing strength. The equipment designer or installer must examine and perform calculations for the complete supporting structure of the bearing.

8.1 Strength of Cast Iron Housings

Although gray cast iron has many superior characteristics, it may fail under impact loads, particularly in a low temperature environment.

Table 8.1 shows the applicable design safety factors for gray cast iron. **Fig. 8.1** to **8.7** show the static rupture strength of the various housing types.

Table 8.1 Safety factor of gray cast iron products (recommended)

Property of load	Safety factor of gray cast iron
Static load	4
With vibration	10
With impact	15

8.2 Strength of Ductile Cast Iron Housings

The high-strength ductile cast iron series has the same shape and dimensions as the standard gray cast iron series, but is acceptable in environments where high-strength is required.

Table 8.2 shows safety factors of the load on ductile cast iron housings, and **tables 8.8** to **8.11** show the approximate rupture strength of pillow type, flange type, and take-up type housings.

Table 8.2 Safety factor of ductile cast iron (recommended)

Property of load	Safety factor of ductile cast iron
Static load	3
With vibration	5
With impact	10

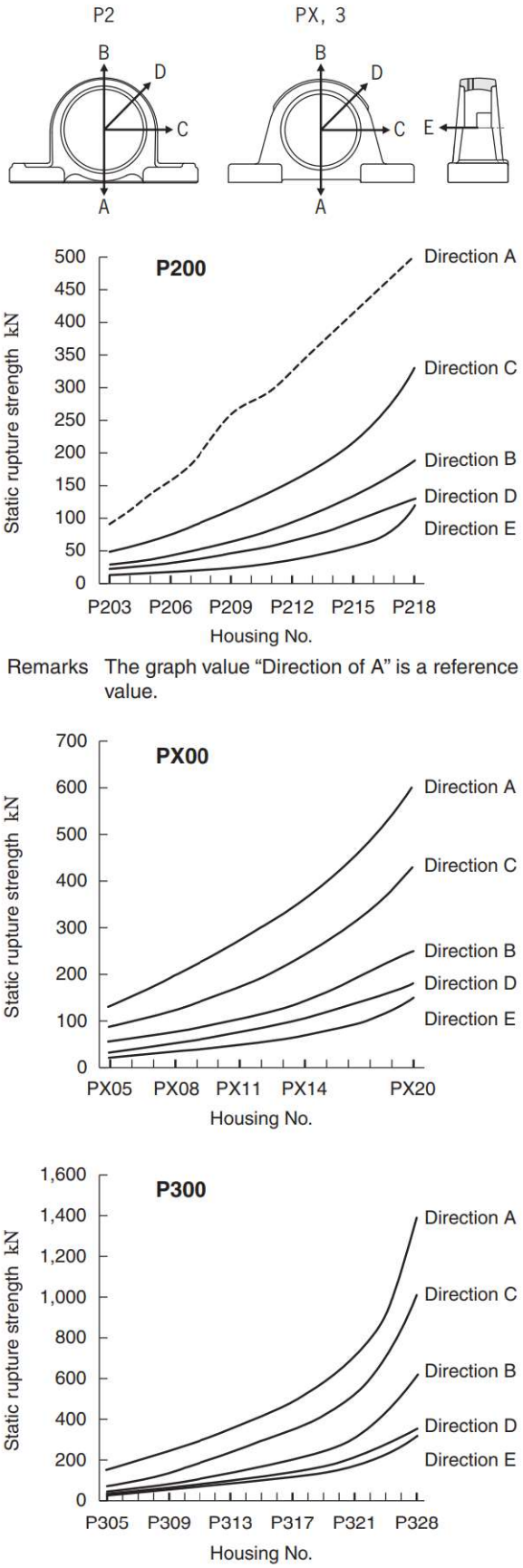


Fig. 8.1 Static rupture strength of pillow type housing (P)

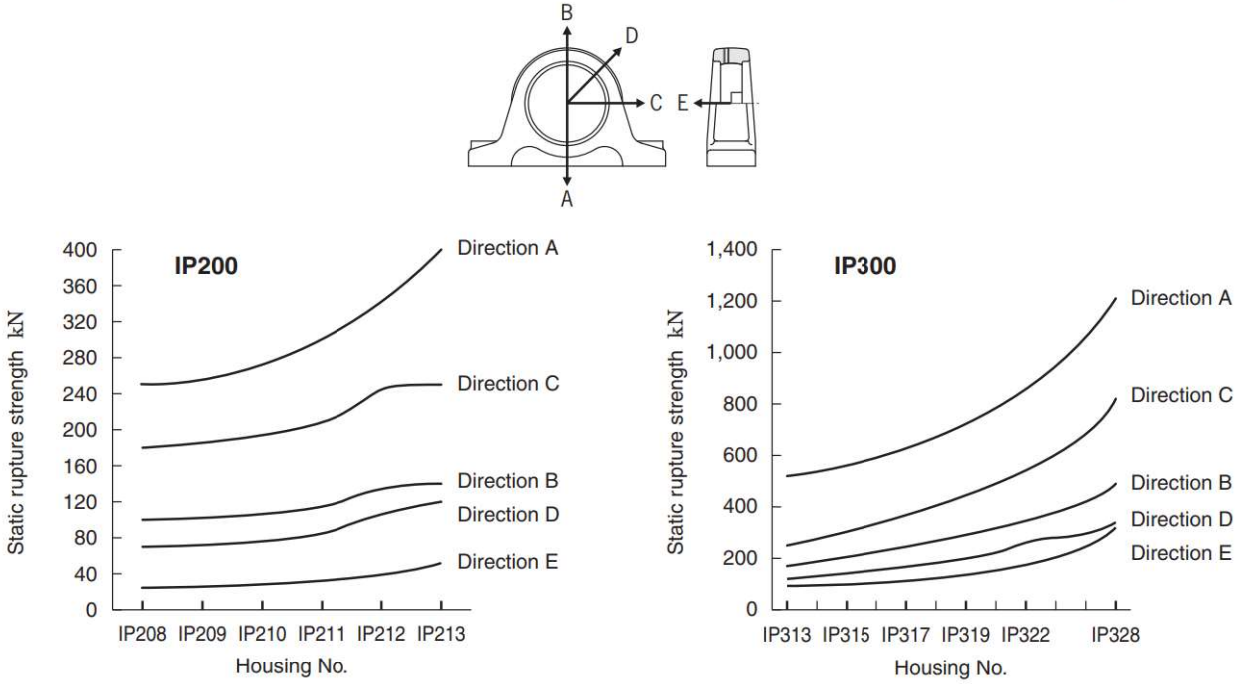


Fig. 8.2 Static rupture strength of thick pillow type housings (IP)

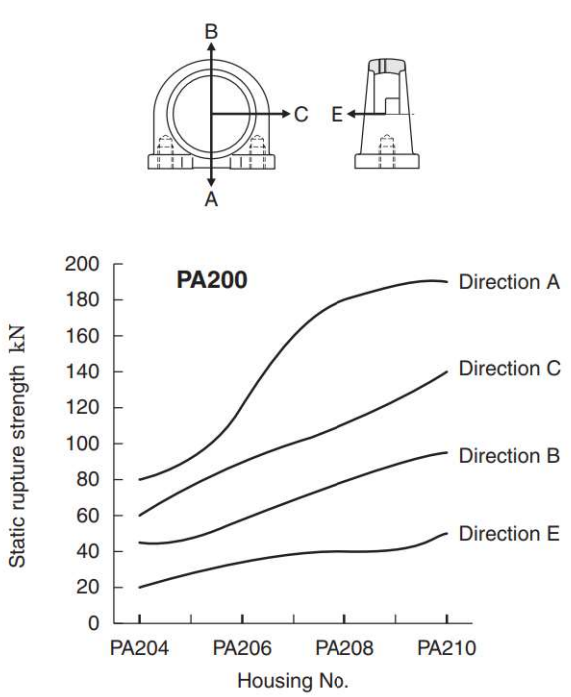


Fig. 8.3 Static rupture strength of tapped base pillow type housings (PA)

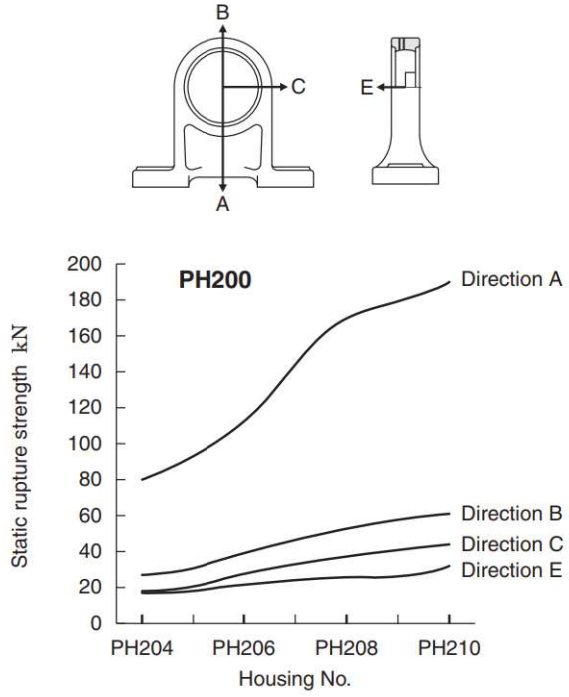
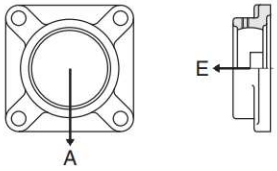
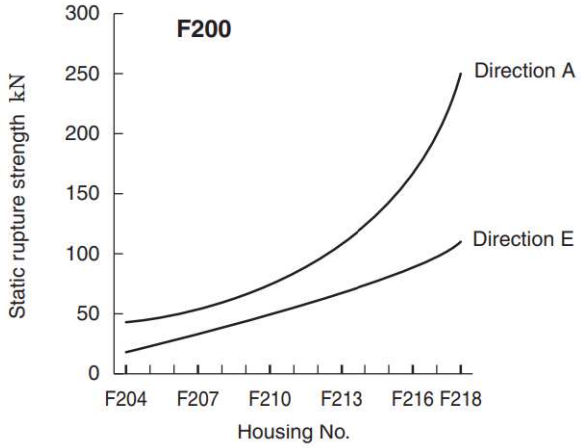
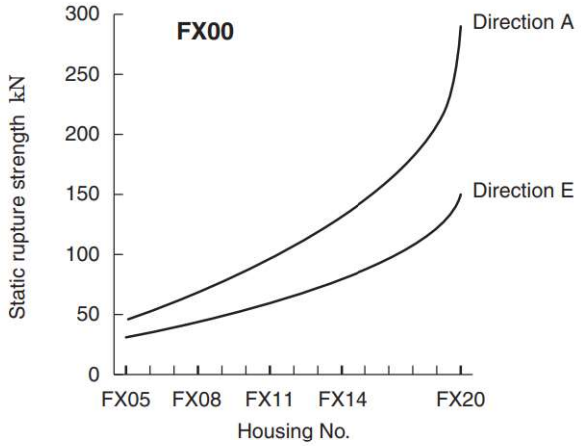


Fig. 8.4 Static rupture strength of High-Base pillow type housings (PH)







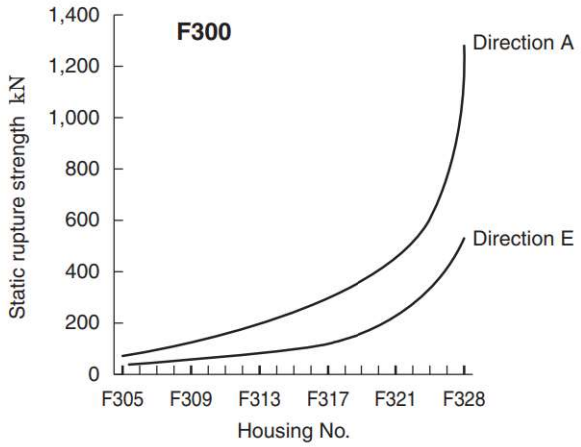
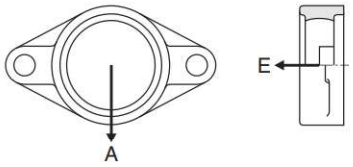
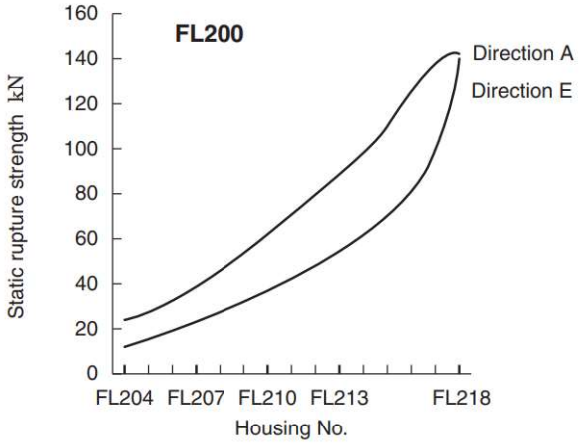
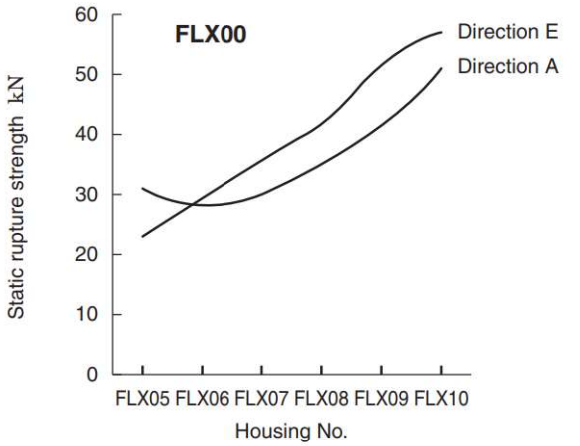


Fig. 8.5 Static rupture strength of square flange type housings (F)







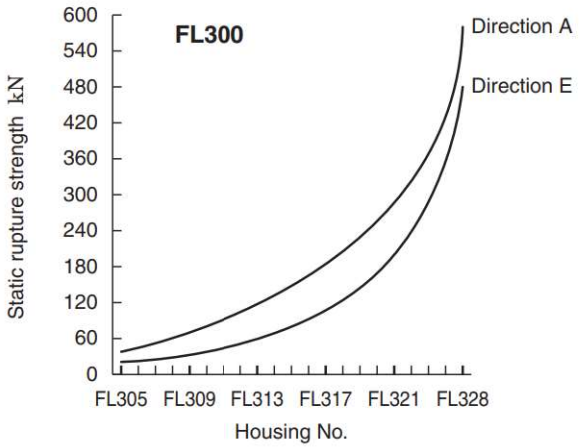


Fig. 8.6 Static rupture strength of oval flange type housings (FL)

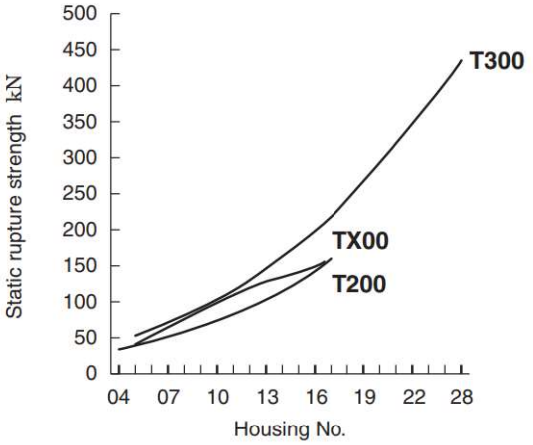
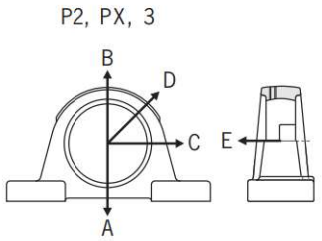
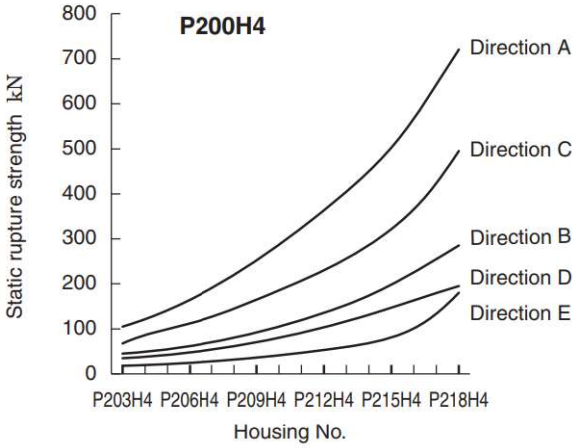
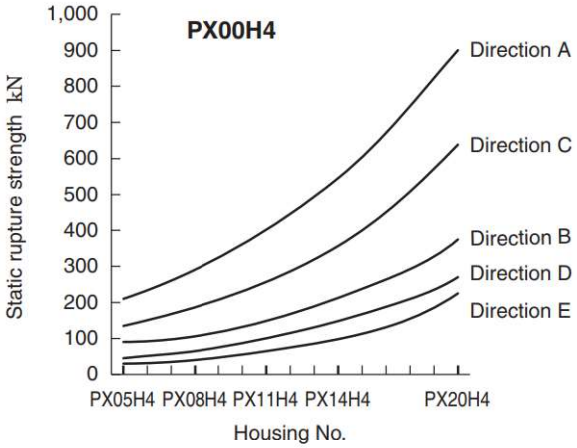


Fig. 8.7 Static rupture strength of take-up type housings (T)







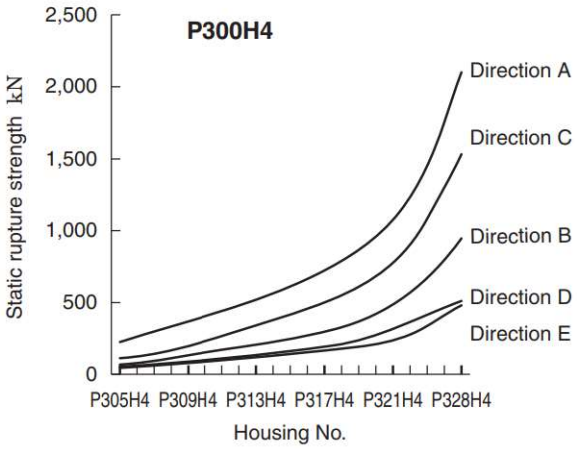


Fig. 8.8 Static rupture strength of ductile cast iron pillow type housings (PH4)

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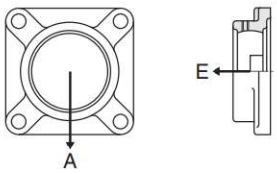
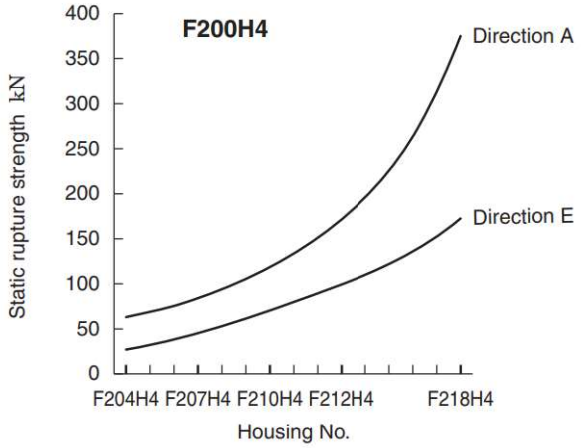
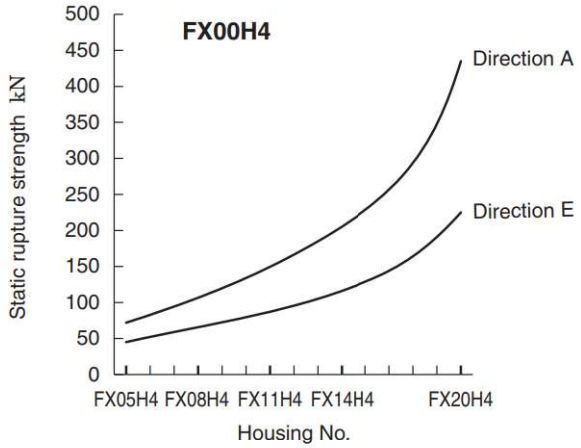






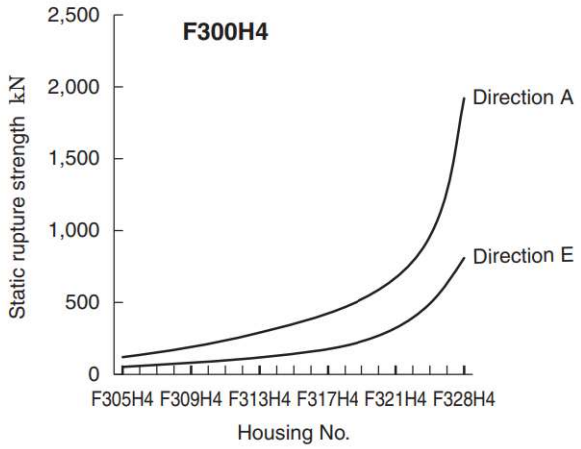
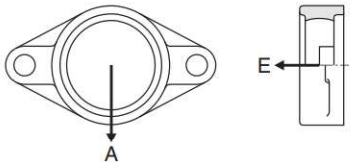
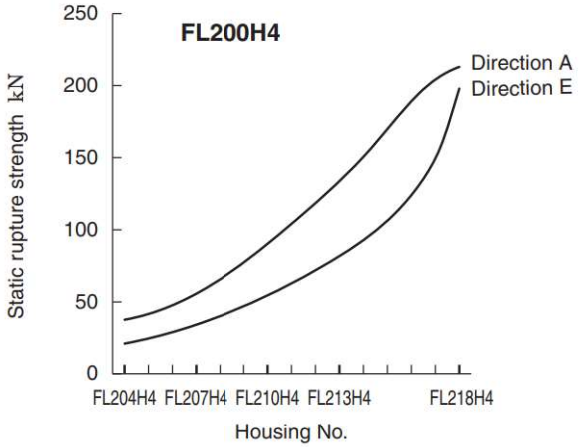
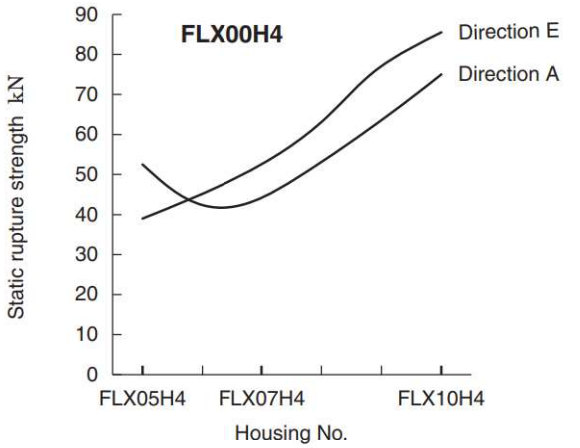


Fig. 8.9 Static rupture strength of ductile cast iron square flange type housings (FH4)







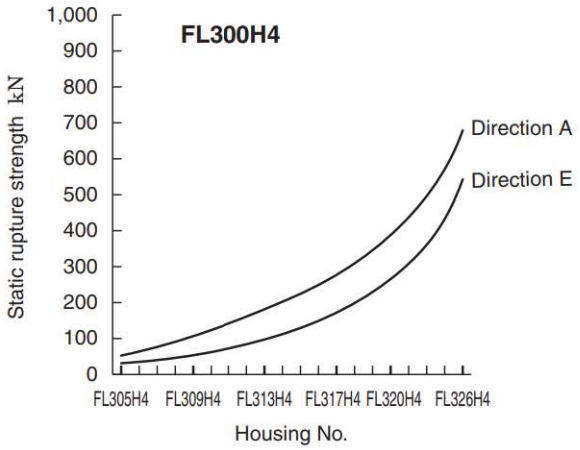
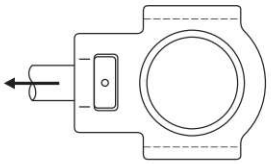


Fig. 8.10 Static rupture strength of ductile cast iron oval flange type housings (FLH4)



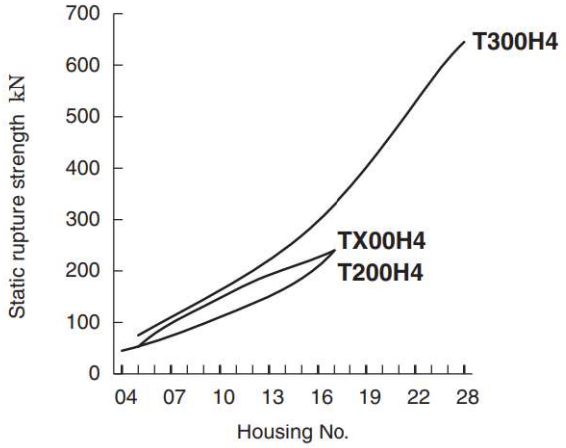


Fig. 8.11 Static rupture strength of ductile cast iron take-up type housings (T_{H4})

8.3 Strength of Stamped Steel Housings

The precisely formed stamped steel housing is very rigid, but it is not as strong as cast iron or cast steel housings. Therefore, it will not support loads to the maximum rating of the bearing itself and must be down-rated per **Table 8.3**.

Table 8.3 Allowable load of steel plate housings (recommended)

Load direction	Allowable load of stamped steel housings
Radial	Approx. 1/6 of basic dynamic radial load rating of bearing (C_r)
Axial	Approx. 1/18 of basic dynamic radial load rating of bearing (C_r)

8.4 Strength of Stainless Steel Housings

FYH supplies stainless steel housings (SP-H1, SPA-H1, SF- H1, SFL-H1, ST-H1, SP, SFL).

Table 8.4 shows the safety factors for stainless steel products. As for the basic values of the static rupture strength of SP-H1, SPA-H1, SF-H1, SFL-H1, ST-H1, SFC-H1 type housings, apply P200 of **Fig. 8.1**, PA200 of **Fig. 8.3**, F200 of **Fig. 8.5**, FL200 of **Fig. 8.6** and T200 of **Fig. 8.7**. As for the basic values of the static rupture strength of SFC-H1 housings, apply F200 of **Fig. 8.5**. For the basic values of the static rupture strength of the SP and SFL type housings, see P000~P006 of **Fig. 8.12** and FL000~FL006 of **Fig. 8.13** and multiply them by 1.5 respectively.

Table 8.4 Safety factor of stainless steel products

Property of load	Safety factor of stainless steel products
Static load	3
With vibration	5
With impact	10

8.5 Strength of Die-cast Housings

The clean series housing is made of die-cast zinc alloy, but the zinc alloy material is not as strong as cast iron or cast steel. **Table 8.5** shows safety factors for die-cast zinc alloy, and **Fig. 8.12** and **8.13** show the basic values of the static rupture strength of the die-cast zinc alloy housing.

Table 8.5 Safety factor of zinc alloy die-cast products

Property of load	Safety factor of die-cast products
Static load	8
With vibration	15
With impact	20

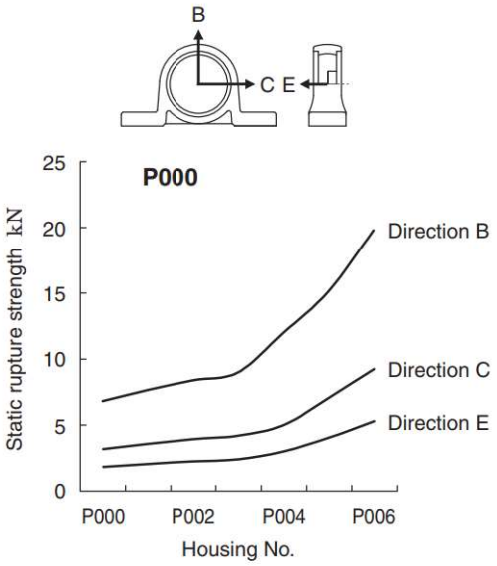


Fig. 8.12 Static rupture strength of clean housings (P)

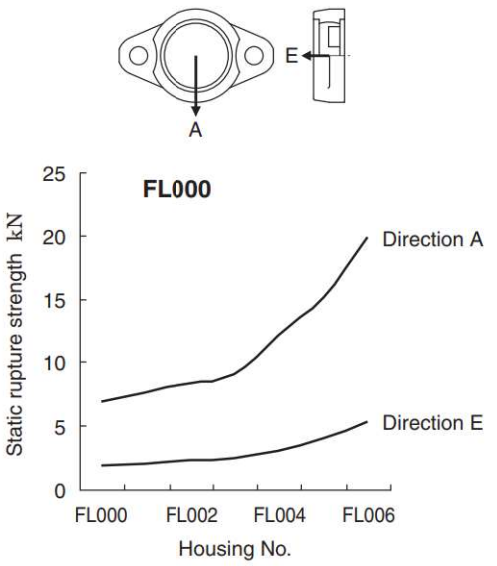


Fig. 8.13 Static rupture strength of clean housings (FL)

8.6 Static Rupture Strength of Plastic Housings

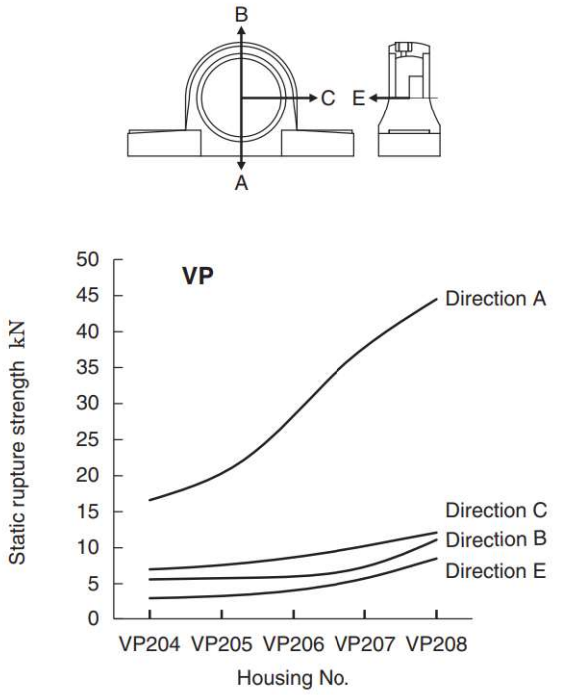


Fig. 8.14 Static rupture strength of plastic housings (VP)

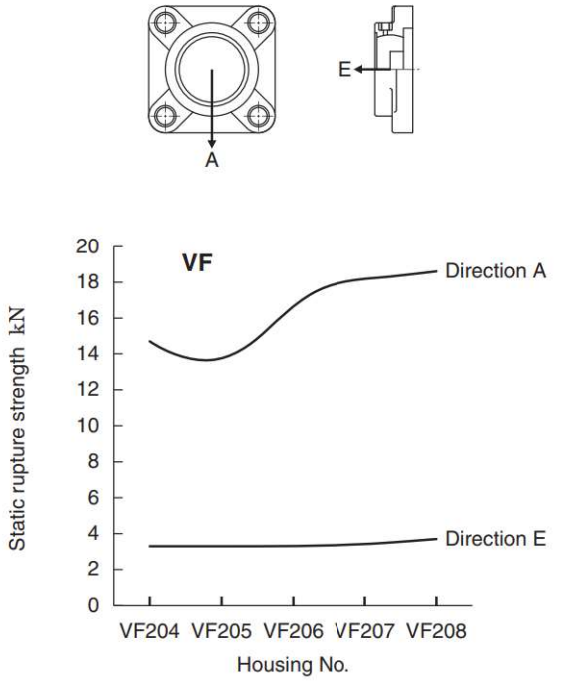


Fig. 8.15 Static rupture strength of plastic housings (VF)

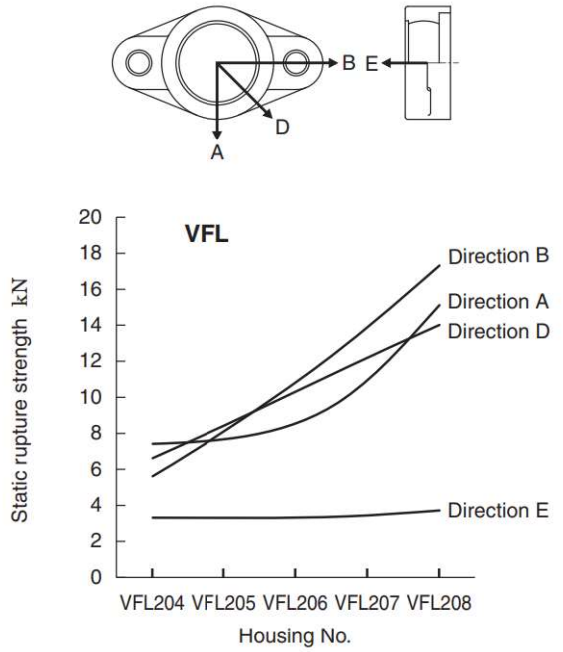


Fig 8.16 Static rupture strength of plastic housings (VFL)

Note:
The figure shows the average static rupture strength of housings.
The correct safety factor should be considered to properly account for combined load in various directions at room temperature (23 ℃ ±5 ℃).

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9 Design of Shaft and Base

9.1 Design of Shaft

For optimal performance of a ball bearing unit, and for maintenance-free operation for an extended period of time, proper shaft selection is very important. The shaft should be straight, of sufficient tensile strength, and free of burrs and scratches.

9.1.1 Dimensional accuracy of shaft

(1) Dimensional tolerance of shaft used for set screw bearings

For bearings with set screws, a relatively looser class of fit makes assembly easier and is perfectly acceptable at low operating speeds. The clearance between the bore of the bearing and the shaft must be decreased as the rotational speed is increased.

Table 9.1 shows the guidelines for the tolerance class for the rotational speed of bearings with set screws.

If the bearing with set screws is exposed to a heavy load ($P_r / C_r > 0.12$), vibration, or heavy impact, use a tighter shaft tolerance than normal.

Table 9.2 shows the tolerances for tight fits.

Table 9.3 shows the recommended roundness and cylindricity for shafting.

Table 9.1 Dimensional tolerance of shaft used for cylindrical bore bearing with set screws (recommended) (clearance fit or intermediate fit)

Unit: μm

Shaft dia. (mm)		Dimensional tolerance of shaft							
		j6		h6		h7		h8	
Over	Incl.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
6	10	+ 7	− 2	0	− 9	0	−15	0	−22
10	18	+ 8	− 3	0	−11	0	−18	0	−27
18	30	+ 9	− 4	0	−13	0	−21	0	−33
30	50	+11	− 5	0	−16	0	−25	0	−39
50	80	+12	− 7	0	−19	0	−30	0	−46
80	120	+13	− 9	0	−22	0	−35	0	−54
120	180	+14	−11	0	−25	0	−40	0	−63
Applicable rotating speed dn [1]		Over 120,000		Over 100,000, incl. 120,000		Over 60,000, incl. 100,000		Incl. 60,000	

Note [1] $dn = d$ (bearing bore dia., mm) $\times n$ (rotating speed, min^{-1})

Table 9.2 Dimensional tolerance of shaft used for cylindrical bore bearing with set screws (recommended) (intermediate fitting or tight fitting)

Unit: μm

Shaft dia. (mm)		Dimensional tolerance of shaft					
		k6		k7		m6	
Over	Incl.	Max.	Min.	Max.	Min.	Max.	Min.
6	10	+10	+1	+16	+1	+15	+ 6
10	18	+12	+1	+19	+1	+18	+ 7
18	30	+15	+2	+23	+2	+21	+ 8
30	50	+18	+2	+27	+2	+25	+ 9
50	80	+21	+2	+32	+2	+30	+11
80	120	+25	+3	+38	+3	+35	+13
120	180	+28	+3	+43	+3	+40	+15

Table 9.3 Recommended accuracy of shaft used for ball bearing units

Unit: μm

Shaft dia. (mm)		Tolerance of shaft roundness and cylindricity (max.)
Over	Incl.	
6	10	6
10	18	8
18	30	9
30	50	11
50	80	13
80	120	15
120	180	18

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(2) Dimensional tolerance of shaft used with tapered bore bearings

Since tapered bore bearings are fixed to the shaft with an adapter, a looser fit is allowable since the adapter sleeve provides excellent concentricity. This makes mounting of the bearing to the shaft much easier.

Table 9.4 shows the dimensional tolerance of the shaft used with tapered bore bearings (with adapters).

Table 9.4 Dimensional tolerance of shaft used for tapered bore bearings (with adapters) (recommended)

Unit: μm

Shaft dia. (mm)		Dimensional tolerance of shaft			
		h8		h9	
Over	Incl.	Max.	Min.	Max.	Min.
18	**30**	0	–33	0	– 52
30	**50**	0	–39	0	– 62
50	**80**	0	–46	0	– 74
80	**120**	0	–54	0	– 87
120	**180**	0	–63	0	–100

(3) Dimensional tolerance of shaft with eccentric locking collar

Eccentric locking collar bearings have greater clearance (more eccentricity) between the shaft and the bore of the bearing when installed. Therefore, the shaft tolerances must be tighter (h5 or j5) to reduce the clearance (eccentricity). The same clearance fits are recommended as with blower bearings as shown in **Table. 2.6**.

(4) Dimensional tolerance of shaft used for concentric locking collar

Regarding the shaft used for concentric locking collar bearings, the same clearance (h5 or j5) fits are recommended as with air handling bearings as shown in **Table 2.6**.

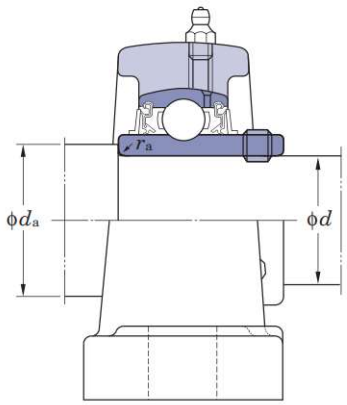
9.1.2 Dimensions of shouldered shafts

When using a set screw or eccentric locking collar bearing that is exposed to a high axial load, excessive vibration, or impact, a shouldered shaft may be used. The inner ring of the bearing is then tightened in place with a locknut, if the shaft is threaded, or with a locking ring otherwise.

However, if after mounted units used a shouldered shafts, between the inner ring end face and shouldered shafts, on clearances of 2 mm or more is recommended.

Table 9.5 shows the shoulder diameter and the fillet radius of the shouldered shaft.

Table 9.5 Recommended shoulder diameter and fillet radius of a shouldered shaft



Unit: mm

Bore dia. code	Nominal bearing bore dia. d	Diameter Series[1)] UC200, UCX00		Diameter Series[1)] UC300	
		Shoulder dia. d_a	Fillet roundness radius r_a (max.)	Shoulder dia. d_a	Fillet roundness radius r_a (max.)
01	**12**	17	0.6		
02	**15**	20	0.6		
03	**17**	22	0.6		
04	**20**	30	1	–	–
05	**25**	35	1	35	1
06	**30**	40	1	40	1
07	**35**	45	1	45	1.5
08	**40**	50	1	50	1.5
09	**45**	55	1	55	1.5
10	**50**	60	1	60	2
11	**55**	65	1.5	65	2
12	**60**	70	1.5	75	2
13	**65**	75	1.5	80	2
14	**70**	80	1.5	85	2
15	**75**	85	1.5	90	2
16	**80**	90	2	95	2
17	**85**	95	2	100	2.5
18	**90**	100	2	105	2.5
19	**95**	–	–	110	2.5
20	**100**			115	2.5
21	**105**			120	2.5
22	**110**			125	2.5
24	**120**			135	2.5
26	**130**			150	3
28	**140**			160	3

The basic bearing size number consists of the duty code (2, X, or 3) followed by the inner ring size code (07, 10, 24, etc.)

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9.1.3 High temperature applications

In general, two bearing units are used per shaft. If the distance between the bearings is small, or if the temperature change of the shaft is small, both bearings may be fixed in position.

However, if the distance between the bearings is large and the shaft is exposed to heat, then only one bearing should be fixed and the opposing bearing must be free to float in the axial direction.

This is because shaft expansion due to temperature change of the shaft causes a high axial load and can cause failure of fixed bearings. The amount of shaft expansion due to temperature change may be calculated by using **Formula (9.1)**.

$$\Delta_\ell = \alpha \cdot \Delta_t \cdot l \quad \cdots\cdots (9.1)$$

Whereas,

Δ_ℓ: Expansion of shaft, mm

α: Linear expansion coefficient of shaft in the case of ordinary steel, $11 \sim 12 \times 10^{-6}$

Δ_t: Temperature increase, ℃

l: Installation distance of unit, mm

Proper installation procedures for a shaft exposed to temperature changes are shown below.

(1) Installation with a dog point set screw on the free side

To accommodate shaft expansion in the axial direction, the bearing must be installed so that the shaft can move freely through the bore in either axial direction.

To accomplish this, the shaft must be grooved for a full dog point set screw (suffix code: G6). This should be done on the free side only. The dog point screw allows free movement in the axial direction and provides force to rotate the bearing in the radial direction.

Fig. 9.1 shows an example of the structure of a bearing with a key groove on the shaft and a full dog point set screw. **Table 9.6** shows the dimensions of the key groove for the full dog point set screw. Note that the full dog point set screw in the image is also capped so that it may be tightened against the bearing, not the shaft. A full dog point set screw with a jam nut will also work to achieve this function.

The tolerance class of the shaft to be used is h7.

If the temperature of the shaft is higher than that of the bearing, then a looser fit tolerance class is specified.

When using this method to allow for free expansion, there is the possibility of fretting between the shaft and the inner race. In order to prevent fretting, a high temperature grease must be applied to the inner ring of the bearing and the shaft prior to installation.

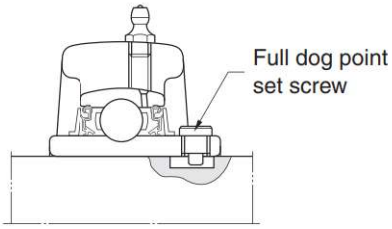

Fig. 9.1 Use on free side with full dog point set screw

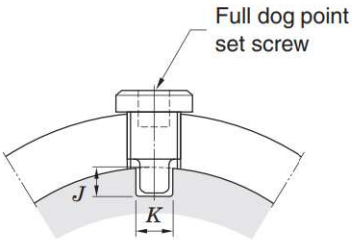

Table 9.6 Dimensions of key groove for full dog point set screw (use on free side)

Nominal size of set screw	Dimensions of key groove (mm)		Applicable nominal bearing code		
	J	K	UC200	UCX00	UC300
M6 × 0.75	5	4	201–206	X05	305, 306
M8 × 1	6	6	207–209	X06–X08	307
M10 × 1.25	6.5	7	210–212	X09–X11	308, 309
M12 × 1.5	7	9	213–218	X12–X17	310–314
M14 × 1.5	7	10		X18	315, 316
M16 × 1.5	8	12		X20	317–319
M18 × 1.5	8	13			320–324
M20 × 1.5	8	15			326, 328

Allowable tolerance of key groove dimension "K" (Recommended value: 0~+0.2mm)

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(2) Installation of cartridge type units on the free side

If the rotational speed is high or if the bearing is exposed to high vibration, the cartridge type unit is recommended on the free side. In this case, the housing of the cartridge unit is free to move axially within the mounting bore and the bearing insert is rigidly attached to the shaft.

Fig. 9.2 shows the required structure for the cartridge type unit on the free side.

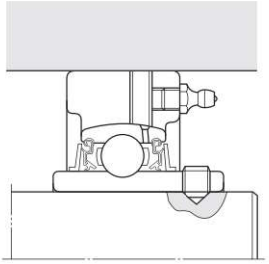


Fig. 9.2 Use of cartridge type units on free side

If, in addition to the expansion of the shaft, the ball bearing itself is exposed to heat, then a calculation of the decrease in internal clearances of the bearing must be made. The appropriate bearing internal clearance must be specified. (see **"7 Operating temperature and bearing specifications"**).

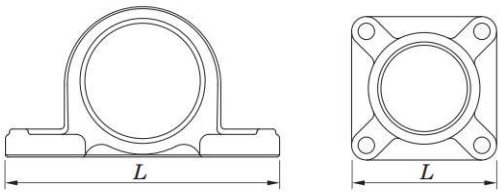
9.2 Mounting Base Design

9.2.1 Rigidity of base and flatness of mounting Surface

If rigidity of the base on which a ball bearing unit is to be mounted is not sufficient, or if the flatness of the mounting surface is poor, then vibration or abnormal noise may occur during operation. This may lead to premature bearing failure since the strength of the housing is diminished from improper support.

The mounting surface must be accurately machined to eliminate deformation of the housing.

Fig. 9.3 shows the recommended values for flatness of the mounting surface on which the ball bearing unit is to be installed.



Max.: L / 1,000 mm

Fig. 9.3 Flatness of mounting surface of base (recommended value)

9.2.2 Mounting cartridge type units in high temperature applications

Cartridge units are designed to fit into an accurately bored cylindrical opening in the mounting base. Under ordinary operating conditions, H7 is an adequate choice for the tolerance class of the cylindrically bored hole.

In instances where both the bearing and the shaft are heated during operation, select G7 as the tolerance class of the cylindrical bore.

If the bearing is exposed to excessive vibration or impact, then an even tighter tolerance class must be specified.

Table 9.7 shows the dimensional requirements for the cylindrical bore.

Table 9.7 Dimensional tolerance of cylindrical bore for mounting cartridge type units (recommended values)

Unit: μm

Nominal bore dia. of cylindrical bore (mm)		Dimensional tolerance of cylindrical bore			
		H7		G7	
Over	Incl.	Max.	Min.	Max.	Min.
50	80	+30	0	+40	+10
80	120	+35	0	+47	+12
120	180	+40	0	+54	+14
180	250	+46	0	+61	+15
250	315	+52	0	+69	+17
315	400	+57	0	+75	+18

9.2.3 Installation of take-up units

A take-up unit is positioned between two guide rails and enables linear adjustment by means of the threaded rod and bolt.

Table 9.8 shows the dimensions of the guide rail, adjuster bolt, and fixed nut.

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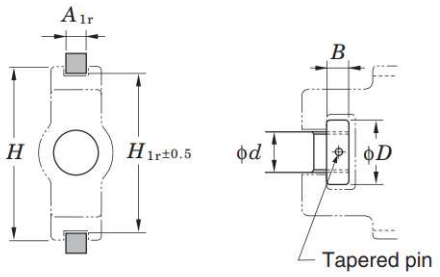
Table 9.8 Dimensions relative to installation of take-up type units (recommended values)



Unit: mm

Nominal bearing code	Dimensions of guide rail			Dimensions of adjuster bolt and round nut		
	A_{1r}	H_{1r}	H (Reference)	d	D	B
T204 T205	11	77	89	16	28	14
T206 T207	11	90	102	18	32	14
T208	15	103	114	24	42	16
T209 T210	15	103	117	24	42	16
T211 T212	20	131	146	30	55	20 27
T213 T214 T215	24	152	167	36	60	27
T216	24	166	184	36	60	27
T217	28	174	198	42	60	30
TX05 TX06	11	90	102	18	32	14
TX07	15	103	114	24	42	16
TX08 TX09	15	103	117	24	42	16
TX10 TX11	20	131	146	30	55	20 27
TX12 TX13 TX14	24	152	167	36	60	27
TX15	26	166	184	36	60	27
TX16 TX17	26	174	198	42	60	30

Remark This table is also applicable to stainless steel housings.

Unit: mm

Nominal bearing code	Dimensions of guide rail			Dimensions of adjuster bolt and round nut		
	A_{1r}	H_{1r}	H (Reference)	d	D	B
T305	11	81	89	22	32	12
T306 T307	15	91 101	100 111	24 26	36 40	14
T308 T309	16	113 126	124 138	28 30	45 50	16 18
T310	18	141	151	32	55	20
T311 T312	20	151 161	163 178	34 36	60 65	22 24
T313 T314 T315	24	171 181 193	190 202 216	38 40 40	65 80 80	26 28 28
T316	28	205	230	46	90	34
T317 T318	30	216 230	240 255	46 50	90 95	34 38
T319	32	242	270	50	95	38
T320 T321	32	262	290	52	100	40
T322	36	287	320	55	110	44
T324	42	322	355	60	120	50
T326 T328	47	352 382	385 415	65 70	130 140	55 60

9.3 Dowel Pins for Accurate Unit Mounting

The pillow type, square flange type, and oval flange type housings all have a dowel pin seat on the mounting base. If accurate positioning of the housing is required, then the bottom of the housing may be drilled for dowel pins which fit into corresponding holes in the mounting surface. The dimensions for the hole and pin sizes can be found in **Appendix table 5** in the back of the catalog.

10 Nomenclature

Nomenclature of FYH Ball Bearing Units conform to JIS B 1557, and comprise the bearing unit model code (comprising bearing model code and housing model code), diameter series code, bore diameter. code, accessory code, and special code.

UC P 207 J L3

Bearing No.:	UC207L3
Housing No.:	P207J

UK P 209 J CD + H2309X

Bearing No.:	UK209+H2309X
Housing No.:	P209JE1
Steel plate cover No.:	(Open type) C-9x40
	(Closed type) D-9

UC F 209 J L3 FD D1K2 G6 A1

Bearing No.:	UC209L3D1K2G6
Housing No.:	F209JA1E3
Cast iron cover No.:	(Closed type) 209FD

- A1 — Housing special code (**Table 10.8**)
- D1K2 G6 — Bearing special code (**Table 10.7**)
- FD — Accessory code (**Table 10.6**)
- J — Fitting code (**Table 10.5**)
- 209 — Bore dia. code (**Table 10.4**)
- 209 — Diameter series code (**Table 10.3**)
- F — Housing model code (**Table 10.2**)
- UC — Bearing model code (**Table 10.1**)

Remark The above code shows an example of nomenclature structure. It may depend on the bearing unit model.

Table 10.1 Bearing model code

Bearing model code	Details
UC	with set screws
UC-S6	with set screws (stainless steel series)
UK	Tapered bore with adapter sleeve
NA	with eccentric locking collar
NC	with concentric locking collar
SB	with set screws (lightweight type)
SU	with set screws (clean series)
SA	with eccentric locking collar (lightweight type)
SA-F	with eccentric locking collar, Lubricating mechanism (lightweight type)
SU-S6	with set screws (stainless steel series)
ER	with set screws, cylindrical O.D., Lubricating mechanism, snap ring
ERC	with concentric locking collar, cylindrical O.D., Lubricating mechanism, snap ring
RB	with set screws, cylindrical O.D.
SBB	with set screws, cylindrical O.D.
SAA-F	with eccentric locking collar, cylindrical O.D. (lightweight type)

Table 10.2 Housing model code

Housing model code	Details
P	Pillow type
IP	Thick pillow type
PA	Tapped-Base pillow
PAN	Tapped-Base pillow
PH	High-Base pillow type
LP	Lightweight pillow type
P	Pillow type (clean series)
SP-H1	Pillow type (stainless steel series)
SPA-H1	Tapped-Base pillow (stainless steel series)

Table 10.2 Housing model code (continued)

Housing model code	Details
VP	Pillow type (thermoplastic series)
VPAN	Tapped-Base pillow (thermoplastic series)
SP	Pillow type (stainless steel series)
PP	Stamped steel pillow type
F	Square four-bolt flange type
NF	Square four-bolt flange type
FL	Oval two-bolt flange type
FA	Adjustable oval two-bolt flange type
FB	Three-bolt flange type
FC	Round flange cartridge type
FCF	Round flange cartridge type
FS	Square four-bolt cartridge flange type
FL	Oval two-bolt flange type (clean series)
TFD-H4	Three-bolt flange type (Ductile cast iron)
LF	Lightweight oval two-bolt flange type
SF-H1	Square four-bolt flange type (stainless steel series)
SFL-H1	Oval two-bolt flange type (stainless steel series)
SFL	Oval two-bolt flange type (stainless steel series)
SFC	Round flange cartridge type (stainless steel series)
PF	Stamped steel plate round three-bolt flange type
PFL	Stamped steel plate oval two-bolt flange type
VF	Square four-bolt flange type (thermoplastic series)
VFL	Oval two-bolt flange type (thermoplastic series)
VFB	Three-bolt flange type (thermoplastic series)
T	Take-up type
TRS	Narrow slot Take-up type
ST-H1	Take-up type (stainless steel series)
TH	Section steel frame take-up type
TL	Light channel steel frame take-up type
TU	Channel steel frame take-up type
PTH	Steel plate frame take-up type
NPTH	Steel plate frame take-up type

Table 10.2 Housing model code (continued)

Housing model code	Details
C	Cartridge type
HA	Hanger type

Table 10.3 Diameter series code

Diameter series code	Details
0	Small size light duty
2	Normal duty
X	Medium duty
3	Heavy duty

Table 10.4 Bore dia. code

Bore dia. code	Details
8	Nominal bearing bore dia. 8 mm
00	Nominal bearing bore dia. 10 mm
01	Nominal bearing bore dia. 12 mm
02	Nominal bearing bore dia. 15 mm
03	Nominal bearing bore dia. 17 mm
04 and above	(Bore dia. code) × 5 = Nominal bearing bore dia. (mm)
01–8	– (bore dia. code) /16 = nominal bearing bore dia. (inch) (in this case, 8/16 = 1/2 inch = 12.7 mm) As for the bore dia. inch series bearing.

Table 10.5 Fitting code

Fitting code	Details
J	Tolerance class of spherical bore of the housing is J7 (not shown where the spherical bore diameter exceeds 120 mm)
H	Tolerance class of spherical bore of the housing is H7
K	Tolerance class of spherical bore of the housing is K7

Table 10.6 Accessory code

Accessory code	Details
C[1)]	Cover, open type
D[1)]	Cover, closed type
FC	Cast iron cover, open type
FD	Cast iron cover, closed type
L3	Triple-lip seal type

Note [1)] Standard specifications of codes C and D are as shown below.
201–218, X05–X17.....Steel plate cover
X18–X20, 305–328.....Cast iron cover

Table 10.7 Bearing special code

Item	Bearing special code	Details
Grease	D1	U-RET EDM-1
	D2	SH33M
	D9	Demnum L-200
Set Screw	G4	Cone point
	G6	Capped full dog point
Seal	K2	Silicone rubber
	K3	Non-contact type
Sealing Device	P3	Without seal, slinger
	P4	Without seal
Others	S3	Air handling fit,100% noise check, the anti-rotation pin
	S5	For blower (seal: K3, inner clearance and bearing accuracy are specially controlled)
	S6	Stainless steel bearing
	S7	Plated bearing (for corrosion-resistance)

Table 10.8 Housing special code

Item	Housing special code	Details
Grease Fitting Thread Bore dia.	A1	PT1/8 tube thread
	A2	PF1/8 tube thread
	A3	PT1/4 tube thread
	A4	PF1/4 tube thread
	A5	1/8NPT tube thread
Grease Fitting Thread Bore Position	B1	Right
	B2	Left
	B3	45°
	B5	30°
	B7	Both right and left
Machining	E1	Machined for stamped cover
	E3	Cast iron cover mounting groove (diameter series 2, X, 3)
	E4	Non-lubricating type
Housing material	H1	Stainless steel cast steel model (SCS13)
	H4	Ductile iron (FCD450-10)
	H5	Rolled steel for general purpose (SS400)
	H9	Stainless steel cast steel model (SCS14)
Grease Fitting	N1	B type (67.5°)
	N2	C type (90°)
Surface treatment	Z5	Nickel plated housing

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11 Accuracy and Internal Clearance

Accuracy of a ball bearing unit is specified in JIS B 1558 (ball bearings for ball bearing units) and JIS B 1559 (housings for ball bearing units). FYH produces products conforming to these standards.

11.1 Accuracy of Bearings

Table 11.1 to **Table 11.4** shows the accuracy of a ball bearings for ball bearing units.

Ball bearings for blowers (special code: S3, S5) are produced with greater accuracy than standard models (see **Table 11.3**).

Table 11.5 shows the tolerance limitations of inner rings for cylindrical bore bearings.

Table 11.2 Tolerances and tolerance values of outer rings of ball bearings inserts

Unit: μm

Nominal bearing outer dia. D (mm)		Variation of tolerance of average outer dia. Δ_{Dm}		Radial runout of outer ring K_{ea}
Over	Incl.	Max.	Min.	Max.
18	**30**	0	– 9	15
30	**50**	0	–11	20
50	**80**	0	–13	25
80	**120**	0	–15	35
120	**150**	0	–18	40
150	**180**	0	–25	45
180	**250**	0	–30	50
250	**315**	0	–35	60

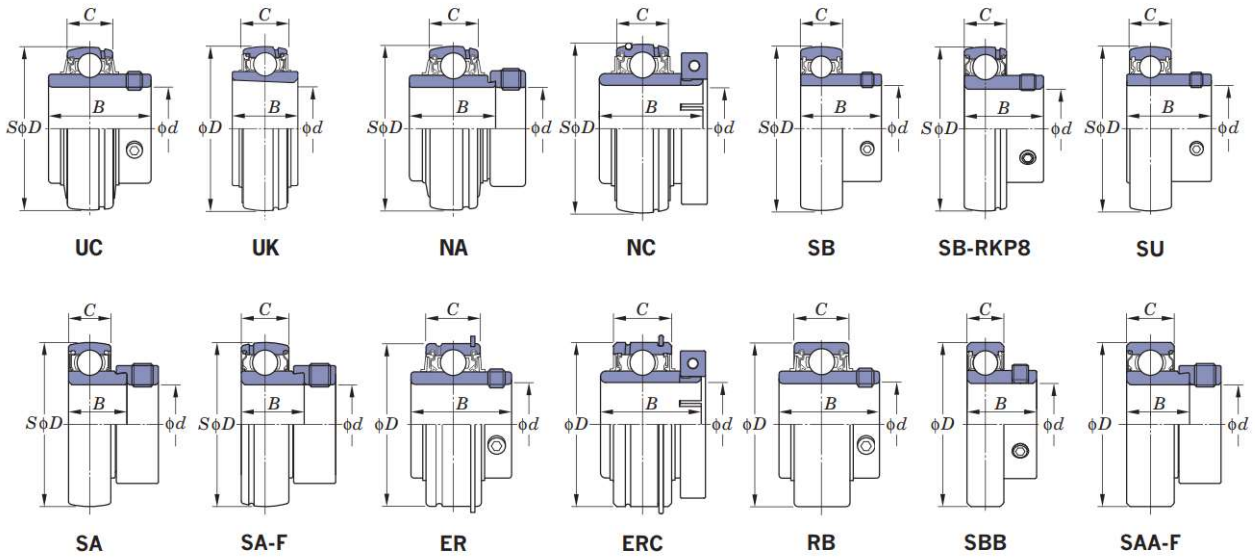
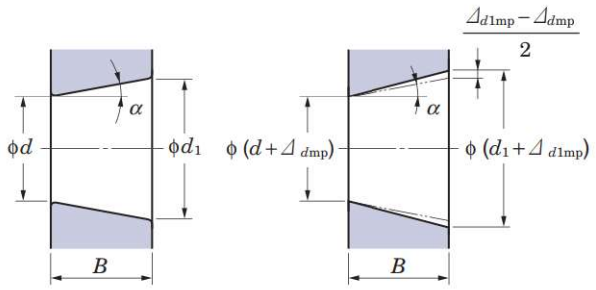


Table 11.1 Tolerances and tolerance values of inner rings of ball bearings for ball bearing units

Unit: μm

Nominal bearing bore dia. d (mm)		Variation of tolerance of average bore dia. in plane Δ_{dmp}		Unequal bore dia. in plane V_{dsp}	Variation of tolerance of eccentricity on eccentric surface of inner ring and eccentric locking collar Δ_{Hs}		Variation of tolerance of inner ring width Δ_{Bs}		Radial runout of inner ring K_{ia}
Over	Incl.	Max.	Min.	Max.	Max.	Min.	Max.	Min.	Max.
–	**10**	+15	0	10	+100	–100	0	–120	10
10	**18**	+15	0	10	+100	–100	0	–120	15
18	**31.75**	+18	0	12	+100	–100	0	–120	18
31.75	**50.8**	+21	0	14	+100	–100	0	–120	20
50.8	**80**	+24	0	16	+100	–100	0	–150	25
80	**120**	+28	0	19	+100	–100	0	–200	30
120	**180**	+33	0	22	+100	–100	0	–250	35

Table 11.3 Variation of tolerances and tolerance values of tapered bore on bearing with tapered bore



Theoretical tapered bore

Tapered bore with variation of tolerance of average bore dia. in plane

Unit: μm

Nominal bearing bore dia. d, mm		Δ_{dmp}		$\Delta_{d1mp} - \Delta_{dmp}$		V_{dsp} [1]
Over	Incl.	Max.	Min.	Max.	Min.	Max.
18	**30**	+33	0	+21	0	13
30	**50**	+39	0	+25	0	16
50	**80**	+46	0	+30	0	19
80	**120**	+54	0	+35	0	22
120	**180**	+63	0	+40	0	40

Note [1] To be applied to all the radial planes of tapered bore

Remarks 1. Applicable range
Applicable to tapered bore of inner ring of tapered bore radial bearing that standard value of taper ratio is 1/12.

2. Amount code

d_1: Standard diameter at theoretical large end of tapered bore

Standard diameter $d_1 = d + \frac{1}{12} B$

Δ_{dmp}: Variation of tolerance of average bore diameter in plane at theoretical small end of tapered bore

Δ_{d1mp}: Variation of tolerance of average bore diameter in plane at theoretical large end of tapered bore

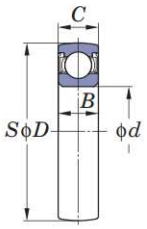
V_{dsp}: Unequal bore diameter in plane

B: Nominal inner ring width

α: 1/2 of nominal taper angle of tapered bore

α = 2° 23' 9.4"
= 2.385 94°
= 0.041 643 rad

Table 11.4 Tolerances and tolerance values of inner rings of SC ball bearings



SC

Unit: μm

Nominal bearing bore dia. d (mm)		Variation of tolerance of average bore dia. in plane Δ_{dmp}		Unequal average bore dia. in plane V_{dsp}	Radial runout of inner ring K_{ia}
Over	Incl.	Max.	Min.	Max.	Max.
10	**18**	0	– 8	6	7
18	**31.75**	0	–10	6	8
31.75	**50.8**	0	–12	10	10

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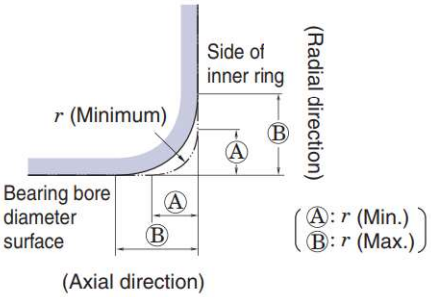
Table 11.5 Tolerance limitations for radius dimensions for the inner ring of cylindrical bore bearings



Unit: mm

r (Min.)	r (Max.)	
	Radial direction	Axial direction
0.6	1	2
1	1.5	3
1.1	2	3.5
1.5	2.3	4
2	3	4.5
2.1	4	6.5
2.5	3.8	6
3	5	8
4	6.5	9

Remark Though accurate profile of chamfered surface is not specified, the profile on the axial plane should not exceed the virtual arc of radius r (minimum) that contacts with the side of inner ring and the bearing bore diameter surface.

11.2 Accuracy of Housings

This section details the tolerance specifications of the inner diameter of the spherical bore of FYH housings. These values determine how tight or how loose the bearing fits inside the housing.

Table 11.6 shows the tolerance of the diameter of the spherical bore of housings.

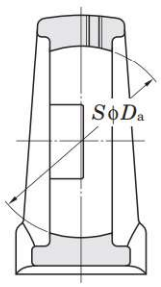
Standard tolerance for mounted units, between the outer diameter of the bearing and the inner diameter of the housing, is a class J7 intermediate fit.

A class H7 tolerance allows greater clearance for applications where minor shaft alignment constantly occurs or in environments where higher temperatures can cause thermal expansion. An anti-rotation pin on the outer ring of the bearing is supplied with these units to prevent the outer ring of the bearing from spinning inside the housing.

A class K7 tolerance allows less clearance and is recommended to prevent the outer ring of the bearing from rotating inside the housing.

Fig. 11.1 shows examples of housing dimensions relative to installation position with tolerance values.

Table 11.6 Allowance of spherical bore diameter of housings



Unit: μm

Nominal dia. of spherical bore D_a (mm)		Tolerance class H7		Tolerance class J7		Tolerance class K7	
		Variation of tolerance of spherical bore dia. Δ_{Dam}		Variation of tolerance of spherical bore dia. Δ_{Dam}		Variation of tolerance of spherical bore dia. Δ_{Dam}	
Over	Incl.	Max.	Min.	Max.	Min.	Max.	Min.
18	**30**	+21	0	+12	− 9	+ 6	−15
30	**50**	+25	0	+14	−11	+ 7	−18
50	**80**	+30	0	+18	−12	+ 9	−21
80	**120**	+35	0	+22	−13	+10	−25
120	**180**	+40	0	+26	−14	+12	−28
180	**250**	+46	0	+30	−16	+13	−33
250	**315**	+52	0	+36	−16	+16	−36

Remark FYH selects J, H, or K depending on the applications.

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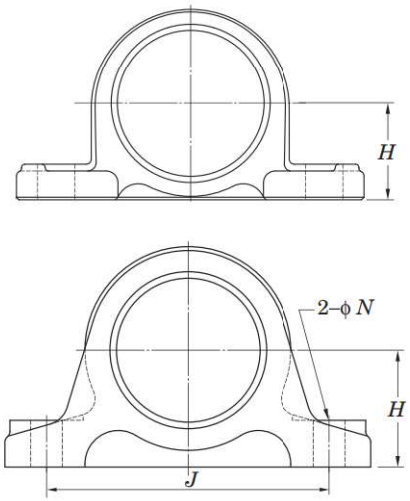
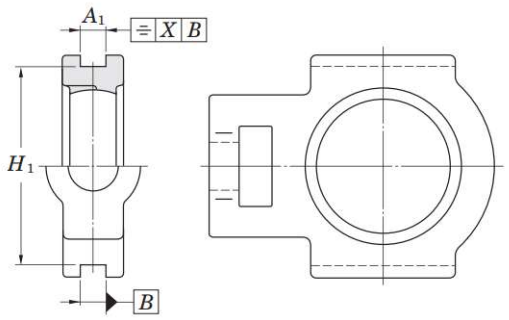
Fig. 11.1 Dimensions relative to installation of housings with tolerances and tolerance values (representative example)

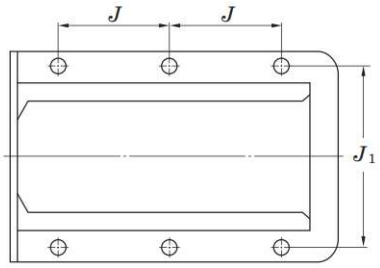
Pillow type housings



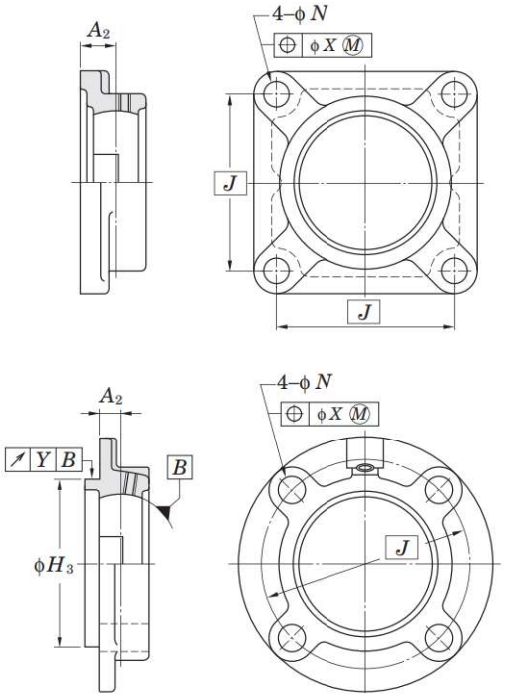
Take-up type housings



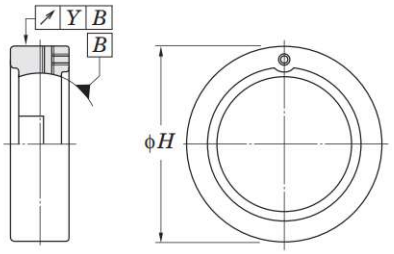
Frame for take-up type units



Flange type housings



Cartridge type housings



Remark Respective tolerances and tolerance values for housings are shown in dimensional tables.

Table 11.7 shows ordinary dimensional tolerance of cut or cast portions not specified in this catalog.

Table 11.7 Ordinary dimensional tolerance not specified respectively

Item	Standard code	Class
Cutting	JIS B 0405	Medium
Casting of cast iron	JIS B 0403	Ordinary
Casting of cast steel	JIS B 0403	Ordinary

11.3 Internal Bearing Clearance

Internal bearing clearance is defined as the allowable space between the bearing balls and the raceways. The degree of internal clearance, referred to as "operation clearance", greatly influences operational life of the bearing as well as characteristics of heat, noise, and vibration.

If the clearance is exceptionally tight between the shaft and the inner ring of the bearing then expansion of the inner ring must be taken into consideration and the correct ball clearance should be selected. Transmission heat from the shaft is also a factor to consider when determining the correct amount of ball clearance (see **"7 Operating temperature and bearing specifications"**).

Table 11.8 shows the internal clearance applicable to specific operating conditions and **Table 11.9** shows the available options for internal clearance.

Table 11.8 Internal clearance applicable to specific operating conditions

Type	Applicable internal clearance	
	Bearing with cylindrical bore	Bearing with tapered bore
Standard type	CN	C3
NC	CN	–
Stainless steel type	C3	–
Heat resistant type (suffix code: D1K2)	C4	C5
Heat resistant type (suffix code: D9K2)	C4	C5
Cold resistant type (suffix code: D2K2)	CN	C3
High speed type (suffix code: K3)	CN	C3
For blower (suffix code: S3)	CN	C3
For high speed blower (suffix code: S5)	C2	C3

Remark For bearings with suffix codes, as those indicated above, the clearance is implied and not indicated in the part number.

Table 11.9 Available options for internal clearance

Unit: μm

Nominal bearing bore dia. d (mm)		Internal clearance											
		C2		CN		GN		C3		C4		C5	
Over	Incl.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
6	**10**	0	7	2	13	–	–	8	23	14	29	20	37
10	**18**	0	9	3	18	10	25	11	25	18	33	25	45
18	**24**	0	10	5	20	12	28	13	28	20	36	28	48
24	**30**	1	11	5	20	12	28	13	28	23	41	30	53
30	**40**	1	11	6	20	13	33	15	33	28	46	40	64
40	**50**	1	11	6	23	14	36	18	36	30	51	45	73
50	**65**	1	15	8	28	18	43	23	43	38	61	55	90
65	**80**	1	15	10	30	20	51	25	51	46	71	65	105
80	**100**	1	18	12	36	24	58	30	58	53	84	75	120
100	**120**	2	20	15	41	28	66	36	66	61	97	90	140
120	**140**	2	23	18	48	33	81	41	81	71	114	105	160

Remarks 1. Radial internal clearance in this table conforms to JIS B 1558 (ball bearing inserts).
2. Increase in radial internal clearance generated by measured load conforms to the table below. Smaller correction of C2 clearance is applicable to the minimum clearance, while larger correction is applicable to the maximum clearance.

Unit: μm

Nominal bearing bore dia. d (mm)		Measured load	Correction of clearance				
Over	Incl.	N	C2	CN	GN, C3	C4	C5
2.5	**18**	24.5	3 – 4	4	4		
18	**50**	49	4 – 5	5	6		
50	**280**	147	6 – 8	8	9		

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12 Materials

12.1 Bearing Material

Ball bearing inserts are comprised of inner and outer rings, balls, and steel ball cages all of which are made from the highest quality of bearing steel.

These bearings possess the following features.

(1) High elastic limit to resist strong opposing force
(2) High rolling fatigue strength to allow for heavy loads
(3) Superior hardness
(4) Superior wear resistance
(5) Superior toughness against impact and shock loads
(6) Superior precision of dimensional tolerances

High carbon chrome bearing steel is utilized for the bearing components as specified in JIS (Japanese Industrial Standards).

To increase reliability and reduce contamination within the material, a vacuum degassing process is executed to reduce non-metallic elements and any oxygen in the steel.

After the bearing is assembled it is heat tempered and quenched until the hardness reaches 60HRC.

Table 12.1 shows the chemical components of high carbon chrome bearing steel. Stainless steel bearing inserts (suffix: S6) utilize superior corrosion resistant JIS certified stainless steel.

Riveted steel ball cages are made of JIS certified cold rolled steel which is shown in **Table 12.2**.

12.2 Housing Material

FYH housings are made primarily of gray cast iron, and stamped steel. Gray cast iron is the most popular choice for mounted units because of its optimal characteristics of vibration absorption, high strength, and excellent heat dissipation.

Table 12.3 shows the mechanical properties of gray cast iron (FC200).

Nodular graphite cast iron, or ductile iron, (FCD450-10 of JIS G 5502) provides a good combination of rigidity and fracture resistance, and it is suitable where heavy vibration or impact forces are present.

Housings for units within the Clean Series are available in die-cast zinc alloy as well as stainless steel. Housing material for stamped steel units consists of thick gauge cold rolled sheet steel and steel strip.

Table 12.4 to **12.8** show the mechanical properties of these housing materials.

Table 12.1 Chemical components of high carbon chrome bearing steel (JIS G 4805)

Code	Chemical components (%)						
	C	Si	Mn	P	S	Cr	Mo
SUJ 2	0.95–1.10	0.15–0.35	0.50 or less	0.025 or less	0.025 or less	1.30–1.60	–
SUJ 3	0.95–1.10	0.40–0.70	0.90–1.15	0.025 or less	0.025 or less	0.90–1.20	–

Table 12.2 Chemical components of cold rolled steel and steel strip (SPCC) (JIS G 3141)

Code	Chemical components (%)						
	C	Si	Mn	P	S	Ni	Cr
SPCC	0.15 or less	–	0.60 or less	0.100 or less	0.050 or less	–	–
SPCD	0.12 or less	–	0.50 or less	0.040 or less	0.040 or less	–	–

Table 12.3 Mechanical properties of gray cast iron (FC200)

Type code	Tensile strength N/mm^2	Hardness HB
FC200	200 or more	223 or less

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Table 12.4 Mechanical properties of cast carbon steel products (JIS G 3101)

Type code	Yielding point or bearing force N/mm²			Tensile strength N/mm²	Thickness of steel mm	Tensile test piece	Elonga-tion %	Bending property		
	Thickness of steel mm							Bending angle	Inside dia.	Test piece
	incl. 16	Over 16 incl. 40	Over 40							
SS400	245 or more	235 or more	215 or more	400–510	Over 5, 16 max.	No.1A	17 or more	180°	1.5 times of thickness	No.1
					Over 16, 40 max.	No.1A	21 or more			
					Over 40	No.4	23 or more			

Table 12.5 Mechanical properties of zinc alloy die-cast (ZDC02) (JIS H 5301) (Reference)

Code	Tensile strength N/mm²	Elonga-tion %	Impact N · m/cm²	Hard-ness HB
ZDC2	285	10	140	82

Table 12.6 Mechanical properties of stainless cast steel products (SCS 13 , SCS 14) (JIS G 5121)

Type code	Bearing force N/mm²	Tensile strength N/mm²	Elonga-tion %	Hard-ness HB
SCS 13	185 or more	440 or more	30 or more	183 or less
SCS 14	185 or more	440 or more	28 or more	183 or less

Correspondence standards
SCS 13: ISO GX5CrNi 19 9 , ASTM CF-8 (AISI 304)
SCS 14: ISO GX5CrNiMo 19 11 2 , ASTM CF-8M (AISI 316)

Table 12.7 Mechanical properties of cold rolled sheet steel and steel strip (SPCC) (JIS G 3141)

Type code	Tensile strength N/mm²	Elongation %
SPCC	270 or more	34 or more
SPCD	270 or more	36 or more

Table 12.8 Mechanical properties of ductile cast iron (FCD450-10) (JIS G 5502)

Type code	Tensile strength N/mm²	Elongation %
FCD	450 or more	10 or more

12.3 Materials of Parts and Accessories

Table 12.9 shows materials of parts and accessories of a ball bearing unit.

Table 12.9 Materials of parts and accessories of ball bearing units

Designations	Materials	Code	Standard code
Seal (standard type)	Nitrile rubber	NBR	–
Seal (heat resistant, cold resistant)	Silicone rubber	VMQ	–
Slinger (flinger)	Cold rolled steel plate and steel strip	SPCC	JIS G 3141
Stainless steel slinger (flinger)	Cold rolled stain-less steel plate and steel strip	SUS304-CP, SUS304-CS	JIS G 4305
Steel plate cover	Cold rolled steel plate and steel strip	SPCD	JIS G 3141
Stainless steel plate cover	Cold rolled stain-less steel plate and steel strip	SUS304-CP, SUS304-CS	JIS G 4305
Cast iron cover	Gray cast iron products	FC200	JIS G 5501
Hexagon socket set screw	Chrome molybde-num steel	SCM435	JIS G 4053
Stainless steel hexagon socket set screw	Stainless bar steel	SUS304	JIS G 4303
Adapter sleeve for bearing	Mechanical struc-tural carbon steel	S17C	JIS G 4051
Lock nut for bearing	Mechanical struc-tural carbon steel	S17C	JIS G 4051
Washer for bearing	Cold rolled steel plate and steel strip	SPCC	JIS G 3141
Locking collar	Mechanical struc-tural carbon steel	S17C	JIS G 4051
Grease fitting	Copper and copper alloy rod	SUM24L	JIS G 4804

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13 Performance

13.1 Bearing Friction Torque

Bearing friction torque is the conglomeration of the rolling friction between the balls with the inner and outer rings, the sliding friction between the balls and the cage, the agitating resistance of lubricants, and the friction resistance of the seals.

The specific amount of friction torque is influenced by the particular bearing model, dimensions, bearing load, rotating speed, and lubricating conditions.

Bearings with triple-lip seals and open cover seals will have greater friction torque and overall greater friction resistance.

Friction torque for bearings can be found by the formulas below.

$$M = M_p + M_k \quad \text{(13.1)}$$

$$M_p = \mu \cdot P \cdot \frac{d}{2} \quad \text{(13.2)}$$

Whereas,

M: Friction torque of bearing, $\mathrm{mN \cdot m}$

M_p: Friction torque of sections changed by load, $\mathrm{mN \cdot m}$

M_k: Friction torque of sections changed by rotating speed, $\mathrm{mN \cdot m}$

μ: Friction coefficient (0.0015 to 0.002)

P: Load applied to bearings, N

d: Nominal bearing bore dia., mm

Note that the agitating resistance of lubricants and the friction resistance of the seals are difficult to calculate since the resistance fluctuates with speed.

Fig. 13.1 shows the result of measurement of friction torque of the typical ball bearing unit.

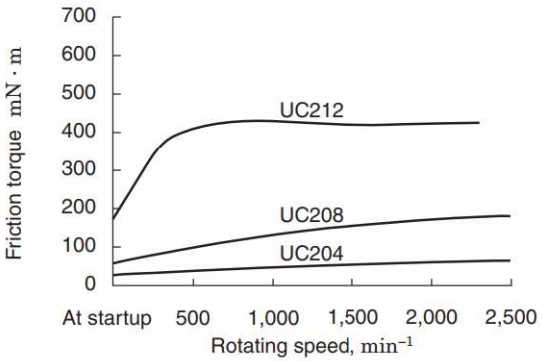

Fig. 13.1 Example of measurement result of ball bearing units

13.2 Bearing Temperature Increase

The increase in temperature of the bearing is represented as heat energy created from friction torque in the bearing during operation. The temperature of the bearing during operation increases in proportion to the amount of friction torque, and friction torque increases in proportion to the increase in bearing load.

The increase in temperature of the bearing depends on the heating value generated by friction in the bearing and the amount of heat discharged from the bearing and housing in which it is mounted. Therefore, the temperature level of the bearing is influenced by the environmental conditions of the location in which the bearing unit is installed (quality of heat radiation environment).

The operating temperature of the bearing unit increases gradually after startup of operation and reaches the maximum level after one or two hours if no abnormalities occur. Then it decreases slightly and enters a steady state (see **Fig. 13.2**).

If the operating conditions are not changed, bearing temperature will remain virtually constant, and measurement of the temperature and assumption of the bearing status are enabled.

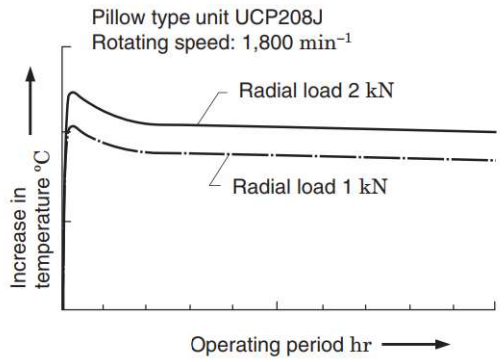

Fig. 13.2 Example of temperature measurement during operation of pillow type units

Increase in temperature during operation of the bearing depends on the type of seal used in the bearing as well as friction torque.

Increase in temperature of triple-lip bearings (suffix code: L3) is greater than that of the standard single lip model, and that of the non-contact seal (suffix code: K3, S5) is lower than the standard single lip model. Bearings for blowers and other high-speed applications are equipped with non-contact seals, with grease or oil, for high-speed operation as well as reduction of heat, vibration, and noise.

14 Handling

14.1 Installation

14.1.1 Installation of setscrew units

When installing setscrew units, it is important to tighten the setscrews to the shaft with the specified torque.

When the clearance between the inner ring and the shaft is small, then grind the surface of the shaft where the setscrew contacts and make a flat base (**Fig. 14.1**). It helps you to take the shaft out of the inner ring.

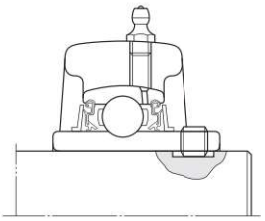

Fig. 14.1 Flat seat provided for shaft

If the unit is exposed to great load or excessive vibration, another option is to use a shouldered shaft and tighten the inner ring of the bearing with a shaft nut. (**Fig. 14.2**)

For dimensions of the shouldered shaft, see **"9 Design of shaft and base"**.

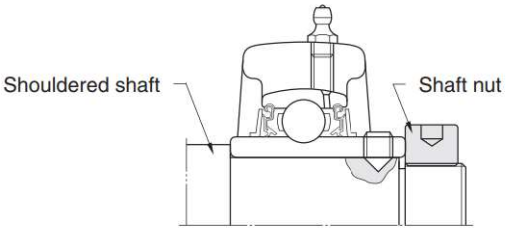

Fig. 14.2 Example of installation with a shouldered shaft and shaft nut

FYH Bearings are available with a variety of set screw options including **Double Point** and **Bullet Point** set screws which provide a secure fit to the shaft. Additional styles of setscrews are also available to meet a range of purposes and operating conditions (see **Table 14.1**).

Table 14.1 Set screws of ball bearings for units

Designations (code)	Details
Bullet Point	The tip of the FYH Bullet Point setscrew has a ball shape, and it is designed to firmly grip the shaft by expanding its threads outward against the threads of the inner ring of the bearing as it is tightened. When shock or vibration are problems, the Bullet Point setscrew can remain affixed to the shaft longer than other set screw styles including double point, ball point, or others.
Double Point (**G7**)	The cone point at the center of the screw, combined with the round point at the outer edge, provide excellent shaft contact and greatly reduced fitting error. This style is also available with a nylon film fused to the thread surface to prevent the screw from loosening during operation.
Cone Point (**G4**)	The cone point setscrew has a 90º angle and fits a drilled cone seat in the shaft. It allows correct positioning on the shaft and prevents shaft movement in an axial direction. (**Fig14.3**)
Capped Full Dog Point (**G6**)	The capped full dog point setscrew fits into the keyed groove in the shaft and allows for expansion and contraction of the shaft. It tightens to the inner ring of the bearing (not the shaft) to allow the shaft to float within the bore of the bearing.

When correct positioning is required, make a drilled cone base on the shaft, and tighten the shaft, using a cone point set screw (**Fig. 14.3**).

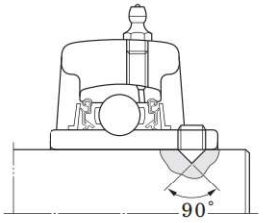

Fig. 14.3 Drilled seat provided for shaft

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Contact FYH for additional set screw styles.

Shown below are installation procedures for bearing units with setscrews.

(1) Inspect the unit to ensure that the rigidity of the base, flatness of the mounting surface, and tolerance of the shaft meet the required standards. Check the shaft for bends, burrs, and other flaws.

(2) Make sure that the set screws are retracted far enough so that they do not contact the shaft as the bearing is installed.

(3) Fit the bearing unit onto the shaft and slide it to the specified position. In order to secure a tight fit, press-fit the bearing unit to the shaft with a press, cold-fit by cooling the shaft, or shrink-fit the bearing unit by warming it with an air bath (100 ℃ or less). Avoid striking the bearing with a hammer to press-fit the bearing to the shaft. If you give a strong impact to the side surface of the inner ring, the both slinger moves, and it may cause a problem.

(4) Align the bearing unit to the specified position on the base and affix it with washers and bolts. (**Fig. 14.4**). Use a torque wrench to tighten the bolts to the housing to the specified torque setting. For mounting bolt torque specifications, see **Appendix table 2** in the back of the catalog.

Fig. 14.4 Installation of setscrew units

(5) Tighten both of the setscrews on the inner ring to the specified torque setting (**Fig. 14.5**). For setscrew torque specifications, see **Appendix table 3** in the back of the catalog.

Fig. 14.5 Tightening of set screws

(6) Turn the shaft by hand and tighten the setscrews of all other bearings on the same shaft to the specified torque setting.

(7) Finally, turn the shaft by hand and make sure that it rotates without any problems.

14.1.2 Installation of adapter style units

Adapter units, comprised of an adapter sleeve, locknut, and washer, can be installed into environments where they are exposed to excessive vibration and impact.

It is of great importance that these units are properly mounted. If the locknut is not properly tightened, the sleeve may be loose which could lead to slippage and wear on the shaft or bearing. Conversely, if the locknut is over-tightened, the inner ring of the bearing can expand and reduce internal ball clearance which could cause excessive heat and premature failure.

Installation procedures for adapter style bearings are shown below.

(1) Inspect the unit to ensure that the rigidity of the base, flatness of the mounting surface, and tolerance of the shaft meet the required standards. Check the shaft for bends, burrs, and other flaws.

(2) Slide the adapter sleeve onto the shaft where the bearing unit will be installed.

If the sleeve is too tight, place a screwdriver in the slotted portion of the sleeve and expand the slot to open the sleeve.

(3) Slide the bearing unit over the shaft and onto the adapter sleeve, then place a cylindrical reinforcing ring against the inner ring of the front side of the bearing. Seat the adapter sleeve by lightly tapping all around the backside of the sleeve (**Fig. 14.6**).

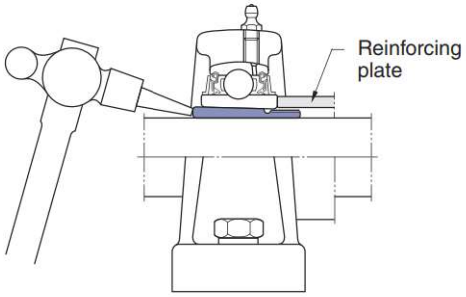

Fig. 14.6 Fitting adapter sleeve to bearing with tapered bore

(4) Attach the lock washer so that the tab fits into the slot in the sleeve, and, making sure the tapered side is facing the bearing, tighten the locknut on the sleeve by hand.

(5) Align the bearing unit to the specified position on the base and affix it with washers, and bolts. Use a torque wrench to tighten the bolts to the housing to the specified torque setting. For mounting bolt torque specifications, see **Appendix table 2** in the back of the catalog.

(6) Use a torque wrench to tighten the locknut to the correct specification (**Fig. 14.7**). For locknut torque specifications, see **Appendix table 4** in the back of the catalog.

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Fig. 14.7 Tightening locknut

(7A) For pillow block housings, loosen the mounting bolts and adjust the unit axially while rotating the shaft by hand. Then re-tighten the mounting bolts to the correct specification.
(7B) For flange block housings, the position of the unit must be in the correct axial position in relation to the shaft, so take extra care to properly align them before completing installation.
(8) Bend one of the tabs on the washer so that it fits into one of the slots on the locknut (**Fig. 14.8**).

Fig. 14.8 Bending claw of washer
(Locking locknut)

(9) Finally, turn the shaft by hand and make sure that it rotates without any problems.

14.1.3 Installation of units with eccentric locking collars

Eccentric locking collar bearings provide another option for shaft locking. Since the rotating force of the shaft increases the tightening force of the eccentric ring to the shaft, this style of bearing allows a secure grip to the shaft.

Since the rotating force of the shaft increases the tightening force of the eccentric ring to the shaft, the unit with eccentric locking collar allows secure fixing of the bearing (**Fig. 14.9**).

Fig. 14.9 Ball bearing units with eccentric locking collar

Installation procedures for eccentric locking collar style bearings are shown below.
(1) Inspect the unit to ensure that the rigidity of the base, flatness of the mounting surface, and tolerance of the shaft meet the required standards. Check the shaft for bends, burrs, and other flaws.
(2) Slide the bearing unit onto the shaft, and place it at the specified mounting position.
(3) Align the bearing unit to the specified position on the base and affix it with washers, and bolts. (**Fig. 14.4**). Use a torque wrench to tighten the bolts to the housing to the specified torque setting. For mounting bolt torque specifications, see **Appendix table 2** in the back of this catalog.
(4A) Fit the eccentric section of the inner ring of the bearing to the eccentric recessed section of the eccentric locking collar, and rotate the collar in the direction of shaft rotation. Then, tighten the setscrew on the eccentric locking collar to the specified torque setting (**Fig. 14.10**).

Fig. 14.10 Installing eccentric locking collar

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(4B) The NU-LOC collar is tightened by a hexagon head bolt to a specified torque setting in order to apply the correct amount of force to the inner ring o the bearing. (**Fig. 14.11**)

Regarding tightening torque for set screws or hexagon head bolts, see **Appendix Table 3** in the back of this catalog.

Fig 14.11 Installation of NU-LOC units

(5) Rotate the shaft by hand and then install the next eccentric locking collar unit to the shaft.
(6) Finally, turn the shaft by hand and make sure that it rotates without any problems.

14.1.4 Installing units with covers

Covers for ball bearing units are available in two types, steel plate and cast iron. Install both the covers at last after installation of the bearing and housing is complete.

Procedures for installation of the ball bearing units with covers are shown below.

(1) Apply grease all around the seal lip of the cover, and pack the internal space of the cover with grease (approximately 1/3 to 1/2 of the space capacity) (**Fig. 14.12**).

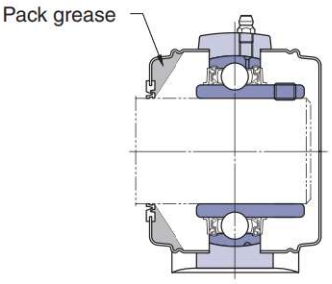

Fig. 14.12 Packing grease in internal space of seal lip of covers

(2) Make sure that the bearing unit is securely fixed to the shaft and mounting base.
(3) Slide the cover over the shaft to the grove in the housing and lightly press it into place.
(4A) For stamped steel covers, use a plastic mallet to prevent deformation, and evenly tap all around the periphery of the cover to install it to the housing (**Fig. 14.13**).

To remove the stamped steel cover, put a screwdriver into the groove on the periphery of the cover and slightly pry it.

Fig. 14.13 Installing steel plate covers

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(4B) When installing a cast iron cover, fit the cover to the cover groove of the housing, and affix it with the supplied bolts.
For the tightening torque of the cast iron cover mounting bolts, see the **Appendix table 2** at the end of this catalog.
(5) Install another cover to the housing in a similar manner.
(6) Check for abnormality of the installed cover.
(7) Finally, turn the shaft by hand, and check for abnormality in the bearing.

14.2 Test Run Inspection

After installation of the ball bearing unit is complete, execute the test run inspection to ensure that it was done properly.

The test run inspection should be executed by following the procedures below.

(1) Turn the shaft by hand and make sure that the bearing rotates smoothly.
If there is any resistance, vibration, excessive rotational torque, or uneven rotation, the bearing is judged to be faulty.
(2) Execute a powered run with no load and at low speed, and check for abnormal noise and vibration.
(3) Execute a powered run under normal operating conditions and check for abnormal noise, vibration, and temperature increase.

Table 14.2 shows the main faults that may occur during the test run inspection of the ball bearing unit and causes.

Table 14.2 Main causes of bearing failure during test runs and their causes

Faults	Causes
Excessive torque, uneven rotating torque	(1) Faulty installation, causes preload on bearing (2) Inappropriate handling or installation, leading to interference of seal with slinger (3) Excessive tightening of locknut (adapter) causing too small internal clearance of bearing
Abnormal noise, abnormal vibration	(1) Improper tightening of set screws or of mounting bolts (2) Excessively large internal clearance of bearings (3) Bent shaft, or shouldered shaft may be machined eccentrically (4) Shaft tolerance chosen improperly (5) Mounting base not rigid or flat
Abnormal temperature increase	(1) Too small internal clearance of bearing (2) Faulty installation, causes preload on bearing (3) Load too great (4) Allowable rotational speed exceeded (5) Mounting base not rigid or flat (6) Inappropriate handling or installation, leading to interference of seal with slinger

14.3 Periodic Inspection

FYH Ball Bearing Units do not need to be inspected as frequently as lower quality bearings. However, it is good practice to set up an inspection schedule for even these high quality bearings.

Since a ball bearing unit cannot be disassembled for inspection of the internal status of components, the external appearance of the bearing must be inspected to give tell-tale signs of the status and expected life of the bearing. The following characteristics must be checked per the inspection schedule that is established for a particular application.

(1) Overall appearance
(2) Loose set screws or mounting bolts
(3) Noise from vibration
(4) Temperature of the bearing housing or the inner ring
(5) Grease supply interval and quantity of grease injected into the bearing (either too much or too little grease can be detrimental to the life of the bearing)

Table 14.3 shows the main faults that are usually found during periodic inspections and their causes.

If any fault is found in a ball bearing unit during an inspection, then immediate action must be taken to correct the situation and prevent deterioration of the bearing components. If serious damage has already occurred to the bearing unit, then the bearing unit must be replaced immediately to prevent damage to other machine components.

Table 14.3 Main faults found during periodic inspection and their causes

Faults	Causes
Excessive torque	(1) Degraded grease (2) Interference of seal with slinger due to excessive supply of grease (3) Deformation of slinger causing interference with seal (4) High load due to shaft expansion
Abnormal noise, abnormal vibration	(1) Improper tightening of set screws locknut (adapter) or of mounting bolts (2) Wear on inner ring of bearing or shaft due to creep or fretting (3) Ingress of foreign matter (dirt) into bearing (4) Damage to cage or ball surfaces due to rolling fatigue (5) Indentation on raceway surface or ball surface due to excessive load (6) Warped or bent shaft
Abnormal temperature increase	(1) Degraded grease (2) Interference of seal with slinger due to excessive supply of grease (3) Deformation of slinger causing interference with seal (4) Looseness of setscrew, eccentric locking collar or adapter lock nut for tapered bore bearings (5) Load due to shaft expansion (6) Damage to cage or ball surfaces due to rolling fatigue

14.4 Supply of Grease

FYH Ball Bearing units are supplied with high quality FYH Lithium Bearing grease and seals. Therefore, under clean operating conditions, light loads, low speeds, and low temperatures the bearing may be used with no further lubrication.

However, under harsher operating conditions and environments, the grease will deteriorate much more rapidly.

This would include environments exposed to dust, moisture, or higher operating temperatures.

In such cases, a re-greasing schedule must be established to prevent premature failure of the bearing. The life of the bearing can be greatly extended by proper attention to the re-greasing schedule and by supplying the proper amount of grease. Please note that too much grease can be detrimental as well as too little grease.

14.4.1 Grease life and supply intervals

The grease life of a bearing unit can be found using **Formula (4.7)** in page 27.

The re-greasing schedule should be set at 1/4 to 1/3 of the grease life found by the calculation shown above; however this may be adjusted for particularly demanding environments or conditions.

In addition, some environments may be unusually dirty or wet, and these conditions may be exacerbated by higher temperatures. Under such harsh conditions, a more frequent re-greasing schedule will extend the life of the bearing.

Under normal operating conditions, adhere to the guidelines outlined in **Table 2.2** in page 10.

14.4.2 Amount of grease

The amount of grease initially supplied in a new FYH Ball Bearing Unit is approximately 30 to 35% of the internal space capacity of the bearing. If the bearing is over greased, the agitation of the grease causes internal friction and heating of the bearing. The first sign of failure will be excessive grease finding its way to the outside of the bearing. DO NOT exceed the initial greasing amount.

Table 14.4 shows the recommended amount of grease to be used for re-greasing FYH bearings.

In a severely dusty or wet environments, the amount of grease may be as much as doubled if operating speeds are low.

Note:

1. **Table 14.4** applies to UK units as well.
2. For greasing triple-lip (L3) type bearings, use 1 1/2 times the amount of grease recommended in the table.
3. Values shown in the table are applicable to standard grease (density: 0.9 g/ml). If a compatible grease of another specific gravity is used, then the proper conversion must be made to insure that the recommended volume is put into the bearing.

Table 14.4 Amount of recommended grease for ball bearing units

Bore dia. code	Greasing amount, g		
	Diameter Series[1)]		
	UC200	UCX00	UC300
01	0.7		
02	0.7		
03	0.7		
04	0.7		
05	0.8	1.3	1.8
06	1.3	1.8	2.5
07	1.8	2.3	3.4
08	2.3	2.8	4.6
09	2.8	3.2	6.3
10	3.2	4.3	8.1
11	4.3	5.5	11
12	5.5	6.8	14
13	6.8	7.7	17
14	7.7	9	21
15	9	11	25
16	11	14	29
17	14	17	34
18	17	21	40
19	–	–	47
20	–	29	61
21	–	–	69
22	–	–	84
24	–	–	98
26	–	–	126
28	–	–	151

The basic bearing size number consists of the duty code (2, X, or 3) followed by the inner ring size code (07, 10, 24, etc.)

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14.4.3 Types of grease supplied

Many different types of grease are available for use in ball bearings. However, if a non-compatible grease is used, particularly a non-lithium based grease, then performance may be drastically reduced.

Only use the grease recommended in **Table 2.1** (page 10) to assure optimum performance of your bearings.

If another grease is used in an emergency situation, for instance, please assure that this grease is compatible, with a lithium base, at the minimum.

14.4.4 Relubricating the unit at the specified interval

Note **Fig. 14.14** which shows the grease fitting, grease groove and grease holes for relubrication of the unit.

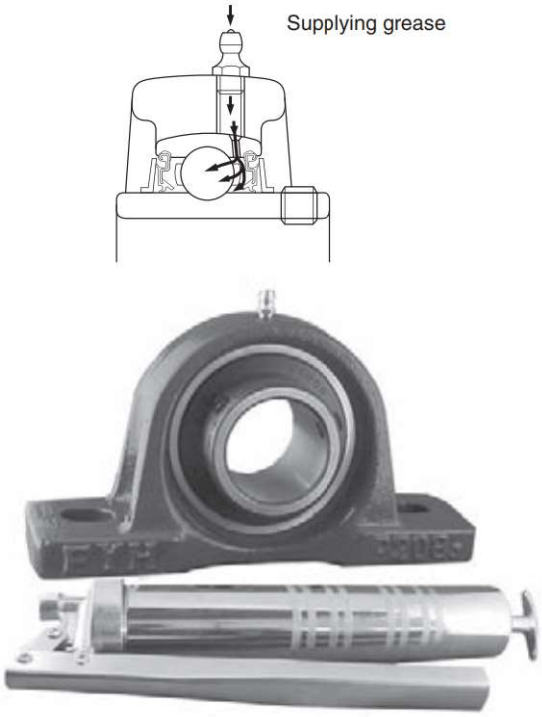

Fig. 14.14 Supplying grease to ball bearing units

(1) Clean the grease fitting and the area around it to prevent dirt and foreign material from entering the unit.
(2) Clean the grease gun and pack clean grease.
(3) Grease the unit with the recommended amount of grease.

When lubricating the ball bearing unit, slowly turn the shaft with your hand. This allows the fresh grease to be uniformly distributed inside the unit.

If it is difficult to access the standard straight type grease fitting with a grease gun, 67.5° and 90° angled fittings are available as an option. See the images below of these grease fittings. Contact FYH for more information.

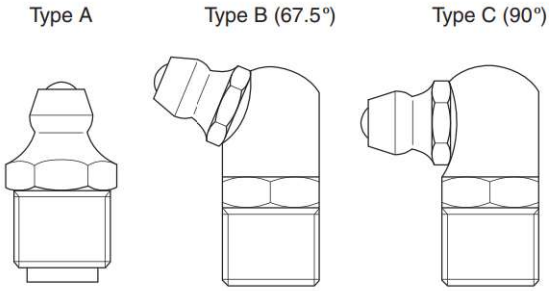

Fig. 14.15 Types of grease fittings for ball bearing units

When using a centralized automatic lubrication system, with ball bearings, it is important to use softer grease than normal. The grease should be specified with a "worked penetration number" between 300 and 380. This is NLGI grade "0" or "1". Piping from the lubricating system must be sized so that the specified volume of grease is supplied.

Piping must be connected to the threaded hole on the ball bearing unit. This is either 1/4-28 tapered threads for units up to and including 210 ring size, or 1/8 PT (BSPT) for ball bearing units with a 211 ring size and larger. If the piping size used is larger than the threaded hole in the ball bearing unit, then the appropriate reducing coupling (or street elbow) must be used to fit the threaded hole.

Fig. 14.16 shows the body of a pipe reducer.

When using an automatic centralized lubrication system, it is imperative to assure that the correct volume of grease is supplied to each individual bearing as specified in **Table 14.4**. The total amount of grease is a multiple of the number of bearings being supplied by the central lubrication system.

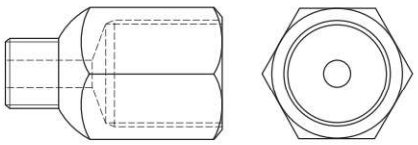

Fig. 14.16 Reducing coupling for centralized lubrication systems

14.5 Replacing Bearings

If a bearing insert needs to be replaced, it is not always necessary to replace the housing if the housing is intact.

After carefully inspecting the housing to ensure that it is not damaged, simply insert a new bearing into the old housing.

Replacement procedures for a bearing insert are listed below.

(1) Remove the complete bearing unit from the shaft and mounting base.
(2) Screw in the set screws so that the head of each set screw does not protrude outside the outer diameter of the inner ring. Otherwise, the head of the set screw may damage the bearing seat inside the housing.
(3) Use a bar or pipe to rotate the bearing 90° until the bearing is horizontal.
(4) Remove the bearing insert from the housing via the loading slot in the back of the housing.

Reverse the above procedure to put in a new bearing insert. Ensure that the set screws are screwed in before proceeding with the replacement.

15 Dimensional Tables for Ball Bearing Units

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1 Pillow Block Units

Pillow Block Units

UCP (d 12 ~ 140) 82
NAP (d 12 ~ 75) 88
NAP-E (d 1 $^{3}/_{16}$ ~ 2 $^{15}/_{16}$) 90
NAPK (d 12 ~ 75) 92
NCP (d 20 ~ 60) 94
UKP (d_1 20 ~ 125) 96

Thick Pillow Block Units

UCIP (d 40 ~ 140) 102
UKIP (d_1 35 ~ 125) 104

Tapped-Base Pillow Block Units

UCPA (d 12 ~ 50) 106
UCPAN (d 20 ~ 35) 108
NCPA (d 20 ~ 50) 110
NCPAN (d 20 ~ 35) 112

High-Base Pillow Block Units

UCPH (d 12 ~ 50) 114

Narrow Inner Ring Bearing Pillow Block Units

SBP-RKP8 (d 20 ~ 40) 116
SAP-FP9 (d 20 ~ 55) 116
SBPAN-RKP8 (d 20 ~ 35) 118
SAPAN-FP9 (d 20 ~ 35) 118

Light Pillow Block Units

BLP (d 12 ~ 40) 120
ALP (d 12 ~ 40) 120

Compact Pillow Block Units

UP (d 10 ~ 30) 122

Corrosion Resistant Series Pillow Block Units

UCSP-H1S6 (d 12 ~ 60) 124
UCSPA-H1S6 (d 12 ~ 40) 126
USP-S6 (d 10 ~ 30) 128
UCVP-S6 (d 20 ~ 50) 130
UCVP-ES7 (d 20 ~ 50) 132
UCVPAN-ES7 (d 20 ~ 35) 134

Stamped Steel Pillow Block Units

SBPP (d 12 ~ 30) 136
SAPP (d 12 ~ 30) 136

2 4-Bolt Flange Units

4-Bolt Flange Units

UCF (d 12 ~ 140) 138
UCF-E (d 12 ~ 85) 144
NANF (d 12 ~ 60) 148
NCF (d 20 ~ 60) 150
NCF-E (d 20 ~ 60) 152
UKF (d_1 20 ~ 125) 154

Square Piloted 4-Bolt Flange Units

UCFS (d 25 ~ 140) 160
UKFS (d_1 20 ~ 125) 162

Narrow Inner Ring Bearing 4-Bolt Flange Units

SBF-RKP8 (d 20 ~ 40) 164
SAF-FP9 (d 20 ~ 55) 164

Corrosion Resistant Series 4-Bolt Flange Units

UCSF-H1S6 (d 20 ~ 60) 166
UCSF-EH1S6 (d 20 ~ 60) 168
UCVF-S6 (d 20 ~ 40) 170
UCVF-ES7 (d 20 ~ 40) 172

3 Oval Flange Units

2-Bolt Flange Units

UCFL (d 12 ~ 120) 174
UCFL-E (d 12 ~ 85) 180
NANFL (d 12 ~ 55) 184
NCFL (d 20 ~ 60) 186
NCFL-E (d 20 ~ 60) 188
UKFL (d_1 20 ~ 110) 190

Adjustable 2-Bolt Flange Units

UCFA (d 12 ~ 55) 194

3-Bolt Flange Units

UCFB (d 12 ~ 50) 196

Narrow Inner Ring Bearing 2-Bolt Flange Units

SBFL-RKP8 (d 20 ~ 40) 198
SAFL-FP9 (d 20 ~ 55) 198

Light 3-Bolt Flange Units

SBTFD-H4RKP8 (d 12 ~ 35) 200
SATFD-FH4P9 (d 12 ~ 35) 200

Light 2-Bolt Flange Units

BLF (d 12 ~ 35) 202
ALF (d 12 ~ 35) 202

Compact 2-Bolt Flange Units

UFL (d 8 ~ 30) 204

Corrosion Resistant Series 2-Bolt Flange Units

UCSFL-H1S6 (d 12 ~ 50) 206
UCSFL-EH1S6 (d 12 ~ 50) 208
USFL-S6 (d 10 ~ 30) 210
UCVFL-S6 (d 20 ~ 40) 212
UCVFL-ES7 (d 20 ~ 40) 214

Corrosion Resistant Series 3-Bolt Flange Units

UCVFB-ES7 (d 20 ~ 35) 216

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4 4-Bolt Flange Cartridge Units

4-Bolt Flange Cartridge Units

UCFC (d 12 ~ 100) 218
UCFCX-E (d 25 ~ 100) 222
UCFCF (d 25 ~ 55) 224
NCFC (d 20 ~ 60) 226
UKFC (d_1 20 ~ 90) 228

Narrow Inner Ring Bearing 4-Bolt Flange Cartridge Units

SBFC-RKP8 (d 20 ~ 40) 232
SAFC-FP9 (d 20 ~ 55) 232

Corrosion Resistant Series 4-Bolt Flange Cartridge Units

UCSFC-H1S6 (d 20 ~ 40) 234

5 Stamped Steel Flange Units

Stamped Steel 3-Bolt Flange Cartridge Units

SBPF (d 12 ~ 35) 236
SAPF (d 12 ~ 35) 236

Stamped Steel 2-Bolt Flange Units

SBPFL (d 12 ~ 35) 238
SAPFL (d 12 ~ 35) 238

6 Take-Up Units

Take-Up Units

UCT (d 12 ~ 140) 240
UCT-E (d 12 ~ 85) 246
NAT-E (d 12 ~ 75) 250
NCT (d 20 ~ 60) 252
NCT-E (d 20 ~ 60) 254
UKT (d_1 20 ~ 125) 256

Narrow Slot Take-Up Units

UCTRS (d 25 ~ 35) 260

Corrosion Resistant Series Take-Up Units

UCST-H1S6 (d 20 ~ 50) 262
UCST-EH1S6 (d 20 ~ 50) 264

Section Steel Frame Take-Up Units

UCTH (d 12 ~ 65) 266

Channel Steel Frame Take-Up Units

UCTL (d 20 ~ 45) 268
UCTU (d 40 ~ 90) 270

Steel Plate Frame Take-Up Units

SBPTH (d 12 ~ 25) 274
SBNPTH (d 12 ~ 25) 276

7 Other Units

Cartridge Units

UCC (d 12 ~ 140) 278
UKC (d 20 ~ 125) 282

Hanger Units

UCHA (d 12 ~ 75) 284

8 Ball Bearing Inserts

Cylindrical bore (with set screws)

UC, SB, SB-RKP8, SU (d 8 ~ 140) 286

Stainless steel series Cylindrical bore (with set screws)

UC-S6, SU-S6 (d 10 ~ 60) 294

Cylindrical bore (with eccentric locking collar)

SA, SA-F, NA (d 12 ~ 75) 296

Cylindrical bore (with concentric locking collar)

NC2 (d 20 ~ 60) 302

Cylindrical bore (with concentric locking collar) Cylindrical O. D.

ERC (d 20 ~ 60) 304

Tapered bore (with adapter)

UK (d_1 20 ~ 125) 306

Cylindrical bore (with set screws) Cylindrical O. D.

ER, RB (d 12 ~ 60) 312

Cylindrical bore (with set screws) Cylindrical O. D.

SBB-RK (d 12 ~ 55) 314

Cylindrical bore (with eccentric locking collar) Cylindrical O. D.

SAA-FP7 (d 12 ~ 55) 314

Cylindrical bore

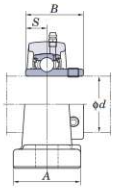
SC (d 17 ~ 40) 316

9 Bearing Adapter

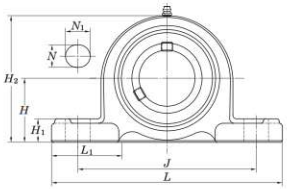
H2300X (d_1 20 ~ 125) 318

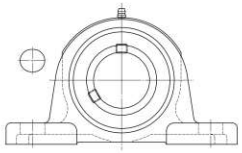
ROYSE
rodamientos y servicios
Desde 1979

UCP
Cylindrical bore (with set screws)
d 12 ~ (45) mm

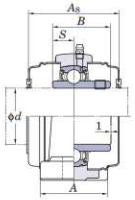


UCP2

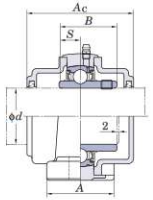




With Pressed Steel Cover



With Cast Iron Cover

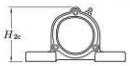


Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_a)

Unit: mm

Housing No.			ΔH_a
P203~P210	PX05~PX10	P305~P310	±0.15
P211~P218	PX11~PX18	P311~P318	±0.2
	PX20	P319~P328	±0.3

Forms and dimensions of H_{2c} of P204JE3 and P205JE3 (housing with cast iron cover) are shown below.



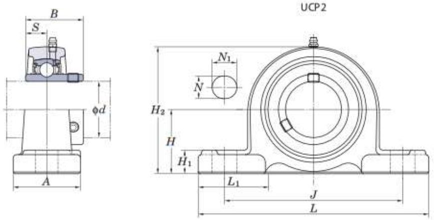
P204JE3 H_{2c} = 70 mm
P205JE3 H_{2c} = 77 mm

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	L_1	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	One Side Closed Type	Dimension mm A_s	inch	Mass kg	With Cast Iron Cover Unit No. Open Type	One Side Closed Type	Dimension mm A_c	inch	Mass kg
12														UCP201		UC201	0.63				UCP201C	UCP201CD	45	1 25/32	0.63	–	–	–	–	–
	1/2													UCP201-8		UC201-8	0.63				–	–	–	–	–	–	–	–	–	–
15		1 3/16	5	1 1/2	3 3/4	1/2	23/32	5/8	2 3/8	1 13/32	1.220	0.500	3/8	UCP202	P203	UC202	0.61	12.8	6.65	13.2	UCP202C	UCP202CD	45	1 25/32	0.61	–	–	–	–	–
	5/8	30.2	127	38	95	13	18	16	60	36	31	12.7	M10	UCP202-10		UC202-10	0.61				–	–	–	–	–	–	–	–	–	–
17														UCP203		UC203	0.60				UCP203C	UCP203CD	45	1 25/32	0.60	–	–	–	–	–
20	3/4	1 5/16	5	1 1/2	3 3/4	1/2	23/32	5/8	2 9/16	1 13/32	1.220	0.500	3/8	UCP204-12	P204	UC204-12	0.66	12.8	6.65	13.2	–	–	–	–	–	–	–	–	–	–
		33.3	127	38	95	13	18	16	65	36	31	12.7	M10	UCP204		UC204	0.66				UCP204C	UCP204CD	45	1 25/32	0.66	UCP204FC	UCP204FCD	62	2 7/16	0.96
	7/8													UCP205-14		UC205-14	0.80				–	–	–	–	–	–	–	–	–	–
	15/16	1 7/16	5 1/2	1 1/2	4 1/8	1/2	23/32	5/8	2 3/4	1 1/2	1.343	0.563	3/8	UCP205-15	P205	UC205-15	0.80	14.0	7.85	13.9	–	–	–	–	–	–	–	–	–	–
		36.5	140	38	105	13	18	16	70	38	34.1	14.3	M10	UCP205		UC205	0.80				UCP205C	UCP205CD	49	1 15/16	0.80	UCP205FC	UCP205FCD	66	2 19/32	1.2
25	1													UCP205-16		UC205-16	0.80				–	–	–	–	–	–	–	–	–	–
		1 3/4	6 1/4	2	4 11/16	21/32	31/32	5/8	3 3/8	1 27/32	1.500	0.626	1/2	UCPX05	PX05	UCX05	1.5	19.5	11.3	13.9	UCPX05C	UCPX05CD	53	2 3/32	1.5	–	–	–	–	–
	1	44.4	159	51	119	17	25	16	86	47	38.1	15.9	M14	UCPX05-16		UCX05-16	1.5				–	–	–	–	–	–	–	–	–	–
		1 49/64	6 7/8	1 3/4	5 3/16	21/32	25/32	5/8	3 11/32	2 5/32	1.496	0.591	1/2	UCP305	P305	UC305	1.7	21.2	10.9	12.6	–	–	–	–	–	UCP305C	UCP305CD	76	3	2.3
	1	45	175	45	132	17	20	16	85	55	38	15	M14	UCP305-16		UC305-16	1.7				–	–	–	–	–	–	–	–	–	–
	1 1/8													UCP206-18		UC206-18	1.3				–	–	–	–	–	–	–	–	–	–
		1 11/16	6 1/2	1 7/8	4 3/4	21/32	13/16	21/32	3 5/16	1 7/8	1.500	0.626	1/2	UCP206	P206	UC206	1.3	19.5	11.3	13.9	UCP206C	UCP206CD	53	2 3/32	1.3	UCP206FC	UCP206FCD	70	2 3/4	1.8
	1 3/16	42.9	165	48	121	17	21	17	84	48	38.1	15.9	M14	UCP206-19		UC206-19	1.3				–	–	–	–	–	–	–	–	–	–
	1 1/4													UCP206-20		UC206-20	1.3				–	–	–	–	–	–	–	–	–	–
30														UCPX06		UCX06	2.1				UCPX06C	UCPX06CD	60	2 3/8	2.1	–	–	–	–	–
	1 3/16	1 7/8	6 7/8	2 1/4	5	21/32	31/32	21/32	3 21/32	2 5/32	1.689	0.689	1/2	UCPX06-19	PX06	UCX06-19	2.1	25.7	15.4	13.9	–	–	–	–	–	–	–	–	–	–
	1 1/4	47.6	175	57	127	17	25	17	93	55	42.9	17.5	M14	UCPX06-20		UCX06-20	2.1				–	–	–	–	–	–	–	–	–	–
	–	1 31/32	7 3/32	1 31/32	5 1/2	21/32	25/32	21/32	3 3/4	2 3/32	1.693	0.669	1/2	UCP306	P306	UC306	2.2	26.7	15.0	13.3	–	–	–	–	–	UCP306C	UCP306CD	82	3 7/32	2.8
		50	180	50	140	17	20	17	95	53	43	17	M14																	
	1 1/4													UCP207-20		UC207-20	1.6				–	–	–	–	–	–	–	–	–	–
	1 5/16													UCP207-21		UC207-21	1.6				–	–	–	–	–	–	–	–	–	–
	1 3/8	1 7/8	6 9/16	1 7/8	5	21/32	13/16	23/32	3 3/4	1 27/32	1.689	0.689	1/2	UCP207-22	P207	UC207-22	1.6	25.7	15.4	13.9	–	–	–	–	–	–	–	–	–	–
		47.6	167	48	127	17	21	18	95	47	42.9	17.5	M14	UCP207		UC207	1.6				UCP207C	UCP207CD	60	2 3/8	1.6	UCP207FC	UCP207FCD	78	3 1/16	2.3
35	1 7/16													UCP207-23		UC207-23	1.6				–	–	–	–	–	–	–	–	–	–
	1 3/8													UCPX07-22		UCX07-22	2.7				–	–	–	–	–	–	–	–	–	–
		2 1/8	8	2 1/4	5 21/32	21/32	1 3/16	3/4	4 1/8	2 17/32	1.937	0.748	1/2	UCPX07	PX07	UCX07	2.7	29.1	17.8	14.0	UCPX07C	UCPX07CD	69	2 23/32	2.7	–	–	–	–	–
	1 7/16	54	203	57	144	17	30	19	105	64	49.2	19	M14	UCPX07-23		UCX07-23	2.7				–	–	–	–	–	–	–	–	–	–
	–	2 13/64	8 9/32	2 7/32	6 5/16	21/32	31/32	3/4	4 7/32	2 9/16	1.890	0.748	1/2	UCP307	P307	UC307	3.0	33.4	19.3	13.2	–	–	–	–	–	UCP307C	UCP307CD	88	3 15/32	3.8
		56	210	56	160	17	25	19	107	65	48	19	M14																	
	1 1/2													UCP208-24		UC208-24	2.0				–	–	–	–	–	–	–	–	–	–
	1 9/16	1 15/16	7 1/4	2 1/8	5 13/32	21/32	13/16	23/32	3 27/32	2 3/32	1.937	0.748	1/2	UCP208-25	P208	UC208-25	2.0	29.1	17.8	14.0	–	–	–	–	–	–	–	–	–	–
		49.2	184	54	137	17	21	18	98	53	49.2	19	M14	UCP208		UC208	2.0				UCP208C	UCP208CD	69	2 23/32	2.0	UCP208FC	UCP208FCD	86	3 3/8	2.8
40	1 1/2	2 5/16	8 3/4	2 5/8	6 5/32	25/32	1 1/4	13/16	4 1/2	2 25/32	1.937	0.748	5/8	UCPX08-24	PX08	UCX08-24	3.5	34.1	21.3	14.0	–	–	–	–	–	–	–	–	–	–
		58.7	222	67	156	20	32	21	114	71	49.2	19	M16	UCPX08		UCX08	3.5				UCPX08C	UCPX08CD	69	2 23/32	3.5	–	–	–	–	–
	1 1/2	2 23/64	8 27/32	2 3/8	6 11/16	21/32	1 1/16	3/4	4 21/32	2 9/16	2.047	0.748	1/2	UCP308-24	P308	UC308-24	3.8	40.7	24.0	13.2	–	–	–	–	–	–	–	–	–	–
		60	220	60	170	17	27	19	118	65	52	19	M14	UCP308		UC308	3.8				–	–	–	–	–	UCP308C	UCP308CD	96	3 25/32	4.8
	1 5/8													UCP209-26		UC209-26	2.2				–	–	–	–	–	–	–	–	–	–
	1 11/16	2 1/8	7 15/32	2 1/8	5 3/4	21/32	13/16	25/32	4 3/16	2 5/32	1.937	0.748	1/2	UCP209-27	P209	UC209-27	2.2	34.1	21.3	14.0	–	–	–	–	–	–	–	–	–	–
	1 3/4	54	190	54	146	17	21	20	106	55	49.2	19	M14	UCP209-28		UC209-28	2.2				–	–	–	–	–	–	–	–	–	–
45														UCP209		UC209	2.2				UCP209C	UCP209CD	69	2 23/32	2.2	UCP209FC	UCP209FCD	88	3 15/32	3.0
	1 11/16	2 5/16	8 3/4	2 5/8	6 5/32	25/32	1 5/16	13/16	4 9/16	2 25/32	2.031	0.748	5/8	UCPX09-27	PX09	UCX09-27	3.7	35.1	23.3	14.4	–	–	–	–	–	–	–	–	–	–
	1 3/4	58.7	222	67	156	20	33	21	116	71	51.6	19	M16	UCPX09-28		UCX09-28	3.7				–	–	–	–	–	–	–	–	–	–
														UCPX09		UCX09	3.7				UCPX09C	UCPX09CD	74	2 29/32	3.7	–	–	–	–	–

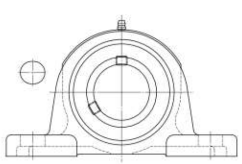
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~210, X05~X09, 305~308
   A-R1/8 ..... 211~218, X10~X20, 309~328
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (or L2) follows the Part No. of unit or bearing. (Example of Part No. : UCP206JL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Representative examples of the forms of housing are indicated.
6. Housings of nodular graphite cast iron are also available.

UCP
Cylindrical bore (with set screws)
d (45) ~ (75) mm

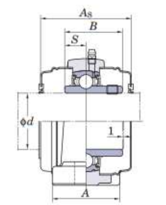
UCP2



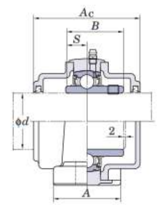
UCPX, 3



With Pressed Steel Cover



With Cast Iron Cover

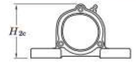


Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs})

Unit: mm

Housing No.			Δ_{Hs}
P203~P210	PX05~PX10	P305~P310	±0.15
P211~P218	PX11~PX18	P311~P318	±0.2
	PX20	P319~P328	±0.3

Forms and dimensions of H_{2c} of P204JE3 and P205JE3 (housing with cast iron cover) are shown below.

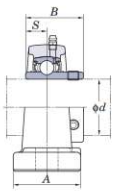


P204JE3 H_{2c} = 70 mm
P205JE3 H_{2c} = 77 mm

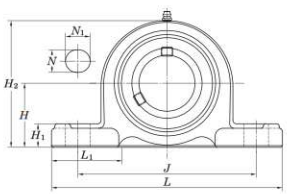
Shaft Dia. mm d	Shaft Dia. inch d	H	L	A	J	N	N_1	H_1	H_2	L_1	B	S	Bolt Size inch / mm	Unit No.	Standard Housing No.	Bearing No.	Mass kg	C_r kN	C_{0r} kN	Factor f_0	Pressed Steel Cover: Open Type	Pressed Steel Cover: One Side Closed Type	A_s mm	A_s inch	Mass kg	Cast Iron Cover: Open Type	Cast Iron Cover: One Side Closed Type	A_c mm	A_c inch	Mass kg
45	1 3/4	2 41/64	9 21/32	2 5/8	7 15/32	25/32	1 3/16	13/16	5 3/16	2 15/16	2.244	0.866	5/8	UCP309-28	P309	UC309-28	4.9	48.9	29.5	13.3	–	–	–	–	–	–	–	–	–	–
		67	245	67	190	20	30	21	132	75	57	22	M16	UCP309		UC309	4.9				–	–	–	–	–	UCP309C	UCP309CD	102	4 1/32	6.2
50	1 7/8													UCP210-30	P210	UC210-30	2.9	35.1	23.3	14.4	–	–	–	–	–	–	–	–	–	–
	1 15/16	2 1/4	8 1/8	2 3/8	6 1/4	25/32	7/8	13/16	4 7/16	2 3/8	2.031	0.748	5/8	UCP210-31		UC210-31	2.9				–	–	–	–	–	–	–	–	–	–
		57.2	206	60	159	20	22	21	113	60	51.6	19	M16	UCP210		UC210	2.9				UCP210C	UCP210CD	74	2 29/32	2.9	UCP210FC	UCP210FCD	97	3 13/16	3.9
	2													UCP210-32		UC210-32	2.9				–	–	–	–	–	–	–	–	–	–
	1 15/16	2 1/2	9 1/2	2 7/8	6 23/32	25/32	1 13/32	7/8	4 31/32	3	2.189	0.874	5/8	UCPX10-31	PX10	UCX10-31	4.6	43.4	29.4	14.4	–	–	–	–	–	–	–	–	–	–
		63.5	241	73	171	20	36	22	126	76	55.6	22.2	M16	UCPX10		UCX10	4.6				UCPX10C	UCPX10CD	76	3	4.6	–	–	–	–	–
	2													UCPX10-32		UCX10-32	4.6				–	–	–	–	–	–	–	–	–	–
	–	2 61/64	10 13/16	2 15/16	8 11/32	25/32	1 3/8	15/16	5 13/16	3 15/32	2.402	0.866	5/8	UCP310	P310	UC310	6.6	62.0	38.3	13.2	–	–	–	–	–	UCP310C	UCP310CD	110	4 11/32	8.2
		75	275	75	212	20	35	24	148	88	61	22	M16																	
55	2													UCP211-32	P211	UC211-32	3.6	43.4	29.4	14.4	–	–	–	–	–	–	–	–	–	–
	2 1/8	2 1/2	8 5/8	2 3/8	6 23/32	25/32	7/8	29/32	4 29/32	2 9/16	2.189	0.874	5/8	UCP211-34		UC211-34	3.6				–	–	–	–	–	–	–	–	–	–
		63.5	219	60	171	20	22	23	125	65	55.6	22.2	M16	UCP211		UC211	3.6				UCP211C	UCP211CD	76	3	3.6	UCP211FC	UCP211FCD	99	3 29/32	4.8
	2 3/16													UCP211-35		UC211-35	3.6				–	–	–	–	–	–	–	–	–	–
		2 3/4	10 1/4	3 1/8	7 1/4	31/32	1 13/32	1 3/32	5 15/32	3 9/32	2.563	1.000	3/4	UCPX11	PX11	UCX11	6.5	52.4	36.2	14.4	UCPX11C	UCPX11CD	89	3 1/2	6.5	–	–	–	–	–
	2 3/16	69.8	260	79	184	25	36	28	139	83	65.1	25.4	M20	UCPX11-35		UCX11-35	6.5				–	–	–	–	–	–	–	–	–	–
	2 1/4													UCPX11-36		UCX11-36	6.5				–	–	–	–	–	–	–	–	–	–
	2	3 5/32	12 7/32	3 5/32	9 9/32	25/32	1 1/2	1 1/16	6 7/32	3 17/32	2.598	0.984	5/8	UCP311-32	P311	UC311-32	7.9	71.6	45.0	13.2	–	–	–	–	–	–	–	–	–	–
		80	310	80	236	20	38	27	158	90	66	25	M16	UCP311		UC311	7.9				–	–	–	–	–	UCP311C	UCP311CD	114	4 1/2	9.7
	2 3/16													UCP311-35		UC311-35	7.9				–	–	–	–	–	–	–	–	–	–
60	2 1/4													UCP212-36	P212	UC212-36	4.9	52.4	36.2	14.4	–	–	–	–	–	–	–	–	–	–
		2 3/4	9 1/2	2 3/4	7 1/4	25/32	31/32	31/32	5 7/16	2 7/8	2.563	1.000	5/8	UCP212		UC212	4.9				UCP212C	UCP212CD	89	3 1/2	4.9	UCP212FC	UCP212FCD	114	4 1/2	6.4
	2 3/8	69.8	241	70	184	20	25	25	138	73	65.1	25.4	M16	UCP212-38		UC212-38	4.9				–	–	–	–	–	–	–	–	–	–
	2 7/16													UCP212-39		UC212-39	4.9				–	–	–	–	–	–	–	–	–	–
		3	11 1/4	3 1/4	8	31/32	1 9/16	1 3/32	5 31/32	3 15/32	2.563	1.000	3/4	UCPX12	PX12	UCX12	7.7	57.2	40.1	14.4	UCPX12C	UCPX12CD	89	3 1/2	7.7	–	–	–	–	–
	2 7/16	76.2	286	83	203	25	40	28	152	88	65.1	25.4	M20	UCPX12-39		UCX12-39	7.7				–	–	–	–	–	–	–	–	–	–
		3 11/32	13	3 11/32	9 27/32	31/32	1 1/2	1 5/32	6 9/16	4 1/16	2.795	1.024	3/4	UCP312	P312	UC312	9.5	81.9	52.2	13.2	–	–	–	–	–	UCP312C	UCP312CD	124	4 7/8	11.8
	2 7/16	85	330	85	250	25	38	29	167	103	71	26	M20	UCP312-39		UC312-39	9.5				–	–	–	–	–	–	–	–	–	–
65	2 1/2	3	10 7/16	2 3/4	8	31/32	1 3/16	1 1/16	5 29/32	3 1/16	2.563	1.000	3/4	UCP213-40	P213	UC213-40	5.9	57.2	40.1	14.4	–	–	–	–	–	–	–	–	–	–
		76.2	265	70	203	25	30	27	150	78	65.1	25.4	M20	UCP213		UC213	5.9				UCP213C	UCP213CD	89	3 1/2	5.9	UCP213FC	UCP213FCD	114	4 1/2	7.6
	2 1/2	3	11 1/4	3 1/4	8	31/32	1 9/16	1 3/32	6 3/32	3 15/32	2.937	1.189	3/4	UCPX13-40	PX13	UCX13-40	8.1	62.2	44.1	14.5	–	–	–	–	–	–	–	–	–	–
		76.2	286	83	203	25	40	28	155	88	74.6	30.2	M20	UCPX13		UCX13	8.1				UCPX13C	UCPX13CD	99	3 29/32	8.1	–	–	–	–	–
	2 1/2	3 35/64	13 3/8	3 17/32	10 1/4	31/32	1 1/2	1 1/4	6 15/16	4 11/32	2.953	1.181	3/4	UCP313-40	P313	UC313-40	10.7	92.7	59.9	13.2	–	–	–	–	–	–	–	–	–	–
		90	340	90	260	25	38	32	176	110	75	30	M20	UCP313		UC313	10.7				–	–	–	–	–	UCP313C	UCP313CD	122	4 13/16	12.8
70	2 3/4	3 1/8	10 15/32	2 27/32	8 9/32	31/32	1 3/16	1 1/16	6 3/16	2 15/16	2.937	1.189	3/4	UCP214-44	P214	UC214-44	6.8	62.2	44.1	14.5	–	–	–	–	–	–	–	–	–	–
		79.4	266	72	210	25	30	27	157	75	74.6	30.2	M20	UCP214		UC214	6.8				UCP214C	UCP214CD	99	3 29/32	6.8	UCP214FC	UCP214FCD	124	4 7/8	8.7
	2 3/4	3 1/2	13	3 1/2	9	1 1/16	1 31/32	1 1/4	6 23/32	3 27/32	3.063	1.331	7/8	UCPX14-44	PX14	UCX14-44	10.2	67.4	48.3	14.5	–	–	–	–	–	–	–	–	–	–
		88.9	330	89	229	27	50	32	171	98	77.8	33.3	M22	UCPX14		UCX14	10.2				UCPX14C	UCPX14CD	99	3 29/32	10.2	–	–	–	–	–
	2 3/4	3 47/64	14 3/16	3 17/32	11 1/32	1 1/16	1 9/16	1 3/8	7 5/16	4 11/32	3.071	1.299	7/8	UCP314-44	P314	UC314-44	12.4	104	68.2	13.2	–	–	–	–	–	–	–	–	–	–
		95	360	90	280	27	40	35	186	110	78	33	M22	UCP314		UC314	12.4				–	–	–	–	–	UCP314C	UCP314CD	124	4 7/8	14.7
75	2 15/16													UCP215-47	P215	UC215-47	7.4	67.4	48.3	14.5	–	–	–	–	–	–	–	–	–	–
		3 1/4	10 13/16	2 29/32	8 17/32	31/32	1 3/16	1 3/32	6 3/8	3 1/16	3.063	1.311	3/4	UCP215		UC215	7.4				UCP215C	UCP215CD	99	3 29/32	7.4	UCP215FC	UCP215FCD	124	4 7/8	9.3
	3	82.6	275	74	217	25	30	28	162	78	77.8	33.3	M20	UCP215-48		UC215-48	7.4				–	–	–	–	–	–	–	–	–	–
	2 15/16													UCPX15-47	PX15	UCX15-47	10.8	72.7	53.0	14.6	–	–	–	–	–	–	–	–	–	–
		3 1/2	13	3 1/2	9	1 1/16	1 31/32	1 1/4	6 7/8	3 29/32	3.252	1.311	7/8	UCPX15		UCX15	10.8				UCPX15C	UCPX15CD	109	4 9/32	10.8	–	–	–	–	–
	3	88.9	330	89	229	27	50	32	175	99	82.6	33.3	M22	UCPX15-48		UCX15-48	10.8				–	–	–	–	–	–	–	–	–	–

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF .... 201~210, X05~X09, 305~308
   A-R1/8 .... 211~218, X10~X20, 309~328
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (or L2) follows the Part No. of unit or bearing. (Example of Part No. : UCP206JL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Representative examples of the forms of housing are indicated.
6. Housings of nodular graphite cast iron are also available.

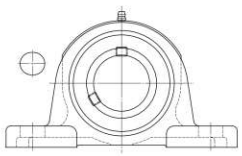
UCP
Cylindrical bore (with set screws)
d (75) ~ 140 mm



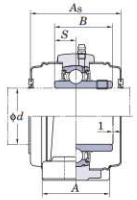
UCP2



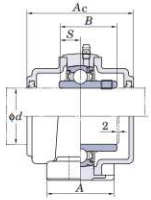
UCPX, 3



With Pressed Steel Cover



With Cast Iron Cover

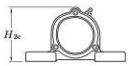


Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_k)

Unit: mm

Housing No.			ΔH_k
P203~P210	PX05~PX10	P305~P310	±0.15
P211~P218	PX11~PX18	P311~P318	±0.2
	PX20	P319~P328	±0.3

Forms and dimensions of H_{2c} of P204JE3 and P205JE3 (housing with cast iron cover) are shown below.



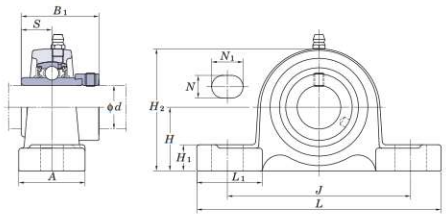
P204JE3 H_{2c} = 70 mm
P205JE3 H_{2c} = 77 mm

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	L_1	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	One Side Closed Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Cover Unit No. Open Type	One Side Closed Type	Dimension mm / inch A_c	Mass kg
75	2 15/16	3 15/16	14 31/32	3 15/16	11 13/32	1 1/16	1 9/16	1 3/8	7 25/32	4 7/32	3.228	1.260	7/8	UCP315-47	P315	UC315-47	14.8	113	77.2	13.2	–	–	– –	–	–	–	– –	–
		100	380	100	290	27	40	35	198	107	82	32	M22	UCP315		UC315	14.8				–	–	– –	–	UCP315C	UCP315CD	134 5 9/32	17.3
	3													UCP315-48		UC315-48	14.8				–	–	– –	–	–	–	– –	–
80	3 1/8	3 1/2	11 1/2	3 1/16	9 1/8	31/32	1 3/8	1 3/16	6 27/32	3 9/32	3.252	1.311	3/4	UCP216-50	P216	UC216-50	9.0	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
		88.9	292	78	232	25	35	30	174	83	82.6	33.3	M20	UCP216		UC216	9.0				UCP216C	UCP216CD	109 4 9/32	9.0	UCP216FC	UCP216FCD	138 5 7/16	11.4
	–	4	15	4	11 1/8	1 1/16	2 9/32	1 11/32	7 11/16	4 9/16	3.374	1.343	7/8	UCPX16	PX16	UCX16	15.3	84.0	61.9	14.5	UCPX16C	UCPX16CD	113 4 7/16	15.3	–	–	– –	–
		101.6	381	102	283	27	58	34	195	116	85.7	34.1	M22															
	–	4 11/64	15 3/4	4 11/32	11 13/16	1 1/16	1 9/16	1 3/8	8 7/32	4 23/32	3.386	1.339	7/8	UCP316	P316	UC316	18.5	123	86.7	13.3	–	–	– –	–	UCP316C	UCP316CD	138 5 7/16	21.4
		106	400	110	300	27	40	35	209	120	86	34	M22															
85	3 1/4	3 3/4	12 7/32	3 9/32	9 23/32	31/32	1 3/8	1 1/4	7 9/32	3 7/16	3.374	1.343	3/4	UCP217-52	P217	UC217-52	10.8	84.0	61.9	14.5	–	–	– –	–	–	–	– –	–
		95.2	310	83	247	25	35	32	185	87	85.7	34.1	M20	UCP217		UC217	10.8				UCP217C	UCP217CD	113 4 7/16	10.8	UCP217FC	UCP217FCD	142 5 19/32	13.5
		4	15	4	11 1/8	1 1/16	2 3/8	1 11/32	7 7/8	4 9/16	3.780	1.563	7/8	UCPX17	PX17	UCX17	16.1	96.1	71.5	14.5	UCPX17C	UCPX17CD	123 4 27/32	16.1	–	–	– –	–
	3 7/16	101.6	381	102	283	27	60	34	200	116	96	39.7	M22	UCPX17-55		UCX17-55	16.1				–	–	– –	–	–	–	– –	–
	–	4 13/32	16 17/32	4 11/32	12 19/32	1 5/16	1 25/32	1 9/16	8 21/32	4 23/32	3.780	1.575	1	UCP317	P317	UC317	20.3	133	96.8	13.3	–	–	– –	–	UCP317C	UCP317CD	146 5 3/4	23.6
		112	420	110	320	33	45	40	220	120	96	40	M27															
90	3 1/2	4	12 7/8	3 15/32	10 5/16	1 1/16	1 9/16	1 5/16	7 25/32	3 11/16	3.780	1.563	7/8	UCP218-56	P218	UC218-56	13.9	96.1	71.5	14.5	–	–	– –	–	–	–	– –	–
		101.6	327	88	262	27	40	33	198	94	96	39.7	M22	UCP218		UC218	13.9				UCP218C	UCP218CD	123 4 27/32	13.9	UCP218FC	UCP218FCD	152 6	17.0
	–	4	15	4 3/8	11 1/8	1 1/16	2 3/8	1 1/2	8 1/32	4 9/16	4.094	1.689	7/8	UCPX18	PX18	UCX18	19.1	109	81.9	14.4	–	–	– –	–	UCPX18C	UCPX18C	158 6 7/32	22.5
		101.6	381	111	283	27	60	38	204	116	104	42.9	M22															
	3 1/2	4 41/64	16 15/16	4 11/32	13	1 5/16	1 25/32	1 9/16	9 7/32	4 23/32	3.780	1.575	1	UCP318-56	P318	UC318-56	22.8	143	107	13.3	–	–	– –	–	–	–	– –	–
		118	430	110	330	33	45	40	234	120	96	40	M27	UCP318		UC318	22.8				–	–	– –	–	UCP318C	UCP318CD	150 5 29/32	26.6
95	–	4 59/64	18 1/2	4 23/32	14 3/16	1 13/32	1 31/32	1 13/16	9 3/4	4 29/32	4.055	1.614	1 1/8	UCP319	P319	UC319	29.0	153	119	13.3	–	–	– –	–	UCP319C	UCP319CD	162 6 3/8	33.3
		125	470	120	360	36	50	46	248	125	103	41	M30															
100	3 15/16	5	17	4 3/4	13 1/4	1 5/16	2 9/16	1 25/32	9 21/32	4 31/32	4.626	1.937	1	UCPX20	PX20	UCX20	30.4	133	105	14.4	–	–	– –	–	UCPX20C	UCPX20CD	186 7 5/16	34.9
		127	432	121	337	33	65	45	245	126	117.5	49.2	M27	UCPX20-63		UCX20-63	30.4				–	–	– –	–	–	–	– –	–
	4													UCPX20-64		UCX20-64	30.4				–	–	– –	–	–	–	– –	–
	3 15/16	5 33/64	19 9/32	4 23/32	14 31/32	1 13/32	1 31/32	1 13/16	10 3/4	5 1/2	4.252	1.654	1 1/8	UCP320	P320	UC320	35.1	173	141	13.2	–	–	– –	–	UCP320C	UCP320CD	174 6 27/32	40.7
		140	490	120	380	36	50	46	273	140	108	42	M30	UCP320-63		UC320-63	35.1				–	–	– –	–	–	–	– –	–
	4													UCP320-64		UC320-64	35.1				–	–	– –	–	–	–	– –	–
105	–	5 33/64	19 9/32	4 23/32	14 31/32	1 13/32	1 31/32	1 13/16	10 15/16	5 1/2	4.409	1.732	1 1/8	UCP321	P321	UC321	37.6	184	153	13.2	–	–	– –	–	UCP321C	UCP321CD	178 7	43.6
		140	490	120	380	36	50	46	278	140	112	44	M30															
110	–	5 29/32	20 15/32	5 1/2	15 3/4	1 9/16	2 5/32	1 31/32	11 21/32	5 29/32	4.606	1.811	1 1/4	UCP322	P322	UC322	44.0	205	180	13.2	–	–	– –	–	UCP322C	UCP322CD	188 7 13/32	50.8
		150	520	140	400	40	55	50	296	150	117	46	M33															
120	–	6 19/64	22 7/16	5 1/2	17 23/32	1 9/16	2 5/32	1 31/32	12 7/16	6 5/16	4.961	2.008	1 1/4	UCP324	P324	UC324	55.4	207	185	13.5	–	–	– –	–	UCP324C	UCP324CD	196 7 23/32	64.9
		160	570	140	450	40	55	50	316	160	126	51	M33															
130	–	7 3/32	23 5/8	5 1/2	18 29/32	1 9/16	2 5/32	1 31/32	13 21/32	7 11/16	5.315	2.126	1 1/4	UCP326	P326	UC326	72.1	229	214	13.6	–	–	– –	–	UCP326C	UCP326CD	214 8 7/16	84.2
		180	600	140	480	40	55	50	355	195	135	54	M33															
140	–	7 7/8	24 13/32	5 1/2	19 11/16	1 9/16	2 5/32	2 3/8	15 15/32	7 9/32	5.709	2.323	1 1/4	UCP328	P328	UC328	92.5	253	246	13.6	–	–	– –	–	UCP328C	UCP328CD	222 8 3/4	108
		200	620	140	500	40	55	60	393	185	145	59	M33															

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~210, X05~X09, 305~308
   A-R1/8 ..... 211~218, X10~X20, 309~328
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (or L2) follows the Part No. of unit or bearing. (Example of Part No. : UCP206JL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Representative examples of the forms of housing are indicated.
6. Housings of nodular graphite cast iron are also available.

FYH

NAP
Cylindrical bore
(with eccentric locking collar)
d 12 ~ 75 mm



Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{H_2})

Unit: mm

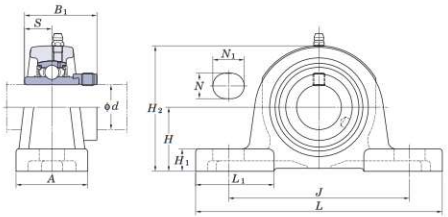
Housing No.	Δ_{H_2}
P203~P210	±0.15
P211~P215	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	L_1	B_1	S	Bolt Size inch / mm	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12														NAP201	P203	NA201	12.8	6.65	13.2	0.71
	1/2	1 3/16	5	1 1/2	3 3/4	1/2	23/32	5/8	2 3/8	1 13/32	1.720	0.673	3/8	NAP201-8		NA201-8				
15		30.2	127	38	95	13	18	16	60	36	43.7	17.1	M10	NAP202		NA202				0.69
	5/8													NAP202-10		NA202-10				
17														NAP203		NA203				0.66
20	3/4	1 5/16	5	1 1/2	3 3/4	1/2	23/32	5/8	2 9/16	1 13/32	1.720	0.673	3/8	NAP204-12	P204	NA204-12	12.8	6.65	13.2	0.73
		33.3	127	38	95	13	18	16	65	36	43.7	17.1	M10	NAP204		NA204				
	7/8													NAP205-14	P205	NA205-14	14.0	7.85	13.9	0.87
25	15/16	1 7/16	5 1/2	1 1/2	4 1/8	1/2	23/32	5/8	2 3/4	1 1/2	1.748	0.689	3/8	NAP205-15		NA205-15				
		36.5	140	38	105	13	18	16	70	38	44.4	17.5	M10	NAP205		NA205				
	1													NAP205-16		NA205-16				
	1 1/8													NAP206-18	P206	NA206-18	19.5	11.3	13.9	1.4
30		1 11/16	6 1/2	1 7/8	4 3/4	21/32	13/16	21/32	3 5/16	1 7/8	1.906	0.720	1/2	NAP206		NA206				
	1 3/16	42.9	165	48	121	17	21	17	84	48	48.4	18.3	M14	NAP206-19		NA206-19				
	1 1/4													NAP206-20		NA206-20				
	1 1/4													NAP207-20	P207	NA207-20	25.7	15.4	13.9	1.8
	1 5/16													NAP207-21		NA207-21				
35	1 3/8	1 7/8	6 9/16	1 7/8	5	21/32	13/16	23/32	3 3/4	1 27/32	2.012	0.740	1/2	NAP207-22		NA207-22				
		47.6	167	48	127	17	21	18	95	47	51.1	18.8	M14	NAP207		NA207				
	1 7/16													NAP207-23		NA207-23				
	1 1/2													NAP208-24	P208	NA208-24	29.1	17.8	14.0	2.1
40	1 9/16	1 15/16	7 1/4	2 1/8	5 13/32	21/32	13/16	23/32	3 27/32	2 3/32	2.217	0.843	1/2	NAP208-25		NA208-25				
		49.2	184	54	137	17	21	18	98	53	56.3	21.4	M14	NAP208		NA208				
	1 5/8													NAP209-26	P209	NA209-26	34.1	21.3	14.0	2.4
45	1 11/16	2 1/8	7 15/32	2 1/8	5 3/4	21/32	13/16	25/32	4 3/16	2 5/32	2.217	0.843	1/2	NAP209-27		NA209-27				
	1 3/4	54	190	54	146	17	21	20	106	55	56.3	21.4	M14	NAP209-28		NA209-28				
														NAP209		NA209				
	1 7/8													NAP210-30	P210	NA210-30	35.1	23.3	14.4	3.1
50	1 15/16	2 1/4	8 1/8	2 3/8	6 1/4	25/32	7/8	13/16	4 7/16	2 3/8	2.469	0.969	5/8	NAP210-31		NA210-31				
		57.2	206	60	159	20	22	21	113	60	62.7	24.6	M16	NAP210		NA210				
	2													NAP210-32		NA210-32				
	2													NAP211-32	P211	NA211-32	43.4	29.4	14.4	3.9
55	2 1/8	2 1/2	8 1/8	2 3/8	6 23/32	25/32	7/8	29/32	4 29/32	2 9/16	2.811	1.094	5/8	NAP211-34		NA211-34				
		63.5	219	60	171	20	22	23	125	65	71.4	27.8	M16	NAP211		NA211				
	2 3/16													NAP211-35		NA211-35				
	2 1/4													NAP212-36	P212	NA212-36	52.4	36.2	14.4	5.2
60		2 3/4	9 1/2	2 3/4	7 1/4	25/32	31/32	31/32	5 7/16	2 7/8	3.063	1.220	5/8	NAP212		NA212				
	2 3/8	69.8	241	70	184	20	25	25	138	73	77.8	31	M16	NAP212-38		NA212-38				
	2 7/16													NAP212-39		NA212-39				
65	2 1/2	3	10 7/16	2 3/4	8	31/32	1 3/16	1 1/16	5 29/32	3 1/16	3.374	1.343	3/4	NAP213-40	P213	NA213-40	57.2	40.1	14.4	6.5
		76.2	265	70	203	25	30	27	150	78	85.7	34.1	M20	NAP213		NA213				
70	2 3/4	3 1/8	10 15/32	2 27/32	8 9/32	31/32	1 3/16	1 1/16	6 3/16	2 15/16	3.374	1.343	3/4	NAP214-44	P214	NA214-44	62.2	44.1	14.5	7.7
		79.4	266	72	210	25	30	27	157	75	85.7	34.1	M20	NAP214		NA214				
75	2 15/16	3 1/4	10 13/16	2 29/32	8 17/32	31/32	1 3/16	1 3/32	6 3/8	3 1/16	3.626	1.469	3/4	NAP215-47	P215	NA215-47	67.4	48.3	14.5	7.9
		82.6	275	74	217	25	30	28	162	78	92.1	37.3	M20	NAP215		NA215				

Remarks
1. In Part No. of unit, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~210
   A-R1/8 ..... 211~215
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (or L2) follows the Part No. of unit or bearing. (Example of Part No. : NAP206JL3, NA206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Representative examples of the forms of housing are indicated.
6. Housings of nodular graphite cast iron are also available.

FYH

NAP-E
Cylindrical bore
(with eccentric locking collar)
d 1 3/16 ~ 2 15/16 inch



Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs})

Unit: mm

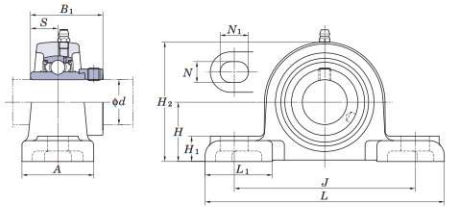
Housing No.	Δ_{Hs}
P306E~P310E	±0.15
P311E~P315E	±0.2

Shaft Dia. inch d	Dimensions inch mm H	L	A	J	N	N_1	H_1	H_2	L_1	B_1	S	Bolt Size inch mm	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
1 3/16	1 7/8	7 3/32	1 31/32	5 1/2	21/32	25/32	9/16	3 21/32	2 3/32	1.969	0.689	1/2	NAP306-19E	P306E	NA306-19		26.7	15.0	13.3	2.3
	47.6	180	50	140	17	20	14.6	92.6	53	50	17.5	M14								
1 7/16	2 1/8	8 9/32	2 7/32	6 5/16	21/32	31/32	21/32	4 1/8	2 9/16	2.031	0.720	1/2	NAP307-23E	P307E	NA307-23		33.4	19.3	13.2	3.1
	54	210	56	160	17	25	17	105	65	51.6	18.3	M14								
1 1/2	2 3/8	8 27/32	2 3/8	6 11/16	21/32	1 1/16	3/4	4 21/32	2 9/16	2.248	0.780	1/2	NAP308-24E	P308E	NA308-24		40.7	24.0	13.2	4.1
	60.3	220	60	170	17	27	19.3	118.3	65	57.1	19.8	M14								
1 11/16	2 5/8	9 27/32	2 5/8	7 15/32	25/32	1 3/16	13/16	5 3/16	2 15/16	2.311	0.780	5/8	NAP309-27E	P309E	NA309-27		48.9	29.5	13.3	5.1
	66.7	245	67	190	20	30	20.7	131.7	75	58.7	19.8	M16								
1 15/16	2 13/16	10 13/16	2 15/16	8 11/32	25/32	1 3/8	13/16	5 11/16	3 15/32	2.622	0.969	5/8	NAP310-31E	P310E	NA310-31		62.0	38.3	13.2	7
	71.4	275	75	212	20	35	20.4	144.4	88	66.6	24.6	M16								
2 3/16	3 1/16	12 7/32	3 5/32	9 9/32	25/32	1 1/2	31/32	6 1/8	3 17/32	2.874	1.094	5/8	NAP311-35E	P311E	NA311-35		71.6	45.0	13.2	8.5
	77.8	310	80	236	20	38	24.8	155.8	90	73	27.8	M16								
2 7/16	3 5/16	13	3 11/32	9 27/32	31/32	1 1/2	1 3/32	6 17/32	4 1/16	3.126	1.220	3/4	NAP312-39E	P312E	NA312-39		81.9	52.2	13.2	10.1
	84.1	330	85	250	25	38	28.1	166.1	103	79.4	31	M20								
2 11/16	3 13/16	14 1/16	3 17/32	11 1/32	1 1/16	1 9/16	1 7/16	7 13/32	4 11/32	3.626	1.343	7/8	NAP314-43E	P314E	NA314-43		104	68.2	13.2	13.8
	96.8	360	90	280	27	40	36.8	187.8	110	92.1	34.1	M22								
2 15/16	4 1/8	14 31/32	3 15/16	11 13/32	1 1/16	1 23/32	1 9/16	7 31/32	4 7/32	3.937	1.469	7/8	NAP315-47E	P315E	NA315-47		113	77.2	13.2	16.8
	104.8	380	100	290	27	44	39.8	202.8	107	100	37.3	M22								

Remarks
1. In Part No. of unit, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 306~308
   A-R1/8 ..... 309~315
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (or L2) follows the Part No. of unit or bearing. (Example of Part No. : NAP306JEL3, NA306L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Representative examples of the forms of housing are indicated.
6. Housings of nodular graphite cast iron are also available.

FYH

NAPK
Cylindrical bore
(with eccentric locking collar)
d 12 ~ 75 mm



ROYSE
rodamientos y servicios
Desde 1979

Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_2)

Unit: mm

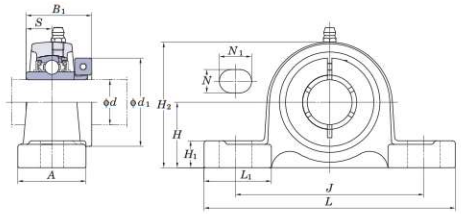
Housing No.	ΔH_2
PK204~PK210	±0.15
PK211~PK215	±0.2

Shaft Dia mm	Shaft Dia inch	Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	L_1	B_1	S	Bolt Size inch	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12														NAPK201		NA201				
	1/2													NAPK201-8		NA201-8				
15														NAPK202		NA202				
	5/8	1 1/4	5 1/4	1 5/8	3 27/32	7/16	9/16	9/16	2 15/32	1 25/32	1.72	0.673	3/8	NAPK202-10	PK204	NA202-10	12.8	6.65	13.2	0.82
17		31.8	133	41	98	11	14	14	63	45	43.7	17.1		NAPK203		NA203				
	3/4													NAPK204-12		NA204-12				
20														NAPK204		NA204				
	7/8													NAPK205-14		NA205-14				
25	15/16	1 5/16	5 1/2	1 23/32	4 1/8	7/16	9/16	5/8	2 11/16	1 25/32	1.748	0.689	3/8	NAPK205-15	PK205	NA205-15	14.0	7.85	13.9	1
		33.3	140	44	105	11	14	16	68	45	44.4	17.5		NAPK205		NA205				
	1													NAPK205-16		NA205-16				
	1 1/8													NAPK206-18		NA206-18				
30		1 9/16	6 5/16	1 7/8	4 3/4	9/16	3/4	31/32	3 5/32	1 25/32	1.906	0.72	1/2	NAPK206	PK206	NA206	19.5	11.3	13.9	1.4
	1 3/16	39.7	160	48	121	14	19	17	80	45	48.4	18.3		NAPK206-19		NA206-19				
	1 1/4													NAPK206-20		NA206-20				
	1 1/4													NAPK207-20		NA207-20				
	1 5/16													NAPK207-21		NA207-21				
35	1 3/8	1 13/16	6 9/16	1 7/8	5	9/16	3/4	3/4	3 5/8	1 25/32	2.012	0.74	1/2	NAPK207-22	PK207	NA207-22	25.7	15.4	13.9	2
		46	167	48	127	14	19	19	92	45	51.1	18.8		NAPK207		NA207				
	1 7/16													NAPK207-23		NA207-23				
40	1 1/2	1 15/16	7 1/8	2 1/8	5 3/8	9/16	1 1/32	3/4	3 15/16	1 31/32	2.217	0.843	1/2	NAPK208-24	PK208	NA208-24	29.1	17.8	14.0	2.5
	1 9/16	49.2	181	54	136.5	14	26.3	19	100	50	56.3	21.4		NAPK208-25		NA208-25				
														NAPK208		NA208				
	1 5/8													NAPK209-26		NA209-26				
45	1 11/16	2 1/16	7 5/32	2 1/8	5 7/8	9/16	1 1/8	25/32	4 3/16	2 1/16	2.217	0.843	1/2	NAPK209-27	PK209	NA209-27	34.1	21.3	14.0	2.7
	1 3/4	52.4	190	54	149.2	14	28.6	20	106	52	56.3	21.4		NAPK209-28		NA209-28				
														NAPK209		NA209				
	1 7/8													NAPK210-30		NA210-30				
50	1 15/16	2 3/16	8	2 1/4	6 1/4	9/16	3/4	7/8	4 13/32	25/32	2.469	0.969	1/2	NAPK210-31	PK210	NA210-31	35.1	23.3	14.4	3.2
		55.6	203	57	159	14	19	22	112	55	62.7	24.6		NAPK210		NA210				
	2													NAPK210-32		NA210-32				
	2													NAPK211-32		NA211-32				
55	2 1/8	2 7/16	9 1/8	2 3/8	7 1/8	23/32	15/16	31/32	4 7/8	2 19/32	2.811	1.094	5/8	NAPK211-34	PK211	NA211-34	43.4	29.4	14.4	4.6
		61.9	232	60	181	18	24	25	124	66	71.4	27.8		NAPK211		NA211				
	2 3/16													NAPK211-35		NA211-35				
	2 1/4													NAPK212-36		NA212-36				
60		2 11/16	9 1/2	2 17/32	7 17/32	23/32	15/16	13/32	5 11/32	2 9/16	3.063	1.22	5/8	NAPK212	PK212	NA212	52.4	36.2	14.4	5.2
	2 3/8	68.3	241	64	191	18	24	28	136	65	77.8	31		NAPK212-38		NA212-38				
	2 7/16													NAPK212-39		NA212-39				
75	2 15/16	3 5/16	11 31/32	3 7/32	9 1/2	7/8	1/4	1 1/2	6 1/2	3 7/16	3.626	1.469	3/4	NAPK215-47	PK215	NA215-47	67.4	48.3	14.5	9.6
		84.1	304	82	241	22	32	38	165	87	92.1	37.3		NAPK215		NA215				

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~210
   A-Rc1/8 ..... 211~215
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Representative examples of the forms of housing are indicated.
5. Housings of nodular graphite cast iron are also available.

FYH

NCP
Cylindrical bore
(with concentric locking collar)
d 20 ~ 60 mm



Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{H_2})

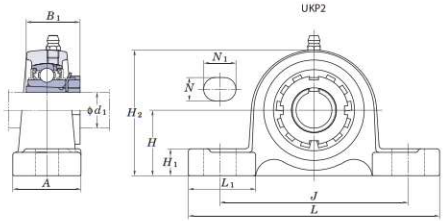
Unit: mm

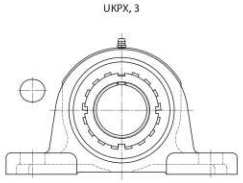
Housing No.	Δ_{H_2}
P204~P210	±0.15
P211~P212	±0.2

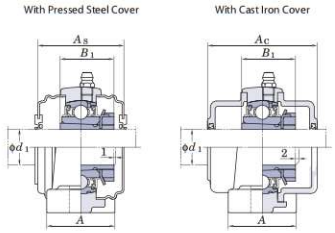
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	L_1	B_1	S	d_1	Bolt Size inch / mm	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
20	3/4	1 5/16	5	1 1/2	3 3/4	1/2	23/32	5/8	2 9/16	1 13/32	1 9/32	0.500	1 3/4	3/8	NCP204-12	P204	NC204-12	12.8	6.65	13.2	0.8
		33.3	127	38	95	13	18	16	65	36	32.5	12.7	44.5	M10	NCP204		NC204				
25	7/8														NCP205-14	P205	NC205-14	14.0	7.85	13.9	1.0
	15/16	1 7/16	5 1/2	1 1/2	4 1/8	1/2	23/32	5/8	2 3/4	1 1/2	1 7/16	0.563	1 15/16	3/8	NCP205-15		NC205-15				
		36.5	140	38	105	13	18	16	70	38	36.5	14.3	49.2	M10	NCP205		NC205				
	1														NCP205-16		NC205-16				
30	1 1/8														NCP206-18	P206	NC206-18	19.5	11.3	13.9	1.5
		1 11/16	6 1/2	1 7/8	4 3/4	21/32	13/16	21/32	3 5/16	1 7/8	1 9/16	0.626	2 3/16	1/2	NCP206		NC206				
	1 3/16	42.9	165	48	121	17	21	17	84	48	39.7	15.9	55.6	M14	NCP206-19		NC206-19				
	1 1/4														NCP206-20		NC206-20				
35	1 1/4	1 7/8	6 9/16	1 7/8	5	21/32	13/16	23/32	3 3/4	1 27/32	1 3/4	0.689	2 7/16	1/2	NCP207-20	P207	NC207-20	25.7	15.4	13.9	1.9
		47.6	167	48	127	17	21	18	95	47	44.5	17.5	61.9	M14							
	1 3/8														NCP207-22	P207	NC207-22	25.7	15.4	13.9	1.9
		1 7/8	6 9/16	1 7/8	5	21/32	13/16	23/32	3 3/4	1 27/32	1 3/4	0.689	2 9/16	1/2	NCP207		NC207				
		47.6	167	48	127	17	21	18	95	47	44.5	17.5	65.1	M14							
	1 7/16														NCP207-23		NC207-23				
40	1 1/2	1 15/16	7 1/4	2 1/8	5 13/32	21/32	13/16	23/32	3 27/32	2 3/32	2	0.748	2 11/16	1/2	NCP208-24	P208	NC208-24	29.1	17.8	14.0	2.4
		49.2	184	54	137	17	21	18	98	53	50.8	19	68.3	M14	NCP208		NC208				
45	1 5/8	2 1/8	7 15/32	2 1/8	5 3/4	21/32	13/16	25/32	4 3/16	2 5/32	2	0.748	2 13/16	1/2	NCP209-26	P209	NC209-26	34.1	21.3	14.0	2.6
		54	190	54	146	17	21	20	106	55	50.8	19	71.4	M14							
	1 11/16														NCP209-27	P209	NC209-27	34.1	21.3	14.0	2.6
	1 3/4	2 1/8	7 15/32	2 1/8	5 3/4	21/32	13/16	25/32	4 3/16	2 5/32	2	0.748	2 15/16	1/2	NCP209-28		NC209-28				
		54	190	54	146	17	21	20	106	55	50.8	19	74.6	M14	NCP209		NC209				
50	1 15/16														NCP210-31	P210	NC210-31	35.1	23.3	14.4	3.5
		2 1/4	8 1/8	2 3/8	6 1/4	25/32	7/8	13/16	4 7/16	2 3/8	2 3/32	0.748	3 3/8	5/8	NCP210		NC210				
	2	57.2	206	60	159	20	22	21	113	60	53.1	19	85.7	M16	NCP210-32		NC210-32				
55	2	2 1/2	8 5/8	2 3/8	6 23/32	25/32	7/8	29/32	4 29/32	2 9/16	2 1/4	0.874	3 1/2	5/8	NCP211-32	P211	NC211-32	43.4	29.4	14.4	4.0
		63.5	219	60	171	20	22	23	125	65	57.1	22.2	88.9	M16							
		2 1/2	8 5/8	2 3/8	6 23/32	25/32	7/8	29/32	4 29/32	2 9/16	2 1/4	0.874	3 5/8	5/8	NCP211	P211	NC211	43.4	29.4	14.4	4.0
	2 3/16	63.5	219	60	171	20	22	23	125	65	57.1	22.2	92.1	M16	NCP211-35		NC211-35				
60	2 1/4	2 3/4	9 1/2	2 3/4	7 1/4	25/32	31/32	31/32	5 7/16	2 7/8	2 5/8	1.000	4 1/16	5/8	NCP212-36	P212	NC212-36	52.4	36.2	14.4	5.6
		69.8	241	70	184	20	25	25	138	73	66.7	25.4	103.2	M16							
	2 3/8	2 3/4	9 1/2	2 3/4	7 1/4	25/32	31/32	31/32	5 7/16	2 7/8	2 5/8	1.000	4 1/8	5/8	NCP212	P212	NC212	52.4	36.2	14.4	5.6
	2 7/16	69.8	241	70	184	20	25	25	138	73	66.7	25.4	104.8	M16	NCP212-39		NC212-39				

Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
A-1/4-28UNF ..... 204~210
A-R1/8 ..... 211~212
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Representative examples of the forms of housing are indicated.

UKP
Tapered bore (with adapter)
d_1 20 ~ (50) mm





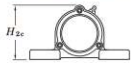


Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_s)

Unit: mm

Housing No.			ΔH_s
P205~P210	PX05~PX10	P305~P310	±0.15
P211~P218	PX11~PX18	P311~P318	±0.2
	PX20	P319~P328	±0.3

Forms and dimensions of H_{2c} of P205JE3 (housing with cast iron cover) are shown below.



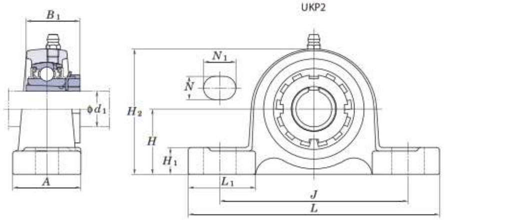
P205JE3 H_{2c}=77 mm

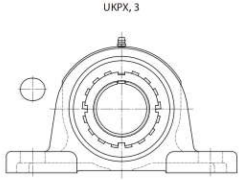
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm d_1	H	L	A	J	N	N_1	H_1	H_2	L_1	B_1	Bolt Size inch / mm	Standard Unit No.	Standard Housing No.	Standard Bearing No.	Adapter No.	Mass kg	Basic Load Ratings kN C_r	Basic Load Ratings kN C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	With Pressed Steel Cover Unit No. One Side Closed Type	With Pressed Steel Cover Dimension mm inch A_s	With Pressed Steel Cover Mass kg	With Cast Iron Cover Unit No. Open Type	With Cast Iron Cover Unit No. One Side Closed Type	With Cast Iron Cover Dimension mm inch A_c	With Cast Iron Cover Mass kg
20	3/4	1 7/16	5 1/2	1 1/2	4 1/8	1/2	23/32	5/8	2 3/4	1 1/2	1 3/8	3/8	UKP205	P205	UK205		HE2305X	0.84	14.0	7.85	13.9	–	–	– –	–	–	–	– –	–
		36.5	140	38	105	13	18	16	70	38	35	M10					H2305X	0.84				UKP205C	UKP205CD	49 1 15/16	0.84	UKP205FC	UKP205FCD	66 2 19/32	1.3
	3/4	1 3/4	6 1/4	2	4 11/16	21/32	31/32	5/8	3 3/8	1 27/32	1 3/8	1/2	UKPX05	PX05	UKX05		HE2305X	1.5	19.5	11.3	13.9	–	–	– –	–	–	–	– –	–
		44.4	159	51	119	17	25	16	86	47	35	M14					H2305X	1.5				UKPX05C	UKPX05CD	53 2 3/32	1.5	–	–	– –	–
	3/4	1 49/64	6 7/8	1 3/4	5 3/16	21/32	25/32	5/8	3 11/32	2 5/32	1 3/8	1/2	UKP305	P305	UK305		HE2305X	1.7	21.2	10.9	12.6	–	–	– –	–	–	–	– –	–
		45	175	45	132	17	20	16	85	55	35	M14					H2305X	1.7				–	–	– –	–	UKP305C	UKP305CD	76 3	2.3
25		1 11/16	6 1/2	1 7/8	4 3/4	21/32	13/16	21/32	3 5/16	1 7/8	1 1/2	1/2	UKP206	P206	UK206		H2306X	1.4	19.5	11.3	13.9	UKP206C	UKP206CD	53 2 3/32	1.4	UKP206FC	UKP206FCD	70 2 3/4	1.9
	1	42.9	165	48	121	17	21	17	84	48	38	M14					HE2306X	1.4				–	–	– –	–	–	–	– –	–
		1 7/8	6 7/8	2 1/4	5	21/32	31/32	21/32	3 21/32	2 5/32	1 1/2	1/2	UKP06X	PX06	UKX06		H2306X	2.1	25.7	15.4	13.9	UKPX06C	UKPX06CD	60 2 3/8	2.1	–	–	– –	–
	1	47.6	175	57	127	17	25	17	93	55	38	M14					HE2306X	2.1				–	–	– –	–	–	–	– –	–
		1 31/32	7 3/32	1 31/32	5 1/2	21/32	25/32	21/32	3 3/4	2 3/32	1 1/2	1/2	UKP306	P306	UK306		H2306X	2.3	26.7	15.0	13.3	–	–	– –	–	UKP306C	UKP306CD	82 3 7/32	2.9
	1	50	180	50	140	17	20	17	95	53	38	M14					HE2306X	2.3				–	–	– –	–	–	–	– –	–
30	1 1/8	1 7/8	6 9/16	1 7/8	5	21/32	13/16	23/32	3 3/4	1 27/32	1 11/16	1/2	UKP207	P207	UK207		HS2307X	1.7	25.7	15.4	13.9	–	–	– –	–	–	–	– –	–
		47.6	167	48	127	17	21	18	95	47	43	M14					H2307X	1.7				UKP207C	UKP207CD	60 2 3/8	1.7	UKP207FC	UKP207FCD	78 3 1/16	2.5
	1 1/8	2 1/8	8	2 1/4	5 21/32	21/32	1 3/16	3/4	4 1/8	2 17/32	1 11/16	1/2	UKPX07	PX07	UKX07		HS2307X	2.7	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
		54	203	57	144	17	30	19	105	64	43	M14					H2307X	2.7				UKPX07C	UKPX07CD	69 2 23/32	2.7	–	–	– –	–
	1 1/8	2 13/64	8 9/32	2 7/32	6 5/16	21/32	31/32	3/4	4 7/32	2 9/16	1 11/16	1/2	UKP307	P307	UK307		HS2307X	3.0	33.4	19.3	13.2	–	–	– –	–	–	–	– –	–
		56	210	56	160	17	25	19	107	65	43	M14					H2307X	3.0				–	–	– –	–	UKP307C	UKP307CD	88 3 15/32	3.9
35	1 1/4																HE2308X	2.0				–	–	– –	–	–	–	– –	–
	1 3/8	1 15/16	7 1/4	2 1/8	5 13/32	21/32	13/16	23/32	3 27/32	2 3/32	1 13/16	1/2	UKP208	P208	UK208		HS2308X	2.0	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
		49.2	184	54	137	17	21	18	98	53	46	M14					H2308X	2.0				UKP208C	UKP208CD	69 2 23/32	2.0	UKP208FC	UKP208FCD	86 3 3/8	2.9
	1 1/4																HE2308X	3.5				–	–	– –	–	–	–	– –	–
	1 3/8	2 5/16	8 3/4	2 5/8	6 5/32	25/32	1 1/4	13/16	4 1/2	2 25/32	1 13/16	5/8	UKPX08	PX08	UKX08		HS2308X	3.5	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
		58.7	222	67	156	20	32	21	114	71	46	M16					H2308X	3.5				UKPX08C	UKPX08CD	69 2 23/32	3.5	–	–	– –	–
	1 1/4																HE2308X	3.8				–	–	– –	–	–	–	– –	–
	1 3/8	2 23/64	8 21/32	2 3/8	6 11/16	21/32	1 1/16	3/4	4 21/32	2 9/16	1 13/16	1/2	UKP308	P308	UK308		HS2308X	3.8	40.7	24.0	13.2	–	–	– –	–	–	–	– –	–
		60	220	60	170	17	27	19	118	65	46	M14					H2308X	3.8				–	–	– –	–	UKP308C	UKP308CD	96 3 25/32	5.2
40	1 1/2	2 1/8	7 15/32	2 1/8	5 3/4	21/32	13/16	25/32	4 3/16	2 5/32	1 31/32	1/2	UKP209	P209	UK209		HE2309X	2.3	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
		54	190	54	146	17	21	20	106	55	50	M14					H2309X	2.3				UKP209C	UKP209CD	69 2 23/32	2.3	UKP209FC	UKP209FCD	88 3 15/32	3.2
	1 1/2	2 5/16	8 3/4	2 5/8	6 5/32	25/32	1 5/16	13/16	4 9/16	2 25/32	1 31/32	5/8	UKPX09	PX09	UKX09		HE2309X	3.7	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
		58.7	222	67	156	20	33	21	116	71	50	M16					H2309X	3.7				UKPX09C	UKPX09CD	74 2 29/32	3.7	–	–	– –	–
	1 1/2	2 41/64	9 21/32	2 5/8	7 15/32	25/32	1 3/16	13/16	5 3/16	2 15/16	1 31/32	5/8	UKP309	P309	UK309		HE2309X	5.0	48.9	29.5	13.3	–	–	– –	–	–	–	– –	–
		67	245	67	190	20	30	21	132	75	50	M16					H2309X	5.0				–	–	– –	–	UKP309C	UKP309CD	102 4 1/32	6.3
45	1 3/4	2 1/4	8 1/8	2 3/8	6 1/4	25/32	7/8	13/16	4 7/16	2 3/8	2 5/32	5/8	UKP210	P210	UK210		HE2310X	3.0	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
		57.2	206	60	159	20	22	21	113	60	55	M16					H2310X	3.0				UKP210C	UKP210CD	74 2 29/32	3.0	UKP210FC	UKP210FCD	97 3 13/16	4.1
	1 3/4	2 1/2	9 1/2	2 7/8	6 23/32	25/32	1 13/32	7/8	4 31/32	3	2 5/32	5/8	UKPX10	PX10	UKX10		HE2310X	4.6	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
		63.5	241	73	171	20	36	22	126	76	55	M16					H2310X	4.6				UKPX10C	UKPX10CD	76 3	4.6	–	–	– –	–
	1 3/4	2 61/64	10 13/16	2 15/16	8 11/32	25/32	1 3/8	15/16	5 13/16	3 15/32	2 5/32	5/8	UKP310	P310	UK310		HE2310X	6.7	62.0	38.3	13.2	–	–	– –	–	–	–	– –	–
		75	275	75	212	20	35	24	148	88	55	M16					H2310X	6.7				–	–	– –	–	UKP310C	UKP310CD	110 4 11/32	8.4
50	1 7/8																HS2311X	3.7				–	–	– –	–	–	–	– –	–
		2 1/2	8 5/8	2 3/8	6 23/32	25/32	7/8	29/32	4 29/32	2 9/16	2 5/16	5/8	UKP211	P211	UK211		H2311X	3.7	43.4	29.4	14.4	UKP211C	UKP211CD	76 3	3.7	UKP211FC	UKP211FCD	99 3 29/32	5.0
	2	63.5	219	60	171	20	22	23	125	65	59	M16					HE2311X	3.7				–	–	– –	–	–	–	– –	–
	1 7/8																HS2311X	6.2				–	–	– –	–	–	–	– –	–
		2 3/4	10 1/4	3 1/8	7 1/4	31/32	1 13/32	1 3/32	5 15/32	3 9/32	2 5/16	3/4	UKPX11	PX11	UKX11		H2311X	6.2	52.4	36.2	14.4	UKPX11C	UKPX11CD	89 3 1/2	6.2	–	–	– –	–
	2	69.8	260	79	184	25	36	28	139	83	59	M20					HE2311X	6.2				–	–	– –	–	–	–	– –	–

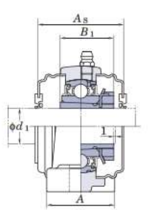
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 205~210, X05~X09, 305~308
   A-R1/8 ..... 211~218, X10~X20, 309~328
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables. (Example of Part No. : UKP206J + H2306X, UK206 + H2306X)
4. As for the triple seal type product (205 is the double seal type product), suffix code L3 (or L2) follows the Part No. of unit or bearing.
5. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter.
6. Representative examples of the forms of housing are indicated.
7. Housings of nodular graphite cast iron are also available.

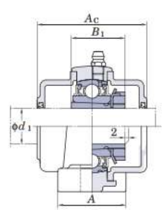
FYH

UKP
Tapered bore (with adapter)
d_1 (50) ~ (90) mm







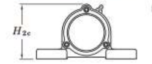


Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs})

Unit: mm

Housing No.			Δ_{Hs}
P205~P210	PX05~PX10	P305~P310	±0.15
P211~P218	PX11~PX18	P311~P318	±0.2
	PX20	P319~P328	±0.3

Forms and dimensions of H_{2c} of P205JE3 (housing with cast iron cover) are shown below.



P205JE3 H_{2c}=77 mm

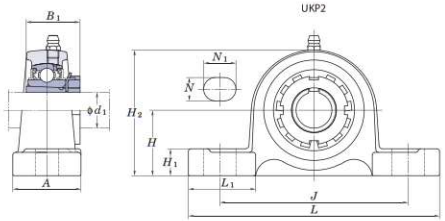
Dimensions: upper value inch, lower value mm.

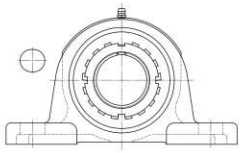
Shaft Dia. d_1 mm	Shaft Dia. d_1 inch	H	L	A	J	N	N_1	H_1	H_2	L_1	B_1	Bolt Size inch / mm	Unit No.
50	1 7/8 2	3 5/32 80	12 7/32 310	3 5/32 80	9 9/32 236	25/32 20	1 1/2 38	1 1/16 27	6 7/32 158	3 17/32 90	2 5/16 59	5/8 M16	**UKP311**
55	2 1/8	2 3/4 69.8	9 1/2 241	2 3/4 70	7 1/4 184	25/32 20	31/32 25	31/32 25	5 7/16 138	2 7/8 73	2 7/16 62	5/8 M16	**UKP212**
55	2 1/8	3 76.2	11 1/4 286	3 1/4 83	8 203	31/32 25	1 9/16 40	1 3/32 28	5 31/32 152	3 15/32 88	2 7/16 62	3/4 M20	**UKPX12**
55	2 1/8	3 11/32 85	13 330	3 11/32 85	9 27/32 250	31/32 25	1 1/2 38	1 5/32 29	6 9/16 167	4 1/16 103	2 7/16 62	3/4 M20	**UKP312**
60	2 1/4 2 3/8	3 76.2	10 7/16 265	2 3/4 70	8 203	31/32 25	1 3/16 30	1 1/16 27	5 29/32 150	3 1/16 78	2 9/16 65	3/4 M20	**UKP213**
60	2 1/4 2 3/8	3 76.2	11 1/4 286	3 1/4 83	8 203	31/32 25	1 9/16 40	1 3/32 28	6 3/32 155	3 15/32 88	2 9/16 65	3/4 M20	**UKPX13**
60	2 1/4 2 3/8	3 35/64 90	13 3/8 340	3 17/32 90	10 1/4 260	31/32 25	1 1/2 38	1 1/4 32	6 15/16 176	4 11/32 110	2 9/16 65	3/4 M20	**UKP313**
65	2 1/2	3 1/4 82.6	10 13/16 275	2 29/32 74	8 17/32 217	31/32 25	1 3/16 30	1 3/32 28	6 3/8 162	3 1/16 78	2 7/8 73	3/4 M20	**UKP215**
65	2 1/2	3 1/2 88.9	13 330	3 1/2 89	9 229	1 1/16 27	1 31/32 50	1 1/4 32	6 7/8 175	3 29/32 99	2 7/8 73	7/8 M22	**UKPX15**
65	2 1/2	3 15/16 100	14 31/32 380	3 15/16 100	11 13/32 290	1 1/16 27	1 9/16 40	1 3/8 35	7 25/32 198	4 7/32 107	2 7/8 73	7/8 M22	**UKP315**
70	2 3/4	3 1/2 88.9	11 1/2 292	3 1/16 78	9 1/8 232	31/32 25	1 3/8 35	1 3/16 30	6 27/32 174	3 9/32 83	3 1/16 78	3/4 M20	**UKP216**
70	2 3/4	4 101.6	15 381	4 102	11 1/8 283	1 1/16 27	2 9/32 58	1 11/32 34	7 11/16 195	4 9/16 116	3 1/16 78	7/8 M22	**UKPX16**
70	2 3/4	4 11/64 106	15 3/4 400	4 11/32 110	11 13/16 300	1 1/16 27	1 9/16 40	1 3/8 35	8 7/32 209	4 23/32 120	3 1/16 78	7/8 M22	**UKP316**
75	3	3 3/4 95.2	12 7/32 310	3 9/32 83	9 23/32 247	31/32 25	1 3/8 35	1 1/4 32	7 9/32 185	3 7/16 87	3 7/32 82	3/4 M20	**UKP217**
75	3	4 101.6	15 381	4 102	11 1/8 283	1 1/16 27	2 3/8 60	1 11/32 34	7 7/8 200	4 9/16 116	3 7/32 82	7/8 M22	**UKPX17**
75	3	4 13/32 112	16 17/32 420	4 11/32 110	12 19/32 320	1 5/16 33	1 25/32 45	1 9/16 40	8 21/32 220	4 23/32 120	3 7/32 82	1 M27	**UKP317**
80	–	4 101.6	12 7/8 327	3 15/32 88	10 5/16 262	1 1/16 27	1 9/16 40	1 5/16 33	7 25/32 198	3 11/16 94	3 3/8 86	7/8 M22	**UKP218**
80	–	4 101.6	15 381	4 3/8 111	11 1/8 283	1 1/16 27	2 3/8 60	1 1/2 38	8 1/32 204	4 9/16 116	3 3/8 86	7/8 M22	**UKPX18**
80	–	4 41/64 118	16 15/16 430	4 11/32 110	13 330	1 5/16 33	1 25/32 45	1 9/16 40	9 7/32 234	4 23/32 120	3 3/8 86	1 M27	**UKP318**
85	3 1/4	4 59/64 125	18 1/2 470	4 23/32 120	14 3/16 360	1 13/32 36	1 31/32 50	1 13/16 46	9 3/4 248	4 29/32 125	3 17/32 90	1 1/8 M30	**UKP319**
90	3 1/2	5 127	17 432	4 3/4 121	13 1/4 337	1 5/16 33	2 9/16 65	1 25/32 45	9 21/32 245	4 31/32 126	3 13/16 97	1 M27	**UKPX20**

Unit No.	Standard Housing No.	Bearing No.	Adapter No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	One Side Closed Type	Dimension A_s mm	A_s inch	Mass kg	With Cast Iron Cover Unit No. Open Type	One Side Closed Type	Dimension A_c mm	A_c inch	Mass kg
UKP311	P311	UK311	HS2311X H2311X HE2311X	8.1 8.1 8.1	71.6	45.0	13.2	–	–	–	–	–	UKP311C	UKP311CD	114	4 1/2	10.0
UKP212	P212	UK212	HS2312X H2312X	4.8 4.8	52.4	36.2	14.4	UKP212C	UKP212CD	89	3 1/2	4.8	UKP212FC	UKP212FCD	114	4 1/2	6.3
UKPX12	PX12	UKX12	HS2312X H2312X	7.5 7.5	57.2	40.1	14.4	UKPX12C	UKPX12CD	89	3 1/2	7.5	–	–	–	–	–
UKP312	P312	UK312	HS2312X H2312X	9.4 9.4	81.9	52.2	13.2	–	–	–	–	–	UKP312C	UKP312CD	124	4 7/8	11.8
UKP213	P213	UK213	HE2313X H2313X HS2313X	5.8 5.8 5.8	57.2	40.1	14.4	UKP213C	UKP213CD	89	3 1/2	5.8	UKP213FC	UKP213FCD	114	4 1/2	7.5
UKPX13	PX13	UKX13	HE2313X H2313X HS2313X	7.8 7.8 7.8	62.2	44.1	14.5	UKPX13C	UKPX13CD	99	3 29/32	7.8	–	–	–	–	–
UKP313	P313	UK313	HE2313X H2313X HS2313X	10.8 10.8 10.8	92.7	59.9	13.2	–	–	–	–	–	UKP313C	UKP313CD	122	4 13/16	13.2
UKP215	P215	UK215	HE2315X H2315X	7.5 7.5	67.4	48.3	14.5	UKP215C	UKP215CD	99	3 29/32	7.5	UKP215FC	UKP215FCD	124	4 7/8	9.5
UKPX15	PX15	UKX15	HE2315X H2315X	10.5 10.5	72.7	53.0	14.6	UKPX15C	UKPX15CD	109	4 9/32	10.5	–	–	–	–	–
UKP315	P315	UK315	HE2315X H2315X	14.9 14.9	113	77.2	13.2	–	–	–	–	–	UKP315C	UKP315CD	134	5 9/32	17.7
UKP216	P216	UK216	HE2316X H2316X	9.2 9.2	72.7	53.0	14.6	UKP216C	UKP216CD	109	4 9/32	9.2	UKP216FC	UKP216FCD	138	5 7/16	11.7
UKPX16	PX16	UKX16	HE2316X H2316X	15.4 15.4	84.0	61.9	14.5	UKPX16C	UKPX16CD	113	4 7/16	15.4	–	–	–	–	–
UKP316	P316	UK316	HE2316X H2316X	18.6 18.6	123	86.7	13.3	–	–	–	–	–	UKP316C	UKP316CD	138	5 7/16	21.7
UKP217	P217	UK217	H2317X HE2317X	11.0 11.0	84.0	61.9	14.5	UKP217C	UKP217CD	113	4 7/16	11.0	UKP217FC	UKP217FCD	142	5 19/32	13.8
UKPX17	PX17	UKX17	H2317X HE2317X	15.8 15.8	96.1	71.5	14.5	UKPX17C	UKPX17CD	123	4 27/32	15.8	–	–	–	–	–
UKP317	P317	UK317	H2317X HE2317X	20.2 20.2	133	96.8	13.3	–	–	–	–	–	UKP317C	UKP317CD	146	5 3/4	23.7
UKP218	P218	UK218	H2318X	13.8	96.1	71.5	14.5	UKP218C	UKP218CD	123	4 27/32	13.8	UKP218FC	UKP218FCD	152	6	18.8
UKPX18	PX18	UKX18	H2318X	18.6	109	81.9	14.4	–	–	–	–	–	UKPX18C	UKPX18CD	158	6 7/32	22.4
UKP318	P318	UK318	H2318X	22.8	143	107	13.3	–	–	–	–	–	UKP318C	UKP318CD	150	5 29/32	27.0
UKP319	P319	UK319	HE2319X H2319X	29.3 29.3	153	119	13.3	–	–	–	–	–	UKP319C	UKP319CD	162	6 3/8	34.0
UKPX20	PX20	UKX20	HE2320X H2320X	29.3 29.3	133	105	14.4	–	–	–	–	–	UKPX20C	UKPX20CD	186	7 5/16	34.3

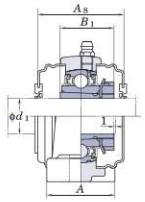
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF .... 205~210, X05~X09, 305~308
   A-R1/8 .... 211~218, X10~X20, 309~328
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables. (Example of Part No. : UKP206J + H2306X, UK206 + H2306X)
4. As for the triple seal type product (205 is the double seal type product), suffix code L3 (or L2) follows the Part No. of unit or bearing.
5. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter.
6. Representative examples of the forms of housing are indicated.
7. Housings of nodular graphite cast iron are also available.

UKP
Tapered bore (with adapter)
d_1 (90) ~ 125 mm

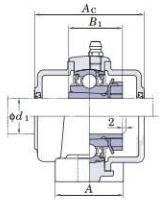




With Pressed Steel Cover



With Cast Iron Cover

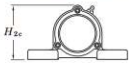


Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_s)

Unit: mm

Housing No.			ΔH_s
P205~P210	PX05~PX10	P305~P310	±0.15
P211~P218	PX11~PX18	P311~P318	±0.2
	PX20	P319~P328	±0.3

Forms and dimensions of H_{2c} of P205JE3 (housing with cast iron cover) are shown below.



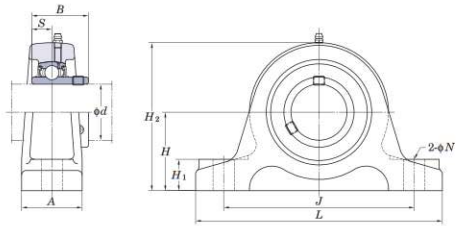
P205JE3 H_{2c} = 77 mm

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	L_1	B_1	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Adapter No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	One Side Closed Type	Dimension mm inch A_s	Mass kg	With Cast Iron Cover Unit No. Open Type	One Side Closed Type	Dimension mm inch A_c	Mass kg
90	3 1/2	5 33/64	19 9/32	4 23/32	14 31/32	1 13/32	1 31/32	1 13/16	10 3/4	5 1/2	3 13/16	1 1/8	UKP320	P320	UK320	HE2320X	34.8	173	141	13.2	–	–	– –	–	–	–	– –	–
		140	490	120	380	36	50	46	273	140	97	M30				H2320X	34.8				–	–	– –	–	UKP320C	UKP320CD	174 6 27/32	41.0
100	4	5 29/32	20 15/32	5 1/2	15 3/4	1 9/16	2 5/32	1 31/32	11 21/32	5 29/32	4 1/8	1 1/4	UKP322	P322	UK322	H2322X	43.9	205	180	13.2	–	–	– –	–	UKP322C	UKP322CD	188 7 13/32	50.8
		150	520	140	400	40	55	50	296	150	105	M33				HE2322X	43.9				–	–	– –	–	–	–	– –	–
110	–	6 19/64	22 7/16	5 1/2	17 23/32	1 9/16	2 5/32	1 31/32	12 7/16	6 5/16	4 13/32	1 1/4	UKP324	P324	UK324	H2324	55.7	207	185	13.5	–	–	– –	–	UKP324C	UKP324CD	196 7 23/32	66.0
		160	570	140	450	40	55	50	316	160	112	M33																
115	4 1/2	7 3/32	23 5/8	5 1/2	18 29/32	1 9/16	2 5/32	1 31/32	13 21/32	7 11/16	4 3/4	1 1/4	UKP326	P326	UK326	HE2326	71.9	229	214	13.6	–	–	– –	–	–	–	– –	–
		180	600	140	480	40	55	50	355	195	121	M33				H2326	71.9				–	–	– –	–	UKP326C	UKP326CD	214 8 7/16	85.2
125	–	7 7/8	24 13/32	5 1/2	19 11/16	1 9/16	2 5/32	2 3/8	15 15/32	7 9/32	5 3/32	1 1/4	UKP328	P328	UK328	H2328	92.5	253	246	13.6	–	–	– –	–	UKP328C	UKP328CD	222 8 3/4	109
		200	620	140	500	40	55	60	393	185	131	M33																

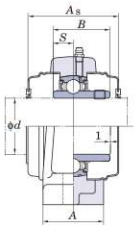
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 205~210, X05~X09, 305~308
   A-R1/8 ..... 211~218, X10~X20, 309~328
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables. (Example of Part No. : UKP206J + H2306X, UK206 + H2306X)
4. As for the triple seal type product (205 is the double seal type product), suffix code L3 (or L2) follows the Part No. of unit or bearing.
5. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter.
6. Representative examples of the forms of housing are indicated.
7. Housings of nodular graphite cast iron are also available.

FYH

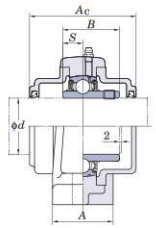
UCIP
Cylindrical bore (with set screws)
d 40 ~ 140 mm



With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_B), variations of tolerance of distance between centers of bolt holes (ΔJ_B) and variations of tolerance of bolt hole diameter (ΔN_B)

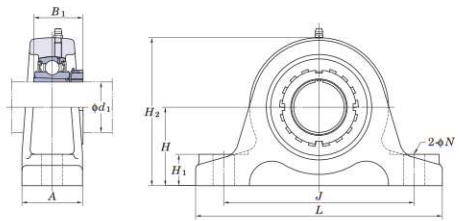
Unit: mm

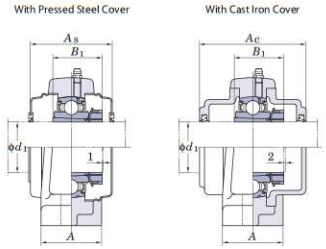
Housing No.		ΔH_B	ΔJ_B	ΔN_B
IP208~IP210		±0.15	±0.5	±0.2
IP211~IP213	IP313~IP318	±0.2	±0.7	
	IP319~IP328	±0.3		±0.3

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	H_1	H_2	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	One Side Closed Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Cover Unit No. Open Type	One Side Closed Type	Dimension mm / inch A_c	Mass kg
40	1 1/2	2 23/64	7 7/8	2 3/8	5 29/32	3/4	31/32	4 17/32	1.937	0.748	5/8	UCIP208-24	IP208	UC208-24	3.4	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
	1 9/16	60	200	60	150	19	25	115	49.2	19	M16	UCIP208-25		UC208-25	3.4				–	–	– –	–	–	–	– –	–
												UCIP208		UC208	3.4				UCIP208C	UCIP208CD	69 2 23/32	3.4	UCIP208FC	UCIP208FCD	86 3 3/8	4.2
45	1 5/8	2 3/4	8 9/32	2 3/8	6 19/64	3/4	31/32	5 1/32	1.937	0.748	5/8	UCIP209-26	IP209	UC209-26	3.9	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
	1 11/16	70	210	60	160	19	25	128	49.2	19	M16	UCIP209-27		UC209-27	3.9				–	–	– –	–	–	–	– –	–
	1 3/4											UCIP209-28		UC209-28	3.9				–	–	– –	–	–	–	– –	–
												UCIP209		UC209	3.9				UCIP209C	UCIP209CD	69 2 23/32	3.9	UCIP209FC	UCIP209FCD	88 3 15/32	4.7
50	1 7/8	2 3/4	8 21/32	2 3/8	6 11/16	3/4	1 3/32	5 3/16	2.031	0.748	5/8	UCIP210-30	IP210	UC210-30	4.8	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
	1 15/16	70	220	60	170	19	28	132	51.6	19	M16	UCIP210-31		UC210-31	4.8				–	–	– –	–	–	–	– –	–
												UCIP210		UC210	4.8				UCIP210C	UCIP210CD	74 2 29/32	4.8	UCIP210FC	UCIP210FCD	97 3 13/16	5.8
	2											UCIP210-32		UC210-32	4.8				–	–	– –	–	–	–	– –	–
55	2	3 5/32	9 1/16	2 3/8	7 3/32	3/4	1 3/32	5 13/16	2.189	0.874	5/8	UCIP211-32	IP211	UC211-32	5.3	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
	2 1/8	80	230	60	180	19	28	148	55.6	22.2	M16	UCIP211-34		UC211-34	5.3				–	–	– –	–	–	–	– –	–
												UCIP211		UC211	5.3				UCIP211C	UCIP211CD	76 3	5.3	UCIP211FC	UCIP211FCD	99 3 29/32	6.3
	2 3/16											UCIP211-35		UC211-35	5.3				–	–	– –	–	–	–	– –	–
60	2 1/4	3 5/32	10 1/4	2 3/4	7 7/8	7/8	1 3/16	6 3/32	2.563	1.000	3/4	UCIP212-36	IP212	UC212-36	7.2	52.4	36.2	14.4	–	–	– –	–	–	–	– –	–
		80	260	70	200	22	30	155	65.1	25.4	M20	UCIP212		UC212	7.2				UCIP212C	UCIP212CD	89 3 1/2	7.2	UCIP212FC	UCIP212FCD	114 4 1/2	8.7
	2 3/8											UCIP212-38		UC212-38	7.2				–	–	– –	–	–	–	– –	–
	2 7/16											UCIP212-39		UC212-39	7.2				–	–	– –	–	–	–	– –	–
65	2 1/2	3 35/64	11 1/32	2 3/4	8 21/32	7/8	1 3/16	6 25/32	2.563	1.000	3/4	UCIP213-40	IP213	UC213-40	8.8	57.2	40.1	14.4	–	–	– –	–	–	–	– –	–
		90	280	70	220	22	30	172	65.1	25.4	M20	UCIP213		UC213	8.8				UCIP213C	UCIP213CD	89 3 1/2	8.8	UCIP213FC	UCIP213FCD	114 4 1/2	10.5
	2 1/2	4 21/64	12 7/32	2 3/4	9 27/32	7/8	1 3/16	8 3/16	2.953	1.181	3/4	UCIP313-40	IP313	UC313-40	13.4	92.7	59.9	13.2	–	–	– –	–	–	–	– –	–
		110	310	70	250	22	30	208	75	30	M20	UCIP313		UC313	13.4				–	–	– –	–	UCIP313C	UCIP313CD	122 4 13/16	15.5
70	2 3/4	4 21/64	13	2 15/16	10 5/8	31/32	1 5/8	8 15/32	3.071	1.299	7/8	UCIP314-44	IP314	UC314-44	15.3	104	68.2	13.2	–	–	– –	–	–	–	– –	–
		110	330	75	270	25	35	215	78	33	M22	UCIP314		UC314	15.3				–	–	– –	–	UCIP314C	UCIP314CD	124 4 7/8	17.6
75	2 15/16	4 23/32	13 3/8	2 15/16	11 1/32	31/32	1 3/8	9 1/16	3.228	1.260	7/8	UCIP315-47	IP315	UC315-47	17.6	113	77.2	13.2	–	–	– –	–	–	–	– –	–
		120	340	75	280	25	35	230	82	32	M22	UCIP315		UC315	17.6				–	–	– –	–	UCIP315C	UCIP315CD	134 5 9/32	20.1
	3											UCIP315-48		UC315-48	17.6				–	–	– –	–	–	–	– –	–
80	–	4 23/32	13 25/32	3 11/32	11 27/64	31/32	1 9/16	9 1/4	3.386	1.339	7/8	UCIP316	IP316	UC316	20.3	123	86.7	13.3	–	–	– –	–	UCIP316C	UCIP316CD	138 5 7/16	23.2
		120	350	85	290	25	40	235	86	34	M22															
85	–	5 1/8	14 9/16	3 11/32	12 13/64	31/32	1 9/16	10 1/32	3.780	1.575	7/8	UCIP317	IP317	UC317	25.9	133	96.8	13.3	–	–	– –	–	UCIP317C	UCIP317CD	146 5 3/4	29.2
		130	370	85	310	25	40	255	96	40	M22															
90	3 1/2	5 1/8	15 3/4	3 11/32	13	1 5/32	1 25/32	10 1/4	3.780	1.575	1	UCIP318-56	IP318	UC318-56	28.6	143	107	13.3	–	–	– –	–	–	–	– –	–
		130	400	85	330	29	45	260	96	40	M27	UCIP318		UC318	28.6				–	–	– –	–	UCIP318C	UCIP318CD	150 5 29/32	32.4
95	–	5 29/32	16 5/32	3 11/32	13 25/64	1 5/32	1 25/32	11 7/32	4.055	1.614	1	UCIP319	IP319	UC319	31.7	153	119	13.3	–	–	– –	–	UCIP319C	UCIP319CD	162 6 3/8	36.0
		150	410	85	340	29	45	285	103	41	M27															
100	3 15/16	5 29/32	16 15/16	3 11/32	14 11/64	1 5/32	1 25/32	11 5/8	4.252	1.654	1	UCIP320	IP320	UC320	36.9	173	141	13.2	–	–	– –	–	UCIP320C	UCIP320CD	174 6 27/32	42.5
		150	430	85	360	29	45	295	108	42	M27	UCIP320-63		UC320-63	36.9				–	–	– –	–	–	–	– –	–
	4											UCIP320-64		UC320-64	36.9				–	–	– –	–	–	–	– –	–
110	–	6 11/16	19 9/32	3 15/16	16 9/64	1 1/4	1 31/32	13 3/16	4.606	1.811	1 1/8	UCIP322	IP322	UC322	52.4	205	180	13.2	–	–	– –	–	UCIP322C	UCIP322CD	188 7 13/32	59.2
		170	490	100	410	32	50	335	117	46	M30															
120	–	6 11/16	20 3/32	3 15/16	16 59/64	1 1/4	1 31/32	13 19/32	4.961	2.008	1 1/8	UCIP324	IP324	UC324	58.7	207	185	13.5	–	–	– –	–	UCIP324C	UCIP324CD	196 7 23/32	68.2
		170	510	100	430	32	50	345	126	51	M30															
130	–	7 7/8	21 21/32	4 11/32	18 1/2	1 1/4	1 31/32	15 11/32	5.315	2.126	1 1/8	UCIP326	IP326	UC326	76.2	229	214	13.6	–	–	– –	–	UCIP326C	UCIP326CD	214 8 7/16	88.3
		200	550	110	470	32	50	390	135	54	M30															
140	–	7 7/8	23 7/32	4 11/32	19 11/16	1 3/8	2 5/32	15 3/4	5.709	2.323	1 1/4	UCIP328	IP328	UC328	87.0	253	246	13.6	–	–	– –	–	UCIP328C	UCIP328CD	222 8 3/4	102
		200	590	110	500	35	55	400	145	59	M33															

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 208~210
   A-R1/8 ..... 211~213, 313~328
3. As for the triple seal type product, suffix code L3 follows the Part No. of unit or bearing.
   (Example of Part No. : UCIP208JL3, UC208L3)
4. As for the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

UKIP
Tapered bore (with adapter)
d_1 35 ~ 125 mm





Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{H_8}), variations of tolerance of distance between centers of bolt holes (Δ_{J_8}) and variations of tolerance of bolt hole diameter (Δ_{N_8})

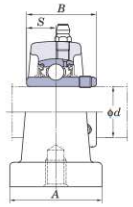
Unit: mm

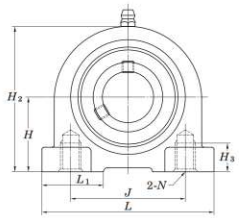
Housing No.		Δ_{H_8}	Δ_{J_8}	Δ_{N_8}
IP208~IP210		±0.15	±0.5	±0.2
IP211~IP213	IP313~IP318	±0.2	±0.7	
	IP319~IP328	±0.3		±0.3

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm d_1	H	L	A	J	N	H_1	H_2	B_1	Bolt Size inch / mm	Unit No.	Housing No.	Bearing No.	Adapter No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover: Unit No. Open Type	One Side Closed Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Cover: Unit No. Open Type	One Side Closed Type	Dimension mm / inch A_c	Mass kg
35	1 1/4	2 23/64	7 7/8	2 3/8	5 29/32	3/4	31/32	4 17/32	1 13/16	5/8	UKIP208	IP208	UK208	HE2308X		3.5	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
	1 3/8	60	200	60	150	19	25	115	46	M16				HS2308X		3.5				–	–	– –	–	–	–	– –	–
														H2308X		3.5				UKIP208C	UKIP208CD	69 2 23/32	3.5	UKIP208FC	UKIP208FCD	86 3 3/8	4.4
40	1 1/2	2 3/4	8 9/32	2 3/8	6 19/64	3/4	31/32	5 1/32	1 31/32	5/8	UKIP209	IP209	UK209	HE2309X		4.0	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
		70	210	60	160	19	25	128	50	M16				H2309X		4.0				UKIP209C	UKIP209CD	69 2 23/32	4.0	UKIP209FC	UKIP209FCD	88 3 15/32	4.9
45	1 3/4	2 3/4	8 21/32	2 3/8	6 11/16	3/4	1 3/32	5 3/16	2 3/32	5/8	UKIP210	IP210	UK210	HE2310X		4.8	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
		70	220	60	170	19	28	132	55	M16				H2310X		4.8				UKIP210C	UKIP210CD	74 2 29/32	4.8	UKIP210FC	UKIP210FCD	97 3 13/16	5.8
50	1 7/8	3 5/32	9 1/16	2 3/8	7 3/32	3/4	1 3/32	5 13/16	2 3/16	5/8	UKIP211	IP211	UK211	HS2311X		5.3	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
		80	230	60	180	19	28	148	59	M16				H2311X		5.3				UKIP211C	UKIP211CD	76 3	5.3	UKIP211FC	UKIP211FCD	99 3 29/32	5.9
	2													HE2311X		5.3				–	–	– –	–	–	–	– –	–
55	2 1/8	3 5/32	10 1/4	2 3/4	7 7/8	7/8	1 3/16	6 3/32	2 7/16	3/4	UKIP212	IP212	UK212	HS2312X		7.1	52.4	36.2	14.4	–	–	– –	–	–	–	– –	–
		80	260	70	200	22	30	155	62	M20				H2312X		7.1				UKIP212C	UKIP212CD	89 3 1/2	7.1	UKIP212FC	UKIP212FCD	114 4 1/2	8.6
60	2 1/4	3 35/64	11 1/32	2 3/4	8 21/32	7/8	1 3/16	6 25/32	2 9/16	3/4	UKIP213	IP213	UK213	HE2313X		8.7	57.2	40.1	14.4	–	–	– –	–	–	–	– –	–
		90	280	70	220	22	30	172	65	M20				H2313X		8.7				UKIP213C	UKIP213CD	89 3 1/2	8.7	UKIP213FC	UKIP213FCD	114 4 1/2	10.4
	2 3/8													HS2313X		8.7				–	–	– –	–	–	–	– –	–
	2 1/4	4 21/64	12 7/32	2 3/4	9 27/32	7/8	1 3/16	8 3/16	2 9/16	3/4	UKIP313	IP313	UK313	HE2313X		13.5	92.7	59.9	13.2	–	–	– –	–	–	–	– –	–
		110	310	70	250	22	30	208	65	M20				H2313X		13.5				–	–	– –	–	UKIP313C	UKIP313CD	122 4 13/16	15.7
	2 3/8													HS2313X		13.5				–	–	– –	–	–	–	– –	–
65	2 1/2	4 23/32	13 3/8	2 15/16	11 1/32	31/32	1 3/8	9 1/16	2 7/8	7/8	UKIP315	IP315	UK315	HE2315X		17.7	113	77.2	13.2	–	–	– –	–	–	–	– –	–
		120	340	75	280	25	35	230	73	M22				H2315X		17.7				–	–	– –	–	UKIP315C	UKIP315CD	134 5 9/32	20.5
70	2 3/4	4 23/32	13 25/32	3 11/32	11 27/64	31/32	1 9/16	9 1/4	3 1/16	7/8	UKIP316	IP316	UK316	HE2316X		20.4	123	86.7	13.3	–	–	– –	–	–	–	– –	–
		120	350	85	290	25	40	235	78	M22				H2316X		20.4				–	–	– –	–	UKIP316C	UKIP316CD	138 5 7/16	23.5
75		5 1/8	14 9/16	3 11/32	12 13/64	31/32	1 9/16	10 1/32	3 7/32	7/8	UKIP317	IP317	UK317	H2317X		25.7	133	96.8	13.3	–	–	– –	–	UKIP317C	UKIP317CD	146 5 3/4	29.2
	3	130	370	85	310	25	40	255	82	M22				HE2317X		25.7				–	–	– –	–	–	–	– –	–
80	–	5 1/8	15 3/4	3 11/32	13	1 5/32	1 25/32	10 1/4	3 3/8	1	UKIP318	IP318	UK318	H2318X		28.7	143	107	13.3	–	–	– –	–	UKIP318C	UKIP318CD	150 5 29/32	32.9
		130	400	85	330	29	45	260	86	M27																	
85	3 1/4	5 29/32	16 5/32	3 11/32	13 25/64	1 5/32	1 25/32	11 7/32	3 17/32	1	UKIP319	IP319	UK319	HE2319X		32.0	153	119	13.3	–	–	– –	–	–	–	– –	–
		150	410	85	340	29	45	285	90	M27				H2319X		32.0				–	–	– –	–	UKIP319C	UKIP319CD	162 6 3/8	36.7
90	3 1/2	5 29/32	16 15/16	3 11/32	14 11/64	1 5/32	1 25/32	11 5/8	3 13/16	1	UKIP320	IP320	UK320	HE2320X		36.6	173	141	13.2	–	–	– –	–	–	–	– –	–
		150	430	85	360	29	45	295	97	M27				H2320X		36.6				–	–	– –	–	UKIP320C	UKIP320CD	174 6 27/32	42.8
100		6 11/16	19 9/32	3 15/16	16 9/64	1 1/4	1 31/32	13 3/16	4 1/8	1 1/8	UKIP322	IP322	UK322	H2322X		52.2	205	180	13.2	–	–	– –	–	UKIP322C	UKIP322CD	188 7 13/32	59.1
	4	170	490	100	410	32	50	335	105	M30				HE2322X		52.2				–	–	– –	–	–	–	– –	–
110	–	6 11/16	20 3/32	3 15/16	16 59/64	1 1/4	1 31/32	13 19/32	4 13/32	1 1/8	UKIP324	IP324	UK324	H2324		59.0	207	185	13.5	–	–	– –	–	UKIP324C	UKIP324CD	196 7 23/32	69.3
		170	510	100	430	32	50	345	112	M30																	
115	4 1/2	7 7/8	21 21/32	4 11/32	18 1/2	1 1/4	1 31/32	15 11/32	4 3/4	1 1/8	UKIP326	IP326	UK326	HE2326		76.0	229	214	13.6	–	–	– –	–	–	–	– –	–
		200	550	110	470	32	50	390	121	M30				H2326		76.0				–	–	– –	–	UKIP326C	UKIP326CD	214 8 7/16	89.3
125	–	7 7/8	23 7/32	4 11/32	19 11/16	1 3/8	2 5/32	15 3/4	4 5/32	1 1/4	UKIP328	IP328	UK328	H2328		87.0	253	246	13.6	–	–	– –	–	UKIP328C	UKIP328CD	222 8 3/4	104
		200	590	110	500	35	55	400	131	M33																	

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 208~210
   A-R1/8 ..... 211~213, 313~328
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables.
   (Example of Part No. : UKIP208J + H2308X, UK208 + H2308X)
4. As for the triple seal type product, suffix code L3 follows the Part No. of unit or bearing.
   (Example of Part No. : UKIP208JL3 + H2308X, UK208L3 + H2308X)
5. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter.
6. Housings of nodular graphite cast iron are also available.

UCPA
Cylindrical bore (with set screws)
d 12 ~ 50 mm





Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_6) and variations of tolerance of distance between centers of bolt holes (ΔJ_6)

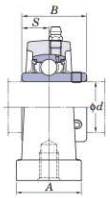
Unit: mm

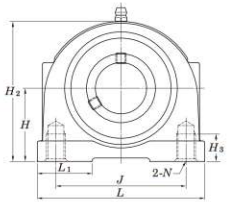
Housing No.	ΔH_6	ΔJ_6
PA204~PA210	±0.15	±0.5

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	H_2	H_3	L_1	B	S	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12												UCPA201	PA204	UC201	12.8	6.65	13.2	0.64
	1/2											UCPA201-8		UC201-8				
15												UCPA202		UC202				0.62
	5/8	1 3/16	3	1 9/16	2 3/64		2 3/8	1/2	1 1/16	1.220	0.500	UCPA202-10		UC202-10				
		30.2	76	40	52	M10×1.5	60	13	27	31	12.7							
17												UCPA203		UC203				0.61
	3/4											UCPA204-12		UC204-12				
20												UCPA204		UC204				0.59
25	7/8											UCPA205-14	PA205	UC205-14	14.0	7.85	13.9	0.83
	15/16	1 7/16	3 5/16	1 25/32	2 13/64		2 25/32	1/2	1 3/16	1.343	0.563	UCPA205-15		UC205-15				
		36.5	84	45	56	M10×1.5	71	13	30	34.1	14.3	UCPA205		UC205				
	1											UCPA205-16		UC205-16				
30	1 1/8											UCPA206-18	PA206	UC206-18	19.5	11.3	13.9	1.2
		1 11/16	3 11/16	1 31/32	2 19/32		3 5/16	23/32	1 13/32	1.500	0.626	UCPA206		UC206				
	1 3/16	42.9	94	50	66	M14×2	84	18	36	38.1	15.9	UCPA206-19		UC206-19				
	1 1/4											UCPA206-20		UC206-20				
35	1 1/4											UCPA207-20	PA207	UC207-20	25.7	15.4	13.9	1.7
	1 5/16											UCPA207-21		UC207-21				
	1 3/8	1 7/8	4 11/32	2 5/32	3 5/32		3 21/32	25/32	1 5/8	1.689	0.689	UCPA207-22		UC207-22				
		47.6	110	55	80	M14×2	93	20	41	42.9	17.5	UCPA207		UC207				
	1 7/16											UCPA207-23		UC207-23				
40	1 1/2											UCPA208-24	PA208	UC208-24	29.1	17.8	14.0	2.0
	1 9/16	1 15/16	4 9/16	2 9/32	3 5/16		3 27/32	25/32	1 5/8	1.937	0.748	UCPA208-25		UC208-25				
		49.2	116	58	84	M14×2	98	20	41	49.2	19	UCPA208		UC208				
45	1 5/8											UCPA209-26	PA209	UC209-26	34.1	21.3	14.0	2.2
	1 11/16	2 9/64	4 23/32	2 3/8	3 35/64		4 3/16	31/32	1 21/32	1.937	0.748	UCPA209-27		UC209-27				
	1 3/4	54.2	120	60	90	M14×2	106	25	42	49.2	19	UCPA209-28		UC209-28				
												UCPA209		UC209				
50	1 7/8											UCPA210-30	PA210	UC210-30	35.1	23.3	14.4	2.8
	1 15/16	2 1/4	5 1/8	2 17/32	3 45/64		4 7/16	31/32	1 27/32	2.031	0.748	UCPA210-31		UC210-31				
		57.2	130	64	94	M16×2	113	25	47	51.6	19	UCPA210		UC210				
	2											UCPA210-32		UC210-32				

Remarks
1. In Part No. of unit, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is A-1/4-28UNF.
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (or L2) follows Part No. of unit or bearing. (Example of Part No. : UCPA206JL3, UC206L3)
4. As for the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Tapered bore (with adapter) type products are also available. (Example of Part No. : UKPA205J + H2305X, UK205 + H2305X)
6. Housings of nodular graphite cast iron are also available.

UCPAN
Cylindrical bore (with set screws)
d 20 ~ 35 mm





Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_0) and variations of tolerance of distance between centers of bolt holes (ΔJ_0)

Unit: mm

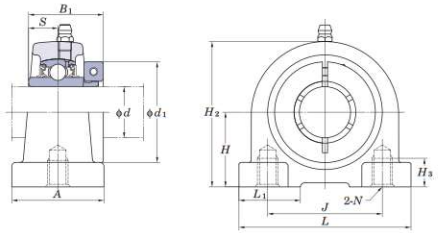
Housing No.	ΔH_0	ΔJ_0
PAN204~PAN207	±0.15	±0.5

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	H_2	H_3	L_1	B	S	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
20	3/4	1 5/16 33.3	2 9/16 65	1 1/4 32	2 50.8	3/8-16UNC	2 17/32 64	1/2 12.7	7/8 22	1.220 31	0.500 12.7	UCPAN204-12 UCPAN204	PAN204	UC204-12 UC204	12.8	6.65	13.2	0.55
25	7/8 15/16 1	1 7/16 36.5	2 3/4 70	1 13/32 36	2 50.8	3/8-16UNC	2 3/4 70	1/2 13	15/16 24	1.343 34.1	0.563 14.3	UCPAN205-14 UCPAN205-15 UCPAN205 UCPAN205-16	PAN205	UC205-14 UC205-15 UC205 UC205-16	14.0	7.85	13.9	0.65
30	1 1/8 1 3/16 1 1/4	1 11/16 42.9	3 27/32 98	1 1/2 38	3 76.2	7/16-14UNC	3 7/32 82	5/8 16	1 11/32 34	1.500 38.1	0.626 15.9	UCPAN206-18 UCPAN206 UCPAN206-19 UCPAN206-20	PAN206	UC206-18 UC206 UC206-19 UC206-20	19.5	11.3	13.9	1.3
35	1 1/4 1 5/16 1 3/8 1 7/16	1 7/8 47.6	4 11/32 110	1 7/8 48	3 1/4 82.6	1/2-13UNC	3 21/32 93	3/4 19	1 3/32 28	1.689 42.9	0.689 17.5	UCPAN207-20 UCPAN207-21 UCPAN207-22 UCPAN207 UCPAN207-23	PAN207	UC207-20 UC207-21 UC207-22 UC207 UC207-23	25.7	15.4	13.9	1.8

Remarks
1. In Part No. of unit, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is A-1/4-28UNF.
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (or L2) follows Part No. of unit or bearing. (Example of Part No.: UCPAN206JL3, UC206L3)
4. As for the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Tapered bore (with adapter) type products are also available. (Example of Part No.: UKPAN205J + H2305X, UK205 + H2305X)
6. Housings of nodular graphite cast iron are also available.

FYH

NCPA
Cylindrical bore
(with concentric locking collar)
d 20 ~ 50 mm



Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs}) and variations of tolerance of distance between centers of bolt holes (Δ_{As})

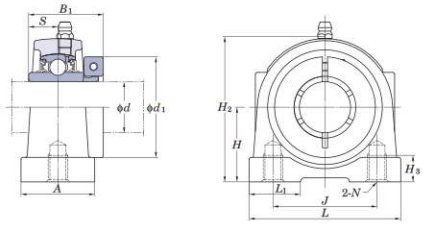
Unit: mm

Housing No.	Δ_{Hs}	Δ_{As}
PA204~PA210	±0.15	±0.5

Shaft Dia. mm / inch d	Dimensions inch / mm H	L	A	J	N	H_2	H_3	L_1	B_1	S	d_1	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
20	3/4	1 3/16	3	1 9/16	2 3/64		2 3/8	1/2	1 1/16	1 9/32	0.500	1 3/4	NCPA204-12	PA204	NC204-12	12.8	6.65	13.2	0.73
		30.2	76	40	52	M10×1.5	60	13	27	32.5	12.7	44.5	NCPA204		NC204				
25	7/8												NCPA205-14	PA205	NC205-14	14.0	7.85	13.9	1.0
	15/16	1 7/16	3 5/16	1 25/32	2 13/64		2 25/32	1/2	1 3/16	1 7/16	0.563	1 15/16	NCPA205-15		NC205-15				
		36.5	84	45	56	M10×1.5	71	13	30	36.5	14.3	49.2	NCPA205		NC205				
	1												NCPA205-16		NC205-16				
30	1 1/8												NCPA206-18	PA206	NC206-18	19.5	11.3	13.9	1.4
		1 11/16	3 11/16	1 31/32	2 19/32		3 5/16	23/32	1 13/32	1 9/16	0.626	2 3/16	NCPA206		NC206				
	1 3/16	42.9	94	50	66	M14×2	84	18	36	39.7	15.9	55.6	NCPA206-19		NC206-19				
	1 1/4												NCPA206-20		NC206-20				
35	1 1/4	1 7/8	4 11/32	2 5/32	3 5/32		3 21/32	25/32	1 5/8	1 3/4	0.689	2 7/16	NCPA207-20	PA207	NC207-20	25.7	15.4	13.9	2.0
		47.6	110	55	80	M14×2	93	20	41	44.5	17.5	61.9							
	1 3/8												NCPA207-22	PA207	NC207-22	25.7	15.4	13.9	2.0
		1 7/8	4 11/32	2 5/32	3 5/32		3 21/32	25/32	1 5/8	1 3/4	0.689	2 9/16	NCPA207		NC207				
		47.6	110	55	80	M14×2	93	20	41	44.5	17.5	65.1							
	1 7/16												NCPA207-23		NC207-23				
40	1 1/2	1 15/16	4 9/16	2 9/32	3 5/16		3 27/32	25/32	1 5/8	2	0.748	2 11/16	NCPA208-24	PA208	NC208-24	29.1	17.8	14.0	2.4
		49.2	116	58	84	M14×2	98	20	41	50.8	19	68.3	NCPA208		NC208				
45	1 5/8	2 9/64	4 23/32	2 3/8	3 35/64		4 3/16	31/32	1 21/32	2	0.748	2 13/16	NCPA209-26	PA209	NC209-26	34.1	21.3	14.0	2.6
		54.2	120	60	90	M14×2	106	25	42	50.8	19	71.4							
	1 11/16												NCPA209-27	PA209	NC209-27	34.1	21.3	14.0	2.6
	1 3/4	2 9/64	4 23/32	2 3/8	3 35/64		4 3/16	31/32	1 21/32	2	0.748	2 15/16	NCPA209-28		NC209-28				
		54.2	120	60	90	M14×2	106	25	42	50.8	19	74.6	NCPA209		NC209				
50	1 15/16												NCPA210-31	PA210	NC210-31	35.1	23.3	14.4	3.4
		2 1/4	5 1/8	2 17/32	3 45/64		4 7/16	31/32	1 27/32	2 3/32	0.748	3 3/8	NCPA210		NC210				
		57.2	130	64	94	M16×2	113	25	47	53.1	19	85.7							
	2												NCPA210-32		NC210-32				

Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is A-1/4-28UNF.
3. As for the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

NCPAN
Cylindrical bore
(with concentric locking collar)
d 20 ~ 35 mm



Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs}) and variations of tolerance of distance between centers of bolt holes (Δ_{Js})

Unit: mm

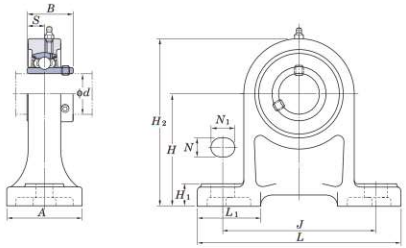
Housing No.	Δ_{Hs}	Δ_{Js}
PAN204~PAN207	±0.15	±0.5

Shaft Dia. mm / inch d	Dimensions inch / mm H	L	A	J	N	H_2	H_3	L_1	B_1	S	d_1	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
20	3/4	1 5/16	2 9/16	1 1/4	2	3/8-16UNC	2 17/32	1/2	7/8	1 9/32	0.500	1 3/4	NCPAN204-12	PAN204	NC204-12	12.8	6.65	13.2	0.7
		33.3	65	32	50.8		64	12.7	22	32.5	12.7	44.5	NCPAN204		NC204				
25	7/8	1 7/16	2 3/4	1 13/32	2	3/8-16UNC	2 3/4	1/2	15/16	1 7/16	0.563	1 15/16	NCPAN205-14	PAN205	NC205-14	14.0	7.85	13.9	0.85
	15/16	36.5	70	36	50.8		70	13	24	36.5	14.3	49.2	NCPAN205-15		NC205-15				
													NCPAN205		NC205				
	1												NCPAN205-16		NC205-16				
30	1 1/8	1 11/16	3 27/32	1 1/2	3	7/16-14UNC	3 7/32	5/8	1 11/32	1 9/16	0.626	2 3/16	NCPAN206-18	PAN206	NC206-18	19.5	11.3	13.9	1.5
		42.9	98	38	76.2		82	16	34	39.7	15.9	55.6	NCPAN206		NC206				
	1 3/16												NCPAN206-19		NC206-19				
	1 1/4												NCPAN206-20		NC206-20				
35	1 1/4	1 7/8	4 1/32	1 7/8	3 1/4	1/2-13UNC	3 21/32	3/4	1 3/32	1 3/4	0.689	2 7/16	NCPAN207-20	PAN207	NC207-20	25.7	15.4	13.9	2.1
		47.6	110	48	82.6		93	19	28	44.5	17.5	61.9							
	1 3/8	1 7/8	4 1/32	1 7/8	3 1/4	1/2-13UNC	3 21/32	3/4	1 3/32	1 3/4	0.689	2 9/16	NCPAN207-22	PAN207	NC207-22	25.7	15.4	13.9	2.1
		47.6	110	48	82.6		93	19	28	44.5	17.5	65.1	NCPAN207		NC207				
	1 7/16												NCPAN207-23		NC207-23				

Remarks
1. In Part No. of unit, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is A-1/4-28UNF.
3. As for the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

FYH

UCPH
Cylindrical bore (with set screws)
d 12 ~ 50 mm



ROYSE
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Desde 1979

Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_1)

Unit: mm

Housing No.	ΔH_1
PH204~PH210	±0.15

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	L_1	B	S	Bolt Size inch / mm	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12														UCPH201	PH204	UC201	12.8	6.65	13.2	0.96
	1/2													UCPH201-8		UC201-8				
15		2 3/4	5	1 9/16	3 3/4	1/2	3/4	19/32	3 31/32	1 13/16	1.220	0.500	3/8	UCPH202		UC202				0.94
	5/8	70	127	40	95	13	19	15	101	46	31	12.7	M10	UCPH202-10		UC202-10				
17														UCPH203		UC203				0.93
	3/4													UCPH204-12		UC204-12				
20														UCPH204		UC204				0.91
	7/8													UCPH205-14	PH205	UC205-14	14.0	7.85	13.9	1.2
	15/16	3 5/32	5 1/2	1 31/32	4 1/8	1/2	3/4	5/8	4 1/2	1 15/16	1.343	0.563	3/8	UCPH205-15		UC205-15				
25		80	140	50	105	13	19	16	114	49	34.1	14.3	M10	UCPH205		UC205				
	1													UCPH205-16		UC205-16				
	1 1/8													UCPH206-18	PH206	UC206-18	19.5	11.3	13.9	1.6
30		3 35/64	6 1/2	1 31/32	4 3/4	21/32	13/16	23/32	5 1/8	2 7/32	1.500	0.626	1/2	UCPH206		UC206				
	1 3/16	90	165	50	121	17	21	18	130	56	38.1	15.9	M14	UCPH206-19		UC206-19				
	1 1/4													UCPH206-20		UC206-20				
	1 1/4													UCPH207-20	PH207	UC207-20	25.7	15.4	13.9	2.0
	1 5/16													UCPH207-21		UC207-21				
35	1 3/8	3 47/64	6 5/16	2 3/8	5	21/32	13/16	23/32	5 1/2	2 1/8	1.689	0.689	1/2	UCPH207-22		UC207-22				
		95	167	60	127	17	21	18	140	54	42.9	17.5	M14	UCPH207		UC207				
	1 7/16													UCPH207-23		UC207-23				
	1 1/2													UCPH208-24	PH208	UC208-24	29.1	17.8	14.0	2.7
40	1 9/16	3 15/16	7 1/4	2 3/4	5 13/32	21/32	13/16	25/32	5 29/32	2 1/4	1.937	0.748	1/2	UCPH208-25		UC208-25				
		100	184	70	137	17	21	20	150	57	49.2	19	M14	UCPH208		UC208				
	1 5/8													UCPH209-26	PH209	UC209-26	34.1	21.3	14.0	3.0
	1 11/16	4 9/64	7 11/32	2 3/4	5 3/4	21/32	13/16	25/32	6 7/32	2 9/32	1.937	0.748	1/2	UCPH209-27		UC209-27				
45	1 3/4	105	190	70	146	17	21	20	158	58	49.2	19	M14	UCPH209-28		UC209-28				
														UCPH209		UC209				
	1 7/8													UCPH210-30	PH210	UC210-30	35.1	23.3	14.4	3.5
	1 15/16	4 21/64	8 1/8	2 3/4	6 1/4	25/32	7/8	7/8	6 1/2	2 9/16	2.031	0.748	5/8	UCPH210-31		UC210-31				
50		110	206	70	159	20	22	22	165	65	51.6	19	M16	UCPH210		UC210				
	2													UCPH210-32		UC210-32				

Remarks
1. In Part No. of unit, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is A-1/4-28UNF.
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (or L2) follows Part No. of unit or bearing. (Example of Part No. : UCPH206JL3, UC206L3)
4. As for the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Tapered bore (with adapter) type products are also available. (Example of Part No. : UKPH205J + H2305X, UK205 + H2305X)

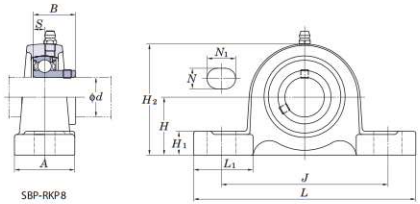
FYH

SBP-RKP8
Cylindrical bore
(with set screws)
d 20 ~ 55 mm

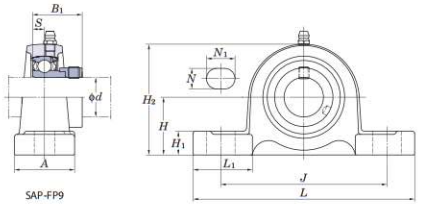
SAP-FP9
Cylindrical bore
(with eccentric locking collar)

SBP-RKP8

SAP-FP9



SBP-RKP8



SAP-FP9

Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_1)

Unit: mm

Housing No.	ΔH_1
P204~P210	±0.15
P211	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	L_1	B	B_1	SBP-RKP8 S	SAP-FP9 S	Bolt Size inch / mm	Unit No.	Bearing No.	Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg SBP-RKP8	SAP-FP9
d																									
20	3/4	1 5/16	5	1 1/2	3 3/4	1/2	23/32	5/8	2 9/16	1 13/32	0.984	1.220	0.276	0.295	3/8	**SBP204-12RKP8**	SB204-12RKP8	**SAP204-12FP9**	SA204-12FP9	P204	12.8	6.65	13.2	0.65	0.69
		33.3	127	38	95	13	18	16	65	36	25	31.0	7	7.5	M10	**SBP204RKP8**	SB204RKP8	**SAP204FP9**	SA204FP9					0.66	0.7
25	7/8															**SBP205-14RKP8**	SB205-14RKP8	**SAP205-14FP9**	SA205-14FP9	P205	14.0	7.85	13.9	0.78	0.82
	15/16	1 7/16	5 1/2	1 1/2	4 1/8	1/2	23/32	5/8	2 3/4	1 1/2	1.063	1.220	0.295	0.295	3/8	**SBP205-15RKP8**	SB205-15RKP8	**SAP205-15FP9**	SA205-15FP9					0.76	0.81
	1	36.5	140	38	105	13	18	16	70	38	27	31.0	7.5	7.5	M10	**SBP205-16RKP8**	SB205-16RKP8	**SAP205-16FP9**	SA205-16FP9					0.8	0.85
																SBP205RKP8	SB205RKP8	**SAP205FP9**	SA205FP9					0.8	0.85
30	1 1/8															**SBP206-18RKP8**	SB206-18RKP8	**SAP206-18FP9**	SA206-18FP9	P206	19.5	11.3	13.9	1.24	1.31
	1 3/16	1 11/16	5 1/2	1 7/8	4 3/4	21/32	13/16	21/32	3 5/16	1 7/8	1.181	1.906	0.315	0.354	1/2	**SBP206-19RKP8**	SB206-19RKP8	**SAP206-19FP9**	SA206-19FP9					1.26	1.33
	1 1/4	42.9	165	48	121	17	21	17	84	48	30	35.7	8	9.0	M14	**SBP206-20RKP8**	SB206-20RKP8	**SAP206-20FP9**	SA206-20FP9					1.29	1.36
																SBP206RKP8	SB206RKP8	**SAP206FP9**	SA206FP9					1.26	1.33
35	1 1/4															**SBP207-20RKP8**	SB207-20RKP8	**SAP207-20FP9**	SA207-20FP9	P207	25.7	15.4	13.9	1.69	1.76
	1 5/16															–	–	**SAP207-21FP9**	SA207-21FP9					–	1.72
	1 3/8	1 7/8	6 9/16	1 7/8	5	21/32	13/16	23/32	3 3/4	1 27/32	1.260	1.531	0.335	0.374	1/2	**SBP207-22RKP8**	SB207-22RKP8	**SAP207-22FP9**	SA207-22FP9					1.61	1.76
	1 7/16	47.6	167	48	127	17	21	18	95	47	32	38.9	8.5	9.5	M14	**SBP207-23RKP8**	SB207-23RKP8	**SAP207-23FP9**	SA207-23FP9					1.64	1.79
																SBP207RKP8	SB207RKP8	**SAP207FP9**	SA207FP9					1.61	1.76
40	1 1/2															**SBP208-24RKP8**	SB208-24RKP8	**SAP208-24FP9**	SA208-24FP9	P208	29.1	17.8	14.0	1.87	2.02
	1 9/16	1 15/16	7 1/4	2 1/8	5 13/32	21/32	13/16	23/32	3 27/32	2 3/32	1.339	1.720	0.354	0.433	1/2	–	–	**SAP208-25FP9**	SA208-25FP9					–	2.06
		49.2	184	54	137	17	21	18	98	53	34	43.7	9	11.0	M14	**SBP208RKP8**	SB208RKP8	**SAP208FP9**	SA208FP9					1.92	2.07
45	1 5/8															–	–	**SAP209-26FP9**	SA209-26FP9	P209	34.1	21.3	14.0	–	2.26
	1 11/16	2 1/8	7 15/32	2 1/8	5 3/4	21/32	13/16	25/32	4 3/16	2 5/32	–	1.720	–	0.433	1/2	–	–	**SAP209-27FP9**	SA209-27FP9					–	2.31
	1 3/4	54	190	54	146	17	21	20	106	55	–	43.7	–	11.0	M14	–	–	**SAP209-28FP9**	SA209-28FP9					–	2.35
																–	–	**SAP209FP9**	SA209FP9					–	2.37
50	1 7/8															–	–	**SAP210-30FP9**	SA210-30FP9	P210	35.1	23.3	14.4	–	2.87
	1 15/16	2 1/4	8 1/8	2 3/8	6 1/4	25/32	7/8	13/16	4 7/16	2 3/8	–	1.720	–	0.433	5/8	–	–	**SAP210-31FP9**	SA210-31FP9					–	2.91
		57.2	206	60	159	20	22	21	113	60	–	43.7	–	11.0	M16	–	–	**SAP210FP9**	SA210FP9					–	2.94
55	2															–	–	**SAP211-32FP9**	SA211-32FP9	P211	43.4	29.4	14.4	–	3.52
	2 1/8	2 1/2	8 5/8	2 3/8	6 23/32	25/32	7/8	29/32	4 29/32	2 3/4	–	1.906	–	0.472	5/8	–	–	**SAP211-34FP9**	SA211-34FP9					–	3.61
	2 3/16	63.5	219	60	171	20	22	23	125	70	–	48.4	–	12.0	M16	–	–	**SAP211-35FP9**	SA211-35FP9					–	3.74
																–	–	**SAP211FP9**	SA211FP9					–	3.71

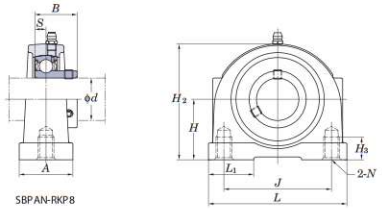
Remarks
1. In Part No. of unit, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 204~210
   A-R1/8 211
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Representative examples of the forms of housing are indicated.
5. Housings of nodular graphite cast iron are also available.

SBPAN-RKP8
Cylindrical bore
(with set screws)
d 20 ~ 35 mm

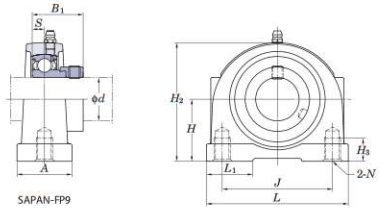
SAPAN-FP9
Cylindrical bore
(with eccentric locking collar)

SBPAN-RKP8

SAPAN-FP9



SBPAN-RKP8



SAPAN-FP9

Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_0) and variations of tolerance of distance between centers of bolt holes (ΔA_0)

Unit: mm

Housing No.	ΔH_0	ΔA_0
PAN204~PAN207	±0.15	±0.5

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	H_2	H_3	L_1	B	B_1	SBPAN-RKP8 S	SAPAN-FP9 S	Unit No.	Bearing No.	Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg SBPAN-RKP8	SAPAN-FP9
20	3/4	1 5/16	2 9/16	1 1/4	2	3/8-16UNC	2 17/32	1/2	7/8	0.984	1.220	0.276	0.295	SBPAN204-12RKP8	SB204-12RKP8	SAPAN204-12FP9	SA204-12FP9	PAN204	12.8	6.65	13.2	0.56	0.56
		33.3	65	32	50.8		64	12.7	22	25	31	7	7.5	SBPAN204RKP8	SB204RKP8	SAPAN204FP9	SA204FP9					0.56	0.56
25	7/8	1 7/16	2 3/4	1 13/32	2	3/8-16UNC	2 3/4	1/2	15/16	1.063	1.220	0.295	0.295	SBPAN205-14RKP8	SB205-14RKP8	SAPAN205-14FP9	SA205-14FP9	PAN205	14.0	7.85	13.9	0.63	0.63
	15/16													SBPAN205-15RKP8	SB205-15RKP8	SAPAN205-15FP9	SA205-15FP9					0.66	0.66
	1	36.5	70	36	50.8		70	13	24	27	31	7.5	7.5	SBPAN205-16RKP8	SB205-16RKP8	SAPAN205-16FP9	SA205-16FP9					0.64	0.64
														SBPAN205RKP8	SB205RKP8	SAPAN205FP9	SA205FP9					0.63	0.63
30	1 1/8	1 11/16	3 27/32	1 1/2	3	7/16-14UNC	3 7/32	5/8	1 11/32	1.181	1.906	0.315	0.354	SBPAN206-18RKP8	SB206-18RKP8	SAPAN206-18FP9	SA206-18FP9	PAN206	19.5	11.3	13.9	1.32	1.32
	1 3/16													SBPAN206-19RKP8	SB206-19RKP8	SAPAN206-19FP9	SA206-19FP9					1.34	1.34
	1 1/4	42.9	98	38	76.2		82	16	34	30	35.7	8	9	SBPAN206-20RKP8	SB206-20RKP8	SAPAN206-20FP9	SA206-20FP9					1.32	1.32
														SBPAN206RKP8	SB206RKP8	SAPAN206FP9	SA206FP9					1.3	1.3
35	1 1/4	1 7/8	4 11/32	1 7/8	3 1/4	1/2-13UNC	3 21/32	3/4	1 3/32	1.260	1.531	0.335	0.374	SBPAN207-20RKP8	SB207-20RKP8	SAPAN207-20FP9	SA207-20FP9	PAN207	25.7	15.4	13.9	1.78	1.78
	1 5/16													–	–	SAPAN207-21FP9	SA207-21FP9					–	1.84
	1 3/8													SBPAN207-22RKP8	SB207-22RKP8	SAPAN207-22FP9	SA207-22FP9					1.81	1.81
	1 7/16	47.6	110	48	82.6		93	19	28	32	38.9	8.5	9.5	SBPAN207-23RKP8	SB207-23RKP8	SAPAN207-23FP9	SA207-23FP9					1.78	1.78
														SBPAN207RKP8	SB207RKP8	SAPAN207FP9	SA207FP9					1.75	1.75

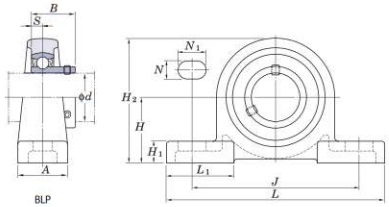
Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is A-1/4-28UNF.
3. As for the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Housings of nodular graphite cast iron are also available.

BLP
Cylindrical bore
(with set screws)
d 12 ~ 40 mm

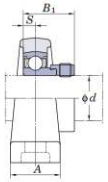
ALP
Cylindrical bore
(with eccentric locking collar)

BLP

ALP



BLP



ALP

Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{H1})

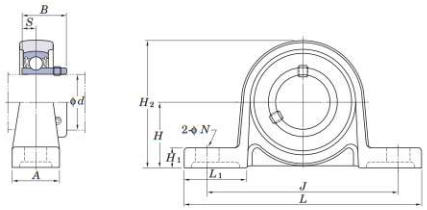
Unit: mm

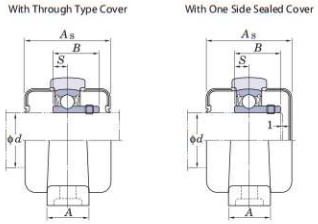
Housing No.	Δ_{H1}
LP203~LP208	±0.15

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	L_1	S	BLP B	ALP B_1	Bolt Size inch / mm	Unit No.	Bearing No.	Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg BLP	ALP
12															BLP201	SB201	ALP201	SA201						
15	1/2	1 3/16	4 1/2	31/32	3 7/16	7/16	5/8	15/32	2 1/4	1 3/8	0.236	0.866	1.122	3/8	BLP201-8	SB201-8	ALP201-8	SA201-8						
		30.2	114	25	87	11	16	12	57	35	6	22	28.5	M10	BLP202	SB202	ALP202	SA202	LP203	9.55	4.80	13.2	0.36	0.39
	5/8														BLP202-10	SB202-10	ALP202-10	SA202-10						
17															BLP203	SB203	ALP203	SA203						
20	3/4	1 5/16	4 29/32	1 1/16	3 13/16	7/16	5/8	1/2	2 9/16	1 1/2	0.276	0.984	1.161	3/8	BLP204-12	SB204-12	ALP204-12	SA204-12	LP204	12.8	6.65	13.2	0.51	0.51
		33.3	125	27	97	11	16	13	65	38	7	25	29.5	M10	BLP204	SB204	ALP204	SA204						
25	7/8														BLP205-14	SB205-14	ALP205-14	SA205-14						
	15/16	1 7/16	5 1/8	1 5/32	3 15/16	7/16	5/8	1/2	2 25/32	1 17/32	0.295	1.063	1.201	3/8	BLP205-15	SB205-15	ALP205-15	SA205-15	LP205	14.0	7.85	13.9	0.57	0.61
		36.5	130	29	100	11	16	13	71	39	7.5	27	30.5	M10	BLP205	SB205	ALP205	SA205						
	1														BLP205-16	SB205-16	ALP205-16	SA205-16						
30	1 1/8														BLP206-18	SB206-18	ALP206-18	SA206-18						
		1 11/16	6 5/32	1 5/16	4 23/32	9/16	13/16	9/16	3 9/32	1 27/32	0.315	1.181	1.335	1/2	BLP206	SB206	ALP206	SA206	LP206	19.5	11.3	13.9	0.69	0.72
	1 3/16	42.9	156	33	120	14	21	14	83	47	8	30	33.9	M12	BLP206-19	SB206-19	ALP206-19	SA206-19						
	1 1/4														BLP206-20	SB206-20	ALP206-20	SA206-20						
35	1 1/4														BLP207-20	SB207-20	ALP207-20	SA207-20						
	1 5/16																ALP207-21	SA207-21						
	1 3/8	1 7/8	6 1/2	1 3/8	5	9/16	13/16	5/8	3 21/32	1 31/32	0.335	1.260	1.437	1/2	BLP207-22	SB207-22	ALP207-22	SA207-22	LP207	25.7	15.4	13.9	0.94	1.0
		47.6	165	35	127	14	21	16	93	50	8.5	32	36.5	M12	BLP207	SB207	ALP207	SA207						
	1 7/16														BLP207-23	SB207-23	ALP207-23	SA207-23						
40	1 1/2														BLP208-24	SB208-24	ALP208-24	SA208-24						
	1 9/16	2	7 1/4	1 15/32	5 1/2	9/16	7/8	23/32	4 1/32	2 5/32	0.354	1.339	1.595	1/2			ALP208-25	SA208-25	LP208	29.1	17.8	14.0	1.8	1.9
		50.8	184	37	140	14	22	18	102	55	9	34	40.5	M12	BLP208	SB208	ALP208	SA208						

Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Allowable load to housing in radial direction is approximately half of basic load rating of bearing, C_r (when safety factor is 4).
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UP
Cylindrical bore (with set screws)
d 10 ~ 30 mm





Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs}) and variations of tolerance of distance between centers of bolt holes (Δ_{Ls})

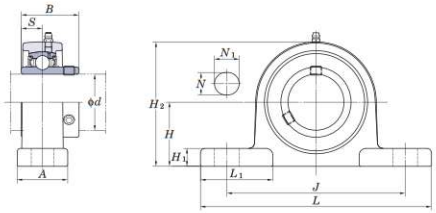
Unit: mm

Housing No.	Δ_{Hs}	Δ_{Ls}
P000~P006	±0.15	±0.3

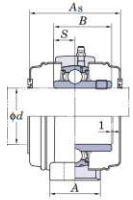
Shaft Dia. mm	Dimensions inch / mm										Bolt Size inch	Standard Unit No.	Housing No.	Bearing No.	Mass	Basic Load Ratings kN		Factor	With Rubber Coated Cover Unit No.		Dimension mm	inch	Mass
d	H	L	A	J	N	H_1	H_2	L_1	B	S	mm				kg	C_r	C_{0r}	f_0	Open Type	One Side Closed Type	A_s		kg
10	45/64 18	2 5/8 67	5/8 16	2 3/32 53	9/32 7	1/4 6	1 3/8 35	23/32 18	0.591 15	0.197 5	1/4 M6	UP000	P000	SU000	0.070	4.55	1.95	12.3	UP000C	UP000CD	29	1 5/32	0.07
12	3/4 19	2 25/32 71	5/8 16	2 13/64 56	9/32 7	1/4 6	1 1/2 38	3/4 19	0.591 15	0.197 5	1/4 M6	UP001	P001	SU001	0.090	5.10	2.40	13.2	UP001C	UP001CD	29	1 5/32	0.09
15	55/64 22	3 5/32 80	5/8 16	2 31/64 63	9/32 7	9/32 7	1 11/16 43	13/16 21	0.650 16.5	0.217 5.5	1/4 M6	UP002	P002	SU002	0.11	5.60	2.85	13.9	UP002C	UP002CD	31	1 7/32	0.11
17	15/16 24	3 11/32 85	23/32 18	2 41/64 67	9/32 7	9/32 7	1 27/32 47	13/16 21	0.689 17.5	0.236 6	1/4 M6	UP003	P003	SU003	0.15	6.00	3.25	14.4	UP003C	UP003CD	33	1 5/16	0.15
20	1 7/64 28	3 15/16 100	25/32 20	3 5/32 80	13/32 10	11/32 9	2 5/32 55	31/32 25	0.827 21	0.276 7	5/16 M8	UP004	P004	SU004	0.23	9.40	5.05	13.9	UP004C	UP004CD	38	1 1/2	0.23
25	1 17/64 32	4 13/32 112	25/32 20	3 35/64 90	13/32 10	13/32 10	2 7/16 62	1 3/32 28	0.866 22	0.276 7	5/16 M8	UP005	P005	SU005	0.28	10.1	5.85	14.5	UP005C	UP005CD	40	1 9/16	0.28
30	1 27/64 36	5 3/16 132	1 1/32 26	4 11/64 106	1/2 13	7/16 11	2 3/4 70	1 11/32 34	0.965 24.5	0.295 7.5	3/8 M10	UP006	P006	SU006	0.42	13.2	8.25	14.7	UP006C	UP006CD	44	1 23/32	0.42

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UCSP-H1S6
Cylindrical bore (with set screws)
d 12 ~ 60 mm



With Pressed Stainless Steel Cover



Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_s)

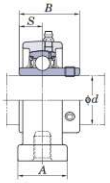
Unit: mm

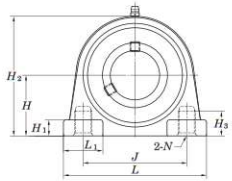
Housing No.	ΔH_s
SP203H1~SP210H1	±0.15
SP211H1~SP212H1	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch/mm H	L	A	J	N	N_1	H_1	H_2	L_1	B	S	Bolt Size inch/mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Stainless Steel Cover Unit No. Open Type	One Side Closed Type	Dimension mm	inch A_s	Mass kg
12														UCSP201XH1S6		UC201XS6					–	–	–	–	–
	1/2													UCSP201-8XH1S6		UC201-8XS6					–	–	–	–	–
15		1 3/16	5	1 3/16	3 3/4	1/2	23/32	7/16	2 7/32	1 21/32	1.079	0.453	3/8	UCSP202XH1S6	SP203H1	UC202XS6	0.47	8.15	3.85	13.2	–	–	–	–	–
	5/8	30.2	127	30	95	13	18	11	56	42	27.4	11.5	M10	UCSP202-10XH1S6		UC202-10XS6					–	–	–	–	–
17														UCSP203XH1S6		UC203XS6					–	–	–	–	–
20	3/4	1 5/16	5	1 3/16	3 3/4	1/2	23/32	7/16	2 15/32	1 21/32	1.220	0.500	3/8	UCSP204-12H1S6	SP204H1	UC204-12S6	0.6	10.9	5.35	13.2	UCSP204H1CS6	UCSP204H1CDS6	45	1 25/32	0.6
		33.3	127	30	95	13	18	11	63	42	31	12.7	M10	UCSP204H1S6		UC204S6									
25	7/8													UCSP205-14H1S6		UC205-14S6					–	–	–	–	–
	15/16	1 7/16	5 1/2	1 3/16	4 1/8	1/2	3/4	15/32	2 23/32	1 13/16	1.343	0.563	3/8	UCSP205-15H1S6	SP205H1	UC205-15S6	0.7	11.9	6.3	13.9	–	–	–	–	–
		36.5	140	30	105	13	19	12	69	46	34.1	14.3	M10	UCSP205H1S6		UC205S6					UCSP205H1CS6	UCSP205H1CDS6	49	1 15/16	0.7
	1													UCSP205-16H1S6		UC205-16S6					–	–	–	–	–
30	1 1/8													UCSP206-18H1S6		UC206-18S6					–	–	–	–	–
		1 11/16	6 1/2	1 13/32	4 3/4	21/32	13/16	1/2	3 3/16	2 1/8	1.500	0.626	1/2	UCSP206H1S6	SP206H1	UC206S6	1.1	16.5	9.05	13.9	UCSP206H1CS6	UCSP206H1CDS6	53	2 3/32	1.1
	1 3/16	42.9	165	36	121	17	21	13	81	54	38.1	15.9	M14	UCSP206-19H1S6		UC206-19S6					–	–	–	–	–
	1 1/4													UCSP206-20H1S6		UC206-20S6					–	–	–	–	–
35	1 1/4													UCSP207-20H1S6		UC207-20S6					–	–	–	–	–
	1 5/16													UCSP207-21H1S6		UC207-21S6					–	–	–	–	–
	1 3/8	1 7/8	6 9/16	1 1/2	5	21/32	13/16	9/16	3 19/32	2	1.689	0.689	1/2	UCSP207-22H1S6	SP207H1	UC207-22S6	1.4	21.8	12.3	13.9	–	–	–	–	–
		47.6	167	38	127	17	21	14	91	51	42.9	17.5	M14	UCSP207H1S6		UC207S6					UCSP207H1CS6	UCSP207H1CDS6	60	2 3/8	1.4
	1 7/16													UCSP207-23H1S6		UC207-23S6					–	–	–	–	–
40	1 1/2	1 15/16	7 1/4	1 9/16	5 13/32	21/32	13/16	9/16	3 13/16	2 3/8	1.937	0.748	1/2	UCSP208-24H1S6	SP208H1	UC208-24S6	1.7	24.8	14.3	14.0	–	–	–	–	–
	1 9/16	49.2	184	40	137	17	21	14	97	60	49.2	19	M14	UCSP208-25H1S6		UC208-25S6					–	–	–	–	–
														UCSP208H1S6		UC208S6					UCSP208H1CS6	UCSP208H1CDS6	69	2 23/32	1.7
45	1 5/8													UCSP209-26H1S6	SP209H1	UC209-26S6	2	27.8	16.2	14.0	–	–	–	–	–
	1 11/16	2 1/8	7 15/32	1 9/16	5 3/4	21/32	13/16	19/32	4 3/32	2 13/32	1.937	0.748	1/2	UCSP209-27H1S6		UC209-27S6					–	–	–	–	–
	1 3/4	54	190	40	146	17	21	15	104	61	49.2	19	M14	UCSP209-28H1S6		UC209-28S6					–	–	–	–	–
														UCSP209H1S6		UC209S6					UCSP209H1CS6	UCSP209H1CDS6	69	2 23/32	2.0
50	1 7/8													UCSP210-30H1S6	SP210H1	UC210-30S6	2.5	29.8	18.6	14.4	–	–	–	–	–
	1 15/16	2 1/4	8 1/8	1 25/32	6 1/4	25/32	7/8	5/8	4 3/8	2 9/16	2.031	0.748	5/8	UCSP210-31H1S6		UC210-31S6					–	–	–	–	–
		57.2	205	45	159	20	22	16	111	65	51.6	19	M16	UCSP210H1S6		UC210S6					UCSP210H1CS6	UCSP210H1CDS6	74	2 29/32	2.5
	2													UCSP210-32H1S6		UC210-32S6									
55	2													UCSP211-32H1S6	SP211H1	UC211-32S6	3.4	36.8	23.5	14.4	–	–	–	–	–
	2 1/8	2 1/2	8 5/8	1 7/8	6 23/32	25/32	7/8	5/8	4 29/32	2 3/4	2.189	0.874	5/8	UCSP211-34H1S6		UC211-34S6					–	–	–	–	–
		63.5	219	48	171	20	22	16	125	70	55.6	22.2	M16	UCSP211H1S6		UC211S6					UCSP211H1CS6	UCSP211H1CDS6	76	3	3.4
	2 3/16													UCSP211-35H1S6		UC211-35S6					–	–	–	–	–
60	2 1/4													UCSP212-36H1S6	SP212H1	UC212-36S6	4.5	44.5	29	14.4	–	–	–	–	–
		2 3/4	9 1/2	2 5/32	7 1/4	25/32	31/32	7/8	5 7/16	3	2.563	1.000	5/8	UCSP212H1S6		UC212S6					UCSP212H1CS6	UCSP212H1CDS6	89	3 1/2	4.5
	2 3/8	69.8	241	55	184	20	25	17	138	76	65.1	25.4	M16	UCSP212-38H1S6		UC212-38S6					–	–	–	–	–
	2 7/16													UCSP212-39H1S6		UC212-39S6					–	–	–	–	–

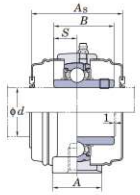
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is are shown below.
   A-1/4-28UNFN12 ..... 201X~210
   A-R1/8N12 ..... 211~212
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UCSPA-H1S6
Cylindrical bore (with set screws)
d 12 ~ 40 mm





With Pressed Stainless Steel Cover



Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{H0}) and variations of tolerance of distance between centers of bolt holes (Δ_{J0})

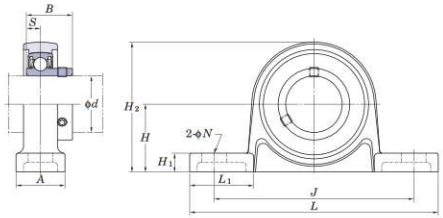
Unit: mm

Housing No.	Δ_{H0}	Δ_{J0}
SPA203H1~SPA208H1	±0.15	±0.5

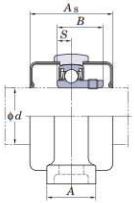
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm											Standard Unit No.	Housing No.	Bearing No.	Mass	Basic Load Ratings kN		Factor	With Pressed Stainless Steel Cover Unit No. Open Type	One Side Closed Type	Dimension mm	Dimension inch	Mass
d		H	L	A	J	N	H_1	H_2	H_3	L_1	B	S				kg	C_r	C_{0r}	f_0			A_s		kg
12													UCSPA201XH1S6	SPA203H1	UC201XS6	0.43	8.15	3.85	13.2	–	–	–	–	–
	1/2	1 3/16	3	1 3/16	2 3/64		13/32	2 1/4	33/64	7/8	1.079	0.453	UCSPA201-8XH1S6		UC201-8XS6					–	–	–	–	–
15		30.2	76	30	52	M10×1.5	10	57	13	22	27.4	11.5	UCSPA202XH1S6		UC202XS6					–	–	–	–	–
	5/8												UCSPA202-10XH1S6		UC202-10XS6					–	–	–	–	–
17													UCSPA203XH1S6		UC203XS6					–	–	–	–	–
20	3/4	1 3/16	3	1 3/16	2 3/64		13/32	2 3/8	33/64	7/8	1.220	0.500	UCSPA204-12H1S6	SPA204H1	UC204-12S6	0.47	10.9	5.35	13.2	–	–	–	–	–
		30.2	76	30	52	M10×1.5	10	60	13	22	31	12.7	UCSPA204H1S6		UC204S6					UCSPA204H1CS6	UCSPA204H1CDS6	45	1 25/32	0.46
25	7/8												UCSPA205-14H1S6	SPA205H1	UC205-14S6	0.63	11.9	6.3	13.9	–	–	–	–	–
	15/16	1 7/16	3 5/16	1 3/16	2 13/64		15/32	2 23/32	33/64	15/16	1.343	0.563	UCSPA205-15H1S6		UC205-15S6					–	–	–	–	–
		36.5	84	30	56	M10×1.5	12	69	13	24	34.1	14.3	UCSPA205H1S6		UC205S6					UCSPA205H1CS6	UCSPA205H1CDS6	49	1 15/16	0.63
	1												UCSPA205-16H1S6		UC205-16S6					–	–	–	–	–
30	1 1/8												UCSPA206-18H1S6	SPA206H1	UC206-18S6	0.91	16.5	9.05	13.9	–	–	–	–	–
		1 11/16	3 11/16	1 13/32	2 19/32		15/32	3 3/16	45/64	1 3/32	1.500	0.626	UCSPA206H1S6		UC206S6					UCSPA206H1CS6	UCSPA206H1CDS6	53	2 3/32	0.91
	1 3/16	42.9	94	36	66	M14×2	12	81	18	28	38.1	15.9	UCSPA206-19H1S6		UC206-19S6					–	–	–	–	–
	1 1/4												UCSPA206-20H1S6		UC206-20S6					–	–	–	–	–
35	1 1/4												UCSPA207-20H1S6	SPA207H1	UC207-20S6	1.3	21.8	12.3	13.9	–	–	–	–	–
	1 5/16												UCSPA207-21H1S6		UC207-21S6					–	–	–	–	–
	1 3/8	1 7/8	4 11/32	1 1/2	3 5/32		1/2	3 19/32	25/32	1 3/16	1.689	0.689	UCSPA207-22H1S6		UC207-22S6					–	–	–	–	–
		47.6	110	38	80	M14×2	13	91	20	30	42.9	17.5	UCSPA207H1S6		UC207S6					UCSPA207H1CS6	UCSPA207H1CDS6	60	2 3/8	1.3
	1 7/16												UCSPA207-23H1S6		UC207-23S6					–	–	–	–	–
40	1 1/2												UCSPA208-24H1S6	SPA208H1	UC208-24S6	1.6	24.8	14.3	14.0	–	–	–	–	–
	1 9/16	1 15/16	4 9/16	1 9/16	3 5/16		1/2	3 13/16	25/32	1 1/4	1.937	0.748	UCSPA208-25H1S6		UC208-25S6					–	–	–	–	–
		49.2	116	40	84	M14×2	13	97	20	32	49.2	19	UCSPA208H1S6		UC208S6					UCSPA208H1CS6	UCSPA208H1CDS6	69	2 23/32	1.5

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is A-1/4-28UNFN12.
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

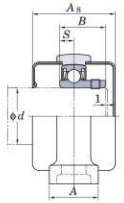
USP-S6
Cylindrical bore (with set screws)
d 10 ~ 30 mm



With Through Type Cover



With One Side Sealed Cover



Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs}) and variations of tolerance of distance between centers of bolt holes (Δ_{As})

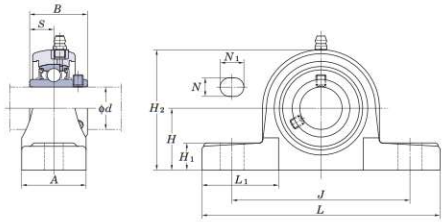
Unit: mm

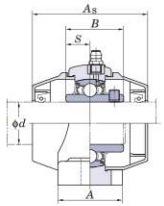
Housing No.	Δ_{Hs}	Δ_{As}
SP000~SP006	±0.15	±0.3

Shaft Dia. mm	Dimensions inch / mm										Bolt Size inch	Standard Unit No.	Housing No.	Bearing No.	Mass	Basic Load Ratings kN		Factor	With Rubber Coated Cover Unit No. Open Type	One Side Closed Type	Dimension mm / inch		Mass
d	H	L	A	J	N	H_1	H_2	L_1	B	S	mm				kg	C_r	C_{0r}	f_0			A_s		kg
10	45/64 18	2 5/8 67	5/8 16	2 3/32 53	9/32 7	3/16 5	1 3/8 35	23/32 18	0.591 15	0.197 5	1/4 M6	USP000S6	SP000	SU000S6	0.076	3.9	1.55	12.3	USP000CS6	USP000CDS6	29	1 5/32	0.08
12	3/4 19	2 25/32 71	5/8 16	2 7/32 56	9/32 7	3/16 5	1 15/32 37	23/32 18.5	0.591 15	0.197 5	1/4 M6	USP001S6	SP001	SU001S6	0.08	4.3	1.9	13.2	USP001CS6	USP001CDS6	29	1 5/32	0.08
15	55/64 22	3 5/32 80	5/8 16	2 15/32 63	9/32 7	1/4 6	1 11/16 42.5	13/16 20.5	0.650 16.5	0.217 5.5	1/4 M6	USP002S6	SP002	SU002S6	0.11	4.7	2.25	13.9	USP002CS6	USP002CDS6	31	1 7/32	0.11
17	15/16 24	3 11/32 85	23/32 18	2 5/8 67	9/32 7	1/4 6	1 13/16 46	13/16 21	0.689 17.5	0.236 6	1/4 M6	USP003S6	SP003	SU003S6	0.14	5.1	2.6	14.4	USP003CS6	USP003CDS6	33	1 5/16	0.14
20	1 7/64 28	3 15/16 100	25/32 20	3 5/32 80	13/32 10	5/16 8	2 5/32 54.5	31/32 25	0.827 21	0.276 7	5/16 M8	USP004S6	SP004	SU004S6	0.23	7.9	4	13.9	USP004CS6	USP004CDS6	38	1 1/2	0.23
25	1 17/64 32	4 13/32 112	25/32 20	3 17/32 90	13/32 10	11/32 9	2 13/32 61	1 3/32 27.5	0.866 22	0.276 7	5/16 M8	USP005S6	SP005	SU005S6	0.28	8.5	4.65	14.5	USP005CS6	USP005CDS6	40	1 9/16	0.28
30	1 27/64 36	5 3/16 132	1 1/32 26	4 3/16 106	1/2 13	13/32 10	2 23/32 69	1 11/32 34	0.965 24.5	0.295 7.5	3/8 M10	USP006S6	SP006	SU006S6	0.43	11.2	6.6	14.7	USP006CS6	USP006CDS6	44	1 23/32	0.43

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UCVP-S6
Cylindrical bore (with set screws)
d 20 ~ 50 mm





Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_4)

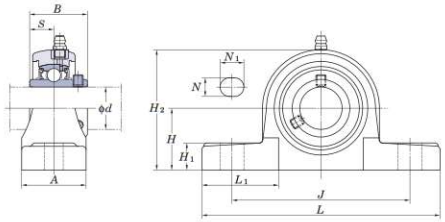
Unit: mm

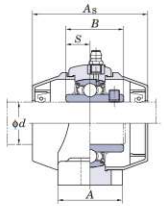
Housing No.	ΔH_4
VP204~VP208	±0.15
VP209~VP210	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Plastic Cover Unit No. Open Type	One Side Closed Type	Dimension mm / inch A_s	Mass kg
20	3/4	1 5/16	5	1 1/2	3 3/4	7/16	9/16	9/16	2 19/32	1.220	0.500	3/8	UCVP204-12S6	VP204	UC204-12S6	0.29	10.9	5.35	13.2	UCVP204-12CS6	UCVP204-12CDS6	63	2 15/32	0.31
		33.3	127	38	95	11	14	14.2	65.5	31	12.7	M10	UCVP204S6		UC204S6					UCVP204CS6	UCVP204CDS6			
25	7/8	1 7/16	5 17/32	1 1/2	4 1/8	7/16	9/16	5/8	2 25/32	1.343	0.563	3/8	UCVP205-14S6	VP205	UC205-14S6	0.41	11.9	6.3	13.9	UCVP205-14CS6	UCVP205-14CDS6	68	2 11/16	0.43
	15/16	36.5	140.5	38	105	11	14	16	71	34.1	14.3	M10	UCVP205S6		UC205S6					UCVP205CS6	UCVP205CDS6			
	1												UCVP205-15S6		UC205-15S6					UCVP205-15CS6	UCVP205-15CDS6			
													UCVP205-16S6		UC205-16S6					UCVP205-16CS6	UCVP205-16CDS6			
30	1 1/8	1 11/16	6 13/32	1 13/16	4 11/16	9/16	23/32	11/16	3 5/16	1.500	0.626	1/2	UCVP206-18S6	VP206	UC206-18S6	0.6	16.5	9.05	13.9	UCVP206-18CS6	UCVP206-18CDS6	79	3 1/8	0.63
	1 3/16	42.9	163	46	119	14	18	17.8	84	38.1	15.9	M12	UCVP206S6		UC206S6					UCVP206CS6	UCVP206CDS6			
	1 1/4												UCVP206-19S6		UC206-19S6					UCVP206-19CS6	UCVP206-19CDS6			
													UCVP206-20S6		UC206-20S6					UCVP206-20CS6	UCVP206-20CDS6			
35	1 1/4	1 7/8	6 5/8	1 7/8	5	9/16	23/32	23/32	3 23/32	1.689	0.689	1/2	UCVP207-20S6	VP207	UC207-20S6	0.84	21.8	12.3	13.9	UCVP207-20CS6	UCVP207-20CDS6	85	3 11/32	0.89
	1 5/16	47.6	168	48	127	14	18	18	94.5	42.9	17.5	M12	UCVP207-21S6		UC207-21S6					UCVP207-21CS6	UCVP207-21CDS6			
	1 3/8												UCVP207-22S6		UC207-22S6					UCVP207-22CS6	UCVP207-22CDS6			
													UCVP207S6		UC207S6					UCVP207CS6	UCVP207CDS6			
	1 7/16												UCVP207-23S6		UC207-23S6					UCVP207-23CS6	UCVP207-23CDS6			
40	1 1/2	1 15/16	7 1/4	2 1/8	5 13/32	9/16	23/32	25/32	3 31/32	1.937	0.748	1/2	UCVP208-24S6	VP208	UC208-24S6	1.1	24.8	14.3	14.0	UCVP208-24CS6	UCVP208-24CDS6	96	3 25/32	1.16
	1 9/16	49.2	184	54	137	14	18	19.5	101	49.2	19	M12	UCVP208-25S6		UC208-25S6					UCVP208-25CS6	UCVP208-25CDS6			
													UCVP208S6		UC208S6					UCVP208CS6	UCVP208CDS6			
45	1 5/8	2 1/8	7 5/16	2 1/8	5 3/4	21/32	25/32	29/32	4 3/16	1.937	0.748	5/8	UCVP209-26S6	VP209	UC209-26S6	1.2	27.8	16.2	14.0	UCVP209-26CS6	UCVP209-26CDS6	107	4 7/32	1.26
	1 11/16	54	192	54	146	17	20	23	106	49.2	19	M14	UCVP209-27S6		UC209-27S6					UCVP209-27CS6	UCVP209-27CDS6			
	1 3/4												UCVP209-28S6		UC209-28S6					UCVP209-28CS6	UCVP209-28CDS6			
													UCVP209S6		UC209S6					UCVP209CS6	UCVP209CDS6			
50	1 7/8	2 1/4	8 1/8	2 3/8	6 1/4	21/32	25/32	29/32	4 1/2	2.031	0.748	5/8	UCVP210-30S6	VP210	UC210-30S6	1.4	29.8	18.6	14.4	UCVP210-30CS6	UCVP210-30CDS6	120	4 23/32	1.46
	1 15/16	57.2	206	60	159	17	20	23	114	51.6	19	M14	UCVP210S6		UC210S6					UCVP210CS6	UCVP210CDS6			
	2												UCVP210-32S6		UC210-32S6					UCVP210-32CS6	UCVP210-32CDS6			

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is A-1/4-28UNFN12.
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UCVP-ES7
Cylindrical bore (with set screws)
d 20 ~ 50 mm





Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_s)

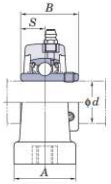
Unit: mm

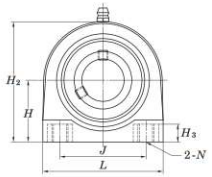
Housing No.	ΔH_s
VP204E~VP208E	±0.15
VP209E~VP210E	±0.2

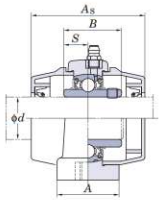
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Plastic Cover Unit No. Open Type	One Side Closed Type	Dimension mm / inch A_s	Mass kg
20	3/4	1 5/16	5	1 1/2	3 3/4	7/16	9/16	9/16	2 19/32	1.220	0.500	3/8	UCVP204-12ES7	VP204E	UC204-12S7	0.29	12.8	6.65	13.2	UCVP204-12ECS7	UCVP204-12ECDS7	63	2 15/32	0.31
		33.3	127	38	95	11	14	14.2	65.5	31	12.7	M10	UCVP204ES7		UC204S7					UCVP204ECS7	UCVP204ECDS7			
25	7/8	1 7/16	5 17/32	1 1/2	4 1/8	7/16	9/16	5/8	2 25/32	1.343	0.563	3/8	UCVP205-14ES7	VP205E	UC205-14S7	0.41	14.0	7.85	13.9	UCVP205-14ECS7	UCVP205-14ECDS7	68	2 11/16	0.43
	15/16	36.5	140.5	38	105	11	14	16	71	34.1	14.3	M10	UCVP205ES7		UC205S7					UCVP205ECS7	UCVP205ECDS7			
	1												UCVP205-15ES7		UC205-15S7					UCVP205-15ECS7	UCVP205-15ECDS7			
													UCVP205-16ES7		UC205-16S7					UCVP205-16ECS7	UCVP205-16ECDS7			
30	1 1/8	1 11/16	6 13/32	1 13/16	4 11/16	9/16	23/32	11/16	3 5/16	1.500	0.626	1/2	UCVP206-18ES7	VP206E	UC206-18S7	0.6	19.5	11.3	13.9	UCVP206-18ECS7	UCVP206-18ECDS7	79	3 1/8	0.63
		42.9	163	46	119	14	18	17.8	84	38.1	15.9	M12	UCVP206ES7		UC206S7					UCVP206ECS7	UCVP206CDS7			
	1 3/16												UCVP206-19ES7		UC206-19S7					UCVP206-19ECS7	UCVP206-19ECDS7			
	1 1/4												UCVP206-20ES7		UC206-20S7					UCVP206-20ECS7	UCVP206-20ECDS7			
35	1 1/4	1 7/8	6 5/8	1 7/8	5	9/16	23/32	23/32	3 23/32	1.689	0.689	1/2	UCVP207-20ES7	VP207E	UC207-20S7	0.84	25.7	15.4	13.9	UCVP207-20ECS7	UCVP207-20ECDS7	85	3 11/32	0.89
	1 5/16	47.6	168	48	127	14	18	18	94.5	42.9	17.5	M12	UCVP207-21ES7		UC207-21S7					UCVP207-21ECS7	UCVP207-21ECDS7			
	1 3/8												UCVP207-22ES7		UC207-22S7					UCVP207-22ECS7	UCVP207-22ECDS7			
													UCVP207ES7		UC207S7					UCVP207ECS7	UCVP207ECDS7			
	1 7/16												UCVP207-23ES7		UC207-23S7					UCVP207-23ECS7	UCVP207-23ECDS7			
40	1 1/2	1 15/16	7 1/4	2 1/8	5 13/32	9/16	23/32	25/32	3 31/32	1.937	0.748	1/2	UCVP208-24ES7	VP208E	UC208-24S7	1.1	29.1	17.8	14.0	UCVP208-24ECS7	UCVP208-24ECDS7	96	3 25/32	1.16
	1 9/16	49.2	184	54	137	14	18	19.5	101	49.2	19	M12	UCVP208-25ES7		UC208-25S7					UCVP208-25ECS7	UCVP208-25ECDS7			
													UCVP208ES7		UC208S7					UCVP208ECS7	UCVP208ECDS7			
45	1 5/8	2 1/8	7 5/16	2 1/8	5 3/4	21/32	25/32	29/32	4 3/16	1.937	0.748	5/8	UCVP209-26ES7	VP209E	UC209-26S7	1.2	34.1	21.3	14.0	UCVP209-26ECS7	UCVP209-26ECDS7	107	4 7/32	1.26
	1 11/16	54	192	54	146	17	20	23	106	49.2	19	M14	UCVP209-27ES7		UC209-27S7					UCVP209-27ECS7	UCVP209-27ECDS7			
	1 3/4												UCVP209-28ES7		UC209-28S7					UCVP209-28ECS7	UCVP209-28ECDS7			
													UCVP209ES7		UC209S7					UCVP209ECS7	UCVP209ECDS7			
50	1 7/8	2 1/4	8 1/8	2 3/8	6 1/4	21/32	25/32	29/32	4 1/2	2.031	0.748	5/8	UCVP210-30ES7	VP210E	UC210-30S7	1.4	35.1	23.3	14.4	UCVP210-30ECS7	UCVP210-30ECDS7	120	4 23/32	1.46
	1 15/16	57.2	206	60	159	17	20	23	114	51.6	19	M14	UCVP210-31ES7		UC210-31S7					UCVP210-31ECS7	UCVP210-31ECDS7			
													UCVP210ES7		UC210S7					UCVP210ECS7	UCVP210ECDS7			
	2												UCVP210-32ES7		UC210-32S7					UCVP210-32ECS7	UCVP210-32ECDS7			

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is A-1/4-28UNFN12.
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UCVPAN-ES7
Cylindrical bore (with set screws)
d 20 ~ 35 mm







Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm									Unit No.	Standard Housing No.	Standard Bearing No.	Mass	Basic Load Ratings kN		Factor	With Plastic Cover Unit No. Open Type	With Plastic Cover Unit No. One Side Closed Type	Dimension mm	Dimension inch	Mass
d		H	L	A	J	N	H_2	H_3	B	S				kg	C_r	C_{0r}	f_0			A_s		kg
20	3/4	1 5/16	2 7/8	1 11/32	2	3/8-16UNC	2 19/32	13/32	1.220	0.500	**UCVPAN204-12ES7**	VPAN204E	UC204-12S7	0.26	12.8	6.65	13.2	UCVPAN204-12ECS7	UCVPAN204-12ECDS7	59.5	2 11/32	0.27
		33.3	73	34.5	50.8		66	10.5	31	12.7	**UCVPAN204ES7**		UC204S7					UCVPAN204ECS7	UCVPAN204ECDS7			
25	7/8	1 7/16	2 25/32	1 7/16	2	3/8-16UNC	2 25/32	13/32	1.343	0.563	**UCVPAN205-14ES7**	VPAN205E	UC205-14S7	0.36	14.0	7.85	13.9	UCVPAN205-14ECS7	UCVPAN205-14ECDS7	66.5	2 5/8	0.37
	15/16	36.5	71	36.5	50.8		71	10.5	34.1	14.3	**UCVPAN205-15ES7**		UC205-15S7					UCVPAN205-15ECS7	UCVPAN205-15ECDS7			
											UCVPAN205ES7		UC205S7					UCVPAN205ECS7	UCVPAN205ECDS7			
	1										**UCVPAN205-16ES7**		UC205-16S7					UCVPAN205-16ECS7	UCVPAN205-16ECDS7			
30	1 1/8	1 11/16	4	1 11/16	3	7/16-14UNC	3 5/16	15/32	1.500	0.626	**UCVPAN206-18ES7**	VPAN206E	UC206-18S7	0.54	19.5	11.3	13.9	UCVPAN206-18ECS7	UCVPAN206-18ECDS7	75.5	2 31/32	0.55
		42.9	101.6	42.5	76.2		84	12.1	38.1	15.9	**UCVPAN206ES7**		UC206S7					UCVPAN206ECS7	UCVPAN206CDS7			
	1 3/16										**UCVPAN206-19ES7**		UC206-19S7					UCVPAN206-19ECS7	UCVPAN206-19ECDS7			
	1 1/4										**UCVPAN206-20ES7**		UC206-20S7					UCVPAN206-20ECS7	UCVPAN206-20ECDS7			
35	1 1/4	1 7/8	4 11/32	1 7/8	3 1/4	1/2-13UNC	3 3/4	17/32	1.689	0.689	**UCVPAN207-20ES7**	VPAN207E	UC207-20S7	0.84	25.7	15.4	13.9	UCVPAN207-20ECS7	UCVPAN207-20ECDS7	85	3 11/32	0.86
	1 5/16	47.6	110	48	82.6		95	13.7	42.9	17.5	**UCVPAN207-21ES7**		UC207-21S7					UCVPAN207-21ECS7	UCVPAN207-21ECDS7			
	1 3/8										**UCVPAN207-22ES7**		UC207-22S7					UCVPAN207-22ECS7	UCVPAN207-22ECDS7			
											UCVPAN207ES7		UC207S7					UCVPAN207ECS7	UCVPAN207ECDS7			
	1 7/16										**UCVPAN207-23ES7**		UC207-23S7					UCVPAN207-23ECS7	UCVPAN207-23ECDS7			

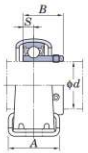
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is A-1/4-28UNFN12.
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

SBPP
Cylindrical bore
(with set screws)
d 12 ~ 30 mm

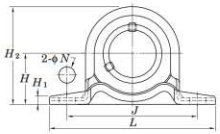
SAPP
Cylindrical bore
(with eccentric locking collar)

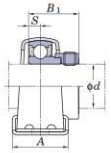
SBPP

SAPP



SBPP





SAPP

Variations of tolerance of distance between centers of bolt holes (ΔJ_s) and variations of tolerance of bolt hole diameter (ΔN_s)

Unit: mm

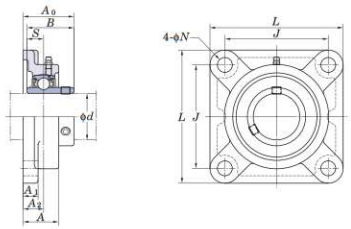
Housing No.	ΔJ_s	ΔN_s
PP203~PP206	±0.4	±0.5

Shaft Dia mm	Shaft Dia inch	Dimensions inch / mm H	L	A	J	N	H_1	H_2	S	SBPP B	SAPP B_1	Bolt Size inch / mm	Unit No.	Bearing No.	Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg SBPP	SAPP
12													SBPP201	SB201	SAPP201	SA201						
	1/2	7/8	3 3/8	31/32	2 43/64	3/8	1/8	1 23/32	0.236	0.866	1.122	5/16	SBPP201-8	SB201-8	SAPP201-8	SA201-8						
15		22.2	86	25	68	9.5	3.2	43.8	6	22	28.5	M8	SBPP202	SB202	SAPP202	SA202	PP203	9.55	4.80	13.2	0.16	0.19
	5/8												SBPP202-10	SB202-10	SAPP202-10	SA202-10						
17													SBPP203	SB203	SAPP203	SA203						
20	3/4	1	3 27/32	1 1/4	2 63/64	3/8	1/8	2	0.276	0.984	1.161	5/16	SBPP204-12	SB204-12	SAPP204-12	SA204-12	PP204	12.8	6.65	13.2	0.23	0.23
		25.4	98	32	76	9.5	3.2	50.5	7	25	29.5	M8	SBPP204	SB204	SAPP204	SA204						
	7/8												SBPP205-14	SB205-14	SAPP205-14	SA205-14						
25	15/16	1 1/8	4 1/4	1 1/4	3 25/64	29/64	5/32	2 7/32	0.295	1.063	1.201	3/8	SBPP205-15	SB205-15	SAPP205-15	SA205-15	PP205	14.0	7.85	13.9	0.28	0.32
		28.6	108	32	86	11.5	4	56.6	7.5	27	30.5	M10	SBPP205	SB205	SAPP205	SA205						
	1												SBPP205-16	SB205-16	SAPP205-16	SA205-16						
	1 1/8												SBPP206-18	SB206-18	SAPP206-18	SA206-18						
30		1 5/16	4 19/32	1 1/2	3 3/4	29/64	5/32	2 5/8	0.315	1.181	1.335	3/8	SBPP206	SB206	SAPP206	SA206	PP206	19.5	11.3	13.9	0.47	0.50
	1 3/16	33.3	117	38	95	11.5	4	66.3	8	30	33.9	M10	SBPP206-19	SB206-19	SAPP206-19	SA206-19						
	1 1/4												SBPP206-20	SB206-20	SAPP206-20	SA206-20						

Remark For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

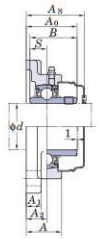
FYH

UCF
Cylindrical bore (with set screws)
d 12 ~ (45) mm

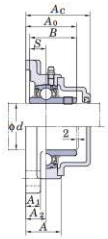


ROYSE
rodamientos y servicios
Desde 1979

With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit: mm

Housing No.			Δ_{A2s}	X
F204~F210	FX05~FX10	F305~F310	±0.5	0.7
F211~F218	FX11~FX20	F311~F328	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{Ns})

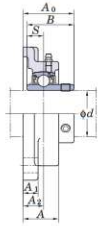
Unit: mm

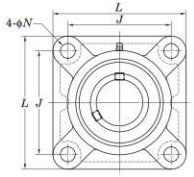
Housing No.			Δ_{Ns}
F204~F218	FX05~FX18	F305~F315	±0.2
	FX20	F316~F328	±0.3

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	Closed Type	Dimension mm / inch A_s		Mass kg	With Cast Iron Cover Unit No. Open Type	Closed Type	Dimension mm / inch A_c		Mass kg
12												UCF201		UC201	0.64				UCF201C	UCF201D	37.5	1 15/32	0.64	–	–	–	–	–
	1/2											UCF201-8		UC201-8	0.64				–	–	–	–	–	–	–	–	–	–
15		3 3/8	1	2 33/64	15/32	7/16	19/32	1 5/16	1.220	0.500	3/8	UCF202		UC202	0.62				UCF202C	UCF202D	37.5	1 15/32	0.62	–	–	–	–	–
	5/8	86	25.5	64	12	11	15	33.3	31	12.7	M10	UCF202-10	F204	UC202-10	0.62	12.8	6.65	13.2	–	–	–	–	–	–	–	–	–	–
17												UCF203		UC203	0.61				UCF203C	UCF203D	37.5	1 15/32	0.61	–	–	–	–	–
	3/4											UCF204-12		UC204-12	0.61				–	–	–	–	–	–	–	–	–	–
20												UCF204		UC204	0.59				UCF204C	UCF204D	37.5	1 15/32	0.59	UCF204FC	UCF204FD	46	1 13/16	0.74
	7/8											UCF205-14		UC205-14	0.83				–	–	–	–	–	–	–	–	–	–
	15/16	3 3/4	1 1/16	2 3/4	15/32	1/2	5/8	1 13/32	1.343	0.563	3/8	UCF205-15		UC205-15	0.83				–	–	–	–	–	–	–	–	–	–
		95	27	70	12	13	16	35.8	34.1	14.3	M10	UCF205	F205	UC205	0.83	14.0	7.85	13.9	UCF205C	UCF205D	40.5	1 19/32	0.83	UCF205FC	UCF205FD	49	1 15/16	1.0
	1											UCF205-16		UC205-16	0.83				–	–	–	–	–	–	–	–	–	–
25		4 1/4	1 3/16	3 17/64	15/32	1/2	45/64	1 19/32	1.500	0.626	3/8	UCFX05	FX05	UCX05	1.2	19.5	11.3	13.9	UCFX05C	UCFX05D	44.5	1 3/4	1.2	–	–	–	–	–
	1	108	30	83	12	13	18	40.2	38.1	15.9	M10	UCFX05-16		UCX05-16	1.2				–	–	–	–	–	–	–	–	–	–
		4 11/32	1 3/32	3 5/32	5/8	1/2	5/8	1 17/32	1.496	0.591	1/2	UCF305	F305	UC305	1.3	21.2	10.9	12.6	–	–	–	–	–	UCF305C	UCF305D	54	2 1/8	1.6
	1	110	29	80	16	13	16	39	38	15	M14	UCF305-16		UC305-16	1.3				–	–	–	–	–	–	–	–	–	–
	1 1/8											UCF206-18		UC206-18	1.1				–	–	–	–	–	–	–	–	–	–
		4 1/4	1 7/32	3 17/64	15/32	1/2	45/64	1 19/32	1.500	0.626	3/8	UCF206	F206	UC206	1.1	19.5	11.3	13.9	UCF206C	UCF206D	44.5	1 3/4	1.1	UCF206FC	UCF206FD	53	2 3/32	1.4
	1 3/16	108	31	83	12	13	18	40.2	38.1	15.9	M10	UCF206-19		UC206-19	1.1				–	–	–	–	–	–	–	–	–	–
	1 1/4											UCF206-20		UC206-20	1.1				–	–	–	–	–	–	–	–	–	–
30		4 19/32	1 11/32	3 5/8	5/8	9/16	3/4	1 3/4	1.689	0.689	1/2	UCFX06		UCX06	1.6				UCFX06C	UCFX06D	49	1 15/16	1.6	–	–	–	–	–
	1 3/16	117	34	92	16	14	19	44.4	42.9	17.5	M14	UCFX06-19	FX06	UCX06-19	1.6	25.7	15.4	13.9	–	–	–	–	–	–	–	–	–	–
	1 1/4											UCFX06-20		UCX06-20	1.6				–	–	–	–	–	–	–	–	–	–
	–	4 29/32	1 1/4	3 47/64	5/8	19/32	45/64	1 23/32	1.693	0.669	1/2	UCF306	F306	UC306	1.9	26.7	15.0	13.3	–	–	–	–	–	UCF306C	UCF306D	59	2 5/16	2.2
	1 1/4											UCF207-20		UC207-20	1.5				–	–	–	–	–	–	–	–	–	–
	1 5/16	4 19/32	1 11/32	3 5/8	35/64	19/32	3/4	1 3/4	1.689	0.689	7/16	UCF207-21		UC207-21	1.5				–	–	–	–	–	–	–	–	–	–
	1 3/8	117	34	92	14	15	19	44.4	42.9	17.5	M12	UCF207-22	F207	UC207-22	1.5	25.7	15.4	13.9	–	–	–	–	–	–	–	–	–	–
												UCF207		UC207	1.5				UCF207C	UCF207D	49	1 15/16	1.5	UCF207FC	UCF207FD	58	2 9/32	1.9
35	1 7/16											UCF207-23		UC207-23	1.5				–	–	–	–	–	–	–	–	–	–
	1 3/8											UCFX07-22		UCX07-22	2.0				–	–	–	–	–	–	–	–	–	–
		5 1/8	1 1/2	4 1/64	5/8	9/16	53/64	2 1/32	1.937	0.748	1/2	UCFX07		UCX07	2.0	29.1	17.8	14.0	UCFX07C	UCFX07D	55.5	2 3/16	2.0	–	–	–	–	–
	1 7/16	130	38	102	16	14	21	51.2	49.2	19	M14	UCFX07-23	FX07	UCX07-23	2.0				–	–	–	–	–	–	–	–	–	–
	–	5 5/16	1 13/32	3 15/16	3/4	5/8	25/32	1 15/16	1.890	0.748	5/8	UCF307	F307	UC307	2.3	33.4	19.3	13.2	–	–	–	–	–	UCF307C	UCF307D	64	2 17/32	2.7
	1 1/2											UCF208-24		UC208-24	1.9				–	–	–	–	–	–	–	–	–	–
	1 9/16	5 1/8	1 13/32	4 1/64	5/8	19/32	53/64	2 1/32	1.937	0.748	1/2	UCF208-25	F208	UC208-25	1.9	29.1	17.8	14.0	–	–	–	–	–	–	–	–	–	–
		130	36	102	16	15	21	51.2	49.2	19	M14	UCF208		UC208	1.9				UCF208C	UCF208D	55.5	2 3/16	1.9	UCF208FC	UCF208FD	64	2 17/32	2.3
40	1 1/2	5 13/32	1 9/16	4 9/64	3/4	9/16	55/64	2 1/16	1.937	0.748	5/8	UCFX08-24	FX08	UCX08-24	2.4	34.1	21.3	14.0	–	–	–	–	–	–	–	–	–	–
		137	40	105	19	14	22	52.2	49.2	19	M16	UCFX08		UCX08	2.4				UCFX08C	UCFX08D	56.5	2 7/32	2.4	–	–	–	–	–
	1 1/2	5 29/32	1 9/16	4 13/32	3/4	21/32	29/32	2 7/32	2.047	0.748	5/8	UCF308-24	F308	UC308-24	3.1	40.7	24.0	13.2	–	–	–	–	–	–	–	–	–	–
		150	40	112	19	17	23	56	52	19	M16	UCF308		UC308	3.1				–	–	–	–	–	UCF308C	UCF308D	71	2 25/32	3.6
	1 5/8											UCF209-26		UC209-26	2.2				–	–	–	–	–	–	–	–	–	–
	1 11/16	5 13/32	1 1/2	4 9/64	5/8	5/8	55/64	2 1/16	1.937	0.748	1/2	UCF209-27	F209	UC209-27	2.2	34.1	21.3	14.0	–	–	–	–	–	–	–	–	–	–
	1 3/4	137	38	105	16	16	22	52.2	49.2	19	M14	UCF209-28		UC209-28	2.2				–	–	–	–	–	–	–	–	–	–
45												UCF209		UC209	2.2				UCF209C	UCF209D	56.5	2 7/32	2.2	UCF209FC	UCF209FD	66	2 19/32	2.6
	1 11/16											UCFX09-27		UCX09-27	2.7				–	–	–	–	–	–	–	–	–	–
	1 3/4	5 5/8	1 9/16	4 3/8	3/4	9/16	29/32	2 3/16	2.031	0.748	5/8	UCFX09-28	FX09	UCX09-28	2.7	35.1	23.3	14.4	–	–	–	–	–	–	–	–	–	–
		143	40	111	19	14	23	55.6	51.6	19	M16	UCFX09		UCX09	2.7				UCFX09C	UCFX09D	60	2 3/8	2.7	–	–	–	–	–

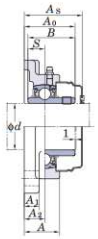
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~210, X05~X09, 305~308
   A-R1/8 ..... 211~218, X10~X20, 309~328
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UCF206JL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

UCF
Cylindrical bore (with set screws)
d (45) ~ (75) mm

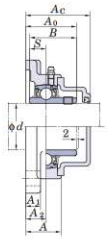




With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A20}) and tolerance of position of bolt hole (X)

Unit: mm

Housing No.			Δ_{A20}	X
F204~F210	FX05~FX10	F305~F310	±0.5	0.7
F211~F218	FX11~FX20	F311~F328	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{N0})

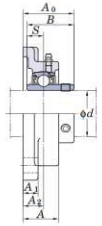
Unit: mm

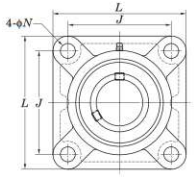
Housing No.			Δ_{N0}
F204~F218	FX05~FX18	F305~F315	±0.2
	FX20	F316~F328	±0.3

Shaft Dia. mm / inch d	Dimensions inch / mm L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	Closed Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Cover Unit No. Open Type	Closed Type	Dimension mm / inch A_c	Mass kg
45	1 3/4	6 5/16	1 23/32	4 59/64	3/4	23/32	63/64	2 3/8	2.244	5/8	UCF309-28	F309	UC309-28	4.0	48.9	29.5	13.3	–	–	– –	–	–	–	– –	–
		160	44	125	19	18	25	60	57	22	UCF309		UC309	4.0				–	–	– –	–	UCF309C	UCF309D	76 3	4.6
50	1 7/8										UCF210-30	F210	UC210-30	2.5	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
	1 15/16	5 5/8	1 9/16	4 3/8	5/8	5/8	55/64	2 5/32	2.031	0.748	UCF210-31		UC210-31	2.5				–	–	– –	–	–	–	– –	–
		143	40	111	16	16	22	54.6	51.6	19	UCF210		UC210	2.5				UCF210C	UCF210D	59 2 5/16	2.5	UCF210FC	UCF210FD	70.5 2 25/32	3.0
	2										UCF210-32		UC210-32	2.5				–	–	– –	–	–	–	– –	–
	1 15/16	6 3/8	1 23/32	5 1/8	3/4	25/32	1 1/32	2 11/32	2.189	0.874	UCFX10-31	FX10	UCX10-31	3.7	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
		162	44	130	19	20	26	59.4	55.6	22.2	UCFX10		UCX10	3.7				UCFX10C	UCFX10D	64 2 17/32	3.7	–	–	– –	–
	2										UCFX10-32		UCX10-32	3.7				–	–	– –	–	–	–	– –	–
	–	6 7/8	1 7/8	5 13/64	29/32	3/4	1 7/64	2 5/8	2.402	0.866	UCF310	F310	UC310	5.1	62.0	38.3	13.2	–	–	– –	–	UCF310C	UCF310D	83 3 9/32	5.9
55	2										UCF211-32	F211	UC211-32	3.4	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
	2 1/8	6 3/8	1 11/16	5 1/8	3/4	23/32	63/64	2 5/16	2.189	0.874	UCF211-34		UC211-34	3.4				–	–	– –	–	–	–	– –	–
		162	43	130	19	18	25	58.4	55.6	22.2	UCF211		UC211	3.4				UCF211C	UCF211D	63 2 15/32	3.4	UCF211FC	UCF211FD	74.5 2 15/16	4.0
	2 3/16										UCF211-35		UC211-35	3.4				–	–	– –	–	–	–	– –	–
		6 7/8	1 15/16	5 5/8	3/4	25/32	1 9/64	2 23/32	2.563	1.000	UCFX11	FX11	UCX11	4.9	52.4	36.2	14.4	UCFX11C	UCFX11D	73.5 2 29/32	4.9	–	–	– –	–
	2 3/16	175	49	143	19	20	29	68.7	65.1	25.4	UCFX11-35		UCX11-35	4.9				–	–	– –	–	–	–	– –	–
	2 1/4										UCFX11-36		UCX11-36	4.9				–	–	– –	–	–	–	– –	–
	2	7 9/32	2 1/16	5 33/64	29/32	25/32	1 3/16	2 25/32	2.598	0.984	UCF311-32	F311	UC311-32	5.6	71.6	45.0	13.2	–	–	– –	–	–	–	– –	–
		185	52	140	23	20	30	71	66	25	UCF311		UC311	5.6				–	–	– –	–	UCF311C	UCF311D	87 3 7/16	6.5
	2 3/16										UCF311-35		UC311-35	5.6				–	–	– –	–	–	–	– –	–
60	2 1/4										UCF212-36	F212	UC212-36	4.2	52.4	36.2	14.4	–	–	– –	–	–	–	– –	–
		6 7/8	1 7/8	5 5/8	3/4	23/32	1 9/64	2 23/32	2.563	1.000	UCF212		UC212	4.2				UCF212C	UCF212D	73.5 2 29/32	4.2	UCF212FC	UCF212FD	86 3 3/8	5.0
	2 3/8	175	48	143	19	18	29	68.7	65.1	25.4	UCF212-38		UC212-38	4.2				–	–	– –	–	–	–	– –	–
	2 7/16										UCF212-39		UC212-39	4.2				–	–	– –	–	–	–	– –	–
		7 3/8	2 5/16	5 55/64	3/4	13/16	1 11/32	2 29/32	1.000	5/8	UCFX12	FX12	UCX12	5.7	57.2	40.1	14.4	UCFX12C	UCFX12D	78.5 3 3/32	5.7	–	–	– –	–
	2 7/16	187	59	149	19	21	34	73.7	65.1	25.4	UCFX12-39		UCX12-39	5.7				–	–	– –	–	–	–	– –	–
		7 11/16	2 7/32	5 29/32	29/32	7/8	1 19/64	3 1/16	2.795	1.024	UCF312	F312	UC312	6.9	81.9	52.2	13.2	–	–	– –	–	UCF312C	UCF312D	95 3 3/4	8.1
	2 7/16	195	56	150	23	22	33	78	71	26	UCF312-39		UC312-39	6.9				–	–	– –	–	–	–	– –	–
65	2 1/2	7 3/8	1 31/32	5 55/64	3/4	7/8	1 3/16	2 3/4	2.563	1.000	UCF213-40	F213	UC213-40	5.2	57.2	40.1	14.4	–	–	– –	–	–	–	– –	–
		187	50	149	19	22	30	69.7	65.1	25.4	UCF213		UC213	5.2				UCF213C	UCF213D	74.5 2 15/16	5.2	UCF213FC	UCF213FD	87 3 7/16	6.0
	2 1/2	7 3/8	2 5/16	5 55/64	3/4	13/16	1 11/32	3 3/32	2.937	1.189	UCFX13-40	FX13	UCX13-40	6.3	62.2	44.1	14.5	–	–	– –	–	–	–	– –	–
		187	59	149	19	21	34	78.4	74.6	30.2	UCFX13		UCX13	6.3				UCFX13C	UCFX13D	83.5 3 9/32	6.3	–	–	– –	–
	2 1/2	8 3/16	2 9/32	6 17/32	29/32	7/8	1 19/64	3 1/16	2.953	1.181	UCF313-40	F313	UC313-40	7.8	92.7	59.9	13.2	–	–	– –	–	–	–	– –	–
		208	58	166	23	22	33	78	75	30	UCF313		UC313	7.8				–	–	– –	–	UCF313C	UCF313D	94 3 11/16	8.9
70	2 3/4	7 19/32	2 1/8	5 63/64	3/4	7/8	1 7/32	2 31/32	2.937	1.189	UCF214-44	F214	UC214-44	5.9	62.2	44.1	14.5	–	–	– –	–	–	–	– –	–
		193	54	152	19	22	31	75.4	74.6	30.2	UCF214		UC214	5.9				UCF214C	UCF214D	80.5 3 5/32	5.9	UCF214FC	UCF214FD	93 3 21/32	6.8
	2 3/4	7 3/4	2 3/8	5 63/64	29/32	7/8	1 29/64	3 7/32	3.063	1.331	UCFX14-44	FX14	UCX14-44	7.0	67.4	48.3	14.5	–	–	– –	–	–	–	– –	–
		197	60	152	23	22	37	81.5	77.8	33.3	UCFX14		UCX14	7.0				UCFX14C	UCFX14D	86.5 3 13/32	7.0	–	–	– –	–
	2 3/4	8 29/32	2 13/32	7 1/64	63/64	31/32	1 27/64	3 3/16	3.071	1.299	UCF314-44	F314	UC314-44	10.1	104	68.2	13.2	–	–	– –	–	–	–	– –	–
		226	61	178	25	25	36	81	78	33	UCF314		UC314	10.1				–	–	– –	–	UCF314C	UCF314D	98 3 27/32	11.2
75	2 15/16	7 7/8	2 7/32	6 17/64	3/4	7/8	1 11/32	3 3/32	3.063	1.311	UCF215-47	F215	UC215-47	6.4	67.4	48.3	14.5	–	–	– –	–	–	–	– –	–
		200	56	159	19	22	34	78.5	77.8	33.3	UCF215		UC215	6.4				UCF215C	UCF215D	83.5 3 9/32	6.4	UCF215FC	UCF215FD	96 3 25/32	7.4
	3										UCF215-48		UC215-48	6.4				–	–	– –	–	–	–	– –	–
	2 15/16	7 3/4	2 11/16	5 63/64	29/32	15/16	1 9/16	3 17/32	3.252	1.311	UCFX15-47	FX15	UCX15-47	8.4	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
		197	68	152	23	24	40	89.3	82.6	33.3	UCFX15		UCX15	8.4				UCFX15C	UCFX15D	94.5 3 23/32	8.4	–	–	– –	–
	3										UCFX15-48		UCX15-48	8.4				–	–	– –	–	–	–	– –	–

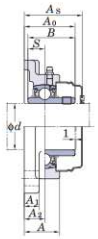
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~210, X05~X09, 305~308
   A-R1/8 ..... 211~218, X10~X20, 309~328
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UCF206JL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

UCF
Cylindrical bore (with set screws)
d (75) ~ 140 mm

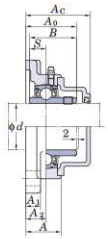




With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2b}) and tolerance of position of bolt hole (X)

Unit: mm

Housing No.			Δ_{A2b}	X
F204~F210	FX05~FX10	F305~F310	±0.5	0.7
F211~F218	FX11~FX20	F311~F328	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{Nb})

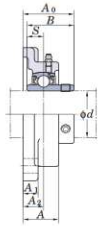
Unit: mm

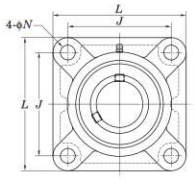
Housing No.			Δ_{Nb}
F204~F218	FX05~FX18	F305~F315	±0.2
	FX20	F316~F328	±0.3

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	Closed Type	Dimension mm / inch A_s		Mass kg	With Cast Iron Cover Unit No. Open Type	Closed Type	Dimension mm / inch A_c		Mass kg
75	2 15/16	9 9/32	2 19/32	7 1/4	63/64	31/32	1 17/32	3 1/2	3.228	1.260	7/8	UCF315-47	F315	UC315-47	11.6	113	77.2	13.2	–	–	–	–	–	–	–	–	–	–
		236	66	184	25	25	39	89	82	32	M22	UCF315		UC315	11.6				–	–	–	–	–	UCF315C	UCF315D	106	4 3/16	12.9
	3											UCF315-48		UC315-48	11.6				–	–	–	–	–	–	–	–	–	–
80	3 1/8	8 3/16	2 9/32	6 1/2	29/32	7/8	1 11/32	3 9/32	3.252	1.311	3/4	UCF216-50	F216	UC216-50	7.3	72.7	53.0	14.6	–	–	–	–	–	–	–	–	–	–
		208	58	165	23	22	34	83.3	82.6	33.3	M20	UCF216		UC216	7.3				UCF216C	UCF216D	88.5	3 15/32	7.3	UCF216FC	UCF216FD	103	4 1/16	8.5
	–	8 7/16	2 3/4	6 47/64	29/32	15/16	1 9/16	3 19/32	3.374	1.343	3/4	UCFX16	FX16	UCX16	9.4	84.0	61.9	14.5	UCFX16C	UCFX16D	96.5	3 13/16	9.4	–	–	–	–	–
		214	70	171	23	24	40	91.6	85.7	34.1	M20																	
	–	9 27/32	2 11/16	7 23/32	1 7/32	1 1/16	1 1/2	3 17/32	3.386	1.339	1	UCF316	F316	UC316	12.8	123	86.7	13.3	–	–	–	–	–	UCF316C	UCF316D	107	4 7/32	14.2
		250	68	196	31	27	38	90	86	34	M27																	
85	3 1/4	8 21/32	2 15/32	6 57/64	29/32	15/16	1 13/32	3 7/16	3.374	1.343	3/4	UCF217-52	F217	UC217-52	8.9	84.0	61.9	14.5	–	–	–	–	–	–	–	–	–	–
		220	63	175	23	24	36	87.6	85.7	34.1	M20	UCF217		UC217	8.9				UCF217C	UCF217D	92.5	3 21/32	8.9	UCF217FC	UCF217FD	107	4 7/32	10.3
		8 7/16	2 3/4	6 47/64	29/32	15/16	1 9/16	3 25/32	3.780	1.563	3/4	UCFX17	FX17	UCX17	10.8	96.1	71.5	14.5	UCFX17C	UCFX17D	101.5	4	10.8	–	–	–	–	–
	3 7/16	214	70	171	23	24	40	96.3	96	39.7	M20	UCFX17-55		UCX17-55	10.8				–	–	–	–	–	–	–	–	–	–
	–	10 1/4	2 29/32	8 1/32	1 7/32	1 1/16	1 47/64	3 15/16	3.780	1.575	1	UCF317	F317	UC317	15.3	133	96.8	13.3	–	–	–	–	–	UCF317C	UCF317D	117	4 19/32	16.9
		260	74	204	31	27	44	100	96	40	M27																	
90	3 1/2	9 1/4	2 11/16	7 23/64	29/32	31/32	1 9/16	3 25/32	3.780	1.563	3/4	UCF218-56	F218	UC218-56	11.4	96.1	71.5	14.5	–	–	–	–	–	–	–	–	–	–
		235	68	187	23	25	40	96.3	96	39.7	M20	UCF218		UC218	11.4				UCF218C	UCF218D	101.5	4	11.4	UCF218FC	UCF218FD	116	4 9/16	12.9
	–	8 7/16	3	6 47/64	29/32	15/16	1 49/64	4 3/16	4.094	1.689	3/4	UCFX18	FX18	UCX18	11.9	109	81.9	14.4	–	–	–	–	–	UCFX18C	UCFX18C	124	4 7/8	13.6
		214	76	171	23	24	45	106.1	104	42.9	M20																	
	3 1/2	11 1/32	3	8 1/2	1 3/8	1 3/16	1 47/64	3 15/16	3.780	1.575	1 1/8	UCF318-56	F318	UC318-56	18.9	143	107	13.3	–	–	–	–	–	–	–	–	–	–
		280	76	216	35	30	44	100	96	40	M30	UCF318		UC318	18.9				–	–	–	–	–	UCF318C	UCF318D	119	4 11/16	20.8
95	–	11 13/32	3 11/16	8 31/32	1 3/8	1 3/16	2 21/64	4 3/4	4.055	1.614	1 1/8	UCF319	F319	UC319	21.6	153	119	13.3	–	–	–	–	–	UCF319C	UCF319D	140	5 1/2	23.8
		290	94	228	35	30	59	121	103	41	M30																	
100	3 15/16	10 9/16	3 13/16	8 5/16	1 7/32	1 3/32	2 21/64	5	4.626	1.937	1	UCFX20	FX20	UCX20	19.4	133	105	14.4	–	–	–	–	–	UCFX20C	UCFX20D	152	5 31/32	21.6
		268	97	211	31	28	59	127.3	117.5	49.2	M27	UCFX20-63		UCX20-63	19.4				–	–	–	–	–	–	–	–	–	–
	4											UCFX20-64		UCX20-64	19.4				–	–	–	–	–	–	–	–	–	–
	3 15/16	12 7/32	3 11/16	9 17/32	1 1/2	1 1/4	2 21/64	4 29/32	4.252	1.654	1 1/4	UCF320	F320	UC320	25.8	173	141	13.2	–	–	–	–	–	UCF320C	UCF320D	146	5 3/4	28.6
		310	94	242	38	32	59	125	108	42	M33	UCF320-63		UC320-63	25.8				–	–	–	–	–	–	–	–	–	–
	4											UCF320-64		UC320-64	25.8				–	–	–	–	–	–	–	–	–	–
105	–	12 7/32	3 11/16	9 17/32	1 1/2	1 1/4	2 21/64	5	4.409	1.732	1 1/4	UCF321	F321	UC321	30.2	184	153	13.2	–	–	–	–	–	UCF321C	UCF321D	148	5 13/16	33.2
		310	94	242	38	32	59	127	112	44	M33																	
110	–	13 3/8	3 25/32	10 15/32	1 39/64	1 3/8	2 23/64	5 5/32	4.606	1.811	1 3/8	UCF322	F322	UC322	35.3	205	180	13.2	–	–	–	–	–	UCF322C	UCF322D	154	6 1/16	41.7
		340	96	266	41	35	60	131	117	46	M36																	
120	–	14 9/16	4 11/32	11 27/64	1 39/64	1 9/16	2 9/16	5 1/2	4.961	2.008	1 3/8	UCF324	F324	UC324	47.3	207	185	13.5	–	–	–	–	–	UCF324C	UCF324D	163	6 13/32	52.1
		370	110	290	41	40	65	140	126	51	M36																	
130	–	16 5/32	4 17/32	12 19/32	1 39/64	1 25/32	2 9/16	5 3/4	5.315	2.126	1 3/8	UCF326	F326	UC326	65.5	229	214	13.6	–	–	–	–	–	UCF326C	UCF326D	172	6 25/32	71.6
		410	115	320	41	45	65	146	135	54	M36																	
140	–	17 23/32	4 29/32	13 25/32	1 39/64	2 3/32	2 61/64	6 11/32	5.709	2.323	1 3/8	UCF328	F328	UC328	80.4	253	246	13.6	–	–	–	–	–	UCF328C	UCF328D	186	7 5/16	89
		450	125	350	41	55	75	161	145	59	M36																	

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~210, X05~X09, 305~308
   A-R1/8 ..... 211~218, X10~X20, 309~328
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UCF206JL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

UCF-E
Cylindrical bore (with set screws)
d 12 ~ 50 mm





Variations of tolerance of distance from mounting surface to center of spherical bore ($\Delta_{A_0B_0}$) and tolerance of position of bolt hole (X)

Unit: mm

Housing No.		$\Delta_{A_0B_0}$	X
F204E~F210E	FX05E~FX10E	±0.5	0.7
F211E~F217E	FX11E~FX17E	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{N_0})

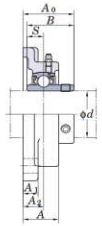
Unit: mm

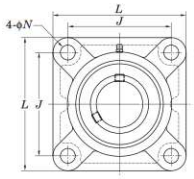
Housing No.		Δ_{N_0}
F204E~F217E	FX05E~FX17E	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12												UCF201E		UC201				0.64
	1/2											UCF201-8E		UC201-8				
15		3 3/8	1	2 33/64	7/16	7/16	19/32	1 5/16	1.220	0.500		UCF202E		UC202				0.62
	5/8	86	25.5	64	11	11	15	33.3	31	12.7	3/8	UCF202-10E	F204E	UC202-10	12.8	6.65	13.2	
17												UCF203E		UC203				0.61
	3/4											UCF204-12E		UC204-12				
20												UCF204E		UC204				0.59
	7/8											UCF205-14E		UC205-14				
	15/16	3 3/4	1 1/16	2 3/4	15/32	1/2	5/8	1 13/32	1.343	0.563		UCF205-15E	F205E	UC205-15	14.0	7.85	13.9	0.83
25		95	27	70	12	13	16	35.8	34.1	14.3	3/8	UCF205E		UC205				
	1											UCF205-16E		UC205-16				
		4 1/4	1 3/16	3 17/64	15/32	1/2	45/64	1 19/32	1.500	0.626	3/8	UCFX05E	FX05E	UCX05	19.5	11.3	13.9	1.2
	1	108	30	83	12	13	18	40.2	38.1	15.9		UCFX05-16E		UCX05-16				
	1 1/8											UCF206-18E		UC206-18				
		4 1/4	1 7/32	3 17/64	33/64	1/2	45/64	1 19/32	1.500	0.626		UCF206E	F206E	UC206	19.5	11.3	13.9	1.1
	1 3/16	108	31	83	13	13	18	40.2	38.1	15.9	7/16	UCF206-19E		UC206-19				
30	1 1/4											UCF206-20E		UC206-20				
		4 19/32	1 11/32	3 5/8	33/64	9/16	3/4	1 3/4	1.689	0.689		UCFX06E		UCX06				
	1 3/16	117	34	92	13	14	19	44.4	42.9	17.5	7/16	UCFX06-19E	FX06E	UCX06-19	25.7	15.4	13.9	1.6
	1 1/4											UCFX06-20E		UCX06-20				
	1 1/4											UCF207-20E		UC207-20				
	1 5/16	4 19/32	1 11/32	3 5/8	33/64	19/32	3/4	1 3/4	1.689	0.689		UCF207-21E		UC207-21				
	1 3/8	117	34	92	13	15	19	44.4	42.9	17.5	7/16	UCF207-22E	F207E	UC207-22	25.7	15.4	13.9	1.5
35												UCF207E		UC207				
	1 7/16											UCF207-23E		UC207-23				
	1 3/8	5 1/8	1 1/2	4 1/64	33/64	9/16	53/64	2 1/32	1.937	0.748	7/16	UCFX07-22E		UCX07-22				
		130	38	102	13	14	21	51.2	49.2	19		UCFX07E	FX07E	UCX07	29.1	17.8	14.0	2.0
	1 7/16											UCFX07-23E		UCX07-23				
	1 1/2	5 1/8	1 13/32	4 1/64	35/64	19/32	53/64	2 1/32	1.937	0.748	1/2	UCF208-24E		UC208-24				
	1 9/16	130	36	102	14	15	21	51.2	49.2	19		UCF208-25E	F208E	UC208-25	29.1	17.8	14.0	1.9
40												UCF208E		UC208				
	1 1/2	5 13/32	1 9/16	4 9/64	19/32	9/16	55/64	2 1/16	1.937	0.748	1/2	UCFX08-24E	FX08E	UCX08-24	34.1	21.3	14.0	2.4
		137	40	105	15	14	22	52.2	49.2	19		UCFX08E		UCX08				
	1 5/8											UCF209-26E		UC209-26				
	1 11/16	5 13/32	1 1/2	4 9/64	5/8	5/8	55/64	2 1/16	1.937	0.748	1/2	UCF209-27E	F209E	UC209-27	34.1	21.3	14.0	2.2
	1 3/4	137	38	105	16	16	22	52.2	49.2	19		UCF209-28E		UC209-28				
45												UCF209E		UC209				
	1 11/16	5 5/8	1 9/16	4 3/8	19/32	9/16	29/32	2 3/16	2.031	0.748	1/2	UCFX09-27E		UCX09-27				
	1 3/4	143	40	111	15	14	23	55.6	51.6	19		UCFX09-28E	FX09E	UCX09-28	35.1	23.3	14.4	2.7
												UCFX09E		UCX09				
	1 7/8											UCF210-30E		UC210-30				
	1 15/16	5 5/8	1 9/16	4 3/8	5/8	5/8	55/64	2 5/32	2.031	0.748	1/2	UCF210-31E	F210E	UC210-31	35.1	23.3	14.4	2.5
		143	40	111	16	16	22	54.6	51.6	19		UCF210E		UC210				
50	2											UCF210-32E		UC210-32				
	1 15/16	6 3/8	1 23/32	5 1/8	21/32	25/32	1 1/32	2 11/32	2.189	0.874	9/16	UCFX10-31E		UCX10-31				
		162	44	130	16.5	20	26	59.4	55.6	22.2		UCFX10E	FX10E	UCX10	43.4	29.4	14.4	3.7
	2											UCFX10-32E		UCX10-32				

Remarks
1. In Part No. of unit, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~210, X05~X09
   A-R1/8 ..... 211~217, X10~X17
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UCF206EJL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

UCF-E
Cylindrical bore (with set screws)
d 55 ~ 85 mm





Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A20}) and tolerance of position of bolt hole (X)

Unit: mm

Housing No.		Δ_{A20}	X
F204E~F210E	FX05E~FX10E	±0.5	0.7
F211E~F217E	FX11E~FX17E	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{N6})

Unit: mm

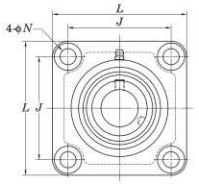
Housing No.		Δ_{N6}
F204E~F217E	FX05E~FX17E	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
55	2	6 3/8	1 11/16	5 1/8	43/64	23/32	63/64	2 5/16	2.189	0.874	5/8	UCF211-32E	F211E	UC211-32	43.4	29.4	14.4	3.4
	2 1/8	162	43	130	17	18	25	58.4	55.6	22.2		UCF211-34E		UC211-34				
												UCF211E		UC211				
	2 3/16											UCF211-35E		UC211-35				
	2 3/16	6 7/8	1 15/16	5 5/8	21/32	25/32	1 9/64	2 23/32	2.563	1.000	9/16	UCFX11E	FX11E	UCX11	52.4	36.2	14.4	4.9
		175	49	143	16.5	20	29	68.7	65.1	25.4		UCFX11-35E		UCX11-35				
	2 1/4											UCFX11-36E		UCX11-36				
60	2 1/4	6 7/8	1 7/8	5 5/8	43/64	23/32	1 9/64	2 23/32	2.563	1.000	5/8	UCF212-36E	F212E	UC212-36	52.4	36.2	14.4	4.2
		175	48	143	17	18	29	68.7	65.1	25.4		UCF212E		UC212				
	2 3/8											UCF212-38E		UC212-38				
	2 7/16											UCF212-39E		UC212-39				
		7 3/8	2 5/16	5 55/64	21/32	13/16	1 11/32	2 29/32	2.563	1.000	9/16	UCFX12E	FX12E	UCX12	57.2	40.1	14.4	5.7
	2 7/16	187	59	149	16.5	21	34	73.7	65.1	25.4		UCFX12-39E		UCX12-39				
65	2 1/2	7 3/8	1 31/32	5 55/64	43/64	7/8	1 3/16	2 3/4	2.563	1.000	5/8	UCF213-40E	F213E	UC213-40	57.2	40.1	14.4	5.2
		187	50	149	17	22	30	69.7	65.1	25.4		UCF213E		UC213				
	2 1/2	7 3/8	1 31/32	5 55/64	21/32	13/16	1 11/32	3 3/32	2.937	1.189	9/16	UCFX13-40E	FX13E	UCX13-40	62.2	44.1	14.5	6.3
		187	59	149	16.5	21	34	78.4	74.6	30.2		UCFX13E		UCX13				
70	2 3/4	7 19/32	2 1/8	5 63/64	3/4	7/8	1 7/32	2 31/32	2.937	1.189	5/8	UCF214-44E	F214E	UC214-44	62.2	44.1	14.5	5.9
		193	54	152	19	22	31	75.4	74.6	30.2		UCF214E		UC214				
	2 3/4	7 3/4	2 3/8	5 63/64	25/32	7/8	1 29/64	3 7/32	3.063	1.331	11/16	UCFX14-44E	FX14E	UCX14-44	67.4	48.3	14.5	7.0
		197	60	152	20	22	37	81.5	77.8	33.3		UCFX14E		UCX14				
75	2 15/16	7 7/8	2 7/32	6 17/64	3/4	7/8	1 11/32	3 3/32	3.063	1.311	5/8	UCF215-47E	F215E	UC215-47	67.4	48.3	14.5	6.4
		200	56	159	19	22	34	78.5	77.8	33.3		UCF215E		UC215				
	3											UCF215-48E		UC215-48				
	2 15/16	7 3/4	2 11/16	5 63/64	25/32	15/16	1 9/16	3 17/32	3.252	1.311	11/16	UCFX15-47E	FX15E	UCX15-47	72.7	53.0	14.6	8.4
		197	68	152	20	24	40	89.3	82.6	33.3		UCFX15E		UCX15				
	3											UCFX15-48E		UCX15-48				
80	3 1/8	8 3/16	2 9/32	6 1/2	3/4	7/8	1 11/32	3 9/32	3.252	1.311	11/16	UCF216-50E	F216E	UC216-50	72.7	53.0	14.6	7.3
		208	58	165	19	22	34	83.3	82.6	33.3		UCF216E		UC216				
	–	8 7/16	2 3/4	6 47/64	25/32	15/16	1 9/16	3 19/32	3.374	1.343	11/16	UCFX16E	FX16E	UCX16	84.0	61.9	14.5	9.4
		214	70	171	20	24	40	91.6	85.7	34.1								
85	3 1/4	8 21/32	2 15/32	6 57/64	3/4	15/16	1 13/32	3 7/16	3.374	1.343	11/16	UCF217-52E	F217E	UC217-52	84.0	61.9	14.5	8.9
		220	63	175	19	24	36	87.6	85.7	34.1		UCF217E		UC217				
		8 7/16	2 3/4	6 47/64	25/32	15/16	1 9/16	3 25/32	3.780	1.563	11/16	UCFX17E	FX17E	UCX17	96.1	71.5	14.5	10.8
	3 7/16	214	70	171	20	24	40	96.3	96	39.7		UCFX17-55E		UCX17-55				

Remarks
1. In Part No. of unit, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~210, X05~X09
   A-R1/8 ..... 211~217, X10~X17
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UCF206EJL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

FYH

NANF
Cylindrical bore
(with eccentric locking collar)
d 12 ~ 60 mm



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit: mm

Housing No.	Δ_{A2s}	X
NF204~NF210	±0.5	0.7
NF211~NF212	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{dN})

Unit: mm

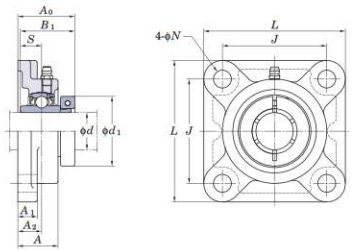
Housing No.	Δ_{dN}
NF204~NF212	±0.2

Shaft Dia mm	Shaft Dia inch	Dimensions inch / mm L	A	J	N	A_1	A_2	A_0	B_1	S	Bolt Size inch	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12												NANF201		NA201				
	1/2											NANF201-8		NA201-8				
15		3 3/8	1 5/32	2 33/64	7/16	19/32	3/4	1 25/32	1.720	0.673		NANF202		NA202				
	5/8	86	29.5	64	11	15	19	45.6	43.7	17.1	3/8	NANF202-10	NF204	NA202-10	12.8	6.65	13.2	0.73
17												NANF203		NA203				
	3/4											NANF204-12		NA204-12				
20												NANF204		NA204				
	7/8											NANF205-14		NA205-14				
	15/16	3 3/4	1 7/32	2 3/4	15/32	19/32	25/32	1 27/32	1.748	0.689		NANF205-15		NA205-15				
25		95	31	70	12	15	20	46.9	44.4	17.5	7/16	NANF205	NF205	NA205	14.0	7.85	13.9	0.95
	1											NANF205-16		NA205-16				
	1 1/8											NANF206-18		NA206-18				
30		4 1/4	1 11/32	3 17/64	33/64	5/8	53/64	2	1.906	0.720		NANF206		NA206				
	1 3/16	108	34	83	13	16	21	51.1	48.4	18.3	7/16	NANF206-19	NF206	NA206-19	19.5	11.3	13.9	1.4
	1 1/4											NANF206-20		NA206-20				
	1 1/4											NANF207-20		NA207-20				
	1 5/16											NANF207-21		NA207-21				
35	1 3/8	4 19/32	1 7/16	3 5/8	33/64	21/32	27/32	2 1/8	2.012	0.740		NANF207-22		NA207-22				
		117	36.5	92	13	17	21.5	53.8	51.1	18.8	7/16	NANF207	NF207	NA207	25.7	15.4	13.9	1.8
	1 7/16											NANF207-23		NA207-23				
	1 1/2											NANF208-24		NA208-24				
40	1 9/16	5 1/8	1 17/32	4 1/64	35/64	21/32	15/16	2 5/16	2.217	0.843		NANF208-25		NA208-25				
		130	39	102	14	17	24	58.9	56.3	21.4	1/2	NANF208	NF208	NA208	29.1	17.8	14.0	2.2
	1 5/8											NANF209-26		NA209-26				
	1 11/16	5 13/32	1 9/16	4 9/64	5/8	23/32	15/16	2 5/16	2.217	0.843		NANF209-27		NA209-27				
45	1 3/4	137	40	105	16	18	24	58.9	56.3	21.4	9/16	NANF209-28	NF209	NA209-28	34.1	21.3	14.0	2.6
												NANF209		NA209				
	1 7/8											NANF210-30		NA210-30				
	1 15/16	5 5/8	1 27/32	4 3/8	43/64	25/32	1 1/8	2 5/8	2.469	0.969		NANF210-31		NA210-31				
50		143	46.5	111	17	20	28.5	66.6	62.7	24.6	9/16	NANF210	NF210	NA210	35.1	23.3	14.4	3.0
	2											NANF210-32		NA210-32				
	2											NANF211-32		NA211-32				
	2 1/8	6 3/8	1 31/32	5 1/8	43/64	13/16	1 17/64	2 31/32	2.811	1.094		NANF211-34		NA211-34				
55		162	50	130	17	21	32	75.6	71.4	27.8	5/8	NANF211	NF211	NA211	43.4	29.4	14.4	4.1
	2 3/16											NANF211-35		NA211-35				
	2 1/4											NANF212-36		NA212-36				
		6 7/8	2 5/32	5 5/8	43/64	13/16	1 27/64	3 1/4	3.063	1.220		NANF212		NA212				
60	2 3/8	175	55	143	17	21	36	82.8	77.8	31	5/8	NANF212-38	NF212	NA212-38	52.4	36.2	14.4	4.9
	2 7/16											NANF212-39		NA212-39				

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~210
   A-R1/8..... 211~212
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Housings of nodular graphite cast iron are also available.

FYH

NCF
Cylindrical bore
(with concentric locking collar)
d 20 ~ 60 mm



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit: mm

Housing No.	Δ_{A2s}	X
F204~F210	±0.5	0.7
F211~F212	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{dN})

Unit: mm

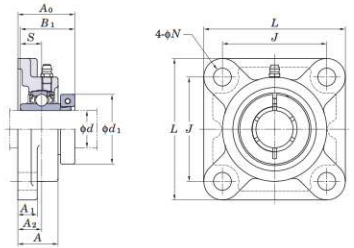
Housing No.	Δ_{dN}
F204~F212	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm L	A	J	N	A_1	A_2	A_0	B_1	S	d_1	Bolt Size inch / mm	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
20	3/4	3 3/8	1	2 33/64	15/32	7/16	19/32	1 3/8	1 9/32	0.500	1 3/4	3/8	NCF204-12	F204	NC204-12	12.8	6.65	13.2	0.73
		86	25.5	64	12	11	15	34.8	32.5	12.7	44.5	M10	NCF204		NC204				
25	7/8												NCF205-14	F205	NC205-14	14.0	7.85	13.9	1.0
	15/16	3 3/4	1 1/16	2 3/4	15/32	1/2	5/8	1 1/2	1 7/16	0.563	1 15/16	3/8	NCF205-15		NC205-15				
		95	27	70	12	13	16	38.2	36.5	14.3	49.2	M10	NCF205		NC205				
	1												NCF205-16		NC205-16				
30	1 1/8												NCF206-18	F206	NC206-18	19.5	11.3	13.9	1.3
		4 1/4	1 7/32	3 17/64	15/32	1/2	45/64	1 21/32	1 9/16	0.626	2 3/16	3/8	NCF206		NC206				
	1 3/16	108	31	83	12	13	18	41.8	39.7	15.9	55.6	M10	NCF206-19		NC206-19				
	1 1/4												NCF206-20		NC206-20				
35	1 1/4	4 19/32	1 11/32	3 5/8	35/64	19/32	3/4	1 13/16	1 3/4	0.689	2 7/16	7/16	NCF207-20	F207	NC207-20	25.7	15.4	13.9	1.8
		117	34	92	14	15	19	46	44.5	17.5	61.9	M12							
	1 3/8												NCF207-22	F207	NC207-22	25.7	15.4	13.9	1.8
		4 19/32	1 11/32	3 5/8	35/64	19/32	3/4	1 13/16	1 3/4	0.689	2 9/16	7/16	NCF207		NC207				
		117	34	92	14	15	19	46	44.5	17.5	65.1	M12							
	1 7/16												NCF207-23		NC207-23				
40	1 1/2	5 1/8	1 13/32	4 1/64	5/8	19/32	53/64	2 3/32	2	0.748	2 11/16	1/2	NCF208-24	F208	NC208-24	29.1	17.8	14.0	2.3
		130	36	102	16	15	21	52.8	50.8	19	68.3	M14	NCF208		NC208				
45	1 5/8	5 13/32	1 1/2	4 9/64	5/8	5/8	55/64	2 1/8	2	0.748	2 13/16	1/2	NCF209-26	F209	NC209-26	34.1	21.3	14.0	2.6
		137	38	105	16	16	22	53.8	50.8	19	71.4	M14							
	1 11/16												NCF209-27	F209	NC209-27	34.1	21.3	14.0	2.6
	1 3/4	5 13/32	1 1/2	4 9/64	5/8	5/8	55/64	2 1/8	2	0.748	2 15/16	1/2	NCF209-28		NC209-28				
		137	38	105	16	16	22	53.8	50.8	19	74.6	M14	NCF209		NC209				
50	1 15/16												NCF210-31	F210	NC210-31	35.1	23.3	14.4	3.1
		5 5/8	1 9/16	4 3/8	5/8	5/8	55/64	2 7/32	2 3/32	0.748	3 3/8	1/2	NCF210		NC210				
		143	40	111	16	16	22	56.1	53.1	19	85.7	M14	NCF210-32		NC210-32				
	2																		
55	2	6 3/8	1 11/16	5 1/8	3/4	23/32	63/64	2 11/32	2 1/4	0.874	3 1/2	5/8	NCF211-32	F211	NC211-32	43.4	29.4	14.4	3.8
		162	43	130	19	18	25	59.9	57.1	22.2	88.9	M16							
		6 3/8	1 11/16	5 1/8	3/4	23/32	63/64	2 11/32	2 1/4	0.874	3 5/8	5/8	NCF211	F211	NC211	43.4	29.4	14.4	3.8
	2 3/16	162	43	130	19	18	25	59.9	57.1	22.2	92.1	M16	NCF211-35		NC211-35				
60	2 1/4	6 7/8	1 7/8	5 5/8	3/4	23/32	1 9/64	2 25/32	2 5/8	1.000	4 1/16	5/8	NCF212-36	F212	NC212-36	52.4	36.2	14.4	4.9
		175	48	143	19	18	29	70.3	66.7	25.4	103.2	M16							
		6 7/8	1 7/8	5 5/8	3/4	23/32	1 9/64	2 25/32	2 5/8	1.000	4 1/8	5/8	NCF212	F212	NC212	52.4	36.2	14.4	4.9
	2 7/16	175	48	143	19	18	29	70.3	66.7	25.4	104.8	M16	NCF212-39		NC212-39				

Remarks
1. In Part No. of unit, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 204~210
   A-R1/8..... 211~212
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Representative examples of the forms of housing are indicated.

FYH

NCF-E
Cylindrical bore
(with concentric locking collar)
d 20 ~ 60 mm



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit: mm

Housing No.	Δ_{A2s}	X
F204E~F208E	±0.5	0.7
F211E~F212E	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{N4})

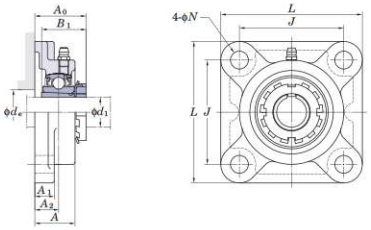
Unit: mm

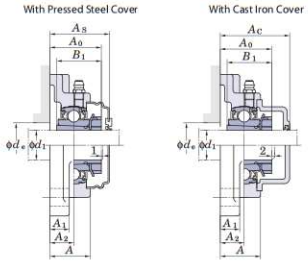
Housing No.	Δ_{N4}
F204E~F212E	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm L	A	J	N	A_1	A_2	A_0	B_1	S	d_1	Bolt Size inch	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
20	3/4	3 3/8	1	2 33/64	7/16	7/16	19/32	1 3/8	1 9/32	0.500	1 3/4	3/8	**NCF204-12E**	F204E	NC204-12	12.8	6.65	13.2	0.73
		86	25.5	64	11	11	15	34.8	32.5	12.7	44.5		**NCF204E**		NC204				
25	7/8											3/8	**NCF205-14E**	F205E	NC205-14	14.0	7.85	13.9	1.0
	15/16	3 3/4	1 1/16	2 3/4	15/32	1/2	5/8	1 1/2	1 7/16	0.563	1 15/16		**NCF205-15E**		NC205-15				
		95	27	70	12	13	16	38.2	36.5	14.3	49.2		**NCF205E**		NC205				
	1												**NCF205-16E**		NC205-16				
30	1 1/8											7/16	**NCF206-18E**	F206E	NC206-18	19.5	11.3	13.9	1.3
		4 1/4	1 7/32	3 17/64	33/64	1/2	45/64	1 21/32	1 9/16	0.626	2 3/16		**NCF206E**		NC206				
	1 3/16	108	31	83	13	13	18	41.8	39.7	15.9	55.6		**NCF206-19E**		NC206-19				
	1 1/4												**NCF206-20E**		NC206-20				
35	1 1/4	4 19/32	1 11/32	3 5/8	33/64	19/32	3/4	1 13/16	1 3/4	0.689	2 7/16	7/16	**NCF207-20E**	F207E	NC207-20	25.7	15.4	13.9	1.8
		117	34	92	13	15	19	46	44.5	17.5	61.9								
	1 3/8											7/16	**NCF207-22E**	F207E	NC207-22	25.7	15.4	13.9	1.8
		4 19/32	1 11/32	3 5/8	33/64	19/32	3/4	1 13/16	1 3/4	0.689	2 9/16		**NCF207E**		NC207				
	1 7/16	117	34	92	13	15	19	46	44.5	17.5	65.1		**NCF207-23E**		NC207-23				
40	1 1/2	5 1/8	1 13/32	4 1/64	35/64	19/32	53/64	2 3/32	2	0.748	2 11/16	1/2	**NCF208-24E**	F208E	NC208-24	29.1	17.8	14.0	2.3
		130	36	102	14	15	21	52.8	50.8	19	68.3		**NCF208E**		NC208				
45	1 5/8	5 13/32	1 1/2	4 9/64	5/8	5/8	55/64	2 1/8	2	0.748	2 13/16	1/2	**NCF209-26E**	F209E	NC209-26	34.1	21.3	14.0	2.6
		137	38	105	16	16	22	53.8	50.8	19	71.4								
	1 11/16											1/2	**NCF209-27E**	F209E	NC209-27	34.1	21.3	14.0	2.6
	1 3/4	5 13/32	1 1/2	4 9/64	5/8	5/8	55/64	2 1/8	2	0.748	2 15/16		**NCF209-28E**		NC209-28				
		137	38	105	16	16	22	53.8	50.8	19	74.6		**NCF209E**		NC209				
50	1 15/16											1/2	**NCF210-31E**	F210E	NC210-31	35.1	23.3	14.4	3.1
		5 5/8	1 9/16	4 3/8	5/8	5/8	55/64	2 7/32	2 3/32	0.748	3 3/8		**NCF210E**		NC210				
	2	143	40	111	16	16	22	56.1	53.1	19	85.7		**NCF210-32E**		NC210-32				
55	2	6 3/8	1 11/16	5 1/8	43/64	23/32	63/64	2 11/32	2 1/4	0.874	3 1/2	5/8	**NCF211-32E**	F211E	NC211-32	43.4	29.4	14.4	3.8
		162	43	130	17	18	25	59.9	57.1	22.2	88.9								
	2 3/16	6 3/8	1 11/16	5 1/8	43/64	23/32	63/64	2 11/32	2 1/4	0.874	3 5/8	5/8	**NCF211E**	F211E	NC211	43.4	29.4	14.4	3.8
		162	43	130	17	18	25	59.9	57.1	22.2	92.1		**NCF211-35E**		NC211-35				
60	2 1/4	6 7/8	1 7/8	5 5/8	43/64	23/32	1 9/64	2 25/32	2 5/8	1.000	4 1/16	5/8	**NCF212-36E**	F212E	NC212-36	52.4	36.2	14.4	4.9
		175	48	143	17	18	29	70.3	66.7	25.4	103.2								
	2 7/16	6 7/8	1 7/8	5 5/8	43/64	23/32	1 9/64	2 25/32	2 5/8	1.000	4 1/8	5/8	**NCF212E**	F212E	NC212	52.4	36.2	14.4	4.9
		175	48	143	17	18	29	70.3	66.7	25.4	104.8		**NCF212-39E**		NC212-39				

Remarks
1. In Part No. of unit, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 204~208
   A-R1/8..... 211~212
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Representative examples of the forms of housing are indicated.

UKF
Tapered bore (with adapter)
d_1 20 ~ (50) mm





Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit: mm

Housing No.			Δ_{A2s}	X
F205~F210	FX05~FX10	F305~F310	±0.5	0.7
F211~F218	FX11~FX20	F311~F328	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{Ns})

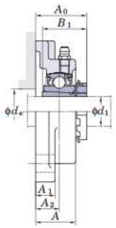
Unit: mm

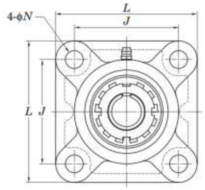
Housing No.			Δ_{Ns}
F205~F218	FX05~FX18	F305~F315	±0.2
	FX20	F316~F328	±0.3

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm d_1	L	A	J	N	A_1	A_2	A_0	B_1	d_e (min.)	Bolt Size inch / mm	Standard Unit No.	Standard Housing No.	Standard Bearing No.	Adapter No.	Mass kg	Basic Load Ratings kN C_r	Basic Load Ratings kN C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	With Pressed Steel Cover Unit No. Closed Type	With Pressed Steel Cover Dimension mm / inch A_s	With Pressed Steel Cover Mass kg	With Cast Iron Cover Unit No. Open Type	With Cast Iron Cover Unit No. Closed Type	With Cast Iron Cover Dimension mm / inch A_c	With Cast Iron Cover Mass kg
20	3/4	3 3/4	1 1/16	2 3/4	15/32	1/2	5/8	1 13/32	1 3/8	1 3/16	3/8	UKF205	F205	UK205	HE2305X	0.87	14.0	7.85	13.9	–	–	– –	–	–	–	– –	–
		95	27	70	12	13	16	36	35	30	M10				H2305X	0.87				UKF205C	UKF205D	40.5 1 19/32	0.87	UKF205FC	UKF205FD	49 1 15/16	1.1
	3/4	4 1/4	1 3/16	3 17/64	15/32	1/2	45/64	1 9/16	1 3/8	1 3/16	3/8	UKF205	FX05	UKX05	HE2305X	1.2	19.5	11.3	13.9	–	–	– –	–	–	–	– –	–
		108	30	83	12	13	18	39.5	35	30	M10				H2305X	1.2				UKFX05C	UKFX05D	44.5 1 3/4	1.2	–	–	– –	–
	3/4	4 11/32	1 5/32	3 5/32	5/8	1/2	5/8	1 15/32	1 3/8	–	1/2	UKF305	F305	UK305	HE2305X	1.4	21.2	10.9	12.6	–	–	– –	–	–	–	– –	–
		110	29	80	16	13	16	37.5	35	–	M14				H2305X	1.4				–	–	– –	–	UKF305C	UKF305D	54 2 1/8	1.7
25	1	4 1/4	1 7/32	3 17/64	15/32	1/2	45/64	1 9/16	1 1/2	1 13/32	3/8	UKF206	F206	UK206	H2306X	1.3	19.5	11.3	13.9	UKF206C	UKF206D	44.5 1 3/4	1.3	UKF206FC	UKF206FD	53 2 3/32	1.6
		108	31	83	12	13	18	39.5	38	36	M10				HE2306X	1.3				–	–	– –	–	–	–	– –	–
	1	4 19/32	1 11/32	3 5/8	5/8	9/16	3/4	1 21/32	1 1/2	1 13/32	1/2	UKF206	FX06	UKX06	H2306X	1.6	25.7	15.4	13.9	UKFX06C	UKFX06D	49 1 15/16	1.6	–	–	– –	–
		117	34	92	16	14	19	42	38	36	M14				HE2306X	1.6				–	–	– –	–	–	–	– –	–
	1	4 29/32	1 1/4	3 47/64	5/8	19/32	45/64	1 5/8	1 1/2	–	1/2	UKF306	F306	UK306	H2306X	1.9	26.7	15.0	13.3	–	–	– –	–	UKF306C	UKF306D	59 2 5/16	2.2
		125	32	95	16	15	18	41	38	–	M14				HE2306X	1.9				–	–	– –	–	–	–	– –	–
30	1 1/8	4 19/32	1 11/32	3 5/8	35/64	19/32	3/4	1 11/16	1 11/16	1 5/8	7/16	UKF207	F207	UK207	HS2307X	1.6	25.7	15.4	13.9	–	–	– –	–	–	–	– –	–
		117	34	92	14	15	19	43	43	41	M12				H2307X	1.6				UKF207C	UKF207D	49 1 15/16	1.6	UKF207FC	UKF207FD	58 2 9/32	2.0
	1 1/8	5 1/8	1 1/2	4 1/64	5/8	9/16	53/64	1 27/32	1 11/16	1 5/8	1/2	UKF307	FX07	UKX07	HS2307X	2.0	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
		130	38	102	16	14	21	47	43	41	M14				H2307X	2.0				UKFX07C	UKFX07D	55.5 2 3/16	2.0	–	–	– –	–
	1 1/8	5 5/16	1 13/32	3 15/16	3/4	5/8	25/32	1 25/32	1 11/16	–	5/8	UKF307	F307	UK307	HS2307X	2.3	33.4	19.3	13.2	–	–	– –	–	–	–	– –	–
		135	36	100	19	16	20	45.5	43	–	M16				H2307X	2.3				–	–	– –	–	UKF307C	UKF307D	64 2 17/32	2.8
35	1 1/4	5 1/8	1 13/32	4 1/64	5/8	19/32	53/64	1 7/8	1 13/16	1 13/16	1/2	UKF308	F208	UK208	HE2308X	1.9	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
	1 3/8	130	36	102	16	15	21	48	46	46	M14				HS2308X	1.9				–	–	– –	–	–	–	– –	–
															H2308X	1.9				UKF208C	UKF208D	55.5 2 3/16	1.9	UKF208FC	UKF208FD	64 2 17/32	2.3
	1 1/4	5 13/32	1 9/16	4 9/64	3/4	9/16	55/64	1 31/32	1 13/16	1 13/16	5/8	UKFX08	FX08	UKX08	HE2308X	2.3	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
	1 3/8	137	40	105	19	14	22	50	46	46	M16				HS2308X	2.3				–	–	– –	–	–	–	– –	–
															H2308X	2.3				UKFX08C	UKFX08D	56.5 2 7/32	2.3	–	–	– –	–
	1 1/4	5 29/32	1 9/16	4 13/32	3/4	21/32	29/32	2	1 13/16	–	5/8	UKF308	F308	UK308	HE2308X	3.1	40.7	24.0	13.2	–	–	– –	–	–	–	– –	–
	1 3/8	150	40	112	19	17	23	50.5	46	–	M16				HS2308X	3.1				–	–	– –	–	–	–	– –	–
															H2308X	3.1				–	–	– –	–	UKF308C	UKF308D	71 2 25/32	3.6
40	1 1/2	5 13/32	1 1/2	4 9/64	5/8	5/8	55/64	2	1 31/32	2 1/16	1/2	UKF209	F209	UK209	HE2309X	2.3	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
		137	38	105	16	16	22	51	50	52	M14				H2309X	2.3				UKF209C	UKF209D	56.5 2 7/32	2.3	UKF209FC	UKF209FD	66 2 19/32	2.8
	1 1/2	5 5/8	1 9/16	4 3/8	3/4	9/16	29/32	2 1/16	1 31/32	2 1/16	5/8	UKFX09	FX09	UKX09	HE2309X	2.7	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
		143	40	111	19	14	23	52	50	52	M16				H2309X	2.7				UKFX09C	UKFX09D	60 2 3/8	2.7	–	–	– –	–
	1 1/2	6 5/16	1 23/32	4 59/64	3/4	23/32	63/64	2 5/32	1 31/32	–	5/8	UKF309	F309	UK309	HE2309X	4.1	48.9	29.5	13.3	–	–	– –	–	–	–	– –	–
		160	44	125	19	18	25	55	50	–	M16				H2309X	4.1				–	–	– –	–	UKF309C	UKF309D	76 3	4.7
45	1 3/4	5 5/8	1 9/16	4 3/8	5/8	5/8	55/64	2 1/16	2 5/32	2 9/32	1/2	UKF210	F210	UK210	HE2310X	2.6	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
		143	40	111	16	16	22	52	55	58	M14				H2310X	2.6				UKF210C	UKF210D	59 2 5/16	2.6	UKF210FC	UKF210FD	70.5 2 25/32	3.1
	1 3/4	6 3/8	1 23/32	5 1/8	3/4	25/32	1 1/32	2 9/32	2 5/32	2 9/32	5/8	UKFX10	FX10	UKX10	HE2310X	3.6	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
		162	44	130	19	20	26	58	55	58	M16				H2310X	3.6				UKFX10C	UKFX10D	64 2 17/32	3.6	–	–	– –	–
	1 3/4	6 7/8	1 7/8	5 13/64	29/32	3/4	1 7/64	2 3/8	2 5/32	–	3/4	UKF310	F310	UK310	HE2310X	5.1	62.0	38.3	13.2	–	–	– –	–	–	–	– –	–
		175	48	132	23	19	28	60	55	–	M20				H2310X	5.1				–	–	– –	–	UKF310C	UKF310D	83 3 9/32	5.9
50	1 7/8	6 3/8	1 11/16	5 1/8	3/4	23/32	63/64	2 1/4	2 5/16	2 17/32	5/8	UKF211	F211	UK211	HS2311X	3.5	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
		162	43	130	19	18	25	57.5	59	64	M16				H2311X	3.5				UKF211C	UKF211D	63 2 15/32	3.5	UKF211FC	UKF211FD	74.5 2 15/16	4.1
	2														HE2311X	3.5				–	–	– –	–	–	–	– –	–
	1 7/8	6 7/8	1 15/16	5 5/8	3/4	25/32	1 9/64	2 17/32	2 5/16	2 17/32	5/8	UKFX11	FX11	UKX11	HS2311X	4.6	52.4	36.2	14.4	–	–	– –	–	–	–	– –	–
		175	49	143	19	20	29	64.5	59	64	M16				H2311X	4.6				UKFX11C	UKFX11D	73.5 2 29/32	4.6	–	–	– –	–
	2														HE2311X	4.6				–	–	– –	–	–	–	– –	–

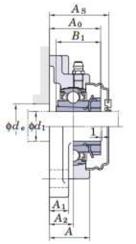
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 205~210, X05~X09, 305~308
   A-R1/8 ..... 211~218, X10~X20, 309~328
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables. (Example of Part No. : UKF206J + H2306X, UK206 + H2306X)
4. As for the triple seal type product (205 is the double seal type product), suffix code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UKF206JL3 + H2306X, UK206L3 + H2306X)
5. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter.
6. Housings of nodular graphite cast iron are also available.

UKF
Tapered bore (with adapter)
d_1 (50) ~ (90) mm

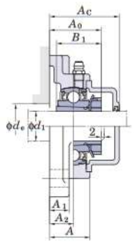




With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit: mm

Housing No.			Δ_{A2s}	X
F205~F210	FX05~FX10	F305~F310	±0.5	0.7
F211~F218	FX11~FX20	F311~F328	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{Ns})

Unit: mm

Housing No.			Δ_{Ns}
F205~F218	FX05~FX18	F305~F315	±0.2
	FX20	F316~F328	±0.3

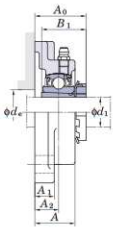
Dimensions: upper value inch, lower value mm.

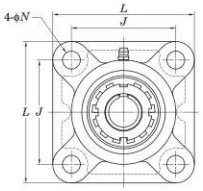
Shaft Dia. d_1 mm	Shaft Dia. d_1 inch	L	A	J	N	A_1	A_2	A_0	B_1	d_e (min.)	Bolt Size inch / mm	Unit No.
50	1 7/8 2	7 9/32 185	2 1/16 52	5 33/64 140	29/32 23	25/32 20	1 3/16 30	2 17/32 64	2 5/16 59	– –	3/4 M20	UKF311
55	2 1/8	6 7/8 175	1 7/8 48	5 5/8 143	3/4 19	23/32 18	1 9/64 29	2 19/32 65.5	2 7/16 62	2 23/32 69	5/8 M16	UKF212
55	2 1/8	7 3/8 187	2 5/16 59	5 55/64 149	3/4 19	13/16 21	1 11/32 34	2 9/16 65	2 7/16 62	2 23/32 69	5/8 M16	UKFX12
55	2 1/8	7 11/16 195	2 7/32 56	5 29/32 150	29/32 23	7/8 22	1 19/64 33	2 3/4 69.5	2 7/16 62	– –	3/4 M20	UKF312
60	2 1/4 2 3/8	7 3/8 187	1 31/32 50	5 55/64 149	3/4 19	7/8 22	1 3/16 30	2 21/32 67.5	2 9/16 65	2 29/32 74	5/8 M16	UKF213
60	2 1/4 2 3/8	7 3/8 187	2 5/16 59	5 55/64 149	3/4 19	13/16 21	1 11/32 34	2 11/16 68	2 9/16 65	2 29/32 74	5/8 M16	UKFX13
60	2 1/4 2 3/8	8 3/16 208	2 9/32 58	6 17/32 166	29/32 23	7/8 22	1 19/64 33	2 13/16 71.5	2 9/16 65	– –	3/4 M20	UKF313
65	2 1/2	7 7/8 200	2 7/32 56	6 17/64 159	3/4 19	7/8 22	1 11/32 34	2 15/16 74.5	2 7/8 73	3 11/32 85	5/8 M16	UKF215
65	2 1/2	7 3/4 197	2 11/16 68	5 63/64 152	29/32 23	15/16 24	1 9/16 40	3 76	2 7/8 73	3 11/32 85	3/4 M20	UKFX15
65	2 1/2	9 9/32 236	2 19/32 66	7 1/4 184	63/64 25	31/32 25	1 17/32 39	3 7/32 81.5	2 7/8 73	– –	7/8 M22	UKF315
70	2 3/4	8 3/16 208	2 9/32 58	6 1/2 165	29/32 23	7/8 22	1 11/32 34	3 3/32 78.5	3 1/16 78	3 17/32 90	3/4 M20	UKF216
70	2 3/4	8 7/16 214	2 3/4 70	6 47/64 171	29/32 23	15/16 24	1 9/16 40	3 1/8 79	3 1/16 78	3 17/32 90	3/4 M20	UKFX16
70	2 3/4	9 27/32 250	2 11/16 68	7 23/32 196	1 7/32 31	1 1/16 27	1 1/2 38	3 1/4 82.5	3 1/16 78	– –	1 M27	UKF316
75	3	8 21/32 220	2 15/32 63	6 57/64 175	29/32 23	15/16 24	1 13/32 36	3 1/4 82.5	3 7/32 82	3 25/32 96	3/4 M20	UKF217
75	3	8 7/16 214	2 3/4 70	6 47/64 171	29/32 23	15/16 24	1 9/16 40	3 7/32 82	3 7/32 82	3 25/32 96	3/4 M20	UKFX17
75	3	10 1/4 260	2 29/32 74	8 1/32 204	1 7/32 31	1 1/16 27	1 47/64 44	3 5/8 92	3 7/32 82	– –	1 M27	UKF317
80	–	9 1/4 235	2 11/16 68	7 23/64 187	29/32 23	31/32 25	1 9/16 40	3 17/32 89.5	3 3/8 86	4 1/32 102	3/4 M20	UKF218
80	–	8 7/16 214	3 76	6 47/64 171	29/32 23	15/16 24	1 49/64 45	3 15/32 88	3 3/8 86	4 1/32 102	3/4 M20	UKFX18
80	–	11 1/32 280	3 76	8 1/2 216	1 3/8 35	1 3/16 30	1 47/64 44	3 5/8 92	3 3/8 86	– –	1 1/8 M30	UKF318
85	3 1/4	11 13/32 290	3 11/16 94	8 31/32 228	1 3/8 35	1 3/16 30	2 21/64 59	4 3/8 111	3 17/32 90	– –	1 1/8 M30	UKF319
90	3 1/2	10 9/16 268	3 13/16 97	8 5/16 211	1 7/32 31	1 3/32 28	2 21/64 59	4 3/16 106	3 13/16 97	4 13/32 112	1 M27	UKFX20

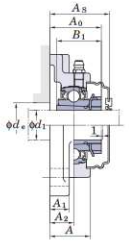
Unit No.	Standard Housing No.	Bearing No.	Adapter No.	Mass kg	C_r kN	C_{0r} kN	Factor f_0	With Pressed Steel Cover Open Type	With Pressed Steel Cover Closed Type	A_s mm	A_s inch	Mass kg	With Cast Iron Cover Open Type	With Cast Iron Cover Closed Type	A_c mm	A_c inch	Mass kg
UKF311	F311	UK311	HS2311X H2311X HE2311X	5.9 5.9 5.9	71.6	45.0	13.2	–	–	–	–	–	UKF311C	UKF311D	87	3 7/16	6.8
UKF212	F212	UK212	HS2312X H2312X	4.1 4.1	52.4	36.2	14.4	UKF212C	UKF212D	73.5	2 29/32	4.1	UKF212FC	UKF212FD	86	3 3/8	4.9
UKFX12	FX12	UKX12	HS2312X H2312X	5.5 5.5	57.2	40.1	14.4	UKFX12C	UKFX12D	78.5	3 3/32	5.5	–	–	–	–	–
UKF312	F312	UK312	HS2312X H2312X	6.8 6.8	81.9	52.2	13.2	–	–	–	–	–	UKF312C	UKF312D	95	3 3/4	8.0
UKF213	F213	UK213	HE2313X H2313X HS2313X	5.1 5.1 5.1	57.2	40.1	14.4	UKF213C	UKF213D	74.5	2 15/16	5.1	UKF213FC	UKF213FD	87	3 7/16	6.0
UKFX13	FX13	UKX13	HE2313X H2313X HS2313X	6.0 6.0 6.0	62.2	44.1	14.5	UKFX13C	UKFX13D	83.5	3 9/32	6.0	–	–	–	–	–
UKF313	F313	UK313	HE2313X H2313X HS2313X	7.9 7.9 7.9	92.7	59.9	13.2	–	–	–	–	–	UKF313C	UKF313D	94	3 11/16	9.0
UKF215	F215	UK215	HE2315X H2315X	6.5 6.5	67.4	48.3	14.5	UKF215C	UKF215D	83.5	3 9/32	6.5	UKF215FC	UKF215FD	96	3 25/32	7.5
UKFX15	FX15	UKX15	HE2315X H2315X	8.1 8.1	72.7	53.0	14.6	UKFX15C	UKFX15D	94.5	3 23/32	8.1	–	–	–	–	–
UKF315	F315	UK315	HE2315X H2315X	11.7 11.7	113	77.2	13.2	–	–	–	–	–	UKF315C	UKF315D	106	4 3/16	13.1
UKF216	F216	UK216	HE2316X H2316X	7.6 7.6	72.7	53.0	14.6	UKF216C	UKF216D	88.5	3 15/32	7.6	UKF216FC	UKF216FD	103	4 1/16	8.9
UKFX16	FX16	UKX16	HE2316X H2316X	9.5 9.5	84.0	61.9	14.5	UKFX16C	UKFX16D	96.5	3 25/32	9.5	–	–	–	–	–
UKF316	F316	UK316	HE2316X H2316X	12.9 12.9	123	86.7	13.3	–	–	–	–	–	UKF316C	UKF316D	107	4 7/32	14.5
UKF217	F217	UK217	H2317X HE2317X	9.0 9.0	84.0	61.9	14.5	UKF217C	UKF217D	92.5	3 21/32	9.0	UKF217FC	UKF217FD	107	4 7/32	10.4
UKFX17	FX17	UKX17	H2317X HE2317X	10.4 10.4	96.1	71.5	14.5	UKFX17C	UKFX17D	101.5	4	10.4	–	–	–	–	–
UKF317	F317	UK317	H2317X HE2317X	15.2 15.2	133	96.8	13.3	–	–	–	–	–	UKF317C	UKF317D	117	4 19/32	17.0
UKF218	F218	UK218	H2318X	11.4	96.1	71.5	14.5	UKF218C	UKF218D	101.5	4	11.4	UKF218FC	UKF218FD	116	4 9/16	13.0
UKFX18	FX18	UKX18	H2318X	11.4	109	81.9	14.4	–	–	–	–	–	UKFX18C	UKFX18D	124	4 7/8	13.3
UKF318	F318	UK318	H2318X	19.0	143	107	13.3	–	–	–	–	–	UKF318C	UKF318D	119	4 11/16	21.1
UKF319	F319	UK319	HE2319X H2319X	21.9 21.9	153	119	13.3	–	–	–	–	–	UKF319C	UKF319D	140	5 1/2	24.3
UKFX20	FX20	UKX20	HE2320X H2320X	18.4 18.4	133	105	14.4	–	–	–	–	–	UKFX20C	UKFX20D	152	5 31/32	20.9

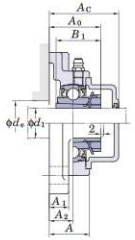
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF .... 205~210, X05~X09, 305~308
   A-R1/8........................ 211~218, X10~X20, 309~328
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables. (Example of Part No. : UKF206J + H2306X, UK206 + H2306X)
4. As for the triple seal type product (205 is the double seal type product), suffix code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UKF206JL3 + H2306X, UK206L3 + H2306X)
5. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter.
6. Housings of nodular graphite cast iron are also available.

UKF
Tapered bore (with adapter)
d_1 (90) ~ 125 mm









Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit: mm

Housing No.			Δ_{A2s}	X
F205~F210	FX05~FX10	F305~F310	±0.5	0.7
F211~F218	FX11~FX20	F311~F328	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{Ns})

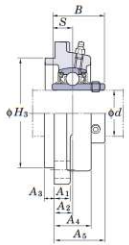
Unit: mm

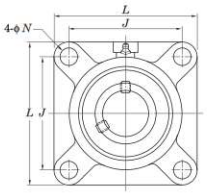
Housing No.			Δ_{Ns}
F205~F218	FX05~FX18	F305~F315	±0.2
	FX20	F316~F328	±0.3

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm L	A	J	N	A_1	A_2	A_0	B_1	d_e (min.)	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Adapter No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	Closed Type	Dimension mm inch A_s	Mass kg	With Cast Iron Cover Unit No. Open Type	Closed Type	Dimension mm inch A_c	Mass kg
90	3 1/2	12 7/32	3 11/16	9 17/32	1 1/2	1 1/4	2 21/64	4 7/16	3 13/16	–	1 1/4	UKF320	F320	UK320	HE2320X	25.4	173	141	13.2	–	–	– –	–	–	–	– –	–
		310	94	242	38	32	59	113	97	–	M33				H2320X	25.4				–	–	– –	–	UKF320C	UKF320D	146 5 3/4	28.5
100	4	13 3/8	3 25/32	10 15/32	1 39/64	1 3/8	2 23/64	4 23/32	4 1/8	–	1 3/8	UKF322	F322	UK322	H2322X	35.2	205	180	13.2	–	–	– –	–	UKF322C	UKF322D	154 6 1/16	38.7
		340	96	266	41	35	60	120	105	–	M36				HE2322X	35.2				–	–	– –	–	–	–	– –	–
110	–	14 9/16	4 11/32	11 27/64	1 39/64	1 9/16	2 9/16	5 1/8	4 13/32	–	1 3/8	UKF324	F324	UK324	H2324	47.6	207	185	13.5	–	–	– –	–	UKF324C	UKF324D	163 6 13/32	52.7
		370	110	290	41	40	65	130.5	112	–	M36																
115	4 1/2	16 5/32	4 17/32	12 19/32	1 39/64	1 25/32	2 9/16	5 3/16	4 3/4	–	1 3/8	UKF326	F326	UK326	HE2326	65.3	229	214	13.6	–	–	– –	–	–	–	– –	–
		410	115	320	41	45	65	131.5	121	–	M36				H2326	65.3				–	–	– –	–	UKF326C	UKF326D	172 6 25/32	71.9
125	–	17 23/32	4 29/32	13 25/32	1 39/64	2 5/32	2 61/64	5 13/16	5 5/32	–	1 3/8	UKF328	F328	UK328	H2328	74.9	253	246	13.6	–	–	– –	–	UKF328C	UKF328D	186 7 5/16	83.5
		450	125	350	41	55	75	147.5	131	–	M36																

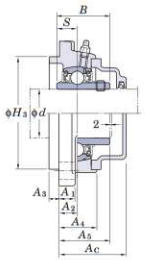
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 205~210, X05~X09, 305~308
   A-R1/8 ..... 211~218, X10~X20, 309~328
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables. (Example of Part No. : UKF206J + H2306X, UK206 + H2306X)
4. As for the triple seal type product (205 is the double seal type product), suffix code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UKF206JL3 + H2306X, UK206L3 + H2306X)
5. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter.
6. Housings of nodular graphite cast iron are also available.

UCFS
Cylindrical bore (with set screws)
d 25 ~ 140 mm





With Cast Iron Cover



Variations of tolerance of spigot joint outside diameter (Δ_{H3a}), variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A3a}), tolerance of position of bolt hole (X), and tolerance of circumferential runout of spigot joint (Y)

Unit: mm

Housing No.	Δ_{H3a}	Δ_{A3a}	X	Y
FS305	0 −0.046	±0.5	0.7	0.2
FS306~FS308	0 −0.054			
FS309~FS310	0 −0.063	±0.8	1	0.3 ~FS318 / FS319~ 0.4
FS311~FS313				
FS314~FS319	0 −0.072			
FS320~FS322	0 −0.081			
FS324~FS328	0 −0.089			

Variations of tolerance of bolt hole diameter (Δ_{Na})

Unit: mm

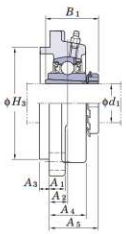
Housing No.	Δ_{Na}
FS305~315	±0.2
FS316~328	±0.3

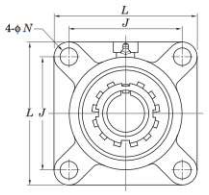
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm L	H_3	J	N	A_1	A_2	A_3	A_4	A_5	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Cast Iron Cover Unit No. Open Type	Closed Type	Dimension mm / inch A_c		Mass kg
25	1	4 11/32 110	3.1496 80	3 5/32 80	5/8 16	1/2 13	23/64 9	9/32 7	7/8 22	1 1/4 32	1.496 38	0.591 15	1/2 M14	**UCFS305** **UCFS305-16**	FS305	UC305 UC305-16	1.4 1.4	21.2	10.9	12.6	UCFS305C –	UCFS305D –	47 –	1 27/32 –	1.7 –
30	–	4 29/32 125	3.5433 90	3 47/64 95	5/8 16	19/32 15	25/64 10	5/16 8	15/16 24	1 13/32 36	1.693 43	0.669 17	1/2 M14	**UCFS306**	FS306	UC306	1.9	26.7	15.0	13.3	UCFS306C	UCFS306D	51	2	2.2
35	–	5 5/16 135	3.9370 100	3 15/16 100	3/4 19	5/8 16	7/16 11	23/64 9	1 1/16 27	1 9/16 40	1.890 48	0.748 19	5/8 M16	**UCFS307**	FS307	UC307	2.3	33.4	19.3	13.2	UCFS307C	UCFS307D	55	2 5/32	2.7
40	1 1/2	5 29/32 150	4.5276 115	4 13/32 112	3/4 19	21/32 17	33/64 13	25/64 10	1 3/16 30	1 13/16 46	2.047 52	0.748 19	5/8 M16	**UCFS308-24** **UCFS308**	FS308	UC308-24 UC308	3.4 3.4	40.7	24.0	13.2	– UCFS308C	– UCFS308D	– 61	– 2 13/32	– 3.9
45	1 3/4	6 5/16 160	4.9213 125	4 59/64 125	3/4 19	23/32 18	35/64 14	7/16 11	1 5/16 33	1 15/16 49	2.244 57	0.866 22	5/8 M16	**UCFS309-28** **UCFS309**	FS309	UC309-28 UC309	4.4 4.4	48.9	29.5	13.3	– UCFS309C	– UCFS309D	– 65	– 2 9/16	– 5.0
50	–	6 7/8 175	5.5118 140	5 13/64 132	29/32 23	3/4 19	5/8 16	15/32 12	1 13/32 36	2 5/32 55	2.402 61	0.866 22	3/4 M20	**UCFS310**	FS310	UC310	5.3	62.0	38.3	13.2	UCFS310C	UCFS310D	71	2 25/32	6.1
55	2 2 3/16	7 9/32 185	5.9055 150	5 33/64 140	29/32 23	25/32 20	43/64 17	33/64 13	1 17/32 39	2 9/32 58	2.598 66	0.984 25	3/4 M20	**UCFS311-32** **UCFS311** **UCFS311-35**	FS311	UC311-32 UC311 UC311-35	6.1 6.1 6.1	71.6	45.0	13.2	– UCFS311C –	– UCFS311D –	– 74 –	– 2 29/32 –	– 7.0 –
60	2 7/16	7 11/16 195	6.2992 160	5 29/32 150	29/32 23	7/8 22	3/4 19	35/64 14	1 21/32 42	2 17/32 64	2.795 71	1.024 26	3/4 M20	**UCFS312** **UCFS312-39**	FS312	UC312 UC312-39	7.4 7.4	81.9	52.2	13.2	UCFS312C –	UCFS312D –	81 –	3 3/16 –	8.6 –
65	2 1/2	8 3/16 208	6.8898 175	6 17/32 166	29/32 23	7/8 22	19/32 15	45/64 18	1 9/16 40	2 3/8 60	2.953 75	1.181 30	3/4 M20	**UCFS313-40** **UCFS313**	FS313	UC313-40 UC313	8.8 8.8	92.7	59.9	13.2	– UCFS313C	– UCFS313D	– 76	– 3	– 9.9
70	2 3/4	8 29/32 226	7.2835 185	7 1/64 178	63/64 25	31/32 25	45/64 18	45/64 18	1 11/16 43	2 15/32 63	3.071 78	1.299 33	7/8 M22	**UCFS314-44** **UCFS314**	FS314	UC314-44 UC314	11.2 11.2	104	68.2	13.2	– UCFS314C	– UCFS314D	– 80	– 3 5/32	– 12.3
75	2 15/16 3	9 9/32 236	7.8740 200	7 1/4 184	63/64 25	31/32 25	53/64 21	45/64 18	1 7/8 48	2 25/32 71	3.228 82	1.260 32	7/8 M22	**UCFS315-47** **UCFS315** **UCFS315-48**	FS315	UC315-47 UC315 UC315-48	13.7 13.7 13.7	113	77.2	13.2	– UCFS315C –	– UCFS315D –	– 88 –	– 3 15/32 –	– 15.0 –
80	–	9 27/32 250	8.2677 210	7 23/32 196	1 7/32 31	1 1/16 27	45/64 18	25/32 20	1 7/8 48	2 3/4 70	3.386 86	1.339 34	1 M27	**UCFS316**	FS316	UC316	15.1	123	86.7	13.3	UCFS316C	UCFS316D	87	3 7/16	16.5
85	–	10 1/4 260	8.6614 220	8 1/32 204	1 7/32 31	1 1/16 27	15/16 24	25/32 20	2 1/8 54	3 5/32 80	3.780 96	1.575 40	1 M27	**UCFS317**	FS317	UC317	17.3	133	96.8	13.3	UCFS317C	UCFS317D	97	3 13/16	18.9
90	3 1/2	11 1/32 280	9.4488 240	8 1/2 216	1 3/8 35	1 3/16 30	15/16 24	25/32 20	2 7/32 56	3 5/32 80	3.780 96	1.575 40	1 1/8 M30	**UCFS318-56** **UCFS318**	FS318	UC318-56 UC318	21.3 21.3	143	107	13.3	– UCFS318C	– UCFS318D	– 99	– 3 29/32	– 23.2
95	–	11 13/32 290	9.8425 250	8 31/32 228	1 3/8 35	1 3/16 30	1 17/32 39	25/32 20	2 29/32 74	3 31/32 101	4.055 103	1.614 41	1 1/8 M30	**UCFS319**	FS319	UC319	24.5	153	119	13.3	UCFS319C	UCFS319D	120	4 23/32	26.7
100	3 15/16 4	12 7/32 310	10.2362 260	9 17/32 242	1 1/2 38	1 1/4 32	1 17/32 39	25/32 20	2 29/32 74	4 1/8 105	4.252 108	1.654 42	1 1/4 M33	**UCFS320** **UCFS320-63** **UCFS320-64**	FS320	UC320 UC320-63 UC320-64	29.5 29.5 29.5	173	141	13.2	UCFS320C – –	UCFS320D – –	126 – –	4 31/32 – –	32.3 – –
105	–	12 7/32 310	10.2362 260	9 17/32 242	1 1/2 38	1 1/4 32	1 17/32 39	25/32 20	2 29/32 74	4 7/32 107	4.409 112	1.732 44	1 1/4 M33	**UCFS321**	FS321	UC321	32.7	184	153	13.2	UCFS321C	UCFS321D	128	5 1/32	35.7
110	–	13 3/8 340	11.8110 300	10 15/32 266	1 39/64 41	1 3/8 35	1 3/8 35	63/64 25	2 25/32 71	4 3/16 106	4.606 117	1.811 46	1 3/8 M36	**UCFS322**	FS322	UC322	39.0	205	180	13.2	UCFS322C	UCFS322D	129	5 3/32	42.4
120	–	14 9/16 370	12.9921 330	11 27/64 290	1 39/64 41	1 9/16 40	1 3/8 35	1 3/16 30	3 5/32 80	4 11/32 110	4.961 126	2.008 51	1 3/8 M36	**UCFS324**	FS324	UC324	50.6	207	185	13.5	UCFS324C	UCFS324D	133	5 1/4	55.4
130	–	16 5/32 410	14.1732 360	12 19/32 320	1 39/64 41	1 25/32 45	1 3/8 35	1 3/16 30	3 11/32 85	4 9/16 116	5.315 135	2.126 54	1 3/8 M36	**UCFS326**	FS326	UC326	67.7	229	214	13.6	UCFS326C	UCFS326D	142	5 29/32	73.8
140	–	17 23/32 450	15.7480 400	13 25/32 350	1 39/64 41	2 5/32 55	1 49/64 45	1 3/16 30	3 3/4 95	5 5/32 131	5.709 145	2.323 59	1 3/8 M36	**UCFS328**	FS328	UC328	94.0	253	246	13.6	UCFS328C	UCFS328D	156	6 5/32	102

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 305~308
   A-R1/8 ..... 309~328
3. As for the triple seal type product, suffix code L3 follows the Part No. of unit or bearing.
   (Example of Part No. : UCFS307JL3, UC307L3)
4. The dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

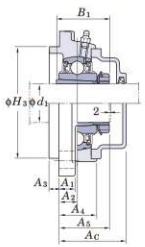
FYH

UKFS
Tapered bore (with adapter)
d_1 20 ~ 125 mm





With Cast Iron Cover



Variations of tolerance of spigot joint outside diameter (Δ_{B3a}), variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A3a}), tolerance of position of bolt hole (X), and tolerance of circumferential runout of spigot joint (Y)

Unit: mm

Housing No.	Δ_{B3a}	Δ_{A3a}	X	Y
FS305	0 −0.046	±0.5	0.7	0.2
FS306~FS308	0 −0.054			
FS309~FS310	0 −0.063	±0.8	1	0.3 ~FS318 / FS319~ 0.4
FS311~FS313				
FS315~FS319	0 −0.072			
FS320~FS322	0 −0.081			
FS324~FS328	0 −0.089			

Variations of tolerance of bolt hole diameter (Δ_{N3})

Unit: mm

Housing No.	Δ_{N3}
FS305~315	±0.2
FS316~328	±0.3

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm										Bolt Size inch / mm	Standard Unit No.	Standard Housing No.	Standard Bearing No.	Adapter No.	Mass kg	Basic Load Ratings kN C_r	Basic Load Ratings kN C_{0r}	Factor f_0	With Cast Iron Cover Unit No. Open Type	With Cast Iron Cover Unit No. Closed Type	With Cast Iron Cover Dimension mm	With Cast Iron Cover Dimension inch	With Cast Iron Cover Mass
d_1		L	H_3	J	N	A_1	A_2	A_3	A_4	A_5	B_1						kg	C_r	C_{0r}	f_0			A_c		kg
20	3/4	4 11/32	3.1496	3 5/32	5/8	1/2	23/64	9/32	7/8	1 3/16	1 3/8	1/2	UKFS305	FS305	UK305	HE2305X	1.4	21.2	10.9	12.6	–	–	–	–	–
		110	80	80	16	13	9	7	22	30.5	35	M14				H2305X	1.4				UKFS305C	UKFS305D	47	1 27/32	1.7
25		4 29/32	3.5433	3 47/64	5/8	19/32	25/64	5/16	15/16	1 5/16	1 1/2	1/2	UKFS306	FS306	UK306	H2306X	1.9	26.7	15.0	13.3	UKFS306C	UKFS306D	51	2	2.2
	1	125	90	95	16	15	10	8	24	33	38	M14				HE2306X	1.9				–	–	–	–	–
30	1 1/8	5 5/16	3.9370	3 15/16	3/4	5/8	7/16	23/64	1 1/16	1 7/16	1 11/16	5/8	UKFS307	FS307	UK307	HS2307X	2.4	33.4	19.3	13.2	–	–	–	–	–
		135	100	100	19	16	11	9	27	36.5	43	M16				H2307X	2.4				UKFS307C	UKFS307D	55	2 5/32	2.9
35	1 1/4	5 29/32	4.5276	4 13/32	3/4	21/32	33/64	25/64	1 3/16	1 19/32	1 13/16	5/8	UKFS308	FS308	UK308	HE2308X	3.4	40.7	24.0	13.2	–	–	–	–	–
	1 3/8	150	115	112	19	17	13	10	30	40.5	46	M16				HS2308X	3.4				–	–	–	–	–
																H2308X	3.4				UKFS308C	UKFS308D	61	2 13/32	3.9
40	1 1/2	6 5/16	4.9213	4 59/64	3/4	23/32	35/64	7/16	1 5/16	1 23/32	1 31/32	5/8	UKFS309	FS309	UK309	HE2309X	4.4	48.9	29.5	13.3	–	–	–	–	–
		160	125	125	19	18	14	11	33	44	50	M16				H2309X	4.4				UKFS309C	UKFS309D	65	2 9/16	5.0
45	1 3/4	6 7/8	5.5118	5 13/64	29/32	3/4	5/8	15/32	1 13/32	1 7/8	2 5/32	3/4	UKFS310	FS310	UK310	HE2310X	5.3	62.0	38.3	13.2	–	–	–	–	–
		175	140	132	23	19	16	12	36	48	55	M20				H2310X	5.3				UKFS310C	UKFS310D	71	2 25/32	6.1
50	1 7/8	7 9/32	5.9055	5 33/64	29/32	25/32	43/64	33/64	1 17/32	2	2 5/16	3/4	UKFS311	FS311	UK311	HS2311X	6.3	71.6	45.0	13.2	–	–	–	–	–
		185	150	140	23	20	17	13	39	51	59	M20				H2311X	6.3				UKFS311C	UKFS311D	74	2 29/32	7.2
	2															HE2311X	6.3				–	–	–	–	–
55	2 1/8	7 11/16	6.2992	5 29/32	29/32	7/8	3/4	35/64	1 21/32	2 3/16	2 7/16	3/4	UKFS312	FS312	UK312	HS2312X	7.3	81.9	52.2	13.2	–	–	–	–	–
		195	160	150	23	22	19	14	42	55.5	62	M20				H2312X	7.3				UKFS312C	UKFS312D	81	3 3/16	8.5
60	2 1/4	8 3/16	6.8898	6 17/32	29/32	7/8	19/32	45/64	1 9/16	2 3/32	2 9/16	3/4	UKFS313	FS313	UK313	HE2313X	8.9	92.7	59.9	13.2	–	–	–	–	–
		208	175	166	23	22	15	18	40	53.5	65	M20				H2313X	8.9				UKFS313C	UKFS313D	76	3	10.0
	2 3/8															HS2313X	8.9				–	–	–	–	–
65	2 1/2	9 9/32	7.8740	7 1/4	63/64	31/32	53/64	45/64	1 7/8	2 1/2	2 7/8	7/8	UKFS315	FS315	UK315	HE2315X	13.4	113	77.2	13.2	–	–	–	–	–
		236	200	184	25	25	21	18	48	63.5	73	M22				H2315X	13.4				UKFS315C	UKFS315D	88	3 15/32	14.8
70	2 3/4	9 27/32	8.2677	7 23/32	1 7/32	1 1/16	45/64	25/32	1 7/8	2 15/32	3 1/16	1	UKFS316	FS316	UK316	HE2316X	15.1	123	86.7	13.3	–	–	–	–	–
		250	210	196	31	27	18	20	48	62.5	78	M27				H2316X	15.1				UKFS316C	UKFS316D	87	3 7/16	16.7
75		10 1/4	8.6614	8 1/32	1 7/32	1 1/16	15/16	25/32	2 1/8	2 27/32	3 7/32	1	UKFS317	FS317	UK317	H2317X	17.1	133	96.8	13.3	UKFS317C	UKFS317D	97	3 13/16	18.9
	3	260	220	204	31	27	24	20	54	72	82	M27				HE2317X	17.1				–	–	–	–	–
80	–	11 1/32	9.4488	8 1/2	1 3/8	1 3/16	15/16	25/32	2 7/32	2 27/32	3 3/8	1 1/8	UKFS318	FS318	UK318	H2318X	21.4	143	107	13.3	UKFS318C	UKFS318D	99	3 29/32	23.5
		280	240	216	35	30	24	20	56	72	86	M30													
85	3 1/4	11 13/32	9.8425	8 31/32	1 3/8	1 3/16	1 17/32	25/32	2 29/32	2 19/32	3 17/32	1 1/8	UKFS319	FS319	UK319	HE2319X	24.8	153	119	13.3	–	–	–	–	–
		290	250	228	35	30	39	20	74	91	90	M30				H2319X	24.8				UKFS319C	UKFS319D	120	4 23/32	26.2
90	3 1/2	12 7/32	10.2362	9 17/32	1 1/2	1 1/4	1 17/32	25/32	2 29/32	2 21/32	3 13/16	1 1/4	UKFS320	FS320	UK320	HE2320X	29.1	173	141	13.2	–	–	–	–	–
		310	260	242	38	32	39	20	74	93	97	M33				H2320X	29.1				UKFS320C	UKFS320D	126	4 31/32	32.2
100		13 3/8	11.8110	10 15/32	1 39/64	1 3/8	1 3/8	63/64	2 25/32	2 3/4	4 1/8	1 3/8	UKFS322	FS322	UK322	H2322X	38.6	205	180	13.2	UKFS322C	UKFS322D	129	5 3/32	42.1
	4	340	300	266	41	35	35	25	71	95	105	M36				HE2322X	38.6				–	–	–	–	–
110	–	14 9/16	12.9921	11 27/64	1 39/64	1 9/16	1 3/8	1 3/16	3 5/32	3 21/32	4 13/32	1 3/8	UKFS324	FS324	UK324	H2324	50.9	207	185	13.5	UKFS324C	UKFS324D	133	5 1/4	56.0
		370	330	290	41	40	35	30	80	100.5	112	M36													
115	4 1/2	16 5/32	14.1732	12 19/32	1 39/64	1 25/32	1 3/8	1 3/16	3 11/32	4	4 3/4	1 3/8	UKFS326	FS326	UK326	HE2326	67.5	229	214	13.6	–	–	–	–	–
		410	360	320	41	45	35	30	85	101.5	121	M36				H2326	67.5				UKFS326C	UKFS326D	142	5 29/32	74.1
125	–	17 23/32	15.7480	13 25/32	1 39/64	2 5/32	1 49/64	1 3/16	3 3/4	4 5/8	5 5/32	1 3/8	UKFS328	FS328	UK328	H2328	94.0	253	246	13.6	UKFS328C	UKFS328D	156	6 5/32	102
		450	400	350	41	55	45	30	95	117.5	131	M36													

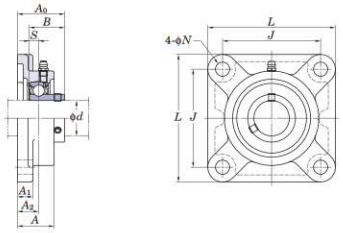
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 305~308
   A-R1/8 ..... 309~328
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables. (Example of Part No. : UKFS307J + H2307X, UK307 + H2307X)
4. As for the triple seal type product, suffix code L3 follows the Part No. of unit or bearing. (Example of Part No. : UKFS307JL3 + H2307X, UK307L3 + H2307X)
5. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter.
6. Housings of nodular graphite cast iron are also available.

SBF-RKP8
Cylindrical bore (with set screws)
d 20 ~ 55 mm

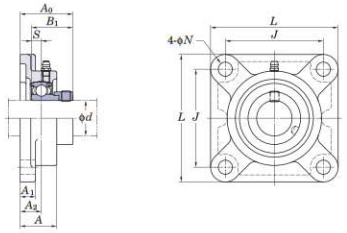
SAF-FP9
Cylindrical bore (with eccentric locking collar)

SBF-RKP8

SAF-FP9



SBF-RKP8



SAF-FP9

Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2B}) and tolerance of position of bolt hole (X)

Unit: mm

Housing No.	Δ_{A2B}	X
F204~F210	±0.5	0.7
F211	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{N6})

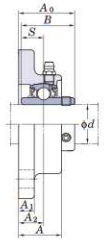
Unit: mm

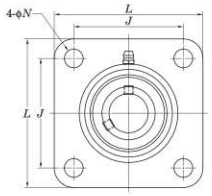
Housing No.	Δ_{N6}
F204~F211	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm L	A	J	N	A_1	A_2	A_0	B	B_1	SBF-RKP8 S	SAF-FP9 S	Bolt Size inch / mm	Unit No.	Bearing No.	Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg SBF-RKP8	SAF-FP9
20	3/4	3 3/8	1	2 33/64	15/32	7/16	19/32	1 17/32	0.984	1.220	0.276	0.295	3/8	SBF204-12RKP8	SB204-12RKP8	SAF204-12FP9	SA204-12FP9	F204	12.8	6.65	13.2	0.58	0.62
		86	25.5	64	12	11	15	38.5	25	31	7	7.5	M10	SBF204RKP8	SB204RKP8	SAF204FP9	SA204FP9						
25	7/8													SBF205-14RKP8	SB205-14RKP8	SAF205-14FP9	SA205-14FP9	F205	14.0	7.85	13.9	0.81	0.85
	15/16	3 3/4	1 1/16	2 3/4	15/32	1/2	5/8	1 9/16	1.063	1.220	0.295	0.295	3/8	SBF205-15RKP8	SB205-15RKP8	SAF205-15FP9	SA205-15FP9						0.86
	1	95	27	70	12	13	16	39.5	27	31	7.5	7.5	M10	SBF205-16RKP8	SB205-16RKP8	SAF205-16FP9	SA205-16FP9						0.86
														SBF205RKP8	SB205RKP8	SAF205FP9	SA205FP9						0.86
30	1 1/8													SBF206-18RKP8	SB206-18RKP8	SAF206-18FP9	SA206-18FP9	F206	19.5	11.3	13.9	1.05	1.12
	1 3/16	4 1/4	1 7/32	3 17/64	15/32	1/2	45/64	1 3/4	1.181	1.906	0.315	0.354	3/8	SBF206-19RKP8	SB206-19RKP8	SAF206-19FP9	SA206-19FP9						
	1 1/4	108	31	83	12	13	18	44.7	30	35.7	8	9	M10	SBF206-20RKP8	SB206-20RKP8	SAF206-20FP9	SA206-20FP9						
														SBF206RKP8	SB206RKP8	SAF206FP9	SA206FP9						
35	1 1/4													SBF207-20RKP8	SB207-20RKP8	SAF207-20FP9	SA207-20FP9	F207	25.7	15.4	13.9	1.44	1.59
	1 5/16													–	–	SAF207-21FP9	SA207-21FP9					–	
	1 3/8	4 19/32	1 11/32	3 5/8	35/64	19/32	3/4	1 29/32	1.260	1.531	0.335	0.374	7/16	SBF207-22RKP8	SB207-22RKP8	SAF207-22FP9	SA207-22FP9					1.44	
	1 7/16	117	34	92	14	15	19	48.4	32	38.9	8.5	9.5	M12	SBF207-23RKP8	SB207-23RKP8	SAF207-23FP9	SA207-23FP9					1.44	
														SBF207RKP8	SB207RKP8	SAF207FP9	SA207FP9					1.44	
40	1 1/2													SBF208-24RKP8	SB208-24RKP8	SAF208-24FP9	SA208-24FP9	F208	29.1	17.8	14.0	1.86	2.01
	1 9/16	5 1/8	1 13/32	4 1/64	5/8	19/32	53/64	2 1/8	1.339	1.720	0.354	0.433	1/2	–	–	SAF208-25FP9	SA208-25FP9					–	
		130	36	102	16	15	21	53.7	34	43.7	9	11	M14	SBF208RKP8	SB208RKP8	SAF208FP9	SA208FP9					1.85	
45	1 5/8													–	–	SAF209-26FP9	SA209-26FP9	F209	34.1	21.3	14.0	–	2.34
	1 11/16	5 13/32	1 1/2	4 9/64	5/8	5/8	55/64	2 5/32	–	1.720	–	0.433	1/2	–	–	SAF209-27FP9	SA209-27FP9						
	1 3/4	137	38	105	16	16	22	54.7	–	43.7	–	11	M14	–	–	SAF209-28FP9	SA209-28FP9						
														–	–	SAF209FP9	SA209FP9						
50	1 7/8													–	–	SAF210-30FP9	SA210-30FP9	F210	35.1	23.3	14.4	–	2.55
	1 15/16	5 5/8	1 9/16	4 3/8	5/8	5/8	55/64	2 5/32	–	1.720	–	0.433	1/2	–	–	SAF210-31FP9	SA210-31FP9						
		143	40	111	16	16	22	54.7	–	43.7	–	11	M14	–	–	SAF210FP9	SA210FP9						
55	2													–	–	SAF211-32FP9	SA211-32FP9	F211	43.4	29.4	14.4	–	3.49
	2 1/8	6 3/8	1 11/16	5 1/8	3/4	23/32	63/64	2 13/32	–	1.906	–	0.472	5/8	–	–	SAF211-34FP9	SA211-34FP9						
	2 3/16	162	43	130	19	18	25	61.4	–	48.4	–	12	M16	–	–	SAF211-35FP9	SA211-35FP9						
														–	–	SAF211FP9	SA211FP9						

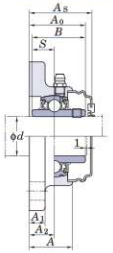
Remarks
1. In Part No. of unit, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 204~210
   A-R1/8 211
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Housings of nodular graphite cast iron are also available.

UCSF-H1S6
Cylindrical bore (with set screws)
d 20 ~ 60 mm





With Pressed Stainless Steel Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit: mm

Housing No.	Δ_{A2s}	X
SF204H1~210H1	±0.5	0.7
SF211H1~212H1	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{N4})

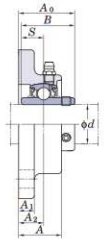
Unit: mm

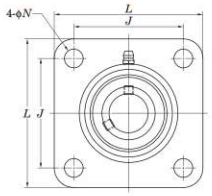
Housing No.	Δ_{N4}
SF204H1~212H1	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Stainless Steel Cover Unit No. Open Type	Closed Type	Dimension mm / inch A_s		Mass kg
20	3/4	3 3/8	1 1/32	2 33/64	15/32	13/32	19/32	1 5/16	1.220	0.500	3/8	UCSF204-12H1S6	SF204H1	UC204-12S6	0.66	10.9	5.35	13.2	–	–	–	–	–
		86	26	64	12	10	15	33.3	31	12.7	M10	UCSF204H1S6		UC204S6					UCSF204H1CS6	UCSF204H1DS6	37.5	1 15/32	0.66
25	7/8	3 3/4	1 3/32	2 3/4	15/32	13/32	5/8	1 13/32	1.343	0.563	3/8	UCSF205-14H1S6	SF205H1	UC205-14S6	0.85	11.9	6.3	13.9	–	–	–	–	–
	15/16											UCSF205-15H1S6		UC205-15S6					–	–	–	–	–
		95	27.5	70	12	10	16	35.8	34.1	14.3	M10	UCSF205H1S6		UC205S6					UCSF205H1CS6	UCSF205H1DS6	40.5	1 19/32	0.85
	1											UCSF205-16H1S6		UC205-16S6					–	–	–	–	–
30	1 1/8	4 1/4	1 7/32	3 17/64	15/32	13/32	45/64	1 19/32	1.500	0.626	3/8	UCSF206-18H1S6	SF206H1	UC206-18S6	1.2	16.5	9.05	13.9	–	–	–	–	–
												UCSF206H1S6		UC206S6					UCSF206H1CS6	UCSF206H1DS6	44.5	1 3/4	1.2
	1 3/16	108	31	83	12	10	18	40.2	38.1	15.9	M10	UCSF206-19H1S6		UC206-19S6					–	–	–	–	–
	1 1/4											UCSF206-20H1S6		UC206-20S6					–	–	–	–	–
35	1 1/4	4 19/32	1 11/32	3 5/8	35/64	7/16	3/4	1 3/4	1.689	0.689	7/16	UCSF207-20H1S6	SF207H1	UC207-20S6	1.5	21.8	12.3	13.9	–	–	–	–	–
	1 5/16											UCSF207-21H1S6		UC207-21S6					–	–	–	–	–
	1 3/8											UCSF207-22H1S6		UC207-22S6					–	–	–	–	–
		117	34	92	14	11	19	44.4	42.9	17.5	M12	UCSF207H1S6		UC207S6					UCSF207H1CS6	UCSF207H1DS6	49	1 15/16	1.5
	1 7/16											UCSF207-23H1S6		UC207-23S6					–	–	–	–	–
40	1 1/2	5 1/8	1 13/32	4 1/64	5/8	15/32	53/64	2 1/32	1.937	0.748	1/2	UCSF208-24H1S6	SF208H1	UC208-24S6	2	24.8	14.3	14.0	–	–	–	–	–
	1 9/16											UCSF208-25H1S6		UC208-25S6					–	–	–	–	–
		130	36	102	16	12	21	51.2	49.2	19	M14	UCSF208H1S6		UC208S6					UCSF208H1CS6	UCSF208H1DS6	55.5	2 3/16	2.0
45	1 5/8	5 13/32	1 1/2	4 9/64	5/8	1/2	55/64	2 1/16	1.937	0.748	1/2	UCSF209-26H1S6	SF209H1	UC209-26S6	2.3	27.8	16.2	14.0	–	–	–	–	–
	1 11/16											UCSF209-27H1S6		UC209-27S6					–	–	–	–	–
	1 3/4											UCSF209-28H1S6		UC209-28S6					–	–	–	–	–
		137	38	105	16	13	22	52.2	49.2	19	M14	UCSF209H1S6		UC209S6					UCSF209H1CS6	UCSF209H1DS6	56.5	2 7/32	2.3
50	1 7/8	5 5/8	1 9/16	4 3/8	5/8	1/2	55/64	2 5/32	2.031	0.748	1/2	UCSF210-30H1S6	SF210H1	UC210-30S6	2.6	29.8	18.6	14.4	–	–	–	–	–
	1 15/16											UCSF210-31H1S6		UC210-31S6					–	–	–	–	–
		143	40	111	16	13	22	54.6	51.6	19	M14	UCSF210H1S6		UC210S6					UCSF210H1CS6	UCSF210H1DS6	59	2 5/16	2.6
	2											UCSF210-32H1S6		UC210-32S6					–	–	–	–	–
55	2	6 3/8	1 11/16	5 1/8	3/4	19/32	63/64	2 5/16	2.189	0.874	5/8	UCSF211-32H1S6	SF211H1	UC211-32S6	4	36.8	23.5	14.4	–	–	–	–	–
	2 1/8											UCSF211-34H1S6		UC211-34S6					–	–	–	–	–
		162	43	130	19	15	25	58.4	55.6	22.2	M16	UCSF211H1S6		UC211S6					UCSF211H1CS6	UCSF211H1DS6	63	2 15/32	4.0
	2 3/16											UCSF211-35H1S6		UC211-35S6					–	–	–	–	–
60	2 1/4	6 7/8	1 7/8	5 5/8	3/4	19/32	1 9/64	2 23/32	2.563	1.000	5/8	UCSF212-36H1S6	SF212H1	UC212-36S6	4.7	44.5	29	14.4	–	–	–	–	–
												UCSF212H1S6		UC212S6					UCSF212H1CS6	UCSF212H1DS6	73.5	2 29/32	4.7
	2 3/8	175	48	143	19	15	29	68.7	65.1	25.4	M16	UCSF212-38H1S6		UC212-38S6					–	–	–	–	–
	2 7/16											UCSF212-39H1S6		UC212-39S6					–	–	–	–	–

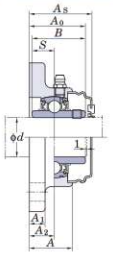
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is are shown below.
   A-1/4-28UNFN12 ..... 204~210
   A-R1/8N12..... 211~212
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UCSF-EH1S6
Cylindrical bore (with set screws)
d 20 ~ 60 mm





With Pressed Stainless Steel Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit: mm

Housing No.	Δ_{A2s}	X
SF204EH1~208EH1	±0.5	0.7
SF211EH1~212EH1	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{N4})

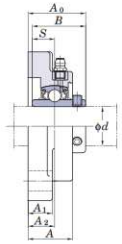
Unit: mm

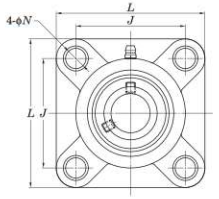
Housing No.	Δ_{N4}
SF204EH1~212EH1	±0.2

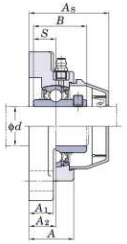
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Stainless Steel Cover Unit No. Open Type	Closed Type	Dimension mm	inch A_s	Mass kg
20	3/4	3 3/8	1 1/32	2 33/64	7/16	13/32	19/32	1 5/16	1.220	0.500	3/8	UCSF204-12EH1S6	SF204EH1	UC204-12S6	0.66	10.9	5.35	13.2	–	–	–	–	–
		86	26	64	11	10	15	33.3	31	12.7		UCSF204EH1S6		UC204S6					UCSF204EH1CS6	UCSF204EH1DS6	37.5	1 15/32	0.66
25	7/8	3 3/4	1 3/32	2 3/4	15/32	13/32	5/8	1 13/32	1.343	0.563	3/8	UCSF205-14EH1S6	SF205EH1	UC205-14S6	0.85	11.9	6.3	13.9	–	–	–	–	–
	15/16	95	27.5	70	12	10	16	35.8	34.1	14.3		UCSF205-15EH1S6		UC205-15S6					–	–	–	–	–
												UCSF205EH1S6		UC205S6					UCSF205EH1CS6	UCSF205EH1DS6	40.5	1 19/32	0.85
	1											UCSF205-16EH1S6		UC205-16S6					–	–	–	–	–
30	1 1/8	4 1/4	1 7/32	3 17/64	33/64	13/32	45/64	1 19/32	1.500	0.626	7/16	UCSF206-18EH1S6	SF206EH1	UC206-18S6	1.2	16.5	9.05	13.9	–	–	–	–	–
		108	31	83	13	10	18	40.2	38.1	15.9		UCSF206EH1S6		UC206S6					UCSF206EH1CS6	UCSF206EH1DS6	44.5	1 3/4	1.2
	1 3/16											UCSF206-19EH1S6		UC206-19S6					–	–	–	–	–
	1 1/4											UCSF206-20EH1S6		UC206-20S6					–	–	–	–	–
35	1 1/4	4 19/32	1 11/32	3 5/8	33/64	7/16	3/4	1 3/4	1.689	0.689	7/16	UCSF207-20EH1S6	SF207EH1	UC207-20S6	1.5	21.8	12.3	13.9	–	–	–	–	–
	1 5/16	117	34	92	13	11	19	44.4	42.9	17.5		UCSF207-21EH1S6		UC207-21S6					–	–	–	–	–
	1 3/8											UCSF207-22EH1S6		UC207-22S6					–	–	–	–	–
												UCSF207EH1S6		UC207S6					UCSF207EH1CS6	UCSF207EH1DS6	49	1 15/16	1.5
	1 7/16											UCSF207-23EH1S6		UC207-23S6					–	–	–	–	–
40	1 1/2	5 1/8	1 13/32	4 1/64	35/64	15/32	53/64	2 1/32	1.937	0.748	1/2	UCSF208-24EH1S6	SF208EH1	UC208-24S6	2	24.8	14.3	14.0	–	–	–	–	–
	1 9/16	130	36	102	14	12	21	51.2	49.2	19		UCSF208-25EH1S6		UC208-25S6					–	–	–	–	–
												UCSF208EH1S6		UC208S6					UCSF208EH1CS6	UCSF208EH1DS6	55.5	2 3/16	2.0
45	1 5/8	5 13/32	1 1/2	4 9/64	5/8	1/2	55/64	2 1/16	1.937	0.748	1/2	UCSF209-26EH1S6	SF209EH1	UC209-26S6	2.3	27.8	16.2	14.0	–	–	–	–	–
	1 11/16	137	38	105	16	13	22	52.2	49.2	19		UCSF209-27EH1S6		UC209-27S6					–	–	–	–	–
	1 3/4											UCSF209-28EH1S6		UC209-28S6					–	–	–	–	–
												UCSF209EH1S6		UC209S6					UCSF209EH1CS6	UCSF209EH1DS6	56.5	2 7/32	2.3
50	1 7/8	5 5/8	1 9/16	4 3/8	5/8	1/2	55/64	2 5/32	2.031	0.748	1/2	UCSF210-30EH1S6	SF210EH1	UC210-30S6	2.6	29.8	18.6	14.4	–	–	–	–	–
	1 15/16	143	40	111	16	13	22	54.6	51.6	19		UCSF210-31EH1S6		UC210-31S6					–	–	–	–	–
												UCSF210EH1S6		UC210S6					UCSF210EH1CS6	UCSF210EH1DS6	59	2 5/16	2.6
	2											UCSF210-32EH1S6		UC210-32S6					–	–	–	–	–
55	2	6 3/8	1 11/16	5 1/8	43/64	19/32	63/64	2 5/16	2.189	0.874	5/8	UCSF211-32EH1S6	SF211EH1	UC211-32S6	4	30.7	23.5	14.4	–	–	–	–	–
	2 1/8	162	43	130	17	15	25	58.4	55.6	22.2		UCSF211-34EH1S6		UC211-34S6					–	–	–	–	–
												UCSF211EH1S6		UC211S6					UCSF211EH1CS6	UCSF211EH1DS6	63	2 15/32	4.0
	2 3/16											UCSF211-35EH1S6		UC211-35S6					–	–	–	–	–
60	2 1/4	6 7/8	1 7/8	5 5/8	43/64	19/32	1 9/64	2 23/32	2.563	1.000	5/8	UCSF212-36EH1S6	SF212EH1	UC212-36S6	4.7	31.6	29	14.4	–	–	–	–	–
		175	48	143	17	15	29	68.7	65.1	25.4		UCSF212EH1S6		UC212S6					UCSF212EH1CS6	UCSF212EH1DS6	73.5	2 29/32	4.7
	2 3/8											UCSF212-38EH1S6		UC212-38S6					–	–	–	–	–
	2 7/16											UCSF212-39EH1S6		UC212-39S6					–	–	–	–	–

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is are shown below.
   A-1/4-28UNFN12 ..... 204~210
   A-R1/8N12..... 211~212
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UCVF-S6
Cylindrical bore (with set screws)
d 20 ~ 40 mm







Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

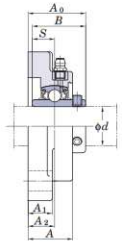
Unit: mm

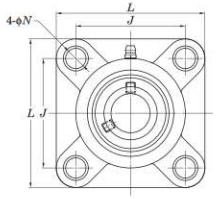
Housing No.	Δ_{A2s}	X
VF204~VF208	±0.5	0.7

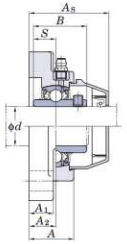
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Plastic Cover Unit No. Open Type	Closed Type	Dimension mm / inch A_s	Mass kg
20	3/4	3 3/8	1 3/32	2 1/2	7/16	17/32	45/64	1 7/16	1.220	0.500	3/8	**UCVF204-12S6**	VF204	UC204-12S6	0.3	10.9	5.35	13.2	UCVF204-12CS6	UCVF204-12DS6	48 / 1 7/8	0.31
		86	27.8	63.5	11	13.4	18	36.3	31	12.7	M10	**UCVF204S6**		UC204S6					UCVF204CS6	UCVF204DS6		
25	7/8	3 3/4	1 1/8	2 3/4	7/16	5/8	43/64	1 7/16	1.343	0.563	3/8	**UCVF205-14S6**	VF205	UC205-14S6	0.41	11.9	6.3	13.9	UCVF205-14CS6	UCVF205-14DS6	50.7 / 2	0.42
	15/16	95	28.5	70	11	15.5	17	36.8	34.1	14.3	M10	**UCVF205-15S6**		UC205-15S6					UCVF205-15CS6	UCVF205-15DS6		
												UCVF205S6		UC205S6					UCVF205CS6	UCVF205DS6		
	1											**UCVF205-16S6**		UC205-16S6					UCVF205-16CS6	UCVF205-16DS6		
30	1 1/8	4 7/32	1 1/4	3 17/64	7/16	9/16	3/4	1 5/8	1.500	0.626	3/8	**UCVF206-18S6**	VF206	UC206-18S6	0.56	16.5	9.05	13.9	UCVF206-18CS6	UCVF206-18DS6	58.3 / 1 9/32	0.57
	1 3/16	107	31.7	83	11	14.5	19.2	41.4	38.1	15.9	M10	**UCVF206S6**		UC206S6					UCVF206CS6	UCVF206DS6		
												UCVF206-19S6		UC206-19S6					UCVF206-19CS6	UCVF206-19DS6		
	1 1/4											**UCVF206-20S6**		UC206-20S6					UCVF206-20CS6	UCVF206-20DS6		
35	1 1/4	4 21/32	1 11/32	3 5/8	33/64	5/8	27/32	1 27/32	1.689	0.689	1/2	**UCVF207-20S6**	VF207	UC207-20S6	0.83	21.8	12.3	13.9	UCVF207-20CS6	UCVF207-20DS6	63.7 / 2 1/2	0.85
	1 5/16	118	34.5	92	13	15.5	21.5	46.9	42.9	17.5	M12	**UCVF207-21S6**		UC207-21S6					UCVF207-21CS6	UCVF207-21DS6		
	1 3/8											**UCVF207-22S6**		UC207-22S6					UCVF207-22CS6	UCVF207-22DS6		
												UCVF207S6		UC207S6					UCVF207CS6	UCVF207DS6		
	1 7/16											**UCVF207-23S6**		UC207-23S6					UCVF207-23CS6	UCVF207-23DS6		
40	1 1/2	5 1/8	1 7/16	4 1/64	35/64	21/32	29/32	2 3/32	1.937	0.748	1/2	**UCVF208-24S6**	VF208	UC208-24S6	1.08	24.8	14.3	14.0	UCVF208-24CS6	UCVF208-24DS6	70.7 / 2 25/32	1.11
	1 9/16	130	36.5	102	14	17	23	53.2	49.2	19	M12	**UCVF208-25S6**		UC208-25S6					UCVF208-25CS6	UCVF208-25DS6		
												UCVF208S6		UC208S6					UCVF208CS6	UCVF208DS6		

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is A-1/4-28UNFN12.
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UCVF-ES7
Cylindrical bore (with set screws)
d 20 ~ 40 mm







Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

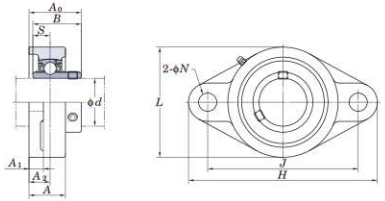
Unit: mm

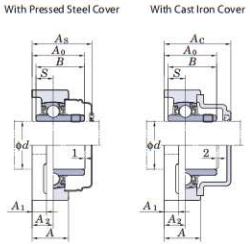
Housing No.	Δ_{A2s}	X
VF204E~VF208E	±0.5	0.7

Shaft Dia. mm / inch d		Dimensions inch / mm L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Plastic Cover Unit No. Open Type	Closed Type	Dimension mm / inch A_s	Mass kg
20	3/4	3 3/8 86	1 3/32 27.8	2 1/2 63.5	7/16 11	17/32 13.4	45/64 18	1 7/16 36.3	1.220 31	0.500 12.7	3/8 M8	**UCVF204-12ES7** **UCVF204ES7**	VF204E	UC204-12S7 UC204S7	0.3	12.8	6.65	13.2	UCVF204-12ECS7 UCVF204ECS7	UCVF204-12EDS7 UCVF204EDS7	48	1 7/8	0.31
25	7/8 15/16 1	3 3/4 95	1 1/8 28.5	2 3/4 70	7/16 11	5/8 15.5	43/64 17	1 7/16 36.8	1.343 34.1	0.563 14.3	7/16 M10	**UCVF205-14ES7** **UCVF205-15ES7** **UCVF205ES7** **UCVF205-16ES7**	VF205E	UC205-14S7 UC205-15S7 UC205S7 UC205-16S7	0.41	14.0	7.85	13.9	UCVF205-14ECS7 UCVF205-15ECS7 UCVF205ECS7 UCVF205-16ECS7	UCVF205-14EDS7 UCVF205-15EDS7 UCVF205EDS7 UCVF205-16EDS7	50.7	2	0.42
30	1 1/8 1 3/16 1 1/4	4 7/32 107	1 1/4 31.7	3 17/64 83	7/16 11	9/16 14.5	3/4 19.2	1 5/8 41.4	1.500 38.1	0.626 15.9	7/16 M10	**UCVF206-18ES7** **UCVF206ES7** **UCVF206-19ES7** **UCVF206-20ES7**	VF206E	UC206-18S7 UC206S7 UC206-19S7 UC206-20S7	0.56	19.5	11.3	13.9	UCVF206-18ECS7 UCVF206ECS7 UCVF206-19ECS7 UCVF206-20ECS7	UCVF206-18EDS7 UCVF206EDS7 UCVF206-19EDS7 UCVF206-20EDS7	58.5	1 5/16	0.57
35	1 1/4 1 5/16 1 3/8 1 7/16	4 21/32 118	1 11/32 34.5	3 5/8 92	33/64 13	5/8 15.5	27/32 21.5	1 27/32 46.9	1.689 42.9	0.689 17.5	1/2 M12	**UCVF207-20ES7** **UCVF207-21ES7** **UCVF207-22ES7** **UCVF207ES7** **UCVF207-23ES7**	VF207E	UC207-20S7 UC207-21S7 UC207-22S7 UC207S7 UC207-23S7	0.83	25.7	15.4	13.9	UCVF207-20ECS7 UCVF207-21ECS7 UCVF207-22ECS7 UCVF207ECS7 UCVF207-23ECS7	UCVF207-20EDS7 UCVF207-21EDS7 UCVF207-22EDS7 UCVF207EDS7 UCVF207-23EDS7	63.7	2 1/2	0.85
40	1 1/2 1 9/16	5 1/8 130	1 7/16 36.5	4 1/64 102	35/64 14	21/32 17	29/32 23	2 3/32 53.2	1.937 49.2	0.748 19	1/2 M12	**UCVF208-24ES7** **UCVF208-25ES7** **UCVF208ES7**	VF208E	UC208-24S7 UC208-25S7 UC208S7	1.08	29.1	17.8	14.0	UCVF208-24ECS7 UCVF208-25ECS7 UCVF208ECS7	UCVF208-24EDS7 UCVF208-25EDS7 UCVF208EDS7	70.7	2 25/32	1.11

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is A-1/4-28UNFN12.
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UCFL
Cylindrical bore (with set screws)
d 12 ~ (45) mm





Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

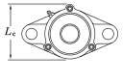
Unit: mm

Housing No.			Δ_{A2s}	X
FL204~FL210	FLX05~FLX10	FL305~FL310	±0.5	0.7
FL211~FL218		FL311~FL324	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{Ns}) Unit: mm

Housing No.			Δ_{Ns}
FL204~FL218	FLX05~FLX10	FL305~FL311	±0.2
		FL312~FL324	±0.3

Forms and dimensions of L_e of FL204JE3 and FL205JE3 (housing with cast iron cover) are shown below.



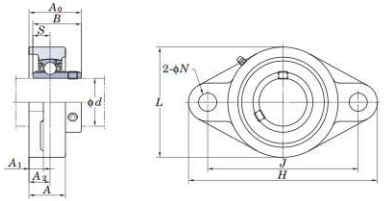
FL204JE3 L_e = 65 mm
FL205JE3 L_e = 73 mm

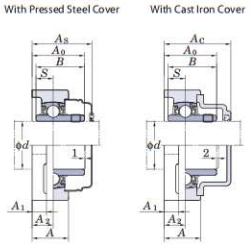
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	Closed Type	Dimension mm / inch A_s		Mass kg	With Cast Iron Cover Unit No. Open Type	Closed Type	Dimension mm / inch A_c		Mass kg
12													UCFL201		UC201	0.50				UCFL201C	UCFL201D	37.5	1 15/32	0.50	–	–	–	–	–
	1/2												UCFL201-8		UC201-8	0.50				–	–	–	–	–	–	–	–	–	–
15		4 7/16	2 3/8	1	3 35/64	15/32	7/16	19/32	1 5/16	1.220	0.500	3/8	UCFL202		UC202	0.48				UCFL202C	UCFL202D	37.5	1 15/32	0.48	–	–	–	–	–
	5/8	113	60	25.5	90	12	11	15	33.3	31	12.7	M10	UCFL202-10	FL204	UC202-10	0.48	12.8	6.65	13.2	–	–	–	–	–	–	–	–	–	–
17													UCFL203		UC203	0.47				UCFL203C	UCFL203D	37.5	1 15/32	0.47	–	–	–	–	–
	3/4												UCFL204-12		UC204-12	0.47				–	–	–	–	–	–	–	–	–	–
20													UCFL204		UC204	0.45				UCFL204C	UCFL204D	37.5	1 15/32	0.45	UCFL204FC	UCFL204FD	46	1 13/16	0.6
	7/8												UCFL205-14		UC205-14	0.64				–	–	–	–	–	–	–	–	–	–
	15/16	5 1/8	2 1/16	1 1/16	3 57/64	5/8	1/2	5/8	1 13/32	1.343	0.563	1/2	UCFL205-15		UC205-15	0.64				–	–	–	–	–	–	–	–	–	–
		130	68	27	99	16	13	16	35.8	34.1	14.3	M14	UCFL205	FL205	UC205	0.64	14.0	7.85	13.9	UCFL205C	UCFL205D	40.5	1 19/32	0.64	UCFL205FC	UCFL205FD	49	1 15/16	0.83
25	1												UCFL205-16		UC205-16	0.64				–	–	–	–	–	–	–	–	–	–
		5 9/16	3 9/32	1 3/16	4 39/64	15/32	1/2	45/64	1 19/32	1.500	0.626	3/8	UCFLX05	FLX05	UCX05	1.1	19.5	11.3	13.9	UCFLX05C	UCFLX05D	44.5	1 3/4	1.1	–	–	–	–	–
	1	141	83	30	117	12	13	18	40.2	38.1	15.9	M10	UCFLX05-16		UCX05-16	1.1				–	–	–	–	–	–	–	–	–	–
		5 29/32	3 5/32	1 5/32	4 29/64	3/4	1/2	5/8	1 17/32	1.496	0.591	5/8	UCFL305	FL305	UC305	1.1	21.2	10.9	12.6	–	–	–	–	–	UCFL305C	UCFL305D	54	2 1/8	1.4
	1	150	80	29	113	19	13	16	39	38	15	M16	UCFL305-16		UC305-16	1.1				–	–	–	–	–	–	–	–	–	–
	1 1/8												UCFL206-18		UC206-18	0.93				–	–	–	–	–	–	–	–	–	–
		5 13/16	3 5/32	1 7/32	4 39/64	5/8	1/2	45/64	1 19/32	1.500	0.626	1/2	UCFL206		UC206	0.93				UCFL206C	UCFL206D	44.5	1 3/4	0.93	UCFL206FC	UCFL206FD	53	2 3/32	1.2
	1 3/16	148	80	31	117	16	13	18	40.2	38.1	15.9	M14	UCFL206-19	FL206	UC206-19	0.93	19.5	11.3	13.9	–	–	–	–	–	–	–	–	–	–
	1 1/4												UCFL206-20		UC206-20	0.93				–	–	–	–	–	–	–	–	–	–
30													UCFLX06		UCX06	1.5				UCFLX06C	UCFLX06D	49	1 15/16	1.5	–	–	–	–	–
	1 3/16	6 5/32	3 3/4	1 11/32	5 1/8	5/8	9/16	3/4	1 3/4	1.689	0.689	1/2	UCFLX06-19	FLX06	UCX06-19	1.5	25.7	15.4	13.9	–	–	–	–	–	–	–	–	–	–
	1 1/4	156	95	34	130	16	14	19	44.4	42.9	17.5	M14	UCFLX06-20		UCX06-20	1.5				–	–	–	–	–	–	–	–	–	–
	–	7 3/32	3 7/32	1 1/4	5 9/32	29/32	19/32	45/64	1 23/32	1.693	0.669	3/4	UCFL306	FL306	UC306	1.5	26.7	15.0	13.3	–	–	–	–	–	UCFL306C	UCFL306D	59	2 5/16	1.8
	1 1/4												UCFL207-20		UC207-20	1.2				–	–	–	–	–	–	–	–	–	–
	1 5/16	6 11/32	3 7/32	1 11/32	5 1/8	5/8	9/16	3/4	1 3/4	1.689	0.689	1/2	UCFL207-21		UC207-21	1.2				–	–	–	–	–	–	–	–	–	–
	1 3/8	161	90	34	130	16	14	19	44.4	42.9	17.5	M14	UCFL207-22	FL207	UC207-22	1.2	25.7	15.4	13.9	–	–	–	–	–	–	–	–	–	–
													UCFL207		UC207	1.2				UCFL207C	UCFL207D	49	1 15/16	1.2	UCFL207FC	UCFL207FD	58	2 9/32	1.6
35	1 7/16												UCFL207-23		UC207-23	1.2				–	–	–	–	–	–	–	–	–	–
	1 3/8												UCFLX07-22		UCX07-22	1.9				–	–	–	–	–	–	–	–	–	–
		6 23/32	4 1/8	1 1/2	5 43/64	5/8	9/16	53/64	2 1/32	1.937	0.748	1/2	UCFLX07	FLX07	UCX07	1.9	29.1	17.8	14.0	UCFLX07C	UCFLX07D	55.5	2 3/16	1.9	–	–	–	–	–
	1 7/16	171	105	38	144	16	14	21	51.2	49.2	19	M14	UCFLX07-23		UCX07-23	1.9				–	–	–	–	–	–	–	–	–	–
	–	7 9/32	3 5/16	1 13/32	5 35/64	29/32	5/8	25/32	1 15/16	1.890	0.748	3/4	UCFL307	FL307	UC307	1.8	33.4	19.3	13.2	–	–	–	–	–	UCFL307C	UCFL307D	64	2 17/32	2.2
	1 1/2												UCFL208-24		UC208-24	1.6				–	–	–	–	–	–	–	–	–	–
	1 9/16	6 7/8	3 5/16	1 13/32	5 43/64	5/8	9/16	53/64	2 1/32	1.937	0.748	1/2	UCFL208-25	FL208	UC208-25	1.6	29.1	17.8	14.0	–	–	–	–	–	–	–	–	–	–
		175	100	36	144	16	14	21	51.2	49.2	19	M14	UCFL208		UC208	1.6				UCFL208C	UCFL208D	55.5	2 3/16	1.6	UCFL208FC	UCFL208FD	64	2 17/32	2.0
40	1 1/2	7 1/16	4 3/8	1 9/16	5 53/64	5/8	9/16	55/64	2 1/16	1.937	0.748	1/2	UCFLX08-24	FLX08	UCX08-24	2.1	34.1	21.3	14.0	–	–	–	–	–	–	–	–	–	–
		179	111	40	148	16	14	22	52.2	49.2	19	M14	UCFLX08		UCX08	2.1				UCFLX08C	UCFLX08D	56.5	2 7/32	2.1	–	–	–	–	–
	1 1/2	7 7/8	4 3/32	1 9/16	6 7/32	29/32	21/32	29/32	2 7/32	2.047	0.748	3/4	UCFL308-24	FL308	UC308-24	2.5	40.7	24.0	13.2	–	–	–	–	–	–	–	–	–	–
		200	112	40	158	23	17	23	56	52	19	M20	UCFL308		UC308	2.5				–	–	–	–	–	UCFL308C	UCFL308D	71	2 25/32	3.0
	1 5/8												UCFL209-26		UC209-26	1.9				–	–	–	–	–	–	–	–	–	–
	1 11/16	7 13/32	4 1/4	1 1/2	5 53/64	3/4	19/32	55/64	2 1/16	1.937	0.748	5/8	UCFL209-27	FL209	UC209-27	1.9	34.1	21.3	14.0	–	–	–	–	–	–	–	–	–	–
	1 3/4	188	108	38	148	19	15	22	52.2	49.2	19	M16	UCFL209-28		UC209-28	1.9				–	–	–	–	–	–	–	–	–	–
45													UCFL209		UC209	1.9				UCFL209C	UCFL209D	56.5	2 7/32	1.9	UCFL209FC	UCFL209FD	66	2 19/32	2.3
	1 11/16	7 7/16	4 9/16	1 9/16	6 3/16	5/8	9/16	29/32	2 3/16	2.031	0.748	1/2	UCFLX09-27		UCX09-27	2.4				–	–	–	–	–	–	–	–	–	–
	1 3/4	189	116	40	157	16	14	23	55.6	51.6	19	M14	UCFLX09-28	FLX09	UCX09-28	2.4	35.1	23.3	14.4	–	–	–	–	–	–	–	–	–	–
													UCFLX09		UCX09	2.4				UCFLX09C	UCFLX09D	60	2 3/8	2.4	–	–	–	–	–

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~210, X05~X09, 305~308
   A-R1/8 ..... 211~218, X10, 309~324
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (or L2) follows the Part No. of unit or bearing. (Example of Part No. : UCFL206JL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

FYH

UCFL
Cylindrical bore (with set screws)
d (45) ~ (90) mm





Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit: mm

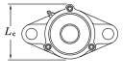
Housing No.			Δ_{A2s}	X
FL204~FL210	FLX05~FLX10	FL305~FL310	±0.5	0.7
FL211~FL218		FL311~FL324	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{Ns})

Unit: mm

Housing No.			Δ_{Ns}
FL204~FL218	FLX05~FLX10	FL305~FL311	±0.2
		FL312~FL324	±0.3

Forms and dimensions of L_c of FL204JE3 and FL205JE3 (housing with cast iron cover) are shown below.

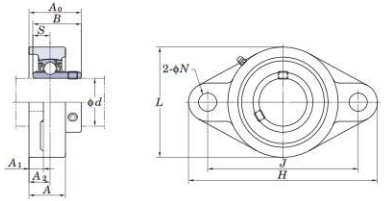


FL204JE3 L_c = 65 mm
FL205JE3 L_c = 73 mm

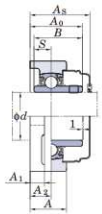
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	Closed Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Cover Unit No. Open Type	Closed Type	Dimension mm / inch A_c	Mass kg
45	1 3/4	9 1/16	4 29/32	1 23/32	6 31/32	63/64	23/32	63/64	2 3/8	2.244	0.866	7/8	UCFL309-28	FL309	UC309-28	3.5	48.9	29.5	13.3	–	–	– –	–	–	–	– –	–
		230	125	44	177	25	18	25	60	57	22	M22	UCFL309		UC309	3.5				–	–	– –	–	UCFL309C	UCFL309D	76 3	4.1
50	1 7/8												UCFL210-30	FL210	UC210-30	2.2	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
	1 15/16	7 3/4	4 7/32	1 9/16	6 3/16	3/4	19/32	55/64	2 5/32	2.031	0.748	5/8	UCFL210-31		UC210-31	2.2				–	–	– –	–	–	–	– –	–
		197	115	40	157	19	15	22	54.6	51.6	19	M16	UCFL210		UC210	2.2				UCFL210C	UCFL210D	59 2 5/16	2.2	UCFL210FC	UCFL210FD	70.5 2 25/32	2.7
	2												UCFL210-32		UC210-32	2.2				–	–	– –	–	–	–	– –	–
	1 15/16	8 1/2	5 1/4	1 23/32	7 1/4	3/4	25/32	1 1/32	2 11/32	2.189	0.874	5/8	UCFLX10-31	FLX10	UCX10-31	3.8	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
		216	133	44	184	19	20	26	59.4	55.6	22.2	M16	UCFLX10		UCX10	3.8				UCFLX10C	UCFLX10D	64 2 17/32	3.8	–	–	– –	–
	2												UCFLX10-32		UCX10-32	3.8				–	–	– –	–	–	–	– –	–
	–	9 7/16	5 1/2	1 7/8	7 23/64	63/64	3/4	1 7/64	2 5/8	2.402	0.866	7/8	UCFL310	FL310	UC310	4.4	62.0	38.3	13.2	–	–	– –	–	UCFL310C	UCFL310D	83 3 9/32	5.2
55	2												UCFL211-32	FL211	UC211-32	3.3	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
	2 1/8	8 13/16	5 1/8	1 11/16	7 1/4	3/4	23/32	63/64	2 5/16	2.189	0.874	5/8	UCFL211-34		UC211-34	3.3				–	–	– –	–	–	–	– –	–
		224	130	43	184	19	18	25	58.4	55.6	22.2	M16	UCFL211		UC211	3.3				UCFL211C	UCFL211D	63 2 15/32	3.3	UCFL211FC	UCFL211FD	74.5 2 15/16	3.9
	2 3/16												UCFL211-35		UC211-35	3.3				–	–	– –	–	–	–	– –	–
	2												UCFL311-32	FL311	UC311-32	5.3	71.6	45.0	13.2	–	–	– –	–	–	–	– –	–
		9 27/32	5 29/32	2 1/16	7 51/64	63/64	25/32	1 3/16	2 25/32	2.598	0.984	7/8	UCFL311		UC311	5.3				–	–	– –	–	UCFL311C	UCFL311D	87 3 7/16	6.2
	2 3/16	250	150	52	198	25	20	30	71	66	25	M22	UCFL311-35		UC311-35	5.3				–	–	– –	–	–	–	– –	–
60	2 1/4												UCFL212-36	FL212	UC212-36	4.2	52.4	36.2	14.4	–	–	– –	–	–	–	– –	–
		9 27/32	5 1/2	1 7/8	7 61/64	29/32	23/32	1 9/64	2 23/32	2.563	1.000	3/4	UCFL212		UC212	4.2				UCFL212C	UCFL212D	73.5 2 29/32	4.2	UCFL212FC	UCFL212FD	86 3 3/8	5.0
	2 3/8	250	140	48	202	23	18	29	68.7	65.1	25.4	M20	UCFL212-38		UC212-38	4.2				–	–	– –	–	–	–	– –	–
	2 7/16												UCFL212-39		UC212-39	4.2				–	–	– –	–	–	–	– –	–
		10 5/8	6 5/16	2 7/32	8 11/32	1 7/32	7/8	1 19/64	3 1/16	2.795	1.024	1	UCFL312	FL312	UC312	6.5	81.9	52.2	13.2	–	–	– –	–	UCFL312C	UCFL312D	95 3 3/4	7.7
	2 7/16	270	160	56	212	31	22	33	78	71	26	M27	UCFL312-39		UC312-39	6.5				–	–	– –	–	–	–	– –	–
65	2 1/2	10 5/32	6 3/32	1 31/32	8 17/64	29/32	25/32	1 3/16	2 3/4	2.563	1.000	3/4	UCFL213-40	FL213	UC213-40	5.1	57.2	40.1	14.4	–	–	– –	–	–	–	– –	–
		258	155	50	210	23	20	30	69.7	65.1	25.4	M20	UCFL213		UC213	5.1				UCFL213C	UCFL213D	74.5 2 15/16	5.1	UCFL213FC	UCFL213FD	87 3 7/16	5.9
	2 1/2	11 5/8	6 7/8	2 9/32	9 29/64	1 7/32	31/32	1 19/64	3 1/16	2.953	1.181	1	UCFL313-40	FL313	UC313-40	8.5	92.7	59.9	13.2	–	–	– –	–	–	–	– –	–
		295	175	58	240	31	25	33	78	75	30	M27	UCFL313		UC313	8.5				–	–	– –	–	UCFL313C	UCFL313D	94 3 11/16	9.6
70	2 3/4	10 7/16	6 5/16	2 1/8	8 1/2	29/32	25/32	1 7/32	2 31/32	2.937	1.189	3/4	UCFL214-44	FL214	UC214-44	5.7	62.2	44.1	14.5	–	–	– –	–	–	–	– –	–
		265	160	54	216	23	20	31	75.4	74.6	30.2	M20	UCFL214		UC214	5.7				UCFL214C	UCFL214D	80.5 3 5/32	5.7	UCFL214FC	UCFL214FD	93 3 21/32	6.6
	2 3/4	12 13/32	7 9/32	2 13/32	9 27/32	1 3/8	1 3/32	1 27/64	3 3/16	3.071	1.299	1 1/8	UCFL314-44	FL314	UC314-44	9.7	104	68.2	13.2	–	–	– –	–	–	–	– –	–
		315	185	61	250	35	28	36	81	78	33	M30	UCFL314		UC314	9.7				–	–	– –	–	UCFL314C	UCFL314D	98 3 27/32	10.8
75	2 15/16												UCFL215-47	FL215	UC215-47	6.4	67.4	48.3	14.5	–	–	– –	–	–	–	– –	–
		10 13/16	6 1/2	2 7/32	8 55/64	29/32	25/32	1 11/32	3 3/32	3.063	1.311	3/4	UCFL215		UC215	6.4				UCFL215C	UCFL215D	83.5 3 9/32	6.4	UCFL215FC	UCFL215FD	96 3 25/32	7.4
	3	275	165	56	225	23	20	34	78.5	77.8	33.3	M20	UCFL215-48		UC215-48	6.4				–	–	– –	–	–	–	– –	–
	2 15/16												UCFL315-47	FL315	UC315-47	11.3	113	77.2	13.2	–	–	– –	–	–	–	– –	–
		12 19/32	7 1/16	2 19/32	10 15/64	1 3/8	1 3/16	1 17/32	3 1/2	3.228	1.260	1 1/8	UCFL315		UC315	11.3				–	–	– –	–	UCFL315C	UCFL315D	106 4 3/16	12.6
	3	320	195	66	260	35	30	39	89	82	32	M30	UCFL315-48		UC315-48	11.3				–	–	– –	–	–	–	– –	–
80	3 1/8	11 13/32	7 3/32	2 9/32	9 11/64	63/64	25/32	1 11/32	3 9/32	3.252	1.311	7/8	UCFL216-50	FL216	UC216-50	7.8	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
		290	180	58	233	25	20	34	83.3	82.6	33.3	M22	UCFL216		UC216	7.8				UCFL216C	UCFL216D	88.5 3 15/32	7.8	UCFL216FC	UCFL216FD	103 4 1/16	9.0
	–	13 31/32	8 9/32	2 11/16	11 7/32	1 1/2	1 1/4	1 1/2	3 17/32	3.386	1.339	1 1/4	UCFL316	FL316	UC316	14.4	123	86.7	13.3	–	–	– –	–	UCFL316C	UCFL316D	107 4 7/32	15.8
85	3 1/4	12	7 5/32	2 15/32	9 49/64	63/64	7/8	1 27/64	3 7/16	3.374	1.343	7/8	UCFL217-52	FL217	UC217-52	9.8	84.0	61.9	14.5	–	–	– –	–	–	–	– –	–
		305	190	63	248	25	22	36	87.6	85.7	34.1	M22	UCFL217		UC217	9.8				UCFL217C	UCFL217D	92.5 3 21/32	9.8	UCFL217FC	UCFL217FD	107 4 7/32	11.2
	–	14 9/16	8 21/32	2 29/32	11 13/16	1 1/2	1 1/4	1 47/64	3 15/16	3.780	1.575	1 1/4	UCFL317	FL317	UC317	16.0	133	96.8	13.3	–	–	– –	–	UCFL317C	UCFL317D	117 4 19/32	17.6
90	3 1/2	12 19/32	8 1/16	2 11/16	10 7/16	63/64	29/32	1 37/64	3 25/32	3.780	1.563	7/8	UCFL218-56	FL218	UC218-56	12.3	96.1	71.5	14.5	–	–	– –	–	–	–	– –	–
		320	205	68	265	25	23	40	96.3	96	39.7	M22	UCFL218		UC218	12.3				UCFL218C	UCFL218D	101.5 4	12.3	UCFL218FC	UCFL218FD	116 4 9/16	13.8

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~210, X05~X09, 305~308
   A-R1/8 ..... 211~218, X10, 309~324
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (or L2) follows the Part No. of unit or bearing. (Example of Part No. : UCFL206JL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

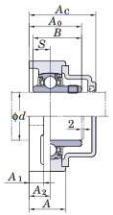
UCFL
Cylindrical bore (with set screws)
d (90) ~ 120 mm



With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit: mm

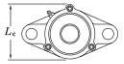
Housing No.			Δ_{A2s}	X
FL204~FL210	FLX05~FLX10	FL305~FL310	±0.5	0.7
FL211~FL218		FL311~FL324	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{Ns})

Unit: mm

Housing No.			Δ_{Ns}
FL204~FL218	FLX05~FLX10	FL305~FL311	±0.2
		FL312~FL324	±0.3

Forms and dimensions of L_e of FL204JE3 and FL205JE3 (housing with cast iron cover) are shown below.



FL204JE3 L_e = 65 mm
FL205JE3 L_e = 73 mm

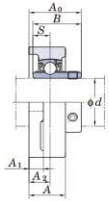
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	Closed Type	Dimension mm	inch A_s	Mass kg	With Cast Iron Cover Unit No. Open Type	Closed Type	Dimension mm	inch A_c	Mass kg
90	3 1/2	15 5/32	9 1/4	3	12 13/32	1 1/2	1 13/32	1 47/64	3 15/16	3.780	1.575	1 1/4	UCFL318-56	FL318	UC318-56	19.0	143	107	13.3	–	–	–	–	–	–	–	–	–	–
		385	235	76	315	38	36	44	100	96	40	M33	UCFL318		UC318	19.0				–	–	–	–	–	UCFL318C	UCFL318D	119	4 11/16	20.9
95	–	15 15/16	9 27/32	3 11/16	13	1 39/64	1 9/16	2 21/64	4 3/4	4.055	1.614	1 3/8	UCFL319	FL319	UC319	24.6	153	119	13.3	–	–	–	–	–	UCFL319C	UCFL319D	140	5 1/2	26.8
		405	250	94	330	41	40	59	121	103	41	M36																	
100	3 15/16	17 5/16	10 5/8	3 11/16	14 11/64	1 47/64	1 9/16	2 21/64	4 29/32	4.252	1.654	1 1/2	UCFL320	FL320	UC320	29.4	173	141	13.2	–	–	–	–	–	UCFL320C	UCFL320D	146	5 3/4	32.2
		440	270	94	360	44	40	59	125	108	42	M39	UCFL320-63		UC320-63	29.4				–	–	–	–	–	–	–	–	–	–
	4												UCFL320-64		UC320-64	29.4				–	–	–	–	–	–	–	–	–	–
110	–	18 1/2	11 13/16	3 25/32	15 23/64	1 47/64	1 21/32	2 23/64	5 5/32	4.606	1.811	1 1/2	UCFL322	FL322	UC322	36.2	205	180	13.2	–	–	–	–	–	UCFL322C	UCFL322D	154	6 1/16	39.6
		470	300	96	390	44	42	60	131	117	46	M39																	
120	–	20 15/32	13	4 11/32	16 59/64	1 27/32	1 7/8	2 9/16	5 1/2	4.961	2.008	1 5/8	UCFL324	FL324	UC324	51.6	207	185	13.5	–	–	–	–	–	UCFL324C	UCFL324D	163	6 13/32	56.4
		520	330	110	430	47	48	65	140	126	51	M42																	

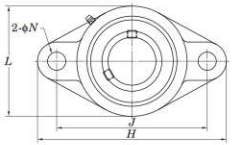
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~210, X05~X09, 305~308
   A-R1/8 ..... 211~218, X10, 309~324
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (or L2) follows the Part No. of unit or bearing. (Example of Part No. : UCFL206JL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

FYH

UCFL-E
Cylindrical bore (with set screws)
d 12 ~ 75 mm

ROYSE rodamientos y servicios Desde 1974





Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A20}) and tolerance of position of bolt hole (X)

Unit: mm

Housing No.	Δ_{A20}	X
FL203E~FL210E	±0.5	0.7
FL211E~FL217E	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{N4})

Unit: mm

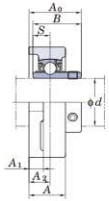
Housing No.	Δ_{N4}
FL203E~FL217E	±0.2

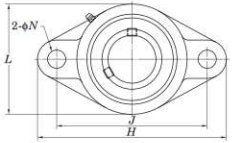
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12													UCFL201E		UC201				0.42
	1/2												UCFL201-8E		UC201-8				
15		3 27/32	2 7/32	1	3	25/64	7/16	19/32	1 5/16	1.220	0.500	5/16	UCFL202E	FL203E	UC202	12.8	6.65	13.2	0.4
		98	56	25.5	76.2	10	11	15	33.3	31	12.7		UCFL202-10E		UC202-10				
	5/8												UCFL203E		UC203				
17																			0.39
20	3/4	4 7/16	2 3/8	1	3 17/32	25/64	7/16	19/32	1 5/16	1.220	0.500	5/16	UCFL204-12E	FL204E	UC204-12	12.8	6.65	13.2	0.48
		113	60	25.5	89.7	10	11	15	33.3	31	12.7		UCFL204E		UC204				
	7/8												UCFL205-14E		UC205-14				
25	15/16	5 1/8	2 1/16	1 1/16	3 57/64	15/32	1/2	5/8	1 13/32	1.343	0.563	3/8	UCFL205-15E	FL205E	UC205-15	14.0	7.85	13.9	0.64
		130	68	27	98.8	12	13	16	35.8	34.1	14.3		UCFL205E		UC205				
	1												UCFL205-16E		UC205-16				
	1 1/8												UCFL206-18E		UC206-18				
30		5 13/16	3 5/32	1 7/32	4 19/32	15/32	1/2	45/64	1 19/32	1.500	0.626	3/8	UCFL206E	FL206E	UC206	19.5	11.3	13.9	0.93
	1 3/16	148	80	31	116.7	12	13	18	40.2	38.1	15.9		UCFL206-19E		UC206-19				
	1 1/4												UCFL206-20E		UC206-20				
	1 1/4												UCFL207-20E		UC207-20				
	1 5/16												UCFL207-21E		UC207-21				
35	1 3/8	6 11/32	3 7/32	1 11/32	5 1/8	33/64	9/16	3/4	1 3/4	1.689	0.689	7/16	UCFL207-22E	FL207E	UC207-22	25.7	15.4	13.9	1.2
		161	90	34	130.2	13	14	19	44.4	42.9	17.5		UCFL207E		UC207				
	1 7/16												UCFL207-23E		UC207-23				
	1 1/2												UCFL208-24E		UC208-24				
40	1 9/16	6 7/8	3 5/16	1 13/32	5 21/32	33/64	9/16	53/64	2 1/32	1.937	0.748	7/16	UCFL208-25E	FL208E	UC208-25	29.1	17.8	14.0	1.6
		175	100	36	143.7	13	14	21	51.2	49.2	19		UCFL208E		UC208				
	1 5/8												UCFL209-26E		UC209-26				
45	1 11/16	7 13/32	4 1/4	1 1/2	5 27/32	19/32	19/32	55/64	2 1/16	1.937	0.748	1/2	UCFL209-27E	FL209E	UC209-27	34.1	21.3	14.0	1.9
	1 3/4	188	108	38	148.4	15	15	22	52.2	49.2	19		UCFL209-28E		UC209-28				
													UCFL209E		UC209				
	1 7/8												UCFL210-30E		UC210-30				
50	1 15/16	7 3/4	4 7/32	1 9/16	6 3/16	19/32	19/32	55/64	2 5/32	2.031	0.748	1/2	UCFL210-31E	FL210E	UC210-31	35.1	23.3	14.4	2.2
		197	115	40	157	15	15	22	54.6	51.6	19		UCFL210E		UC210				
	2												UCFL210-32E		UC210-32				
	2												UCFL211-32E		UC211-32				
55	2 1/8	8 13/16	5 1/8	1 11/16	7 1/4	21/32	23/32	63/64	2 5/16	2.189	0.874	9/16	UCFL211-34E	FL211E	UC211-34	43.4	29.4	14.4	3.3
		224	130	43	184	16.5	18	25	58.4	55.6	22.2		UCFL211E		UC211				
	2 3/16												UCFL211-35E		UC211-35				
	2 1/4												UCFL212-36E		UC212-36				
60		9 27/32	5 1/2	1 7/8	7 61/64	21/32	23/32	1 9/64	2 23/32	2.563	1.000	9/16	UCFL212E	FL212E	UC212	52.4	36.2	14.4	4.2
	2 3/8	250	140	48	202	16.5	18	29	68.7	65.1	25.4		UCFL212-38E		UC212-38				
	2 7/16												UCFL212-39E		UC212-39				
65	2 1/2	10 5/32	6 3/32	1 31/32	8 17/64	21/32	25/32	1 3/16	2 3/4	2.563	1.000	9/16	UCFL213-40E	FL213E	UC213-40	57.2	40.1	14.4	5.2
		258	155	50	210	16.5	20	30	69.7	65.1	25.4		UCFL213E		UC213				
70	2 3/4	10 7/16	6 5/16	2 1/8	8 1/2	21/32	25/32	1 7/32	2 31/32	2.937	1.189	9/16	UCFL214-44E	FL214E	UC214-44	62.2	44.1	14.5	5.7
		265	160	54	216	16.5	20	31	75.4	74.6	30.2		UCFL214E		UC214				
	2 15/16												UCFL215-47E		UC215-47				
75		10 13/16	6 1/2	2 7/32	8 55/64	3/4	25/32	1 11/32	3 3/32	3.063	1.311	11/16	UCFL215E	FL215E	UC215	67.4	48.3	14.5	6.4
	3	275	165	56	225	19	20	34	78.5	77.8	33.3		UCFL215-48E		UC215-48				

Remarks
1. In Part No. of unit, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~210
   A-R1/8 ..... 211~217
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (or L2) follows the Part No. of unit or bearing. (Example of Part No. : UCFL206EJL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

FYH

UCFL-E
Cylindrical bore (with set screws)
d 80 ~ 85 mm





Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A20}) and tolerance of position of bolt hole (X)

Unit: mm

Housing No.	Δ_{A20}	X
FL203E~FL210E	±0.5	0.7
FL211E~FL217E	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{N4})

Unit: mm

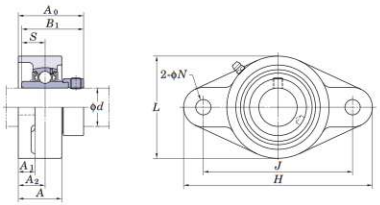
Housing No.	Δ_{N4}
FL203E~FL217E	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
80	3 1/8	11 13/32	7 3/32	2 9/32	9 11/64	3/4	25/32	1 11/32	3 9/32	3.252	1.311	11/16	UCFL216-50E	FL216E	UC216-50		72.7	53.0	14.6	7.8
		290	180	58	233	19	20	34	83.3	82.6	33.3		UCFL216E		UC216					
85	3 1/4	12	7 5/32	2 15/32	9 49/64	3/4	7/8	1 27/64	3 7/16	3.374	1.343	11/16	UCFL217-52E	FL217E	UC217-52		84.0	61.9	14.5	9.8
		305	190	63	248	19	22	36	87.6	85.7	34.1		UCFL217E		UC217					

Remarks
1. In Part No. of unit, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~210
   A-R1/8 ..... 211~217
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (or L2) follows the Part No. of unit or bearing. (Example of Part No. : UCFL206EJL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

FYH

NANFL
Cylindrical bore
(with eccentric locking collar)
d 12 ~ 55 mm



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A20}) and tolerance of position of bolt hole (X)

Unit: mm

Housing No.	Δ_{A20}	X
NFL204~NFL210	±0.5	0.7
NFL211	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{N4})

Unit: mm

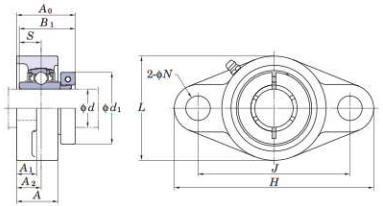
Housing No.	Δ_{N4}
NFL204~NFL211	±0.2

Shaft Dia mm	Shaft Dia inch	Dimensions inch / mm H	L	A	J	N	A_1	A_2	A_0	B_1	S	Bolt Size inch	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12													NANFL201		NA201				
	1/2												NANFL201-8		NA201-8				
15													NANFL202		NA202				
	5/8	4 7/16	2 3/8	1 5/32	3 17/32	25/64	7/16	3/4	1 25/32	1.720	0.673	5/16	NANFL202-10	NFL204	NA202-10	12.8	6.65	13.2	0.59
17		113	60	29.5	89.7	10	11	19	45.6	43.7	17.1		NANFL203		NA203				
	3/4												NANFL204-12		NA204-12				
20													NANFL204		NA204				
	7/8												NANFL205-14		NA205-14				
25	15/16	5 1/8	2 11/16	1 7/32	3 57/64	15/32	1/2	25/32	1 27/32	1.748	0.689	3/8	NANFL205-15	NFL205	NA205-15	14.0	7.85	13.9	0.9
		130	68	31	98.8	12	13	20	46.9	44.4	17.5		NANFL205		NA205				
	1												NANFL205-16		NA205-16				
	1 1/8												NANFL206-18		NA206-18				
30		5 13/16	3 5/32	1 11/32	4 19/32	15/32	1/2	53/64	2	1.906	0.720	3/8	NANFL206	NFL206	NA206	19.5	11.3	13.9	1.1
	1 3/16	148	80	34	116.7	12	13	21	51.1	48.4	18.3		NANFL206-19		NA206-19				
	1 1/4												NANFL206-20		NA206-20				
	1 1/4												NANFL207-20		NA207-20				
	1 5/16												NANFL207-21		NA207-21				
35	1 3/8	6 11/32	3 17/32	1 7/16	5 1/8	33/64	9/16	27/32	2 1/8	2.012	0.740	7/16	NANFL207-22	NFL207	NA207-22	25.7	15.4	13.9	1.6
		161	90	36.5	130.2	13	14	21.5	53.8	51.1	18.8		NANFL207		NA207				
	1 7/16												NANFL207-23		NA207-23				
	1 1/2												NANFL208-24		NA208-24				
40	1 9/16	6 7/8	3 15/16	1 17/32	5 21/32	33/64	9/16	15/16	2 5/16	2.217	0.843	7/16	NANFL208-25	NFL208	NA208-25	29.1	17.8	14.0	2.0
		175	100	39	143.7	13	14	24	58.9	56.3	21.4		NANFL208		NA208				
	1 5/8												NANFL209-26		NA209-26				
45	1 11/16	7 13/32	4 1/4	1 9/16	5 27/32	19/32	9/16	15/16	2 5/16	2.217	0.843	1/2	NANFL209-27	NFL209	NA209-27	34.1	21.3	14.0	2.3
	1 3/4	188	108	40	148.4	15	14	24	58.9	56.3	21.4		NANFL209-28		NA209-28				
													NANFL209		NA209				
	1 7/8												NANFL210-30		NA210-30				
50	1 15/16	7 3/4	4 17/32	1 27/32	6 3/16	19/32	9/16	1 1/8	2 5/8	2.469	0.969	1/2	NANFL210-31	NFL210	NA210-31	35.1	23.3	14.4	2.7
		197	115	46.5	157	15	14	28.5	66.6	62.7	24.6		NANFL210		NA210				
	2												NANFL210-32		NA210-32				
	2												NANFL211-32		NA211-32				
55	2 1/8	8 13/16	5 1/8	1 31/32	7 1/4	21/32	25/32	1 17/64	2 31/32	2.811	1.094	9/16	NANFL211-34	NFL211	NA211-34	43.4	29.4	14.4	4.1
		224	130	50	184	16.5	20	32	75.6	71.4	27.8		NANFL211		NA211				
	2 3/16												NANFL211-35		NA211-35				

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~210
   A-R1/8..... 211
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Housings of nodular graphite cast iron are also available.

FYH

NCFL
Cylindrical bore
(with concentric locking collar)
d 20 ~ 60 mm



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit: mm

Housing No.	Δ_{A2s}	X
FL204~FL210	±0.5	0.7
FL211~FL212	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{N4})

Unit: mm

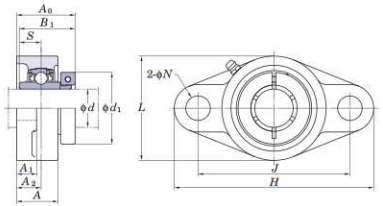
Housing No.	Δ_{N4}
FL204~FL212	±0.2

Shaft Dia. mm / inch d	Dimensions inch / mm H	L	A	J	N	A_1	A_2	A_0	B_1	S	d_1	Bolt Size inch / mm	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
20	3/4	4 7/16	2 3/8	1	3 35/64	15/32	7/16	19/32	1 3/8	1 9/32	0.500	3/8	NCFL204-12	FL204	NC204-12	12.8	6.65	13.2	0.62
		113	60	25.5	90	12	11	15	34.8	32.5	12.7	M10	NCFL204		NC204				
25	7/8	5 1/8	2 11/16	1 1/16	3 57/64	5/8	1/2	5/8	1 1/2	1 7/16	0.563	1/2	NCFL205-14	FL205	NC205-14	14.0	7.85	13.9	0.84
	15/16	130	68	27	99	16	13	16	38.2	36.5	14.3	M14	NCFL205-15		NC205-15				
													NCFL205		NC205				
	1												NCFL205-16		NC205-16				
30	1 1/8	5 13/16	3 5/32	1 7/32	4 39/64	5/8	1/2	45/64	1 21/32	1 9/16	0.626	1/2	NCFL206-18	FL206	NC206-18	19.5	11.3	13.9	1.1
													NCFL206		NC206				
	1 3/16	148	80	31	117	16	13	18	41.8	39.7	15.9	M14	NCFL206-19		NC206-19				
	1 1/4												NCFL206-20		NC206-20				
35	1 1/4	6 11/32	3 17/32	1 11/32	5 1/8	5/8	9/16	3/4	1 13/16	1 3/4	0.689	1/2	NCFL207-20	FL207	NC207-20	25.7	15.4	13.9	1.5
		161	90	34	130	16	14	19	46	44.5	17.5	M14							
	1 3/8	6 11/32	3 17/32	1 11/32	5 1/8	5/8	9/16	3/4	1 13/16	1 3/4	0.689	1/2	NCFL207-22	FL207	NC207-22	25.7	15.4	13.9	1.5
		161	90	34	130	16	14	19	46	44.5	17.5	M14	NCFL207		NC207				
	1 7/16												NCFL207-23		NC207-23				
40	1 1/2	6 7/8	3 15/16	1 13/32	5 43/64	5/8	9/16	53/64	2 3/32	2	0.748	1/2	NCFL208-24	FL208	NC208-24	29.1	17.8	14.0	2.0
		175	100	36	144	16	14	21	52.8	50.8	19	M14	NCFL208		NC208				
45	1 5/8	7 13/32	4 1/4	1 1/2	5 53/64	3/4	19/32	55/64	2 1/8	2	0.748	5/8	NCFL209-26	FL209	NC209-26	34.1	21.3	14.0	2.3
		188	108	38	148	19	15	22	53.8	50.8	19	M16							
	1 11/16	7 13/32	4 1/4	1 1/2	5 53/64	3/4	19/32	55/64	2 1/8	2	0.748	5/8	NCFL209-27	FL209	NC209-27	34.1	21.3	14.0	2.3
	1 3/4	188	108	38	148	19	15	22	53.8	50.8	19	M16	NCFL209-28		NC209-28				
													NCFL209		NC209				
50	1 15/16	7 3/4	4 17/32	1 9/16	6 3/16	3/4	19/32	55/64	2 7/32	2 3/32	0.748	5/8	NCFL210-31	FL210	NC210-31	35.1	23.3	14.4	2.8
		197	115	40	157	19	15	22	56.1	53.1	19	M16	NCFL210		NC210				
	2												NCFL210-32		NC210-32				
55	2	8 13/16	5 1/8	1 11/16	7 1/4	3/4	23/32	63/64	2 11/32	2 1/4	0.874	5/8	NCFL211-32	FL211	NC211-32	43.4	29.4	14.4	3.7
		224	130	43	184	19	18	25	59.9	57.1	22.2	M16							
	2 3/16	8 13/16	5 1/8	1 11/16	7 1/4	3/4	23/32	63/64	2 11/32	2 1/4	0.874	5/8	NCFL211	FL211	NC211	43.4	29.4	14.4	3.7
		224	130	43	184	19	18	25	59.9	57.1	22.2	M16	NCFL211-35		NC211-35				
60	2 1/4	9 27/32	5 1/2	1 7/8	7 61/64	29/32	23/32	1 9/64	2 25/32	2 5/8	1.000	3/4	NCFL212-36	FL212	NC212-36	52.4	36.2	14.4	4.9
		250	140	48	202	23	18	29	70.3	66.7	25.4	M20							
	2 7/16	9 27/32	5 1/2	1 7/8	7 61/64	29/32	23/32	1 9/64	2 25/32	2 5/8	1.000	3/4	NCFL212	FL212	NC212	52.4	36.2	14.4	4.9
		250	140	48	202	23	18	29	70.3	66.7	25.4	M20	NCFL212-39		NC212-39				

Remarks
1. In Part No. of unit, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 204~210
   A-R1/8..... 211~212
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Representative examples of the forms of housing are indicated.

FYH

NCFL-E
Cylindrical bore
(with concentric locking collar)
d 20 ~ 60 mm



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit: mm

Housing No.	Δ_{A2s}	X
FL204E~FL210E	±0.5	0.7
FL211E~FL212E	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{N4})

Unit: mm

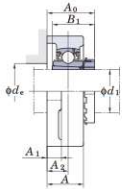
Housing No.	Δ_{N4}
FL204E~FL212E	±0.2

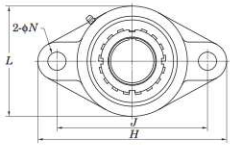
Shaft Dia. mm / inch d	Dimensions inch / mm H	L	A	J	N	A_1	A_2	A_0	B_1	S	d_1	Bolt Size inch	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
20	3/4	4 7/16	2 3/8	1	3 17/32	25/64	7/16	19/32	1 3/8	1 9/32	0.500	5/16	NCFL204-12E	FL204E	NC204-12	12.8	6.65	13.2	0.62
		113	60	25.5	89.7	10	11	15	34.8	32.5	12.7		NCFL204E		NC204				
25	7/8	5 1/8	2 11/16	1 1/16	3 57/64	15/32	1/2	5/8	1 1/2	1 7/16	0.563	3/8	NCFL205-14E	FL205E	NC205-14	14.0	7.85	13.9	0.84
	15/16	130	68	27	98.8	12	13	16	38.2	36.5	14.3		NCFL205-15E		NC205-15				
													NCFL205E		NC205				
	1												NCFL205-16E		NC205-16				
30	1 1/8	5 13/16	3 5/32	1 7/32	4 19/32	15/32	1/2	45/64	1 21/32	1 9/16	0.626	3/8	NCFL206-18E	FL206E	NC206-18	19.5	11.3	13.9	1.1
													NCFL206E		NC206				
	1 3/16	148	80	31	116.7	12	13	18	41.8	39.7	15.9		NCFL206-19E		NC206-19				
	1 1/4												NCFL206-20E		NC206-20				
35	1 1/4	6 11/32	3 17/32	1 11/32	5 1/8	33/64	9/16	3/4	1 13/16	1 3/4	0.689	7/16	NCFL207-20E	FL207E	NC207-20	25.7	15.4	13.9	1.5
		161	90	34	130.2	13	14	19	46	44.5	17.5								
	1 3/8	6 11/32	3 17/32	1 11/32	5 1/8	33/64	9/16	3/4	1 13/16	1 3/4	0.689	7/16	NCFL207-22E	FL207E	NC207-22	25.7	15.4	13.9	1.5
		161	90	34	130.2	13	14	19	46	44.5	17.5		NCFL207E		NC207				
	1 7/16												NCFL207-23E		NC207-23				
40	1 1/2	6 7/8	3 15/16	1 13/32	5 21/32	33/64	9/16	53/64	2 3/32	2	0.748	7/16	NCFL208-24E	FL208E	NC208-24	29.1	17.8	14.0	2.0
		175	100	36	143.7	13	14	21	52.8	50.8	19		NCFL208E		NC208				
45	1 5/8	7 13/32	4 1/4	1 1/2	5 27/32	19/32	19/32	55/64	2 1/8	2	0.748	1/2	NCFL209-26E	FL209E	NC209-26	34.1	21.3	14.0	2.3
		188	108	38	148.4	15	15	22	53.8	50.8	19								
	1 11/16	7 13/32	4 1/4	1 1/2	5 27/32	19/32	19/32	55/64	2 1/8	2	0.748	1/2	NCFL209-27E	FL209E	NC209-27	34.1	21.3	14.0	2.3
	1 3/4	188	108	38	148.4	15	15	22	53.8	50.8	19		NCFL209-28E		NC209-28				
													NCFL209E		NC209				
50	1 15/16	7 3/4	4 17/32	1 9/16	6 3/16	19/32	19/32	55/64	2 7/32	2 3/32	0.748	1/2	NCFL210-31E	FL210E	NC210-31	35.1	23.3	14.4	2.8
		197	115	40	157	15	15	22	56.1	53.1	19		NCFL210E		NC210				
	2												NCFL210-32E		NC210-32				
55	2	8 13/16	5 1/8	1 11/16	7 1/4	21/32	23/32	63/64	2 11/32	2 1/4	0.874	9/16	NCFL211-32E	FL211E	NC211-32	43.4	29.4	14.4	3.7
		224	130	43	184	16.5	18	25	59.9	57.1	22.2								
	2 3/16	8 13/16	5 1/8	1 11/16	7 1/4	21/32	23/32	63/64	2 11/32	2 1/4	0.874	9/16	NCFL211E	FL211E	NC211	43.4	29.4	14.4	3.7
		224	130	43	184	16.5	18	25	59.9	57.1	22.2		NCFL211-35E		NC211-35				
60	2 1/4	9 27/32	5 1/2	1 7/8	7 61/64	21/32	23/32	1 9/64	2 25/32	2 5/8	1.000	9/16	NCFL212-36E	FL212E	NC212-36	52.4	36.2	14.4	4.9
		250	140	48	202	16.5	18	29	70.3	66.7	25.4								
	2 7/16	9 27/32	5 1/2	1 7/8	7 61/64	21/32	23/32	1 9/64	2 25/32	2 5/8	1.000	9/16	NCFL212E	FL212E	NC212	52.4	36.2	14.4	4.9
		250	140	48	202	16.5	18	29	70.3	66.7	25.4		NCFL212-39E		NC212-39				

Remarks
1. In Part No. of unit, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 204~210
   A-R1/8..... 211~212
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Representative examples of the forms of housing are indicated.

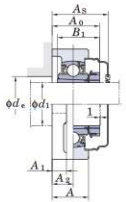
FYH

UKFL
Tapered bore (with adapter)
d_1 20 ~ 50 mm

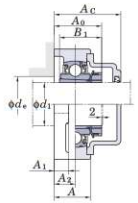




With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2e}) and tolerance of position of bolt hole (X)

Unit: mm

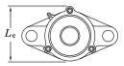
Housing No.			Δ_{A2e}	X
FL205~FL210	FLX05~FLX10	FL305~FL310	±0.5	0.7
FL211~FL218		FL311~FL324	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{Ns})

Unit: mm

Housing No.			Δ_{Ns}
FL205~FL218	FLX05~FLX10	FL305~FL311	±0.2
		FL312~FL324	±0.3

Forms and dimensions of L_e of FL205JE3 (housing with cast iron cover) are shown below.



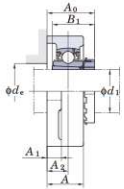
FL205JE3 L_e = 73 mm

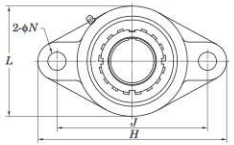
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm d_1	H	L	A	J	N	A_1	A_2	A_0	B_1	d_e (min.)	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Adapter No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	Closed Type	Dimension mm inch A_s	Mass kg	With Cast Iron Cover Unit No. Open Type	Closed Type	Dimension mm inch A_e	Mass kg
20	3/4	5 1/8	2 11/16	1 1/16	3 57/64	5/8	1/2	5/8	1 13/32	1 3/8	1 3/16	1/2	UKFL205	FL205	UK205		HE2305X	0.68	14.0	7.85	13.9	–	–	– –	–	–	–	– –	–
		130	68	27	99	16	13	16	36	35	30	M14					H2305X	0.68				UKFL205C	UKFL205D	40.5 1 19/32	0.68	UKFL205FC	UKFL205FD	49 1 15/16	0.89
	3/4	5 9/16	3 9/32	1 3/16	4 39/64	15/32	1/2	45/64	1 9/16	1 3/8	1 3/16	3/8	UKFLX05	FLX05	UKX05		HE2305X	1.0	19.5	11.3	13.9	–	–	– –	–	–	–	– –	–
		141	83	30	117	12	13	18	39.5	35	30	M10					H2305X	1.0				UKFLX05C	UKFLX05D	44.5 1 3/4	1.0	–	–	– –	–
	3/4	5 29/32	3 5/32	1 5/32	4 29/64	3/4	1/2	5/8	1 15/32	1 3/8	–	5/8	UKFL305	FL305	UK305		HE2305X	1.1	21.2	10.9	12.6	–	–	– –	–	–	–	– –	–
		150	80	29	113	19	13	16	37.5	35	–	M16					H2305X	1.1				–	–	– –	–	UKFL305C	UKFL305D	54 2 1/8	1.4
25		5 13/16	3 5/32	1 7/32	4 39/64	5/8	1/2	45/64	1 9/16	1 1/2	1 13/32	3/8	UKFL206	FL206	UK206		H2306X	0.97	19.5	11.3	13.9	UKFL206C	UKFL206D	44.5 1 3/4	0.97	UKFL206FC	UKFL206FD	53 2 3/32	1.2
	1	148	80	31	117	16	13	18	39.5	38	36	M14					HE2306X	0.97				–	–	– –	–	–	–	– –	–
		6 5/32	3 3/4	1 11/32	5 1/8	5/8	9/16	3/4	1 21/32	1 1/2	1 13/32	3/8	UKFLX06	FLX06	UKX06		H2306X	1.5	25.7	15.4	13.9	UKFLX06C	UKFLX06D	49 1 15/16	1.5	–	–	– –	–
	1	156	95	34	130	16	14	19	42	38	36	M14					HE2306X	1.5				–	–	– –	–	–	–	– –	–
		7 3/32	3 17/32	1 1/4	5 9/32	29/32	19/32	45/64	1 5/8	1 1/2	–	3/4	UKFL306	FL306	UK306		H2306X	1.5	26.7	15.0	13.3	–	–	– –	–	UKFL306C	UKFL306D	59 2 5/16	1.8
	1	180	90	32	134	23	15	18	41	38	–	M20					HE2306X	1.5				–	–	– –	–	–	–	– –	–
30	1 1/8	6 11/32	3 17/32	1 11/32	5 1/8	5/8	9/16	3/4	1 11/16	1 11/16	1 5/8	3/8	UKFL207	FL207	UK207		HS2307X	1.3	25.7	15.4	13.9	–	–	– –	–	–	–	– –	–
		161	90	34	130	16	14	19	43	43	41	M14					H2307X	1.3				UKFL207C	UKFL207D	49 1 15/16	1.3	UKFL207FC	UKFL207FD	58 2 9/32	1.7
	1 1/8	6 23/32	4 1/8	1 1/2	5 43/64	5/8	9/16	53/64	1 27/32	1 11/16	1 5/8	3/8	UKFLX07	FLX07	UKX07		HS2307X	1.8	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
		171	105	38	144	16	14	21	47	43	41	M14					H2307X	1.8				UKFLX07C	UKFLX07D	55.5 2 3/16	1.8	–	–	– –	–
	1 1/8	7 9/32	3 15/16	1 13/32	5 35/64	29/32	5/8	25/32	1 25/32	1 11/16	–	3/4	UKFL307	FL307	UK307		HS2307X	1.9	33.4	19.3	13.2	–	–	– –	–	–	–	– –	–
		185	100	36	141	23	16	20	45.5	43	–	M20					H2307X	1.9				–	–	– –	–	UKFL307C	UKFL307D	64 2 17/32	2.4
35	1 1/4																HE2308X	1.6				–	–	– –	–	–	–	– –	–
	1 3/8	6 7/8	3 15/16	1 13/32	5 43/64	5/8	9/16	53/64	1 7/8	1 13/16	1 13/16	3/8	UKFL208	FL208	UK208		HS2308X	1.6	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
		175	100	36	144	16	14	21	48	46	46	M14					H2308X	1.6				UKFL208C	UKFL208D	55.5 2 3/16	1.6	UKFL208FC	UKFL208FD	64 2 17/32	2.0
	1 1/4																HE2308X	2.1				–	–	– –	–	–	–	– –	–
	1 3/8	7 1/16	4 3/8	1 9/16	5 53/64	5/8	9/16	55/64	1 31/32	1 13/16	1 13/16	3/8	UKFLX08	FLX08	UKX08		HS2308X	2.1	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
		179	111	40	148	16	14	22	50	46	46	M14					H2308X	2.1				UKFLX08C	UKFLX08D	56.5 2 7/32	2.1	–	–	– –	–
	1 1/4																HE2308X	2.5				–	–	– –	–	–	–	– –	–
	1 3/8	7 7/8	4 13/32	1 9/16	6 7/32	29/32	21/32	29/32	2	1 13/16	–	3/4	UKFL308	FL308	UK308		HS2308X	2.5	40.7	24.0	13.2	–	–	– –	–	–	–	– –	–
		200	112	40	158	23	17	23	50.5	46	–	M20					H2308X	2.5				–	–	– –	–	UKFL308C	UKFL308D	71 2 25/32	3.0
40	1 1/2	7 13/32	4 1/4	1 1/2	5 53/64	3/4	19/32	55/64	2	1 31/32	2 1/16	5/8	UKFL209	FL209	UK209		HE2309X	2.0	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
		188	108	38	148	19	15	22	51	50	52	M16					H2309X	2.0				UKFL209C	UKFL209D	56.5 2 7/32	2.0	UKFL209FC	UKFL209FD	66 2 19/32	2.5
	1 1/2	7 7/16	4 9/16	1 9/16	6 3/16	5/8	9/16	29/32	2 1/16	1 31/32	2 1/16	3/8	UKFLX09	FLX09	UKX09		HE2309X	2.5	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
		189	116	40	157	16	14	23	52	50	52	M14					H2309X	2.5				UKFLX09C	UKFLX09D	60 2 3/8	2.5	–	–	– –	–
	1 1/2	9 1/16	4 29/32	1 23/32	6 31/32	63/64	23/32	63/64	2 5/32	1 31/32	–	7/8	UKFL309	FL309	UK309		HE2309X	3.6	48.9	29.5	13.3	–	–	– –	–	–	–	– –	–
		230	125	44	177	25	18	25	55	50	–	M22					H2309X	3.6				–	–	– –	–	UKFL309C	UKFL309D	76 3	4.2
45	1 3/4	7 3/4	4 17/32	1 9/16	6 3/16	3/4	19/32	55/64	2 1/16	2 5/32	2 9/32	5/8	UKFL210	FL210	UK210		HE2310X	2.3	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
		197	115	40	157	19	15	22	52	55	58	M16					H2310X	2.3				UKFL210C	UKFL210D	59 2 5/16	2.3	UKFL210FC	UKFL210FD	70.5 2 25/32	2.8
	1 3/4	8 1/2	5 1/4	1 23/32	7 1/4	3/4	25/32	1 1/32	2 9/32	2 5/32	2 9/32	5/8	UKFLX10	FLX10	UKX10		HE2310X	3.7	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
		216	133	44	184	19	20	26	58	55	58	M16					H2310X	3.7				UKFLX10C	UKFLX10D	64 2 17/32	3.7	–	–	– –	–
	1 3/4	9 7/16	5 1/2	1 7/8	7 23/64	63/64	3/4	1 7/64	2 3/8	2 5/32	–	7/8	UKFL310	FL310	UK310		HE2310X	4.4	62.0	38.3	13.2	–	–	– –	–	–	–	– –	–
		240	140	48	187	25	19	28	60	55	–	M22					H2310X	4.4				–	–	– –	–	UKFL310C	UKFL310D	83 3 9/32	5.2
50	1 7/8																HS2311X	3.3				–	–	– –	–	–	–	– –	–
		8 13/16	5 1/8	1 11/16	7 1/4	3/4	23/32	63/64	2 1/4	2 5/16	2 17/32	5/8	UKFL211	FL211	UK211		H2311X	3.3	43.4	29.4	14.4	UKFL211C	UKFL211D	63 2 15/32	3.3	UKFL211FC	UKFL211FD	74.5 2 15/16	3.9
	2	224	130	43	184	19	18	25	57.5	59	64	M16					HE2311X	3.3				–	–	– –	–	–	–	– –	–
	1 7/8																HS2311X	5.6				–	–	– –	–	–	–	– –	–
		9 27/32	5 29/32	2 1/16	7 51/64	63/64	25/32	1 3/16	2 17/32	2 5/16	–	7/8	UKFL311	FL311	UK311		H2311X	5.6	71.6	45.0	13.2	–	–	– –	–	UKFL311C	UKFL311D	87 3 7/16	6.5
	2	250	150	52	198	25	20	30	64	59	–	M22					HE2311X	5.6				–	–	– –	–	–	–	– –	–

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 205~210, X05~X09, 305~308
   A-R1/8 ..... 211~218, X10, 309~324
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables. (Example of Part No. : UKFL206J + H2306X, UK206 + H2306X)
4. As for the triple seal type product (205 is the double seal type product), suffix code L3 (or L2) follows the Part No. of unit or bearing. (Example of Part No. : UKFL206JL3 + H2306X, UK206L3 + H2306X)
5. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter.
6. Housings of nodular graphite cast iron are also available.

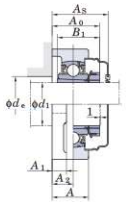
FYH

UKFL
Tapered bore (with adapter)
d_1 55 ~ 110 mm

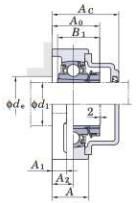




With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit: mm

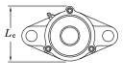
Housing No.			Δ_{A2s}	X
FL205~FL210	FLX05~FLX10	FL305~FL310	±0.5	0.7
FL211~FL218		FL311~FL324	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{Ns})

Unit: mm

Housing No.			Δ_{Ns}
FL205~FL218	FLX05~FLX10	FL305~FL311	±0.2
		FL312~FL324	±0.3

Forms and dimensions of L_e of FL205JE3 (housing with cast iron cover) are shown below.



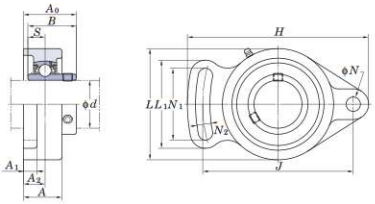
FL205JE3 L_e = 73 mm

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	A_1	A_2	A_0	B_1	d_e (min.)	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Adapter No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	Closed Type	Dimension mm inch A_s	Mass kg	With Cast Iron Cover Unit No. Open Type	Closed Type	Dimension mm inch A_c	Mass kg
55	2 1/8	9 27/32	5 1/2	1 7/8	7 61/64	29/32	23/32	1 9/64	2 19/32	2 7/16	2 23/32	3/4	UKFL212	FL212	UK212	HS2312X	4.1	52.4	36.2	14.4	–	–	– –	–	–	–	– –	–
		250	140	48	202	23	18	29	65.5	62	69	M20				H2312X	4.1				UKFL212C	UKFL212D	73.5 2 29/32	4.1	UKFL212FC	UKFL212FD	86 3 3/8	4.9
	2 1/8	10 5/8	6 5/16	2 7/32	8 11/32	1 7/32	7/8	1 19/64	2 3/4	2 7/16	–	1	UKFL312	FL312	UK312	H2312X	6.9	81.9	52.2	13.2	–	–	– –	–	–	–	– –	–
		270	160	56	212	31	22	33	69.5	62	–	M27				H2312X	6.9				–	–	– –	–	UKFL312C	UKFL312D	95 3 3/8	8.1
60	2 1/4	10 5/32	6 3/32	1 31/32	8 17/64	29/32	25/32	1 3/16	2 21/32	2 9/16	2 29/32	3/4	UKFL213	FL213	UK213	HE2313X	5.0	57.2	40.1	14.4	–	–	– –	–	–	–	– –	–
		258	155	50	210	23	20	30	67.5	65	74	M20				H2313X	5.0				UKFL213C	UKFL213D	74.5 2 15/16	5.0	UKFL213FC	UKFL213FD	87 3 7/16	5.9
	2 3/8															HS2313X	5.0				–	–	– –	–	–	–	– –	–
	2 1/4	11 5/8	6 7/8	2 9/32	9 29/64	1 7/32	31/32	1 19/64	2 13/16	2 9/16	–	1	UKFL313	FL313	UK313	HE2313X	8.6	92.7	59.9	13.2	–	–	– –	–	–	–	– –	–
		295	175	58	240	31	25	33	71.5	65	–	M27				H2313X	8.6				–	–	– –	–	UKFL313C	UKFL313D	94 3 11/16	9.7
	2 3/8															HS2313X	8.6				–	–	– –	–	–	–	– –	–
65	2 1/2	10 13/16	6 1/2	2 7/32	8 55/64	29/32	25/32	1 11/32	2 15/16	2 7/8	3 11/32	3/4	UKFL215	FL215	UK215	HE2315X	6.6	67.4	48.3	14.5	–	–	– –	–	–	–	– –	–
		275	165	56	225	23	20	34	74.5	73	85	M20				H2315X	6.6				UKFL215C	UKFL215D	83.5 3 9/32	6.6	UKFL215FC	UKFL215FD	96 3 25/32	7.6
	2 1/2	12 19/32	7 11/16	2 19/32	10 15/64	1 3/8	1 3/16	1 17/32	2 7/32	2 7/8	–	1 1/8	UKFL315	FL315	UK315	HE2315X	11.4	113	77.2	13.2	–	–	– –	–	–	–	– –	–
		320	195	66	260	35	30	39	81.5	73	–	M30				H2315X	11.4				–	–	– –	–	UKFL315C	UKFL315D	106 4 3/16	12.8
70	2 3/4	11 13/32	7 3/32	2 9/32	9 11/64	63/64	25/32	1 11/32	3 3/32	3 1/16	3 17/32	7/8	UKFL216	FL216	UK216	HE2316X	8.1	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
		290	180	58	233	25	20	34	78.5	78	90	M22				H2316X	8.1				UKFL216C	UKFL216D	88.5 3 15/32	8.1	UKFL216FC	UKFL216FD	103 4 1/16	9.4
	2 3/4	13 31/32	8 9/32	2 11/16	11 7/32	1 1/2	1 1/4	1 1/2	3 1/4	3 1/16	–	1 1/4	UKFL316	FL316	UK316	HE2316X	13.9	123	86.7	13.3	–	–	– –	–	–	–	– –	–
		355	210	68	285	38	32	38	82.5	78	–	M33				H2316X	13.9				–	–	– –	–	UKFL316C	UKFL316D	107 4 7/32	15.5
75		12	7 15/32	2 15/32	9 49/64	63/64	7/8	1 27/64	3 1/4	3 7/32	3 25/32	7/8	UKFL217	FL217	UK217	H2317X	9.9	84.0	61.9	14.5	UKFL217C	UKFL217D	92.5 3 21/32	9.9	UKFL217FC	UKFL217FD	107 4 7/32	11.3
	3	305	190	63	248	25	22	36	82.5	82	96	M22				HE2317X	9.9				–	–	– –	–	–	–	– –	–
		14 9/16	8 21/32	2 29/32	11 13/16	1 1/2	1 1/4	1 47/64	3 5/8	3 7/32	–	1 1/4	UKFL317	FL317	UK317	H2317X	15.8	133	96.8	13.3	–	–	– –	–	UKFL317C	UKFL317D	117 4 19/32	17.6
	3	370	220	74	300	38	32	44	92	82	–	M33				HE2317X	15.8				–	–	– –	–	–	–	– –	–
80	–	12 19/32	8 1/16	2 11/16	10 7/16	63/64	29/32	1 37/64	3 17/32	3 3/8	4 1/32	7/8	UKFL218	FL218	UK218	H2318X	12.2	96.1	71.5	14.5	UKFL218C	UKFL218D	101.5 4	12.2	UKFL218FC	UKFL218FD	116 4 9/16	13.8
		320	205	68	265	25	23	40	89.5	86	102	M22																
	–	15 5/32	9 1/4	3	12 13/32	1 1/2	1 13/32	1 47/64	3 5/8	3 3/8	–	1 1/4	UKFL318	FL318	UK318	H2318X	19.1	143	107	13.3	–	–	– –	–	UKFL318C	UKFL318D	119 4 11/16	21.2
		385	235	76	315	38	36	44	92	86	–	M33																
85	3 1/4	15 15/16	9 27/32	3 11/16	13	1 39/64	1 9/16	2 21/64	4 3/8	3 17/32	–	1 3/8	UKFL319	FL319	UK319	HE2319X	24.9	153	119	13.3	–	–	– –	–	–	–	– –	–
		405	250	94	330	41	40	59	111	90	–	M36				H2319X	24.9				–	–	– –	–	UKFL319C	UKFL319D	140 5 1/2	27.3
90	3 1/2	17 5/16	10 5/8	3 11/16	14 11/64	1 47/64	1 9/16	2 21/64	4 7/16	3 13/16	–	1 1/2	UKFL320	FL320	UK320	HE2320X	29.0	173	141	13.2	–	–	– –	–	–	–	– –	–
		440	270	94	360	44	40	59	113	97	–	M39				H2320X	29.0				–	–	– –	–	UKFL320C	UKFL320D	146 5 3/4	32.1
100		18 1/2	11 13/16	3 25/32	15 23/64	1 47/64	1 21/32	2 23/64	4 23/32	4 1/8	–	1 1/2	UKFL322	FL322	UK322	H2322X	36.1	205	180	13.2	–	–	– –	–	UKFL322C	UKFL322D	154 6 1/16	39.6
	4	470	300	96	390	44	42	60	120	105	–	M39				HE2322X	36.1				–	–	– –	–	–	–	– –	–
110	–	20 15/32	13	4 11/32	16 39/64	1 27/32	1 7/8	2 9/16	5 1/8	4 13/32	–	1 5/8	UKFL324	FL324	UK324	H2324	51.9	207	185	13.5	–	–	– –	–	UKFL324C	UKFL324D	163 6 13/32	57.0
		520	330	110	430	47	48	65	130.5	112	–	M42																

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 205~210, X05~X09, 305~308
   A-R1/8 ..... 211~218, X10, 309~324
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables. (Example of Part No. : UKFL206J + H2306X, UK206 + H2306X)
4. As for the triple seal type product (205 is the double seal type product), suffix code L3 (or L2) follows the Part No. of unit or bearing. (Example of Part No. : UKFL206JL3 + H2306X, UK206L3 + H2306X)
5. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter.
6. Housings of nodular graphite cast iron are also available.

FYH

UCFA
Cylindrical bore (with set screws)
d 12 ~ 55 mm



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A20})

Unit: mm

Housing No.	Δ_{A20}
FA204~FA210	±0.5
FA211	±0.8

Variations of tolerance of bolt hole diameter (Δ_{N_4})

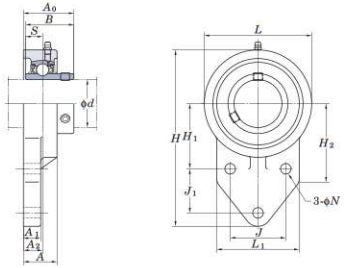
Unit: mm

Housing No.	Δ_{N_4}
FA204~FA211	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	N_1	N_2	L_1	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12																UCFA201	FA204	UC201				0.47
	1/2															UCFA201-8		UC201-8				
15		3 27/32	2 5/16	15/16	3 5/64	25/64	1 9/16	13/32	1 31/32	7/16	35/64	1 1/4	1.220	0.500	5/16	UCFA202		UC202				0.45
	5/8	98	59	24	78	10	40	10	50	11	13.8	32.1	31	12.7	M8	UCFA202-10		UC202-10	12.8	6.65	13.2	
17																UCFA203		UC203				0.44
	3/4															UCFA204-12		UC204-12				
20																UCFA204		UC204				0.42
	7/8															UCFA205-14	FA205	UC205-14				
	15/16	4 7/8	2 3/4	1 1/16	3 55/64	7/16	1 15/16	7/16	2 17/32	1/2	5/8	1 13/32	1.343	0.563	3/8	UCFA205-15		UC205-15				
25		124	70	27	98	11	49	11	64	13	16	35.8	34.1	14.3	M10	UCFA205		UC205	14.0	7.85	13.9	0.68
	1															UCFA205-16		UC205-16				
	1 1/8															UCFA206-18	FA206	UC206-18				
		5 9/16	3 9/32	1 3/16	4 39/64	7/16	2 7/32	15/32	2 11/16	1/2	45/64	1 9/16	1.500	0.626	3/8	UCFA206		UC206				
30	1 3/16	141	83	30	117	11	56	12	68	13	17.8	40	38.1	15.9	M10	UCFA206-19		UC206-19	19.5	11.3	13.9	1.0
	1 1/4															UCFA206-20		UC206-20				
	1 1/4															UCFA207-20	FA207	UC207-20				
	1 5/16															UCFA207-21		UC207-21				
35	1 3/8	6 3/32	3 25/32	1 11/32	5 1/8	33/64	2 15/32	1/2	2 15/16	9/16	47/64	1 23/32	1.689	0.689	7/16	UCFA207-22		UC207-22	25.7	15.4	13.9	1.5
		155	96	34	130	13	63	13	75	14	18.6	44	42.9	17.5	M12	UCFA207		UC207				
	1 7/16															UCFA207-23		UC207-23				
	1 1/2	6 23/32	4 1/8	1 1/2	5 43/64	33/64	2 3/4	1/2	3 5/16	9/16	13/16	2	1.937	0.748	7/16	UCFA208-24	FA208	UC208-24				
40	1 9/16	171	105	38	144	13	70	13	84	14	20.8	51	49.2	19	M12	UCFA208-25		UC208-25	29.1	17.8	14	1.9
																UCFA208		UC208				
	1 5/8															UCFA209-26	FA209	UC209-26				
	1 11/16	7 1/16	4 3/4	1 9/16	5 53/64	19/32	2 27/32	19/32	3 15/32	9/16	55/64	2 1/16	1.937	0.748	1/2	UCFA209-27		UC209-27				
45	1 3/4	179	111	40	148	15	72	15	88	14	21.8	52	49.2	19	M14	UCFA209-28		UC209-28	34.1	21.3	14	1.7
																UCFA209		UC209				
	1 7/8															UCFA210-30	FA210	UC210-30				
	1 15/16	7 7/16	4 9/16	1 9/16	6 3/16	19/32	2 15/16	19/32	3 5/8	9/16	57/64	2 5/32	2.031	0.748	1/2	UCFA210-31		UC210-31				
50		189	116	40	157	15	75	15	92	14	22.5	55.1	51.6	19	M14	UCFA210		UC210	35.1	23.3	14.4	2.0
	2															UCFA210-32		UC210-32				
	2															UCFA211-32	FA211	UC211-32				
	2 1/8	8 1/2	5 1/4	1 23/32	7 1/4	5/8	3 3/8	5/8	4 1/32	25/32	1 1/64	2 5/16	2.189	0.874	1/2	UCFA211-34		UC211-34				
55		216	133	44	184	16	86	16	102	20	25.7	59.1	55.6	22.2	M14	UCFA211		UC211	43.4	29.4	14.4	3.6
	2 3/16															UCFA211-35		UC211-35				

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~210
   A-R1/8 211
3. As for triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (or L2) follows Part No. of unit or bearing. (Example of Part No.: UCFA206JL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Tapered bore (with adapter) type products are also available. (Example of Part No.: UKFA205J + H2305X, UK205 + H2305X)

UCFB
Cylindrical bore (with set screws)
d 12 ~ 50 mm



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A20}), variations of tolerance of distance between centers of bolt holes (Δ_{A0}, Δ_{A10}), variations of tolerance of distance between both grooves (Δ_{B0})

Unit: mm

Housing No.	Δ_{A20}	Δ_{A0}	Δ_{A10}	Δ_{B10}
FB204~FB210	±0.5			

Variations of tolerance of bolt hole diameter (Δ_{N0})

Unit: mm

Housing No.	Δ_{N0}
FB204~FB210	±0.2

Shaft Dia. mm / inch d	Dimensions inch / mm H	L	A	J	J_1	N	H_1	H_2	L_1	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12																UCFB201	FB204	UC201	12.8	6.65	13.2	0.64
	1/2															UCFB201-8		UC201-8				
15		4 11/32	2 7/16	15/16	1 17/64	1 1/16	3/8	1 21/32	2 1/16	2 1/16	1/2	17/32	1 1/4	1.220	0.500	UCFB202		UC202				0.62
	5/8	110	62	24.5	32	27	9.5	42	52	52	13	13.5	31.8	31	12.7	UCFB202-10		UC202-10				
17															5/16 M8	UCFB203		UC203				0.61
	3/4															UCFB204-12		UC204-12				
20																UCFB204		UC204				0.59
	7/8															UCFB205-14	FB205	UC205-14	14.0	7.85	13.9	0.68
	15/16	4 9/16	2 11/16	1 1/16	1 11/32	1 1/16	3/8	1 49/64	2 1/16	2 7/32	1/2	19/32	1 3/8	1.343	0.563	UCFB205-15		UC205-15				
25		116	68	27	34	27	9.5	45	52	56	13	15	34.8	34.1	14.3	UCFB205		UC205				
	1														5/16 M8	UCFB205-16		UC205-16				
	1 1/8															UCFB206-18	FB206	UC206-18	19.5	11.3	13.9	0.92
30		5 1/8	3 1/16	1 3/16	1 37/64	1 9/64	3/8	1 31/32	2 5/32	2 9/16	1/2	43/64	1 17/32	1.500	0.626	UCFB206		UC206				
	1 3/16	130	78	30	40	29	9.5	50	55	65	13	17	39.2	38.1	15.9	UCFB206-19		UC206-19				
	1 1/4															UCFB206-20		UC206-20				
	1 1/4															UCFB207-20	FB207	UC207-20	25.7	15.4	13.9	1.3
	1 5/16															UCFB207-21		UC207-21				
35	1 3/8	5 21/32	3 17/32	1 5/16	1 13/16	1 17/64	3/8	2 11/64	2 7/16	2 3/4	19/32	3/4	1 3/4	1.689	0.689	UCFB207-22		UC207-22				
		144	90	33.5	46	32	9.5	55	62	70	15	19	44.4	42.9	17.5	UCFB207		UC207				
	1 7/16														5/16 M8	UCFB207-23		UC207-23				
	1 1/2															UCFB208-24	FB208	UC208-24	29.1	17.8	14.0	1.8
40	1 9/16	6 15/32	3 15/16	1 3/8	1 31/32	1 39/64	7/16	2 23/64	2 27/32	3 1/16	5/8	25/32	1 31/32	1.937	0.748	UCFB208-25		UC208-25				
		164	100	35	50	41	11	60	72	78	16	20	50.2	49.2	19	UCFB208		UC208				
	1 5/8															UCFB209-26	FB209	UC209-26	34.1	21.3	14.0	2.0
45	1 11/16	6 27/32	4 3/16	1 3/8	2 1/8	1 11/16	7/16	2 9/16	3	3 5/32	23/32	25/32	1 31/32	1.937	0.748	UCFB209-27		UC209-27				
	1 3/4	174	106	35.5	54	43	11	65	76	80	18	20	50.2	49.2	19	UCFB209-28		UC209-28				
															3/8 M10	UCFB209		UC209				
	1 7/8															UCFB210-30	FB210	UC210-30	35.1	23.3	14.4	2.3
50	1 15/16	7 1/4	4 13/32	1 7/16	2 9/32	1 13/16	7/16	2 43/64	3 7/32	3 3/8	23/32	25/32	2 1/16	2.031	0.748	UCFB210-31		UC210-31				
		184	112	36	58	46	11	68	82	86	18	20	52.6	51.6	19	UCFB210		UC210				
	2														3/8 M10	UCFB210-32		UC210-32				

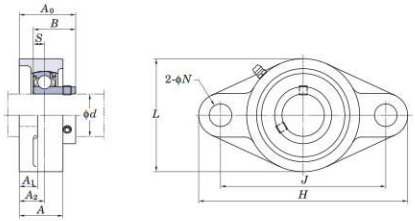
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fitting is A-1/4-28UNF.
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (or L2) follows Part No. of unit or bearing. (Example of Part No. : UCFB206JL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Tapered bore (with adapter) type products are also available. (Example of Part No. : UKFB205J + H2305X, UK205 + H2305X)

SBFL-RKP8
Cylindrical bore (with set screws)
d **20 ~ 55 mm**

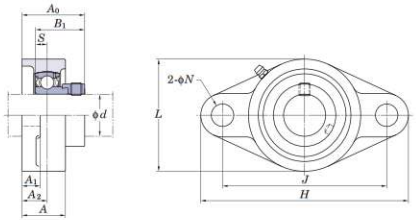
SAFL-FP9
Cylindrical bore (with eccentric locking collar)

SBFL-RKP8

SAFL-FP9



SBFL-RKP8



SAFL-FP9

Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit: mm

Housing No.	Δ_{A2s}	X
FL204~FL210	±0.5	0.7
FL211	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{N_0})

Unit: mm

Housing No.	Δ_{N_0}
FL204~FL211	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	A_1	A_2	A_0	B	B_1	SBFL-RKP8 S	SAFL-FP9 S	Bolt Size inch / mm	Unit No.	Bearing No.	Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg SBFL-RKP8	SAFL-FP9
20	3/4	4 7/16 113	2 3/8 60	1 25.5	3 35/64 90	15/32 12	7/16 11	19/32 15	1 17/32 38.5	0.984 25	1.220 31	0.276 7	0.295 7.5	3/8 M10	**SBFL204-12RKP8** **SBFL204RKP8**	SB204-12RKP8 SB204RKP8	**SAFL204-12FP9** **SAFL204FP9**	SA204-12FP9 SA204FP9	FL204	12.8	6.65	13.2	0.44	0.48
25	7/8 15/16 1	5 1/8 130	2 11/16 68	1 1/16 27	3 57/64 99	5/8 16	1/2 13	5/8 16	1 18/32 39.5	1.063 27	1.220 31	0.295 7.5	0.295 7.5	1/2 M14	**SBFL205-14RKP8** **SBFL205-15RKP8** **SBFL205-16RKP8** **SBFL205RKP8**	SB205-14RKP8 SB205-15RKP8 SB205-16RKP8 SB205RKP8	**SAFL205-14FP9** **SAFL205-15FP9** **SAFL205-16FP9** **SAFL205FP9**	SA205-14FP9 SA205-15FP9 SA205-16FP9 SA205FP9	FL205	14.0	7.85	13.9	0.62	0.67
30	1 1/8 1 3/16 1 1/4	5 13/16 148	3 5/32 80	1 7/32 31	4 39/64 117	5/8 16	1/2 13	45/64 18	1 24/32 44.7	1.181 30	1.906 35.7	0.315 8	0.354 9	1/2 M14	**SBFL206-18RKP8** **SBFL206-19RKP8** **SBFL206-20RKP8** **SBFL206RKP8**	SB206-18RKP8 SB206-19RKP8 SB206-20RKP8 SB206RKP8	**SAFL206-18FP9** **SAFL206-19FP9** **SAFL206-20FP9** **SAFL206FP9**	SA206-18FP9 SA206-19FP9 SA206-20FP9 SA206FP9	FL206	19.5	11.3	13.9	0.88	0.95
35	1 1/4 1 5/16 1 3/8 1 7/16	6 11/32 161	3 17/32 90	1 11/32 34	5 1/8 130	5/8 16	9/16 14	3/4 19	1 29/32 48.4	1.260 32	1.531 38.9	0.335 8.5	0.374 9.5	1/2 M14	**SBFL207-20RKP8** – **SBFL207-22RKP8** **SBFL207-23RKP8** **SBFL207RKP8**	SB207-20RKP8 – SB207-22RKP8 SB207-23RKP8 SB207RKP8	**SAFL207-20FP9** **SAFL207-21FP9** **SAFL207-22FP9** **SAFL207-23FP9** **SAFL207FP9**	SA207-20FP9 SA207-21FP9 SA207-22FP9 SA207-23FP9 SA207FP9	FL207	25.7	15.4	13.9	1.14 – 1.14 1.14 1.14	1.29
40	1 1/2 1 9/16	6 7/8 175	3 15/16 100	1 13/32 36	5 43/64 144	5/8 16	9/16 14	53/64 21	2 4/32 53.7	1.339 34	1.720 43.7	0.354 9	0.433 11	1/2 M14	**SBFL208-24RKP8** – **SBFL208RKP8**	SB208-24RKP8 – SB208RKP8	**SAFL208-24FP9** **SAFL208-25FP9** **SAFL208FP9**	SA208-24FP9 SA208-25FP9 SA208FP9	FL208	29.1	17.8	14.0	1.56 – 1.56	1.71
45	1 5/8 1 11/16 1 3/4	7 13/32 188	4 1/4 108	1 1/2 38	5 53/64 148	3/4 19	19/32 15	55/64 22	2 5/32 54.7	– –	1.720 43.7	– –	0.433 11	5/8 M16	– – – –	– – – –	**SAFL209-26FP9** **SAFL209-27FP9** **SAFL209-28FP9** **SAFL209FP9**	SA209-26FP9 SA209-27FP9 SA209-28FP9 SA209FP9	FL209	34.1	21.3	14.0	–	2.04
50	1 7/8 1 15/16	7 3/4 197	4 17/32 115	1 9/16 40	6 3/16 157	3/4 19	19/32 15	55/64 22	2 5/32 54.7	– –	1.720 43.7	– –	0.433 11	5/8 M16	– – –	– – –	**SAFL210-30FP9** **SAFL210-31FP9** **SAFL210FP9**	SA210-30FP9 SA210-31FP9 SA210FP9	FL210	35.1	23.3	14.4	–	2.25
55	2 2 1/8 2 3/16	8 13/16 224	5 1/8 130	1 11/16 43	7 1/4 184	3/4 19	23/32 18	63/64 25	2 13/32 61.4	– –	1.906 48.4	– –	0.472 12	5/8 M16	– – – –	– – – –	**SAFL211-32FP9** **SAFL211-34FP9** **SAFL211-35FP9** **SAFL211FP9**	SA211-32FP9 SA211-34FP9 SA211-35FP9 SA211FP9	FL211	43.4	29.4	14.4	–	3.39

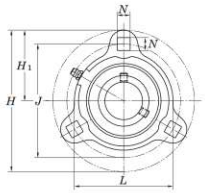
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 204~210
   A-R1/8 211
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Housings of nodular graphite cast iron are also available.

SBTFD-H4RKP8
Cylindrical bore
(with set screws)
d 12 ~ 35 mm

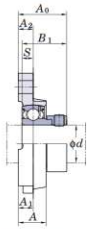
SATFD-FH4P9
Cylindrical bore
(with eccentric locking collar)

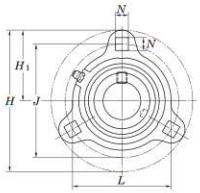
SBTFD-H4RKP8

SATFD-FH4P9



SBTFD-H4RKP8





SATFD-FH4P9

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	H_1	SBTFD A_0	SATFD A_0	A_1	A_2	B	B_1	SBTFD S	SATFD S	Bolt Size inch / mm	Unit No.	Bearing No.	Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg SBTFD	SATFD
12																	SBTFD201H4RKP8	SB201RKP8	SATFD201FH4P9	SA201FP9						
	1/2	3 3/16	2 3/32	11/16	2 1/2	9/32	1 19/32	1	1 1/4	3/8	3/8	0.866	1.126	0.236	0.256	1/4	SBTFD201-8H4RKP8	SB201-8RKP8	SATFD201-8FH4P9	SA201-8FP9						
15		81	53.2	17.5	63.5	7.1	40.5	25.5	31.6	9.5	9.5	22	28.6	6	6.5		SBTFD202H4RKP8	SB202RKP8	SATFD202FH4P9	SA202FP9	TFD203H4	9.55	4.80	13.2	0.23	0.26
	5/8																SBTFD202-10H4RKP8	SB202-10RKP8	SATFD202-10FH4P9	SA202-10FP9						
17																	SBTFD203H4RKP8	SB203RKP8	SATFD203FH4P9	SA203FP9						
20	3/4	3 9/16	2 3/8	25/32	2 13/16	11/32	1 25/32	1 1/8	1 11/32	27/64	27/64	0.984	1.220	0.276	0.295	5/16	SBTFD204H4RKP8	SB204-12RKP8	SATFD204-12FH4P9	SA204-12FP9	TFD204H4	12.8	6.65	13.2	0.30	0.34
		90.5	60.3	19.8	71.4	8.7	45.2	28.7	34.2	10.7	10.7	25	31	7	7.5		SBTFD204H4RKP8	SB204RKP8	SATFD204FH4P9	SA204FP9						
	7/8																SBTFD205-14H4RKP8	SB205-14RKP8	SATFD205-14FH4P9	SA205-14FP9						
25	15/16	3 3/4	2 5/8	25/32	3	11/32	1 7/8	1 3/16	1 11/32	27/64	27/64	1.063	1.220	0.295	0.295	5/16	SBTFD205-15H4RKP8	SB205-15RKP8	SATFD205-15FH4P9	SA205-15FP9	TFD205H4	14.0	7.85	13.9	0.35	0.39
		95.2	66.7	19.8	76.2	8.7	47.6	30.2	34.2	10.7	10.7	27	31	7.5	7.5		SBTFD205H4RKP8	SB205RKP8	SATFD205FH4P9	SA205FP9						
	1																SBTFD205-16H4RKP8	SB205-16RKP8	SATFD205-16FH4P9	SA205-16FP9						
	1 1/8																SBTFD206-18H4RKP8	SB206-18RKP8	SATFD206-18FH4P9	SA206-18FP9						
30		4 7/16	3 3/32	7/8	3 9/16	13/32	2 7/32	1 11/32	1 17/32	15/32	15/32	1.181	1.406	0.315	0.354	3/8	SBTFD206H4RKP8	SB206RKP8	SATFD206FH4P9	SA206FP9	TFD206H4	19.5	11.3	13.9	0.54	0.61
	1 3/16	112.7	78.6	22.2	90.5	10.3	56.4	33.9	38.6	11.9	11.9	30	35.7	8	9		SBTFD206-19H4RKP8	SB206-19RKP8	SATFD206-19FH4P9	SA206-19FP9						
	1 1/4																SBTFD206-20H4RKP8	SB206-20RKP8	SATFD206-20FH4P9	SA206-20FP9						
	1 1/4																SBTFD207-20H4RKP8	SB207-20RKP8	SATFD207-20FH4P9	SA207-20FP9						
	1 5/16																–	–	SATFD207-21FH4P9	SA207-21FP9						
35	1 3/8	4 13/16	3 1/2	15/16	3 15/16	13/32	2 13/32	1 7/16	1 21/32	1/2	1/2	1.260	1.531	0.335	0.374	3/8	SBTFD207-22H4RKP8	SB207-22RKP8	SATFD207-22FH4P9	SA207-22FP9	TFD207H4	25.7	15.4	13.9	0.67	0.82
		122.2	88.9	23.8	100	10.3	61.1	36.2	42.1	12.7	12.7	32	38.9	8.5	9.5		SBTFD207H4RKP8	SB207RKP8	SATFD207FH4P9	SA207FP9						
	1 7/16																SBTFD207-23H4RKP8	SB207-23RKP8	SATFD207-23FH4P9	SA207-23FP9						

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fitting is A-1/4-28UNF.
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

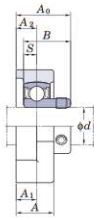
FYH

BLF
Cylindrical bore
(with set screws)
d **12 ~ 35 mm**

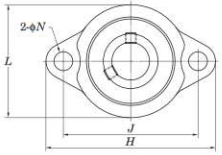
ALF
Cylindrical bore
(with eccentric locking collar)

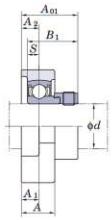
BLF

ALF



BLF





ALF

Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2e}) and variations of tolerance of distance between centers of bolt holes (Δ_{Je})

Unit: mm

Housing No.	Δ_{A2e}	Δ_{Je}
LF203~LF207	±0.5	±0.7

Variations of tolerance of bolt hole diameter (Δ_{Ne})

Unit: mm

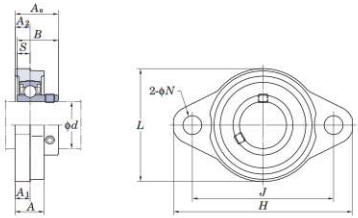
Housing No.	Δ_{Ne}
LF203~LF207	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm d	H	L	A	J	N	A_1	A_2	S	BLF A_0	BLF B	ALF A_{01}	ALF B_1	Bolt Size inch / mm	Unit No.	Bearing No.	Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN C_r	Basic Load Ratings kN C_{0r}	Factor f_0	Mass kg BLF	Mass kg ALF
12																BLF201	SB201	ALF201	SA201						
	1/2		3 3/16	2 1/16	23/32	2 1/2	5/16	3/8	3/8	0.236	1	0.866	1 1/4	1.122	1/4	BLF201-8	SB201-8	ALF201-8	SA201-8						
15			81	52	18	63.5	8	9.5	9.5	6	25.5	22	32	28.5	M6	BLF202	SB202	ALF202	SA202	LF203	9.55	4.80	13.2	0.25	0.28
	5/8															BLF202-10	SB202-10	ALF202-10	SA202-10						
17																BLF203	SB203	ALF203	SA203						
20	3/4		3 17/32	2 3/8	25/32	2 13/16	25/64	7/16	7/16	0.276	1 5/32	0.984	1 5/16	1.161	5/16	BLF204-12	SB204-12	ALF204-12	SA204-12	LF204	12.8	6.65	13.2	0.33	0.33
			90	60	20	71.5	10	11	11	7	29	25	33.5	29.5	M8	BLF204	SB204	ALF204	SA204						
	7/8															BLF205-14	SB205-14	ALF205-14	SA205-14						
25	15/16		3 3/4	2 17/32	25/32	2 63/64	25/64	7/16	7/16	0.295	1 3/16	1.063	1 11/32	1.201	5/16	BLF205-15	SB205-15	ALF205-15	SA205-15	LF205	14.0	7.85	13.9	0.38	0.42
			95	64	20	76	10	11	11	7.5	30.5	27	34	30.5	M8	BLF205	SB205	ALF205	SA205						
	1															BLF205-16	SB205-16	ALF205-16	SA205-16						
	1 1/8															BLF206-18	SB206-18	ALF206-18	SA206-18						
30			4 7/16	3	7/8	3 9/16	15/32	15/32	15/32	0.315	1 11/32	1.181	1 1/2	1.335	3/8	BLF206	SB206	ALF206	SA206	LF206	19.5	11.3	13.9	0.57	0.60
	1 3/16		113	75	22.5	90.5	12	12	12	8	34	30	37.9	33.9	M10	BLF206-19	SB206-19	ALF206-19	SA206-19						
	1 1/4															BLF206-20	SB206-20	ALF206-20	SA206-20						
	1 1/4															BLF207-20	SB207-20	ALF207-20	SA207-20						
	1 5/16																	ALF207-21	SA207-21						
35	1 3/8		4 13/16	3 1/2	15/16	3 15/16	15/32	1/2	33/64	0.335	1 7/16	1.260	1 5/8	1.437	3/8	BLF207-22	SB207-22	ALF207-22	SA207-22	LF207	25.7	15.4	13.9	0.77	0.85
			122	89	24	100	12	13	13	8.5	36.5	32	41	36.5	M10	BLF207	SB207	ALF207	SA207						
	1 7/16															BLF207-23	SB207-23	ALF207-23	SA207-23						

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Allowable load to housing in radial direction is approximately half of basic load rating of bearing, C_r (when safety factor is 4).
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

FYH

UFL
Cylindrical bore (with set screws)
d 8 ~ 30 mm



ROYSE
rodamientos y servicios
Desde 1979

With Through Type Cover

With One Side Sealed Cover

Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and variations of tolerance of distance between centers of bolt holes (Δ_{Js})

Unit: mm

Housing No.	Δ_{A2s}	Δ_{Js}
FL08	±0.5	±0.3
FL000~FL006		

Variations of tolerance of bolt hole diameter (Δ_{Ns})

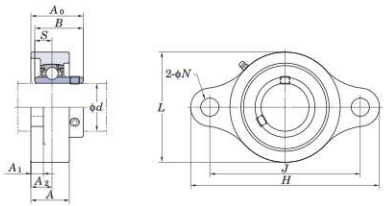
Unit: mm

Housing No.	Δ_{Ns}
FL08	±0.2
FL000~FL006	

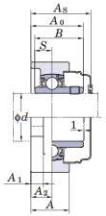
Shaft Dia. mm	Dimensions inch / mm										Bolt Size inch	Standard Unit No.	Housing No.	Bearing No.	Mass	Basic Load Ratings kN		Factor	With Rubber Coated Cover Unit No. Open Type	Closed Type	Dimension mm	inch	Mass
d	H	L	A	J	N	A_1	A_2	A_0	B	S	mm				kg	C_r	C_{0r}	f_0			A_s		kg
8	1 7/8 48	1 1/16 27	11/32 8.5	1 29/64 37	3/16 4.8	5/32 4	5/32 4	1/2 12.5	0.472 12	0.1378 3.5	No.8 M4	UFL08	FL08	SU08	0.030	3.27	1.37	12.4	–	–	–	–	–
10	2 3/8 60	1 13/32 36	15/32 12	1 49/64 45	9/32 7	1/4 6	15/64 6	5/8 16	0.591 15	0.197 5	1/4 M6	UFL000	FL000	SU000	0.050	4.55	1.95	12.3	UFL000C	UFL000D	20.5	13/16	0.05
12	2 15/32 63	1 1/2 38	15/32 12	1 57/64 48	9/32 7	1/4 6	15/64 6	5/8 16	0.591 15	0.197 5	1/4 M6	UFL001	FL001	SU001	0.065	5.10	2.40	13.2	UFL001C	UFL001D	20.5	13/16	0.07
15	2 5/8 67	1 21/32 42	1/2 13	2 3/32 53	9/32 7	1/4 6.5	1/4 6.5	11/16 17.5	0.650 16.5	0.217 5.5	1/4 M6	UFL002	FL002	SU002	0.085	5.60	2.85	13.9	UFL002C	UFL002D	22	7/8	0.09
17	2 25/32 71	1 13/16 46	9/16 14	2 13/64 56	9/32 7	9/32 7	9/32 7	23/32 18.5	0.689 17.5	0.236 6	1/4 M6	UFL003	FL003	SU003	0.11	6.00	3.25	14.4	UFL003C	UFL003D	23.5	15/16	0.11
20	3 17/32 90	2 5/32 55	5/8 16	2 51/64 71	13/32 10	5/16 8	5/16 8	7/8 22	0.827 21	0.276 7	5/16 M8	UFL004	FL004	SU004	0.18	9.40	5.05	13.9	UFL004C	UFL004D	27	1 1/16	0.18
25	3 3/4 95	2 3/8 60	5/8 16	2 61/64 75	13/32 10	5/16 8	5/16 8	29/32 23	0.866 22	0.276 7	5/16 M8	UFL005	FL005	SU005	0.23	10.1	5.85	14.5	UFL005C	UFL005D	28	1 3/32	0.23
30	4 13/32 112	2 3/4 70	23/32 18	3 11/32 85	1/2 13	11/32 9	23/64 9	1 1/32 26	0.965 24.5	0.295 7.5	3/8 M10	UFL006	FL006	SU006	0.31	13.2	8.25	14.7	UFL006C	UFL006D	31	1 7/32	0.31

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UCSFL-H1S6
Cylindrical bore (with set screws)
d 12 ~ 50 mm



With Pressed Stainless Steel Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and variations of tolerance of distance between centers of bolt holes (Δ_{A2})

Unit: mm

Housing No.	Δ_{A2s}	Δ_{A2}
SFL203H1~SFL210H1	±0.5	±0.5

Variations of tolerance of bolt hole diameter (Δ_{N2})

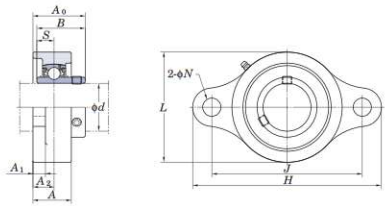
Unit: mm

Housing No.	Δ_{N2}
SFL203H1~SFL210H1	±0.2

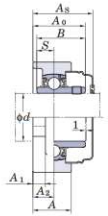
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Stainless Steel Cover Unit No. Open Type	Closed Type	Dimension mm	inch A_s	Mass kg
12													UCSFL201XH1S6		UC201XS6					–	–	–	–	–
	1/2	3 27/32	2 1/16	15/16	3	15/32	13/32	9/16	1 3/16	1.079	0.453	3/8	UCSFL201-8XH1S6		UC201-8XS6					–	–	–	–	–
15		98	52	24	76.5	12	10	14	29.9	27.4	11.5	M10	UCSFL202XH1S6	SFL203H1	UC202XS6	0.33	8.15	3.85	13.2	–	–	–	–	–
	5/8												UCSFL202-10XH1S6		UC202-10XS6					–	–	–	–	–
17													UCSFL203XH1S6		UC203XS6					–	–	–	–	–
20	3/4	4 7/16	2 3/8	1 1/32	3 35/64	15/32	13/32	19/32	1 5/16	1.220	0.500	3/8	UCSFL204-12H1S6	SFL204H1	UC204-12S6	0.47	10.9	5.35	13.2	–	–	–	–	–
		113	60	26	90	12	10	15	33.3	31	12.7	M10	UCSFL204H1S6		UC204S6					UCSFL204H1CS6	UCSFL204H1DS6	38	1 1/2	0.47
25	7/8												UCSFL205-14H1S6		UC205-14S6					–	–	–	–	–
	15/16	5 1/8	2 11/16	1 3/32	3 57/64	5/8	13/32	5/8	1 13/32	1.343	0.563	1/2	UCSFL205-15H1S6	SFL205H1	UC205-15S6	0.61	11.9	6.30	13.9	–	–	–	–	–
		130	68	27.5	99	16	10	16	35.8	34.1	14.3	M14	UCSFL205H1S6		UC205S6					UCSFL205H1CS6	UCSFL205H1DS6	40	1 9/16	0.61
	1												UCSFL205-16H1S6		UC205-16S6					–	–	–	–	–
30	1 1/8												UCSFL206-18H1S6		UC206-18S6					–	–	–	–	–
		5 13/16	3 5/32	1 7/32	4 39/64	5/8	13/32	45/64	1 19/32	1.500	0.626	1/2	UCSFL206H1S6	SFL206H1	UC206S6	0.9	16.5	9.05	13.9	UCSFL206H1CS6	UCSFL206H1DS6	45	1 15/32	0.9
	1 3/16	148	80	31	117	16	10	18	40.2	38.1	15.9	M14	UCSFL206-19H1S6		UC206-19S6					–	–	–	–	–
	1 1/4												UCSFL206-20H1S6		UC206-20S6					–	–	–	–	–
35	1 1/4												UCSFL207-20H1S6		UC207-20S6					–	–	–	–	–
	1 5/16												UCSFL207-21H1S6		UC207-21S6					–	–	–	–	–
	1 3/8	6 11/32	3 11/32	1 11/32	5 1/8	5/8	7/16	3/4	1 3/4	1.689	0.689	1/2	UCSFL207-22H1S6	SFL207H1	UC207-22S6	1.1	21.8	12.3	13.9	–	–	–	–	–
		161	85	34	130	16	11	19	44.4	42.9	17.5	M14	UCSFL207H1S6		UC207S6					UCSFL207H1CS6	UCSFL207H1DS6	49	1 15/16	1.1
	1 7/16												UCSFL207-23H1S6		UC207-23S6					–	–	–	–	–
40	1 1/2												UCSFL208-24H1S6		UC208-24S6					–	–	–	–	–
	1 9/16	6 7/8	3 11/16	1 13/32	5 43/64	5/8	15/32	53/64	2 1/32	1.937	0.748	1/2	UCSFL208-25H1S6	SFL208H1	UC208-25S6	1.4	24.8	14.3	14.0	–	–	–	–	–
		175	94	36	144	16	12	21	51.2	49.2	19	M14	UCSFL208H1S6		UC208S6					UCSFL208H1CS6	UCSFL208H1DS6	56	2 7/32	1.4
45	1 5/8												UCSFL209-26H1S6		UC209-26S6					–	–	–	–	–
	1 11/16	7 13/32	3 15/16	1 1/2	5 53/64	3/4	1/2	55/64	2 1/16	1.937	0.748	5/8	UCSFL209-27H1S6	SFL209H1	UC209-27S6	1.6	27.8	16.2	14.0	–	–	–	–	–
	1 3/4	188	100	38	148	19	13	22	52.2	49.2	19	M16	UCSFL209-28H1S6		UC209-28S6					–	–	–	–	–
													UCSFL209H1S6		UC209S6					UCSFL209H1CS6	UCSFL209H1DS6	57	2 7/32	1.6
50	1 7/8												UCSFL210-30H1S6		UC210-30S6					–	–	–	–	–
	1 15/16	7 3/4	4 3/16	1 9/16	6 3/16	3/4	1/2	55/64	2 5/32	2.031	0.748	5/8	UCSFL210-31H1S6	SFL210H1	UC210-31S6	1.9	29.8	18.6	14.4	–	–	–	–	–
		197	106	40	157	19	13	22	54.6	51.6	19	M16	UCSFL210H1S6		UC210S6					UCSFL210H1CS6	UCSFL210H1DS6	59	2 5/16	1.9
	2												UCSFL210-32H1S6		UC210-32S6					–	–	–	–	–

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fitting is A-1/4-28UNFN12.
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UCSFL-EH1S6
Cylindrical bore (with set screws)
d 12 ~ 50 mm



With Pressed Stainless Steel Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and variations of tolerance of distance between centers of bolt holes (Δ_{A6})

Unit: mm

Housing No.	Δ_{A2s}	Δ_{A6}
SFL203EH1~SFL210EH1	±0.5	±0.5

Variations of tolerance of bolt hole diameter (Δ_{N6})

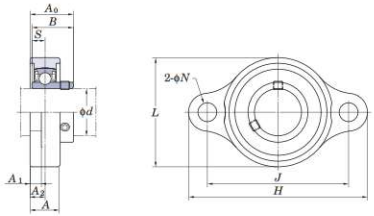
Unit: mm

Housing No.	Δ_{N6}
SFL203EH1~SFL210EH1	±0.2

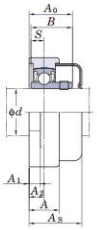
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Stainless Steel Cover Unit No. Open Type	Closed Type	Dimension mm	inch A_s	Mass kg
12													UCSFL201XEH1S6		UC201XS6					–	–	–	–	–
	1/2	3 27/32	2 1/16	15/16	3	25/64	13/32	9/16	1 3/16	1.079	0.453	5/16	UCSFL201-8XEH1S6		UC201-8XS6					–	–	–	–	–
15		98	52	24	76.2	10	10	14	29.9	27.4	11.5		UCSFL202XEH1S6	SFL203EH1	UC202XS6	0.33	8.15	3.85	13.2	–	–	–	–	–
	5/8												UCSFL202-10XEH1S6		UC202-10XS6					–	–	–	–	–
17													UCSFL203XEH1S6		UC203XS6					–	–	–	–	–
20	3/4	4 7/16	2 3/8	1 1/32	3 17/32	25/64	13/32	19/32	1 5/16	1.220	0.500	5/16	UCSFL204-12EH1S6	SFL204EH1	UC204-12S6	0.47	10.9	5.35	13.2	–	–	–	–	–
		113	60	26	89.7	10	10	15	33.3	31	12.7		UCSFL204EH1S6		UC204S6					UCSFL204EH1CS6	UCSFL204EH1DS6	38	1 1/2	0.47
25	7/8												UCSFL205-14EH1S6		UC205-14S6					–	–	–	–	–
	15/16	5 1/8	2 11/16	1 3/32	3 57/64	15/32	13/32	5/8	1 13/32	1.343	0.563	3/8	UCSFL205-15EH1S6	SFL205EH1	UC205-15S6	0.61	11.9	6.30	13.9	–	–	–	–	–
		130	68	27.5	98.8	12	10	16	35.8	34.1	14.3		UCSFL205EH1S6		UC205S6					UCSFL205EH1CS6	UCSFL205EH1DS6	40	1 9/16	0.61
	1												UCSFL205-16EH1S6		UC205-16S6					–	–	–	–	–
30	1 1/8												UCSFL206-18EH1S6		UC206-18S6					–	–	–	–	–
		5 13/16	3 5/32	1 7/32	4 39/64	15/32	13/32	45/64	1 19/32	1.500	0.626	3/8	UCSFL206EH1S6	SFL206EH1	UC206S6	0.9	16.5	9.05	13.9	UCSFL206EH1CS6	UCSFL206EH1DS6	45	1 15/32	0.9
	1 3/16	148	80	31	116.7	12	10	18	40.2	38.1	15.9		UCSFL206-19EH1S6		UC206-19S6					–	–	–	–	–
	1 1/4												UCSFL206-20EH1S6		UC206-20S6					–	–	–	–	–
35	1 1/4												UCSFL207-20EH1S6		UC207-20S6					–	–	–	–	–
	1 5/16												UCSFL207-21EH1S6		UC207-21S6					–	–	–	–	–
	1 3/8	6 11/32	3 11/32	1 11/32	5 1/8	33/64	7/16	3/4	1 3/4	1.689	0.689	7/16	UCSFL207-22EH1S6	SFL207EH1	UC207-22S6	1.1	21.8	12.3	13.9	–	–	–	–	–
		161	85	34	130.2	13	11	19	44.4	42.9	17.5		UCSFL207EH1S6		UC207S6					UCSFL207EH1CS6	UCSFL207EH1DS6	49	1 15/16	1.1
	1 7/16												UCSFL207-23EH1S6		UC207-23S6					–	–	–	–	–
40	1 1/2												UCSFL208-24EH1S6		UC208-24S6					–	–	–	–	–
	1 9/16	6 7/8	3 11/16	1 13/32	5 21/32	33/64	15/32	53/64	2 1/32	1.937	0.748	7/16	UCSFL208-25EH1S6	SFL208EH1	UC208-25S6	1.4	24.8	14.3	14.0	–	–	–	–	–
		175	94	36	143.7	13	12	21	51.2	49.2	19		UCSFL208EH1S6		UC208S6					UCSFL208EH1CS6	UCSFL208EH1DS6	56	2 7/32	1.4
45	1 5/8												UCSFL209-26EH1S6		UC209-26S6					–	–	–	–	–
	1 11/16	7 13/32	3 15/16	1 1/2	5 27/32	19/32	1/2	55/64	2 1/16	1.937	0.748	1/2	UCSFL209-27EH1S6	SFL209EH1	UC209-27S6	1.6	27.8	16.2	14.0	–	–	–	–	–
	1 3/4	188	100	38	148.4	15	13	22	52.2	49.2	19		UCSFL209-28EH1S6		UC209-28S6					–	–	–	–	–
													UCSFL209EH1S6		UC209S6					UCSFL209EH1CS6	UCSFL209EH1DS6	57	2 1/4	1.6
50	1 7/8												UCSFL210-30EH1S6		UC210-30S6					–	–	–	–	–
	1 15/16	7 3/4	4 3/16	1 9/16	6 3/16	19/32	1/2	55/64	2 5/32	2.031	0.748	1/2	UCSFL210-31EH1S6	SFL210EH1	UC210-31S6	1.9	29.8	18.6	14.4	–	–	–	–	–
		197	106	40	157	15	13	22	54.6	51.6	19		UCSFL210EH1S6		UC210S6					UCSFL210EH1CS6	UCSFL210EH1DS6	59	2 5/16	1.9
	2												UCSFL210-32EH1S6		UC210-32S6					–	–	–	–	–

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fitting is A-1/4-28UNFN12.
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

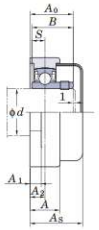
USFL-S6
Cylindrical bore (with set screws)
d 10 ~ 30 mm



With Through Type Cover



With One Side Sealed Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and variations of tolerance of distance between centers of bolt holes (Δ_{A0})

Unit: mm

Housing No.	Δ_{A2s}	Δ_{A0}
SFL000~SFL006	±0.5	±0.3

Variations of tolerance of bolt hole diameter (Δ_{N0})

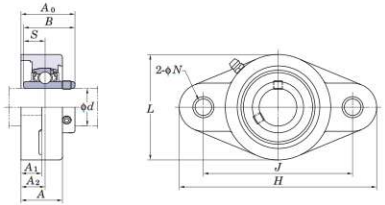
Unit: mm

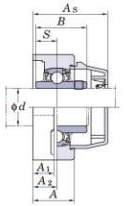
Housing No.	Δ_{N0}
SFL000~SFL006	±0.2

Shaft Dia. mm	Dimensions inch / mm										Bolt Size inch	Standard Unit No.	Housing No.	Bearing No.		Mass	Basic Load Ratings kN		Factor	With Rubber Coated Cover Unit No. Open Type	Closed Type	Dimension mm	inch	Mass
d	H	L	A	J	N	A_1	A_2	A_0	B	S	mm					kg	C_r	C_{0r}	f_0			A_s		kg
10	2 3/8 60	1 11/32 34	15/32 12	1 49/64 45	9/32 7	3/16 5	15/64 6	5/8 16	0.591 15	0.197 5	1/4 M6	**USFL000S6**	SFL000	SU000S6		0.076	3.9	1.55	12.3	USFL000CS6	USFL000DS6	20.5	13/16	0.08
12	2 15/32 63	1 13/32 36	15/32 12	1 57/64 48	9/32 7	3/16 5	15/64 6	5/8 16	0.591 15	0.197 5	1/4 M6	**USFL001S6**	SFL001	SU001S6		0.080	4.3	1.9	13.2	USFL001CS6	USFL001DS6	20.5	13/16	0.08
15	2 5/8 67	1 5/8 41	1/2 13	2 3/32 53	9/32 7	1/4 6	1/4 6.5	11/16 17.5	0.650 16.5	0.217 5.5	1/4 M6	**USFL002S6**	SFL002	SU002S6		0.1	4.7	2.25	13.9	USFL002CS6	USFL002DS6	22	7/8	0.1
17	2 25/32 71	1 23/32 44	9/16 14	2 13/64 56	9/32 7	1/4 6	9/32 7	23/32 18.5	0.689 17.5	0.236 6	1/4 M6	**USFL003S6**	SFL003	SU003S6		0.13	5.1	2.6	14.4	USFL003CS6	USFL003DS6	23.5	15/16	0.13
20	3 19/32 91	2 3/32 53	5/8 16	2 51/64 71	13/32 10	1/4 6	5/16 8	7/8 22	0.827 21	0.276 7	5/16 M8	**USFL004S6**	SFL004	SU004S6		0.21	7.9	4	13.9	USFL004CS6	USFL004DS6	27	1 1/16	0.21
25	3 3/4 95	2 9/32 58	5/8 16	2 61/64 75	13/32 10	1/4 6	5/16 8	29/32 23	0.866 22	0.276 7	5/16 M8	**USFL005S6**	SFL005	SU005S6		0.23	8.5	4.65	14.5	USFL005CS6	USFL005DS6	28	1 3/32	0.23
30	4 11/32 110	2 19/32 66	23/32 18	3 11/32 85	1/2 13	9/32 7	23/64 9	1 1/32 26	0.965 24.5	0.295 7.5	3/8 M10	**USFL006S6**	SFL006	SU006S6		0.33	11.2	6.6	14.7	USFL006CS6	USFL006DS6	31	1 7/32	0.33

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UCVFL-S6
Cylindrical bore (with set screws)
d 20 ~ 40 mm





Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit: mm

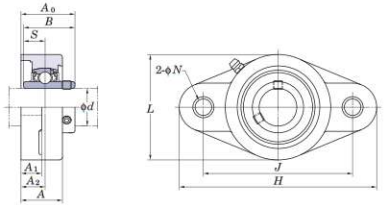
Housing No.	Δ_{A2s}	X
VFL204~VFL208	±0.5	0.7

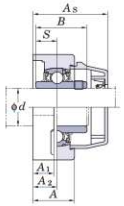
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Plastic Cover Unit No. Open Type	Closed Type	Dimension mm / inch A_s	Mass kg
20	3/4	4 7/16	2 9/16	1 1/32	3 35/64	7/16	17/32	19/32	1 5/16	1.220	0.500	3/8	**UCVFL204-12S6**	VFL204	UC204-12S6	0.25	10.9	5.35	13.2	UCVFL204-12CS6	UCVFL204-12DS6	46.5	1 27/32	0.26
		113	65	26.5	90	11	13.4	15	33.3	31	12.7	M8	**UCVFL204S6**		UC204S6					UCVFL204CS6	UCVFL204DS6			
25	7/8	5 5/32	2 3/4	1 3/32	3 57/64	7/16	17/32	5/8	1 13/32	1.343	0.563	3/8	**UCVFL205-14S6**	VFL205	UC205-14S6	0.35	11.9	6.3	13.9	UCVFL205-14CS6	UCVFL205-14DS6	50.2	1 31/32	0.36
	15/16	131	70	27.5	99	11	13.8	16	35.8	34.1	14.3	M8	**UCVFL205-15S6**		UC205-15S6					UCVFL205-15CS6	UCVFL205-15DS6			
													UCVFL205S6		UC205S6					UCVFL205CS6	UCVFL205DS6			
	1												**UCVFL205-16S6**		UC205-16S6					UCVFL205-16CS6	UCVFL205-16DS6			
30	1 1/8	5 13/16	3 1/32	1 3/16	4 39/64	7/16	9/16	45/64	1 19/32	1.500	0.626	3/8	**UCVFL206-18S6**	VFL206	UC206-18S6	0.49	16.5	9.05	13.9	UCVFL206-18CS6	UCVFL206-18DS6	57.5	2 1/4	0.50
		148	80	30.5	117	11	14.3	18	40.2	38.1	15.9	M8	**UCVFL206S6**		UC206S6					UCVFL206CS6	UCVFL206DS6			
	1 3/16												**UCVFL206-19S6**		UC206-19S6					UCVFL206-19CS6	UCVFL206-19DS6			
	1 1/4												**UCVFL206-20S6**		UC206-20S6					UCVFL206-20CS6	UCVFL206-20DS6			
35	1 1/4	6 15/32	3 17/32	1 1/4	5 1/8	33/64	5/8	3/4	1 3/4	1.689	0.689	7/16	**UCVFL207-20S6**	VFL207	UC207-20S6	0.73	21.8	12.3	13.9	UCVFL207-20CS6	UCVFL207-20DS6	61.2	2 13/32	0.75
	1 5/16	164	90	32	130	13	15.5	19	44.4	42.9	17.5	M10	**UCVFL207-21S6**		UC207-21S6					UCVFL207-21CS6	UCVFL207-21DS6			
	1 3/8												**UCVFL207-22S6**		UC207-22S6					UCVFL207-22CS6	UCVFL207-22DS6			
													UCVFL207S6		UC207S6					UCVFL207CS6	UCVFL207DS6			
	1 7/16												**UCVFL207-23S6**		UC207-23S6					UCVFL207-23CS6	UCVFL207-23DS6			
40	1 1/2	6 15/16	3 15/16	1 11/32	5 43/64	35/64	21/32	53/64	2 1/32	1.937	0.748	1/2	**UCVFL208-24S6**	VFL208	UC208-24S6	0.92	24.8	13.3	14.0	UCVFL208-24CS6	UCVFL208-24DS6	69.2	2 23/32	0.95
	1 9/16	176	100	34.5	144	14	16.5	21	51.2	49.2	19	M12	**UCVFL208-25S6**		UC208-25S6					UCVFL208-25CS6	UCVFL208-25DS6			
													UCVFL208S6		UC208S6					UCVFL208CS6	UCVFL208EDS6			

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is A-1/4-28UNFN12.
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

FYH

UCVFL-ES7
Cylindrical bore (with set screws)
d 20 ~ 40 mm





Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

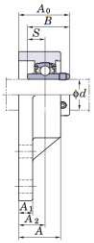
Unit: mm

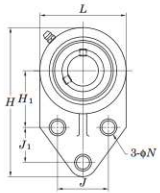
Housing No.	Δ_{A2s}	X
VFL204E~VFL208E	±0.5	0.7

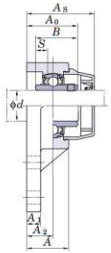
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	A1	A2	A0	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Plastic Cover Unit No. Open Type	Closed Type	Dimension mm	inch A_s	Mass kg
20	3/4	4 7/16	2 9/16	1 1/32	3 35/64	7/16	17/32	19/32	1 5/16	1.220	0.500	3/8	**UCVFL204-12ES7**	VFL204E	UC204-12S7	0.25	12.8	6.65	13.2	UCVFL204-12ECS7	UCVFL204-12EDS7	46.5	1 27/32	0.26
		113	65	26.5	90	11	13.4	15	33.3	31	12.7	M8	**UCVFL204ES7**		UC204S7					UCVFL204ECS7	UCVFL204EDS7			
25	7/8	5 5/32	2 3/4	1 3/32	3 57/64	7/16	17/32	5/8	1 13/32	1.343	0.563	7/16	**UCVFL205-14ES7**	VFL205E	UC205-14S7	0.35	14.0	7.85	13.9	UCVFL205-14ECS7	UCVFL205-14EDS7	50.2	1 31/32	0.36
	15/16	131	70	27.5	99	11	13.8	16	35.8	34.1	14.3	M10	**UCVFL205-15ES7**		UC205-15S7					UCVFL205-15ECS7	UCVFL205-15EDS7			
													UCVFL205ES7		UC205S7					UCVFL205ECS7	UCVFL205EDS7			
	1												**UCVFL205-16ES7**		UC205-16S7					UCVFL205-16ECS7	UCVFL205-16EDS7			
30	1 1/8	5 13/16	3 1/32	1 3/16	4 39/64	7/16	9/16	45/64	1 19/32	1.500	0.626	7/16	**UCVFL206-18ES7**	VFL206E	UC206-18S7	0.49	19.5	11.3	13.9	UCVFL206-18ECS7	UCVFL206-18EDS7	57.5	2 1/4	0.50
		148	80	30.5	117	11	14.3	18	40.2	38.1	15.9	M10	**UCVFL206ES7**		UC206S7					UCVFL206ECS7	UCVFL206EDS7			
	1 3/16												**UCVFL206-19ES7**		UC206-19S7					UCVFL206-19ECS7	UCVFL206-19EDS7			
	1 1/4												**UCVFL206-20ES7**		UC206-20S7					UCVFL206-20ECS7	UCVFL206-20EDS7			
35	1 1/4	6 15/32	3 17/32	1 1/4	5 1/8	33/64	5/8	3/4	1 3/4	1.689	0.689	1/2	**UCVFL207-20ES7**	VFL207E	UC207-20S7	0.73	25.7	15.4	13.9	UCVFL207-20ECS7	UCVFL207-20EDS7	61.2	2 13/32	0.75
	1 5/16	164	90	32	130	13	15.5	19	44.4	42.9	17.5	M12	**UCVFL207-21ES7**		UC207-21S7					UCVFL207-21ECS7	UCVFL207-21EDS7			
	1 3/8												**UCVFL207-22ES7**		UC207-22S7					UCVFL207-22ECS7	UCVFL207-22EDS7			
													UCVFL207ES7		UC207S7					UCVFL207ECS7	UCVFL207EDS7			
	1 7/16												**UCVFL207-23ES7**		UC207-23S7					UCVFL207-23ECS7	UCVFL207-23EDS7			
40	1 1/2	6 15/16	3 15/16	1 11/32	5 43/64	35/64	21/32	53/64	2 1/32	1.937	0.748	1/2	**UCVFL208-24ES7**	VFL208E	UC208-24S7	0.92	29.1	17.8	14.0	UCVFL208-24ECS7	UCVFL208-24EDS7	69.2	2 23/32	0.95
	1 9/16	176	100	34.5	144	14	16.5	21	51.2	49.2	19	M12	**UCVFL208-25ES7**		UC208-25S7					UCVFL208-25ECS7	UCVFL208-25EDS7			
													UCVFL208ES7		UC208S7					UCVFL208ECS7	UCVFL208EDS7			

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is A-1/4-28UNFN12.
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UCVFB-ES7
Cylindrical bore (with set screws)
d 20 ~ 35 mm



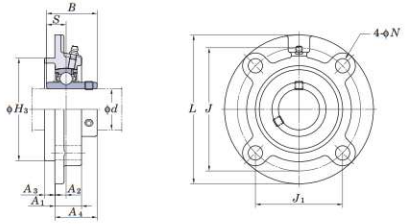


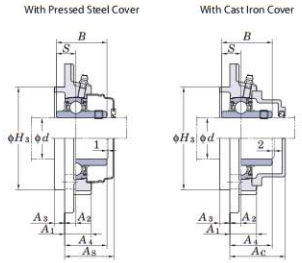


Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	J_1	N	H_1	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.		Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Plastic Cover Unit No. Open Type	Closed Type	Dimension mm / inch A_s	Mass kg
20	3/4	4 1/4	2 1/2	1	1 1/2	7/8	27/64	1 11/16	7/16	39/64	1 5/16	1.220	0.500	3/8	**UCVFB204-12ES7**	VFB204E	UC204-12S7		0.25	12.8	6.65	13.2	UCVFB204-12ECS7	UCVFB204-12EDS7	45.4	1 25/32	0.26
		108	63.5	25.4	38.1	22.2	10.7	42.9	11.4	15.4	33.7	31	12.7	M10	**UCVFB204ES7**		UC204S7						UCVFB204ECS7	UCVFB204EDS7			
25	7/8	4 3/4	2 3/4	1 11/32	1 5/8	1 1/8	27/64	1 13/16	7/16	27/32	1 5/8	1.343	0.563	3/8	**UCVFB205-14ES7**	VFB205E	UC205-14S7		0.31	14.0	7.85	13.9	UCVFB205-14ECS7	UCVFB205-14EDS7	56.8	2 1/4	0.32
	15/16														**UCVFB205-15ES7**		UC205-15S7						UCVFB205-15ECS7	UCVFB205-15EDS7			
		121	70	34.1	41.3	28.6	10.7	46	11.4	21.5	41.3	34.1	14.3	M10	**UCVFB205ES7**		UC205S7						UCVFB205ECS7	UCVFB205EDS7			
	1														**UCVFB205-16ES7**		UC205-16S7						UCVFB205-16ECS7	UCVFB205-16EDS7			
30	1 1/8	5 15/32	3 1/4	1 1/4	1 7/8	1 1/4	27/64	2 1/16	17/32	49/64	1 5/8	1.500	0.626	3/8	**UCVFB206-18ES7**	VFB206E	UC206-18S7		0.47	19.5	11.3	13.9	UCVFB206-18ECS7	UCVFB206-18EDS7	59	2 5/16	0.48
															UCVFB206ES7		UC206S7						UCVFB206ECS7	UCVFB206CDS7			
	1 3/16	139	83	32	47.6	31.8	10.7	52.4	13.3	19.3	41.5	38.1	15.9	M10	**UCVFB206-19ES7**		UC206-19S7						UCVFB206-19ECS7	UCVFB206-19EDS7			
	1 1/4														**UCVFB206-20ES7**		UC206-20S7						UCVFB206-20ECS7	UCVFB206-20EDS7			
35	1 1/4	6 3/16	3 3/4	1 7/16	2	1 1/4	17/32	2 3/8	5/8	27/32	1 27/32	1.689	0.689	1/2	**UCVFB207-20ES7**	VFB207E	UC207-20S7		0.66	25.7	15.4	13.9	UCVFB207-20ECS7	UCVFB207-20EDS7	65.8	2 19/32	0.68
	1 5/16														**UCVFB207-21ES7**		UC207-21S7						UCVFB207-21ECS7	UCVFB207-21EDS7			
	1 3/8	157	95	36.6	50.8	31.8	13.1	60.3	16.1	21.7	47.1	42.9	17.5	M12	**UCVFB207-22ES7**		UC207-22S7						UCVFB207-22ECS7	UCVFB207-22EDS7			
															UCVFB207ES7		UC207S7						UCVFB207ECS7	UCVFB207EDS7			
	1 7/16														**UCVFB207-23ES7**		UC207-23S7						UCVFB207-23ECS7	UCVFB207-23EDS7			

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is A-1/4-28UNFN12.
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UCFC
Cylindrical bore (with set screws)
d 12 ~ 50 mm





Variations of tolerance of spigot joint outside diameter (Δ_{Hm}), variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{Ks}), tolerance of position of bolt hole (X), and tolerance of circumferential runout of spigot joint (Y)

Unit: mm

Housing No.		Δ_{Hm}	Δ_{Ks}	X	Y
FC204~FC206	FCX05	0 −0.046	±0.5	0.7	0.2
FC207~FC210	FCX06~FCX10	0 −0.054			
FC211~FC217	FCX11~FCX15	0 −0.063	±0.8	1	0.3
FC218	FCX16~FCX18	0 −0.072			
	FCX20				0.4

Variations of tolerance of bolt hole diameter (Δ_{Sw})

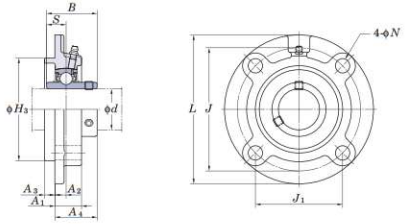
Unit: mm

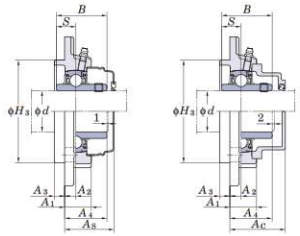
Housing No.		Δ_{Sw}
FC204~FC218	FCX05~FCX20	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm L	H_3	J	J_1	N	A_1	A_2	A_3	A_4	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	Closed Type	Dimension mm	inch A_s	Mass kg	With Cast Iron Cover Unit No. Open Type	Closed Type	Dimension mm	inch A_c	Mass kg
12														UCFC201		UC201	0.78				UCFC201C	UCFC201D	32.5	1 9/32	0.78	–	–	–	–	–
	1/2													UCFC201-8		UC201-8	0.78				–	–	–	–	–	–	–	–	–	–
15		3 15/16	2.4409	3 5/64	2 11/64	15/32	13/16	25/64	13/64	1 1/8	1.220	0.500	3/8	UCFC202	FC204	UC202	0.76				UCFC202C	UCFC202D	32.5	1 9/32	0.76	–	–	–	–	–
	5/8	100	62	78	55.1	12	20.5	10	5	28.3	31	12.7	M10	UCFC202-10		UC202-10	0.76	12.8	6.65	13.2	–	–	–	–	–	–	–	–	–	–
17														UCFC203		UC203	0.75				UCFC203C	UCFC203D	32.5	1 9/32	0.75	–	–	–	–	–
	3/4													UCFC204-12		UC204-12	0.75				–	–	–	–	–	–	–	–	–	–
20														UCFC204		UC204	0.73				UCFC204C	UCFC204D	32.5	1 9/32	0.73	UCFC204FC	UCFC204FD	41	1 17/32	0.84
	7/8													UCFC205-14		UC205-14	0.95				–	–	–	–	–	–	–	–	–	–
	15/16	4 17/32	2.7559	3 35/64	2 1/2	15/32	13/16	25/64	15/64	1 3/16	1.343	0.563	3/8	UCFC205-15	FC205	UC205-15	0.95	14.0	7.85	13.9	–	–	–	–	–	–	–	–	–	–
25		115	70	90	63.6	12	21	10	6	29.8	34.1	14.3	M10	UCFC205		UC205	0.95				UCFC205C	UCFC205D	34.5	1 11/32	0.95	UCFC205FC	UCFC205FD	43	1 21/32	1.1
	1													UCFC205-16		UC205-16	0.95				–	–	–	–	–	–	–	–	–	–
		4 3/8	2.9921	3 5/8	2 9/16	3/8	15/16	25/64	15/64	1 9/32	1.500	0.626	5/16	UCFCX05	FCX05	UCX05	1.2	19.5	11.3	13.9	UCFCX05C	UCFCX05D	36.5	1 7/16	1.2	–	–	–	–	–
	1	111	76	92	65	9.5	24	10	6	32.2	38.1	15.9	M8	UCFCX05-16		UCX05-16	1.2				–	–	–	–	–	–	–	–	–	–
	1 1/8													UCFC206-18		UC206-18	1.3				–	–	–	–	–	–	–	–	–	–
		4 29/32	3.1496	3 15/16	2 25/32	15/32	29/32	25/64	5/16	1 9/32	1.500	0.626	3/8	UCFC206	FC206	UC206	1.3	19.5	11.3	13.9	UCFC206C	UCFC206D	36.5	1 7/16	1.3	UCFC206FC	UCFC206FD	45	1 25/32	1.6
	1 3/16	125	80	100	70.7	12	23	10	8	32.2	38.1	15.9	M10	UCFC206-19		UC206-19	1.3				–	–	–	–	–	–	–	–	–	–
30	1 1/4													UCFC206-20		UC206-20	1.3				–	–	–	–	–	–	–	–	–	–
		5	3.3465	4 9/64	2 59/64	15/32	7/8	5/16	3/8	1 5/16	1.689	0.689	3/8	UCFCX06		UCX06	1.5				UCFCX06C	UCFCX06D	38	1 1/2	1.5	–	–	–	–	–
	1 3/16	127	85	105	74.2	12	22.5	8	9.5	33.4	42.9	17.5	M10	UCFCX06-19	FCX06	UCX06-19	1.5	25.7	15.4	13.9	–	–	–	–	–	–	–	–	–	–
	1 1/4													UCFCX06-20		UCX06-20	1.5				–	–	–	–	–	–	–	–	–	–
	1 1/4													UCFC207-20		UC207-20	1.7				–	–	–	–	–	–	–	–	–	–
	1 5/16													UCFC207-21		UC207-21	1.7				–	–	–	–	–	–	–	–	–	–
	1 3/8	5 5/16	3.5433	4 21/64	3 1/16	35/64	1 1/32	7/16	5/16	1 7/16	1.689	0.689	7/16	UCFC207-22	FC207	UC207-22	1.7	25.7	15.4	13.9	–	–	–	–	–	–	–	–	–	–
35		135	90	110	77.8	14	26	11	8	36.4	42.9	17.5	M12	UCFC207		UC207	1.7				UCFC207C	UCFC207D	41	1 5/8	1.7	UCFC207FC	UCFC207FD	50	1 31/32	2.1
	1 7/16													UCFC207-23		UC207-23	1.7				–	–	–	–	–	–	–	–	–	–
	1 3/8													UCFCX07-22		UCX07-22	1.9				–	–	–	–	–	–	–	–	–	–
		5 1/4	3.6220	4 3/8	3 3/32	15/32	1 1/32	23/64	7/16	1 17/32	1.937	0.748	3/8	UCFCX07	FCX07	UCX07	1.9	29.1	17.8	14.0	UCFCX07C	UCFCX07D	43.5	1 23/32	1.9	–	–	–	–	–
	1 7/16	133	92	111	78.5	12	26	9	11	39.2	49.2	19	M10	UCFCX07-23		UCX07-23	1.9				–	–	–	–	–	–	–	–	–	–
	1 1/2													UCFC208-24		UC208-24	2.0				–	–	–	–	–	–	–	–	–	–
	1 9/16	5 23/32	3.9370	4 23/32	3 11/32	35/64	1 1/32	7/16	25/64	1 5/8	1.937	0.748	7/16	UCFC208-25	FC208	UC208-25	2.0	29.1	17.8	14.0	–	–	–	–	–	–	–	–	–	–
40		145	100	120	84.8	14	26	11	10	41.2	49.2	19	M12	UCFC208		UC208	2.0				UCFC208C	UCFC208D	45.5	1 25/32	2.0	UCFC208FC	UCFC208FD	54	2 1/8	2.4
	1 1/2	5 1/4	3.6220	4 3/8	3 3/32	15/32	1 1/32	23/64	7/16	1 17/32	1.937	0.748	3/8	UCFCX08-24	FCX08	UCX08-24	2.0	34.1	21.3	14.0	–	–	–	–	–	–	–	–	–	–
		133	92	111	78.5	12	26	9	11	39.2	49.2	19	M10	UCFCX08		UCX08	2.0				UCFCX08C	UCFCX08D	43.5	1 23/32	2.0	–	–	–	–	–
	1 5/8													UCFC209-26		UC209-26	2.6				–	–	–	–	–	–	–	–	–	–
	1 11/16	6 5/16	4.1339	5 13/64	3 43/64	5/8	1 1/32	25/64	15/32	1 19/32	1.937	0.748	1/2	UCFC209-27	FC209	UC209-27	2.6	34.1	21.3	14.0	–	–	–	–	–	–	–	–	–	–
	1 3/4	160	105	132	93.3	16	26	10	12	40.2	49.2	19	M14	UCFC209-28		UC209-28	2.6				–	–	–	–	–	–	–	–	–	–
45														UCFC209		UC209	2.6				UCFC209C	UCFC209D	44.5	1 3/4	2.6	UCFC209FC	UCFC209FD	54	2 1/8	3.0
	1 11/16													UCFCX09-27		UCX09-27	2.6				–	–	–	–	–	–	–	–	–	–
	1 3/4	6 3/32	4.2520	5 1/8	3 5/8	35/64	31/32	5/16	15/32	1 19/32	2.031	0.748	7/16	UCFCX09-28	FCX09	UCX09-28	2.6	35.1	23.3	14.4	–	–	–	–	–	–	–	–	–	–
		155	108	130	91.9	14	25	8	12	40.6	51.6	19	M12	UCFCX09		UCX09	2.6				UCFCX09C	UCFCX09D	45	1 25/32	2.6	–	–	–	–	–
	1 7/8													UCFC210-30		UC210-30	2.9				–	–	–	–	–	–	–	–	–	–
	1 15/16	6 1/2	4.3307	5 7/16	3 27/32	5/8	1 3/32	25/64	15/32	1 11/16	2.031	0.748	1/2	UCFC210-31	FC210	UC210-31	2.9	35.1	23.3	14.4	–	–	–	–	–	–	–	–	–	–
		165	110	138	97.6	16	28	10	12	42.6	51.6	19	M14	UCFC210		UC210	2.9				UCFC210C	UCFC210D	47	1 27/32	2.9	UCFC210FC	UCFC210FD	58.5	2 5/16	3.4
50	2													UCFC210-32		UC210-32	2.9				–	–	–	–	–	–	–	–	–	–
	1 15/16													UCFCX10-31		UCX10-31	3.2				–	–	–	–	–	–	–	–	–	–
		6 3/8	4.6457	5 23/64	3 25/32	35/64	31/32	9/32	5/8	1 19/32	2.189	0.874	7/16	UCFCX10	FCX10	UCX10	3.2	43.4	29.4	14.4	UCFCX10C	UCFCX10D	45	1 25/32	3.2	–	–	–	–	–
	2	162	118	136	96.2	14	25	7	16	40.4	55.6	22.2	M12	UCFCX10-32		UCX10-32	3.2				–	–	–	–	–	–	–	–	–	–

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~210, X05~X09
   A-R1/8 ..... 211~218, X10~X20
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UCFC206JL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

UCFC
Cylindrical bore (with set screws)
d 55 ~ 100 mm





Variations of tolerance of spigot joint outside diameter (Δ_{H3a}), variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2a}), tolerance of position of bolt hole (X), and tolerance of circumferential runout of spigot joint (Y)

Unit: mm

Housing No.		Δ_{H3a}	Δ_{A2a}	X	Y
FC204~FC206	FCX05	0 −0.046	±0.5	0.7	0.2
FC207~FC210	FCX06~FCX10	0 −0.054			
FC211~FC217	FCX11~FCX15	0 −0.063	±0.8	1	0.3
FC218	FCX16~FCX18	0 −0.072			
	FCX20				0.4

Variations of tolerance of bolt hole diameter (Δ_{S4})

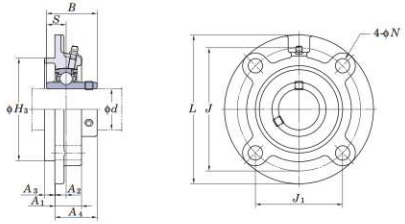
Unit: mm

Housing No.		Δ_{S4}
FC204~FC218	FCX05~FCX20	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm L	H_3	J	J_1	N	A_1	A_2	A_3	A_4	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	Closed Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Cover Unit No. Open Type	Closed Type	Dimension mm / inch A_c	Mass kg
55	2													UCFC211-32	FC211	UC211-32	4.2	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
	2 1/8	7 9/32	4.9213	5 29/32	4 11/64	3/4	1 7/32	33/64	15/32	1 13/16	2.189	0.874	5/8	UCFC211-34		UC211-34	4.2				–	–	– –	–	–	–	– –	–
		185	125	150	106.1	19	31	13	12	46.4	55.6	22.2	M16	UCFC211		UC211	4.2				UCFC211C	UCFC211D	51 2	4.2	UCFC211FC	UCFC211FD	62.5 2 15/32	4.8
	2 3/16													UCFC211-35		UC211-35	4.2				–	–	– –	–	–	–	– –	–
		7 3/32	5	5 63/64	4 15/64	5/8	1 1/32	5/32	55/64	1 23/32	2.563	1.000	1/2	UCFCX11	FCX11	UCX11	4.3	52.4	36.2	14.4	UCFCX11C	UCFCX11D	48.5 1 29/32	4.3	–	–	– –	–
	2 3/16	180	127	152	107.5	16	26	4	22	43.7	65.1	25.4	M14	UCFCX11-35		UCX11-35	4.3				–	–	– –	–	–	–	– –	–
	2 1/4													UCFCX11-36		UCX11-36	4.3				–	–	– –	–	–	–	– –	–
60	2 1/4													UCFC212-36	FC212	UC212-36	5.0	52.4	36.2	14.4	–	–	– –	–	–	–	– –	–
		7 11/16	5.3150	6 19/64	4 29/64	3/4	1 13/32	43/64	15/32	2 7/32	2.563	1.000	5/8	UCFC212		UC212	5.0				UCFC212C	UCFC212D	61.5 2 13/32	5.0	UCFC212FC	UCFC212FD	74 2 29/32	5.8
	2 3/8	195	135	160	113.1	19	36	17	12	56.7	65.1	25.4	M16	UCFC212-38		UC212-38	5.0				–	–	– –	–	–	–	– –	–
	2 7/16													UCFC212-39		UC212-39	5.0				–	–	– –	–	–	–	– –	–
		7 5/8	5.5118	6 1/2	4 19/32	5/8	1 5/16	7/16	25/32	2	2.563	1.000	1/2	UCFCX12	FCX12	UCX12	5.3	57.2	40.1	14.4	UCFCX12C	UCFCX12D	55.5 2 3/16	5.3	–	–	– –	–
	2 7/16	194	140	165	116.7	16	33	11	20	50.7	65.1	25.4	M14	UCFCX12-39		UCX12-39	5.3				–	–	– –	–	–	–	– –	–
65	2 1/2	8 1/16	5.7087	6 11/16	4 47/64	3/4	1 13/32	5/8	35/64	2 3/16	2.563	1.000	5/8	UCFC213-40	FC213	UC213-40	5.6	57.2	40.1	14.4	–	–	– –	–	–	–	– –	–
		205	145	170	120.2	19	36	16	14	55.7	65.1	25.4	M16	UCFC213		UC213	5.6				UCFC213C	UCFC213D	60.5 2 3/8	5.6	UCFC213FC	UCFC213FD	73 2 7/8	6.4
	2 1/2	7 5/8	5.5118	6 1/2	4 19/32	5/8	1 5/16	7/16	25/32	2 3/16	2.937	1.189	1/2	UCFCX13-40	FCX13	UCX13-40	5.7	62.2	44.1	14.5	–	–	– –	–	–	–	– –	–
		194	140	165	116.7	16	33	11	20	55.4	74.6	30.2	M14	UCFCX13		UCX13	5.7				UCFCX13C	UCFCX13D	60.5 2 3/8	5.7	–	–	– –	–
70	2 3/4	8 15/32	5.9055	6 31/32	4 59/64	3/4	1 9/16	43/64	35/64	2 13/32	2.937	1.189	5/8	UCFC214-44	FC214	UC214-44	6.8	62.2	44.1	14.5	–	–	– –	–	–	–	– –	–
		215	150	177	125.1	19	40	17	14	61.4	74.6	30.2	M16	UCFC214		UC214	6.8				UCFC214C	UCFC214D	66.5 2 5/8	6.8	UCFC214FC	UCFC214FD	79 3 1/8	7.7
	2 3/4	8 3/4	6.4567	7 31/64	5 9/32	3/4	1 13/32	35/64	25/32	2 5/16	3.063	1.331	5/8	UCFCX14-44	FCX14	UCX14-44	7.3	67.4	48.3	14.5	–	–	– –	–	–	–	– –	–
		222	164	190	134.3	19	36	14	20	58.5	77.8	33.3	M16	UCFCX14		UCX14	7.3				UCFCX14C	UCFCX14D	63.5 2 1/2	7.3	–	–	– –	–
75	2 15/16													UCFC215-47	FC215	UC215-47	7.2	67.4	48.3	14.5	–	–	– –	–	–	–	– –	–
		8 21/32	6.2992	7 1/4	5 1/8	3/4	1 9/16	45/64	5/8	2 15/32	3.063	1.331	5/8	UCFC215		UC215	7.2				UCFC215C	UCFC215D	67.5 2 21/32	7.2	UCFC215FC	UCFC215FD	80 3 5/32	8.2
	3	220	160	184	130.1	19	40	18	16	62.5	77.8	33.3	M16	UCFC215-48		UC215-48	7.2				–	–	– –	–	–	–	– –	–
	2 15/16													UCFCX15-47	FCX15	UCX15-47	8.0	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
		8 3/4	6.4567	7 31/64	5 9/32	3/4	1 3/8	15/32	55/64	2 13/32	3.252	1.311	5/8	UCFCX15		UCX15	8.0				UCFCX15C	UCFCX15D	66.5 2 5/8	8.0	–	–	– –	–
	3	222	164	190	134.3	19	35	12	22	61.3	82.6	33.3	M16	UCFCX15-48		UCX15-48	8.0				–	–	– –	–	–	–	– –	–
80	3 1/8	9 7/16	6.6929	7 7/8	5 9/16	29/32	1 31/32	45/64	5/8	2 21/32	3.252	1.311	3/4	UCFC216-50	FC216	UC216-50	8.7	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
		240	170	200	141.4	23	42	18	16	67.3	82.6	33.3	M20	UCFC216		UC216	8.7				UCFC216C	UCFC216D	72.5 2 27/32	8.7	UCFC216FC	UCFC216FD	87 3 7/16	9.9
	–	10 1/4	7.3228	8 5/8	6 3/32	29/32	1 13/32	25/64	63/64	2 7/16	3.374	1.343	3/4	UCFCX16	FCX16	UCX16	11.3	84.0	61.9	14.5	UCFCX16C	UCFCX16D	66.5 2 5/8	11.3	–	–	– –	–
		260	186	219	154.8	23	36	10	25	61.6	85.7	34.1	M20															
85	3 1/4	9 27/32	7.0866	8 3/16	5 51/64	29/32	1 25/32	45/64	45/64	2 3/4	3.374	1.343	3/4	UCFC217-52	FC217	UC217-52	10.3	84.0	61.9	14.5	–	–	– –	–	–	–	– –	–
		250	180	208	147.1	23	45	18	18	69.6	85.7	34.1	M20	UCFC217		UC217	10.3				UCFC217C	UCFC217D	74.5 2 15/16	10.3	UCFC217FC	UCFC217FD	89 3 1/2	11.7
	3 7/16	10 1/4	7.3228	8 5/8	6 3/32	29/32	1 13/32	25/64	63/64	2 5/8	3.780	1.563	3/4	UCFCX17	FCX17	UCX17	12.9	96.1	71.5	14.5	UCFCX17C	UCFCX17D	71.5 2 13/16	12.9	–	–	– –	–
		260	186	219	154.8	23	36	10	25	66.3	96	39.7	M20	UCFCX17-55		UCX17-55	12.9				–	–	– –	–	–	–	– –	–
90	3 1/2	10 7/16	7.4803	8 21/32	6 1/8	29/32	1 31/32	55/64	45/64	3 3/32	3.780	1.563	3/4	UCFC218-56	FC218	UC218-56	13.3	96.1	71.5	14.5	–	–	– –	–	–	–	– –	–
		265	190	220	155.5	23	50	22	18	78.3	96	39.7	M20	UCFC218		UC218	13.3				UCFC218C	UCFC218D	83.5 3 9/32	13.3	UCFC218FC	UCFC218FD	98 3 27/32	14.8
	–	10 1/4	7.3228	8 5/8	6 3/32	29/32	1 11/16	15/32	1 7/64	2 7/8	4.094	1.689	3/4	UCFCX18	FCX18	UCX18	13.5	109	81.9	14.4	–	–	– –	–	UCFCX18C	UCFCX18C	92 3 5/8	15.4
		260	186	219	154.8	23	43	12	28	73.1	104	42.9	M20															
100														UCFCX20	FCX20	UCX20	18.2	133	105	14.4	–	–	– –	–	UCFCX20C	UCFCX20D	116 4 9/16	20.7
	3 15/16	10 7/8	8.1102	9 3/8	6 5/8	29/32	2 19/32	55/64	1 7/64	3 9/16	4.626	1.937	3/4	UCFCX20-63		UCX20-63	18.2				–	–	– –	–	–	–	– –	–
		276	206	238	168.3	23	66	22	28	90.3	117.5	49.2	M20	UCFCX20-64		UCX20-64	18.2				–	–	– –	–	–	–	– –	–
	4																											

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~210, X05~X09
   A-R1/8 ..... 211~218, X10~X20
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UCFC206JL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

UCFCX-E
Cylindrical bore (with set screws)
d 25 ~ 100 mm



Variations of tolerance of spigot joint outside diameter (Δ_{H3a}), variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A3a}), tolerance of position of bolt hole (X), and tolerance of circumferential runout of spigot joint (Y)

Unit: mm

Housing No.	Δ_{H3a}	Δ_{A3a}	X	Y
FCX05E	0 −0.046	±0.5	0.7	0.2
FCX06E~FCX10E	0 −0.054			
FCX12E~FCX15E	0 −0.063	±0.8	1	0.3
FCX16E~FCX18E	0 −0.072			
FCX20E				0.4

Variations of tolerance of bolt hole diameter (Δ_{N3a})

Unit: mm

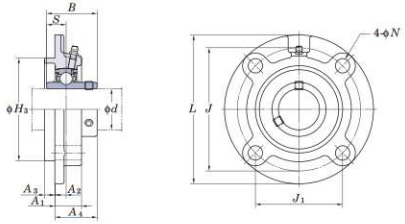
Housing No.	Δ_{N3a}
FCX05E~FCX20E	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm L	H_3	J	J_1	N	A_1	A_2	A_3	A_4	B	S	Bolt Size inch / mm	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
25	1	4 3/8 111	3.000 76.2	3 5/8 92	2 9/16 65	3/8 9.5	15/16 24	25/64 10	15/64 6	1 9/32 32.2	1.500 38.1	0.626 15.9	5/16 M8	**UCFCX05E** **UCFCX05-16E**	FCX05E	UCX05 UCX05-16	19.5	11.3	13.9	1.2
30	1 3/16 1 1/4	5 127	3.375 85.725	4 9/64 105	2 59/64 74.2	15/32 12	7/8 22.5	5/16 8	3/8 9.5	1 5/16 33.4	1.689 42.9	0.689 17.5	3/8 M10	**UCFCX06E** **UCFCX06-19E** **UCFCX06-20E**	FCX06E	UCX06 UCX06-19 UCX06-20	25.7	15.4	13.9	1.5
35	1 3/8 1 7/16	5 1/4 133	3.625 92.075	4 3/8 111	3 3/32 78.5	15/32 12	1 1/32 26	23/64 9	7/16 11	1 17/32 39.2	1.937 49.2	0.748 19	3/8 M10	**UCFCX07-22E** **UCFCX07E** **UCFCX07-23E**	FCX07E	UCX07-22 UCX07 UCX07-23	29.1	17.8	14.0	1.9
40	1 1/2	5 1/4 133	3.625 92.075	4 3/8 111	3 3/32 78.5	15/32 12	1 1/32 26	23/64 9	7/16 11	1 17/32 39.2	1.937 49.2	0.748 19	3/8 M10	**UCFCX08-24E** **UCFCX08E**	FCX08E	UCX08-24 UCX08	34.1	21.3	14.0	2.0
45	1 11/16 1 3/4	6 3/32 155	4.250 107.95	5 1/8 130	3 5/8 91.9	35/64 14	31/32 25	5/16 8	15/32 12	1 19/32 40.6	2.031 51.6	0.748 19	7/16 M12	**UCFCX09-27E** **UCFCX09-28E** **UCFCX09E**	FCX09E	UCX09-27 UCX09-28 UCX09	35.1	23.3	14.4	2.6
50	1 15/16 2	6 3/8 162	4.5 114.3	5 23/64 136	3 25/32 96.2	35/64 14	31/32 25	9/32 7	5/8 16	1 19/32 40.4	2.189 55.6	0.874 22.2	7/16 M12	**UCFCX10-31E** **UCFCX10E** **UCFCX10-32E**	FCX10E	UCX10-31 UCX10 UCX10-32	43.4	29.4	14.4	3.2
60	2 7/16	7 5/8 194	5.500 139.7	6 1/2 165	4 19/32 116.7	5/8 16	1 5/16 33	7/16 11	25/32 20	2 50.7	2.563 65.1	1.000 25.4	1/2 M14	**UCFCX12E** **UCFCX12-39E**	FCX12E	UCX12 UCX12-39	57.2	40.1	14.4	5.3
65	2 1/2	7 5/8 194	5.500 139.7	6 1/2 165	4 19/32 116.7	5/8 16	1 5/16 33	7/16 11	25/32 20	2 3/16 55.4	2.937 74.6	1.189 30.2	1/2 M14	**UCFCX13-40E** **UCFCX13E**	FCX13E	UCX13-40 UCX13	62.2	44.1	14.5	5.7
70	2 3/4	8 3/4 222	6.375 161.925	7 31/64 190	5 9/32 134.3	3/4 19	1 13/32 36	35/64 14	25/32 20	2 5/16 58.5	3.063 77.8	1.331 33.3	5/8 M16	**UCFCX14-44E** **UCFCX14E**	FCX14E	UCX14-44 UCX14	67.4	48.3	14.5	7.3
75	2 15/16 3	8 3/4 222	6.375 161.925	7 31/64 190	5 9/32 134.3	3/4 19	1 3/8 35	15/32 12	55/64 22	2 13/32 61.3	3.252 82.6	1.311 33.3	5/8 M16	**UCFCX15-47E** **UCFCX15E** **UCFCX15-48E**	FCX15E	UCX15-47 UCX15 UCX15-48	72.7	53.0	14.6	8.0
80	–	10 1/4 260	7.375 187.325	8 5/8 219	6 3/32 154.8	29/32 23	1 13/32 36	25/64 10	63/64 25	2 7/16 61.6	3.374 85.7	1.343 34.1	3/4 M20	**UCFCX16E**	FCX16E	UCX16	84.0	61.9	14.5	11.3
85	3 7/16	10 1/4 260	7.375 187.325	8 5/8 219	6 3/32 154.8	29/32 23	1 13/32 36	25/64 10	63/64 25	2 5/8 66.3	3.780 96	1.563 39.7	3/4 M20	**UCFCX17E** **UCFCX17-55E**	FCX17E	UCX17 UCX17-55	96.1	71.5	14.5	12.9
90	–	10 1/4 260	7.375 187.325	8 5/8 219	6 3/32 154.8	29/32 23	1 11/16 43	15/32 12	1 7/64 28	2 7/8 73.1	4.094 104	1.689 42.9	3/4 M20	**UCFCX18E**	FCX18E	UCX18	109	81.9	14.4	13.5
100	3 15/16 4	10 7/8 276	8.125 206.375	9 3/8 238	6 5/8 168.3	29/32 23	2 19/32 66	55/64 22	1 7/64 28	3 9/16 90.3	4.626 117.5	1.937 49.2	3/4 M20	**UCFCX20E** **UCFCX20-63E** **UCFCX20-64E**	FCX20E	UCX20 UCX20-63 UCX20-64	133	105	14.4	18.2

Remarks
1. In Part No. of unit, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... X05~X09
   A-R1/8 ..... X10~X20
3. As for the triple seal type product, suffix code L3 follows the Part No. of unit or bearing. (Example of Part No. : UCFCX06EL3, UCX06L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

FYH

UCFCF
Cylindrical bore
(with set screws)
d 25 ~ 55 mm



Variations of tolerance of spigot joint outside diameter (Δ_{H3a}), variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{L2a}), tolerance of position of bolt hole (X), and tolerance of circumferential runout of spigot joint (Y)

Unit: mm

Housing No.	Δ_{H3a}	Δ_{L2a}	X	Y
FCF205~FCF206	0 −0.046	±0.5	0.7	0.2
FCF207~FCF210	0 −0.054			
FCF211	0 −0.063	±0.8	1	0.3

Variations of tolerance of bolt hole diameter (Δ_{N4})

Unit: mm

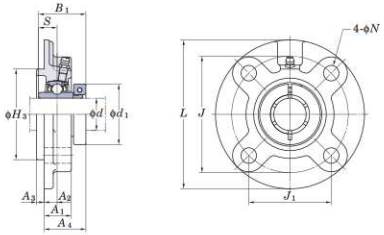
Housing No.	Δ_{N4}
FCF205~FCF211	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm L	H_3	J	J_1	N	A_1	A_2	A_3	A_4	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0
25	7/8	4 3/8	3	3 5/8	2 9/16	13/32	7/8	7/16	1/4	1 7/32	1.343	0.563	5/16	UCFCF205-14	FCF205	UC205-14	1.2	14.0	7.85	13.9
	15/16	111	76.2	92.1	65.1	10.5	22.1	11.1	6.4	30.9	34.1	14.3	M8	UCFCF205-15		UC205-15				
														UCFCF205		UC205				
	1													UCFCF205-16		UC205-16				
30	1 1/8	5	3.375	4 1/8	2 29/32	15/32	25/32	19/64	27/64	1 5/32	1.500	0.626	7/16	UCFCF206-18	FCF206	UC206-18	1.8	19.5	11.3	13.9
	1 3/16	127	85.725	104.8	74.1	12	20	7.5	10.5	29.7	38.1	15.9	M10	UCFCF206		UC206				
	1 1/4													UCFCF206-19		UC206-19				
														UCFCF206-20		UC206-20				
35	1 1/4	5 1/4	3.625	4 3/8	3 3/32	15/32	7/8	9/32	15/32	1 9/32	1.689	0.689	7/16	UCFCF207-20	FCF207	UC207-20	1.8	25.7	15.4	13.9
	1 5/16	133	92.075	111.1	78.6	12	22.2	7.1	11.9	32.5	42.9	17.5	M10	UCFCF207-21		UC207-21				
	1 3/8													UCFCF207-22		UC207-22				
														UCFCF207		UC207				
	1 7/16													UCFCF207-23		UC207-23				
40	1 1/2	5 1/4	3.625	4 3/8	3 3/32	15/32	1 1/32	3/8	15/32	1 9/16	1.937	0.748	7/16	UCFCF208-24	FCF208	UC208-24	2.1	29.1	17.8	14.0
	1 9/16	133	92.075	111.1	78.6	12	26.1	9.5	11.9	39.7	49.2	19	M10	UCFCF208-25		UC208-25				
														UCFCF208		UC208				
45	1 5/8	6 5/32	4.25	5 1/8	3 5/8	17/32	7/8	7/32	15/32	1 13/32	1.937	0.748	1/2	UCFCF209-26	FCF209	UC209-26	2.8	34.1	21.3	14.0
	1 11/16	156	107.95	130.2	92.05	13.5	22	5.5	12	35.7	49.2	19	M12	UCFCF209-27		UC209-27				
	1 3/4													UCFCF209-28		UC209-28				
														UCFCF209		UC209				
50	1 7/8	6 3/8	4.5	5 3/8	3 51/64	17/32	1 1/16	11/32	5/8	1 5/8	2.031	0.748	1/2	UCFCF210-30	FCF210	UC210-30	3.2	35.1	23.3	14.4
	1 15/16	162	114.3	136.5	96.5	13.5	27.1	8.7	15.9	41.3	51.6	19	M12	UCFCF210-31		UC210-31				
														UCFCF210		UC210				
	2													UCFCF210-32		UC210-32				
55	2	7 1/8	5	6	4 1/4	19/32	7/8	7/32	7/8	1 17/32	2.189	0.874	1/2	UCFCF211-32	FCF211	UC211-32	4.2	43.4	29.4	14.4
	2 1/8	181	127	152.4	107.8	15	22.2	5.5	22.2	38.9	55.6	22.2	M14	UCFCF211-34		UC211-34				
														UCFCF211		UC211				
	2 3/16													UCFCF211-35		UC211-35				

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 205~210
   A-R1/8 211
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UCFCF206JL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

FYH

NCFC
Cylindrical bore
(with concentric locking collar)
d 20 ~ 60 mm



Variations of tolerance of spigot joint outside diameter (Δ_{Dm}), variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{Ds}), tolerance of position of bolt hole (X), and tolerance of circumferential runout of spigot joint (Y)

Unit: mm

Housing No.	Δ_{Dm}	Δ_{Ds}	X	Y
FC204~FC206	0 −0.046	±0.5	0.7	0.2
FC207~FC210	0 −0.054			
FC211~FC212	0 −0.063	±0.8	1	0.3

Variations of tolerance of bolt hole diameter (Δ_{Sd})

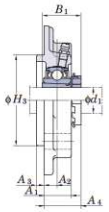
Unit: mm

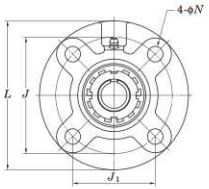
Housing No.	Δ_{Sd}
FC204~FC212	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm L	H_3	J	J_1	N	A_1	A_2	A_3	A_4	B_1	S	d_1	Bolt Size inch / mm	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
20	3/4	3 15/16	2.4409	3 5/64	2 11/64	15/32	13/16	25/64	13/64	1 3/16	1 9/32	0.500	1 3/4	3/8	NCFC204-12	FC204	NC204-12	12.8	6.65	13.2	0.87
		100	62	78	55.1	12	20.5	10	5	29.8	32.5	12.7	44.5	M10	NCFC204		NC204				
25	7/8														NCFC205-14	FC205	NC205-14	14.0	7.85	13.9	1.15
	15/16	4 17/32	2.7559	3 35/64	2 1/2	15/32	13/16	25/64	15/64	1 9/32	1 7/16	0.563	1 15/16	3/8	NCFC205-15		NC205-15				
		115	70	90	63.6	12	21	10	6	32.2	36.5	14.3	49.2	M10	NCFC205		NC205				
	1														NCFC205-16		NC205-16				
30	1 1/8														NCFC206-18	FC206	NC206-18	19.5	11.3	13.9	1.5
		4 29/32	3.1496	3 15/16	2 25/32	15/32	29/32	25/64	5/16	1 11/32	1 9/16	0.626	2 3/16	3/8	NCFC206		NC206				
	1 3/16	125	80	100	70.7	12	23	10	8	33.8	39.7	15.9	55.6	M10	NCFC206-19		NC206-19				
	1 1/4														NCFC206-20		NC206-20				
35	1 1/4	5 5/16	3.5433	4 21/64	3 1/16	35/64	1 1/32	7/16	5/16	1 1/2	1 3/4	0.689	2 7/16	7/16	NCFC207-20	FC207	NC207-20	25.7	15.4	13.9	2.0
		135	90	110	77.8	14	26	11	8	38	44.5	17.5	61.9	M12							
	1 3/8	5 5/16	3.5433	4 21/64	3 1/16	35/64	1 1/32	7/16	5/16	1 1/2	1 3/4	0.689	2 9/16	7/16	NCFC207-22	FC207	NC207-22	25.7	15.4	13.9	2.0
		135	90	110	77.8	14	26	11	8	38	44.5	17.5	65.1	M12	NCFC207		NC207				
	1 7/16														NCFC207-23		NC207-23				
40	1 1/2	5 23/32	3.9370	4 23/32	3 11/32	35/64	1 1/32	7/16	25/64	1 11/16	2	0.748	2 11/16	7/16	NCFC208-24	FC208	NC208-24	29.1	17.8	14.0	2.4
		145	100	120	84.8	14	26	11	10	42.8	50.8	19	68.3	M12	NCFC208		NC208				
45	1 5/8	6 5/16	4.1339	5 13/64	3 43/64	5/8	1 1/32	25/64	15/32	1 21/32	2	0.748	2 13/16	1/2	NCFC209-26	FC209	NC209-26	34.1	21.3	14.0	3.0
		160	105	132	93.3	16	26	10	12	41.8	50.8	19	71.4	M14							
	1 11/16														NCFC209-27	FC209	NC209-27	34.1	21.3	14.0	3.0
	1 3/4	6 5/16	4.1339	5 13/64	3 43/64	5/8	1 1/32	25/64	15/32	1 21/32	2	0.748	2 15/16	1/2	NCFC209-28		NC209-28				
		160	105	132	93.3	16	26	10	12	41.8	50.8	19	74.6	M14	NCFC209		NC209				
50	1 15/16														NCFC210-31	FC210	NC210-31	35.1	23.3	14.4	3.5
		6 1/2	4.3307	5 7/16	3 27/32	5/8	1 3/32	25/64	15/32	1 3/4	2 3/32	0.748	3 3/8	1/2	NCFC210		NC210				
	2	165	110	138	97.6	16	28	10	12	44.1	53.1	19	85.7	M14	NCFC210-32		NC210-32				
55	2	7 9/32	4.9213	5 29/32	4 11/64	3/4	1 7/32	33/64	15/32	1 7/8	2 1/4	0.874	3 1/2	5/8	NCFC211-32	FC211	NC211-32	43.4	29.4	14.4	4.6
		185	125	150	106.1	19	31	13	12	47.9	57.1	22.2	88.9	M16							
	2 3/16	7 9/32	4.9213	5 29/32	4 11/64	3/4	1 7/32	33/64	15/32	1 7/8	2 1/4	0.874	3 5/8	5/8	NCFC211	FC211	NC211	43.4	29.4	14.4	4.6
		185	125	150	106.1	19	31	13	12	47.9	57.1	22.2	92.1	M16	NCFC211-35		NC211-35				
60	2 1/4	7 11/16	5.3150	6 19/64	4 29/64	3/4	1 13/32	43/64	15/32	2 9/32	2 5/8	1.000	4 1/16	5/8	NCFC212-36	FC212	NC212-36	52.4	36.2	14.4	5.7
		195	135	160	113.1	19	36	17	12	58.3	66.7	25.4	103.2	M16							
	2 7/16	7 11/16	5.3150	6 19/64	4 29/64	3/4	1 13/32	43/64	15/32	2 9/32	2 5/8	1.000	4 1/8	5/8	NCFC212	FC212	NC212	52.4	36.2	14.4	5.7
		195	135	160	113.1	19	36	17	12	58.3	66.7	25.4	104.8	M16	NCFC212-39		NC212-39				

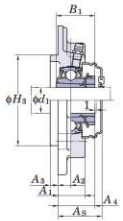
Remarks
1. In Part No. of unit, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 204~210
   A-R1/8 ..... 211~212
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Representative examples of the forms of housing are indicated.

UKFC
Tapered bore (with adapter)
d_1 20 ~ 65 mm

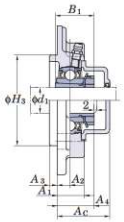




With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of spigot joint outside diameter (Δ_{H3a}), variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2a}), tolerance of position of bolt hole (X), and tolerance of circumferential runout of spigot joint (Y)

Unit: mm

Housing No.		Δ_{H3a}	Δ_{A2a}	X	Y
FC205~FC206	FCX05	0 −0.046	±0.5	0.7	0.2
FC207~FC210	FCX06~FCX10	0 −0.054			
FC211~FC217	FCX11~FCX15	0 −0.063	±0.8	1	0.3
FC218	FCX16~FCX18	0 −0.072			
	FCX20				0.4

Variations of tolerance of bolt hole diameter (Δ_{N4})

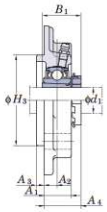
Unit: mm

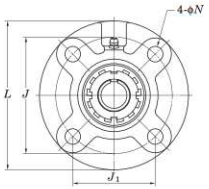
Housing No.		Δ_{N4}
FC204~FC218	FCX05~FCX20	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm d_1	L	H_3	J	J_1	N	A_1	A_2	A_3	A_4	B_1	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Adapter No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	Closed Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Cover Unit No. Open Type	Closed Type	Dimension mm / inch A_c	Mass kg
20	3/4	4 17/32	2.7559	3 35/64	2 1/2	15/32	13/16	25/64	15/64	1 3/16	1 3/8	3/8	UKFC205	FC205	UK205	HE2305X	0.99	14.0	7.85	13.9	–	–	– –	–	–	–	– –	–
		115	70	90	63.6	12	21	10	6	30	35	M10				H2305X	0.99				UKFC205C	UKFC205D	34.5 1 11/32	0.99	UKFC205FC	UKFC205FD	43 1 21/32	1.2
	3/4	4 3/8	2.9921	3 5/8	2 9/16	3/8	15/16	25/64	15/64	1 5/32	1 3/8	5/16	UKFCX05	FCX05	UKX05	HE2305X	1.2	19.5	11.3	13.9	–	–	– –	–	–	–	– –	–
		111	76	92	65	9.5	24	10	6	29.5	35	M8				H2305X	1.2				UKFCX05C	UKFCX05D	36.5 1 7/16	1.2	–	–	– –	–
25		4 29/32	3.1496	3 15/16	2 25/32	15/32	29/32	25/64	5/16	1 1/4	1 1/2	3/8	UKFC206	FC206	UK206	H2306X	1.3	19.5	11.3	13.9	UKFC206C	UKFC206D	36.5 1 7/16	1.3	UKFC206FC	UKFC206FD	45 1 25/32	1.6
	1	125	80	100	70.7	12	23	10	8	31.5	38	M10				H2306X	1.3				–	–	– –	–	–	–	– –	–
		5	3.3465	4 9/64	2 59/64	15/32	7/8	5/16	3/8	1 5/32	1 1/2	3/8	UKFCX06	FCX06	UKX06	H2306X	1.5	25.7	15.4	13.9	UKFCX06C	UKFCX06D	38 1 1/2	1.5	–	–	– –	–
	1	127	85	105	74.2	12	22.5	8	9.5	29	38	M10				HE2306X	1.5				–	–	– –	–	–	–	– –	–
30	1 1/8	5 5/16	3.5433	4 21/64	3 1/16	35/64	1 1/32	7/16	5/16	1 3/8	1 11/16	7/16	UKFC207	FC207	UK207	HS2307X	1.7	25.7	15.4	13.9	–	–	– –	–	–	–	– –	–
		135	90	110	77.8	14	26	11	8	35	43	M12				H2307X	1.7				UKFC207C	UKFC207D	41 1 5/8	1.7	UKFC207FC	UKFC207FD	50 1 31/32	2.1
	1 1/8	5 1/4	3.6220	4 3/8	3 3/32	15/32	1 1/32	23/64	7/16	1 1/4	1 11/16	3/8	UKFCX07	FCX07	UKX07	HS2307X	1.9	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
		133	92	111	78.5	12	26	9	11	31.5	43	M10				H2307X	1.9				UKFCX07C	UKFCX07D	43.5 1 23/32	1.9	–	–	– –	–
35	1 1/4												UKFC208	FC208	UK208	HE2308X	2.0	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
	1 3/8	5 23/32	3.9370	4 23/32	3 11/32	35/64	1 1/32	7/16	25/64	1 1/2	1 13/16	7/16				HS2308X	2.0				–	–	– –	–	–	–	– –	–
		145	100	120	84.8	14	26	11	10	38	46	M12				H2308X	2.0				UKFC208C	UKFC208D	45.5 1 25/32	2.0	UKFC208FC	UKFC208FD	54 2 1/8	2.4
	1 1/4												UKFCX08	FCX08	UKX08	HE2308X	1.9	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
	1 3/8	5 1/4	3.6220	4 3/8	3 3/32	15/32	1 1/32	23/64	7/16	1 5/16	1 13/16	3/8				HS2308X	1.9				–	–	– –	–	–	–	– –	–
		133	92	111	78.5	12	26	9	11	33.5	46	M10				H2308X	1.9				UKFCX08C	UKFCX08D	43.5 1 23/32	1.9	–	–	– –	–
40	1 1/2	6 5/16	4.1339	5 13/64	3 43/64	5/8	1 1/32	25/64	15/32	1 17/32	1 31/32	1/2	UKFC209	FC209	UK209	HE2309X	2.7	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
		160	105	132	93.3	16	26	10	12	39	50	M14				H2309X	2.7				UKFC209C	UKFC209D	44.5 1 3/4	2.7	UKFC209FC	UKFC209FD	54 2 1/8	3.2
	1 1/2	6 3/32	4.2520	5 1/8	3 3/8	35/64	31/32	5/16	15/32	1 5/16	1 31/32	7/16	UKFCX09	FCX09	UKX09	HE2309X	2.6	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
		155	108	130	91.9	14	25	8	12	33.5	50	M12				H2309X	2.6				UKFCX09C	UKFCX09D	45 1 25/32	2.6	–	–	– –	–
45	1 3/4	6 1/2	4.3307	5 7/16	3 27/32	5/8	1 3/32	25/64	15/32	1 9/16	2 5/32	1/2	UKFC210	FC210	UK210	HE2310X	3.0	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
		165	110	138	97.6	16	28	10	12	40	55	M14				H2310X	3.0				UKFC210C	UKFC210D	47 1 27/32	3.0	UKFC210FC	UKFC210FD	58.5 2 5/16	3.5
	1 3/4	6 3/8	4.6457	5 23/64	3 25/32	35/64	31/32	9/32	5/8	1 11/32	2 5/32	7/16	UKFCX10	FCX10	UKX10	HE2310X	3.1	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
		162	118	136	96.2	14	25	7	16	34.5	55	M12				H2310X	3.1				UKFCX10C	UKFCX10D	45 1 25/32	3.1	–	–	– –	–
50	1 7/8												UKFC211	FC211	UK211	HS2311X	4.3	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
		7 9/32	4.9213	5 29/32	4 11/64	3/4	1 7/32	33/64	15/32	1 25/32	2 5/16	5/8				H2311X	4.3				UKFC211C	UKFC211D	51 2	4.3	UKFC211FC	UKFC211FD	62.5 2 15/32	4.9
	2	185	125	150	106.1	19	31	13	12	45.5	59	M16				HE2311X	4.3				–	–	– –	–	–	–	– –	–
	1 7/8												UKFCX11	FCX11	UKX11	HS2311X	4.0	52.4	36.2	14.4	–	–	– –	–	–	–	– –	–
		7 3/32	5	5 63/64	4 15/64	5/8	1 1/32	5/32	55/64	1 5/16	2 5/16	1/2				H2311X	4.0				UKFCX11C	UKFCX11D	48.5 1 29/32	4.0	–	–	– –	–
	2	180	127	152	107.5	16	26	4	22	33	59	M14				HE2311X	4.0				–	–	– –	–	–	–	– –	–
55	2 1/8	7 11/16	5.3150	6 19/64	4 29/64	3/4	1 13/32	43/64	15/32	2 3/32	2 7/16	5/8	UKFC212	FC212	UK212	HS2312X	4.9	52.4	36.2	14.4	–	–	– –	–	–	–	– –	–
		195	135	160	113.1	19	36	17	12	53.5	62	M16				H2312X	4.9				UKFC212C	UKFC212D	61.5 2 13/32	4.9	UKFC212FC	UKFC212FD	74 2 29/32	5.7
	2 1/8	7 5/8	5.5118	6 1/2	4 19/32	5/8	1 5/16	7/16	25/32	1 21/32	2 7/16	1/2	UKFCX12	FCX12	UKX12	HS2312X	5.1	57.2	40.1	14.4	–	–	– –	–	–	–	– –	–
		194	140	165	116.7	16	33	11	20	42	62	M14				H2312X	5.1				UKFCX12C	UKFCX12D	55.5 2 3/16	5.1	–	–	– –	–
60	2 1/4												UKFC213	FC213	UK213	HE2313X	5.5	57.2	40.1	14.4	–	–	– –	–	–	–	– –	–
		8 1/16	5.7087	6 11/16	4 47/64	3/4	1 13/32	5/8	35/64	2 3/32	2 9/16	5/8				H2313X	5.5				UKFC213C	UKFC213D	60.5 2 3/8	5.5	UKFC213FC	UKFC213FD	73 2 7/8	6.4
	2 3/8	205	145	170	120.2	19	36	16	14	53.5	65	M16				HS2313X	5.5				–	–	– –	–	–	–	– –	–
	2 1/4												UKFCX13	FCX13	UKX13	HE2313X	5.3	62.2	44.1	14.5	–	–	– –	–	–	–	– –	–
		7 5/8	5.5118	6 1/2	4 19/32	5/8	1 5/16	7/16	25/32	1 25/32	2 9/16	1/2				H2313X	5.3				UKFCX13C	UKFCX13D	60.5 2 3/8	5.3	–	–	– –	–
	2 3/8	194	140	165	116.7	16	33	11	20	45	65	M14				HS2313X	5.3				–	–	– –	–	–	–	– –	–
65	2 1/2	8 21/32	6.2992	7 1/4	5 1/8	3/4	1 9/16	45/64	5/8	2 5/16	2 7/8	5/8	UKFC215	FC215	UK215	HE2315X	7.4	67.4	48.3	14.5	–	–	– –	–	–	–	– –	–
		220	160	184	130.1	19	40	18	16	58.5	73	M16				H2315X	7.4				UKFC215C	UKFC215D	67.5 2 21/32	7.4	UKFC215FC	UKFC215FD	80 3 5/32	8.4
	2 1/2	8 3/4	6.4567	7 31/64	5 9/32	3/4	1 3/8	15/32	55/64	1 7/8	2 7/8	5/8	UKFCX15	FCX15	UKX15	HE2315X	7.7	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
		222	164	190	134.3	19	35	12	22	48	73	M16				H2315X	7.7				UKFCX15C	UKFCX15D	66.5 2 5/8	7.7	–	–	– –	–

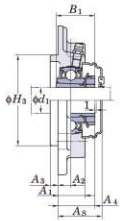
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 205~210, X05~X09
   A-R1/8 ..... 211~218, X10~X20
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables. (Example of Part No. : UKFC206J + H2306X, UK206 + H2306X)
4. As for the triple seal type product (205 is the double seal type product), suffix code L3 (or L2) follows the Part No. of unit or bearing. (Example of Part No. : UKFC206JL3 + H2306X, UK206L3 + H2306X)
5. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter.
6. Housings of nodular graphite cast iron are also available.

UKFC
Tapered bore (with adapter)
d_1 70 ~ 90 mm

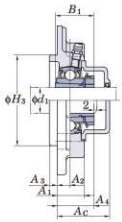




With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of spigot joint outside diameter (Δ_{H3a}), variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{L2a}), tolerance of position of bolt hole (X), and tolerance of circumferential runout of spigot joint (Y)

Unit: mm

Housing No.		Δ_{H3a}	Δ_{L2a}	X	Y
FC205~FC206	FCX05	0 −0.046	±0.5	0.7	0.2
FC207~FC210	FCX06~FCX10	0 −0.054			
FC211~FC217	FCX11~FCX15	0 −0.063	±0.8	1	0.3
FC218	FCX16~FCX18	0 −0.072			
	FCX20				0.4

Variations of tolerance of bolt hole diameter (Δ_{N4})

Unit: mm

Housing No.		Δ_{N4}
FC204~FC218	FCX05~FCX20	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm d_1	L	H_3	J	J_1	N	A_1	A_2	A_3	A_4	B_1	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Adapter No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	Closed Type	Dimension mm inch A_s	Mass kg	With Cast Iron Cover Unit No. Open Type	Closed Type	Dimension mm inch A_c	Mass kg
70	2 3/4	9 7/16	6.6929	7 7/8	5 9/16	29/32	1 31/32	45/64	5/8	2 15/32	3 1/16	3/4	UKFC216	FC216	UK216	HE2316X	9.0	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
		240	170	200	141.4	23	42	18	16	62.5	78	M20				H2316X	9.0				UKFC216C	UKFC216D	72.5 2 27/32	9.0	UKFC216FC	UKFC216FD	87 3 7/16	10.3
	2 3/4	10 1/4	7.3228	8 5/8	6 3/32	29/32	1 13/32	25/64	63/64	1 15/16	3 1/16	3/4	UKFCX16	FCX16	UKX16	HE2316X	11.4	84.0	61.9	14.5	–	–	– –	–	–	–	– –	–
		260	186	219	154.8	23	36	10	25	49	78	M20				H2316X	11.4				UKFCX16C	UKFCX16D	66.5 2 5/8	11.4	–	–	– –	–
75	3	9 27/32	7.0866	8 3/16	5 51/64	29/32	1 25/32	45/64	45/64	3 17/32	3 7/32	3/4	UKFC217	FC217	UK217	H2317X	10.4	84.0	61.9	14.5	UKFC217C	UKFC217D	74.5 2 15/16	10.4	UKFC217FC	UKFC217FD	89 3 1/2	11.8
		250	180	208	147.1	23	45	18	18	64.5	82	M20				H2317X	10.4				–	–	– –	–	–	–	– –	–
	3	10 1/4	7.3228	8 5/8	6 3/32	29/32	1 13/32	25/64	63/64	2 1/16	3 7/32	3/4	UKFCX17	FCX17	UKX17	H2317X	12.6	96.1	71.5	14.5	UKFCX17C	UKFCX17D	71.5 2 13/16	12.6	–	–	– –	–
		260	186	219	154.8	23	36	10	25	52	82	M20				H2317X	12.6				–	–	– –	–	–	–	– –	–
80	–	10 7/16	7.4803	8 21/32	6 1/8	29/32	1 31/32	55/64	45/64	2 13/16	3 3/8	3/4	UKFC218	FC218	UK218	H2318X	13.3	96.1	71.5	14.5	UKFC218C	UKFC218D	83.5 3 9/32	13.3	UKFC218FC	UKFC218FD	98 3 27/32	14.9
		265	190	220	155.5	23	50	22	18	71.5	86	M20																
	–	10 1/4	7.3228	8 5/8	6 3/32	29/32	1 11/16	15/32	1 7/64	2 5/32	3 3/8	3/4	UKFCX18	FCX18	UKX18	H2318X	13.0	109	81.9	14.4	–	–	– –	–	UKFCX18C	UKFCX18D	92 3 5/8	15.1
		260	186	219	154.8	23	43	12	28	55	86	M20																
90	3 1/2	10 7/8	8.1102	9 3/8	6 3/8	29/32	2 19/32	55/64	1 7/64	2 23/32	3 13/16	3/4	UKFCX20	FCX20	UKX20	HE2320X	17.1	133	105	14.4	–	–	– –	–	–	–	– –	–
		276	206	238	168.3	23	66	22	28	69	97	M20				H2320X	17.1				–	–	– –	–	UKFCX20C	UKFCX20D	116 4 9/16	19.9

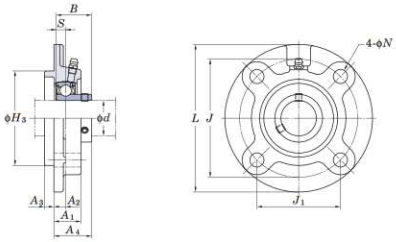
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 205~210, X05~X09
   A-R1/8 ..... 211~218, X10~X20
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables. (Example of Part No. : UKFC206J + H2306X, UK206 + H2306X)
4. As for the triple seal type product (205 is the double seal type product), suffix code L3 (or L2) follows the Part No. of unit or bearing. (Example of Part No. : UKFC206JL3 + H2306X, UK206L3 + H2306X)
5. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter.
6. Housings of nodular graphite cast iron are also available.

SBFC-RKP8
Cylindrical bore
(with set screws)
d 20 ~ 55 mm

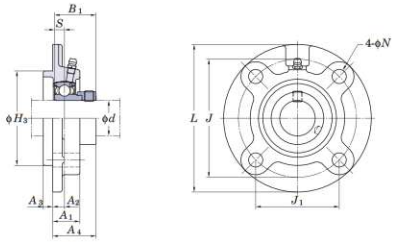
SAFC-FP9
Cylindrical bore
(with eccentric locking collar)

SBFC-RKP8

SAFC-FP9



SBFC-RKP8



SAFC-FP9

Variations of tolerance of spigot joint outside diameter (Δ_{Hs}), variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}), tolerance of position of bolt hole (X), and tolerance of circumferential runout of spigot joint (Y)

Unit: mm

Housing No.	Δ_{Hs}	Δ_{A2s}	X	Y
FC204~FC206	0 / −0.046	±0.5	0.7	0.2
FC207~FC210	0 / −0.054			
FC211	0 / −0.063	±0.8	1	0.3

Variations of tolerance of bolt hole diameter (Δ_{Ns})

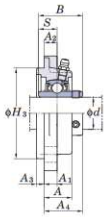
Unit: mm

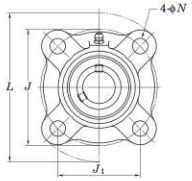
Housing No.	Δ_{Ns}
FC204~FC211	±0.2

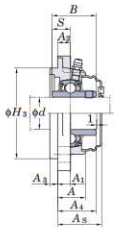
Shaft Dia. mm / inch d		Dimensions inch / mm L	J	J_1	N	H_3	A_1	A_2	A_3	A_4	B	B_1	SBFC-RKP8 S	SAFC-FP9 S	Bolt Size inch / mm	Unit No.	Bearing No.	Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg SBFC-RKP8	SAFC-FP9
20	3/4	3 15/16	3 5/64	2 11/64	15/32	2.4409	13/16	25/64	13/64	1 5/16	0.984	1.220	0.276	0.295	3/8	SBFC204-12RKP8	SB204-12RKP8	SAFC204-12FP9	SA204-12FP9	FC204	12.8	6.65	13.2	0.72	0.76
		100	78	55.1	12	62	20.5	10	5	33.5	25	31	7	7.5	M10	SBFC204RKP8	SB204RKP8	SAFC204FP9	SA204FP9						
25	7/8	4 17/32	3 35/64	2 1/2	15/32	2.7559	13/16	25/64	15/64	1 5/16	1.063	1.220	0.295	0.295	3/8	SBFC205-14RKP8	SB205-14RKP8	SAFC205-14FP9	SA205-14FP9	FC205	14.0	7.85	13.9	0.93	0.98
	15/16															SBFC205-15RKP8	SB205-15RKP8	SAFC205-15FP9	SA205-15FP9						
	1	115	90	63.6	12	70	21	10	6	33.5	27	31	7.5	7.5	M10	SBFC205-16RKP8	SB205-16RKP8	SAFC205-16FP9	SA205-16FP9						
																SBFC205RKP8	SB205RKP8	SAFC205FP9	SA205FP9						
30	1 1/8	4 29/32	3 15/16	2 25/32	15/32	3.1496	29/32	25/64	5/16	1 7/16	1.181	1.906	0.315	0.354	3/8	SBFC206-18RKP8	SB206-18RKP8	SAFC206-18FP9	SA206-18FP9	FC206	19.5	11.3	13.9	1.25	1.32
	1 3/16															SBFC206-19RKP8	SB206-19RKP8	SAFC206-19FP9	SA206-19FP9						
	1 1/4	125	100	70.7	12	80	23	10	8	36.7	30	35.7	8	9	M10	SBFC206-20RKP8	SB206-20RKP8	SAFC206-20FP9	SA206-20FP9						
																SBFC206RKP8	SB206RKP8	SAFC206FP9	SA206FP9						
35	1 1/4															SBFC207-20RKP8	SB207-20RKP8	SAFC207-20FP9	SA207-20FP9	FC207	25.7	15.4	13.9	1.64	1.79
	1 5/16															–	–	SAFC207-21FP9	SA207-21FP9					–	
	1 3/8	5 5/16	4 21/64	3 1/16	35/64	3.5433	1 1/32	7/16	5/16	1 19/32	1.260	1.531	0.335	0.374	7/16	SBFC207-22RKP8	SB207-22RKP8	SAFC207-22FP9	SA207-22FP9					1.64	
	1 7/16	135	110	77.8	14	90	26	11	8	40.4	32	38.9	8.5	9.5	M12	SBFC207-23RKP8	SB207-23RKP8	SAFC207-23FP9	SA207-23FP9					1.64	
																SBFC207RKP8	SB207RKP8	SAFC207FP9	SA207FP9					1.64	
40	1 1/2															SBFC208-24RKP8	SB208-24RKP8	SAFC208-24FP9	SA208-24FP9	FC208	29.1	17.8	14.0	1.96	2.11
	1 9/16	5 23/32	4 23/32	3 11/32	35/64	3.937	1 1/32	7/16	25/64	1 23/32	1.339	1.720	0.354	0.433	7/16	–	–	SAFC208-25FP9	SA208-25FP9					–	
		145	120	84.8	14	100	26	11	10	43.7	34	43.7	9	11	M12	SBFC208RKP8	SB208RKP8	SAFC208FP9	SA208FP9					1.96	
45	1 5/8															–	–	SAFC209-26FP9	SA209-26FP9	FC209	34.1	21.3	14.0	–	2.74
	1 11/16	6 5/16	5 13/64	3 43/64	5/8	4.1339	1 1/32	15/32	15/32	1 3/4	–	1.720	–	0.433	1/2	–	–	SAFC209-27FP9	SA209-27FP9						
	1 3/4	160	132	93.3	16	105	26	12	12	44.7	–	43.7	–	11	M14	–	–	SAFC209-28FP9	SA209-28FP9						
																–	–	SAFC209FP9	SA209FP9						
50	1 7/8	6 1/2	5 7/16	3 27/32	5/8	4.3307	1 3/32	15/32	15/32	1 3/4	–	1.720	–	0.433	1/2	–	–	SAFC210-30FP9	SA210-30FP9	FC210	35.1	23.3	14.4	–	2.95
	1 15/16	165	138	97.6	16	110	28	12	12	44.7	–	43.7	–	11	M14	–	–	SAFC210-31FP9	SA210-31FP9						
																–	–	SAFC210FP9	SA210FP9						
55	2	7 9/32	5 29/32	4 11/64	3/4	4.9213	1 7/32	33/64	15/32	1 15/16	–	1.906	–	0.472	5/8	–	–	SAFC211-32FP9	SA211-32FP9	FC211	43.4	29.4	14.4	–	4.29
	2 1/8	185	150	106.1	19	125	31	13	12	49.4	–	48.4	–	12	M16	–	–	SAFC211-34FP9	SA211-34FP9						
	2 3/16															–	–	SAFC211-35FP9	SA211-35FP9						
																–	–	SAFC211FP9	SA211FP9						

Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
A-1/4-28UNF ..... 204~210
A-R1/8 211
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Representative examples of the forms of housing are indicated.

UCSFC-H1S6
Cylindrical bore (with set screws)
d 20 ~ 40 mm







Variations of tolerance of spigot joint outside diameter (Δ_{Dm})

Unit: mm

Housing No.	Δ_{Dm}
SFC204H1~SFC206H1	0 −0.046
SFC207H1~SFC208H1	0 −0.054

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm L	H_5	J	J_1	N	A	A_1	A_2	A_3	A_4	B	S	Bolt Size inch / mm	Unit No.	Standard Housing No.	Standard Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Stainless Steel Cover Unit No. Open Type	Closed Type	Dimension mm	inch A_s	Mass kg
20	3/4	3 15/16	2.4409	3 5/64	2 11/64	15/32	53/64	13/32	25/64	13/64	1 1/8	1.220	0.500	3/8	UCSFC204-12H1S6	SFC204H1	UC204-12S6	0.5	10.9	5.35	13.2	–	–	–	–	–
		100	62	78	55.1	12	21	10	10	5	28.3	31	12.7	M10	UCSFC204H1S6		UC204S6	0.5				UCSFC204H1CS6	UCSFC204H1DS6	32.5	1 9/32	0.5
25	7/8	4 17/32	2.7559	3 35/64	2 1/2	15/32	27/32	13/32	25/64	15/64	1 3/16	1.343	0.563	3/8	UCSFC205-14H1S6	SFC205H1	UC205-14S6	0.6	11.9	6.3	13.9	–	–	–	–	–
	15/16	115	70	90	63.6	12	21.5	10	10	6	29.8	34.1	14.3	M10	UCSFC205-15H1S6		UC205-15S6	0.6				–	–	–	–	–
															UCSFC205H1S6		UC205S6	0.6				UCSFC205H1CS6	UCSFC205H1DS6	34.5	1 11/32	0.6
	1														UCSFC205-16H1S6		UC205-16S6	0.6				–	–	–	–	–
30	1 1/8	4 29/32	3.1496	3 15/16	2 25/32	15/32	29/32	13/32	25/64	5/16	1 9/32	1.500	0.626	3/8	UCSFC206-18H1S6	SFC206H1	UC206-18S6	0.8	16.5	9.05	13.9	–	–	–	–	–
		125	80	100	70.7	12	23	10	10	8	32.2	38.1	15.9	M10	UCSFC206H1S6		UC206S6	0.8				UCSFC206H1CS6	UCSFC206H1DS6	36.5	1 7/16	0.8
	1 3/16														UCSFC206-19H1S6		UC206-19S6	0.8				–	–	–	–	–
	1 1/4														UCSFC206-20H1S6		UC206-20S6	0.8				–	–	–	–	–
35	1 1/4	5 5/16	3.5433	4 21/64	3 1/16	35/64	1 1/32	15/32	7/16	5/16	1 7/16	1.689	0.689	7/16	UCSFC207-20H1S6	SFC207H1	UC207-20S6	1.1	21.8	12.3	13.9	–	–	–	–	–
	1 5/16	135	90	110	77.8	14	26	12	11	8	36.4	42.9	17.5	M12	UCSFC207-21H1S6		UC207-21S6	1.1				–	–	–	–	–
	1 3/8														UCSFC207-22H1S6		UC207-22S6	1.1				–	–	–	–	–
															UCSFC207H1S6		UC207S6	1.1				UCSFC207H1CS6	UCSFC207H1DS6	41	1 5/8	1.1
	1 7/16														UCSFC207-23H1S6		UC207-23S6	1.1				–	–	–	–	–
40	1 1/2	5 23/32	3.9370	4 23/32	3 11/32	35/64	1 1/32	15/32	7/16	25/64	1 5/8	1.937	0.748	7/16	UCSFC208-24H1S6	SFC208H1	UC208-24S6	1.4	24.8	14.3	14.0	–	–	–	–	–
	1 9/16	145	100	120	84.8	14	26	12	11	10	41.2	49.2	19	M12	UCSFC208-25H1S6		UC208-25S6	1.4				–	–	–	–	–
															UCSFC208H1S6		UC208S6	1.4				UCSFC208H1CS6	UCSFC208H1DS6	45.5	1 25/32	1.4

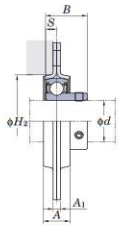
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is A-1/4-28UNFN12.
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

SBPF
Cylindrical bore
(with set screws)
d 12 ~ 35 mm

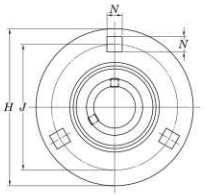
SAPF
Cylindrical bore
(with eccentric locking collar)

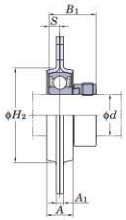
SBPF

SAPF



SBPF





SAPF

Variations of tolerance of distance between centers of bolt holes (ΔJ_s)

Unit: mm

Housing No.	ΔJ_s
PF203~PF207	±0.4

Variations of tolerance of bolt hole diameter (ΔN_s)

Unit: mm

Housing No.	ΔN_s
PF203~PF207	±0.25

Shaft Dia mm	Shaft Dia inch	Dimensions inch / mm H	A	A_1	J	N	H_2	S	SBPF B	SAPF B_1	Bolt Size inch / mm	Unit No.	Bearing No.	Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg SBPF	SAPF
12												SBPF201	SB201	SAPF201	SA201						
15	1/2	3 3/16	9/16	5/32	2 1/2	9/32	1 15/16	0.236	0.866	1.122	1/4	SBPF201-8	SB201-8	SAPF201-8	SA201-8	PF203	9.55	4.80	13.2	0.27	0.3
		81	14	4	63.5	7.1	49	6	22	28.5	M6	SBPF202	SB202	SAPF202	SA202						
	5/8											SBPF202-10	SB202-10	SAPF202-10	SA202-10						
17												SBPF203	SB203	SAPF203	SA203						
20	3/4	3 17/32	5/8	5/32	2 13/16	23/64	2 5/32	0.276	0.984	1.161	5/16	SBPF204-12	SB204-12	SAPF204-12	SA204-12	PF204	12.8	6.65	13.2	0.33	0.33
		90	16	4	71.5	9	55	7	25	29.5	M8	SBPF204	SB204	SAPF204	SA204						
25	7/8											SBPF205-14	SB205-14	SAPF205-14	SA205-14						
	15/16	3 3/4	23/32	5/32	2 63/64	23/64	2 3/8	0.295	1.063	1.201	5/16	SBPF205-15	SB205-15	SAPF205-15	SA205-15	PF205	14.0	7.85	13.9	0.38	0.42
		95	18	4	76	9	60	7.5	27	30.5	M8	SBPF205	SB205	SAPF205	SA205						
	1											SBPF205-16	SB205-16	SAPF205-16	SA205-16						
30	1 1/8											SBPF206-18	SB206-18	SAPF206-18	SA206-18						
		4 7/16	3/4	13/64	3 9/16	7/16	2 25/32	0.315	1.181	1.335	3/8	SBPF206	SB206	SAPF206	SA206	PF206	19.5	11.3	13.9	0.62	0.65
	1 3/16	113	19	5.2	90.5	11	71	8	30	33.9	M10	SBPF206-19	SB206-19	SAPF206-19	SA206-19						
	1 1/4											SBPF206-20	SB206-20	SAPF206-20	SA206-20						
35	1 1/4											SBPF207-20	SB207-20	SAPF207-20	SA207-20						
	1 5/16													SAPF207-21	SA207-21						
	1 3/8	4 13/16	7/8	13/64	3 15/16	7/16	3 3/16	0.335	1.260	1.437	3/8	SBPF207-22	SB207-22	SAPF207-22	SA207-22	PF207	25.7	15.4	13.9	0.82	0.9
		122	22	5.2	100	11	81	8.5	32	36.5	M10	SBPF207	SB207	SAPF207	SA207						
	1 7/16											SBPF207-23	SB207-23	SAPF207-23	SA207-23						

Note 1) H_2 is the minimum size of the mounting hole.

Remark For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

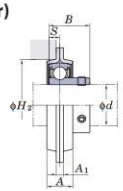
FYH

SBPFL
Cylindrical bore
(with set screws)
d 12 ~ 35 mm

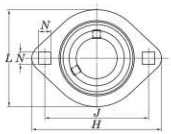
SAPFL
Cylindrical bore
(with eccentric locking collar)

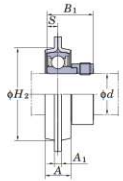
SBPFL

SAPFL



SBPFL





SAPFL

Variations of tolerance of distance between centers of bolt holes (Δ_{L_N})

Unit: mm

Housing No.	Δ_{L_N}
PFL203~PFL207	±0.4

Variations of tolerance of bolt hole diameter (Δ_{N_N})

Unit: mm

Housing No.	Δ_{N_N}
PFL203~PFL207	±0.25

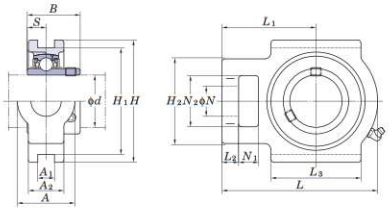
Shaft Dia mm	Shaft Dia inch	Dimensions inch / mm H	L	A	A_1	J	N	H_2	S	SBPFL B	SAPFL B_1	Bolt Size inch / mm	Unit No.	Bearing No.	Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg SBPFL	SAPFL
12													SBPFL201	SB201	SAPFL201	SA201						
	1/2	3 3/16	2 5/16	9/16	5/32	2 1/2	9/32	1 15/16	0.236	0.866	1.122	1/4	SBPFL201-8	SB201-8	SAPFL201-8	SA201-8						
15		81	59	14	4	63.5	7.1	49	6	22	28.5	M6	SBPFL202	SB202	SAPFL202	SA202	PFL203	9.55	4.80	13.2	0.19	0.22
	5/8												SBPFL202-10	SB202-10	SAPFL202-10	SA202-10						
17													SBPFL203	SB203	SAPFL203	SA203						
20	3/4	3 17/32	2 5/8	5/8	5/32	2 13/16	23/64	2 5/32	0.276	0.984	1.161	5/16	SBPFL204-12	SB204-12	SAPFL204-12	SA204-12	PFL204	12.8	6.65	13.2	0.24	0.24
		90	67	16	4	71.5	9	55	7	25	29.5	M8	SBPFL204	SB204	SAPFL204	SA204						
	7/8												SBPFL205-14	SB205-14	SAPFL205-14	SA205-14						
25	15/16	3 3/4	2 25/32	23/32	5/32	2 63/64	23/64	2 3/8	0.295	1.063	1.201	5/16	SBPFL205-15	SB205-15	SAPFL205-15	SA205-15	PFL205	14.0	7.85	13.9	0.28	0.32
		95	71	18	4	76	9	60	7.5	27	30.5	M8	SBPFL205	SB205	SAPFL205	SA205						
	1												SBPFL205-16	SB205-16	SAPFL205-16	SA205-16						
	1 1/8												SBPFL206-18	SB206-18	SAPFL206-18	SA206-18						
30		4 7/16	3 5/16	3/4	13/64	3 9/16	7/16	2 25/32	0.315	1.181	1.335	3/8	SBPFL206	SB206	SAPFL206	SA206	PFL206	19.5	11.3	13.9	0.38	0.41
	1 3/16	113	84	19	5.2	90.5	11	71	8	30	33.9	M10	SBPFL206-19	SB206-19	SAPFL206-19	SA206-19						
	1 1/4												SBPFL206-20	SB206-20	SAPFL206-20	SA206-20						
	1 1/4												SBPFL207-20	SB207-20	SAPFL207-20	SA207-20						
	1 5/16														SAPFL207-21	SA207-21						
35	1 3/8	4 13/16	3 11/16	7/8	13/64	3 15/16	7/16	3 3/16	0.335	1.260	1.437	3/8	SBPFL207-22	SB207-22	SAPFL207-22	SA207-22	PFL207	25.7	15.4	13.9	0.66	0.74
		122	94	22	5.2	100	11	81	8.5	32	36.5	M10	SBPFL207	SB207	SAPFL207	SA207						
	1 7/16												SBPFL207-23	SB207-23	SAPFL207-23	SA207-23						

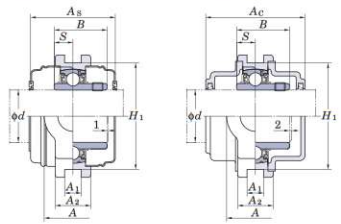
Note 1) H_2 is the minimum size of the mounting hole.

Remark For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

FYH

UCT
Cylindrical bore (with set screws)
d 12 ~ (45) mm





Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

Unit: mm

Housing No.			Δ_{A1s}	Δ_{H1s}	X
T204~T210	TX05~TX10	T305~T310	+0.2 / 0	0 / −0.5	0.5
T211~T217	TX11~TX17	T311~T318	+0.3 / 0	0 / −0.8	0.6
		T319~T322			0.7
		T324~T328			0.8

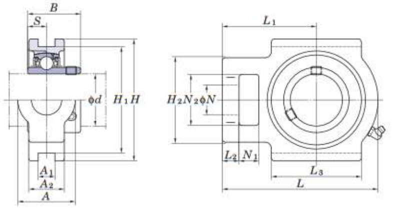
Form and dimensions of L_e of T204JE3 and T205JE3 (housing with cast iron cover) are shown below.

T204JE3 L_e = 97 mm
T205JE3 L_e = 102 mm

Shaft Dia. mm / inch d	Dimensions inch / mm A	A_1	A_2	H	H_1	H_2	L	L_1	L_2	L_3	N	N_1	N_2	B	S	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	One Side Closed Type	Dimension mm / inch A_s		Mass kg	With Cast Iron Cover Unit No. Open Type	One Side Closed Type	Dimension mm / inch A_c		Mass kg
12																UCT201		UC201	0.81				UCT201C	UCT201CD	45	1 25/32	0.81	–	–	–	–	–
	1/2															UCT201-8		UC201-8	0.81				–	–	–	–	–	–	–	–	–	–
15		1 1/4	15/32	13/16	3 1/2	2 63/64	2	3 11/16	2 13/32	13/32	2	3/4	5/8	1 1/4	1.220	0.500	UCT202		UC202	0.79				UCT202C	UCT202CD	45	1 25/32	0.79	–	–	–	–	–
	5/8	32	12	21	89	76	51	94	61	10	51	19	16	32	31	12.7	UCT202-10	T204	UC202-10	0.79	12.8	6.65	13.2	–	–	–	–	–	–	–	–	–
17																	UCT203		UC203	0.78				UCT203C	UCT203CD	45	1 25/32	0.78	–	–	–	–	–
	3/4																UCT204-12		UC204-12	0.78				–	–	–	–	–	–	–	–	–
20																	UCT204		UC204	0.76				UCT204C	UCT204CD	45	1 25/32	0.76	UCT204FC	UCT204FCD	62	2 7/16	1.1
	7/8																UCT205-14		UC205-14	0.84				–	–	–	–	–	–	–	–	–	–
	15/16	1 1/4	15/32	15/16	3 1/2	2 63/64	2	3 13/16	2 7/16	13/32	2	3/4	5/8	1 1/4	1.343	0.563	UCT205-15	T205	UC205-15	0.84	14.0	7.85	13.9	–	–	–	–	–	–	–	–	–	–
		32	12	24	89	76	51	97	62	10	51	19	16	32	34.1	14.3	UCT205		UC205	0.84				UCT205C	UCT205CD	49	1 15/16	0.84	UCT205FC	UCT205FCD	66	2 19/32	1.2
25	1																UCT205-16		UC205-16	0.84				–	–	–	–	–	–	–	–	–	–
		1 15/32	15/32	1 3/32	4 1/32	3 1/2	2 7/32	4 7/16	2 3/4	13/32	2 1/4	7/8	5/8	1 15/32	1.500	0.626	UCTX05	TX05	UCX05	1.4	19.5	11.3	13.9	UCTX05C	UCTX05CD	53	2 3/32	1.4	–	–	–	–	–
	1	37	12	28	102	89	56	113	70	10	57	22	16	37	38.1	15.9	UCTX05-16		UCX05-16	1.4				–	–	–	–	–	–	–	–	–	–
		1 13/32	15/32	1 1/32	3 1/2	3 5/32	2 7/16	4 13/16	3	15/32	2 9/16	1 1/32	5/8	1 13/32	1.496	0.591	UCT305	T305	UC305	1.4	21.2	10.9	12.6	–	–	–	–	–	UCT305C	UCT305CD	76	3	2.0
	1	36	12	26	89	80	62	122	76	12	65	26	16	36	38	15	UCT305-16		UC305-16	1.4				–	–	–	–	–	–	–	–	–	–
	1 1/8																UCT206-18		UC206-18	1.3				–	–	–	–	–	–	–	–	–	–
		1 15/32	15/32	1 3/32	4 1/32	3 1/2	2 7/32	4 7/16	2 3/4	13/32	2 1/4	7/8	5/8	1 15/32	1.500	0.626	UCT206	T206	UC206	1.3	19.5	11.3	13.9	UCT206C	UCT206CD	53	2 3/32	1.3	UCT206FC	UCT206FCD	70	2 3/4	1.8
	1 3/16	37	12	28	102	89	56	113	70	10	57	22	16	37	38.1	15.9	UCT206-19		UC206-19	1.3				–	–	–	–	–	–	–	–	–	–
	1 1/4																UCT206-20		UC206-20	1.3				–	–	–	–	–	–	–	–	–	–
30																	UCTX06		UCX06	1.7				UCTX06C	UCTX06CD	60	2 3/8	1.7	–	–	–	–	–
	1 3/16	1 15/32	15/32	1 3/16	4 1/32	3 1/2	2 17/32	5 3/32	3 1/16	1/2	2 17/32	7/8	5/8	1 15/32	1.689	0.689	UCTX06-19	TX06	UCX06-19	1.7	25.7	15.4	13.9	–	–	–	–	–	–	–	–	–	–
	1 1/4	37	12	30	102	89	64	129	78	13	64	22	16	37	42.9	17.5	UCTX06-20		UCX06-20	1.7				–	–	–	–	–	–	–	–	–	–
	–	1 5/8	5/8	1 3/32	3 15/16	3 35/64	2 3/4	5 13/32	3 11/32	9/16	2 29/32	1 3/32	23/32	1 5/8	1.693	0.669	UCT306	T306	UC306	1.8	26.7	15.0	13.3	–	–	–	–	–	UCT306C	UCT306CD	82	3 7/32	2.4
	1 1/4																UCT207-20		UC207-20	1.6				–	–	–	–	–	–	–	–	–	–
	1 5/16	1 15/32	15/32	1 3/16	4 1/32	3 1/2	2 17/32	5 3/32	3 1/16	1/2	2 17/32	7/8	5/8	1 15/32	1.689	0.689	UCT207-21		UC207-21	1.6				–	–	–	–	–	–	–	–	–	–
	1 3/8	37	12	30	102	89	64	129	78	13	64	22	16	37	42.9	17.5	UCT207-22	T207	UC207-22	1.6	25.7	15.4	13.9	–	–	–	–	–	–	–	–	–	–
																	UCT207		UC207	1.6				UCT207C	UCT207CD	60	2 3/8	1.6	UCT207FC	UCT207FCD	78	3 1/16	2.3
35	1 7/16																UCT207-23		UC207-23	1.6				–	–	–	–	–	–	–	–	–	–
	1 3/8																UCTX07-22		UCX07-22	2.7				–	–	–	–	–	–	–	–	–	–
		1 15/16	5/8	1 13/32	4 1/2	4 1/64	3 9/32	5 21/32	3 15/32	19/32	3 9/32	1 5/32	3/4	1 15/16	1.937	0.748	UCTX07	TX07	UCX07	2.7	29.1	17.8	14.0	UCTX07C	UCTX07CD	69	2 23/32	2.7	–	–	–	–	–
	1 7/16	49	16	36	114	102	83	144	88	15	83	29	19	49	49.2	19	UCTX07-23		UCX07-23	2.7				–	–	–	–	–	–	–	–	–	–
	–	1 25/32	5/8	1 1/4	4 3/8	3 15/16	2 15/16	5 29/32	3 11/16	19/32	3 5/32	1 3/16	25/32	1 25/32	1.890	0.748	UCT307	T307	UC307	2.3	33.4	19.3	13.2	–	–	–	–	–	UCT307C	UCT307CD	88	3 15/32	3.1
	1 1/2																UCT208-24		UC208-24	2.5				–	–	–	–	–	–	–	–	–	–
	1 9/16	1 15/16	5/8	1 5/16	4 1/2	4 1/64	3 9/32	5 21/32	3 15/32	5/8	3 9/32	1 5/32	3/4	1 15/16	1.937	0.748	UCT208-25	T208	UC208-25	2.5	29.1	17.8	14.0	–	–	–	–	–	–	–	–	–	–
		49	16	33	114	102	83	144	88	16	83	29	19	49	49.2	19	UCT208		UC208	2.5				UCT208C	UCT208CD	69	2 23/32	2.5	UCT208FC	UCT208FCD	86	3 3/8	3.3
40	1 1/2	1 15/16	5/8	1 13/32	4 19/32	4 1/64	3 9/32	5 21/32	3 7/16	19/32	3 9/32	1 5/32	3/4	1 15/16	1.937	0.748	UCTX08-24	TX08	UCX08-24	2.6	34.1	21.3	14.0	–	–	–	–	–	–	–	–	–	–
		49	16	36	117	102	83	144	87	15	83	29	19	49	49.2	19	UCTX08		UCX08	2.6				UCTX08C	UCTX08CD	69	2 23/32	2.6	–	–	–	–	–
	1 1/2	1 31/32	45/64	1 11/32	4 7/8	4 13/32	3 9/32	6 3/8	3 15/16	21/32	3 1/2	1 1/4	7/8	1 31/32	2.047	0.748	UCT308-24	T308	UC308-24	3.0	40.7	24.0	13.2	–	–	–	–	–	–	–	–	–	–
		50	18	34	124	112	83	162	100	17	89	32	22	50	52	19	UCT308		UC308	3.0				–	–	–	–	–	UCT308C	UCT308CD	96	3 25/32	4.0
	1 5/8																UCT209-26		UC209-26	2.4				–	–	–	–	–	–	–	–	–	–
	1 11/16	1 15/16	5/8	1 3/8	4 19/32	4 1/64	3 9/32	5 21/32	3 7/16	5/8	3 9/32	1 5/32	3/4	1 15/16	1.937	0.748	UCT209-27	T209	UC209-27	2.4	34.1	21.3	14.0	–	–	–	–	–	–	–	–	–	–
	1 3/4	49	16	35	117	102	83	144	87	16	83	29	19	49	49.2	19	UCT209-28		UC209-28	2.4				–	–	–	–	–	–	–	–	–	–
45																	UCT209		UC209	2.4				UCT209C	UCT209CD	69	2 23/32	2.4	UCT209FC	UCT209FCD	88	3 15/32	3.2
	1 11/16																UCTX09-27		UCX09-27	2.9				–	–	–	–	–	–	–	–	–	–
	1 3/4	1 15/16	5/8	1 1/2	4 19/32	4 1/64	3 9/32	5 7/8	3 17/32	5/8	3 3/8	1 5/32	3/4	1 15/16	2.031	0.748	UCTX09-28	TX09	UCX09-28	2.9	35.1	23.3	14.4	–	–	–	–	–	–	–	–	–	–
		49	16	38	117	102	83	149	90	16	86	29	19	49	51.6	19	UCTX09		UCX09	2.9				UCTX09C	UCTX09CD	74	2 29/32	2.9	–	–	–	–	–

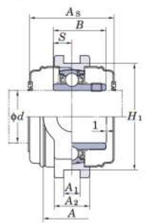
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   B-1/4-28UNF..... 201~210, X05~X09, 305~308
   B-R1/8 ..... 211~217, X10~X17, 309~328
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UCT206JL3, UC206L3)
4. As for the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

UCT
Cylindrical bore (with set screws)
d (45) ~ (75) mm

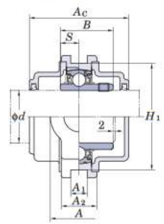


ROYSE
rodamientos y servicios
Desde 1979

With Pressed Steel Cover



With Cast Iron Cover

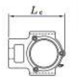


Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

Unit: mm

Housing No.			Δ_{A1s}	Δ_{H1s}	X
T204~T210	TX05~TX10	T305~T310	+0.2 / 0	0 / −0.5	0.5
T211~T217	TX11~TX17	T311~T318	+0.3 / 0	0 / −0.8	0.6
		T319~T322			0.7
		T324~T328			0.8

Form and dimensions of L_c of T204JE3 and T205JE3 (housing with cast iron cover) are shown below.



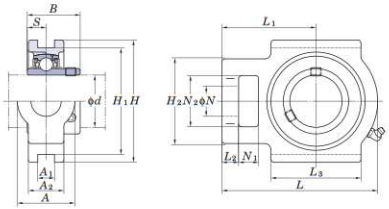
T204JE3 L_c = 97 mm
T205JE3 L_c = 102 mm

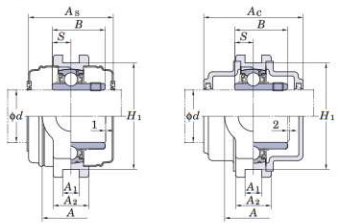
Shaft Dia. d mm	Shaft Dia. d inch	A	A_1	A_2	H	H_1	H_2	L	L_1	L_2	L_3	N	N_1	N_2	B	S	Standard Unit No.	Standard Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	One Side Closed Type	Dimension A_s mm	A_s inch	Mass kg	With Cast Iron Cover Unit No. Open Type	One Side Closed Type	Dimension A_c mm	A_c inch	Mass kg
	1 3/4	2 5/32	45/64	1 1/2	5 7/16	4 59/64	3 17/32	7	4 11/32	23/32	3 13/16	1 11/32	15/16	2 5/32	2.244	0.866	UCT309-28	T309	UC309-28	4.1	48.9	29.5	13.3	–	–	–	–	–	–	–	–	–	–
45		55	18	38	138	125	90	178	110	18	97	34	24	55	57	22	UCT309		UC309	4.1				–	–	–	–	–	UCT309C	UCT309CD	102	4 1/32	5.4
	1 7/8																UCT210-30	T210	UC210-30	2.6				–	–	–	–	–	–	–	–	–	–
	1 15/16	1 15/16	5/8	1 15/32	4 19/32	4 1/64	3 9/32	5 7/8	3 17/32	5/8	3 3/8	1 5/32	3/4	1 15/16	2.031	0.748	UCT210-31		UC210-31	2.6				–	–	–	–	–	–	–	–	–	–
		49	16	37	117	102	83	149	90	16	86	29	19	49	51.6	19	UCT210		UC210	2.6	35.1	23.3	14.4	UCT210C	UCT210CD	74	2 29/32	2.6	UCT210FC	UCT210FCD	97	3 13/16	3.6
	2																UCT210-32		UC210-32	2.6				–	–	–	–	–	–	–	–	–	–
50	1 15/16	2 17/32	55/64	1 21/32	5 3/4	5 1/8	4 1/32	6 23/32	4 3/16	3/4	3 3/4	1 3/8	31/32	2 17/32	2.189	0.874	UCTX10-31	TX10	UCX10-31	4.4				–	–	–	–	–	–	–	–	–	–
		64	22	42	146	130	102	171	106	19	95	35	25	64	55.6	22.2	UCTX10		UCX10	4.4	43.4	29.4	14.4	UCTX10C	UCTX10CD	76	3	4.4	–	–	–	–	–
	2																UCTX10-32		UCX10-32	4.4				–	–	–	–	–	–	–	–	–	–
	–	2 13/32	25/32	1 9/16	5 15/16	5 33/64	3 27/32	7 17/32	4 19/32	25/32	4 3/16	1 15/32	1 1/16	2 13/32	2.402	0.866	UCT310	T310	UC310	4.9	62.0	38.3	13.2	–	–	–	–	–	UCT310C	UCT310CD	110	4 11/32	6.5
		61	20	40	151	140	98	191	117	20	106	37	27	61	61	22																	
	2																UCT211-32	T211	UC211-32	4.0				–	–	–	–	–	–	–	–	–	–
	2 1/8	2 17/32	55/64	1 1/2	5 3/4	5 1/8	4 1/32	6 23/32	4 3/16	3/4	3 3/4	1 3/8	31/32	2 17/32	2.189	0.874	UCT211-34		UC211-34	4.0				–	–	–	–	–	–	–	–	–	–
		64	22	38	146	130	102	171	106	19	95	35	25	64	55.6	22.2	UCT211		UC211	4.0	43.4	29.4	14.4	UCT211C	UCT211CD	76	3	4.0	UCT211FC	UCT211FCD	99	3 29/32	5.2
	2 3/16																UCT211-35		UC211-35	4.0				–	–	–	–	–	–	–	–	–	–
55		2 17/32	55/64	1 23/32	5 3/4	5 1/8	4 1/32	7 5/8	4 11/16	3/4	4 1/32	1 3/8	1 1/4	2 17/32	2.563	1.000	UCTX11	TX11	UCX11	5.3				UCTX11C	UCTX11CD	89	3 1/2	5.3	–	–	–	–	–
	2 3/16	64	22	44	146	130	102	194	119	19	102	35	32	64	65.1	25.4	UCTX11-35		UCX11-35	5.3	52.4	36.2	14.4	–	–	–	–	–	–	–	–	–	–
	2 1/4																UCTX11-36		UCX11-36	5.3				–	–	–	–	–	–	–	–	–	–
	2	2 19/32	55/64	1 23/32	6 13/32	5 29/32	4 1/8	8 5/32	5	13/16	4 17/32	1 17/32	1 5/32	2 19/32	2.598	0.984	UCT311-32	T311	UC311-32	6.1				–	–	–	–	–	–	–	–	–	–
		66	22	44	163	150	105	207	127	21	115	39	29	66	66	25	UCT311		UC311	6.1	71.6	45.0	13.2	–	–	–	–	–	UCT311C	UCT311CD	114	4 1/2	7.9
	2 3/16																UCT311-35		UC311-35	6.1				–	–	–	–	–	–	–	–	–	–
	2 1/4																UCT212-36	T212	UC212-36	4.9				–	–	–	–	–	–	–	–	–	–
		2 17/32	55/64	1 21/32	5 3/4	5 1/8	4 1/32	7 5/8	4 11/16	3/4	4 1/32	1 3/8	1 1/4	2 17/32	2.563	1.000	UCT212		UC212	4.9	52.4	36.2	14.4	UCT212C	UCT212CD	89	3 1/2	4.9	UCT212FC	UCT212FCD	114	4 1/2	6.4
	2 3/8	64	22	42	146	130	102	194	119	19	102	35	32	64	65.1	25.4	UCT212-38		UC212-38	4.9				–	–	–	–	–	–	–	–	–	–
	2 7/16																UCT212-39		UC212-39	4.9				–	–	–	–	–	–	–	–	–	–
60		2 3/4	1 1/32	1 7/8	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2.563	1.000	UCTX12	TX12	UCX12	7.4	57.2	40.1	14.4	UCTX12C	UCTX12CD	89	3 1/2	7.4	–	–	–	–	–
	2 7/16	70	26	48	167	151	111	224	137	21	121	41	32	70	65.1	25.4	UCTX12-39		UCX12-39	7.4				–	–	–	–	–	–	–	–	–	–
		2 25/32	55/64	1 13/16	7	6 19/64	4 7/16	8 21/32	5 5/16	29/32	4 27/32	1 5/8	1 7/32	2 25/32	2.795	1.024	UCT312	T312	UC312	7.6	81.9	52.2	13.2	–	–	–	–	–	UCT312C	UCT312CD	124	4 7/8	9.9
	2 7/16	71	22	46	178	160	113	220	135	23	123	41	31	71	71	26	UCT312-39		UC312-39	7.6				–	–	–	–	–	–	–	–	–	–
	2 1/2	2 3/4	1 1/32	1 23/32	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2.563	1.000	UCT213-40	T213	UC213-40	6.9	57.2	40.1	14.4	–	–	–	–	–	–	–	–	–	–
		70	26	44	167	151	111	224	137	21	121	41	32	70	65.1	25.4	UCT213		UC213	6.9				UCT213C	UCT213CD	89	3 1/2	6.9	UCT213FC	UCT213FCD	114	4 1/2	8.6
	2 1/2	2 3/4	1 1/32	1 7/8	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2.937	1.189	UCTX13-40	TX13	UCX13-40	7.6	62.2	44.1	14.5	–	–	–	–	–	–	–	–	–	–
65		70	26	48	167	151	111	224	137	21	121	41	32	70	74.6	30.2	UCTX13		UCX13	7.6				UCTX13C	UCTX13CD	99	3 29/32	7.6	–	–	–	–	–
	2 1/2	3 5/32	1 1/32	1 31/32	7 15/32	6 11/16	4 9/16	9 3/8	5 3/4	31/32	5 9/32	1 11/16	1 1/4	2 3/4	2.953	1.181	UCT313-40	T313	UC313-40	9.3	92.7	59.9	13.2	–	–	–	–	–	–	–	–	–	–
		80	26	50	190	170	116	238	146	25	134	43	32	70	75	30	UCT313		UC313	9.3				–	–	–	–	–	UCT313C	UCT313CD	122	4 13/16	11.4
	2 3/4	2 3/4	1 1/32	1 13/16	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2.937	1.189	UCT214-44	T214	UC214-44	7.0	62.2	44.1	14.5	–	–	–	–	–	–	–	–	–	–
		70	26	46	167	151	111	224	137	21	121	41	32	70	74.6	30.2	UCT214		UC214	7.0				UCT214C	UCT214CD	99	3 29/32	7.0	UCT214FC	UCT214FCD	124	4 7/8	8.9
	2 3/4	2 3/4	1 1/32	1 7/8	6 9/16	5 15/16	4 3/8	9 1/8	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.063	1.331	UCTX14-44	TX14	UCX14-44	7.9	67.4	48.3	14.5	–	–	–	–	–	–	–	–	–	–
70		70	26	48	167	151	111	232	140	21	121	41	32	70	77.8	33.3	UCTX14		UCX14	7.9				UCTX14C	UCTX14CD	99	3 29/32	7.9	–	–	–	–	–
	2 3/4	3 17/32	1 1/32	2 1/16	7 15/16	7 3/32	5 1/8	9 29/32	6 3/32	31/32	5 1/2	1 13/16	1 13/32	3 11/32	3.071	1.299	UCT314-44	T314	UC314-44	11.1	104	68.2	13.2	–	–	–	–	–	–	–	–	–	–
		90	26	52	202	180	130	252	155	25	140	46	36	85	78	33	UCT314		UC314	11.1				–	–	–	–	–	UCT314C	UCT314CD	124	4 7/8	13.4
	2 15/16	2 3/4	1 1/32	1 7/8	6 9/16	5 15/16	4 3/8	9 1/8	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.063	1.331	UCT215-47	T215	UC215-47	7.3				–	–	–	–	–	–	–	–	–	–
		70	26	48	167	151	111	232	140	21	121	41	32	70	77.8	33.3	UCT215		UC215	7.3	67.4	48.3	14.5	UCT215C	UCT215CD	99	3 29/32	7.3	UCT215FC	UCT215FCD	124	4 7/8	9.2
	3																UCT215-48		UC215-48	7.3				–	–	–	–	–	–	–	–	–	–
75	2 15/16																UCTX15-47	TX15	UCX15-47	8.7				–	–	–	–	–	–	–	–	–	–
		2 3/4	1 7/64	1 7/8	7 1/4	6 1/2	4 3/8	9 1/4	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.252	1.311	UCTX15		UCX15	8.7	72.7	53.0	14.6	UCTX15C	UCTX15CD	109	4 9/32	8.7	–	–	–	–	–
	3	70	28	48	184	165	111	235	140	21	121	41	32	70	82.6	33.3	UCTX15-48		UCX15-48	8.7				–	–	–	–	–	–	–	–	–	–

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   B-1/4-28UNF............ 201~210, X05~X09, 305~308
   B-R1/8 .... 211~217, X10~X17, 309~328
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No.: UCT206JL3, UC206L3)
4. As for the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

FYH

UCT
Cylindrical bore (with set screws)
d (75) ~ 140 mm





Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

Unit: mm

Housing No.			Δ_{A1s}	Δ_{H1s}	X
T204~T210	TX05~TX10	T305~T310	+0.2 / 0	0 / −0.5	0.5
T211~T217	TX11~TX17	T311~T318	+0.3 / 0	0 / −0.8	0.6
		T319~T322			0.7
		T324~T328			0.8

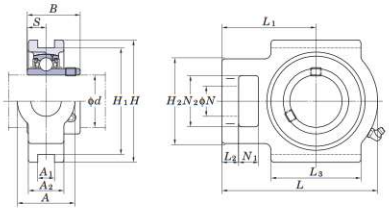
Form and dimensions of L_e of T204JE3 and T205JE3 (housing with cast iron cover) are shown below.

T204JE3 L_e = 97 mm
T205JE3 L_e = 102 mm

Shaft Dia. mm / inch (d)	Dimensions inch / mm: A	A_1	A_2	H	H_1	H_2	L	L_1	L_2	L_3	N	N_1	N_2	B	S	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	One Side Closed Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Cover Unit No. Open Type	One Side Closed Type	Dimension mm / inch A_c	Mass kg
75	2 15/16	3 17/32	1 1/32	2 5/32	8 1/2	7 9/16	5 3/16	10 5/16	6 5/16	31/32	5 29/32	1 13/16	1 13/32	3 11/32	3.228	UCT315-47	T315	UC315-47	13.0	113	77.2	13.2	–	–	– –	–	–	–	– –	–
		90	26	55	216	192	132	262	160	25	150	46	36	85	82	32														
																		UC315	13.0				–	–	– –	–	UCT315C	UCT315CD	134 5 9/32	15.5
	3															UCT315														
																UCT315-48		UC315-48	13.0				–	–	– –	–	–	–	– –	–
80	3 1/8	2 3/4	1 1/32	2	7 1/4	6 1/2	4 3/8	9 1/4	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.252	UCT216-50	T216	UC216-50	8.2	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
		70	26	51	184	165	111	235	140	21	121	41	32	70	82.6	33.3														
																		UC216	8.2				UCT216C	UCT216CD	109 4 9/32	8.2	UCT216FC	UCT216FCD	138 5 7/16	10.6
	–	2 7/8	1 7/64	2 1/8	7 25/32	6 13/16	4 7/8	10 1/4	6 3/8	1 3/32	6 3/16	1 7/8	1 1/2	2 7/8	3.374	UCTX16	TX16	UCX16	11.7	84.0	61.9	14.5	UCTX16C	UCTX16CD	113 4 7/16	11.7	–	–	– –	–
		73	28	54	198	173	124	260	162	28	157	48	38	73	85.7	34.1														
	–	4 1/32	1 3/16	2 3/8	9 1/16	8 1/32	5 29/32	11 3/32	6 27/32	1 3/32	6 5/16	2 3/32	1 21/32	3 27/32	3.386	UCT316	T316	UC316	16.2	123	86.7	13.3	–	–	– –	–	UCT316C	UCT316CD	138 5 7/16	19.1
		102	30	60	230	204	150	282	174	28	160	53	42	98	86	34														
85	3 1/4	2 7/8	1 3/16	2 1/8	7 25/32	6 13/16	4 7/8	10 1/4	6 3/8	1 5/32	6 3/16	1 7/8	1 1/2	2 7/8	3.374	UCT217-52	T217	UC217-52	11.0	84.0	61.9	14.5	–	–	– –	–	–	–	– –	–
		73	30	54	198	173	124	260	162	29	157	48	38	73	85.7	34.1														
																		UC217	11.0				UCT217C	UCT217CD	113 4 7/16	11.0	UCT217FC	UCT217FCD	142 5 19/32	13.7
		2 7/8	1 7/64	2 1/8	7 25/32	6 13/16	4 7/8	10 1/4	6 3/8	1 3/32	6 3/16	1 7/8	1 1/2	2 7/8	3.780	UCTX17	TX17	UCX17	11.7	96.1	71.5	14.5	UCTX17C	UCTX17CD	123 4 27/32	11.7	–	–	– –	–
	3 7/16	73	28	54	198	173	124	260	162	28	157	48	38	73	96	39.7														
																UCTX17-55		UCX17-55	11.7				–	–	– –	–	–	–	– –	–
	–	4 1/32	1 17/64	2 17/32	9 7/16	8 27/64	5 31/32	11 23/32	7 7/32	1 3/16	6 11/16	2 3/32	1 21/32	3 27/32	3.780	UCT317	T317	UC317	19.0	133	96.8	13.3	–	–	– –	–	UCT317C	UCT317CD	146 5 3/4	22.3
		102	32	64	240	214	152	298	183	30	170	53	42	98	96	40														
90	3 1/2	4 11/32	1 17/64	2 19/32	10 1/32	8 31/32	6 5/16	12 9/32	7 9/16	1 3/16	6 7/8	2 1/4	1 13/16	4 3/16	3.780	UCT318-56	T318	UC318-56	21.6	143	107	13.3	–	–	– –	–	–	–	– –	–
		110	32	66	255	228	160	312	192	30	175	57	46	106	96	40														
																UCT318		UC318	21.6				–	–	– –	–	UCT318C	UCT318CD	150 5 29/32	25.4
95	–	4 11/32	1 3/8	2 27/32	10 5/8	9 29/64	6 1/2	12 11/16	7 3/4	1 7/32	7 3/32	2 1/4	1 13/16	4 3/16	4.055	UCT319	T319	UC319	24.9	153	119	13.3	–	–	– –	–	UCT319C	UCT319CD	162 6 3/8	29.2
		110	35	72	270	240	165	322	197	31	180	57	46	106	103	41														
100	3 15/16	4 23/32	1 3/8	2 15/16	11 13/32	10 15/64	6 7/8	13 19/32	8 9/32	1 1/4	7 7/8	2 5/16	1 7/8	4 17/32	4.252	UCT320	T320	UC320	30.7	173	141	13.2	–	–	– –	–	UCT320C	UCT320CD	174 6 27/32	36.3
		120	35	75	290	260	175	345	210	32	200	59	48	115	108	42														
																UCT320-63		UC320-63	30.7				–	–	– –	–	–	–	– –	–
	4															UCT320-64		UC320-64	30.7				–	–	– –	–	–	–	– –	–
105	–	4 23/32	1 3/8	2 15/16	11 13/32	10 15/64	6 7/8	13 19/32	8 9/32	1 1/4	7 7/8	2 5/16	1 7/8	4 17/32	4.409	UCT321	T321	UC321	36.7	184	153	13.2	–	–	– –	–	UCT321C	UCT321CD	178 7	42.7
		120	35	75	290	260	175	345	210	32	200	59	48	115	112	44														
110	–	5 1/8	1 1/2	3 5/32	12 19/32	11 7/32	7 9/32	15 5/32	9 1/4	1 1/2	8 15/32	2 9/16	2 1/16	4 29/32	4.606	UCT322	T322	UC322	39.7	205	180	13.2	–	–	– –	–	UCT322C	UCT322CD	188 7 13/32	46.5
		130	38	80	320	285	185	385	235	38	215	65	52	125	117	46														
120	–	5 1/2	1 49/64	3 17/32	13 31/32	12 9/32	8 9/32	17	10 1/2	1 21/32	9 1/16	2 3/4	2 3/8	5 1/2	4.961	UCT324	T324	UC324	54.4	207	185	13.5	–	–	– –	–	UCT324C	UCT324CD	196 7 23/32	63.9
		140	45	90	355	320	210	432	267	42	230	70	60	140	126	51														
130	–	5 29/32	1 31/32	3 15/16	15 5/32	13 25/32	8 21/32	18 5/16	11 7/32	1 25/32	9 7/16	2 15/16	2 9/16	5 29/32	5.315	UCT326	T326	UC326	69.3	229	214	13.6	–	–	– –	–	UCT326C	UCT326CD	214 8 7/16	81.4
		150	50	100	385	350	220	465	285	45	240	75	65	150	135	54														
140	–	6 3/32	1 31/32	3 15/16	16 11/32	14 61/64	9 1/16	20 9/32	12 13/32	1 31/32	10 1/32	3 5/32	2 3/4	6 5/16	5.709	UCT328	T328	UC328	85.1	253	246	13.6	–	–	– –	–	UCT328C	UCT328CD	222 8 3/4	101
		155	50	100	415	380	230	515	315	50	255	80	70	160	145	59														

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   B-1/4-28UNF..... 201~210, X05~X09, 305~308
   B-R1/8 ..... 211~217, X10~X17, 309~328
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UCT206JL3, UC206L3)
4. As for the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

UCT-E
Cylindrical bore (with set screws)
d 12 ~ 50 mm



Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

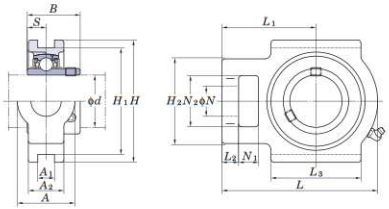
Unit: mm

Housing No.		Δ_{A1s}	Δ_{H1s}	X
T204E~T210E	TX05E~TX10E	+0.2 0	0 −0.5	0.5
T211E~T217E	TX11E~TX17E	+0.3 0	0 −0.8	0.6

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm A	A_1	A_2	H	H_1	H_2	L	L_1	L_2	L_3	N	N_1	N_2	B	S	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12																	UCT201E	T204E	UC201	12.8	6.65	13.2	0.81
	1/2																UCT201-8E		UC201-8				
15		1 1/4	17/32	13/16	3 1/2	3	2	3 11/16	2 13/32	13/32	2	3/4	5/8	1 1/4	1.220	0.500	UCT202E		UC202				0.79
	5/8	32	13.5	21	89	76.2	51	94	61	10	51	19	16	32	31	12.7	UCT202-10E		UC202-10				
17																	UCT203E		UC203				0.78
	3/4																UCT204-12E		UC204-12				
20																	UCT204E		UC204				0.76
	7/8																UCT205-14E	T205E	UC205-14	14.0	7.85	13.9	0.84
	15/16	1 1/4	17/32	15/16	3 1/2	3	2	3 13/16	2 7/16	13/32	2	3/4	5/8	1 1/4	1.343	0.563	UCT205-15E		UC205-15				
		32	13.5	24	89	76.2	51	97	62	10	51	19	16	32	34.1	14.3	UCT205E		UC205				
25	1																UCT205-16E		UC205-16				
		1 15/32	17/32	1 3/32	4 1/32	3 1/2	2 7/32	4 7/16	2 3/4	13/32	2 1/4	7/8	5/8	1 15/32	1.500	0.626	UCTX05E	TX05E	UCX05	19.5	11.3	13.9	1.4
	1	37	13.5	28	102	88.9	56	113	70	10	57	22	16	37	38.1	15.9	UCTX05-16E		UCX05-16				
	1 1/8																UCT206-18E	T206E	UC206-18	19.5	11.3	13.9	1.3
		1 15/32	17/32	1 3/32	4 1/32	3 1/2	2 7/32	4 7/16	2 3/4	13/32	2 1/4	7/8	5/8	1 15/32	1.500	0.626	UCT206E		UC206				
	1 3/16	37	13.5	28	102	88.9	56	113	70	10	57	22	16	37	38.1	15.9	UCT206-19E		UC206-19				
30	1 1/4																UCT206-20E		UC206-20				
		1 15/32	17/32	1 3/16	4 1/32	3 1/2	2 17/32	5 3/32	3 1/16	1/2	2 17/32	7/8	5/8	1 15/32	1.689	0.689	UCTX06E	TX06E	UCX06	25.7	15.4	13.9	1.7
	1 3/16	37	13.5	30	102	88.9	64	129	78	13	64	22	16	37	42.9	17.5	UCTX06-19E		UCX06-19				
	1 1/4																UCTX06-20E		UCX06-20				
	1 1/4																UCT207-20E	T207E	UC207-20	25.7	15.4	13.9	1.6
	1 5/16																UCT207-21E		UC207-21				
	1 3/8	1 15/32	17/32	1 3/16	4 1/32	3 1/2	2 17/32	5 3/32	3 1/16	1/2	2 17/32	7/8	5/8	1 15/32	1.689	0.689	UCT207-22E		UC207-22				
		37	13.5	30	102	88.9	64	129	78	13	64	22	16	37	42.9	17.5	UCT207E		UC207				
35	1 7/16																UCT207-23E		UC207-23				
	1 3/8	1 15/16	11/16	1 13/32	4 1/2	4	3 9/32	5 21/32	3 15/32	19/32	3 9/32	1 5/32	3/4	1 15/16	1.937	0.748	UCTX07-22E	TX07E	UCX07-22	29.1	17.8	14.0	2.7
		49	17.5	36	114	101.6	83	144	88	15	83	29	19	49	49.2	19	UCTX07E		UCX07				
	1 7/16																UCTX07-23E		UCX07-23				
	1 1/2	1 15/16	11/16	1 5/16	4 1/2	4	3 9/32	5 21/32	3 15/32	19/32	3 9/32	1 5/32	3/4	1 15/16	1.937	0.748	UCT208-24E	T208E	UC208-24	29.1	17.8	14.0	2.5
	1 9/16	49	17.5	33	114	101.6	83	144	88	16	83	29	19	49	49.2	19	UCT208E		UC208-25				
40																	UCT208E		UC208				
	1 1/2	1 15/16	11/16	1 13/32	4 19/32	4	3 9/32	5 21/32	3 7/16	19/32	3 9/32	1 5/32	3/4	1 15/16	1.937	0.748	UCTX08-24E	TX08E	UCX08-24	34.1	21.3	14.0	2.6
		49	17.5	36	117	101.6	83	144	87	15	83	29	19	49	49.2	19	UCTX08E		UCX08				
	1 5/8																UCT209-26E	T209E	UC209-26	34.1	21.3	14.0	2.4
	1 11/16	1 15/16	11/16	1 3/8	4 19/32	4	3 9/32	5 21/32	3 7/16	5/8	3 9/32	1 5/32	3/4	1 15/16	1.937	0.748	UCT209-27E		UC209-27				
	1 3/4	49	17.5	35	117	101.6	83	144	87	16	83	29	19	49	49.2	19	UCT209-28E		UC209-28				
45																	UCT209E		UC209				
	1 11/16	1 15/16	11/16	1 1/2	4 19/32	4	3 9/32	5 7/8	3 17/32	5/8	3 3/8	1 5/32	3/4	1 15/16	2.031	0.748	UCTX09-27E	TX09E	UCX09-27	35.1	23.3	14.4	2.9
	1 3/4	49	17.5	38	117	101.6	83	149	90	16	86	29	19	49	51.6	19	UCTX09-28E		UCX09-28				
																	UCTX09E		UCX09				
	1 7/8																UCT210-30E	T210E	UC210-30	35.1	23.3	14.4	2.6
	1 15/16	1 15/16	11/16	1 15/32	4 19/32	4	3 9/32	5 7/8	3 17/32	5/8	3 3/8	1 5/32	3/4	1 15/16	2.031	0.748	UCT210-31E		UC210-31				
		49	17.5	37	117	101.6	83	149	90	16	86	29	19	49	51.6	19	UCT210E		UC210				
50	2																UCT210-32E		UC210-32				
	1 15/16	2 17/32	1 1/16	1 21/32	5 3/4	5 1/8	4 1/64	6 23/32	4 3/16	3/4	3 3/4	1 3/8	31/32	2 17/32	2.189	0.874	UCTX10-31E	TX10E	UCX10-31	43.4	29.4	14.4	4.4
		64	27	42	146	130.17	102	171	106	19	95	35	25	64	55.6	22.2	UCTX10E		UCX10				
	2																UCTX10-32E		UCX10-32				

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   B-1/4-28UNF..... 201~210, X05~X09, 305~308
   B-R1/8 ..... 211~217, X10~X17, 309~328
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UCT206EL3, UC206L3)
4. As for the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

UCT-E
Cylindrical bore (with set screws)
d 55 ~ 85 mm



Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

Unit: mm

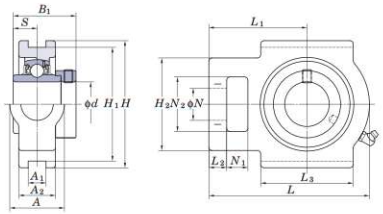
Housing No.		Δ_{A1s}	Δ_{H1s}	X
T204E~T210E	TX05E~TX10E	+0.2 0	0 −0.5	0.5
T211E~T217E	TX11E~TX17E	+0.3 0	0 −0.8	0.6

Shaft Dia. mm inch d		Dimensions inch mm A	A_1	A_2	H	H_1	H_2	L	L_1	L_2	L_3	N	N_1	N_2	B	S	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
55	2																UCT211-32E	T211E	UC211-32	43.4	29.4	14.4	4.0
	2 1/8	2 17/32	1 1/16	1 1/2	5 3/4	5 1/8	4 1/64	6 23/32	4 3/16	3/4	3 3/4	1 3/8	31/32	2 17/32	2.189	0.874	UCT211-34E		UC211-34				
		64	27	38	146	130.17	102	171	106	19	95	35	25	64	55.6	22.2	UCT211E		UC211				
	2 3/16																UCT211-35E		UC211-35				
	2 3/16	2 17/32	1 1/16	1 23/32	5 3/4	5 1/8	4 1/64	7 5/8	4 11/16	3/4	4 1/32	1 3/8	1 1/4	2 17/32	2.563	1.000	UCTX11E	TX11E	UCX11	52.4	36.2	14.4	5.3
		64	27	44	146	130.17	102	194	119	19	102	35	32	64	65.1	25.4	UCTX11-35E		UCX11-35				
	2 1/4																UCTX11-36E		UCX11-36				
60	2 1/4																UCT212-36E	T212E	UC212-36	52.4	36.2	14.4	4.9
		2 17/32	1 1/16	1 21/32	5 3/4	5 1/8	4 1/64	7 5/8	4 11/16	3/4	4 1/32	1 3/8	1 1/4	2 17/32	2.563	1.000	UCT212E		UC212				
	2 3/8	64	27	42	146	130.17	102	194	119	19	102	35	32	64	65.1	25.4	UCT212-38E		UC212-38				
	2 7/16																UCT212-39E		UC212-39				
	2 7/16	2 3/4	1 1/16	1 7/8	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2.563	1.000	UCTX12E	TX12E	UCX12	57.2	40.1	14.4	7.4
		70	27	48	167	150.8	111	224	137	21	121	41	32	70	65.1	25.4	UCTX12-39E		UCX12-39				
65	2 1/2	2 3/4	1 1/16	1 23/32	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2.563	1.000	UCT213-40E	T213E	UC213-40	57.2	40.1	14.4	6.9
		70	27	44	167	150.8	111	224	137	21	121	41	32	70	65.1	25.4	UCT213E		UC213				
	2 1/2	2 3/4	1 1/16	1 7/8	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2.937	1.189	UCTX13-40E	TX13E	UCX13-40	62.2	44.1	14.5	7.6
		70	27	48	167	150.8	111	224	137	21	121	41	32	70	74.6	30.2	UCTX13E		UCX13				
70	2 3/4	2 3/4	1 1/16	1 13/16	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2.937	1.189	UCT214-44E	T214E	UC214-44	62.2	44.1	14.5	7.0
		70	27	46	167	150.8	111	224	137	21	121	41	32	70	74.6	30.2	UCT214E		UC214				
	2 3/4	2 3/4	1 1/16	1 7/8	6 9/16	5 15/16	4 3/8	9 1/8	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.063	1.331	UCTX14-44E	TX14E	UCX14-44	67.4	48.3	14.5	7.9
		70	27	48	167	150.8	111	232	140	21	121	41	32	70	77.8	33.3	UCTX14E		UCX14				
75	2 15/16	2 3/4	1 1/16	1 7/8	6 9/16	5 15/16	4 3/8	9 1/8	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.063	1.331	UCT215-47E	T215E	UC215-47	67.4	48.3	14.5	7.3
		70	27	48	167	150.8	111	232	140	21	121	41	32	70	77.8	33.3	UCT215E		UC215				
	3																UCT215-48E		UC215-48				
	2 15/16	2 3/4	1 1/16	1 7/8	7 1/4	6 1/2	4 3/8	9 1/4	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.252	1.311	UCTX15-47E	TX15E	UCX15-47	72.7	53.0	14.6	8.7
		70	27	48	184	165	111	235	140	21	121	41	32	70	82.6	33.3	UCTX15E		UCX15				
	3																UCTX15-48E		UCX15-48				
80	3 1/8	2 3/4	1 1/16	2	7 1/4	6 1/2	4 3/8	9 1/4	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.252	1.311	UCT216-50E	T216E	UC216-50	72.7	53.0	14.6	8.2
		70	27	51	184	165	111	235	140	21	121	41	32	70	82.6	33.3	UCT216E		UC216				
	–	3 1/2	1 13/16	2 11/16	7 25/32	6 13/16	4 7/8	10 1/4	6 3/8	1 3/32	6 3/16	1 7/8	1 1/2	2 7/8	3.374	1.343	UCTX16E	TX16E	UCX16	84.0	61.9	14.5	12.4
		89	46	68	198	173	124	260	162	28	157	48	38	73	85.7	34.1							
85	3 1/4	3 1/2	1 13/16	2 11/16	7 25/32	6 13/16	4 7/8	10 1/4	6 3/8	1 5/32	6 3/16	1 7/8	1 1/2	2 7/8	3.374	1.343	UCT217-52E	T217E	UC217-52	84.0	61.9	14.5	12.1
		89	46	68	198	173	124	260	162	29	157	48	38	73	85.7	34.1	UCT217E		UC217				
		3 1/2	1 13/16	2 11/16	7 25/32	6 13/16	4 7/8	10 1/4	6 3/8	1 3/32	6 3/16	1 7/8	1 1/2	2 7/8	3.780	1.563	UCTX17E	TX17E	UCX17	96.1	71.5	14.5	13.3
	3 7/16	89	46	68	198	173	124	260	162	28	157	48	38	73	96	39.7	UCTX17-55E		UCX17-55				

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   B-1/4-28UNF..... 201~210, X05~X09, 305~308
   B-R1/8 ..... 211~217, X10~X17, 309~328
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UCT206EL3, UC206L3)
4. As for the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of nodular graphite cast iron are also available.

FYH

NAT-E
Cylindrical bore
(with eccentric locking collar)
d 12 ~ 75 mm



Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

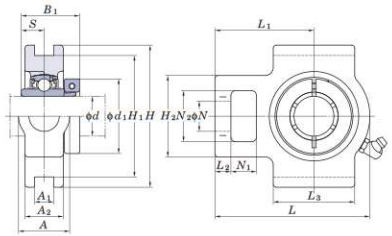
Unit: mm

Housing No.	Δ_{A1s}	Δ_{H1s}	X
T204E~T210E	+0.2 0	0 −0.5	0.5
T211E~T215E	+0.3 0	0 −0.8	0.6

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm A	A_1	A_2	H	H_1	H_2	L	L_1	L_2	L_3	N	N_1	N_2	B_1	S	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12																	NAT201E	T204E	NA201	12.8	6.65	13.2	0.83
	1/2																NAT201-8E		NA201-8				
15		1 1/4	17/32	13/16	3 1/2	3	2	3 11/16	2 13/32	13/32	2	3/4	5/8	1 1/4	1.720	0.673	NAT202E		NA202				0.81
	5/8	32	13.5	21	89	76.2	51	94	61	10	51	19	16	32	43.7	17.1	NAT202-10E		NA202-10				
17																	NAT203E		NA203				0.8
	3/4																NAT204-12E		NA204-12				0.84
20																	NAT204E		NA204				
	7/8																NAT205-14E	T205E	NA205-14	14.0	7.85	13.9	0.89
25	15/16	1 1/4	17/32	15/16	3 1/2	3	2	3 13/16	2 7/16	13/32	2	3/4	5/8	1 1/4	1.748	0.689	NAT205-15E		NA205-15				
		32	13.5	24	89	76.2	51	97	62	10	51	19	16	32	44.4	17.5	NAT205E		NA205				
	1																NAT205-16E		NA205-16				
	1 1/8																NAT206-18E	T206E	NA206-18	19.5	11.3	13.9	1.39
30		1 15/32	17/32	1 3/32	4 1/32	3 1/2	2 7/32	4 7/16	2 3/4	13/32	2 1/4	7/8	5/8	1 15/32	1.906	0.720	NAT206E		NA206				
	1 3/16	37	13.5	28	102	88.9	56	113	70	10	57	22	16	37	48.4	18.3	NAT206-19E		NA206-19				
	1 1/4																NAT206-20E		NA206-20				
	1 1/4																NAT207-20E	T207E	NA207-20	25.7	15.4	13.9	1.73
	1 5/16																NAT207-21E		NA207-21				
35	1 3/8	1 15/32	17/32	1 3/16	4 1/32	3 1/2	2 17/32	5 3/32	3 1/16	1/2	2 17/32	7/8	5/8	1 15/32	2.012	0.740	NAT207-22E		NA207-22				
		37	13.5	30	102	88.9	64	129	78	13	64	22	16	37	51.1	18.8	NAT207E		NA207				
	1 7/16																NAT207-23E		NA207-23				
	1 1/2																NAT208-24E	T208E	NA208-24	29.1	17.8	14.0	2.74
40	1 9/16	1 15/16	11/16	1 5/16	4 1/2	4	3 9/32	5 21/32	3 15/32	5/8	3 9/32	1 15/32	3/4	1 15/16	2.217	0.843	NAT208-25E		NA208-25				
		49	17.5	33	114	101.6	83	144	88	16	83	29	19	49	56.3	21.4	NAT208E		NA208				
	1 5/8																NAT209-26E	T209E	NA209-26	34.1	21.3	14.0	2.57
45	1 11/16	1 15/16	11/16	1 3/8	4 19/32	4	3 9/32	5 21/32	3 7/16	5/8	3 9/32	1 5/32	3/4	1 15/16	2.217	0.843	NAT209-27E		NA209-27				
	1 3/4	49	17.5	35	117	101.6	83	144	87	16	83	29	19	49	56.3	21.4	NAT209-28E		NA209-28				
																	NAT209E		NA209				
	1 7/8																NAT210-30E	T210E	NA210-30	35.1	23.3	14.4	2.81
50	1 15/16	1 15/16	11/16	1 15/32	4 19/32	4	3 9/32	5 7/8	3 17/32	5/8	3 3/8	1 5/32	3/4	1 15/16	2.469	0.969	NAT210-31E		NA210-31				
		49	17.5	37	117	101.6	83	149	90	16	86	29	19	49	62.7	24.6	NAT210E		NA210				
	2																NAT210-32E		NA210-32				
	2																NAT211-32E	T211E	NA211-32	43.4	29.4	14.4	4.28
55	2 1/8	2 17/32	1 1/16	1 1/2	5 3/4	5 1/8	4 1/32	6 23/32	4 3/16	3/4	3 3/4	1 3/8	31/32	2 17/32	2.811	1.094	NAT211-34E		NA211-34				
		64	27	38	146	130.17	102	171	106	19	95	35	25	64	71.4	27.8	NAT211E		NA211				
	2 9/16																NAT211-35E		NA211-35				
	2 1/4																NAT212-36E	T212E	NA212-36	52.4	36.2	14.4	5.23
60		2 17/32	1 1/16	1 21/32	5 3/4	5 1/8	4 1/32	7 5/8	4 11/16	3/4	4 1/32	1 3/8	1 1/4	2 17/32	3.063	1.220	NAT212E		NA212				
	2 3/8	64	27	42	146	130.17	102	194	119	19	102	35	32	64	77.8	31	NAT212-38E		NA212-38				
	2 7/16																NAT212-39E		NA212-39				
65	2 1/2	2 3/4	1 1/16	1 23/32	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.374	1.343	NAT213-40E	T213E	NA213-40	57.2	40.1	14.4	7.49
		70	27	44	167	150.8	111	224	137	21	121	41	32	70	85.7	34.1	NAT213E		NA213				
70	2 3/4	2 3/4	1 1/16	1 13/16	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.374	1.343	NAT214-44E	T214E	NA214-44	62.2	44.1	14.5	7.87
		70	27	46	167	150.8	111	224	137	21	121	41	32	70	85.7	34.1	NAT214E		NA214				
75	2 15/16	2 3/4	1 1/16	1 7/8	6 9/16	5 15/16	4 3/8	9 1/8	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.626	1.469	NAT215-47E	T215E	NA215-47	67.4	48.3	14.5	7.83
		70	27	48	167	150.8	111	232	140	21	121	41	32	70	92.1	37.3	NAT215E		NA215				

Remarks
1. In Part No. of unit, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   B-1/4-28UNF..... 204~210
   B-R1/8 ..... 211~215
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Representative examples of the forms of housing are indicated.

NCT
Cylindrical bore
(with concentric locking collar)
d 20 ~ 60 mm



Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

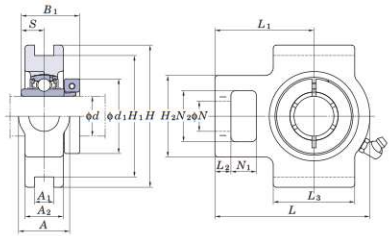
Unit: mm

Housing No.	Δ_{A1s}	Δ_{H1s}	X
T204~T210	+0.2 0	0 −0.5	0.5
T211~T212	+0.3 0	0 −0.8	0.6

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm A	A_1	A_2	H	H_1	H_2	L	L_1	L_2	L_3	N	N_1	N_2	B_1	S	d_1	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
20	3/4	1 1/4 32	15/32 12	13/16 21	3 1/2 89	2 63/64 76	2 51	3 11/16 94	2 13/32 61	13/32 10	2 51	3/4 19	5/8 16	1 1/4 32	1 9/32 32.5	0.500 12.7	1 3/4 44.5	NCT204-12 NCT204	T204	NC204-12 NC204	12.8	6.65	13.2	0.9
25	7/8 15/16 1	1 1/4 32	15/32 12	15/16 24	3 1/2 89	2 63/64 76	2 51	3 13/16 97	2 7/16 62	13/32 10	2 51	3/4 19	5/8 16	1 1/4 32	1 7/16 36.5	0.563 14.3	1 15/16 49.2	NCT205-14 NCT205-15 NCT205 NCT205-16	T205	NC205-14 NC205-15 NC205 NC205-16	14.0	7.85	13.9	1.0
30	1 1/8 1 3/16 1 1/4	1 15/32 37	15/32 12	1 3/32 28	4 1/32 102	3 1/2 89	2 7/32 56	4 7/16 113	2 3/4 70	13/32 10	2 1/4 57	7/8 22	5/8 16	1 15/32 37	1 9/16 39.7	0.626 15.9	2 3/16 55.6	NCT206-18 NCT206 NCT206-19 NCT206-20	T206	NC206-18 NC206 NC206-19 NC206-20	19.5	11.3	13.9	1.5
35	1 1/4	1 15/32 37	15/32 12	1 3/16 30	4 1/32 102	3 1/2 89	2 17/32 64	5 3/32 129	3 1/16 78	1/2 13	2 17/32 64	7/8 22	5/8 16	1 15/32 37	1 3/4 44.5	0.689 17.5	2 7/16 61.9	NCT207-20	T207	NC207-20	25.7	15.4	13.9	1.9
	1 3/8 1 7/16	1 15/32 37	15/32 12	1 3/16 30	4 1/32 102	3 1/2 89	2 17/32 64	5 3/32 129	3 1/16 78	1/2 13	2 17/32 64	7/8 22	5/8 16	1 15/32 37	1 3/4 44.5	0.689 17.5	2 9/16 65.1	NCT207-22 NCT207 NCT207-23	T207	NC207-22 NC207 NC207-23	25.7	15.4	13.9	1.9
40	1 1/2	1 15/16 49	5/8 16	1 5/16 33	4 1/2 114	4 1/64 102	3 9/32 83	5 21/32 144	3 15/32 88	5/8 16	3 9/32 83	1 5/32 29	3/4 19	1 15/16 49	2 50.8	0.748 19	2 11/16 68.3	NCT208-24 NCT208	T208	NC208-24 NC208	29.1	17.8	14.0	2.9
45	1 5/8	1 15/16 49	5/8 16	1 3/8 35	4 19/32 117	4 1/64 102	3 9/32 83	5 21/32 144	3 7/16 87	5/8 16	3 9/32 83	1 5/32 29	3/4 19	1 15/16 49	2 50.8	0.748 19	2 13/16 71.4	NCT209-26	T209	NC209-26	34.1	21.3	14.0	2.8
	1 11/16 1 3/4	1 15/16 49	5/8 16	1 3/8 35	4 19/32 117	4 1/64 102	3 9/32 83	5 21/32 144	3 7/16 87	5/8 16	3 9/32 83	1 5/32 29	3/4 19	1 15/16 49	2 50.8	0.748 19	2 15/16 74.6	NCT209-27 NCT209-28 NCT209	T209	NC209-27 NC209-28 NC209	34.1	21.3	14.0	2.8
50	1 15/16 2	1 15/16 49	5/8 16	1 15/32 37	4 19/32 117	4 1/64 102	3 9/32 83	5 7/8 149	3 17/32 90	5/8 16	3 3/8 86	1 5/32 29	3/4 19	1 15/16 49	2 3/32 53.1	0.748 19	3 3/8 85.7	NCT210-31 NCT210 NCT210-32	T210	NC210-31 NC210 NC210-32	35.1	23.3	14.4	3.2
55	2	2 17/32 64	51/64 22	1 1/2 38	5 3/4 146	5 1/8 130	4 1/32 102	6 23/32 171	4 3/16 106	3/4 19	3 3/4 95	1 3/8 35	31/32 25	2 17/32 64	2 1/4 57.1	0.874 22.2	3 1/2 88.9	NCT211-32	T211	NC211-32	43.4	29.4	14.4	4.4
	2 3/16	2 17/32 64	51/64 22	1 1/2 38	5 3/4 146	5 1/8 130	4 1/32 102	6 23/32 171	4 3/16 106	3/4 19	3 3/4 95	1 3/8 35	31/32 25	2 17/32 64	2 1/4 57.1	0.874 22.2	3 5/8 92.1	NCT211 NCT211-35	T211	NC211 NC211-35	43.4	29.4	14.4	4.4
60	2 1/4	2 17/32 64	51/64 22	1 21/32 42	5 3/4 146	5 1/8 130	4 1/32 102	7 5/8 194	4 11/16 119	3/4 19	4 1/32 102	1 3/8 35	1 1/4 32	2 17/32 64	2 5/8 66.7	1.000 25.4	4 1/16 103.2	NCT212-36	T212	NC212-36	52.4	36.2	14.4	5.6
	2 7/16	2 17/32 64	51/64 22	1 21/32 42	5 3/4 146	5 1/8 130	4 1/32 102	7 5/8 194	4 11/16 119	3/4 19	4 1/32 102	1 3/8 35	1 1/4 32	2 17/32 64	2 5/8 66.7	1.000 25.4	4 1/8 104.8	NCT212 NCT212-39	T212	NC212 NC212-39	52.4	36.2	14.4	5.6

Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
B-1/4-28UNF..... 204~210
B-R1/8 ..... 211~212
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Representative examples of the forms of housing are indicated.

NCT-E
Cylindrical bore
(with concentric locking collar)
d 20 ~ 60 mm



Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

Unit: mm

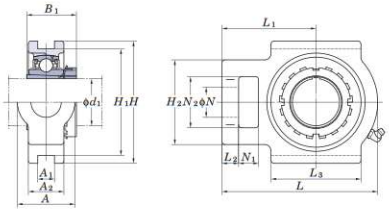
Housing No.	Δ_{A1s}	Δ_{H1s}	X
T204E~T210E	+0.2 0	0 −0.5	0.5
T211E~T212E	+0.3 0	0 −0.8	0.6

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm A	A_1	A_2	H	H_1	H_2	L	L_1	L_2	L_3	N	N_1	N_2	B_1	S	d_1	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
20	3/4	1 1/4 32	17/32 13.5	13/16 21	3 1/2 89	3 76.2	2 51	3 11/16 94	2 13/32 61	13/32 10	2 51	3/4 19	5/8 16	1 1/4 32	1 9/32 32.5	0.500 12.7	1 3/4 44.5	NCT204-12E NCT204E	T204E	NC204-12 NC204	12.8	6.65	13.2	0.9
25	7/8 15/16 1	1 1/4 32	17/32 13.5	15/16 24	3 1/2 89	3 76.2	2 51	3 13/16 97	2 7/16 62	13/32 10	2 51	3/4 19	5/8 16	1 1/4 32	1 7/16 36.5	0.563 14.3	1 15/16 49.2	NCT205-14E NCT205-15E NCT205E NCT205-16E	T205E	NC205-14 NC205-15 NC205 NC205-16	14.0	7.85	13.9	1.0
30	1 1/8 1 3/16 1 1/4	1 15/32 37	17/32 13.5	1 3/32 28	4 1/32 102	3 1/2 88.9	2 7/32 56	4 7/16 113	2 3/4 70	13/32 10	2 1/4 57	7/8 22	5/8 16	1 15/32 37	1 9/16 39.7	0.626 15.9	2 3/16 55.6	NCT206-18E NCT206E NCT206-19E NCT206-20E	T206E	NC206-18 NC206 NC206-19 NC206-20	19.5	11.3	13.9	1.5
35	1 1/4	1 15/32 37	17/32 13.5	1 3/16 30	4 1/32 102	3 1/2 88.9	2 17/32 64	5 3/32 129	3 1/16 78	1/2 13	2 17/32 64	7/8 22	5/8 16	1 15/32 37	1 3/4 44.5	0.689 17.5	2 7/16 61.9	NCT207-20E	T207E	NC207-20	25.7	15.4	13.9	1.9
	1 3/8 1 7/16	1 15/32 37	17/32 13.5	1 3/16 30	4 1/32 102	3 1/2 88.9	2 17/32 64	5 3/32 129	3 1/16 78	1/2 13	2 17/32 64	7/8 22	5/8 16	1 15/32 37	1 3/4 44.5	0.689 17.5	2 9/16 65.1	NCT207-22E NCT207E NCT207-23E	T207E	NC207-22 NC207 NC207-23	25.7	15.4	13.9	1.9
40	1 1/2	1 15/16 49	11/16 17.5	1 5/16 33	4 1/2 114	4 101.6	3 9/32 83	5 21/32 144	3 15/32 88	5/8 16	3 9/32 83	1 5/32 29	3/4 19	1 15/16 49	2 50.8	0.748 19	2 11/16 68.3	NCT208-24E NCT208E	T208E	NC208-24 NC208	29.1	17.8	14.0	2.9
45	1 5/8	1 15/16 49	11/16 17.5	1 3/8 35	4 19/32 117	4 101.6	3 9/32 83	5 21/32 144	3 7/16 87	5/8 16	3 9/32 83	1 5/32 29	3/4 19	1 15/16 49	2 50.8	0.748 19	2 13/16 71.4	NCT209-26E	T209E	NC209-26	34.1	21.3	14.0	2.8
	1 11/16 1 3/4	1 15/16 49	11/16 17.5	1 3/8 35	4 19/32 117	4 101.6	3 9/32 83	5 21/32 144	3 7/16 87	5/8 16	3 9/32 83	1 5/32 29	3/4 19	1 15/16 49	2 50.8	0.748 19	2 15/16 74.6	NCT209-27E NCT209-28E NCT209E	T209E	NC209-27 NC209-28 NC209	34.1	21.3	14.0	2.8
50	1 15/16 2	1 15/16 49	11/16 17.5	1 15/32 37	4 19/32 117	4 101.6	3 9/32 83	5 7/8 149	3 17/32 90	5/8 16	3 3/8 86	1 5/32 29	3/4 19	1 15/16 49	2 3/32 53.1	0.748 19	3 3/8 85.7	NCT210-31E NCT210E NCT210-32E	T210E	NC210-31 NC210 NC210-32	35.1	23.3	14.4	3.2
55	2	2 17/32 64	1 1/16 27	1 1/2 38	5 3/4 146	5 1/8 130.17	4 1/32 102	6 23/32 171	4 3/16 106	3/4 19	3 3/4 95	1 3/8 35	31/32 25	2 17/32 64	2 1/4 57.1	0.874 22.2	3 1/2 88.9	NCT211-32E	T211E	NC211-32	43.4	29.4	14.4	4.4
	2 3/16	2 17/32 64	1 1/16 27	1 1/2 38	5 3/4 146	5 1/8 130.17	4 1/32 102	6 23/32 171	4 3/16 106	3/4 19	3 3/4 95	1 3/8 35	31/32 25	2 17/32 64	2 1/4 57.1	0.874 22.2	3 5/8 92.1	NCT211E NCT211-35E	T211E	NC211 NC211-35	43.4	29.4	14.4	4.4
60	2 1/4	2 17/32 64	1 1/16 27	1 21/32 42	5 3/4 146	5 1/8 130.17	4 1/32 102	7 5/8 194	4 11/16 119	3/4 19	4 1/32 102	1 3/8 35	1 1/4 32	2 17/32 64	2 5/8 66.7	1.000 25.4	4 1/16 103.2	NCT212-36E	T212E	NC212-36	52.4	36.2	14.4	5.6
	2 7/16	2 17/32 64	1 1/16 27	1 21/32 42	5 3/4 146	5 1/8 130.17	4 1/32 102	7 5/8 194	4 11/16 119	3/4 19	4 1/32 102	1 3/8 35	1 1/4 32	2 17/32 64	2 5/8 66.7	1.000 25.4	4 1/8 104.8	NCT212E NCT212-39E	T212E	NC212 NC212-39	52.4	36.2	14.4	5.6

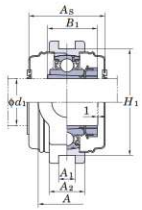
Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
B-1/4-28UNF..... 204~210
B-R1/8 ..... 211~212
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Representative examples of the forms of housing are indicated.

FYH

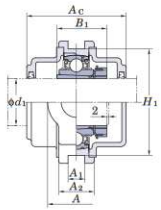
UKT
Tapered bore (with adapter)
d_1 20 ~ 50 mm



With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

Unit: mm

Housing No.			Δ_{A1s}	Δ_{H1s}	X
T205~T210	TX05~TX10	T305~T310	+0.2 / 0	0 / −0.5	0.5
T211~T217	TX11~TX17	T311~T318	+0.3 / 0	0 / −0.8	0.6
		T319~T322			0.7
		T324~T328			0.8

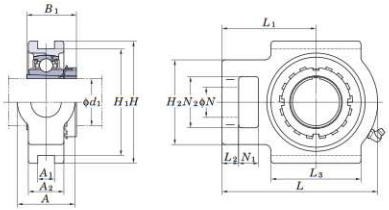
Form and dimension of L_c of T205JE3 (housing with cast iron cover) are shown below.

T205JE3 L_c = 102 mm

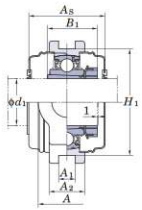
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm d_1	A	A_1	A_2	H	H_1	H_2	L	L_1	L_2	L_3	N	N_1	N_2	B_1	Standard Unit No.	Housing No.	Bearing No.	Adapter No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	One Side Closed Type	Dimension mm inch A_s	Mass kg	With Cast Iron Cover Unit No. Open Type	One Side Closed Type	Dimension mm inch A_c	Mass kg
20	3/4	1 1/4	15/32	15/16	3 1/2	2 63/64	2	3 13/16	2 7/16	13/32	2	3/4	5/8	1 1/4	1 3/8	UKT205	T205	UK205	HE2305X	0.88	14.0	7.85	13.9	–	–	– –	–	–	–	– –	–
		32	12	24	89	76	51	97	62	10	51	19	16	32	35				H2305X	0.88				UKT205C	UKT205CD	49 1 15/16	0.88	UKT205FC	UKT205FCD	66 2 19/32	1.3
	3/4	1 15/32	15/32	1 3/32	4 1/32	3 1/2	2 7/32	4 7/16	2 3/4	13/32	2 1/4	7/8	5/8	1 15/32	1 3/8	UKTX05	TX05	UKX05	HE2305X	1.3	19.5	11.3	13.9	–	–	– –	–	–	–	– –	–
		37	12	28	102	89	56	113	70	10	57	22	16	37	35				H2305X	1.3				UKTX05C	UKTX05CD	53 2 3/32	1.3	–	–	– –	–
	3/4	1 13/32	15/32	1 1/32	3 1/2	3 5/32	2 7/16	4 13/16	3	15/32	2 9/16	1 1/32	5/8	1 13/32	1 3/8	UKT305	T305	UK305	HE2305X	1.5	21.2	10.9	12.6	–	–	– –	–	–	–	– –	–
		36	12	26	89	80	62	122	76	12	65	26	16	36	35				H2305X	1.5				–	–	– –	–	UKT305C	UKT305CD	76 3	2.1
25	1	1 15/32	15/32	1 3/32	4 1/32	3 1/2	2 7/32	4 7/16	2 3/4	13/32	2 1/4	7/8	5/8	1 15/32	1 1/2	UKT206	T206	UK206	H2306X	1.3	19.5	11.3	13.9	UKT206C	UKT206CD	53 2 3/32	1.3	UKT206FC	UKT206FCD	70 2 3/4	1.8
		37	12	28	102	89	56	113	70	10	57	22	16	37	38				HE2306X	1.3				–	–	– –	–	–	–	– –	–
	1	1 15/32	15/32	1 3/16	4 1/32	3 1/2	2 17/32	5 3/32	3 1/16	1/2	2 17/32	7/8	5/8	1 15/32	1 1/2	UKTX06	TX06	UKX06	H2306X	1.7	25.7	15.4	13.9	UKTX06C	UKTX06CD	60 2 3/8	1.7	–	–	– –	–
		37	12	30	102	89	64	129	78	13	64	22	16	37	38				HE2306X	1.7				–	–	– –	–	–	–	– –	–
	1	1 5/8	5/8	1 3/32	3 15/16	3 35/64	2 3/4	5 13/32	3 11/32	9/16	2 29/32	1 3/32	23/32	1 5/8	1 1/2	UKT306	T306	UK306	H2306X	1.9	26.7	15.0	13.3	–	–	– –	–	UKT306C	UKT306CD	82 3 7/32	2.5
		41	16	28	100	90	70	137	85	14	74	28	18	41	38				HE2306X	1.9				–	–	– –	–	–	–	– –	–
30	1 1/8	1 15/32	15/32	1 3/16	4 1/32	3 1/2	2 17/32	5 3/32	3 1/16	1/2	2 17/32	7/8	5/8	1 15/32	1 11/16	UKT207	T207	UK207	HS2307X	1.7	25.7	15.4	13.9	–	–	– –	–	–	–	– –	–
		37	12	30	102	89	64	129	78	13	64	22	16	37	43				H2307X	1.7				UKT207C	UKT207CD	60 2 3/8	1.7	UKT207FC	UKT207FCD	78 3 1/16	2.5
	1 1/8	1 15/16	5/8	1 13/32	4 1/2	4 1/64	3 9/32	5 21/32	3 15/32	19/32	3 9/32	1 5/32	3/4	1 15/16	1 11/16	UKTX07	TX07	UKX07	HS2307X	2.6	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
		49	16	36	114	102	83	144	88	15	83	29	19	49	43				H2307X	2.6				UKTX07C	UKTX07CD	69 2 23/32	2.6	–	–	– –	–
	1 1/8	1 25/32	5/8	1 1/4	4 3/8	3 15/16	2 15/16	5 29/32	3 11/16	19/32	3 5/32	1 3/16	25/32	1 25/32	1 11/16	UKT307	T307	UK307	HS2307X	2.4	33.4	19.3	13.2	–	–	– –	–	–	–	– –	–
		45	16	32	111	100	75	150	94	15	80	30	20	45	43				H2307X	2.4				–	–	– –	–	UKT307C	UKT307CD	88 3 15/32	3.3
35	1 1/4 1 3/8	1 15/16	5/8	1 5/16	4 1/2	4 1/64	3 9/32	5 21/32	3 15/32	5/8	3 9/32	1 5/32	3/4	1 15/16	1 13/16	UKT208	T208	UK208	HE2308X	2.5	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
																			HS2308X	2.5				–	–	– –	–	–	–	– –	–
		49	16	33	114	102	83	144	88	16	83	29	19	49	46				H2308X	2.5				UKT208C	UKT208CD	69 2 23/32	2.5	UKT208FC	UKT208FCD	86 3 3/8	3.4
	1 1/4 1 3/8	1 15/16	5/8	1 13/32	4 19/32	4 1/64	3 9/32	5 21/32	3 7/16	19/32	3 9/32	1 5/32	3/4	1 15/16	1 13/16	UKTX08	TX08	UKX08	HE2308X	2.6	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
																			HS2308X	2.6				–	–	– –	–	–	–	– –	–
		49	16	36	117	102	83	144	87	15	83	29	19	49	46				H2308X	2.6				UKTX08C	UKTX08CD	69 2 23/32	2.6	–	–	– –	–
	1 1/4 1 3/8	1 31/32	45/64	1 11/32	4 7/8	4 13/32	3 9/32	6 3/8	3 15/16	21/32	3 1/2	1 1/4	7/8	1 31/32	1 13/16	UKT308	T308	UK308	HE2308X	3.0	40.7	24.0	13.2	–	–	– –	–	–	–	– –	–
																			HS2308X	3.0				–	–	– –	–	–	–	– –	–
		50	18	34	124	112	83	162	100	17	89	32	22	50	46				H2308X	3.0				–	–	– –	–	UKT308C	UKT308CD	96 3 25/32	4.0
40	1 1/2	1 15/16	5/8	1 3/8	4 19/32	4 1/64	3 9/32	5 21/32	3 7/16	5/8	3 9/32	1 5/32	3/4	1 15/16	1 31/32	UKT209	T209	UK209	HE2309X	2.5	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
		49	16	35	117	102	83	144	87	16	83	29	19	49	50				H2309X	2.5				UKT209C	UKT209CD	69 2 23/32	2.5	UKT209FC	UKT209FCD	88 3 15/32	3.4
	1 1/2	1 15/16	5/8	1 1/2	4 19/32	4 1/64	3 9/32	5 7/8	3 17/32	5/8	3 3/8	1 5/32	3/4	1 15/16	1 31/32	UKTX09	TX09	UKX09	HE2309X	2.9	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
		49	16	38	117	102	83	149	90	16	86	29	19	49	50				H2309X	2.9				UKTX09C	UKTX09CD	74 2 29/32	2.9	–	–	– –	–
	1 1/2	2 5/32	45/64	1 1/2	5 7/16	4 59/64	3 17/32	7	4 11/32	23/32	3 13/16	1 11/32	15/16	2 5/32	1 31/32	UKT309	T309	UK309	HE2309X	4.2	48.9	29.5	13.3	–	–	– –	–	–	–	– –	–
		55	18	38	138	125	90	178	110	18	97	34	24	55	50				H2309X	4.2				–	–	– –	–	UKT309C	UKT309CD	102 4 1/32	5.5
45	1 3/4	1 15/16	5/8	1 15/32	4 19/32	4 1/64	3 9/32	5 7/8	3 17/32	5/8	3 3/8	1 5/32	3/4	1 15/16	2 5/32	UKT210	T210	UK210	HE2310X	2.7	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
		49	16	37	117	102	83	149	90	16	86	29	19	49	55				H2310X	2.7				UKT210C	UKT210CD	74 2 29/32	2.7	UKT210FC	UKT210FCD	97 3 13/16	3.8
	1 3/4	2 17/32	55/64	1 21/32	5 3/4	5 1/8	4 1/32	6 23/32	4 3/16	3/4	3 3/4	1 3/8	31/32	2 17/32	2 5/32	UKTX10	TX10	UKX10	HE2310X	4.4	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
		64	22	42	146	130	102	171	106	19	95	35	25	64	55				H2310X	4.4				UKTX10C	UKTX10CD	76 3	4.4	–	–	– –	–
	1 3/4	2 13/32	25/32	1 9/16	5 15/16	5 33/64	3 27/32	7 17/32	4 19/32	25/32	4 3/16	1 15/32	1 1/16	2 13/32	2 5/32	UKT310	T310	UK310	HE2310X	5.0	62.0	38.3	13.2	–	–	– –	–	–	–	– –	–
		61	20	40	151	140	98	191	117	20	106	37	27	61	55				H2310X	5.0				–	–	– –	–	UKT310C	UKT310CD	110 4 11/32	6.7
50	1 7/8	2 17/32	55/64	1 1/2	5 3/4	5 1/8	4 1/32	6 23/32	4 3/16	3/4	3 3/4	1 3/8	31/32	2 17/32	2 5/16	UKT211	T211	UK211	HS2311X	4.1	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
																			H2311X	4.1				UKT211C	UKT211CD	76 3	4.1	UKT211FC	UKT211FCD	99 3 29/32	5.4
	2	64	22	38	146	130	102	171	106	19	95	35	25	64	59				HE2311X	4.1				–	–	– –	–	–	–	– –	–
	1 7/8	2 17/32	55/64	1 23/32	5 3/4	5 1/8	4 1/32	7 5/8	4 11/16	3/4	4 1/32	1 3/8	1 1/4	2 17/32	2 5/16	UKTX11	TX11	UKX11	HS2311X	5.1	52.4	36.2	14.4	–	–	– –	–	–	–	– –	–
																			H2311X	5.1				UKTX11C	UKTX11CD	89 3 1/2	5.1	–	–	– –	–
	2	64	22	44	146	130	102	194	119	19	102	35	32	64	59				HE2311X	5.1				–	–	– –	–	–	–	– –	–
	1 7/8	2 19/32	55/64	1 23/32	6 13/32	5 29/32	4 1/8	8 5/32	5	13/16	4 17/32	1 17/32	1 5/32	2 19/32	2 5/16	UKT311	T311	UK311	HS2311X	6.4	71.6	45.0	13.2	–	–	– –	–	–	–	– –	–
																			H2311X	6.4				–	–	– –	–	UKT311C	UKT311CD	114 4 1/2	8.3
	2	66	22	44	163	150	105	207	127	21	115	39	29	66	59				HE2311X	6.4				–	–	– –	–	–	–	– –	–

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   B-1/4-28UNF..... 205~210, X05~X09, 305~308
   B-R1/8 ..... 211~217, X10~X17, 309~328
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables.
   (Example of Part No. : UKT206J + H2306X, UK206 + H2306X)
4. As for the triple seal type product (205 is the double seal type product), suffix code L3 (or L2) follows the Part No. of unit or bearing.
   (Example of Part No. : UKT206JL3 + H2306X, UK206L3 + H2306X)
5. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter.
6. Housings of nodular graphite cast iron are also available.

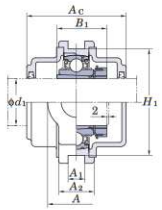
UKT
Tapered bore (with adapter)
d_1 55 ~ 125 mm



With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

Unit: mm

Housing No.			Δ_{A1s}	Δ_{H1s}	X
T205~T210	TX05~TX10	T305~T310	+0.2 / 0	0 / −0.5	0.5
T211~T217	TX11~TX17	T311~T318	+0.3 / 0	0 / −0.8	0.6
		T319~T322			0.7
		T324~T328			0.8

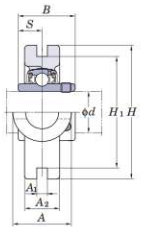
Form and dimension of L_c of T205JE3 (housing with cast iron cover) are shown below.

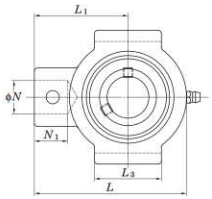
T205JE3 L_c = 102 mm

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm d_1	A	A_1	A_2	H	H_1	H_2	L	L_1	L_2	L_3	N	N_1	N_2	B_1	Standard Unit No.	Housing No.	Bearing No.	Adapter No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	One Side Closed Type	Dimension mm inch A_s	Mass kg	With Cast Iron Cover Unit No. Open Type	One Side Closed Type	Dimension mm inch A_c	Mass kg
55	2 1/8		2 17/32	55/64	1 21/32	5 3/4	5 1/8	4 1/32	7 5/8	4 11/16	3/4	4 1/32	1 3/8	1 1/4	2 17/32	2 7/16	UKT212	T212	UK212	HS2312X	4.8	52.4	36.2	14.4	–	–	– –	–	–	–	– –	–
			64	22	42	146	130	102	194	119	19	102	35	32	64	62				H2312X	4.8				UKT212C	UKT212CD	89 3 1/2	4.8	UKT212FC	UKT212FCD	114 4 1/2	6.3
	2 1/8		2 3/4	1 1/32	1 7/8	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2 7/16	UKTX12	TX12	UKX12	HS2312X	7.3	57.2	40.1	14.4	–	–	– –	–	–	–	– –	–
			70	26	48	167	151	111	224	137	21	121	41	32	70	62				H2312X	7.3				UKTX12C	UKTX12CD	89 3 1/2	7.3	–	–	– –	–
	2 1/8		2 25/32	55/64	1 13/16	7	6 19/64	4 7/16	8 21/32	5 5/16	29/32	4 27/32	1 5/8	1 7/32	2 25/32	2 7/16	UKT312	T312	UK312	HS2312X	7.5	81.9	52.2	13.2	–	–	– –	–	–	–	– –	–
			71	22	46	178	160	113	220	135	23	123	41	31	71	62				H2312X	7.5				–	–	– –	–	UKT312C	UKT312CD	124 4 7/8	9.9
60	2 1/4		2 3/4	1 1/32	1 23/32	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2 9/16	UKT213	T213	UK213	HE2313X	6.8	57.2	40.1	14.4	–	–	– –	–	–	–	– –	–
			70	26	44	167	151	111	224	137	21	121	41	32	70	65				H2313X	6.8				UKT213C	UKT213CD	89 3 1/2	6.8	UKT213FC	UKT213FCD	114 4 1/2	8.5
	2 3/8																			HS2313X	6.8				–	–	– –	–	–	–	– –	–
	2 1/4		2 3/4	1 1/32	1 7/8	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2 9/16	UKT13	TX13	UKX13	HE2313X	7.2	62.2	44.1	14.5	–	–	– –	–	–	–	– –	–
			70	26	48	167	151	111	224	137	21	121	41	32	70	65				H2313X	7.2				UKTX13C	UKTX13CD	99 3 29/32	7.2	–	–	– –	–
	2 3/8																			HS2313X	7.2				–	–	– –	–	–	–	– –	–
	2 1/4		3 5/32	1 1/32	1 31/32	7 15/32	6 11/16	4 9/16	9 3/8	5 3/4	31/32	5 9/32	1 11/16	1 1/4	2 3/4	2 9/16	UKT313	T313	UK313	HE2313X	9.4	92.7	59.9	13.2	–	–	– –	–	–	–	– –	–
			80	26	50	190	170	116	238	146	25	134	43	32	70	65				H2313X	9.4				–	–	– –	–	UKT313C	UKT313CD	122 4 13/16	11.6
	2 3/8																			HS2313X	9.4				–	–	– –	–	–	–	– –	–
65	2 1/2		2 3/4	1 1/32	1 13/16	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2 7/8	UKT215	T215	UK215	HE2315X	7.4	67.4	48.3	14.5	–	–	– –	–	–	–	– –	–
			70	26	48	167	151	111	232	140	21	121	41	32	70	73				H2315X	7.4				UKT215C	UKT215CD	99 3 29/32	7.4	UKT215FC	UKT215FCD	124 4 7/8	9.4
	2 1/2		2 3/4	1 7/64	1 7/8	7 1/4	6 1/2	4 3/8	9 1/4	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2 7/8	UKTX15	TX15	UKX15	HE2315X	8.4	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
			70	28	48	184	165	111	235	140	21	121	41	32	70	73				H2315X	8.4				UKTX15C	UKTX15CD	109 4 9/32	8.4	–	–	– –	–
	2 1/2		3 17/32	1 1/32	2 5/32	8 1/2	7 9/16	5 3/16	10 5/16	6 5/16	31/32	5 29/32	1 13/16	1 13/32	3 11/32	2 7/8	UKT315	T315	UK315	HE2315X	13.1	113	77.2	13.2	–	–	– –	–	–	–	– –	–
			90	26	55	216	192	132	262	160	25	150	46	36	85	73				H2315X	13.1				–	–	– –	–	UKT315C	UKT315CD	134 5 9/32	15.9
70	2 3/4		2 3/4	1 1/32	2	7 1/4	6 1/2	4 3/8	9 1/4	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3 1/16	UKT216	T216	UK216	HE2316X	8.5	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
			70	26	51	184	165	111	235	140	21	121	41	32	70	78				H2316X	8.5				UKT216C	UKT216CD	109 4 9/32	8.5	UKT216FC	UKT216FCD	138 5 7/16	11.0
	2 3/4		2 7/8	1 7/64	2 1/8	7 25/32	6 13/16	4 7/8	10 1/4	6 3/8	1 3/32	6 3/16	1 7/8	1 1/2	2 7/8	3 1/16	UKTX16	TX16	UKX16	HE2316X	11.8	84.0	61.9	14.5	–	–	– –	–	–	–	– –	–
			73	28	54	198	173	124	260	162	28	157	48	38	73	78				H2316X	11.8				UKTX16C	UKTX16CD	113 4 7/16	11.8	–	–	– –	–
	2 3/4		4 1/32	1 3/16	2 3/8	9 1/16	8 1/32	5 29/32	11 3/32	6 27/32	1 3/32	6 5/16	2 3/32	1 21/32	3 27/32	3 1/16	UKT316	T316	UK316	HE2316X	16.3	123	86.7	13.3	–	–	– –	–	–	–	– –	–
			102	30	60	230	204	150	282	174	28	160	53	42	98	78				H2316X	16.3				–	–	– –	–	UKT316C	UKT316CD	138 5 7/16	19.4
75			2 7/8	1 3/16	2 1/8	7 25/32	6 13/16	4 7/8	10 1/4	6 3/8	1 5/32	6 3/16	1 7/8	1 1/2	2 7/8	3 7/32	UKT217	T217	UK217	H2317X	11.2	84.0	61.9	14.5	UKT217C	UKT217CD	113 4 7/16	11.2	UKT217FC	UKT217FCD	142 5 19/32	14.0
	3		73	30	54	198	173	124	260	162	29	157	48	38	73	82				HE2317X	11.2				–	–	– –	–	–	–	– –	–
			2 7/8	1 7/64	2 1/8	7 25/32	6 13/16	4 7/8	10 1/4	6 3/8	1 3/32	6 3/16	1 7/8	1 1/2	2 7/8	3 7/32	UKTX17	TX17	UKX17	H2317X	11.4	96.1	71.5	14.5	UKTX17C	UKTX17CD	123 4 27/32	11.4	–	–	– –	–
	3		73	28	54	198	173	124	260	162	28	157	48	38	73	82				HE2317X	11.4				–	–	– –	–	–	–	– –	–
			4 1/32	1 17/64	2 17/32	9 7/16	8 27/64	5 31/32	11 23/32	7 7/32	1 3/16	6 11/16	2 3/32	1 21/32	3 27/32	3 7/32	UKT317	T317	UK317	H2317X	18.9	133	96.8	13.3	–	–	– –	–	UKT317C	UKT317CD	146 5 3/4	22.4
	3		102	32	64	240	214	152	298	183	30	170	53	42	98	82				HE2317X	18.9				–	–	– –	–	–	–	– –	–
80	–		4 11/32	1 17/64	2 19/32	10 1/32	8 31/32	6 5/16	12 9/32	7 9/16	1 3/16	6 7/8	2 1/4	1 13/16	4 3/16	3 3/8	UKT318	T318	UK318	H2318X	21.7	143	107	13.3	–	–	– –	–	UKT318C	UKT318CD	150 5 29/32	25.9
			110	32	66	255	228	160	312	192	30	175	57	46	106	86																
85	3 1/4		4 11/32	1 3/8	2 27/32	10 5/8	9 29/64	6 1/2	12 11/16	7 3/4	1 7/32	7 3/32	2 1/4	1 13/16	4 3/16	3 17/32	UKT319	T319	UK319	HE2319X	25.2	153	119	13.3	–	–	– –	–	–	–	– –	–
			110	35	72	270	240	165	322	197	31	180	57	46	106	90				H2319X	25.2				–	–	– –	–	UKT319C	UKT319CD	162 6 3/8	29.9
90	3 1/2		4 23/32	1 3/8	2 15/16	11 13/32	10 15/64	6 7/8	13 19/32	8 9/32	1 1/4	7 7/8	2 5/16	1 7/8	4 17/32	3 13/16	UKT320	T320	UK320	HE2320X	30.4	173	141	13.2	–	–	– –	–	–	–	– –	–
			120	35	75	290	260	175	345	210	32	200	59	48	115	97				H2320X	30.4				–	–	– –	–	UKT320C	UKT320CD	174 6 27/32	36.6
100	4		5 1/8	1 1/2	3 5/32	12 19/32	11 7/32	7 9/32	15 5/32	9 1/4	1 1/2	8 15/32	2 9/16	2 1/16	4 29/32	4 1/8	UKT322	T322	UK322	H2322X	39.5	205	180	13.2	–	–	– –	–	UKT322C	UKT322CD	188 7 13/32	46.4
			130	38	80	320	285	185	385	235	38	215	65	52	125	105				HE2322X	39.5				–	–	– –	–	–	–	– –	–
110	–		5 1/2	1 49/64	3 17/32	13 31/32	12 9/32	8 9/32	17	10 1/2	1 21/32	9 1/16	2 3/4	2 3/8	5 1/2	4 13/32	UKT324	T324	UK324	H2324	54.7	207	185	13.5	–	–	– –	–	UKT324C	UKT324CD	196 7 23/32	65.0
			140	45	90	355	320	210	432	267	42	230	70	60	140	112																
115	4 1/2		5 29/32	1 31/32	3 15/16	15 5/32	13 25/32	8 21/32	18 5/16	11 7/32	1 25/32	9 7/16	2 15/16	2 9/16	5 29/32	4 3/4	UKT326	T326	UK326	HE2326	69.1	229	214	13.6	–	–	– –	–	–	–	– –	–
			150	50	100	385	350	220	465	285	45	240	75	65	150	121				H2326	69.1				–	–	– –	–	UKT326C	UKT326CD	214 8 7/16	82.4
125	–		6 3/32	1 31/32	3 15/16	16 11/32	14 61/64	9 1/16	20 9/32	12 13/32	1 31/32	10 1/32	3 5/32	2 3/4	6 5/16	5 5/32	UKT328	T328	UK328	H2328	85.1	253	246	13.6	–	–	– –	–	UKT328C	UKT328CD	222 8 3/4	102
			155	50	100	415	380	230	515	315	50	255	80	70	160	131																

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   B-1/4-28UNF..... 205~210, X05~X09, 305~308
   B-R1/8 ..... 211~217, X10~X17, 309~328
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables.
   (Example of Part No. : UKT206J + H2306X, UK206 + H2306X)
4. As for the triple seal type product (205 is the double seal type product), suffix code L3 (or L2) follows the Part No. of unit or bearing.
   (Example of Part No. : UKT206JL3 + H2306X, UK206L3 + H2306X)
5. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter.
6. Housings of nodular graphite cast iron are also available.

UCTRS
Cylindrical bore (with set screws)
d 25 ~ 35 mm





Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

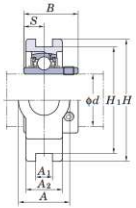
Unit: mm

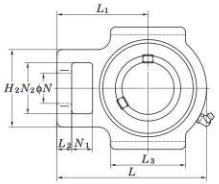
Housing No.	Δ_{A1s}	Δ_{H1s}	X
TRS205~TRS207	+0.2 0	0 −0.5	0.5

Shaft Dia. d mm	inch	Dimensions inch / mm A	A_1	A_2	H	H_1	L	L_1	L_3	N	N_1	B	S	Standard Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
25	7/8													UCTRS205-14	TRS205	UC205-14	14.0	7.85	13.9	0.68
	15/16	1 3/8	1/4	13/16	3 5/32	2 5/8	3 19/32	2 7/32	1 9/16	25/32	25/32	1.343	0.563	UCTRS205-15		UC205-15				0.66
		35	6.35	21	80	66.7	91	56	40	19.84	20	34.1	14.3	UCTRS205		UC205				0.65
	1													UCTRS205-16		UC205-16				0.65
30	1 1/8													UCTRS206-18	TRS206	UC206-18	19.5	11.3	13.9	1.25
		1 3/8	1/4	15/16	4 1/8	3 1/2	4 11/32	2 11/16	2 17/32	3/4	15/16	1.500	0.626	UCTRS206		UC206				1.23
	1 3/16	35	6.35	24	105	88.9	110	68	64	19.05	24	38.1	15.9	UCTRS206-19		UC206-19				1.23
	1 1/4													UCTRS206-20		UC206-20				1.21
35	1 1/4													UCTRS207-20	TRS207	UC207-20	25.7	15.4	13.9	1.35
	1 5/16	1 3/8	1/4	31/32	4 1/8	3 1/2	4 1/2	2 11/16	2 17/32	3/4	15/16	1.689	0.689	UCTRS207-21		UC207-21				1.31
	1 3/8	35	6.35	25	105	88.9	114	68	64	19.05	24	42.9	17.5	UCTRS207-22		UC207-22				1.29
														UCTRS207		UC207				1.29
	1 7/16													UCTRS207-23		UC207-23				1.26

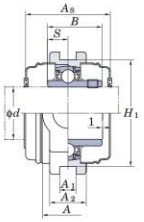
Remarks
1. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 205~207
2. As for the triple seal type product (from 205 is the double seal type products), suffix code L3 (L2) follows the Part No. of unit or bearing.
   (Example of Part No.: UCTRS206JL3, UC206L3)
3. As for the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Housings of nodular graphite cast iron are also available.

UCST-H1S6
Cylindrical bore (with set screws)
d 20 ~ 50 mm





With Pressed Stainless Steel Cover



Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

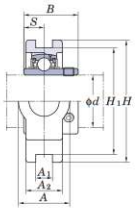
Unit: mm

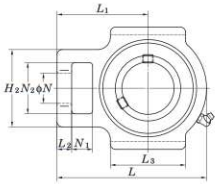
Housing No.	Δ_{A1s}	Δ_{H1s}	X
ST204H1~210H1	+0.2 0	0 −0.5	0.5

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm A	A_1	A_2	H	H_1	H_2	L	L_1	L_2	L_3	N	N_1	N_2	B	S	Unit No.		Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg	With Pressed Stainless Steel Cover Unit No. Open Type	One Side Closed Type	Dimension mm	inch A_s	Mass kg
20	3/4	1 1/4	15/32	29/32	3 1/2	2 63/64	1 13/16	3 1/2	2 5/16	11/32	1 23/32	3/4	23/32	1 1/4	1.220	0.500	UCST204-12H1S6		ST204H1	UC204-12S6	10.9	5.35	13.2	0.73	–	–	–	–	–
		32	12	23	89	76	46	89	59	9	44	19	18	32	31	12.7	UCST204H1S6			UC204S6					UCST204H1CS6	UCST204H1CDS6	45	1 25/32	0.73
25	7/8																UCST205-14H1S6		ST205H1	UC205-14S6	11.9	6.30	13.9	0.79	–	–	–	–	–
	15/16	1 1/4	15/32	31/32	3 1/2	2 63/64	1 13/16	3 21/32	2 3/8	11/32	1 23/32	3/4	23/32	1 1/4	1.343	0.563	UCST205-15H1S6			UC205-15S6					–	–	–	–	–
		32	12	25	89	76	46	93	60	9	44	19	18	32	34.1	14.3	UCST205H1S6			UC205S6					UCST205H1CS6	UCST205H1CDS6	49	1 15/16	0.79
	1																UCST205-16H1S6			UC205-16S6					–	–	–	–	–
30	1 1/8																UCST206-18H1S6		ST206H1	UC206-18S6	16.5	9.05	13.9	1.1	–	–	–	–	–
		1 15/32	15/32	1 1/16	4 1/32	3 1/2	2 1/16	4 3/16	2 5/8	11/32	1 31/32	7/8	23/32	1 15/32	1.500	0.626	UCST206H1S6			UC206S6					UCST206H1CS6	UCST206H1CDS6	53	2 3/32	1.1
	1 3/16	37	12	27	102	89	52	106	67	9	50	22	18	37	38.1	15.9	UCST206-19H1S6			UC206-19S6					–	–	–	–	–
	1 1/4																UCST206-20H1S6			UC206-20S6					–	–	–	–	–
35	1 1/4																UCST207-20H1S6		ST207H1	UC207-20S6	21.8	12.3	13.9	1.5	–	–	–	–	–
	1 5/16																UCST207-21H1S6			UC207-21S6					–	–	–	–	–
	1 3/8	1 15/32	15/32	1 7/32	4 1/32	3 1/2	2 7/32	4 11/16	2 15/16	7/16	2 7/32	7/8	23/32	1 15/32	1.689	0.689	UCST207-22H1S6			UC207-22S6					–	–	–	–	–
		37	12	31	102	89	56	119	75	11	56	22	18	37	42.9	17.5	UCST207H1S6			UC207S6					UCST207H1CS6	UCST207H1CDS6	60	2 3/8	1.5
	1 7/16																UCST207-23H1S6			UC207-23S6					–	–	–	–	–
40	1 1/2																UCST208-24H1S6		ST208H1	UC208-24S6	24.8	14.3	14.0	2.0	–	–	–	–	–
	1 9/16	1 15/16	5/8	1 1/4	4 1/2	4 1/64	2 29/32	5 5/16	3 11/32	9/16	2 17/32	1 5/32	25/32	1 15/16	1.937	0.748	UCST208-25H1S6			UC208-254S6					–	–	–	–	–
		49	16	32	114	102	74	135	85	14	64	29	20	49	49.2	19	UCST208H1S6			UC208S6					UCST208H1CS6	UCST208H1CDS6	69	2 23/32	2.0
45	1 5/8																UCST209-26H1S6		ST209H1	UC209-26S6	27.8	16.2	14.0	2.1	–	–	–	–	–
	1 11/16	1 15/16	5/8	1 11/32	4 19/32	4 1/64	2 29/32	5 13/32	3 11/32	9/16	2 19/32	1 5/32	25/32	1 15/16	1.937	0.748	UCST209-27H1S6			UC209-27S6					–	–	–	–	–
	1 3/4	49	16	34	117	102	74	137	85	14	66	29	20	49	49.2	19	UCST209-28H1S6			UC209-28S6					–	–	–	–	–
																	UCST209H1S6			UC209S6					UCST209H1CS6	UCST209H1CDS6	69	2 23/32	2.1
50	1 7/8																UCST210-30H1S6		ST210H1	UC210-30S6	29.8	18.6	14.4	2.3	–	–	–	–	–
	1 15/16	1 15/16	5/8	1 3/8	4 19/32	4 1/64	2 29/32	5 5/8	3 7/16	9/16	2 27/32	1 5/32	25/32	1 15/16	2.031	0.748	UCST210-31H1S6			UC210-31S6					–	–	–	–	–
		49	16	35	117	102	74	143	87	14	72	29	20	49	51.6	19	UCST210H1S6			UC210S6					UCST210H1CS6	UCST210H1CDS6	74	2 29/32	2.3
	2																UCST210-32H1S6			UC210-32S6					–	–	–	–	–

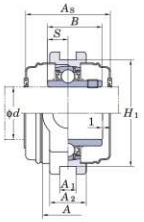
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is B-1/4-28UNFN12.
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UCST-EH1S6
Cylindrical bore (with set screws)
d 20 ~ 50 mm





With Pressed Stainless Steel Cover



Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

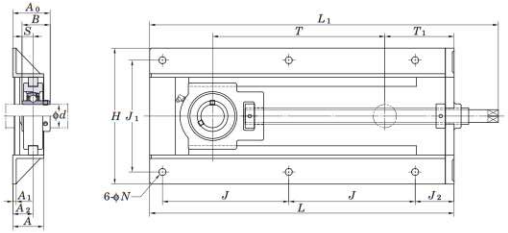
Unit: mm

Housing No.	Δ_{A1s}	Δ_{H1s}	X
ST204EH1~210EH1	+0.2 0	0 −0.5	0.5

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm A	A_1	A_2	H	H_1	H_2	L	L_1	L_2	L_3	N	N_1	N_2	B	S	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg	With Pressed Stainless Steel Cover Unit No. Open Type	One Side Closed Type	Dimension mm	inch A_s	Mass kg
20	3/4	1 1/4	17/32	29/32	3 1/2	3	1 13/16	3 1/2	2 5/16	11/32	1 23/32	3/4	23/32	1 1/4	1.220	0.500	UCST204-12EH1S6	ST204EH1	UC204-12S6	10.9	5.35	13.2	0.73	–	–	–	–	–
		32	13.5	23	89	76.2	46	89	59	9	44	19	18	32	31	12.7	UCST204EH1S6		UC204S6					UCST204EH1CS6	UCST204EH1CDS6	45	1 25/32	0.73
25	7/8	1 1/4	17/32	31/32	3 1/2	3	1 13/16	3 21/32	2 3/8	11/32	1 23/32	3/4	23/32	1 1/4	1.343	0.563	UCST205-14EH1S6	ST205EH1	UC205-14S6	11.9	6.30	13.9	0.79	–	–	–	–	–
	15/16																UCST205-15EH1S6		UC205-15S6					–	–	–	–	–
		32	13.5	25	89	76.2	46	93	60	9	44	19	18	32	34.1	14.3	UCST205EH1S6		UC205S6					UCST205EH1CS6	UCST205EH1CDS6	49	1 15/16	0.79
	1																UCST205-16EH1S6		UC205-16S6					–	–	–	–	–
30	1 1/8	1 15/32	17/32	1 1/16	4 1/32	3 1/2	2 1/16	4 3/16	2 5/8	11/32	1 31/32	7/8	23/32	1 15/32	1.500	0.626	UCST206-18EH1S6	ST206EH1	UC206-18S6	16.5	9.05	13.9	1.1	–	–	–	–	–
																	UCST206EH1S6		UC206S6					UCST206EH1CS6	UCST206EH1CDS6	53	2 3/32	1.1
	1 3/16	37	13.5	27	102	88.9	52	106	67	9	50	22	18	37	38.1	15.9	UCST206-19EH1S6		UC206-19S6					–	–	–	–	–
	1 1/4																UCST206-20EH1S6		UC206-20S6					–	–	–	–	–
35	1 1/4	1 15/32	17/32	1 7/32	4 1/32	3 1/2	2 7/32	4 11/16	2 15/16	7/16	2 7/32	7/8	23/32	1 15/32	1.689	0.689	UCST207-20EH1S6	ST207EH1	UC207-20S6	21.8	12.3	13.9	1.5	–	–	–	–	–
	1 5/16																UCST207-21EH1S6		UC207-21S6					–	–	–	–	–
	1 3/8	37	13.5	31	102	88.9	56	119	75	11	56	22	18	37	42.9	17.5	UCST207-22EH1S6		UC207-22S6					–	–	–	–	–
																	UCST207EH1S6		UC207S6					UCST207EH1CS6	UCST207EH1CDS6	60	2 3/8	1.5
	1 7/16																UCST207-23EH1S6		UC207-23S6					–	–	–	–	–
40	1 1/2	1 15/16	11/6	1 1/4	4 1/2	4	2 29/32	5 5/16	3 11/32	9/16	2 17/32	1 5/32	25/32	1 15/16	1.937	0.748	UCST208-24EH1S6	ST208EH1	UC208-24S6	24.8	14.3	14.0	2.0	–	–	–	–	–
	1 9/16																UCST208-25EH1S6		UC208-254S6					–	–	–	–	–
		49	17.5	32	114	101.6	74	135	85	14	64	29	20	49	49.2	19	UCST208EH1S6		UC208S6					UCST208EH1CS6	UCST208EH1CDS6	69	2 23/32	2.0
45	1 5/8	1 15/16	11/6	1 11/32	4 19/32	4	2 29/32	5 13/32	3 11/32	9/16	2 19/32	1 5/32	25/32	1 15/16	1.937	0.748	UCST209-26EH1S6	ST209EH1	UC209-26S6	27.8	16.2	14.0	2.1	–	–	–	–	–
	1 11/16																UCST209-27EH1S6		UC209-27S6					–	–	–	–	–
	1 3/4	49	17.5	34	117	101.6	74	137	85	14	66	29	20	49	49.2	19	UCST209-28EH1S6		UC209-28S6					–	–	–	–	–
																	UCST209EH1S6		UC209S6					UCST209EH1CS6	UCST209EH1CDS6	69	2 23/32	2.1
50	1 7/8	1 15/16	11/6	1 3/8	4 19/32	4	2 29/32	5 5/8	3 7/16	9/16	2 27/32	1 5/32	25/32	1 15/16	2.031	0.748	UCST210-30EH1S6	ST210EH1	UC210-30S6	29.8	18.6	14.4	2.3	–	–	–	–	–
	1 15/16																UCST210-31EH1S6		UC210-31S6					–	–	–	–	–
		49	17.5	35	117	101.6	74	143	87	14	72	29	20	49	51.6	19	UCST210EH1S6		UC210S6					UCST210EH1CS6	UCST210EH1CDS6	74	2 29/32	2.3
	2																UCST210-32EH1S6		UC210-32S6					–	–	–	–	–

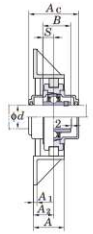
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of the applicable grease fitting is B-1/4-28UNFN12.
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UCTH
Cylindrical bore (with set screws)
d 12 ~ 65 mm



With Pressed Steel Cover

With Cast Iron Cover



Variations of tolerance of distance between centers of bolt holes (ΔJ_{1s}, ΔJ_{1c})

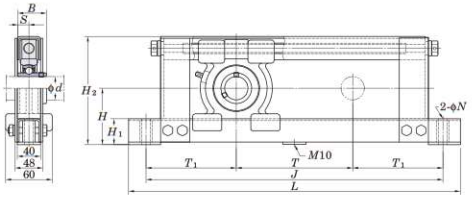
Unit: mm

Nominal unit code	ΔJ_{1s}	ΔJ_{1c}
UCTH201~UCTH213	±0.5	±0.5

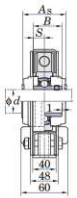
Shaft Dia. mm d	Shaft Dia. inch d	Dimensions inch / mm H	L	L_1	A	J	J_1	J_2	N	T	T_1	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Standard Unit No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	One Side Closed Type	Dimension mm inch A_s	Mass kg	With Cast Iron Cover Unit No. Open Type	One Side Closed Type	Dimension mm inch A_c	Mass kg
12																		UCTH201-150	UC201	6.7				UCTH201C-150	UCTH201CD-150	45 1 25/32	6.7	–	–	– –	–
	1/2																	UCTH201-8-150	UC201-8	6.7				–	–	– –	–	–	–	– –	–
15		7 7/8	12 17/32	14 13/16	1 31/32	4 39/64	6 1/16	2 9/16	15/32	6 1/32	3 15/32	1/4	1 7/64	1 13/16	1.220	0.500	3/8	UCTH202-150	UC202	6.7	12.8	6.65	13.2	UCTH202C-150	UCTH202CD-150	45 1 25/32	6.7	–	–	– –	–
	5/8	200	318	376	50	117	154	65	12	153	88	6	28	46.3	31	12.7	M10	UCTH202-10-150	UC202-10	6.7				–	–	– –	–	–	–	– –	–
17																		UCTH203-150	UC203	6.7				UCTH203C-150	UCTH203CD-150	45 1 25/32	6.7	–	–	– –	–
	3/4																	UCTH204-12-150	UC204-12	6.7				–	–	– –	–	–	–	– –	–
20																		UCTH204-150	UC204	6.7				UCTH204C-150	UCTH204CD-150	45 1 25/32	6.7	UCTH204FC-150	UCTH204FCD-150	62 2 7/16	7.0
25	7/8																	UCTH205-14-150	UC205-14	6.7				–	–	– –	–	–	–	– –	–
	15/16	7 7/8	12 17/32	14 27/32	1 31/32	4 39/64	6 1/16	2 9/16	15/32	5 31/32	3 15/32	1/4	1 7/64	1 7/8	1.343	0.563	3/8	UCTH205-15-150	UC205-15	6.7	14.0	7.85	13.9	–	–	– –	–	–	–	– –	–
		200	318	377	50	117	154	65	12	152	88	6	28	47.8	34.1	14.3	M10	UCTH205-150	UC205	6.7				UCTH205C-150	UCTH205CD-150	49 1 15/16	6.7	UCTH205FC-150	UCTH205FCD-150	66 2 19/32	7.1
	1																	UCTH205-16-150	UC205-16	6.7				–	–	– –	–	–	–	– –	–
30	1 1/8																	UCTH206-18-150	UC206-18	8.0				–	–	– –	–	–	–	– –	–
		8 3/8	13 7/32	16 1/32	1 31/32	4 31/32	6 17/32	2 9/16	15/32	5 5/8	3 15/16	1/4	1 17/64	2 1/8	1.500	0.626	3/8	UCTH206-150	UC206	8.0	19.5	11.3	13.9	UCTH206C-150	UCTH206CD-150	53 2 3/32	8.0	UCTH206FC-150	UCTH206FCD-150	70 2 3/4	8.5
	1 3/16	213	335	407	50	126	166	65	12	143	100	6	32	54.2	38.1	15.9	M10	UCTH206-19-150	UC206-19	8.0				–	–	– –	–	–	–	– –	–
	1 1/4																	UCTH206-20-150	UC206-20	8.0				–	–	– –	–	–	–	– –	–
35	1 1/4																	UCTH207-20-230	UC207-20	10.5				–	–	– –	–	–	–	– –	–
	1 5/16																	UCTH207-21-230	UC207-21	10.5				–	–	– –	–	–	–	– –	–
	1 3/8	8 3/8	16 11/16	19 11/16	1 31/32	6 13/16	6 17/32	2 9/16	15/32	8 5/8	4 7/32	1/4	1 17/64	2 1/4	1.689	0.689	3/8	UCTH207-22-230	UC207-22	10.5	25.7	15.4	13.9	–	–	– –	–	–	–	– –	–
		213	430	500	50	173	166	65	12	219	107	6	32	57.4	42.9	17.5	M10	UCTH207-230	UC207	10.5				UCTH207C-230	UCTH207CD-230	60 2 3/8	10.5	UCTH207FC-230	UCTH207FCD-230	78 3 1/16	11.2
	1 7/16																	UCTH207-23-230	UC207-23	10.5				–	–	– –	–	–	–	– –	–
40	1 1/2																	UCTH208-24-300	UC208-24	12.5				–	–	– –	–	–	–	– –	–
	1 9/16	9 7/32	20 15/32	23 19/32	1 31/32	8 35/64	7 9/16	2 5/8	15/32	11 21/32	4 11/16	1/4	1 3/8	2 9/16	1.937	0.748	3/8	UCTH208-25-300	UC208-25	12.5	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
		234	523	599	50	217	192	67	12	296	119	6	35	65.2	49.2	19	M10	UCTH208-300	UC208	12.5				UCTH208C-300	UCTH208CD-300	69 2 23/32	12.5	UCTH208FC-300	UCTH208FCD-300	86 3 3/8	13.3
45	1 5/8																	UCTH209-26-300	UC209-26	12.4				–	–	– –	–	–	–	– –	–
	1 11/16	9 7/32	20 15/32	23 17/32	1 31/32	8 35/64	7 9/16	2 5/8	15/32	11 11/16	4 21/32	1/4	1 3/8	2 9/16	1.937	0.748	3/8	UCTH209-27-300	UC209-27	12.4	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
	1 3/4	234	523	598	50	217	192	67	12	297	118	6	35	65.2	49.2	19	M10	UCTH209-28-300	UC209-28	12.4				–	–	– –	–	–	–	– –	–
																		UCTH209-300	UC209	12.4				UCTH209C-300	UCTH209CD-300	69 2 23/32	12.4	UCTH209FC-300	UCTH209FCD-300	88 3 15/32	13.2
50	1 7/8																	UCTH210-30-300	UC210-30	12.6				–	–	– –	–	–	–	– –	–
	1 15/16	9 7/32	20 1/4	23 3/4	1 31/32	8 5/8	7 9/16	2 5/8	19/32	11 21/32	4 3/4	1/4	1 3/8	2 21/32	2.031	0.748	7/16	UCTH210-31-300	UC210-31	12.6	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
		234	527	603	50	219	192	67	15	296	121	6	35	67.6	51.6	19	M12	UCTH210-300	UC210	12.6				UCTH210C-300	UCTH210CD-300	74 2 29/32	12.6	UCTH210FC-300	UCTH210FCD-300	97 3 13/16	13.6
	2																	UCTH210-32-300	UC210-32	12.6				–	–	– –	–	–	–	– –	–
55	2																	UCTH211-32-300	UC211-32	20.1				–	–	– –	–	–	–	– –	–
	2 1/8	11 31/32	21 15/32	24 3/4	2 9/16	9 1/16	9 7/16	2 15/32	19/32	11 15/32	5 9/16	1/4	1 1/2	2 13/16	2.189	0.874	7/16	UCTH211-34-300	UC211-34	20.1	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
		304	545	629	65	230	240	63	15	291	141	6	38	71.4	55.6	22.2	M12	UCTH211-300	UC211	20.1				UCTH211C-300	UCTH211CD-300	76 3	20.1	UCTH211FC-300	UCTH211FCD-300	99 3 29/32	21.3
	2 3/16																	UCTH211-35-300	UC211-35	20.1				–	–	– –	–	–	–	– –	–
60	2 1/4																	UCTH212-36-300	UC212-36	21.4				–	–	– –	–	–	–	– –	–
		11 31/32	22 15/32	25 5/8	2 9/16	9 9/16	9 7/16	2 15/32	19/32	11 11/32	6 1/16	1/4	1 1/2	3 1/16	2.563	1.000	7/16	UCTH212-300	UC212	21.4	52.4	36.2	14.4	UCTH212C-300	UCTH212CD-300	89 3 1/2	21.4	UCTH212FC-300	UCTH212FCD-300	114 4 1/2	21.9
	2 3/8	304	571	651	65	243	240	63	15	288	154	6	38	77.7	65.1	25.4	M12	UCTH212-38-300	UC212-38	21.4				–	–	– –	–	–	–	– –	–
	2 7/16																	UCTH212-39-300	UC212-39	21.4				–	–	– –	–	–	–	– –	–
65	2 1/2	13 1/16	23 31/32	28 1/16	2 9/16	10 15/64	10 15/64	2 5/8	19/32	11 13/16	7	1/4	1 11/16	3 1/4	2.563	1.000	7/16	UCTH213-40-300	UC213-40	25.5	57.2	40.1	14.4	–	–	– –	–	–	–	– –	–
		332	609	713	65	260	260	67	15	300	178	6	43	82.7	65.1	25.4	M12	UCTH213-300	UC213	25.5				UCTH213C-300	UCTH213CD-300	89 3 1/2	25.5	UCTH213FC-300	UCTH213FCD-300	114 4 1/2	27.2

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   B-1/4-28UNF..... 201~210
   B-R1/8 ..... 211~213
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (or L2) follows the Part No. of unit or bearing.
   (Example of Part No. : UCTH206JL3-150, UC206L3)
4. If heavy load ($P_r/C_r > 0.12$), vibration, or impact occurs, contact with FYH.
5. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
6. Tapered bore (with adapter) type products are also available.
   (Example of Part No. : UKTH205J-150 + H2305X, UK205 + H2305X)

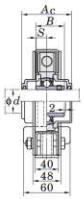
UCTL
Cylindrical bore (with set screws)
d 20 ~ 45 mm



With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_0) and variations of tolerance of distance between centers of bolt holes (ΔJ_0)

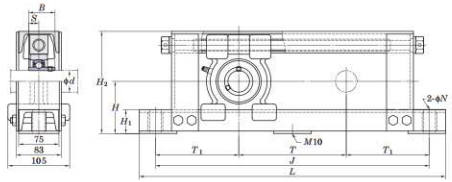
Unit: mm

Nominal unit code	ΔH_0	ΔJ_0
UCTL204~207	±2	±0.5
UCTL208, 209		±0.8

Shaft Dia. mm	Dimensions mm										Bolt Size mm	Standard Unit No.	Standard Bearing No.	Standard Mass	Basic Load Ratings kN		Factor	With Pressed Steel Cover Unit No. Open Type	With Pressed Steel Cover Unit No. One Side Closed Type	With Pressed Steel Cover Dimension mm	With Pressed Steel Cover Mass	With Cast Iron Cover Unit No. Open Type	With Cast Iron Cover Unit No. One Side Closed Type	With Cast Iron Cover Dimension mm	With Cast Iron Cover Mass
d	H	H_1	H_2	L	J	N	T	T_1	B	S				kg	C_r	C_{0r}	f_0			A_s	kg			A_c	kg
20	77	44	146	430	370	15	100	135	31	12.7	M12	**UCTL204-100**	UC204	6.0	12.8	6.65	13.2	UCTL204C-100	UCTL204CD-100	45	6.0	–	–	–	–
	77	44	146	530	470	15	200	135	31	12.7	M12	**UCTL204-200**	UC204	7.0	12.8	6.65	13.2	UCTL204C-200	UCTL204CD-200	45	7.0	–	–	–	–
	77	44	146	630	570	15	300	135	31	12.7	M12	**UCTL204-300**	UC204	7.5	12.8	6.65	13.2	UCTL204C-300	UCTL204CD-300	45	7.5	–	–	–	–
	77	44	146	730	670	15	400	135	31	12.7	M12	**UCTL204-400**	UC204	8.0	12.8	6.65	13.2	UCTL204C-400	UCTL204CD-400	45	8.0	–	–	–	–
25	82	44	156	440	380	15	100	140	34.1	14.3	M12	**UCTL205-100**	UC205	7.0	14.0	7.85	13.9	UCTL205C-100	UCTL205CD-100	49	7.0	–	–	–	–
	82	44	156	540	480	15	200	140	34.1	14.3	M12	**UCTL205-200**	UC205	7.5	14.0	7.85	13.9	UCTL205C-200	UCTL205CD-200	49	7.5	–	–	–	–
	82	44	156	640	580	15	300	140	34.1	14.3	M12	**UCTL205-300**	UC205	8.0	14.0	7.85	13.9	UCTL205C-300	UCTL205CD-300	49	8.0	–	–	–	–
	82	44	156	740	680	15	400	140	34.1	14.3	M12	**UCTL205-400**	UC205	9.0	14.0	7.85	13.9	UCTL205C-400	UCTL205CD-400	49	9.0	–	–	–	–
30	87	44	166	450	390	15	100	145	38.1	15.9	M12	**UCTL206-100**	UC206	7.0	19.5	11.3	13.9	UCTL206C-100	UCTL206CD-100	53	7.0	UCTL206FC-100	UCTL206FCD-100	70	7.5
	87	44	166	550	490	15	200	145	38.1	15.9	M12	**UCTL206-200**	UC206	8.0	19.5	11.3	13.9	UCTL206C-200	UCTL206CD-200	53	8.0	UCTL206FC-200	UCTL206FCD-200	70	8.5
	87	44	166	650	590	15	300	145	38.1	15.9	M12	**UCTL206-300**	UC206	9.0	19.5	11.3	13.9	UCTL206C-300	UCTL206CD-300	53	9.0	UCTL206FC-300	UCTL206FCD-300	70	9.5
	87	44	166	750	690	15	400	145	38.1	15.9	M12	**UCTL206-400**	UC206	9.5	19.5	11.3	13.9	UCTL206C-400	UCTL206CD-400	53	9.5	UCTL206FC-400	UCTL206FCD-400	70	10
35	92	44	176	460	400	15	100	150	42.9	17.5	M12	**UCTL207-100**	UC207	8.0	25.7	15.4	13.9	UCTL207C-100	UCTL207CD-100	60	8.0	UCTL207FC-100	UCTL207FCD-100	78	9.0
	92	44	176	560	500	15	200	150	42.9	17.5	M12	**UCTL207-200**	UC207	8.5	25.7	15.4	13.9	UCTL207C-200	UCTL207CD-200	60	8.5	UCTL207FC-200	UCTL207FCD-200	78	9.5
	92	44	176	660	600	15	300	150	42.9	17.5	M12	**UCTL207-300**	UC207	9.0	25.7	15.4	13.9	UCTL207C-300	UCTL207CD-300	60	9.0	UCTL207FC-300	UCTL207FCD-300	78	10
	92	44	176	760	700	15	400	150	42.9	17.5	M12	**UCTL207-400**	UC207	10	25.7	15.4	13.9	UCTL207C-400	UCTL207CD-400	60	10	UCTL207FC-400	UCTL207FCD-400	78	11
40	97	44	186	470	410	15	100	155	49.2	19	M12	**UCTL208-100**	UC208	8.5	29.1	17.8	14.0	UCTL208C-100	UCTL208CD-100	69	8.5	UCTL208FC-100	UCTL208FCD-100	86	9.5
	97	44	186	570	510	15	200	155	49.2	19	M12	**UCTL208-200**	UC208	9.0	29.1	17.8	14.0	UCTL208C-200	UCTL208CD-200	69	9.0	UCTL208FC-200	UCTL208FCD-200	86	10
	97	44	186	670	610	15	300	155	49.2	19	M12	**UCTL208-300**	UC208	10	29.1	17.8	14.0	UCTL208C-300	UCTL208CD-300	69	10	UCTL208FC-300	UCTL208FCD-300	86	11
	97	44	186	770	710	15	400	155	49.2	19	M12	**UCTL208-400**	UC208	10.5	29.1	17.8	14.0	UCTL208C-400	UCTL208CD-400	69	10.5	UCTL208FC-400	UCTL208FCD-400	86	11.5
45	100	44	192	480	420	15	100	160	49.2	19	M12	**UCTL209-100**	UC209	9.0	34.1	21.3	14.0	UCTL209C-100	UCTL209CD-100	69	9.0	UCTL209FC-100	UCTL209FCD-100	88	10
	100	44	192	580	520	15	200	160	49.2	19	M12	**UCTL209-200**	UC209	9.5	34.1	21.3	14.0	UCTL209C-200	UCTL209CD-200	69	9.5	UCTL209FC-200	UCTL209FCD-200	88	10.5
	100	44	192	680	620	15	300	160	49.2	19	M12	**UCTL209-300**	UC209	10.5	34.1	21.3	14.0	UCTL209C-300	UCTL209CD-300	69	10.5	UCTL209FC-300	UCTL209FCD-300	88	11.5
	100	44	192	780	720	15	400	160	49.2	19	M12	**UCTL209-400**	UC209	11	34.1	21.3	14.0	UCTL209C-400	UCTL209CD-400	69	11	UCTL209FC-400	UCTL209FCD-400	88	12

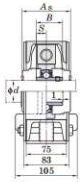
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings is C-1/4-28UNF.
3. As for the triple seal type product (204 and 205 are the double seal type products), suffix code L3 (or L2) follows the Part No. of unit or bearing. (Example of Part No.: UCTL206JL3-100, UC206L3)
4. The unit should be mounted so that load is applied to the frame mounting surface vertically and downward.
5. If heavy load (P_r /C_r > 0.12), vibration, or impact occurs, contact with FYH.
6. Tapered bore (with adapter) type bearing units are also available. (Example of Part No.: UKTL206J-100 + H2306X, UK206 + H2306X)
7. If frame parts need to be corrosion resistant, contact with FYH.
8. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UCTU
Cylindrical bore (with set screws)
d 40 ~ 80 mm

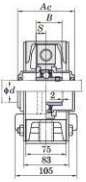


UCTU200

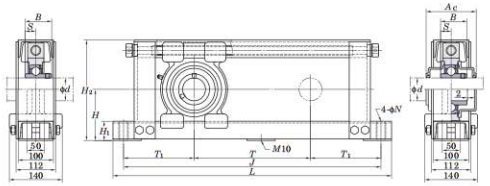
With Pressed Steel Cover



With Cast Iron Cover



With Cast Iron Cover



UCTU300

Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_0) and variations of tolerance of distance between centers of bolt holes (ΔJ_0)

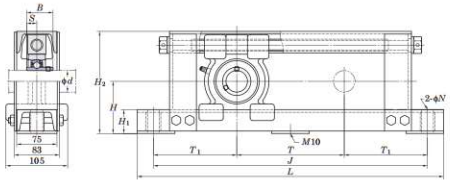
Unit: mm

Nominal unit code	ΔH_0	ΔJ_0
UCTU208~212 UCTU313~315	±2	±0.8
UCTU316~318		±1.2

Shaft Dia. mm d	Dimensions mm H	H_1	H_2	L	J	N	T	T_1	B	S	Bolt Size mm	Standard Unit No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open Type	One Side Closed Type	Dimension mm A_s	Mass kg	With Cast Iron Cover Unit No. Open Type	One Side Closed Type	Dimension mm A_c	Mass kg
40	97	44	190	870	810	22	500	155	49.2	19	M18	**UCTU208-500**	UC208	21	29.1	17.8	14.0	UCTU208C-500	UCTU208CD-500	69	21	UCTU208FC-500	UCTU208FCD-500	86	22
	97	44	190	970	910	22	600	155	49.2	19	M18	**UCTU208-600**	UC208	22	29.1	17.8	14.0	UCTU208C-600	UCTU208CD-600	69	22	UCTU208FC-600	UCTU208FCD-600	86	23
	97	44	190	1,070	1,010	22	700	155	49.2	19	M18	**UCTU208-700**	UC208	24	29.1	17.8	14.0	UCTU208C-700	UCTU208CD-700	69	24	UCTU208FC-700	UCTU208FCD-700	86	25
	97	44	190	1,170	1,110	22	800	155	49.2	19	M18	**UCTU208-800**	UC208	26	29.1	17.8	14.0	UCTU208C-800	UCTU208CD-800	69	26	UCTU208FC-800	UCTU208FCD-800	86	27
	97	44	190	1,270	1,210	22	900	155	49.2	19	M18	**UCTU208-900**	UC208	28	29.1	17.8	14.0	UCTU208C-900	UCTU208CD-900	69	28	UCTU208FC-900	UCTU208FCD-900	86	29
45	102	44	200	880	820	22	500	160	49.2	19	M18	**UCTU209-500**	UC209	22	34.1	21.3	14.0	UCTU209C-500	UCTU209CD-500	69	22	UCTU209FC-500	UCTU209FCD-500	88	23
	102	44	200	980	920	22	600	160	49.2	19	M18	**UCTU209-600**	UC209	24	34.1	21.3	14.0	UCTU209C-600	UCTU209CD-600	69	24	UCTU209FC-600	UCTU209FCD-600	88	25
	102	44	200	1,080	1,020	22	700	160	49.2	19	M18	**UCTU209-700**	UC209	25	34.1	21.3	14.0	UCTU209C-700	UCTU209CD-700	69	25	UCTU209FC-700	UCTU209FCD-700	88	26
	102	44	200	1,180	1,120	22	800	160	49.2	19	M18	**UCTU209-800**	UC209	27	34.1	21.3	14.0	UCTU209C-800	UCTU209CD-800	69	27	UCTU209FC-800	UCTU209FCD-800	88	28
	102	44	200	1,280	1,220	22	900	160	49.2	19	M18	**UCTU209-900**	UC209	29	34.1	21.3	14.0	UCTU209C-900	UCTU209CD-900	69	29	UCTU209FC-900	UCTU209FCD-900	88	30
50	107	44	210	890	830	22	500	165	51.6	19	M18	**UCTU210-500**	UC210	23	35.1	23.3	14.4	UCTU210C-500	UCTU210CD-500	74	23	UCTU210FC-500	UCTU210FCD-500	97	24
	107	44	210	990	930	22	600	165	51.6	19	M18	**UCTU210-600**	UC210	25	35.1	23.3	14.4	UCTU210C-600	UCTU210CD-600	74	25	UCTU210FC-600	UCTU210FCD-600	97	26
	107	44	210	1,090	1,030	22	700	165	51.6	19	M18	**UCTU210-700**	UC210	27	35.1	23.3	14.4	UCTU210C-700	UCTU210CD-700	74	27	UCTU210FC-700	UCTU210FCD-700	97	28
	107	44	210	1,190	1,130	22	800	165	51.6	19	M18	**UCTU210-800**	UC210	28	35.1	23.3	14.4	UCTU210C-800	UCTU210CD-800	74	28	UCTU210FC-800	UCTU210FCD-800	97	29
	107	44	210	1,290	1,230	22	900	165	51.6	19	M18	**UCTU210-900**	UC210	30	35.1	23.3	14.4	UCTU210C-900	UCTU210CD-900	74	30	UCTU210FC-900	UCTU210FCD-900	97	31
55	115	44	230	910	850	22	500	175	55.6	22.2	M18	**UCTU211-500**	UC211	25	43.4	29.4	14.4	UCTU211C-500	UCTU211CD-500	76	25	UCTU211FC-500	UCTU211FCD-500	99	26
	115	44	230	1,010	950	22	600	175	55.6	22.2	M18	**UCTU211-600**	UC211	27	43.4	29.4	14.4	UCTU211C-600	UCTU211CD-600	76	27	UCTU211FC-600	UCTU211FCD-600	99	28
	115	44	230	1,110	1,050	22	700	175	55.6	22.2	M18	**UCTU211-700**	UC211	28	43.4	29.4	14.4	UCTU211C-700	UCTU211CD-700	76	28	UCTU211FC-700	UCTU211FCD-700	99	29
	115	44	230	1,210	1,150	22	800	175	55.6	22.2	M18	**UCTU211-800**	UC211	30	43.4	29.4	14.4	UCTU211C-800	UCTU211CD-800	76	30	UCTU211FC-800	UCTU211FCD-800	99	31
	115	44	230	1,310	1,250	22	900	175	55.6	22.2	M18	**UCTU211-900**	UC211	32	43.4	29.4	14.4	UCTU211C-900	UCTU211CD-900	76	32	UCTU211FC-900	UCTU211FCD-900	99	33
60	120	44	240	920	860	22	500	180	65.1	25.4	M18	**UCTU212-500**	UC212	26	52.4	36.2	14.4	UCTU212C-500	UCTU212CD-500	89	26	UCTU212FC-500	UCTU212FCD-500	114	28
	120	44	240	1,020	960	22	600	180	65.1	25.4	M18	**UCTU212-600**	UC212	28	52.4	36.2	14.4	UCTU212C-600	UCTU212CD-600	89	28	UCTU212FC-600	UCTU212FCD-600	114	30
	120	44	240	1,120	1,060	22	700	180	65.1	25.4	M18	**UCTU212-700**	UC212	30	52.4	36.2	14.4	UCTU212C-700	UCTU212CD-700	89	30	UCTU212FC-700	UCTU212FCD-700	114	32
	120	44	240	1,220	1,160	22	800	180	65.1	25.4	M18	**UCTU212-800**	UC212	31	52.4	36.2	14.4	UCTU212C-800	UCTU212CD-800	89	31	UCTU212FC-800	UCTU212FCD-800	114	33
	120	44	240	1,320	1,260	22	900	180	65.1	25.4	M18	**UCTU212-900**	UC212	33	52.4	36.2	14.4	UCTU212C-900	UCTU212CD-900	89	33	UCTU212FC-900	UCTU212FCD-900	114	35
65	145	55	285	940	880	22	500	190	75	30	M18	**UCTU313-500**	UC313	40	92.7	59.9	13.2	–	–	–	–	UCTU313C-500	UCTU313CD-500	122	42
	145	55	285	1,040	980	22	600	190	75	30	M18	**UCTU313-600**	UC313	43	92.7	59.9	13.2	–	–	–	–	UCTU313C-600	UCTU313CD-600	122	45
	145	55	285	1,140	1,080	22	700	190	75	30	M18	**UCTU313-700**	UC313	46	92.7	59.9	13.2	–	–	–	–	UCTU313C-700	UCTU313CD-700	122	48
	145	55	285	1,240	1,180	22	800	190	75	30	M18	**UCTU313-800**	UC313	49	92.7	59.9	13.2	–	–	–	–	UCTU313C-800	UCTU313CD-800	122	51
	145	55	285	1,340	1,280	22	900	190	75	30	M18	**UCTU313-900**	UC313	51	92.7	59.9	13.2	–	–	–	–	UCTU313C-900	UCTU313CD-900	122	53
70	150	55	295	960	900	22	500	200	78	33	M18	**UCTU314-500**	UC314	44	104	68.2	13.2	–	–	–	–	UCTU314C-500	UCTU314CD-500	124	46
	150	55	295	1,060	1,000	22	600	200	78	33	M18	**UCTU314-600**	UC314	46	104	68.2	13.2	–	–	–	–	UCTU314C-600	UCTU314CD-600	124	48
	150	55	295	1,160	1,100	22	700	200	78	33	M18	**UCTU314-700**	UC314	48	104	68.2	13.2	–	–	–	–	UCTU314C-700	UCTU314CD-700	124	50
	150	55	295	1,260	1,200	22	800	200	78	33	M18	**UCTU314-800**	UC314	51	104	68.2	13.2	–	–	–	–	UCTU314C-800	UCTU314CD-800	124	53
	150	55	295	1,360	1,300	22	900	200	78	33	M18	**UCTU314-900**	UC314	53	104	68.2	13.2	–	–	–	–	UCTU314C-900	UCTU314CD-900	124	55
75	155	55	305	980	920	22	500	210	82	32	M18	**UCTU315-500**	UC315	54	113	77.2	13.2	–	–	–	–	UCTU315C-500	UCTU315CD-500	134	57
	155	55	305	1,080	1,020	22	600	210	82	32	M18	**UCTU315-600**	UC315	57	113	77.2	13.2	–	–	–	–	UCTU315C-600	UCTU315CD-600	134	60
	155	55	305	1,180	1,120	22	700	210	82	32	M18	**UCTU315-700**	UC315	59	113	77.2	13.2	–	–	–	–	UCTU315C-700	UCTU315CD-700	134	62
	155	55	305	1,280	1,220	22	800	210	82	32	M18	**UCTU315-800**	UC315	61	113	77.2	13.2	–	–	–	–	UCTU315C-800	UCTU315CD-800	134	64
	155	55	305	1,380	1,320	22	900	210	82	32	M18	**UCTU315-900**	UC315	64	113	77.2	13.2	–	–	–	–	UCTU315C-900	UCTU315CD-900	134	67
80	160	55	315	1,000	940	22	500	220	86	34	M18	**UCTU316-500**	UC316	57	123	86.7	13.3	–	–	–	–	UCTU316C-500	UCTU316CD-500	138	60
	160	55	315	1,100	1,040	22	600	220	86	34	M18	**UCTU316-600**	UC316	60	123	86.7	13.3	–	–	–	–	UCTU316C-600	UCTU316CD-600	138	63
	160	55	315	1,200	1,140	22	700	220	86	34	M18	**UCTU316-700**	UC316	62	123	86.7	13.3	–	–	–	–	UCTU316C-700	UCTU316CD-700	138	65
	160	55	315	1,300	1,240	22	800	220	86	34	M18	**UCTU316-800**	UC316	64	123	86.7	13.3	–	–	–	–	UCTU316C-800	UCTU316CD-800	138	67
	160	55	315	1,400	1,340	22	900	220	86	34	M18	**UCTU316-900**	UC316	67	123	86.7	13.3	–	–	–	–	UCTU316C-900	UCTU316CD-900	138	70

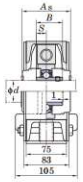
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   C-1/4-28UNF..... 208~210
   C-R1/8..... 211, 212, 313~318
3. As for the triple seal type product, suffix code L3 follows the Part No. of unit or bearing.
   (Example of Part No. : UCTU208JL3-500, UC208L3)
4. The unit should be mounted so that load is applied to the frame mounting surface vertically and downward.
5. If heavy load ($P_r/C_r > 0.12$), vibration, or impact occurs, contact with FYH.
6. Tapered bore (with adapter) type bearing units are also available. (Example of Part No. : UKTU208J-500 + H2308X, UK208 + H2308X)
7. If frame parts need to be corrosion resistant, contact with FYH.
8. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UCTU
Cylindrical bore (with set screws)
d 85 ~ 90 mm

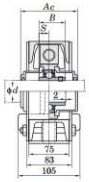


UCTU200

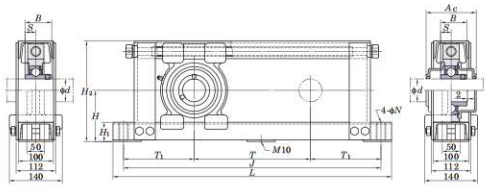
With Pressed Steel Cover



With Cast Iron Cover



With Cast Iron Cover



UCTU300

Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_0) and variations of tolerance of distance between centers of bolt holes (ΔJ_0)

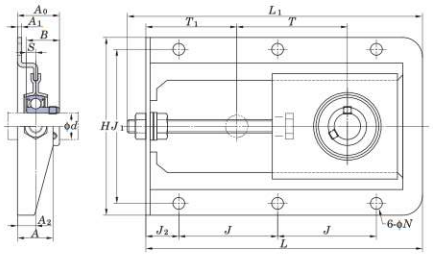
Unit: mm

Nominal unit code	ΔH_0	ΔJ_0
UCTU208~212 UCTU313~315	±2	±0.8
UCTU316~318		±1.2

Shaft Dia. mm	Dimensions mm										Bolt Size mm	Standard Unit No.	Standard Bearing No.	Standard Mass	Basic Load Ratings kN		Factor	With Pressed Steel Cover Unit No. Open Type	With Pressed Steel Cover Unit No. One Side Closed Type	With Pressed Steel Cover Dimension mm	With Pressed Steel Cover Mass	With Cast Iron Cover Unit No. Open Type	With Cast Iron Cover Unit No. One Side Closed Type	With Cast Iron Cover Dimension mm	With Cast Iron Cover Mass
d	H	H_1	H_2	L	J	N	T	T_1	B	S				kg	C_r	C_{0r}	f_0			A_s	kg			A_c	kg
85	165	55	325	1,020	960	22	500	230	96	40	M18	**UCTU317-500**	UC317	62	133	96.8	13.3	–	–	–	–	UCTU317C-500	UCTU317CD-500	146	65
	165	55	325	1,120	1,060	22	600	230	96	40	M18	**UCTU317-600**	UC317	64	133	96.8	13.3	–	–	–	–	UCTU317C-600	UCTU317CD-600	146	67
	165	55	325	1,220	1,160	22	700	230	96	40	M18	**UCTU317-700**	UC317	67	133	96.8	13.3	–	–	–	–	UCTU317C-700	UCTU317CD-700	146	70
	165	55	325	1,320	1,260	22	800	230	96	40	M18	**UCTU317-800**	UC317	69	133	96.8	13.3	–	–	–	–	UCTU317C-800	UCTU317CD-800	146	72
	165	55	325	1,420	1,360	22	900	230	96	40	M18	**UCTU317-900**	UC317	71	133	96.8	13.3	–	–	–	–	UCTU317C-900	UCTU317CD-900	146	74
90	170	55	335	1,050	990	22	500	245	96	40	M18	**UCTU318-500**	UC318	65	143	107	13.3	–	–	–	–	UCTU318C-500	UCTU318CD-500	150	68
	170	55	335	1,150	1,090	22	600	245	96	40	M18	**UCTU318-600**	UC318	67	143	107	13.3	–	–	–	–	UCTU318C-600	UCTU318CD-600	150	70
	170	55	335	1,250	1,190	22	700	245	96	40	M18	**UCTU318-700**	UC318	70	143	107	13.3	–	–	–	–	UCTU318C-700	UCTU318CD-700	150	73
	170	55	335	1,350	1,290	22	800	245	96	40	M18	**UCTU318-800**	UC318	72	143	107	13.3	–	–	–	–	UCTU318C-800	UCTU318CD-800	150	75
	170	55	335	1,450	1,390	22	900	245	96	40	M18	**UCTU318-900**	UC318	74	143	107	13.3	–	–	–	–	UCTU318C-900	UCTU318CD-900	150	77

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   C-1/4-28UNF..... 208~210
   C-R1/8 ..... 211, 212, 313~318
3. As for the triple seal type product, suffix code L3 follows the Part No. of unit or bearing.
   (Example of Part No.: UCTU208JL3-500, UC208L3)
4. The unit should be mounted so that load is applied to the frame mounting surface vertically and downward.
5. If heavy load (P_r /C_r > 0.12), vibration, or impact occurs, contact with FYH.
6. Tapered bore (with adapter) type bearing units are also available. (Example of Part No.: UKTU208J-500 + H2308X, UK208 + H2308X)
7. If frame parts need to be corrosion resistant, contact with FYH.
8. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

SBPTH
Cylindrical bore (with set screws)
d 12 ~ 25 mm



Variations of tolerance of distance between centers of bolt holes (ΔJ_{1s}, ΔJ_{1d})

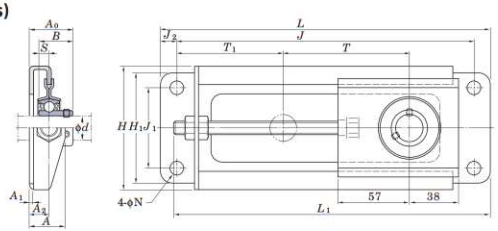
Unit: mm

Nominal unit code	ΔJ_{1s}	ΔJ_{1d}
SBPTH201~SBPTH205	±0.7	±0.7

Shaft Dia. mm d	Dimensions inch / mm H	L	L_1	A	J	J_1	J_2	N	T	T_1	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Unit No.		Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12	5 5/16	8 9/32	8 21/32	1 1/16	2 61/64	4 39/64	31/32	11/32	3 15/32	2 23/32	1/8	35/64	1 3/16	0.866	0.236	5/16	SBPTH201-90		SB201	9.55	4.80	13.2	0.91
	135	210	220	27	75	117	25	9	88	69	3.2	13.9	29.9	22	6	M8							
15	5 5/16	8 9/32	8 21/32	1 1/16	2 61/64	4 39/64	31/32	11/32	3 15/32	2 23/32	1/8	35/64	1 3/16	0.866	0.236	5/16	SBPTH202-90		SB202	9.55	4.80	13.2	0.91
	135	210	220	27	75	117	25	9	88	69	3.2	13.9	29.9	22	6	M8							
17	5 5/16	8 9/32	8 21/32	1 1/16	2 61/64	4 39/64	31/32	11/32	3 15/32	2 23/32	1/8	35/64	1 3/16	0.866	0.236	5/16	SBPTH203-90		SB203	9.55	4.80	13.2	0.91
	135	210	220	27	75	117	25	9	88	69	3.2	13.9	29.9	22	6	M8							
20	5 5/16	8 9/32	8 21/32	1 1/16	2 61/64	4 39/64	31/32	11/32	3 15/32	2 23/32	1/8	35/64	1 1/4	0.984	0.276	5/16	SBPTH204-90		SB204	12.8	6.65	13.2	0.91
	135	210	220	27	75	117	25	9	88	69	3.2	13.9	31.9	25	7	M8							
25	5 5/16	8 9/32	8 21/32	1 1/16	2 61/64	4 39/64	31/32	11/32	3 15/32	2 23/32	1/8	35/64	1 5/16	1.063	0.295	5/16	SBPTH205-90		SB205	14.0	7.85	13.9	0.91
	135	210	220	27	75	117	25	9	88	69	3.2	13.9	33.4	27	7.5	M8							

Remarks 1. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
2. If heavy load ($P_r/C_r > 0.12$), vibration, or impact occurs, contact with FYH.

SBNPTH
Cylindrical bore (with set screws)
d 12 ~ 25 mm



Variations of tolerance of distance between centers of bolt holes (ΔJ_{16}, ΔJ_{1a})

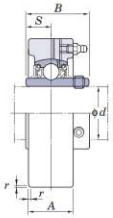
Unit: mm

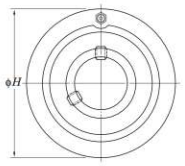
Nominal unit code	ΔJ_{16}	ΔJ_{1a}
SBNPTH201~SBNPTH205	±0.7	±0.7

Shaft Dia. mm d	Dimensions inch / mm H	H_1	L	L_1	A	J	J_1	J_2	N	T	T_1	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Unit No.		Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12	3 15/16	3 17/32	10 1/4	9 11/16	1 1/16	9 1/4	2 9/16	1/2	7/16	3 15/16	3 9/32	1/8	19/32	1 7/32	0.866	0.236	5/16	SBNPTH201-100		SB201	9.55	4.80	13.2	0.93
	100	90	260	246	27	235	65	12.5	11	100	83.5	3.2	15	31	22	6	M8							
15	3 15/16	3 17/32	10 1/4	9 11/16	1 1/16	9 1/4	2 9/16	1/2	7/16	3 15/16	3 9/32	1/8	19/32	1 7/32	0.866	0.236	5/16	SBNPTH202-100		SB202	9.55	4.80	13.2	0.93
	100	90	260	246	27	235	65	12.5	11	100	83.5	3.2	15	31	22	6	M8							
17	3 15/16	3 17/32	10 1/4	9 11/16	1 1/16	9 1/4	2 9/16	1/2	7/16	3 15/16	3 9/32	1/8	19/32	1 7/32	0.866	0.236	5/16	SBNPTH203-100		SB203	9.55	4.80	13.2	0.93
	100	90	260	246	27	235	65	12.5	11	100	83.5	3.2	15	31	22	6	M8							
20	3 15/16	3 17/32	10 1/4	9 11/16	1 1/16	9 1/4	2 9/16	1/2	7/16	3 15/16	3 9/32	1/8	19/32	1 5/16	0.984	0.276	5/16	SBNPTH204-100		SB204	12.8	6.65	13.2	0.93
	100	90	260	246	27	235	65	12.5	11	100	83.5	3.2	15	33	25	7	M8							
25	3 15/16	3 17/32	10 1/4	9 11/16	1 1/16	9 1/4	2 9/16	1/2	7/16	3 15/16	3 9/32	1/8	19/32	1 11/32	1.063	0.295	5/16	SBNPTH205-100		SB205	14.0	7.85	13.9	0.93
	100	90	260	246	27	235	65	12.5	11	100	83.5	3.2	15	34.5	27	7.5	M8							

Remarks 1. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
2. If heavy load ($P_r/C_r > 0.12$), vibration, or impact occurs, contact with FYH.

UCC
Cylindrical bore (with set screws)
d 12 ~ (45) mm





Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	A	r	B	S	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12							UCC201		UC201				0.52
	1/2						UCC201-8		UC201-8				
15		2.835	25/32	0.06	1.220	0.500	UCC202		UC202				0.50
	5/8	72	20	1.5	31	12.7	UCC202-10	C204	UC202-10	12.8	6.65	13.2	
17							UCC203		UC203				0.49
	3/4						UCC204-12		UC204-12				0.47
20							UCC204		UC204				
	7/8						UCC205-14		UC205-14				
	15/16	3.150	55/64	0.06	1.343	0.563	UCC205-15	C205	UC205-15	14.0	7.85	13.9	0.64
		80	22	1.5	34.1	14.3	UCC205		UC205				
25	1						UCC205-16		UC205-16				
		3.543	1 1/16	0.06	1.500	0.626	UCCX05	CX05	UCX05	19.5	11.3	13.9	1.0
	1	90	27	1.5	38.1	15.9	UCCX05-16		UCX05-16				
		3.543	1 1/32	0.08	1.496	0.591	UCC305	C305	UC305	21.2	10.9	12.6	1.5
	1	90	26	2	38	15	UCC305-16		UC305-16				
	1 1/8						UCC206-18		UC206-18				
		3.346	1 1/16	0.06	1.500	0.626	UCC206	C206	UC206	19.5	11.3	13.9	0.81
	1 3/16	85	27	1.5	38.1	15.9	UCC206-19		UC206-19				
	1 1/4						UCC206-20		UC206-20				
30							UCCX06		UCX06				
	1 3/16	3.937	1 3/16	0.08	1.689	0.689	UCCX06-19	CX06	UCX06-19	25.7	15.4	13.9	1.3
	1 1/4	100	30	2	42.9	17.5	UCCX06-20		UCX06-20				
	–	3.937	1 7/64	0.08	1.693	0.669	UCC306	C306	UC306	26.7	15.0	13.3	1.7
	1 1/4						UCC207-20		UC207-20				
	1 5/16	3.543	1 7/64	0.08	1.689	0.689	UCC207-21		UC207-21				
	1 3/8	90	28	2	42.9	17.5	UCC207-22	C207	UC207-22	25.7	15.4	13.9	0.93
							UCC207		UC207				
35	1 7/16						UCC207-23		UC207-23				
	1 3/8						UCCX07-22		UCX07-22				
		4.331	1 11/32	0.08	1.937	0.748	UCCX07	CX07	UCX07	29.1	17.8	14.0	1.7
	1 7/16	110	34	2	49.2	19	UCCX07-23		UCX07-23				
	–	4.331	1 17/64	0.12	1.890	0.748	UCC307	C307	UC307	33.4	19.3	13.2	2.2
	1 1/2						UCC208-24		UC208-24				
	1 9/16	3.937	1 3/16	0.08	1.937	0.748	UCC208-25	C208	UC208-25	29.1	17.8	14.0	1.2
		100	30	2	49.2	19	UCC208		UC208				
40	1 1/2	4.724	1 1/2	0.08	1.937	0.748	UCCX08-24	CX08	UCX08-24	34.1	21.3	14.0	2.3
		120	38	2	49.2	19	UCCX08		UCX08				
	1 1/2	4.724	1 11/32	0.12	2.047	0.748	UCC308-24	C308	UC308-24	40.7	24.0	13.2	2.2
		120	34	3	52	19	UCC308		UC308				
	1 5/8						UCC209-26		UC209-26				
	1 11/16	4.331	1 7/32	0.08	1.937	0.748	UCC209-27	C209	UC209-27	34.1	21.3	14.0	1.5
45	1 3/4	110	31	2	49.2	19	UCC209-28		UC209-28				
							UCC209		UC209				

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~213, X05~X12, 305~308
   A-R1/8 ..... 309~328
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No.: UCC206JL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

ROYSE rodamientos y servicios desde 1979

d (45) ~ 85 mm

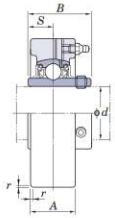
Variations of tolerance of outside diameter (Δ_{Hs}), variations of tolerance of width (Δ_{As}), and tolerance of circumferential runout of outside diameter (Y)

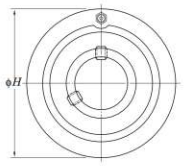
Unit: mm

Housing No.			Δ_{Hs}	Δ_{As}	Y
C204~C205			0 −0.030	±0.2	0.2
C206~C210	CX05~CX08	C305~C308	0 −0.035		
	CX09~CX10	C309~C310	0 −0.040	±0.3	0.3
C211~C213	CX11~CX12	C311~C314			
		C315~C318	0 −0.046		0.4
		C319			
		C320~C322	0 −0.052		
		C324~C328	0 −0.057		

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	A	r	B	S	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
	1 11/16	4.724	1 1/2	0.08	2.031	0.748	UCCX09-27		UCX09-27				
45	1 3/4	120	38	2	51.6	19	UCCX09-28	CX09	UCX09-28	35.1	23.3	14.4	2.3
							UCCX09		UCX09				
	1 3/4	5.118	1 1/2	0.12	2.244	0.866	UCC309-28	C309	UC309-28	48.9	29.5	13.3	2.8
		130	38	3	57	22	UCC309		UC309				
	1 7/8						UCC210-30		UC210-30				
	1 15/16	4.724	1 19/64	0.08	2.031	0.748	UCC210-31	C210	UC210-31	35.1	23.3	14.4	2.0
		120	33	2	51.6	19	UCC210		UC210				
	2						UCC210-32		UC210-32				
50	1 15/16						UCCX10-31		UCX10-31				
		5.118	1 37/64	0.1	2.189	0.874	UCCX10	CX10	UCX10	43.4	29.4	14.4	2.8
	2	130	40	2.5	55.6	22.2	UCCX10-32		UCX10-32				
	–	5.512	1 37/64	0.12	2.402	0.866	UCC310	C310	UC310	62.0	38.3	13.2	3.2
		140	40	3	61	22							
	2						UCC211-32		UC211-32				
	2 1/8	4.921	1 3/8	0.1	2.189	0.874	UCC211-34	C211	UC211-34	43.4	29.4	14.4	2.2
		125	35	2.5	55.6	22.2	UCC211		UC211				
	2 3/16						UCC211-35		UC211-35				
55							UCCX11		UCX11				
	2 3/16	5.906	1 21/32	0.1	2.563	1.000	UCCX11-35	CX11	UCX11-35	52.4	36.2	14.4	4.0
	2 1/4	150	42	2.5	65.1	25.4	UCCX11-36		UCX11-36				
	2						UCC311-32		UC311-32				
		5.906	1 47/64	0.12	2.598	0.984	UCC311	C311	UC311	71.6	45.0	13.2	3.9
	2 3/16	150	44	3	66	25	UCC311-35		UC311-35				
	2 1/4						UCC212-36		UC212-36				
		5.118	1 1/2	0.1	2.563	1.000	UCC212	C212	UC212	52.4	36.2	14.4	2.6
	2 3/8	130	38	2.5	65.1	25.4	UCC212-38		UC212-38				
60	2 7/16						UCC212-39		UC212-39				
		6.299	1 47/64	0.1	2.563	1.000	UCCX12	CX12	UCX12	57.2	40.1	14.4	4.6
	2 7/16	160	44	2.5	65.1	25.4	UCCX12-39		UCX12-39				
		6.299	1 13/16	0.12	2.795	1.024	UCC312	C312	UC312	81.9	52.2	13.2	4.8
	2 7/16	160	46	3	71	26	UCC312-39		UC312-39				
	2 1/2	5.512	1 37/64	0.1	2.563	1.000	UCC213-40	C213	UC213-40	57.2	40.1	14.4	3.0
65		140	40	2.5	65.1	25.4	UCC213		UC213				
	2 1/2	6.693	1 31/32	0.12	2.953	1.181	UCC313-40	C313	UC313-40	92.7	59.9	13.2	5.7
		170	50	3	75	30	UCC313		UC313				
70	2 3/4	7.087	2 3/64	0.12	3.071	1.299	UCC314-44	C314	UC314-44	104	68.2	13.2	6.7
		180	52	3	78	33	UCC314		UC314				
	2 15/16						UCC315-47		UC315-47				
75		7.480	2 11/64	0.16	3.228	1.260	UCC315	C315	UC315	113	77.2	13.2	7.8
	3	190	55	4	82	32	UCC315-48		UC315-48				
80	–	7.874	2 23/64	0.16	3.386	1.339	UCC316	C316	UC316	123	86.7	13.3	9.2
		200	60	4	86	34							
85	–	8.465	2 33/64	0.16	3.780	1.575	UCC317	C317	UC317	133	96.8	13.3	11.7
		215	64	4	96	40							

UCC
Cylindrical bore (with set screws)
d 90 ~ 140 mm





Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm					Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor	Mass
d		H	A	r	B	S				C_r	C_{0r}	f_0	kg
90	3 1/2	8.858 225	2 19/32 66	0.16 4	3.780 96	1.575 40	**UCC318-56** **UCC318**	C318	UC318-56 UC318	143	107	13.3	13.1
95	–	9.449 240	2 53/64 72	0.16 4	4.055 103	1.614 41	**UCC319**	C319	UC319	153	119	13.3	15.8
100	3 15/16 4	10.236 260	2 61/64 75	0.16 4	4.252 108	1.654 42	**UCC320** **UCC320-63** **UCC320-64**	C320	UC320 UC320-63 UC320-64	173	141	13.2	19.6
105	–	10.236 260	2 61/64 75	0.16 4	4.409 112	1.732 44	**UCC321**	C321	UC321	184	153	13.2	27.0
110	–	11.811 300	3 5/32 80	0.2 5	4.606 117	1.811 46	**UCC322**	C322	UC322	205	180	13.2	29.2
120	–	12.598 320	3 35/64 90	0.2 5	4.961 126	2.008 51	**UCC324**	C324	UC324	207	185	13.5	35.9
130	–	13.386 340	3 15/16 100	0.24 6	5.315 135	2.126 54	**UCC326**	C326	UC326	229	214	13.6	43.0
140	–	14.173 360	3 15/16 100	0.24 6	5.709 145	2.323 59	**UCC328**	C328	UC328	253	246	13.6	52.9

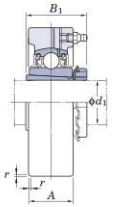
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~213, X05~X12, 305~308
   A-R1/8 ..... 309~328
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No.: UCC206JL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

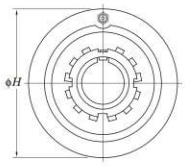
Variations of tolerance of outside diameter (Δ_{Dm}), variations of tolerance of width (Δ_{Bs}), and tolerance of circumferential runout of outside diameter (Y)

Unit: mm

Housing No.			Δ_{Dm}	Δ_{Bs}	Y
C204~C205			0 −0.030	±0.2	0.2
C206~C210	CX05~CX08	C305~C308	0 −0.035		
	CX09~CX10	C309~C310	0 −0.040	±0.3	0.3
C211~C213	CX11~CX12	C311~C314			
		C315~C318	0 −0.046		0.4
		C319			
		C320~C322	0 −0.052		
		C324~C328	0 −0.057		

UKC
Tapered bore (with adapter)
d_1 20 ~ (50) mm





Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	A	r	B_1	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Adapter No.	Mass kg
20	3/4	3.150 80	55/64 22	0.06 1.5	1 3/8 35	UKC205	C205	UK205	14.0	7.85	13.9	HE2305X H2305X	0.7
	3/4	3.543 90	1 1/16 27	0.06 1.5	1 3/8 35	UKCX05	CX05	UKX05	19.5	11.3	13.9	HE2305X H2305X	0.99
	3/4	3.543 90	1 1/32 26	0.08 2	1 3/8 35	UKC305	C305	UK305	21.2	10.9	12.6	HE2305X H2305X	1.6
25	1	3.346 85	1 1/16 27	0.06 1.5	1 1/2 38	UKC206	C206	UK206	19.5	11.3	13.9	H2306X HE2306X	0.89
	1	3.937 100	1 3/16 30	0.08 2	1 1/2 38	UKCX06	CX06	UKX06	25.7	15.4	13.9	H2306X HE2306X	1.3
	1	3.937 100	1 7/64 28	0.08 2	1 1/2 38	UKC306	C306	UK306	26.7	15.0	13.3	H2306X HE2306X	1.8
30	1 1/8	3.543 90	1 7/64 28	0.08 2	1 11/16 43	UKC207	C207	UK207	25.7	15.4	13.9	HS2307X H2307X	1.0
	1 1/8	4.331 110	1 11/32 34	0.08 2	1 11/16 43	UKCX07	CX07	UKX07	29.1	17.8	14.0	HS2307X H2307X	1.8
	1 1/8	4.331 110	1 17/64 32	0.12 3	1 11/16 43	UKC307	C307	UK307	33.4	19.3	13.2	HS2307X H2307X	2.2
35	1 1/4 1 3/8	3.937 100	1 3/16 30	0.08 2	1 13/16 46	UKC208	C208	UK208	29.1	17.8	14.0	HE2308X HS2308X H2308X	1.5
	1 1/4 1 3/8	4.724 120	1 1/2 38	0.08 2	1 13/16 46	UKCX08	CX08	UKX08	34.1	21.3	14.0	HE2308X HS2308X H2308X	2.4
	1 1/4 1 3/8	4.724 120	1 11/32 34	0.12 3	1 13/16 46	UKC308	C308	UK308	40.7	24.0	13.2	HE2308X HS2308X H2308X	2.2
40	1 1/2	4.331 110	1 7/32 31	0.08 2	1 31/32 50	UKC209	C209	UK209	34.1	21.3	14.0	HE2309X H2309X	1.8
	1 1/2	4.724 120	1 1/2 38	0.08 2	1 31/32 50	UKCX09	CX09	UKX09	35.1	23.3	14.4	HE2309X H2309X	2.4
	1 1/2	5.118 130	1 1/2 38	0.12 3	1 31/32 50	UKC309	C309	UK309	48.9	29.5	13.3	HE2309X H2309X	2.8
45	1 3/4	4.724 120	1 19/64 33	0.08 2	2 5/32 55	UKC210	C210	UK210	35.1	23.3	14.4	HE2310X H2310X	2.2
	1 3/4	5.118 130	1 37/64 40	0.1 2.5	2 5/32 55	UKCX10	CX10	UKX10	43.4	29.4	14.4	HE2310X H2310X	2.9
	1 3/4	5.512 140	1 37/64 40	0.12 3	2 5/32 55	UKC310	C310	UK310	62.0	38.3	13.2	HE2310X H2310X	3.2
50	1 7/8 2	4.921 125	1 3/8 35	0.1 2.5	2 5/16 59	UKC211	C211	UK211	43.4	29.4	14.4	HS2311X H2311X HE2311X	2.7
	1 7/8 2	5.906 150	1 21/32 42	0.1 2.5	2 5/16 59	UKCX11	CX11	UKX11	52.4	36.2	14.4	HS2311X H2311X HE2311X	4.1

Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 205~213, X05~X12, 305~308
   A-R1/8 ..... 309~328
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables.
   (Example of Part No. : UKC206J + H2306X, UK206 + H2306X)
4. As for the triple seal type product (205 is the double seal type product), suffix code L3 (or L2) follows the Part No. of unit or bearing.
   (Example of Part No. : UKC206JL3 + H2306X, UK206L3 + H2306X)
5. As for the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter.

ROYSE rodamientos y servicios Desde 1979

d_1 (50) ~ 125 mm

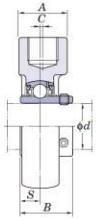
Variations of tolerance of outside diameter (Δ_{Hs}), variations of tolerance of width (Δ_{As}), and tolerance of circumferential runout of outside diameter (Y)

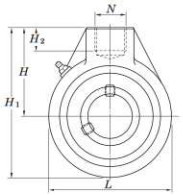
Unit: mm

Housing No.			Δ_{Hs}	Δ_{As}	Y
C205			0 −0.030	±0.2	0.2
C206~C210	CX05~CX08	C305~C308	0 −0.035		
	CX09~CX10	C309~C310	0 −0.040	±0.3	0.3
C211~C213	CX11~CX12	C311~C314			
		C315~C318	0 −0.046		0.4
		C319			
		C320~C322	0 −0.052		
		C324~C328	0 −0.057		

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	A	r	B_1	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Adapter No.	Mass kg
50	1 7/8 2	5.906 150	1 47/64 44	0.12 3	2 5/16 59	UKC311	C311	UK311	71.6	45.0	13.2	HS2311X H2311X HE2311X	4.1
55	2 1/8	5.118 130	1 1/2 38	0.1 2.5	2 7/16 62	UKC212	C212	UK212	52.4	36.2	14.4	HS2312X H2312X	3.1
	2 1/8	6.299 160	1 47/64 44	0.1 2.5	2 7/16 62	UKCX12	CX12	UKX12	57.2	40.1	14.4	HS2312X H2312X	4.4
	2 1/8	6.299 160	1 13/16 46	0.12 3	2 7/16 62	UKC312	C312	UK312	81.9	52.2	13.2	HS2312X H2312X	4.7
60	2 1/4 2 3/8	5.512 140	1 37/64 40	0.1 2.5	2 9/16 65	UKC213	C213	UK213	57.2	40.1	14.4	HE2313X H2313X HS2313X	3.3
	2 1/4 2 3/8	6.693 170	1 31/32 50	0.12 3	2 9/16 65	UKC313	C313	UK313	92.7	59.9	13.2	HE2313X H2313X HS2313X	5.8
65	2 1/2	7.480 190	2 11/64 55	0.16 4	2 7/8 73	UKC315	C315	UK315	113	77.2	13.2	HE2315X H2315X	8.0
70	2 3/4	7.874 200	2 23/64 60	0.16 4	3 1/16 78	UKC316	C316	UK316	123	86.7	13.3	HE2316X H2316X	9.2
75	3	8.465 215	2 33/64 64	0.16 4	3 7/32 82	UKC317	C317	UK317	133	96.8	13.3	H2317X HE2317X	11.6
80	–	8.858 225	2 19/32 66	0.16 4	3 3/8 86	UKC318	C318	UK318	143	107	13.3	H2318X	13.1
85	3 1/4	9.449 240	2 53/64 72	0.16 4	3 17/32 90	UKC319	C319	UK319	153	119	13.3	HE2319X H2319X	16.1
90	3 1/2	10.236 260	2 61/64 75	0.16 4	3 13/16 97	UKC320	C320	UK320	173	141	13.2	HE2320X H2320X	19.2
100	4	11.811 300	3 5/32 80	0.2 5	4 1/8 105	UKC322	C322	UK322	205	180	13.2	H2322X HE2322X	29.1
110	–	12.598 320	3 35/64 90	0.2 5	4 13/32 112	UKC324	C324	UK324	207	185	13.5	H2324	36.2
115	4 1/2	13.386 340	3 15/16 100	0.24 6	4 3/4 121	UKC326	C326	UK326	229	214	13.6	HE2326 H2326	42.8
125	–	14.173 360	3 15/16 100	0.24 6	5 5/32 131	UKC328	C328	UK328	253	246	13.6	H2328	52.9

UCHA
Cylindrical bore (with set screws)
d 12 ~ 75 mm





Note 1) Dimensions N screw hole is apply JIS B0203 (Taper Pipe Threads) standards.
It can not apply to the Parallel Pipe Male Thread.
Also, below shown the dimensions of Parallel Pipe Female Thread.

Unit: mm

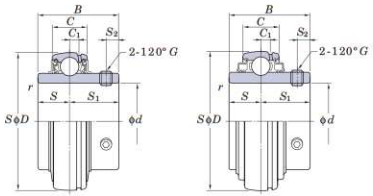
Nominal of Thread	Female Thread			Thread	Apply Male Thread
	Major Diameter	Pitch Diameter	Minor Diameter	Number of Threads (in 25.4 mm)	
	D	D_2	D_1	n	
Rp 3/4	26.441	25.279	24.117	14	R 3/4
Rp 1	33.249	31.770	30.291	11	R 1
Rp 1 1/2	41.910	40.431	38.952	11	R 1 1/2
Rp 1 1/4	47.803	46.324	44.845	11	R 1 1/4

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	A	L	H_1	H_2	N 1)	C	B	S	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12											UCHA201	HA204	UC201	12.8	6.65	13.2	0.77
	1/2										UCHA201-8		UC201-8				
15		2 17/32	1 9/16	2 17/32	3 25/32	3/4		–	1.220	0.500	UCHA202		UC202				0.75
	5/8	64	40	64	96	19	Rp 3/4	–	31	12.7	UCHA202-10		UC202-10				
17											UCHA203		UC203				0.74
	3/4										UCHA204-12		UC204-12				0.72
20											UCHA204		UC204				
	7/8										UCHA205-14	HA205	UC205-14	14.0	7.85	13.9	0.87
25	15/16	2 17/32	1 9/16	3 1/16	4 1/16	3/4		–	1.343	0.563	UCHA205-15		UC205-15				
		64	40	78	103	19	Rp 3/4	–	34.1	14.3	UCHA205		UC205				
	1										UCHA205-16		UC205-16				
	1 1/8										UCHA206-18	HA206	UC206-18	19.5	11.3	13.9	0.83
30		2 17/32	1 9/16	3 1/16	4 1/16	3/4		–	1.500	0.626	UCHA206		UC206				
	1 3/16	64	40	78	103	19	Rp 3/4	–	38.1	15.9	UCHA206-19		UC206-19				
	1 1/4										UCHA206-20		UC206-20				
	1 1/4										UCHA207-20	HA207	UC207-20	25.7	15.4	13.9	1.2
	1 5/16										UCHA207-21		UC207-21				
35	1 3/8	2 3/4	1 9/16	3 5/8	4 9/16	3/4		–	1.689	0.689	UCHA207-22		UC207-22				
		70	40	92	116	19	Rp 3/4	–	42.9	17.5	UCHA207		UC207				
	1 7/16										UCHA207-23		UC207-23				
	1 1/2										UCHA208-24	HA208	UC208-24	29.1	17.8	14.0	1.3
40	1 9/16	2 7/8	1 9/16	3 25/32	4 3/4	3/4		5/64	1.937	0.748	UCHA208-25		UC208-25				
		73	40	96	121	19	Rp 3/4	2	49.2	19	UCHA208		UC208				
	1 5/8										UCHA209-26	HA209	UC209-26	34.1	21.3	14.0	1.7
45	1 11/16	3 7/32	1 7/8	4 1/4	5 11/32	13/16		13/64	1.937	0.748	UCHA209-27		UC209-27				
	1 3/4	82	48	108	136	21	Rp 1	5	49.2	19	UCHA209-28		UC209-28				
											UCHA209		UC209				
	1 7/8										UCHA210-30	HA210	UC210-30	35.1	23.3	14.4	2.1
50	1 15/16	3 9/32	1 7/8	4 21/32	5 19/32	13/16		13/64	2.031	0.748	UCHA210-31		UC210-31				
		83	48	118	142	21	Rp 1	5	51.6	19	UCHA210		UC210				
	2										UCHA210-32		UC210-32				
	2										UCHA211-32	HA211	UC211-32	43.4	29.4	14.4	2.8
55	2 1/8	3 7/16	2 3/8	4 31/32	5 29/32	31/32		9/32	2.189	0.874	UCHA211-34		UC211-34				
		87	60	126	150	25	Rp 1 1/4	7	55.6	22.2	UCHA211		UC211				
	2 9/16										UCHA211-35		UC211-35				
	2 1/4										UCHA212-36	HA212	UC212-36	52.4	36.2	14.4	3.9
60		4 1/32	2 3/8	5 19/32	6 13/16	1 3/32		23/64	2.563	1.000	UCHA212		UC212				
	2 3/8	102	60	142	173	28	Rp 1 1/4	9	65.1	25.4	UCHA212-38		UC212-38				
	2 7/16										UCHA212-39		UC212-39				
65	2 1/2	4 19/32	2 3/4	6 17/32	7 7/8	1 1/4		3/8	2.563	1.000	UCHA213-40	HA213	UC213-40	57.2	40.1	14.4	5.8
		117	70	166	200	32	Rp 1 1/2	9.5	65.1	25.4	UCHA213		UC213				
70	2 3/4	4 19/32	2 3/4	6 17/32	7 7/8	1 1/4		3/8	2.937	1.189	UCHA214-44	HA214	UC214-44	62.2	44.1	14.5	5.9
		117	70	166	200	32	Rp 1 1/2	9.5	74.6	30.2	UCHA214		UC214				
	2 15/16										UCHA215-47	HA215	UC215-47	67.4	48.3	14.5	5.6
75		4 19/32	2 3/4	6 17/32	7 7/8	1 1/4		3/8	3.063	1.311	UCHA215		UC215				
	3	117	70	166	200	32	Rp 1 1/2	9.5	77.8	33.3	UCHA215-48		UC215-48				

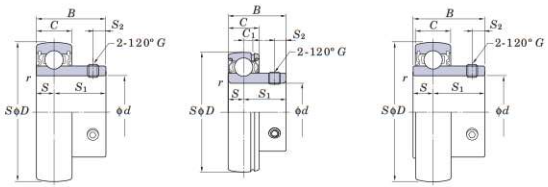
Remarks
1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.62.)
2. Part No. of applicable grease fittings are shown below.
   A-1/4-28UNF ..... 201~210
   A-R1/8 ..... 211~215
3. As for the triple seal type product (from 201 to 205 are the double seal type products), suffix code L3 (or L2) follows the Part No. of unit or bearing.
   (Example of Part No. : UCHA206JL3, UC206L3)
4. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter.
5. Tapered bore (with adapter) type products are also available. (Example of Part No. : UKHA205J + H2305X, UK205 + H2305X)

UC, SB, SB-RKP8, SU
Cylindrical bore (with set screws)
d 8 ~ 25 mm

UC SB SB-RKP8 SU



UC UC-L3



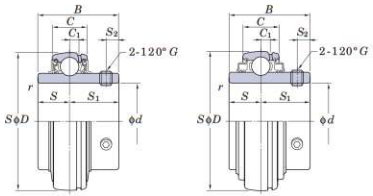
SB SB-RKP8 SU

Shaft Dia. mm	Shaft Dia. inch	Dimensions d		D		B		C		r (min.)		Basic Load Ratings kN		Factor	Bearing No.		Dimensions C_1		S		S_1		S_2		Set Screw Brg. Bore G		Mass
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	C_r	C_{0r}	f_0	Standard	L3 Type	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	kg
8	–	22	0.866	12	0.472	7	0.276	0.3	0.012	3.27	1.37	12.4	SU08	–			–	–	3.5	0.138	8.5	0.335	2.8	0.110	M3×0.35	–	0.012
10	–	26	1.024	15	0.591	8	0.315	0.3	0.012	4.55	1.95	12.3	SU000	–			–	–	5	0.197	10	0.394	3	0.118	M3×0.35	–	0.024
12	–	28	1.102	15	0.591	8	0.315	0.3	0.012	5.10	2.40	13.2	SU001	–			–	–	5	0.197	10	0.394	3	0.118	M3×0.35	–	0.026
		40	1.575	22	0.866	12	0.472	0.6	0.024	9.55	4.80	13.2	SB201	–			–	–	6	0.236	16	0.630	4	0.157	M5×0.5	–	0.10
		40	1.575	22	0.866	13	0.512	0.6	0.024	9.55	4.80	13.2	SB201RKP8	–			3.4	0.134	6	0.236	16	0.630	4	0.157	M5×0.5	–	0.10
		47	1.850	31	1.220	16	0.630	0.6	0.024	12.8	6.65	13.2	UC201	UC201L2			4	0.157	12.7	0.500	18.3	0.720	5	0.197	M6×0.75	–	0.21
–	1/2	40	1.575	22	0.866	12	0.472	0.6	0.024	9.55	4.80	13.2	SB201-8	–			–	–	6	0.236	16	0.630	4	0.157	–	No.10-32UNF	0.10
		40	1.575	22	0.866	13	0.512	0.6	0.024	9.55	4.80	13.2	SB201-8RKP8	–			3.4	0.134	6	0.236	16	0.630	4	0.157	–	No.10-32UNF	0.10
		47	1.850	31	1.220	16	0.630	0.6	0.024	12.8	6.65	13.2	UC201-8	UC201-8L2			4	0.157	12.7	0.500	18.3	0.720	5	0.197	–	1/4-28UNF	0.21
15	–	32	1.260	16.5	0.650	9	0.354	0.3	0.012	5.60	2.85	13.9	SU002	–			–	–	5.5	0.217	11	0.433	3.3	0.130	M4×0.5	–	0.038
		40	1.575	22	0.866	12	0.472	0.6	0.024	9.55	4.80	13.2	SB202	–			–	–	6	0.236	16	0.630	4	0.157	M5×0.5	–	0.10
		40	1.575	22	0.866	13	0.512	0.6	0.024	9.55	4.80	13.2	SB202RKP8	–			3.4	0.134	6	0.236	16	0.630	4	0.157	M5×0.5	–	0.10
		47	1.850	31	1.220	16	0.630	0.6	0.024	12.8	6.65	13.2	UC202	UC202L2			4	0.157	12.7	0.500	18.3	0.720	5	0.197	M6×0.75		0.19
–	5/8	40	1.575	22	0.866	12	0.472	0.6	0.024	9.55	4.80	13.2	SB202-10	–			–	–	6	0.236	16	0.630	4	0.157	–	No.10-32UNF	0.10
		40	1.575	22	0.866	13	0.512	0.6	0.024	9.55	4.80	13.2	SB202-10RKP8	–			3.4	0.134	6	0.236	16	0.630	4	0.157	–	No.10-32UNF	0.10
		47	1.850	31	1.220	16	0.630	0.6	0.024	12.8	6.65	13.2	UC202-10	UC202-10L2			4	0.157	12.7	0.500	18.3	0.720	5	0.197	–	1/4-28UNF	0.19
17	–	35	1.378	17.5	0.689	10	0.394	0.3	0.012	6.00	3.25	14.4	SU003	–			–	–	6	0.236	11.5	0.453	3.3	0.130	M4×0.5	–	0.050
		40	1.575	22	0.866	12	0.472	0.6	0.024	9.55	4.80	13.2	SB203	–			–	–	6	0.236	16	0.630	4	0.157	M5×0.5	–	0.10
		40	1.575	22	0.866	13	0.512	0.6	0.024	9.55	4.80	13.2	SB203RKP8	–			3.4	0.134	6	0.236	16	0.630	4	0.157	M5×0.5	–	0.10
		47	1.850	31	1.220	16	0.630	0.6	0.024	12.8	6.65	13.2	UC203	UC203L2			4	0.157	12.7	0.500	18.3	0.720	5	0.197	M6×0.75	–	0.18
–	3/4	47	1.850	25	0.984	14	0.551	1	0.039	12.8	6.65	13.2	SB204-12	–			–	–	7	0.276	18	0.709	5	0.197	–	1/4-28UNF	0.15
		47	1.850	25	0.984	15	0.591	1	0.039	12.8	6.65	13.2	SB204-12RKP8	–			3.7	0.146	7	0.276	18	0.709	5	0.197	–	1/4-28UNF	0.19
		47	1.850	31	1.220	16	0.630	1	0.039	12.8	6.65	13.2	UC204-12	UC204-12L2			4	0.157	12.7	0.500	18.3	0.720	5	0.197	–	1/4-28UNF	0.16
20	–	42	1.654	21	0.827	12	0.472	0.6	0.024	9.40	5.05	13.9	SU004	–			–	–	7	0.276	14	0.551	4	0.157	M5×0.5	–	0.080
		47	1.850	25	0.984	14	0.551	1	0.039	12.8	6.65	13.2	SB204	–			–	–	7	0.276	18	0.709	5	0.197	M6×0.75	–	0.15
		47	1.850	25	0.984	15	0.591	1	0.039	12.8	6.65	13.2	SB204RKP8	–			3.7	0.146	7	0.276	18	0.709	5	0.197	M6×0.75	–	0.19
		47	1.850	31	1.220	16	0.630	1	0.039	12.8	6.65	13.2	UC204	UC204L2			4	0.157	12.7	0.500	18.3	0.720	5	0.197	M6×0.75	–	0.16
–	7/8	52	2.047	27	1.063	15	0.591	1	0.039	14.0	7.85	13.9	SB205-14	–			–	–	7.5	0.295	19.5	0.768	5.5	0.217	–	1/4-28UNF	0.18
		52	2.047	27	1.063	15	0.591	1	0.039	14.0	7.85	13.9	SB205-14RKP8	–			3.7	0.146	7.5	0.295	19.5	0.768	5.5	0.217	–	1/4-28UNF	0.19
		52	2.047	34.1	1.343	17	0.669	1	0.039	14.0	7.85	13.9	UC205-14	UC205-14L2			5	0.197	14.3	0.563	19.8	0.780	5.5	0.217	–	1/4-28UNF	0.23
–	15/16	52	2.047	27	1.063	15	0.591	1	0.039	14.0	7.85	13.9	SB205-15	–			–	–	7.5	0.295	19.5	0.768	5.5	0.217	–	1/4-28UNF	0.18
		52	2.047	27	1.063	15	0.591	1	0.039	14.0	7.85	13.9	SB205-15RKP8	–			3.7	0.146	7.5	0.295	19.5	0.768	5.5	0.217	–	1/4-28UNF	0.19
		52	2.047	34.1	1.343	17	0.669	1	0.039	14.0	7.85	13.9	UC205-15	UC205-15L2			5	0.197	14.3	0.563	19.8	0.780	5.5	0.217	–	1/4-28UNF	0.21
25	–	47	1.850	22	0.866	12	0.472	0.6	0.024	10.1	5.85	14.5	SU005	–			–	–	7	0.276	15	0.591	4.5	0.177	M5×0.5	–	0.10
		52	2.047	27	1.063	15	0.591	1	0.039	14.0	7.85	13.9	SB205	–			–	–	7.5	0.295	19.5	0.768	5.5	0.217	M6×0.75	–	0.18
		52	2.047	27	1.063	15	0.591	1	0.039	14.0	7.85	13.9	SB205RKP8	–			3.7	0.146	7.5	0.295	19.5	0.768	5.5	0.217	M6×0.75	–	0.19
		52	2.047	34.1	1.343	17	0.669	1	0.039	14.0	7.85	13.9	UC205	UC205L2			5	0.197	14.3	0.563	19.8	0.780	5.5	0.217	M6×0.75	–	0.20
		62	2.441	38	1.496	22	0.866	1.1	0.043	21.2	10.9	12.6	UC305	–			6	0.236	15	0.591	23	0.906	6	0.236	M6×0.75	–	0.45
		62	2.441	38.1	1.500	19	0.748	1	0.039	19.5	11.3	13.9	UCX05	UCX05L3			5	0.197	15.9	0.626	22.2	0.874	6	0.236	M6×0.75	–	0.39
–	1	52	2.047	27	1.063	15	0.591	1	0.039	14.0	7.85	13.9	SB205-16	–			–	–	7.5	0.295	19.5	0.768	5.5	0.217	–	1/4-28UNF	0.18
		52	2.047	27	1.063	15	0.591	1	0.039	14.0	7.85	13.9	SB205-16RKP8	–			3.7	0.146	7.5	0.295	19.5	0.768	5.5	0.217	–	1/4-28UNF	0.19
		52	2.047	34.1	1.343	17	0.669	1	0.039	14.0	7.85	13.9	UC205-16	UC205-16L2			5	0.197	14.3	0.563	19.8	0.780	5.5	0.217	–	1/4-28UNF	0.20
		62	2.441	38	1.496	22	0.866	1.1	0.043	21.2	10.9	12.6	UC305-16	–			6	0.236	15	0.591	23	0.906	6	0.236	M6×0.75	–	0.44
		62	2.441	38.1	1.500	19	0.748	1	0.039	19.5	11.3	13.9	UCX05-16	UCX05-16L3			5	0.197	15.9	0.626	22.2	0.874	6	0.236	–	1/4-28UNF	0.38
–	1 1/8	62	2.441	30	1.181	16	0.630	1	0.039	19.5	11.3	13.9	SB206-18	–			–	–	8	0.315	22	0.866	6	0.236	–	1/4-28UNF	0.27
		62	2.441	30	1.181	18	0.709	1	0.039	19.5	11.3	13.9	SB206-18RKP8	–			4.7	0.185	8	0.315	22	0.866	6	0.236	–	1/4-28UNF	0.31
		62	2.441	38.1	1.500	19	0.748	1	0.039	19.5	11.3	13.9	UC206-18	UC206-18L2			5	0.197	15.9	0.626	22.2	0.874	6	0.236	–	1/4-28UNF	0.34

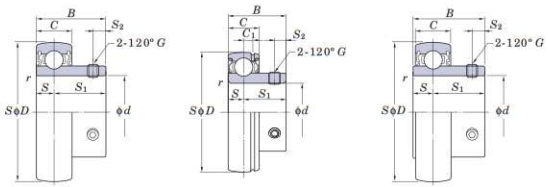
Remarks 1. SU type product is the clean series ball bearing for unit.
2. From UC201 to 205 are the double seal type products (L2).

UC, SB, SB-RKP8, SU
Cylindrical bore (with set screws)
d 30 ~ 40 mm

UC SB SB-RKP8 SU



UC UC-L3



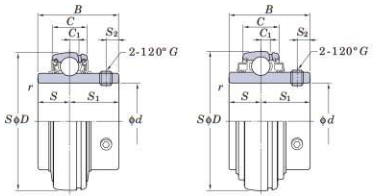
SB SB-RKP8 SU

Shaft Dia. mm	Shaft Dia. inch	Dimensions D mm	D inch	B mm	B inch	C mm	C inch	r (min.) mm	r (min.) inch	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Bearing No. Standard	L3 Type	Dimensions C_1 mm	C_1 inch	S mm	S inch	S_1 mm	S_1 inch	S_2 mm	S_2 inch	Set Screw Brg. Bore G mm	G inch	Mass kg
30	–	55	2.165	24.5	0.965	13	0.512	1	0.039	13.2	8.25	14.7	SU006	–	–	–	7.5	0.295	17	0.669	5.5	0.217	M5×0.5	–	0.15
		62	2.441	30	1.181	16	0.630	1	0.039	19.5	11.3	13.9	SB206	–	–	–	8	0.315	22	0.866	6	0.236	M6×0.75	–	0.27
		62	2.441	30	1.181	18	0.709	1	0.039	19.5	11.3	13.9	SB206RKP8	–	4.7	0.185	8	0.315	22	0.866	6	0.236	M6×0.75	–	0.31
		62	2.441	38.1	1.500	19	0.748	1	0.039	19.5	11.3	13.9	UC206	UC206L3	5	0.197	15.9	0.626	22.2	0.874	6	0.236	M6×0.75	–	0.32
		72	2.835	42.9	1.689	20	0.787	1	0.039	25.7	15.4	13.9	UCX06	UCX06L3	5.5	0.217	17.5	0.689	25.4	1.000	6.5	0.256	M8×1	–	0.58
		72	2.835	43	1.693	24	0.945	1.1	0.043	26.7	15.0	13.3	UC306	–	6.5	0.256	17	0.669	26	1.024	6	0.236	M6×0.75	–	0.56
–	1 3/16	62	2.441	30	1.181	16	0.630	1	0.039	19.5	11.3	13.9	SB206-19	–	–	–	8	0.315	22	0.866	6	0.236	–	1/4-28UNF	0.27
		62	2.441	30	1.181	18	0.709	1	0.039	19.5	11.3	13.9	SB206-19RKP8	–	4.7	0.185	8	0.315	22	0.866	6	0.236	–	1/4-28UNF	0.31
		62	2.441	38.1	1.500	19	0.748	1	0.039	19.5	11.3	13.9	UC206-19	UC206-19L2	5	0.197	15.9	0.626	22.2	0.874	6	0.236	–	1/4-28UNF	0.32
		72	2.835	42.9	1.689	20	0.787	1	0.039	25.7	15.4	13.9	UCX06-19	UCX06-19L3	5.5	0.217	17.5	0.689	25.4	1.000	6.5	0.256	–	5/16-24UNF	0.58
–	1 1/4	62	2.441	30	1.181	16	0.630	1	0.039	19.5	11.3	13.9	SB206-20	–	–	–	8	0.315	22	0.866	6	0.236	–	1/4-28UNF	0.27
		62	2.441	30	1.181	18	0.709	1	0.039	19.5	11.3	13.9	SB206-20RKP8	–	4.7	0.185	8	0.315	22	0.866	6	0.236	–	1/4-28UNF	0.31
		62	2.441	38.1	1.500	19	0.748	1	0.039	19.5	11.3	13.9	UC206-20	UC206-20L2	5	0.197	15.9	0.626	22.2	0.874	6	0.236	–	1/4-28UNF	0.30
		72	2.835	42.9	1.689	20	0.787	1	0.039	25.7	15.4	13.9	UCX06-20	UCX06-20L3	5.5	0.217	17.5	0.689	25.4	1.000	6.5	0.256	–	5/16-24UNF	0.55
–	1 1/4	72	2.835	32	1.260	17	0.669	1.1	0.043	25.7	15.4	13.9	SB207-20	–	–	–	8.5	0.335	23.5	0.925	6	0.236	–	1/4-28UNF	0.42
		72	2.835	32	1.260	19	0.748	1.1	0.043	25.7	15.4	13.9	SB207-20RKP8	–	5	0.197	8.5	0.335	23.5	0.925	6	0.236	–	1/4-28UNF	0.51
		72	2.835	42.9	1.689	20	0.787	1.1	0.043	25.7	15.4	13.9	UC207-20	UC207-20L3	5.5	0.217	17.5	0.689	25.4	1.000	6.5	0.256	–	5/16-24UNF	0.54
–	1 5/16	72	2.835	42.9	1.689	20	0.787	1.1	0.043	25.7	15.4	13.9	UC207-21	UC207-21L3	5.5	0.217	17.5	0.689	25.4	1.000	6.5	0.256	–	5/16-24UNF	0.51
–	1 3/8	72	2.835	32	1.260	17	0.669	1.1	0.043	25.7	15.4	13.9	SB207-22	–	–	–	8.5	0.335	23.5	0.925	6	0.236	–	1/4-28UNF	0.42
		72	2.835	32	1.260	19	0.748	1.1	0.043	25.7	15.4	13.9	SB207-22RKP8	–	5	0.197	8.5	0.335	23.5	0.925	6	0.236	–	1/4-28UNF	0.51
		72	2.835	42.9	1.689	20	0.787	1.1	0.043	25.7	15.4	13.9	UC207-22	UC207-22L3	5.5	0.217	17.5	0.689	25.4	1.000	6.5	0.256	–	5/16-24UNF	0.48
		80	3.150	49.2	1.937	21	0.827	1.1	0.043	29.1	17.8	14.0	UCX07-22	UCX07-22L3	6	0.236	19	0.748	30.2	1.189	8	0.315	–	5/16-24UNF	0.75
35	–	72	2.835	32	1.260	17	0.669	1.1	0.043	25.7	15.4	13.9	SB207	–	–	–	8.5	0.335	23.5	0.925	6	0.236	M6×0.75	–	0.42
		72	2.835	32	1.260	19	0.748	1.1	0.043	25.7	15.4	13.9	SB207RKP8	–	5	0.197	8.5	0.335	23.5	0.925	6	0.236	M6×0.75	–	0.51
		72	2.835	42.9	1.689	20	0.787	1.1	0.043	25.7	15.4	13.9	UC207	UC207L3	5.5	0.217	17.5	0.689	25.4	1.000	6.5	0.256	M8×1	–	0.48
		80	3.150	49.2	1.937	21	0.827	1.1	0.043	29.1	17.8	14.0	UCX07	UCX07L3	6	0.236	19	0.748	30.2	1.189	8	0.315	M8×1	–	0.75
		80	3.150	48	1.890	26	1.024	1.5	0.059	33.4	19.3	13.2	UC307	UC307L3	7.5	0.295	19	0.748	29	1.142	8	0.315	M8×1	–	0.71
–	1 7/16	72	2.835	32	1.260	17	0.669	1.1	0.043	25.7	15.4	13.9	SB207-23	–	–	–	8.5	0.335	23.5	0.925	6	0.236	–	1/4-28UNF	0.42
		72	2.835	32	1.260	19	0.748	1.1	0.043	25.7	15.4	13.9	SB207-23RKP8	–	5	0.197	8.5	0.335	23.5	0.925	6	0.236	–	1/4-28UNF	0.51
		72	2.835	42.9	1.689	20	0.787	1.1	0.043	25.7	15.4	13.9	UC207-23	UC207-23L3	5.5	0.217	17.5	0.689	25.4	1.000	6.5	0.256	–	5/16-24UNF	0.45
		80	3.150	49.2	1.937	21	0.827	1.1	0.043	29.1	17.8	14.0	UCX07-23	UCX07-23L3	6	0.236	19	0.748	30.2	1.189	8	0.315	–	5/16-24UNF	0.72
–	1 1/2	80	3.150	34	1.339	18	0.709	1.1	0.043	29.1	17.8	14.0	SB208-24	–	–	–	9	0.354	25	0.984	8	0.315	–	5/16-24UNF	0.60
		80	3.150	34	1.339	22	0.866	1.1	0.043	29.1	17.8	14.0	SB208-24RKP8	–	5.2	0.205	9	0.354	25	0.984	8	0.315	–	5/16-24UNF	0.65
		80	3.150	49.2	1.937	21	0.827	1.1	0.043	29.1	17.8	14.0	UC208-24	UC208-24L3	6	0.236	19	0.748	30.2	1.189	8	0.315	–	5/16-24UNF	0.68
		85	3.346	49.2	1.937	22	0.866	1.1	0.043	34.1	21.3	14.0	UCX08-24	UCX08-24L3	6	0.236	19	0.748	30.2	1.189	8	0.315	–	5/16-24UNF	0.87
		90	3.543	52	2.047	28	1.102	1.5	0.059	40.7	24.0	13.2	UC308-24	UC308-24L3	8	0.315	19	0.748	33	1.299	10	0.394	M10×1.25	–	1.05
–	1 9/16	80	3.150	49.2	1.937	21	0.827	1.1	0.043	29.1	17.8	14.0	UC208-25	UC208-25L3	6	0.236	19	0.748	30.2	1.189	8	0.315	–	5/16-24UNF	0.60
40	–	80	3.150	34	1.339	18	0.709	1.1	0.043	29.1	17.8	14.0	SB208	–	–	–	9	0.354	25	0.984	8	0.315	M8×1	–	0.60
		80	3.150	34	1.339	22	0.866	1.1	0.043	29.1	17.8	14.0	SB208RKP8	–	5.2	0.205	9	0.354	25	0.984	8	0.315	M8×1	–	0.65
		80	3.150	49.2	1.937	21	0.827	1.1	0.043	29.1	17.8	14.0	UC208	UC208L3	6	0.236	19	0.748	30.2	1.189	8	0.315	M8×1	–	0.64
		85	3.346	49.2	1.937	22	0.866	1.1	0.043	34.1	21.3	14.0	UCX08	UCX08L3	6	0.236	19	0.748	30.2	1.189	8	0.315	M8×1	–	0.83
		90	3.543	52	2.047	28	1.102	1.5	0.059	40.7	24.0	13.2	UC308	UC308L3	8	0.315	19	0.748	33	1.299	10	0.394	M10×1.25	–	1.00
–	1 5/8	85	3.346	49.2	1.937	22	0.866	1.1	0.043	34.1	21.3	14.0	UC209-26	UC209-26L3	6	0.236	19	0.748	30.2	1.189	8	0.315	–	5/16-24UNF	0.78
–	1 11/16	85	3.346	49.2	1.937	22	0.866	1.1	0.043	34.1	21.3	14.0	UC209-27	UC209-27L3	6	0.236	19	0.748	30.2	1.189	8	0.315	–	5/16-24UNF	0.74
		90	3.543	51.6	2.031	24	0.945	1.1	0.043	35.1	23.3	14.4	UCX09-27	UCX09-27L3	6	0.236	19	0.748	32.6	1.283	9	0.354	–	3/8-24UNF	0.93
–	1 3/4	85	3.346	49.2	1.937	22	0.866	1.1	0.043	34.1	21.3	14.0	UC209-28	UC209-28L3	6	0.236	19	0.748	30.2	1.189	8	0.315	–	5/16-24UNF	0.70
		90	3.543	51.6	2.031	24	0.945	1.1	0.043	35.1	23.3	14.4	UCX09-28	UCX09-28L3	6	0.236	19	0.748	32.6	1.283	9	0.354	–	3/8-24UNF	0.97
		100	3.937	57	2.244	30	1.181	1.5	0.059	48.9	29.5	13.3	UC309-28	UC309-28L3	8.5	0.335	22	0.866	35	1.378	10	0.394	M10×1.25	–	1.35

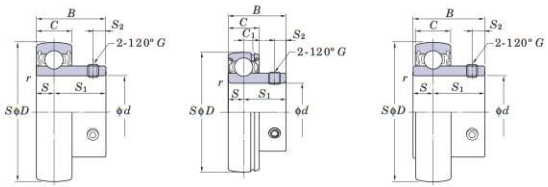
Remarks 1. SU type product is the clean series ball bearing for unit.
2. From UC201 to 205 are the double seal type products (L2).

UC, SB, SB-RKP8, SU
Cylindrical bore (with set screws)
d 45 ~ (75) mm

UC SB SB-RKP8 SU



UC UC-L3



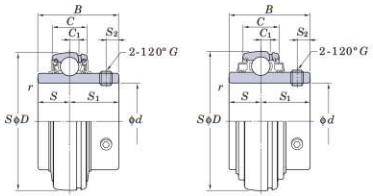
SB SB-RKP8 SU

Shaft Dia. mm	Shaft Dia. inch	Dimensions d		D		B		C		r (min.)		Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Bearing No. Standard	L3 Type	C_1		S		S_1		S_2		Set Screw Brg. Bore G		Mass
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch						mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	kg
		85	3.346	49.2	1.937	22	0.866	1.1	0.043	34.1	21.3	14.0	UC209	UC209L3	6	0.236	19	0.748	30.2	1.189	8	0.315	M8×1	–	0.68
45	–	90	3.543	51.6	2.031	24	0.945	1.1	0.043	35.1	23.3	14.4	UCX09	UCX09L3	6	0.236	19	0.748	32.6	1.283	9	0.354	M10×1.25	–	0.95
		100	3.937	57	2.244	30	1.181	1.5	0.059	48.9	29.5	13.3	UC309	UC309L3	8.5	0.335	22	0.866	35	1.378	10	0.394	M10×1.25	–	1.33
–	1 7/8	90	3.543	51.6	2.031	24	0.945	1.1	0.043	35.1	23.3	14.4	UC210-30	UC210-30L3	6	0.236	19	0.748	32.6	1.283	9	0.354	–	3/8-24UNF	0.87
–	1 15/16	90	3.543	51.6	2.031	24	0.945	1.1	0.043	35.1	23.3	14.4	UC210-31	UC210-31L3	6	0.236	19	0.748	32.6	1.283	9	0.354	–	3/8-24UNF	0.82
		100	3.937	55.6	2.189	25	0.984	1.1	0.043	43.4	29.4	14.4	UCX10-31	UCX10-31L3	7	0.276	22.2	0.874	33.4	1.315	9	0.354	–	3/8-24UNF	1.32
		90	3.543	51.6	2.031	24	0.945	1.1	0.043	35.1	23.3	14.4	UC210	UC210L3	6	0.236	19	0.748	32.6	1.283	9	0.354	M10×1.25	–	0.80
50	–	100	3.937	55.6	2.189	25	0.984	1.1	0.043	43.4	29.4	14.4	UCX10	UCX10L3	7	0.276	22.2	0.874	33.4	1.315	9	0.354	M10×1.25	–	1.29
		110	4.331	61	2.402	32	1.260	2	0.079	62.0	38.3	13.2	UC310	UC310L3	9	0.354	22	0.866	39	1.535	12	0.472	M12×1.5	–	1.69
–	2	90	3.543	51.6	2.031	24	0.945	1.1	0.043	35.1	23.3	14.4	UC210-32	UC210-32L3	6	0.236	19	0.748	32.6	1.283	9	0.354	–	3/8-24UNF	0.78
		100	3.937	55.6	2.189	25	0.984	1.1	0.043	43.4	29.4	14.4	UCX10-32	UCX10-32L3	7	0.276	22.2	0.874	33.4	1.315	9	0.354	–	3/8-24UNF	1.26
–	2	100	3.937	55.6	2.189	25	0.984	1.5	0.059	43.4	29.4	14.4	UC211-32	UC211-32L3	7	0.276	22.2	0.874	33.4	1.315	9	0.354	–	3/8-24UNF	1.26
		120	4.724	66	2.598	34	1.339	2	0.079	71.6	45.0	13.2	UC311-32	UC311-32L3	10	0.394	25	0.984	41	1.614	12	0.472	M12×1.5	–	2.08
–	2 1/8	100	3.937	55.6	2.189	25	0.984	1.5	0.059	43.4	29.4	14.4	UC211-34	UC211-34L3	7	0.276	22.2	0.874	33.4	1.315	9	0.354	–	3/8-24UNF	1.15
		100	3.937	55.6	2.189	25	0.984	1.5	0.059	43.4	29.4	14.4	UC211	UC211L3	7	0.276	22.2	0.874	33.4	1.315	9	0.354	M10×1.25	–	1.11
55	–	110	4.331	65.1	2.563	27	1.063	1.5	0.059	52.4	36.2	14.4	UCX11	UCX11L3	7.5	0.295	25.4	1.000	39.7	1.563	10.5	0.413	M10×1.25	–	1.80
		120	4.724	66	2.598	34	1.339	2	0.079	71.6	45.0	13.2	UC311	UC311L3	10	0.394	25	0.984	41	1.614	12	0.472	M12×1.5	–	1.90
		100	3.937	55.6	2.189	25	0.984	1.5	0.059	43.4	29.4	14.4	UC211-35	UC211-35L3	7	0.276	22.2	0.874	33.4	1.315	9	0.354	–	3/8-24UNF	1.09
–	2 3/16	110	4.331	65.1	2.563	27	1.063	1.5	0.059	52.4	36.2	14.4	UCX11-35	UCX11-35L3	7.5	0.295	25.4	1.000	39.7	1.563	10.5	0.413	–	3/8-24UNF	1.78
		120	4.724	66	2.598	34	1.339	2	0.079	71.6	45.0	13.2	UC311-35	UC311-35L3	10	0.394	25	0.984	41	1.614	12	0.472	M12×1.5	–	1.67
–	2 1/4	110	4.331	65.1	2.563	27	1.063	1.5	0.059	52.4	36.2	14.4	UCX11-36	UCX11-36L3	7.5	0.295	25.4	1.000	39.7	1.563	10.5	0.413	–	3/8-24UNF	1.7
–	2 1/4	110	4.331	65.1	2.563	27	1.063	1.5	0.059	52.4	36.2	14.4	UC212-36	UC212-36L3	7.5	0.295	25.4	1.000	39.7	1.563	10.5	0.413	–	3/8-24UNF	1.67
		110	4.331	65.1	2.563	27	1.063	1.5	0.059	52.4	36.2	14.4	UC212	UC212L3	7.5	0.295	25.4	1.000	39.7	1.563	10.5	0.413	M10×1.25	–	1.54
60	–	120	4.724	65.1	2.563	28	1.102	1.5	0.059	57.2	40.1	14.4	UCX12	UCX12L3	7.5	0.295	25.4	1.000	39.7	1.563	12	0.472	M12×1.5	–	2.05
		130	5.118	71	2.795	36	1.417	2.1	0.083	81.9	52.2	13.2	UC312	UC312L3	11.5	0.453	26	1.024	45	1.772	12	0.472	M12×1.5	–	2.60
–	2 3/8	110	4.331	65.1	2.563	27	1.063	1.5	0.059	52.4	36.2	14.4	UC212-38	UC212-38L3	7.5	0.295	25.4	1.000	39.7	1.563	10.5	0.413	–	3/8-24UNF	1.52
		110	4.331	65.1	2.563	27	1.063	1.5	0.059	52.4	36.2	14.4	UC212-39	UC212-39L3	7.5	0.295	25.4	1.000	39.7	1.563	10.5	0.413	–	3/8-24UNF	1.45
–	2 7/16	120	4.724	65.1	2.563	28	1.102	1.5	0.059	57.2	40.1	14.4	UCX12-39	UCX12-39L3	7.5	0.295	25.4	1.000	39.7	1.563	12	0.472	–	1/2-20UNF	1.95
		130	5.118	71	2.795	36	1.417	2.1	0.083	81.9	52.2	13.2	UC312-39	UC312-39L3	11.5	0.453	26	1.024	45	1.772	12	0.472	M12×1.5	–	2.50
		120	4.724	65.1	2.563	28	1.102	1.5	0.059	57.2	40.1	14.4	UC213-40	UC213-40L3	7.5	0.295	25.4	1.000	39.7	1.563	12	0.472	–	1/2-20UNF	1.94
–	2 1/2	125	4.921	74.6	2.937	30	1.181	1.5	0.059	62.2	44.1	14.5	UCX13-40	UCX13-40L3	9	0.354	30.2	1.189	44.4	1.748	12	0.472	–	1/2-20UNF	2.61
		140	5.512	75	2.953	38	1.496	2.1	0.083	92.7	59.9	13.2	UC313-40	UC313-40L3	12	0.472	30	1.181	45	1.772	12	0.472	M12×1.5	–	3.24
		120	4.724	65.1	2.563	28	1.102	1.5	0.059	57.2	40.1	14.4	UC213	UC213L3	7.5	0.295	25.4	1.000	39.7	1.563	12	0.472	M12×1.5	–	1.86
65	–	125	4.921	74.6	2.937	30	1.181	1.5	0.059	62.2	44.1	14.5	UCX13	UCX13L3	9	0.354	30.2	1.189	44.4	1.748	12	0.472	M12×1.5	–	2.52
		140	5.512	75	2.953	38	1.496	2.1	0.083	92.7	59.9	13.2	UC313	UC313L3	12	0.472	30	1.181	45	1.772	12	0.472	M12×1.5	–	3.16
		125	4.921	74.6	2.937	30	1.181	1.5	0.059	62.2	44.1	14.5	UC214-44	UC214-44L3	9	0.354	30.2	1.189	44.4	1.748	12	0.472	–	1/2-20UNF	2.06
–	2 3/4	130	5.118	77.8	3.063	32	1.260	1.5	0.059	67.4	48.3	14.5	UCX14-44	UCX14-44L3	9	0.354	33.3	1.311	44.5	1.752	12	0.472	–	1/2-20UNF	2.75
		150	5.906	78	3.071	40	1.575	2.1	0.083	104	68.2	13.2	UC314-44	UC314-44L3	12.5	0.492	33	1.299	45	1.772	12	0.472	M12×1.5	–	3.91
		125	4.921	74.6	2.937	30	1.181	1.5	0.059	62.2	44.1	14.5	UC214	UC214L3	9	0.354	30.2	1.189	44.4	1.748	12	0.472	M12×1.5	–	2.05
70	–	130	5.118	77.8	3.063	32	1.260	1.5	0.059	67.4	48.3	14.5	UCX14	UCX14L3	9	0.354	33.3	1.311	44.5	1.752	12	0.472	M12×1.5	–	2.74
		150	5.906	78	3.071	40	1.575	2.1	0.083	104	68.2	13.2	UC314	UC314L3	12.5	0.492	33	1.299	45	1.772	12	0.472	M12×1.5	–	3.90
		130	5.118	77.8	3.063	32	1.260	1.5	0.059	67.4	48.3	14.5	UC215-47	UC215-47L3	9	0.354	33.3	1.311	44.5	1.752	12	0.472	–	1/2-20UNF	2.23
–	2 15/16	140	5.512	82.6	3.252	33	1.299	1.5	0.059	72.7	53.0	14.6	UCX15-47	UCX15-47L3	9	0.354	33.3	1.311	49.3	1.941	14	0.551	–	1/2-20UNF	3.43
		160	6.299	82	3.228	42	1.654	2.1	0.083	113	77.2	13.2	UC315-47	UC315-47L3	14.5	0.571	32	1.260	50	1.969	14	0.551	M14×1.5	–	4.72
		130	5.118	77.8	3.063	32	1.260	1.5	0.059	67.4	48.3	14.5	UC215	UC215L3	9	0.354	33.3	1.311	44.5	1.752	12	0.472	M12×1.5	–	2.21
75	–	140	5.512	82.6	3.252	33	1.299	1.5	0.059	72.7	53.0	14.6	UCX15	UCX15L3	9	0.354	33.3	1.311	49.3	1.941	14	0.551	M12×1.5	–	3.41
		160	6.299	82	3.228	42	1.654	2.1	0.083	113	77.2	13.2	UC315	UC315L3	14.5	0.571	32	1.260	50	1.969	14	0.551	M14×1.5	–	4.70
		130	5.118	77.8	3.063	32	1.260	1.5	0.059	67.4	48.3	14.5	UC215-48	UC215-48L3	9	0.354	33.3	1.311	44.5	1.752	12	0.472	–	1/2-20UNF	2.12
–	3	140	5.512	82.6	3.252	33	1.299	1.5	0.059	72.7	53.0	14.6	UCX15-48	UCX15-48L3	9	0.354	33.3	1.311	49.3	1.941	14	0.551	–	1/2-20UNF	3.32
		160	6.299	82	3.228	42	1.654	2.1	0.083	113	77.2	13.2	UC315-48	UC315-48L3	14.5	0.571	32	1.260	50	1.969	14	0.551	M14×1.5	–	4.61

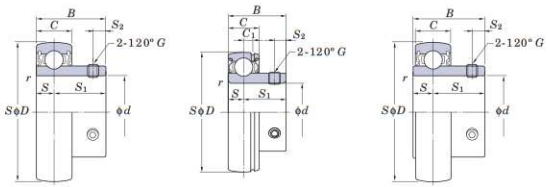
Remarks 1. SU type product is the clean series ball bearing for unit.
2. From UC201 to 205 are the double seal type products (L2).

UC, SB, SB-RKP8, SU
Cylindrical bore (with set screws)
d (75) ~ 140 mm

UC SB SB-RKP8 SU



UC UC-L3



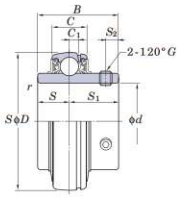
SB SB-RKP8 SU

Shaft Dia. mm	Shaft Dia. inch	Dimensions d	D mm	D inch	B mm	B inch	C mm	C inch	r (min.) mm	r (min.) inch	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Bearing No. Standard	L3 Type	C_1 mm	C_1 inch	S mm	S inch	S_1 mm	S_1 inch	S_2 mm	S_2 inch	Set Screw Brg. Bore G mm	G inch	Mass kg
–	3 1/8		140	5.512	82.6	3.252	33	1.299	2	0.079	72.7	53.0	14.6	UC216-50	UC216-50L3	9	0.354	33.3	1.311	49.3	1.941	14	0.551	–	1/2-20UNF	2.84
			140	5.512	82.6	3.252	33	1.299	2	0.079	72.7	53.0	14.6	UC216	UC216L3	9	0.354	33.3	1.311	49.3	1.941	14	0.551	M12x1.5	–	2.79
80	–		150	5.906	85.7	3.374	35	1.378	2	0.079	84.0	61.9	14.5	UCX16	UCX16L3	10	0.394	34.1	1.343	51.6	2.031	14	0.551	M12x1.5	–	3.87
			170	6.693	86	3.386	44	1.732	2.1	0.083	123	86.7	13.3	UC316	UC316L3	15	0.591	34	1.339	52	2.047	14	0.551	M14x1.5	–	5.60
–	3 1/4		150	5.906	85.7	3.374	35	1.378	2	0.079	84.0	61.9	14.5	UC217-52	UC217-52L3	10	0.394	34.1	1.343	51.6	2.031	14	0.551	–	1/2-20UNF	3.66
			150	5.906	85.7	3.374	35	1.378	2	0.079	84.0	61.9	14.5	UC217	UC217L3	10	0.394	34.1	1.343	51.6	2.031	14	0.551	M12x1.5	–	3.45
85	–		160	6.299	96	3.780	38	1.496	2	0.079	96.1	71.5	14.5	UCX17	UCX17L3	11	0.433	39.7	1.563	56.3	2.217	15	0.591	M12x1.5	–	5.05
			180	7.087	96	3.780	46	1.811	3	0.118	133	96.8	13.3	UC317	UC317L3	15	0.591	40	1.575	56	2.205	16	0.630	M16x1.5	–	6.90
–	3 7/16		160	6.299	96	3.780	38	1.496	2	0.079	96.1	71.5	14.5	UCX17-55	UCX17-55L3	11	0.433	39.7	1.563	56.3	2.217	15	0.591	–	1/2-20UNF	4.80
–	3 1/2		160	6.299	96	3.780	38	1.496	2	0.079	96.1	71.5	14.5	UC218-56	UC218-56L3	11	0.433	39.7	1.563	56.3	2.217	15	0.591	–	1/2-20UNF	4.46
			190	7.480	96	3.780	48	1.890	3	0.118	143	107	13.3	UC318-56	UC318-56L3	15.5	0.610	40	1.575	56	2.205	16	0.630	M16x1.5	–	8.03
			160	6.299	96	3.780	38	1.496	2	0.079	96.1	71.5	14.5	UC218	UC218L3	11	0.433	39.7	1.563	56.3	2.217	15	0.591	M12x1.5	–	4.35
90	–		170	6.693	104	4.094	40	1.575	2	0.079	109	81.9	14.4	UCX18	–	11.5	0.453	42.9	1.689	61.1	2.406	16	0.630	M14x1.5	–	6.00
			190	7.480	96	3.780	48	1.890	3	0.118	143	107	13.3	UC318	UC318L3	15.5	0.610	40	1.575	56	2.205	16	0.630	M16x1.5	–	7.87
95	–		200	7.874	103	4.055	50	1.969	3	0.118	153	119	13.3	UC319	UC319L3	16.5	0.650	41	1.614	62	2.441	18	0.709	M16x1.5	–	8.91
100	–		190	7.480	117.5	4.626	43	1.693	2.1	0.083	133	105	14.4	UCX20	–	13	0.512	49.2	1.937	68.3	2.689	18	0.709	M16x1.5	–	8.56
			215	8.465	108	4.252	54	2.126	3	0.118	173	141	13.2	UC320	UC320L3	18	0.709	42	1.654	66	2.598	20	0.787	M18x1.5	–	11.2
–	3 15/16		190	7.480	117.5	4.626	43	1.693	2.1	0.083	133	105	14.4	UCX20-63	–	13	0.512	49.2	1.937	68.3	2.689	18	0.709	–	5/8-18UNF	8.56
			215	8.465	108	4.252	54	2.126	3	0.118	173	141	13.2	UC320-63	UC320-63L3	18	0.709	42	1.654	66	2.598	20	0.787	M18x1.5	–	11.2
–	4		190	7.480	117.5	4.626	43	1.693	2.1	0.083	133	105	14.4	UCX20-64	–	13	0.512	49.2	1.937	68.3	2.689	18	0.709	–	5/8-18UNF	8.33
			215	8.465	108	4.252	54	2.126	3	0.118	173	141	13.2	UC320-64	UC320-64L3	18	0.709	42	1.654	66	2.598	20	0.787	M18x1.5	–	11.0
105			225	8.858	112	4.409	56	2.205	3	0.118	184	153	13.2	UC321	–	19	0.748	44	1.732	68	2.677	20	0.787	M18x1.5	–	12.7
110			240	9.449	117	4.606	60	2.362	3	0.118	205	180	13.2	UC322	UC322L3	20	0.787	46	1.811	71	2.795	20	0.787	M18x1.5	–	15.1
120	–		260	10.236	126	4.961	64	2.520	3	0.118	207	185	13.5	UC324	UC324L3	21	0.827	51	2.008	75	2.953	20	0.787	M18x1.5	–	19.0
130			280	11.024	135	5.315	68	2.677	4	0.157	229	214	13.6	UC326	UC326L3	22	0.866	54	2.126	81	3.189	20	0.787	M20x1.5	–	23.6
140			300	11.811	145	5.709	72	2.835	4	0.157	253	246	13.6	UC328	UC328L3	23	0.906	59	2.323	86	3.386	20	0.787	M20x1.5	–	29.4

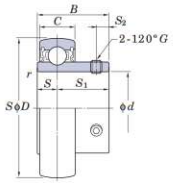
Remarks 1. SU type product is the clean series ball bearing for unit.
2. From UC201 to 205 are the double seal type products (L2).

UC-S6, SU-S6 (Stainless steel series)
Cylindrical bore (with set screws)
d 10 ~ 60 mm

UC-S6 SU-S6



UC-S6



SU-S6

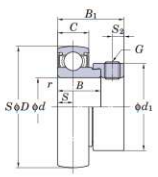
Shaft Dia. mm	Shaft Dia. inch	Dimensions d		D		B		C		r (min.)		Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Bearing No. Standard	Dimensions C_1		S		S_1		S_2		Set Screw Brg. Bore G	Mass
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch					mm	inch	mm	inch	mm	inch	mm	inch	mm	kg
10	–	26	1.024	15	0.591	8	0.315	0.3	0.012	3.9	1.55	12.3	SU000S6	–	–	5	0.197	10	0.394	3	0.118	M3×0.35	0.024
12		28	1.102	15	0.591	8	0.315	0.3	0.012	4.3	1.9	13.2	SU001S6	–	–	5	0.197	10	0.394	3	0.118	M3×0.35	0.026
		40	1.575	27.4	1.079	13	0.512	0.6	0.024	8.15	3.85	13.2	UC201XS6	3.5	0.138	11.5	0.453	15.9	0.626	4	0.158	M5×0.5	0.10
	1/2	40	1.575	27.4	1.079	13	0.512	0.6	0.024	8.15	3.85	13.2	UC201-8XS6	3.5	0.138	11.5	0.453	15.9	0.626	4	0.158	M5×0.5	0.10
15		32	1.260	16.5	0.650	9	0.354	0.3	0.012	4.7	2.25	13.9	SU002S6	–	–	5.5	0.217	11	0.433	3.3	0.130	M4×0.5	0.038
		40	1.575	27.4	1.079	13	0.512	0.6	0.024	8.15	3.85	13.2	UC202XS6	3.5	0.138	11.5	0.453	15.9	0.626	4	0.158	M5×0.5	0.10
	5/8	40	1.575	27.4	1.079	13	0.512	0.6	0.024	8.15	3.85	13.2	UC202-10XS6	3.5	0.138	11.5	0.453	15.9	0.626	4	0.158	M5×0.5	0.10
17	–	35	1.378	17.5	0.689	10	0.394	0.3	0.012	5.1	2.6	14.4	SU003S6	–	–	6	0.236	11.5	0.453	3.3	0.130	M4×0.5	0.050
		40	1.575	27.4	1.079	13	0.512	0.6	0.024	8.15	3.85	13.2	UC203XS6	3.5	0.138	11.5	0.453	15.9	0.626	4	0.158	M5×0.5	0.10
20	3/4	47	1.850	31	1.220	16	0.630	1	0.039	10.9	5.35	13.2	UC204-12S6	4	0.157	12.7	0.500	18.3	0.720	5	0.197	M6×0.75	0.16
		42	1.654	21	0.827	12	0.472	0.6	0.024	7.9	4	13.9	SU004S6	–	–	7	0.276	14	0.551	4	0.157	M5×0.5	0.080
		47	1.850	31	1.220	16	0.630	1	0.039	10.9	5.35	13.2	UC204S6	4	0.157	12.7	0.500	18.3	0.720	5	0.197	M6×0.75	0.16
25	7/8	52	2.047	34.1	1.343	17	0.669	1	0.039	11.9	6.3	13.9	UC205-14S6	5	0.197	14.3	0.563	19.8	0.780	5.5	0.217	M6×0.75	0.23
	15/16	52	2.047	34.1	1.343	17	0.669	1	0.039	11.9	6.3	13.9	UC205-15S6	5	0.197	14.3	0.563	19.8	0.780	5.5	0.217	M6×0.75	0.21
		47	1.850	22	0.866	12	0.472	0.6	0.024	8.5	4.65	14.5	SU005S6	–	–	7	0.276	15	0.591	4.5	0.177	M5×0.5	0.10
		52	2.047	34.1	1.343	17	0.669	1	0.039	11.9	6.3	13.9	UC205S6	5	0.197	14.3	0.563	19.8	0.780	5.5	0.217	M6×0.75	0.20
	1	52	2.047	34.1	1.343	17	0.669	1	0.039	11.9	6.3	13.9	UC205-16S6	5	0.197	14.3	0.563	19.8	0.780	5.5	0.217	M6×0.75	0.20
30	1 1/8	62	2.441	38.1	1.500	19	0.748	1	0.039	16.5	9.05	13.9	UC206-18S6	5	0.197	15.9	0.626	22.2	0.874	6	0.236	M6×0.75	0.34
		55	2.165	24.5	0.965	13	0.512	1	0.039	11.2	6.6	14.7	SU006S6	–	–	7.5	0.295	17	0.669	5.5	0.217	M5×0.5	0.15
		62	2.441	38.1	1.500	19	0.748	1	0.039	16.5	9.05	13.9	UC206S6	5	0.197	15.9	0.626	22.2	0.874	6	0.236	M6×0.75	0.32
	1 3/16	62	2.441	38.1	1.500	19	0.748	1	0.039	16.5	9.05	13.9	UC206-19S6	5	0.197	15.9	0.626	22.2	0.874	6	0.236	M6×0.75	0.32
	1 1/4	62	2.441	38.1	1.500	19	0.748	1	0.039	16.5	9.05	13.9	UC206-20S6	5	0.197	15.9	0.626	22.2	0.874	6	0.236	M6×0.75	0.30
35	1 1/4	72	2.835	42.9	1.689	20	0.787	1.1	0.043	21.8	12.3	13.9	UC207-20S6	5.5	0.217	17.5	0.689	25.4	1.000	6.5	0.256	M8×1	0.54
	1 5/16	72	2.835	42.9	1.689	20	0.787	1.1	0.043	21.8	12.3	13.9	UC207-21S6	5.5	0.217	17.5	0.689	25.4	1.000	6.5	0.256	M8×1	0.51
	1 3/8	72	2.835	42.9	1.689	20	0.787	1.1	0.043	21.8	12.3	13.9	UC207-22S6	5.5	0.217	17.5	0.689	25.4	1.000	6.5	0.256	M8×1	0.48
		72	2.835	42.9	1.689	20	0.787	1.1	0.043	21.8	12.3	13.9	UC207S6	5.5	0.217	17.5	0.689	25.4	1.000	6.5	0.256	M8×1	0.48
	1 7/16	72	2.835	42.9	1.689	20	0.787	1.1	0.043	21.8	12.3	13.9	UC207-23S6	5.5	0.217	17.5	0.689	25.4	1.000	6.5	0.256	M8×1	0.45
40	1 1/2	80	3.150	49.2	1.937	21	0.827	1.1	0.043	24.8	14.3	14.0	UC208-24S6	6	0.236	19	0.748	30.2	1.189	8	0.315	M8×1	0.68
	1 9/16	80	3.150	49.2	1.937	21	0.827	1.1	0.043	24.8	14.3	14.0	UC208-25S6	6	0.236	19	0.748	30.2	1.189	8	0.315	M8×1	0.60
		80	3.150	49.2	1.937	21	0.827	1.1	0.043	24.8	14.3	14.0	UC208S6	6	0.236	19	0.748	30.2	1.189	8	0.315	M8×1	0.64
45	1 5/8	85	3.346	49.2	1.937	22	0.866	1.1	0.043	27.8	16.2	14.0	UC209-26S6	6	0.236	19	0.748	30.2	1.189	8	0.315	M8×1	0.78
	1 11/16	85	3.346	49.2	1.937	22	0.866	1.1	0.043	27.8	16.2	14.0	UC209-27S6	6	0.236	19	0.748	30.2	1.189	8	0.315	M8×1	0.74
	1 3/4	85	3.346	49.2	1.937	22	0.866	1.1	0.043	27.8	16.2	14.0	UC209-28S6	6	0.236	19	0.748	30.2	1.189	8	0.315	M8×1	0.70
		85	3.346	49.2	1.937	22	0.866	1.1	0.043	27.8	16.2	14.0	UC209S6	6	0.236	19	0.748	30.2	1.189	8	0.315	M8×1	0.68
50	1 7/8	90	3.543	51.6	2.031	24	0.945	1.1	0.043	29.8	18.6	14.4	UC210-30S6	6	0.236	19	0.748	32.6	1.283	9	0.354	M8×1	0.87
	1 15/16	90	3.543	51.6	2.031	24	0.945	1.1	0.043	29.8	18.6	14.4	UC210-31S6	6	0.236	19	0.748	32.6	1.283	9	0.354	M8×1	0.82
		90	3.543	51.6	2.031	24	0.945	1.1	0.043	29.8	18.6	14.4	UC210S6	6	0.236	19	0.748	32.6	1.283	9	0.354	M8×1	0.80
	2	90	3.543	51.6	2.031	24	0.945	1.1	0.043	29.8	18.6	14.4	UC210-32S6	6	0.236	19	0.748	32.6	1.283	9	0.354	M8×1	0.78
55	2	100	3.937	55.6	2.189	25	0.984	1.5	0.059	36.8	23.5	14.4	UC211-32S6	7	0.276	22.2	0.874	33.4	1.315	9	0.354	M10×1.25	1.26
	2 1/8	100	3.937	55.6	2.189	25	0.984	1.5	0.059	36.8	23.5	14.4	UC211-34S6	7	0.276	22.2	0.874	33.4	1.315	9	0.354	M10×1.25	1.15
		100	3.937	55.6	2.189	25	0.984	1.5	0.059	36.8	23.5	14.4	UC211S6	7	0.276	22.2	0.874	33.4	1.315	9	0.354	M10×1.25	1.11
	2 3/16	100	3.937	55.6	2.189	25	0.984	1.5	0.059	36.8	23.5	14.4	UC211-35S6	7	0.276	22.2	0.874	33.4	1.315	9	0.354	M10×1.25	1.09
60	2 1/4	110	4.331	65.1	2.563	27	1.063	1.5	0.059	44.5	29	14.4	UC212-36S6	7.5	0.295	25.4	1.000	39.7	1.563	10.5	0.413	M10×1.25	1.67
		110	4.331	65.1	2.563	27	1.063	1.5	0.059	44.5	29	14.4	UC212S6	7.5	0.295	25.4	1.000	39.7	1.563	10.5	0.413	M10×1.25	1.54
	2 3/8	110	4.331	65.1	2.563	27	1.063	1.5	0.059	44.5	29	14.4	UC212-38S6	7.5	0.295	25.4	1.000	39.7	1.563	10.5	0.413	M10×1.25	1.52
	2 7/16	110	4.331	65.1	2.563	27	1.063	1.5	0.059	44.5	29	14.4	UC212-39S6	7.5	0.295	25.4	1.000	39.7	1.563	10.5	0.413	M10×1.25	1.45

Remark S6 series product is the stainless steel series ball bearing for unit.

FYH

SA, SA-F, NA
Cylindrical bore
(with eccentric locking collar)
d 12 ~ (30) mm

SA SA-F NA



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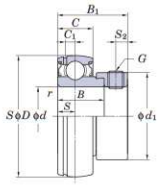
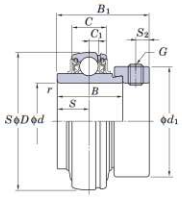


SA-F

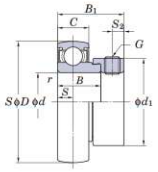


NA

Shaft Dia mm	Shaft Dia inch	Dimensions D mm	D inch	B mm	B inch	B_1 mm	B_1 inch	C mm	C inch	r (min.) mm	r (min.) inch	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Bearing No.	Dimensions C_1 mm	C_1 inch	S mm	S inch	S_2 mm	S_2 inch	d_1 mm	d_1 inch	Set Screw Brg.Bore mm	Set Screw Brg.Bore inch	Mass kg
12	–	40	1.575	19	0.784	28.5	1.122	12	0.472	0.6	0.024	9.55	4.80	13.2	SA201	–	–	6	0.236	4.8	0.189	28.6	1.126	M6×0.75	–	0.13
		40	1.575	19.1	0.752	28.6	1.126	13	0.512	0.6	0.024	9.55	4.80	13.2	SA201F	3.4	0.134	6.5	0.256	4.8	0.189	28.6	1.126	M6×0.75	–	0.13
		47	1.850	34.2	1.346	43.7	1.720	16	0.630	1	0.039	12.8	6.65	13.2	NA201	4	0.157	17.1	0.673	4.8	0.189	33.3	1.311	M6×0.75	–	0.29
–	1/2	40	1.575	19	0.784	28.5	1.122	12	0.472	0.6	0.024	9.55	4.80	13.2	SA201-8	–	–	6	0.236	4.8	0.189	28.6	1.126	–	1/4-28UNF	0.13
		40	1.575	19.1	0.752	28.6	1.126	13	0.512	0.6	0.024	9.55	4.80	13.2	SA201-8F	3.4	0.134	6.5	0.256	4.8	0.189	28.6	1.126	–	1/4-28UNF	0.13
		47	1.850	34.2	1.346	43.7	1.720	16	0.630	1	0.039	12.8	6.65	13.2	NA201-8	4	0.157	17.1	0.673	4.8	0.189	33.3	1.311	–	1/4-28UNF	0.29
15	–	40	1.575	19	0.784	28.5	1.122	12	0.472	0.6	0.024	9.55	4.80	13.2	SA202	–	–	6	0.236	4.8	0.189	28.6	1.126	M6×0.75	–	0.13
		40	1.575	19.1	0.752	28.6	1.126	13	0.512	0.6	0.024	9.55	4.80	13.2	SA202F	3.4	0.134	6.5	0.256	4.8	0.189	28.6	1.126	M6×0.75	–	0.13
		47	1.850	34.2	1.346	43.7	1.720	16	0.630	1	0.039	12.8	6.65	13.2	NA202	4	0.157	17.1	0.673	4.8	0.189	33.3	1.311	M6×0.75	–	0.27
–	5/8	40	1.575	19	0.784	28.5	1.122	12	0.472	0.6	0.024	9.55	4.80	13.2	SA202-10	–	–	6	0.236	4.8	0.189	28.6	1.126	–	1/4-28UNF	0.13
		47	1.850	34.2	1.346	43.7	1.720	16	0.630	1	0.039	12.8	6.65	13.2	NA202-10	4	0.157	17.1	0.673	4.8	0.189	33.3	1.311	–	1/4-28UNF	0.26
17	–	40	1.575	19	0.784	28.5	1.122	12	0.472	0.6	0.024	9.55	4.80	13.2	SA203	–	–	6	0.236	4.8	0.189	28.6	1.126	M6×0.75	–	0.13
		40	1.575	19.1	0.752	28.6	1.126	13	0.512	0.6	0.024	9.55	4.80	13.2	SA203F	3.4	0.134	6.5	0.256	4.8	0.189	28.6	1.126	M6×0.75	–	0.13
		47	1.850	34.2	1.346	43.7	1.720	16	0.630	1	0.039	12.8	6.65	13.2	NA203	4	0.157	17.1	0.673	4.8	0.189	33.3	1.311	M6×0.75	–	0.25
–	3/4	47	1.850	20	0.787	29.5	1.161	14	0.551	1	0.039	12.8	6.65	13.2	SA204-12	–	–	7	0.276	4.8	0.189	33.3	1.311	–	1/4-28UNF	0.15
		47	1.850	21.5	0.846	31	1.220	15	0.591	1	0.039	12.8	6.65	13.2	SA204-12F	3.7	0.146	7.5	0.295	4.8	0.189	33.3	1.311	–	1/4-28UNF	0.19
		47	1.850	34.2	1.346	43.7	1.720	16	0.630	1	0.039	12.8	6.65	13.2	NA204-12	4	0.157	17.1	0.673	4.8	0.189	33.3	1.311	–	1/4-28UNF	0.23
20	–	47	1.850	20	0.787	29.5	1.161	14	0.551	1	0.039	12.8	6.65	13.2	SA204	–	–	7	0.276	4.8	0.189	33.3	1.311	M6×0.75	–	0.15
		47	1.850	21.5	0.846	31	1.220	15	0.591	1	0.039	12.8	6.65	13.2	SA204F	3.7	0.146	7.5	0.295	4.8	0.189	33.3	1.311	M6×0.75	–	0.19
		47	1.850	34.2	1.346	43.7	1.720	16	0.630	1	0.039	12.8	6.65	13.2	NA204	4	0.157	17.1	0.673	4.8	0.189	33.3	1.311	M6×0.75	–	0.22
–	7/8	52	2.047	21	0.827	30.5	1.201	15	0.591	1	0.039	14.0	7.85	13.9	SA205-14	–	–	7.5	0.295	4.8	0.189	38.1	1.500	–	1/4-28UNF	0.22
		52	2.047	34.9	1.374	44.4	1.748	17	0.669	1	0.039	14.0	7.85	13.9	NA205-14	5	0.197	17.5	0.689	4.8	0.189	38.1	1.500	–	1/4-28UNF	0.27
–	15/16	52	2.047	21	0.827	30.5	1.201	15	0.591	1	0.039	14.0	7.85	13.9	SA205-15	–	–	7.5	0.295	4.8	0.189	38.1	1.500	–	1/4-28UNF	0.22
		52	2.047	21.5	0.846	31	1.220	15	0.591	1	0.039	14.0	7.85	13.9	SA205-15F	3.7	0.146	7.5	0.295	4.8	0.189	38.1	1.500	–	1/4-28UNF	0.23
		52	2.047	34.9	1.374	44.4	1.748	17	0.669	1	0.039	14.0	7.85	13.9	NA205-15	5	0.197	17.5	0.689	4.8	0.189	38.1	1.500	–	1/4-28UNF	0.29
25	–	52	2.047	21	0.827	30.5	1.201	15	0.591	1	0.039	14.0	7.85	13.9	SA205	–	–	7.5	0.295	4.8	0.189	38.1	1.500	M6×0.75	–	0.22
		52	2.047	21.5	0.846	31	1.220	15	0.591	1	0.039	14.0	7.85	13.9	SA205F	3.7	0.146	7.5	0.295	4.8	0.189	38.1	1.500	M6×0.75	–	0.23
		52	2.047	34.9	1.374	44.4	1.748	17	0.669	1	0.039	14.0	7.85	13.9	NA205	5	0.197	17.5	0.689	4.8	0.189	38.1	1.500	M6×0.75	–	0.25
–	1	52	2.047	21	0.827	30.5	1.201	15	0.591	1	0.039	14.0	7.85	13.9	SA205-16	–	–	7.5	0.295	4.8	0.189	38.1	1.500	–	1/4-28UNF	0.22
		52	2.047	21.5	0.846	31	1.220	15	0.591	1	0.039	14.0	7.85	13.9	SA205-16F	3.7	0.146	7.5	0.295	4.8	0.189	38.1	1.500	–	1/4-28UNF	0.23
		52	2.047	34.9	1.374	44.4	1.748	17	0.669	1	0.039	14.0	7.85	13.9	NA205-16	5	0.197	17.5	0.689	4.8	0.189	38.1	1.500	–	1/4-28UNF	0.25
–	1 1/8	62	2.441	22	0.866	33.9	1.335	16	0.630	1	0.039	19.5	11.3	13.9	SA206-18	–	–	8	0.315	6	0.236	44.5	1.752	–	5/16-24UNF	0.3
		62	2.441	23.8	0.937	35.7	1.406	18	0.709	1	0.039	19.5	11.3	13.9	SA206-18F	4.7	0.185	9	0.354	6	0.236	44.5	1.752	–	5/16-24UNF	0.34
		62	2.441	36.5	1.437	48.4	1.906	19	0.748	1	0.039	19.5	11.3	13.9	NA206-18	5	0.197	18.3	0.720	6	0.236	44.5	1.752	–	5/16-24UNF	0.43
30	–	62	2.441	22	0.866	33.9	1.335	16	0.630	1	0.039	19.5	11.3	13.9	SA206	–	–	8	0.315	6	0.236	44.5	1.752	M8×1	–	0.3
		62	2.441	23.8	0.937	35.7	1.406	18	0.709	1	0.039	19.5	11.3	13.9	SA206F	4.7	0.185	9	0.354	6	0.236	44.5	1.752	M8×1	–	0.34
		62	2.441	36.5	1.437	48.4	1.906	19	0.748	1	0.039	19.5	11.3	13.9	NA206	5	0.197	18.3	0.720	6	0.236	44.5	1.752	M8×1	–	0.41
–	1 3/16	62	2.441	22	0.866	33.9	1.335	16	0.630	1	0.039	19.5	11.3	13.9	SA206-19	–	–	8	0.315	6	0.236	44.5	1.752	–	5/16-24UNF	0.3
		62	2.441	23.8	0.937	35.7	1.406	18	0.709	1	0.039	19.5	11.3	13.9	SA206-19F	4.7	0.185	9	0.354	6	0.236	44.5	1.752	–	5/16-24UNF	0.34
		62	2.441	36.5	1.437	48.4	1.906	19	0.748	1	0.039	19.5	11.3	13.9	NA206-19	5	0.197	18.3	0.720	6	0.236	44.5	1.752	–	5/16-24UNF	0.41
		72	2.835	36.5	1.437	50	1.969	24	0.945	1.1	0.043	26.7	15.0	13.3	NA306-19	6.5	0.256	17.5	0.689	6.8	0.268	49.2	1.937	–	5/16-24UNF	0.66
–	1 1/4	62	2.441	22	0.866	33.9	1.335	16	0.630	1	0.039	19.5	11.3	13.9	SA206-20	–	–	8	0.315	6	0.236	44.5	1.752	–	5/16-24UNF	0.3
		62	2.441	23.8	0.937	35.7	1.406	18	0.709	1	0.039	19.5	11.3	13.9	SA206-20F	4.7	0.185	9	0.354	6	0.236	44.5	1.752	–	5/16-24UNF	0.34
		62	2.441	36.5	1.437	48.4	1.906	19	0.748	1	0.039	19.5	11.3	13.9	NA206-20	5	0.197	18.3	0.720	6	0.236	44.5	1.752	–	5/16-24UNF	0.38
–	1 1/4	72	2.835	23	0.906	36.5	1.437	17	0.669	1.1	0.043	25.7	15.4	13.9	SA207-20	–	–	8.5	0.335	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.5
		72	2.835	25.4	1.000	38.9	1.531	19	0.748	1.1	0.043	25.7	15.4	13.9	SA207-20F	5.7	0.224	9.5	0.335	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.57
		72	2.835	37.6	1.480	51.1	2.012	20	0.787	1.1	0.043	25.7	15.4	13.9	NA207-20	5.5	0.217	18.8	0.740	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.68
–	1 5/16	72	2.835	23	0.906	36.5	1.437	17	0.669	1.1	0.043	25.7	15.4	13.9	SA207-21	–	–	8.5	0.335	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.5
		72	2.835	25.4	1.000	38.9	1.531	19	0.748	1.1	0.043	25.7	15.4	13.9	SA207-21F	5.7	0.224	9.5	0.335	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.57
		72	2.835	37.6	1.480	51.1	2.012	20	0.787	1.1	0.043	25.7	15.4	13.9	NA207-21	5.5	0.217	18.8	0.740	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.65

SA, SA-F, NA
Cylindrical bore
(with eccentric locking collar)
d (30) ~ 60 mm

SA SA-F NA



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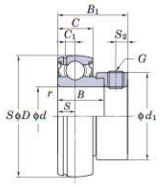

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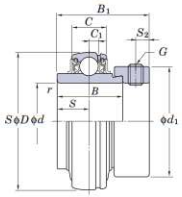
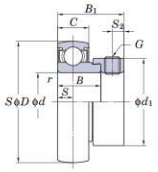


NA

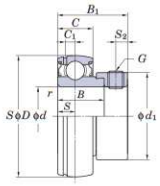
Shaft Dia mm	Shaft Dia inch	Dimensions D mm	D inch	B mm	B inch	B_1 mm	B_1 inch	C mm	C inch	r (min.) mm	r (min.) inch	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Bearing No.	Dimensions C_1 mm	C_1 inch	S mm	S inch	S_2 mm	S_2 inch	d_1 mm	d_1 inch	Set Screw Brg.Bore mm	inch	Mass kg
–	1 3/8	72	2.835	23	0.906	36.5	1.437	17	0.669	1.1	0.043	25.7	15.4	13.9	SA207-22	–	–	8.5	0.335	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.5
		72	2.835	25.4	1.000	38.9	1.531	19	0.748	1.1	0.043	25.7	15.4	13.9	SA207-22F	5.7	0.224	9.5	0.335	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.57
		72	2.835	37.6	1.480	51.1	2.012	20	0.787	1.1	0.043	25.7	15.4	13.9	NA207-22	5.5	0.217	18.8	0.740	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.61
35	–	72	2.835	23	0.906	36.5	1.437	17	0.669	1.1	0.043	25.7	15.4	13.9	SA207	–	–	8.5	0.335	6.8	0.268	55.6	2.189	M8×1	–	0.5
		72	2.835	25.4	1.000	38.9	1.531	19	0.748	1.1	0.043	25.7	15.4	13.9	SA207F	5.7	0.224	9.5	0.335	6.8	0.268	55.6	2.189	M8×1	–	0.57
		72	2.835	37.6	1.480	51.1	2.012	20	0.787	1.1	0.043	25.7	15.4	13.9	NA207	5.5	0.217	18.8	0.740	6.8	0.268	55.6	2.189	M8×1	–	0.61
–	1 7/16	72	2.835	23	0.906	36.5	1.437	17	0.669	1.1	0.043	25.7	15.4	13.9	SA207-23	–	–	8.5	0.335	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.5
		72	2.835	25.4	1.000	38.9	1.531	19	0.748	1.1	0.043	25.7	15.4	13.9	SA207-23F	5.7	0.224	9.5	0.335	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.57
		72	2.835	37.6	1.480	51.1	2.012	20	0.787	1.1	0.043	25.7	15.4	13.9	NA207-23	5.5	0.217	18.8	0.740	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.58
		80	3.150	38.1	1.500	51.6	2.031	26	1.024	1.5	0.059	33.4	19.3	13.2	NA307-23	7.5	0.295	18.3	0.720	6.8	0.268	55.5	2.185	–	5/16-24UNF	0.81
–	1 1/2	80	3.150	27	1.063	40.5	1.595	18	0.709	1.1	0.043	29.1	17.8	14.0	SA208-24	–	–	9	0.354	6.8	0.268	60.3	2.374	–	5/16-24UNF	0.67
		80	3.150	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	29.1	17.8	14.0	SA208-24F	6.4	0.252	11	0.433	6.8	0.268	60.3	2.374	–	5/16-24UNF	0.75
		80	3.150	42.8	1.685	56.3	2.217	21	0.827	1.1	0.043	29.1	17.8	14.0	NA208-24	6	0.236	21.4	0.843	6.8	0.268	60.3	2.374	–	5/16-24UNF	0.83
		90	3.543	41.3	1.626	57.1	2.248	28	1.102	1.5	0.059	40.7	24.0	13.2	NA308-24	8	0.315	19.8	0.780	8	0.315	63.5	2.500	–	3/8-24UNF	1.19
–	1 9/16	80	3.150	27	1.063	40.5	1.595	18	0.709	1.1	0.043	29.1	17.8	14.0	SA208-25	–	–	9	0.354	6.8	0.268	60.3	2.374	–	5/16-24UNF	0.67
		80	3.150	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	29.1	17.8	14.0	SA208-25F	6.4	0.252	11	0.433	6.8	0.268	60.3	2.374	–	5/16-24UNF	0.75
		80	3.150	42.8	1.685	56.3	2.217	21	0.827	1.1	0.043	29.1	17.8	14.0	NA208-25	6	0.236	21.4	0.843	6.8	0.268	60.3	2.374	–	5/16-24UNF	0.79
40	–	80	3.150	27	1.063	40.5	1.595	18	0.709	1.1	0.043	29.1	17.8	14.0	SA208	–	–	9	0.354	6.8	0.268	60.3	2.374	M8×1	–	0.67
		80	3.150	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	29.1	17.8	14.0	SA208F	6.4	0.252	11	0.433	6.8	0.268	60.3	2.374	M8×1	–	0.75
		80	3.150	42.8	1.685	56.3	2.217	21	0.827	1.1	0.043	29.1	17.8	14.0	NA208	6	0.236	21.4	0.843	6.8	0.268	60.3	2.374	M8×1	–	0.78
–	1 5/8	85	3.346	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	34.1	21.3	14.0	SA209-26F	6	0.236	11	0.433	6.8	0.268	63.5	2.500	–	5/16-24UNF	0.82
		85	3.346	42.8	1.685	56.3	2.217	22	0.866	1.1	0.043	34.1	21.3	14.0	NA209-26	6	0.236	21.4	0.843	6.8	0.268	63.5	2.500	–	5/16-24UNF	0.96
–	1 11/16	85	3.346	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	34.1	21.3	14.0	SA209-27F	6	0.236	11	0.433	6.8	0.268	63.5	2.500	–	5/16-24UNF	0.82
		85	3.346	42.8	1.685	56.3	2.217	22	0.866	1.1	0.043	34.1	21.3	14.0	NA209-27	6	0.236	21.4	0.843	6.8	0.268	63.5	2.500	–	5/16-24UNF	0.91
		100	3.937	42.9	1.689	58.7	2.311	30	1.181	1.5	0.059	48.9	29.5	13.3	NA309-27	8.5	0.335	19.8	0.780	8	0.315	69.8	2.748	–	3/8-24UNF	1.47
–	1 3/4	85	3.346	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	34.1	21.3	14.0	SA209-28F	6	0.236	11	0.433	6.8	0.268	63.5	2.500	–	5/16-24UNF	0.82
		85	3.346	42.8	1.685	56.3	2.217	22	0.866	1.1	0.043	34.1	21.3	14.0	NA209-28	6	0.236	21.4	0.843	6.8	0.268	63.5	2.500	–	5/16-24UNF	0.87
45	–	85	3.346	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	34.1	21.3	14.0	SA209F	6	0.236	11	0.433	6.8	0.268	63.5	2.500	M8×1	–	0.82
		85	3.346	42.8	1.685	56.3	2.217	22	0.866	1.1	0.043	34.1	21.3	14.0	NA209	6	0.236	21.4	0.843	6.8	0.268	63.5	2.500	M8×1	–	0.85
–	1 7/8	90	3.543	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	35.1	23.3	14.4	SA210-30F	6.6	0.260	11	0.433	6.8	0.268	69.9	2.752	–	5/16-24UNF	0.85
		90	3.543	49.2	1.937	62.7	2.469	24	0.945	1.1	0.043	35.1	23.3	14.4	NA210-30	6	0.236	24.6	0.969	6.8	0.268	69.9	2.752	–	5/16-24UNF	1.08
–	1 15/16	90	3.543	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	35.1	23.3	14.4	SA210-31F	6.6	0.260	11	0.433	6.8	0.268	69.9	2.752	–	5/16-24UNF	0.85
		90	3.543	49.2	1.937	62.7	2.469	24	0.945	1.1	0.043	35.1	23.3	14.4	NA210-31	6	0.236	24.6	0.969	6.8	0.268	69.9	2.752	–	5/16-24UNF	1.04
		110	4.331	49.2	1.937	66.6	2.622	32	1.260	2	0.079	62.0	38.3	13.2	NA310-31	9	0.354	24.6	0.969	8.7	0.343	76.2	3.000	–	3/8-24UNF	1.95
50	–	90	3.543	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	35.1	23.3	14.4	SA210F	6.6	0.260	11	0.433	6.8	0.268	69.9	2.752	M8×1	–	0.85
		90	3.543	49.2	1.937	62.7	2.469	24	0.945	1.1	0.043	35.1	23.3	14.4	NA210	6	0.236	24.6	0.969	6.8	0.268	69.9	2.752	M8×1	–	1.01
–	2	90	3.543	49.2	1.937	62.7	2.469	24	0.945	1.1	0.043	35.1	23.3	14.4	NA210-32	6	0.236	24.6	0.969	6.8	0.268	69.9	2.752	–	5/16-24UNF	0.99
		100	3.937	32.4	1.276	48.4	1.906	24	0.945	1.5	0.059	43.4	29.4	14.4	SA211-32F	7	0.276	12	0.472	8	0.315	76.2	3.000	–	3/8-24UNF	1.2
		100	3.937	55.5	2.185	71.4	2.811	25	0.984	1.5	0.059	43.4	29.4	14.4	NA211-32	7	0.276	27.8	1.094	8	0.315	76.2	3.000	–	3/8-24UNF	1.58
–	2 1/8	100	3.937	32.4	1.276	48.4	1.906	24	0.945	1.5	0.059	43.4	29.4	14.4	SA211-34F	7	0.276	12	0.472	8	0.315	76.2	3.000	–	3/8-24UNF	1.2
		100	3.937	55.5	2.185	71.4	2.811	25	0.984	1.5	0.059	43.4	29.4	14.4	NA211-34	7	0.276	27.8	1.094	8	0.315	76.2	3.000	–	3/8-24UNF	1.49
55	–	100	3.937	32.4	1.276	48.4	1.906	24	0.945	1.5	0.059	43.4	29.4	14.4	SA211F	7	0.276	12	0.472	8	0.315	76.2	3.000	M10×1.25	–	1.2
		100	3.937	55.5	2.185	71.4	2.811	25	0.984	1.5	0.059	43.4	29.4	14.4	NA211	7	0.276	27.8	1.094	8	0.315	76.2	3.000	M10×1.25	–	1.39
–	2 3/16	100	3.937	32.4	1.276	48.4	1.906	24	0.945	1.5	0.059	43.4	29.4	14.4	SA211-35F	7	0.276	12	0.472	8	0.315	76.2	3.000	–	3/8-24UNF	1.2
		100	3.937	55.5	2.185	71.4	2.811	25	0.984	1.5	0.059	43.4	29.4	14.4	NA211-35	7	0.276	27.8	1.094	8	0.315	76.2	3.000	–	3/8-24UNF	1.36
		120	4.724	55.6	2.189	73	2.874	34	1.339	2	0.079	71.6	45.0	13.2	NA311-35	10	0.394	27.8	1.094	8.7	0.343	82.5	3.248	–	3/8-24UNF	2.2
60	2 1/4	110	4.331	61.9	2.437	77.8	3.063	27	1.063	1.5	0.059	52.4	36.2	14.4	NA212-36	7.5	0.295	31	1.220	8	0.315	84.2	3.315	–	3/8-24UNF	2.03
		110	4.331	61.9	2.437	77.8	3.063	27	1.063	1.5	0.059	52.4	36.2	14.4	NA212	7.5	0.295	31	1.220	8	0.315	84.2	3.315	M10×1.25	–	1.87
	2 7/16	130	5.118	61.9	2.437	79.4	3.126	36	1.417	2.1	0.083	81.9	52.2	13.2	NA312-39	11.5	0.453	31	1.220	8.7	0.343	88.9	3.500	–	3/8-24UNF	3

SA, SA-F, NA
Cylindrical bore
(with eccentric locking collar)
d 65 ~ 75 mm

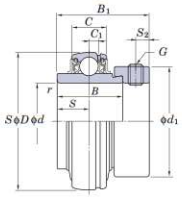
SA SA-F NA



SA



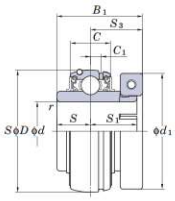
SA-F



NA

Shaft Dia mm	Shaft Dia inch	Dimensions D mm	D inch	B mm	B inch	B_1 mm	B_1 inch	C mm	C inch	r (min.) mm	r (min.) inch	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Bearing No.	Dimensions C_1 mm	C_1 inch	S mm	S inch	S_2 mm	S_2 inch	d_1 mm	d_1 inch	Set Screw Brg.Bore mm	inch	Mass kg
65	2 1/2	120	4.724	68.2	2.685	85.7	3.374	28	1.102	1.5	0.059	57.2	40.1	14.4	NA213-40	7.5	0.295	34.1	1.343	8.5	0.335	92	3.622	–	3/8-24UNF	2.51
		120	4.724	68.2	2.685	85.7	3.374	28	1.102	1.5	0.059	57.2	40.1	14.4	NA213	7.5	0.295	34.1	1.343	8.5	0.335	92	3.622	M10×1.25	–	2.45
70	2 3/4	125	4.921	68.2	2.685	85.7	3.374	30	1.181	1.5	0.059	62.2	44.1	14.5	NA214-44	9	0.354	34.1	1.343	8.5	0.335	97	3.819	–	3/8-24UNF	2.94
		125	4.921	68.2	2.685	85.7	3.374	30	1.181	1.5	0.059	62.2	44.1	14.5	NA214	9	0.354	34.1	1.343	8.5	0.335	97	3.819	M10×1.25	–	2.92
	2 11/16	150	5.906	68.3	2.689	92.1	3.626	40	1.575	2.1	0.083	104	68.2	13.2	NA314-43	12.5	0.492	34.1	1.343	11.9	0.469	101.6	4.000	–	1/2-20UNF	4.7
75		130	5.118	74.6	2.937	92.1	3.626	32	1.260	1.5	0.059	67.4	48.3	14.5	NA215	9	0.354	37.3	1.469	8.5	0.335	102	4.016	M10×1.25	–	2.74
	3	130	5.118	74.6	2.937	92.1	3.626	32	1.260	1.5	0.059	67.4	48.3	14.5	NA215-48	9	0.354	37.3	1.469	8.5	0.335	102	4.016	–	3/8-24UNF	2.72
	2 15/16	160	6.299	74.6	2.937	100	3.937	42	1.654	2.1	0.083	113	77.2	13.2	NA315-47	14.5	0.571	37.3	1.469	12.7	0.500	112.7	4.437	–	5/8-18UNF	5.8

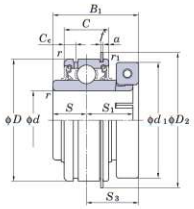
NC2
Cylindrical bore
(with concentric locking collar)
d 20 ~ 60 mm



Shaft Dia. mm	Shaft Dia. inch	Dimensions D mm	D inch	B1 mm	B1 inch	C mm	C inch	r mm	r inch	Basic Load Ratings kN Cr	Basic Load Ratings kN C0r	Factor f0	Bearing No.	Collar No.	Dimensions C1 mm	C1 inch	S mm	S inch	S1 mm	S1 inch	S3 mm	S3 inch	d1 mm	d1 inch	Cap Screw inch / mm	Mass kg
20	3/4	47	1.850	32.5	1.280	16	0.630	1	0.039	12.8	6.65	13.2	NC204-12	UCL204B	4	0.157	12.7	0.500	18.3	0.720	19.8	0.780	44.5	1.752	No.8-32UNC	0.30
													NC204	UCL204BM											M4×0.7	
25	7/8	52	2.047	36.5	1.437	17	0.669	1	0.039	14.0	7.85	13.9	NC205-14	UCL205A	5	0.197	14.3	0.563	19.8	0.780	22.2	0.874	49.2	1.937	No.8-32UNC	0.40
	15/16												NC205-15	UCL205A											No.8-32UNC	
													NC205	UCL205AM											M4×0.7	
	1												NC205-16	UCL205A											No.8-32UNC	
30	1 1/8	62	2.441	39.7	1.563	19	0.748	1	0.039	19.5	11.3	13.9	NC206-18	UCL206A	5	0.197	15.9	0.626	22.2	0.874	23.8	0.937	55.6	2.189	No.8-32UNC	0.50
													NC206	UCL206AM											M4×0.7	
	1 3/16												NC206-19	UCL206A											No.8-32UNC	
	1 1/4												NC206-20	UCL206A											No.8-32UNC	
35	1 1/4	72	2.835	44.5	1.752	20	0.787	1.1	0.043	25.7	15.4	13.9	NC207-20	UCL207A	5.5	0.217	17.5	0.689	25.4	1.000	27	1.063	61.9	2.437	No.10-24UNC	0.80
	1 3/8	72	2.835	44.5	1.752	20	0.787	1.1	0.043	25.7	15.4	13.9	NC207-22	UCL207B	5.5	0.217	17.5	0.689	25.4	1.000	27	1.063	65.1	2.563	No.10-24UNC	0.80
													NC207	UCL207BM											M5×0.8	
	1 7/16												NC207-23	UCL207B											No.10-24UNC	
40	1 1/2	80	3.150	50.8	2.000	21	0.827	1.1	0.043	29.1	17.8	14.0	NC208-24	UCL208A	6	0.236	19	0.748	30.2	1.189	31.8	1.252	68.3	2.689	No.10-24UNC	1.0
													NC208	UCL208AM											M5×0.8	
45	1 5/8	85	3.346	50.8	2.000	22	0.866	1.1	0.043	34.1	21.3	14.0	NC209-26	UCL209A	6	0.236	19	0.748	30.2	1.189	31.8	1.252	71.4	2.811	No.10-24UNC	1.1
	1 11/16	85	3.346	50.8	2.000	22	0.866	1.1	0.043	34.1	21.3	14.0	NC209-27	UCL209B	6	0.236	19	0.748	30.2	1.189	31.8	1.252	74.6	2.937	No.10-24UNC	1.1
	1 3/4												NC209-28	UCL209B											No.10-24UNC	
													NC209	UCL209BM											M5×0.8	
50	1 15/16	90	3.543	53.1	2.091	24	0.945	1.1	0.043	35.1	23.3	14.4	NC210-31	UCL210A	6	0.236	19	0.748	32.6	1.283	34.1	1.343	85.7	3.374	1/4-20UNC	1.4
													NC210	UCL210AM											M6×1	
	2												NC210-32	UCL210A											1/4-20UNC	
55	2	100	3.937	57.1	2.248	25	0.984	1.5	0.059	43.4	29.4	14.4	NC211-32	UCL211A	7	0.276	22.2	0.874	33.4	1.315	34.9	1.374	88.9	3.500	1/4-20UNC	1.5
	2 3/16	100	3.937	57.1	2.248	25	0.984	1.5	0.059	43.4	29.4	14.4	NC211	UCL211BM	7	0.276	22.2	0.874	33.4	1.315	34.9	1.374	92.1	3.626	M6×1	1.5
													NC211-35	UCL211B											1/4-20UNC	
60	2 1/4	110	4.331	66.7	2.626	27	1.063	1.5	0.059	52.4	36.2	14.4	NC212-36	UCL212A	7.5	0.295	25.4	1.000	39.7	1.563	41.3	1.626	103.2	4.063	5/16-18UNC	2.2
	2 7/16	110	4.331	66.7	2.626	27	1.063	1.5	0.059	52.4	36.2	14.4	NC212	UCL212BM	7.5	0.295	25.4	1.000	39.7	1.563	41.3	1.626	104.8	4.126	M8×1.25	2.2
													NC212-39	UCL212B											5/16-18UNC	

FYH

ERC
Cylindrical bore
(with concentric locking collar)
Cylindrical O. D.
d 20 ~ 60 mm

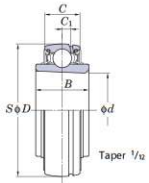


Shaft Dia. mm	Shaft Dia. inch	Dimensions D mm	D inch	B_1 mm	B_1 inch	C mm	C inch	r mm	r inch	r_1 (min.) mm	r_1 (min.) inch	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Bearing No.	Collar No.	Dimensions C_c mm	C_c inch	S mm	S inch	S_1 mm	S_1 inch	S_3 mm	S_3 inch	a mm	a inch	f mm	f inch	d_1 mm	d_1 inch	D_2 mm	D_2 inch	Cap Screw inch / mm	Mass kg
20	3/4	47	1.850	32.5	1.280	16	0.630	1	0.039	0.5	0.020	12.8	6.65	13.2	ERC204-12	UCL204B	4	0.157	12.7	0.500	18.3	0.720	19.8	0.780	2.38	0.094	1.07	0.042	44.5	1.752	52.5	2.067	No.8-32UNC	0.36
															ERC204	UCL204BM																	M4×0.7	
25	7/8	52	2.047	36.5	1.437	19	0.748	1	0.039	0.5	0.020	14.0	7.85	13.9	ERC205-14	UCL205A	5	0.197	14.3	0.563	19.8	0.780	22.2	0.874	2.38	0.094	1.07	0.042	49.2	1.937	57.7	2.272	No.8-32UNC	0.47
	15/16														ERC205-15	UCL205A																	No.8-32UNC	
															ERC205	UCL205AM																	M4×0.7	
	1														ERC205-16	UCL205A																	No.8-32UNC	
30	1 1/8	62	2.441	39.7	1.563	22	0.866	1	0.039	0.5	0.020	19.5	11.3	13.9	ERC206-18	UCL206A	5.5	0.217	15.9	0.626	22.2	0.874	23.8	0.937	3.18	0.125	1.65	0.065	55.6	2.189	67.5	2.657	No.8-32UNC	0.57
															ERC206	UCL206AM																	M4×0.7	
	1 3/16														ERC206-19	UCL206A																	No.8-32UNC	
	1 1/4														ERC206-20	UCL206A																	No.8-32UNC	
35	1 1/4	72	2.835	44.5	1.752	24	0.945	1.1	0.043	0.5	0.020	25.7	15.4	13.9	ERC207-20	UCL207A	5.5	0.217	17.5	0.689	25.4	1.000	27	1.063	3.18	0.125	1.65	0.065	61.9	2.437	78.4	3.087	No.10-24UNC	0.95
	1 3/8	72	2.835	44.5	1.752	24	0.945	1.1	0.043	0.5	0.020	25.7	15.4	13.9	ERC207-22	UCL207B	5.5	0.217	17.5	0.689	25.4	1.000	27	1.063	3.18	0.125	1.65	0.065	65.1	2.563	78.4	3.087	No.10-24UNC	0.95
															ERC207	UCL207BM																	M5×0.8	
	1 7/16														ERC207-23	UCL207B																	No.10-24UNC	
40	1 1/2	80	3.150	50.8	2.000	28	1.102	1.1	0.043	0.5	0.020	29.1	17.8	14.0	ERC208-24	UCL208A	6	0.236	19	0.748	30.2	1.189	31.8	1.252	3.18	0.125	1.65	0.065	68.3	2.689	86.4	3.402	No.10-24UNC	1.2
															ERC208	UCL208AM																	M5×0.8	
45	1 5/8	85	3.346	50.8	2.000	28	1.102	1.1	0.043	0.5	0.020	34.1	21.3	14.0	ERC209-26	UCL209A	6	0.236	19	0.748	30.2	1.189	31.8	1.252	3.18	0.125	1.65	0.065	71.4	2.811	91.4	3.598	No.10-24UNC	1.3
	1 11/16	85	3.346	50.8	2.000	28	1.102	1.1	0.043	0.5	0.020	34.1	21.3	14.0	ERC209-27	UCL209B	6	0.236	19	0.748	30.2	1.189	31.8	1.252	3.18	0.125	1.65	0.065	74.6	2.937	91.4	3.598	No.10-24UNC	1.3
	1 3/4														ERC209-28	UCL209B																	No.10-24UNC	
															ERC209	UCL209BM																	M5×0.8	
50	1 15/16	90	3.543	53.1	2.091	28	1.102	1.1	0.043	0.5	0.020	35.1	23.3	14.4	ERC210-31	UCL210A	7.5	0.295	19	0.748	32.6	1.283	34.1	1.343	3.18	0.125	2.41	0.095	85.7	3.374	96.3	3.791	1/4-20UNC	1.6
															ERC210	UCL210AM																	M6×1	
	2														ERC210-32	UCL210A																	1/4-20UNC	
55	2	100	3.937	57.1	2.248	30	1.181	1.5	0.059	0.5	0.020	43.4	29.4	14.4	ERC211-32	UCL211A	7.5	0.295	22.2	0.874	33.4	1.315	34.9	1.374	3.18	0.125	2.41	0.095	88.9	3.500	106.3	4.185	1/4-20UNC	1.8
		100	3.937	57.1	2.248	30	1.181	1.5	0.059	0.5	0.020	43.4	29.4	14.4	ERC211	UCL211BM	7.5	0.295	22.2	0.874	33.4	1.315	34.9	1.374	3.18	0.125	2.41	0.095	92.1	3.626	106.3	4.185	M6×1	1.8
	2 3/16														ERC211-35	UCL211B																	1/4-20UNC	
60	2 1/4	110	4.331	66.7	2.626	32	1.260	1.5	0.059	0.5	0.020	52.4	36.2	14.4	ERC212-36	UCL212A	7.5	0.295	25.4	1.000	39.7	1.563	41.3	1.626	3.18	0.125	2.41	0.095	103.2	4.063	116.4	4.583	5/16-18UNC	2.5
		110	4.331	66.7	2.626	32	1.260	1.5	0.059	0.5	0.020	52.4	36.2	14.4	ERC212	UCL212BM	7.5	0.295	25.4	1.000	39.7	1.563	41.3	1.626	3.18	0.125	2.41	0.095	104.8	4.126	116.4	4.583	M8×1.25	2.5
	2 7/16														ERC212-39	UCL212B																	5/16-18UNC	

UK
Tapered bore (with adapter)
d_1 20 ~ (50) mm

UK

UK+H



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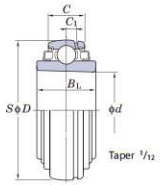
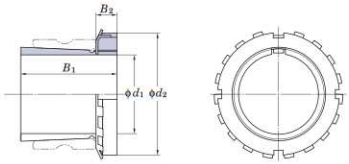


UK-L3



Adapter

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch mm						Basic Load Ratings kN		Factor	Bearing No.		Bearing Mass kg		H23 Series Adapter Adapter No.	Dimensions inch mm			Mass	Sleeve No.
d_1		d	D	B	B_L	C	C_1	C_r	C_{0r}	f_0	Standard	L3 Type	Standard	L3 Type		B_1	B_2	d_2	kg	
20	3/4	0.984 25	2.047 52	0.945 24	0.945 24	0.669 17	0.197 5	14.0	7.85	13.9	UK205	UK205L2	0.18	0.18	HE2305X H2305X	1.378 35	0.315 8	1.496 38	0.095	AE2305X A2305X
	3/4	0.984 25	2.441 62	1.063 27	– –	0.748 19	0.197 5	19.5	11.3	13.9	UKX05	–	0.27	–	HE2305X H2305X	1.378 35	0.315 8	1.496 38	0.095	AE2305X A2305X
	3/4	0.984 25	2.441 62	1.063 27	– –	0.866 22	0.236 6	21.2	10.9	12.6	UK305	–	0.40	–	HE2305X H2305X	1.378 35	0.315 8	1.496 38	0.095	AE2305X A2305X
25	1	1.181 30	2.441 62	1.063 27	1.063 27	0.748 19	0.197 5	19.5	11.3	13.9	UK206	UK206L3	0.29	0.29	H2306X HE2306X	1.496 38	0.315 8	1.772 45	0.13	A2306X HE2306X
	1	1.181 30	2.835 72	1.181 30	– –	0.787 20	0.217 5.5	25.7	15.4	13.9	UKX06	–	0.43	–	H2306X HE2306X	1.496 38	0.315 8	1.772 45	0.13	A2306X HE2306X
	1	1.181 30	2.835 72	1.181 30	– –	0.945 24	0.256 6.5	26.7	15.0	13.3	UK306	–	0.47	–	H2306X HE2306X	1.496 38	0.315 8	1.772 45	0.13	A2306X HE2306X
30	1 1/8	1.378 35	2.835 72	1.181 30	1.181 30	0.787 20	0.217 5.5	25.7	15.4	13.9	UK207	UK207L3	0.43	0.43	HS2307X H2307X	1.693 43	0.354 9	2.047 52	0.17	AS2307X A2307X
	1 1/8	1.378 35	3.150 80	1.339 34	– –	0.827 21	0.236 6	29.1	17.8	14.0	UKX07	–	0.53	–	HS2307X H2307X	1.693 43	0.354 9	2.047 52	0.17	AS2307X A2307X
	1 1/8	1.378 35	3.150 80	1.299 33	1.299 33	1.024 26	0.295 7.5	33.4	19.3	13.2	UK307	UK307L3	0.60	0.60	HS2307X H2307X	1.693 43	0.354 9	2.047 52	0.17	AS2307X A2307X
35	1 1/4 1 3/8	1.575 40	3.150 80	1.339 34	1.339 34	0.827 21	0.236 6	29.1	17.8	14.0	UK208	UK208L3	0.58	0.58	HE2308X HS2308X H2308X	1.811 46	0.394 10	2.283 58	0.22	AE2308X AS2308X A2308X
	1 1/4 1 3/8	1.575 40	3.346 85	1.417 36	– –	0.866 22	0.236 6	34.1	21.3	14.0	UKX08	–	0.58	–	HE2308X HS2308X H2308X	1.811 46	0.394 10	2.283 58	0.22	AE2308X AS2308X A2308X
	1 1/4 1 3/8	1.575 40	3.543 90	1.378 35	1.378 35	1.102 28	0.315 8	40.7	24.0	13.2	UK308	UK308L3	0.80	0.80	HE2308X HS2308X H2308X	1.811 46	0.394 10	2.283 58	0.22	AE2308X AS2308X A2308X
40	1 1/2	1.772 45	3.346 85	1.417 36	1.417 36	0.866 22	0.236 6	34.1	21.3	14.0	UK209	UK209L3	0.65	0.65	HE2309X H2309X	1.969 50	0.433 11	2.559 65	0.28	AE2309X A2309X
	1 1/2	1.772 45	3.543 90	1.417 36	– –	0.945 24	0.236 6	35.1	23.3	14.4	UKX09	–	0.67	–	HE2309X H2309X	1.969 50	0.433 11	2.559 65	0.28	AE2309X A2309X
	1 1/2	1.772 45	3.937 100	1.496 38	1.496 38	1.181 30	0.335 8.5	48.9	29.5	13.3	UK309	UK309L3	1.08	1.08	HE2309X H2309X	1.969 50	0.433 11	2.559 65	0.28	AE2309X A2309X
45	1 3/4	1.969 50	3.543 90	1.417 36	1.417 36	0.945 24	0.236 6	35.1	23.3	14.4	UK210	UK210L3	0.65	0.65	HE2310X H2310X	2.165 55	0.472 12	2.756 70	0.36	AE2310X A2310X
	1 3/4	1.969 50	3.937 100	1.575 40	– –	0.984 25	0.276 7	43.4	29.4	14.4	UKX10	–	0.89	–	HE2310X H2310X	2.165 55	0.472 12	2.756 70	0.36	AE2310X A2310X
	1 3/4	1.969 50	4.331 110	1.575 40	1.575 40	1.260 32	0.354 9	62.0	38.3	13.2	UK310	UK310L3	1.38	1.38	HE2310X H2310X	2.165 55	0.472 12	2.756 70	0.36	AE2310X A2310X
50	1 7/8 2	2.165 55	3.937 100	1.575 40	1.575 40	0.984 25	0.276 7	43.4	29.4	14.4	UK211	UK211L3	1.09	1.09	HS2311X H2311X HE2311X	2.323 59	0.472 12	2.953 75	0.42	AS2311X A2311X AE2311X
	1 7/8 2	2.165 55	4.331 110	1.850 47	– –	1.063 27	0.295 7.5	52.4	36.2	14.4	UKX11	–	1.15	–	HS2311X H2311X HE2311X	2.323 59	0.472 12	2.953 75	0.42	AS2311X A2311X AE2311X

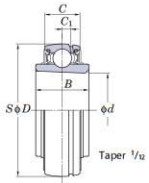
Remarks 1. In Part No. of unit with adapters, Part No. of applicable adapters follow the Part No. shown in the dimensional tables.
(Example of Part No.: UK206 + H2306X, UK206L3 + H2306X)

2. Adapter series applicable to UK200 series
UK200 ..... H2300X series
UK200L3 (or L2) ..... H2300X series
3. UK205 is the double seal type product (L2).
4. Inch bore diameter series adapters are also available (see the dimensional tables of adapters).

UK
Tapered bore (with adapter)
d_1 (50) ~ (90) mm

UK

UK+H



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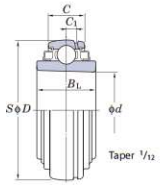
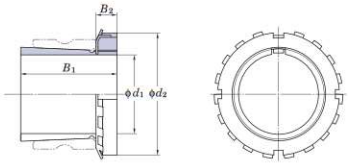


UK-L3



Adapter

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch mm						Basic Load Ratings kN		Factor	Bearing No.		Bearing Mass kg		H23 Series Adapter Adapter No.	Dimensions inch mm			Mass	Sleeve No.
d_1		d	D	B	B_L	C	C_1	C_r	C_{0r}	f_0	Standard	L3 Type	Standard	L3 Type		B_1	B_2	d_2	kg	
50	1 7/8	2.165	4.724	1.693	1.693	1.339	0.394	71.6	45.0	13.2	UK311	UK311L3	1.78	1.78	HS2311X	2.323	0.472	2.953	0.42	AS2311X
		55	120	43	43	34	10								H2311X	59	12	75		A2311X
	2														HE2311X					AE2311X
55	2 1/8	2.362	4.331	1.850	1.850	1.063	0.295	52.4	36.2	14.4	UK212	UK212L3	1.41	1.41	HS2312X	2.441	0.512	3.150	0.48	AS2312X
		60	110	47	47	27	7.5								H2312X	62	13	80		A2312X
	2 1/8	2.362	4.724	1.417	–	1.102	0.295	57.2	40.1	14.4	UKX12	–	1.45	–	HS2312X	2.441	0.512	3.150	0.48	AS2312X
		60	120	36	–	28	7.5								H2312X	62	13	80		A2312X
	2 1/8	2.362	5.118	1.850	1.850	1.417	0.453	81.9	52.2	13.2	UK312	UK312L3	2.06	2.06	HS2312X	2.441	0.512	3.150	0.48	AS2312X
		60	130	47	47	36	11.5								H2312X	62	13	80		A2312X
60	2 1/4	2.559	4.724	1.417	1.850	1.102	0.295	57.2	40.1	14.4	UK213	UK213L3	1.34	1.67	HE2313X	2.559	0.551	3.346	0.56	AE2313X
		65	120	36	47	28	7.5								H2313X	65	14	85		A2313X
	2 3/8														HS2313X					AS2313X
	2 1/4	2.559	4.921	1.575	–	1.181	0.354	62.2	44.1	14.5	UKX13	–	1.62	–	HE2313X	2.559	0.551	3.346	0.56	AE2313X
		65	125	40	–	30	9								H2313X	65	14	85		A2313X
	2 3/8														HS2313X					AS2313X
	2 1/4	2.559	5.512	1.929	1.929	1.496	0.472	92.7	59.9	13.2	UK313	UK313L3	2.71	2.71	HE2313X	2.559	0.551	3.346	0.56	AE2313X
		65	140	49	49	38	12								H2313X	65	14	85		A2313X
	2 3/8														HS2313X					AS2313X
65	2 1/2	2.953	5.118	1.575	2.008	1.260	0.354	67.4	48.3	14.5	UK215	UK215L3	1.50	1.99	HE2315X	2.874	0.591	3.858	1.05	AE2315X
		75	130	40	51	32	9								H2315X	73	15	98		A2315X
	2 1/2	2.953	5.512	1.654	–	1.299	0.354	72.7	53.0	14.6	UKX15	–	2.10	–	HE2315X	2.874	0.591	3.858	1.05	AE2315X
		75	140	42	–	33	9								H2315X	73	15	98		A2315X
	2 1/2	2.953	6.299	2.165	2.165	1.654	0.571	113	77.2	13.2	UK315	UK315L3	3.80	3.80	HE2315X	2.874	0.591	3.858	1.05	AE2315X
		75	160	55	55	42	14.5								H2315X	73	15	98		A2315X
70	2 3/4	3.150	5.512	1.654	2.165	1.299	0.354	72.7	53.0	14.6	UK216	UK216L3	1.96	2.56	HE2316X	3.071	0.669	4.134	1.3	AE2316X
		80	140	42	55	33	9								H2316X	78	17	105		A2316X
	2 3/4	3.150	5.906	1.732	–	1.378	0.394	84.0	61.9	14.5	UKX16	–	2.64	–	HE2316X	3.071	0.669	4.134	1.3	AE2316X
		80	150	44	–	35	10								H2316X	78	17	105		A2316X
	2 3/4	3.150	6.693	2.165	2.165	1.732	0.591	123	86.7	13.3	UK316	UK316L3	4.39	4.39	HE2316X	3.071	0.669	4.134	1.3	AE2316X
		80	170	55	55	44	15								H2316X	78	17	105		A2316X
75		3.346	5.906	1.732	2.244	1.378	0.394	84.0	61.9	14.5	UK217	UK217L3	2.42	3.10	H2317X	3.228	0.709	4.331	1.45	A2317X
	3	85	150	44	57	35	10								HE2317X	82	18	110		AE2317X
		3.346	6.299	1.890	–	1.496	0.433	96.1	71.5	14.5	UKX17	–	3.25	–	H2317X	3.228	0.709	4.331	1.45	A2317X
	3	85	160	48	–	38	11								HE2317X	82	18	110		AE2317X
		3.346	7.087	2.362	2.362	1.811	0.591	133	96.8	13.3	UK317	UK317L3	5.30	5.30	H2317X	3.228	0.709	4.331	1.45	A2317X
	3	85	180	60	60	46	15								HE2317X	82	18	110		AE2317X
80	–	3.543	6.299	1.890	2.480	1.496	0.433	96.1	71.5	14.5	UK218	UK218L3	2.90	3.77	H2318X	3.386	0.709	4.724	1.7	A2318X
		90	160	48	63	38	11									86	18	120		
	–	3.543	6.693	1.969	–	1.575	0.453	109	81.9	14.4	UKX18	–	3.80	–	H2318X	3.386	0.709	4.724	1.7	A2318X
		90	170	50	–	40	11.5									86	18	120		
	–	3.543	7.480	2.362	2.362	1.890	0.610	143	107	13.3	UK318	UK318L3	6.20	6.20	H2318X	3.386	0.709	4.724	1.7	A2318X
		90	190	60	60	48	15.5									86	18	120		
85	3 1/4	3.740	7.874	2.598	2.598	1.969	0.650	153	119	13.3	UK319	UK319L3	7.31	7.31	H2319X	3.543	0.748	4.921	1.95	A2319X
		95	200	66	66	50	16.5									90	19	125		
90	3 1/2	3.937	7.480	2.126	–	1.693	0.512	133	105	14.4	UKX20	–	5.36	–	HE2320X	3.819	0.787	5.118	2.2	AE2320X
		100	190	54	–	43	13								H2320X	97	20	130		A2320X

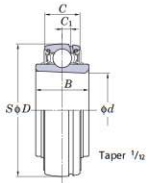
Remarks 1. In Part No. of unit with adapters, Part No. of applicable adapters follow the Part No. shown in the dimensional tables.
(Example of Part No.: UK206 + H2306X, UK206L3 + H2306X)

2. Adapter series applicable to UK200 series
UK200 ..... H2300X series
UK200L3 (or L2) ..... H2300X series
3. UK205 is the double seal type product (L2).
4. Inch bore diameter series adapters are also available (see the dimensional tables of adapters).

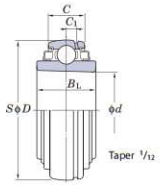
UK
Tapered bore (with adapter)
d_1 (90) ~ 125 mm

UK

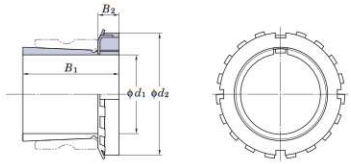
UK+H



UK



UK-L3



Adapter

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch mm						Basic Load Ratings kN		Factor	Bearing No.		Bearing Mass kg		H23 Series Adapter Adapter No.	Dimensions inch mm			Mass	Sleeve No.
d_1		d	D	B	B_L	C	C_1	C_r	C_{0r}	f_0	Standard	L3 Type	Standard	L3 Type		B_1	B_2	d_2	kg	
90	3 1/2	3.937	8.465	2.677	2.677	2.126	0.709	173	141	13.2	UK320	UK320L3	8.70	8.70	HE2320X	3.819	0.787	5.118	2.2	AE2320X
		100	215	68	68	54	18								H2320X	97	20	130		A2320X
100	4	4.331	9.449	3.071	3.071	2.362	0.787	205	180	13.2	UK322	UK322L3	12.2	12.2	H2322X	4.134	0.827	5.709	2.75	A2322X
		110	240	78	78	60	20								HE2322X	105	21	145		AE2322X
110	–	4.724	10.236	3.425	3.425	2.520	0.827	207	185	13.5	UK324	UK324L3	16.1	16.1	H2324	4.409	0.866	6.102	3.2	A2324
		120	260	87	87	64	21									112	22	155		
115	4 1/2	5.118	11.024	3.425	3.425	2.677	0.866	229	214	13.6	UK326	UK326L3	18.8	18.8	HE2326	4.764	0.906	6.496	4.6	AE2326
		130	280	87	87	68	22								H2326	121	23	165		A2326
125	–	5.512	11.811	3.819	3.819	2.835	0.906	253	246	13.6	UK328	UK328L3	23.9	23.9	H2328	5.157	0.945	7.087	5.5	A2328
		140	300	97	97	72	23									131	24	180		

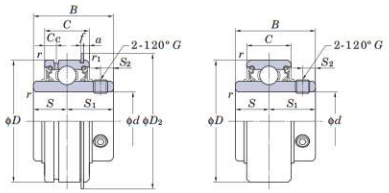
Remarks 1. In Part No. of unit with adapters, Part No. of applicable adapters follow the Part No. shown in the dimensional tables.
(Example of Part No.: UK206 + H2306X, UK206L3 + H2306X)

2. Adapter series applicable to UK200 series
UK200 ..... H2300X series
UK200L3 (or L2) ..... H2300X series
3. UK205 is the double seal type product (L2).
4. Inch bore diameter series adapters are also available (see the dimensional tables of adapters).

FYH

ER, RB
Cylindrical bore (with set screws), Cylindrical O. D.
d 12 ~ 60 mm

ER RB



ER RB

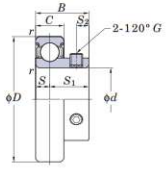
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch mm					Basic Load Ratings kN		Factor	Bearing No.		Dimensions inch mm							Set Screw Brg. Bore G		Mass kg	
d		D	B	C	r (min.)	r_1 (min.)	C_r	C_{0r}	f_0	(ER)	(RB)	S	S_1	S_2	C_c	a	f	D_2	mm	inch	(ER)	(RB)
12										ER201	RB201								M6×0.75	–	0.27	0.27
	1/2	1.850	1.220	0.630	0.024	0.020	12.8	6.65	13.2	ER201-8	RB201-8	0.500	0.720	0.197	0.157	0.094	0.042	2.067	–	1/4-28UNF	0.27	0.27
15		47	31	16	0.6	0.5				ER202	RB202	12.7	18.3	5	4	2.38	1.07	52.5	M6×0.75	–	0.25	0.25
	5/8									ER202-10	RB202-10								–	1/4-28UNF	0.25	0.25
17										ER203	RB203								M6×0.75	–	0.24	0.24
20	3/4	1.850	1.220	0.630	0.039	0.020	12.8	6.65	13.2	ER204-12	RB204-12	0.500	0.720	0.197	0.157	0.094	0.042	2.067	–	1/4-28UNF	0.22	0.22
		47	31	16	1	0.5				ER204	RB204	12.7	18.3	5	4	2.38	1.07	52.5	M6×0.75	–	0.22	0.22
25	7/8	2.047	1.343	0.748	0.039	0.020	14.0	7.85	13.9	ER205-14	RB205-14	0.563	0.780	0.217	0.197	0.094	0.042	2.272	–	1/4-28UNF	0.3	0.29
	15/16	52	34.1	19	1	0.5				ER205-15	RB205-15	14.3	19.8	5.5	5	2.38	1.07	57.7	–	1/4-28UNF	0.28	0.27
										ER205	RB205								M6×0.75	–	0.27	0.26
	1									ER205-16	RB205-16								–	1/4-28UNF	0.27	0.26
30	1 1/8	2.441	1.500	0.866	0.039	0.020	19.5	11.3	13.9	ER206-18	RB206-18	0.626	0.874	0.236	0.217	0.125	0.065	2.657	–	1/4-28UNF	0.41	0.4
		62	38.1	22	1	0.5				ER206	RB206	15.9	22.2	6	5.5	3.18	1.65	67.5	M6×0.75	–	0.39	0.38
	1 3/16									ER206-19	RB206-19								–	1/4-28UNF	0.39	0.38
	1 1/4									ER206-20	RB206-20								–	1/4-28UNF	0.37	0.36
35	1 1/4	2.835	1.689	0.945	0.043	0.020	25.7	15.4	13.9	ER207-20	RB207-20	0.689	1.000	0.256	0.217	0.125	0.065	3.087	–	5/16-24UNF	0.69	0.68
	1 5/16	72	42.9	24	1.1	0.5				ER207-21	RB207-21	17.5	25.4	6.5	5.5	3.18	1.65	78.4	–	5/16-24UNF	0.66	0.65
	1 3/8									ER207-22	RB207-22								–	5/16-24UNF	0.64	0.63
										ER207	RB207								M8×1	–	0.63	0.62
	1 7/16									ER207-23	RB207-23								–	5/16-24UNF	0.61	0.6
40	1 1/2	3.150	1.937	1.102	0.043	0.020	29.1	17.8	14.0	ER208-24	RB208-24	0.748	1.189	0.315	0.236	0.125	0.065	3.402	–	5/16-24UNF	0.85	0.84
	1 9/16	80	49.2	28	1.1	0.5				ER208-25	RB208-25	19	30.2	8	6	3.18	1.65	86.4	–	5/16-24UNF	0.82	0.81
										ER208	RB208								M8×1	–	0.81	0.78
45	1 5/8	3.346	1.937	1.102	0.043	0.020	34.1	21.3	14.0	ER209-26	–	0.748	1.189	0.315	0.236	0.125	0.065	3.598	–	5/16-24UNF	1.0	–
	1 11/16	85	49.2	28	1.1	0.5				ER209-27	–	19	30.2	8	6	3.18	1.65	91.4	–	5/16-24UNF	0.96	–
	1 3/4									ER209-28	–								–	5/16-24UNF	0.92	–
										ER209	–								M8×1	–	0.90	–
50	1 7/8	3.543	2.031	1.102	0.043	0.020	35.1	23.3	14.4	ER210-30	–	0.748	1.283	0.354	0.295	0.125	0.095	3.791	–	3/8-24UNF	1.05	–
	1 15/16	90	51.6	28	1.1	0.5				ER210-31	–	19	32.6	9	7.5	3.18	2.41	96.3	–	3/8-24UNF	1.0	–
										ER210	–								M10×1.25	–	0.98	–
	2									ER210-32	–								–	3/8-24UNF	0.96	–
55	2	3.937	2.189	1.181	0.059	0.020	43.4	29.4	14.4	ER211-32	–	0.874	1.315	0.354	0.295	0.125	0.095	4.185	–	3/8-24UNF	1.56	–
	2 1/8	100	55.6	30	1.5	0.5				ER211-34	–	22.2	33.4	9	7.5	3.18	2.41	106.3	–	3/8-24UNF	1.45	–
										ER211	–								M10×1.25	–	1.41	–
	2 3/16									ER211-35	–								–	3/8-24UNF	1.39	–
60	2 1/4	4.331	2.563	1.260	0.059	0.020	52.4	36.2	14.4	ER212-36	–	1.000	1.563	0.413	0.295	0.125	0.095	4.583	–	3/8-24UNF	2.02	–
		110	65.1	32	1.5	0.5				ER212	–	25.4	39.7	10.5	7.5	3.18	2.41	116.4	M10×1.25	–	1.89	–
	2 3/8									ER212-38	–								–	3/8-24UNF	1.87	–
	2 7/16									ER212-39	–								–	3/8-24UNF	1.8	–

SBB-RK
Cylindrical bore
(with set screws)
Cylindrical O. D.
d 12 ~ 55 mm

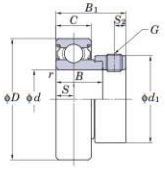
SAA-FP7
Cylindrical bore
(with eccentric locking collar)
Cylindrical O. D.

SBB-RK

SAA-FP7



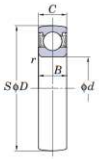
SBB-RK



SAA-FP7

Shaft Dia. mm	Shaft Dia. inch	Dimensions D mm	D inch	B mm	B inch	B_1 mm	B_1 inch	C mm	C inch	r (min.) mm	r (min.) inch	Basic Load Ratings kN C_0	C_{0r}	Factor f_0	Bearing No.	Dimensions S mm	S inch	S_1 mm	S_1 inch	S_2 mm	S_2 inch	d_1 mm	d_1 inch	Set Screw Brg. Bore mm	Set Screw Brg. Bore inch	Mass kg
12	–	40	1.575	22	0.866	–	–	12	0.472	0.6	0.024	9.55	4.80	13.2	SBB201RK	6	0.236	16	0.630	4	0.157	–	–	M5×0.5	–	0.10
		40	1.575	19.1	0.752	28.6	1.126	13	0.512	0.6	0.024	9.55	4.80	13.2	SAA201FP7	6.5	0.256			4.8	0.189	28.6	1.126	M6×0.75	–	0.13
–	1/2	40	1.575	22	0.866	–	–	12	0.472	0.6	0.024	9.55	4.80	13.2	SBB201-8RK	6	0.236	16	0.630	4	0.157	–	–	–	No.10-32UNF	0.10
	1/2	40	1.575	19.1	0.752	28.6	1.126	13	0.512	0.6	0.024	9.55	4.80	13.2	SAA201-8FP7	6.5	0.256			4.8	0.189	28.6	1.126	–	1/4-28UNF	0.13
15	–	40	1.575	22	0.866	–	–	12	0.472	0.6	0.024	9.55	4.80	13.2	SBB202RK	6	0.236	16	0.630	4	0.157	–	–	M5×0.5	–	0.10
		40	1.575	19.1	0.752	28.6	1.126	13	0.512	0.6	0.024	9.55	4.80	13.2	SAA202FP7	6.5	0.256			4.8	0.189	28.6	1.126	M6×0.75	–	0.13
–	5/8	40	1.575	22	0.866	–	–	12	0.472	0.6	0.024	9.55	4.80	13.2	SBB202-10RK	6	0.236	16	0.630	4	0.157	–	–	–	No.10-32UNF	0.10
17	–	40	1.575	22	0.866	–	–	12	0.472	0.6	0.024	9.55	4.80	13.2	SBB203RK	6	0.236	16	0.630	4	0.157	–	–	M5×0.5	–	0.10
		40	1.575	19.1	0.752	28.6	1.126	13	0.512	0.6	0.024	9.55	4.80	13.2	SAA203FP7	6.5	0.256			4.8	0.189	28.6	1.126	M6×0.75	–	0.13
–	3/4	47	1.850	25	0.984	–	–	14	0.551	1	0.039	12.8	6.65	13.2	SBB204-12RK	7	0.276	18	0.709	5	0.197	–	–	–	1/4-28UNF	0.15
	3/4	47	1.850	21.5	0.846	31	1.220	15	0.591	1	0.039	12.8	6.65	13.2	SAA204-12FP7	7.5	0.295			4.8	0.189	33.3	1.311	–	1/4-28UNF	0.19
20	–	47	1.850	25	0.984	–	–	14	0.551	1	0.039	12.8	6.65	13.2	SBB204RK	7	0.276	18	0.709	5	0.197	–	–	M6×0.75	–	0.15
		47	1.850	21.5	0.846	31	1.220	15	0.591	1	0.039	12.8	6.65	13.2	SAA204FP7	7.5	0.295			4.8	0.189	33.3	1.311	M6×0.75	–	0.19
–	7/8	52	2.047	27	1.063	–	–	15	0.591	1	0.039	14.0	7.85	13.9	SBB205-14RK	7.5	0.295	19.5	0.768	5.5	0.217	–	–	–	1/4-28UNF	0.18
–	15/16	52	2.047	27	1.063	–	–	15	0.591	1	0.039	14.0	7.85	13.9	SBB205-15RK	7.5	0.295	19.5	0.768	5.5	0.217	–	–	–	1/4-28UNF	0.18
	15/16	52	2.047	21.5	0.846	31	1.220	15	0.591	1	0.039	14.0	7.85	13.9	SAA205-15FP7	7.5	0.295			4.8	0.189	38.1	1.500	–	1/4-28UNF	0.23
25	–	52	2.047	27	1.063	–	–	15	0.591	1	0.039	14.0	7.85	13.9	SBB205RK	7.5	0.295	19.5	0.768	5.5	0.217	–	–	M6×0.75	–	0.18
		52	2.047	21.5	0.846	31	1.220	15	0.591	1	0.039	14.0	7.85	13.9	SAA205FP7	7.5	0.295			4.8	0.189	38.1	1.500	M6×0.75	–	0.23
–	1	52	2.047	27	1.063	–	–	15	0.591	1	0.039	14.0	7.85	13.9	SBB205-16RK	7.5	0.295	19.5	0.768	5.5	0.217	–	–	–	1/4-28UNF	0.18
	1	52	2.047	21.5	0.846	31	1.220	15	0.591	1	0.039	14.0	7.85	13.9	SAA205-16FP7	7.5	0.295			4.8	0.189	38.1	1.500	–	1/4-28UNF	0.23
–	1 1/8	62	2.441	30	1.181	–	–	16	0.630	1	0.039	19.5	11.3	13.9	SBB206-18RK	8	0.315	22	0.866	6	0.236	–	–	–	1/4-28UNF	0.27
	1 1/8	62	2.441	23.8	0.937	35.7	1.406	18	0.709	1	0.039	19.5	11.3	13.9	SAA206-18FP7	9	0.354			6	0.236	44.5	1.752	–	5/16-24UNF	0.34
30	–	62	2.441	30	1.181	–	–	16	0.630	1	0.039	19.5	11.3	13.9	SBB206RK	8	0.315	22	0.866	6	0.236	–	–	M6×0.75	–	0.27
		62	2.441	23.8	0.937	35.7	1.406	18	0.709	1	0.039	19.5	11.3	13.9	SAA206FP7	9	0.354			6	0.236	44.5	1.752	M8×1	–	0.34
–	1 3/16	62	2.441	30	1.181	–	–	16	0.630	1	0.039	19.5	11.3	13.9	SBB206-19RK	8	0.315	22	0.866	6	0.236	–	–	–	1/4-28UNF	0.27
	1 3/16	62	2.441	23.8	0.937	35.7	1.406	18	0.709	1	0.039	19.5	11.3	13.9	SAA206-19FP7	9	0.354			6	0.236	44.5	1.752	–	5/16-24UNF	0.34
–	1 1/4	62	2.441	30	1.181	–	–	16	0.630	1	0.039	19.5	11.3	13.9	SBB206-20RK	8	0.315	22	0.866	6	0.236	–	–	–	1/4-28UNF	0.27
	1 1/4	62	2.441	23.8	0.937	35.7	1.406	18	0.709	1	0.039	19.5	11.3	13.9	SAA206-20FP7	9	0.354			6	0.236	44.5	1.752	–	5/16-24UNF	0.34
–	1 1/4	72	2.835	32	1.260	–	–	17	0.669	1.1	0.043	25.7	15.4	13.9	SBB207-20RK	8.5	0.335	23.5	0.925	6	0.236	–	–	–	1/4-28UNF	0.42
	1 1/4	72	2.835	25.4	1.000	38.9	1.531	19	0.748	1.1	0.043	25.7	15.4	13.9	SAA207-20FP7	9.5	0.374			6.8	0.268	55.6	2.189	–	5/16-24UNF	0.57
–	1 5/16	72	2.835	25.4	1.000	38.9	1.531	19	0.748	1.1	0.043	25.7	15.4	13.9	SAA207-21FP7	9.5	0.374	–	–	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.57
–	1 3/8	72	2.835	32	1.260	–	–	17	0.669	1.1	0.043	25.7	15.4	13.9	SBB207-22RK	8.5	0.335	23.5	0.925	6	0.236	–	–	–	1/4-28UNF	0.42
	1 3/8	72	2.835	25.4	1.000	38.9	1.531	19	0.748	1.1	0.043	25.7	15.4	13.9	SAA207-22FP7	9.5	0.374			6.8	0.268	55.6	2.189	–	5/16-24UNF	0.57
35	–	72	2.835	32	1.260	–	–	17	0.669	1.1	0.043	25.7	15.4	13.9	SBB207RK	8.5	0.335	23.5	0.925	6	0.236	–	–	M6×0.75	–	0.42
		72	2.835	25.4	1.000	38.9	1.531	19	0.748	1.1	0.043	25.7	15.4	13.9	SAA207FP7	9.5	0.374			6.8	0.268	55.6	2.189	M8×1	–	0.57
–	1 7/16	72	2.835	32	1.260	–	–	17	0.669	1.1	0.043	25.7	15.4	13.9	SBB207-23RK	8.5	0.335	23.5	0.925	6	0.236	–	–	–	1/4-28UNF	0.42
	1 7/16	72	2.835	25.4	1.000	38.9	1.531	19	0.748	1.1	0.043	25.7	15.4	13.9	SAA207-23FP7	9.5	0.374			6.8	0.268	55.6	2.189	–	5/16-24UNF	0.57
–	1 1/2	80	3.150	34	1.339	–	–	18	0.709	1.1	0.043	29.1	17.8	14.0	SBB208-24RK	9	0.354	25	0.984	8	0.315	–	–	–	5/16-24UNF	0.60
	1 1/2	80	3.150	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	29.1	17.8	14.0	SAA208-24FP7	11	0.433			6.8	0.268	60.3	2.374	–	5/16-24UNF	0.75
–	1 9/16	80	3.150	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	29.1	17.8	14.0	SAA208-25FP7	11	0.433	–	–	6.8	0.268	60.3	2.374	–	5/16-24UNF	0.75
40	–	80	3.150	34	1.339	–	–	18	0.709	1.1	0.043	29.1	17.8	14.0	SBB208RK	9	0.354	25	0.984	8	0.315	–	–	M8×1	–	0.60
		80	3.150	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	29.1	17.8	14.0	SAA208FP7	11	0.433			6.8	0.268	60.3	2.374	M8×1	–	0.75
–	1 5/8	85	3.346	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	34.1	21.3	14.0	SAA209-26FP7	11	0.433	–	–	6.8	0.268	63.5	2.500	–	5/16-24UNF	0.82
–	1 11/16	85	3.346	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	34.1	21.3	14.0	SAA209-27FP7	11	0.433	–	–	6.8	0.268	63.5	2.500	–	5/16-24UNF	0.82
45	1 3/4	85	3.346	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	34.1	21.3	14.0	SAA209-28FP7	11	0.433	–	–	6.8	0.268	63.5	2.500	–	5/16-24UNF	0.82
		85	3.346	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	34.1	21.3	14.0	SAA209FP7	11	0.433	–	–	6.8	0.268	63.5	2.500	M8×1	–	0.82
–	1 7/8	90	3.543	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	35.1	23.3	14.4	SAA210-30FP7	11	0.433	–	–	6.8	0.268	69.9	2.752	–	5/16-24UNF	0.85
50	1 15/16	90	3.543	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	35.1	23.3	14.4	SAA210-31FP7	11	0.433	–	–	6.8	0.268	69.9	2.752	–	5/16-24UNF	0.85
		90	3.543	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	35.1	23.3	14.4	SAA210FP7	11	0.433	–	–	6.8	0.268	69.9	2.752	M8×1	–	0.85
–	2	100	3.937	32.4	1.276	48.4	1.906	24	0.945	1.5	0.059	43.4	29.4	14.4	SAA211-32FP7	12	0.472	–	–	8	0.315	76.2	3.000	–	3/8-24UNF	1.2
–	2 1/8	100	3.937	32.4	1.276	48.4	1.906	24	0.945	1.5	0.059	43.4	29.4	14.4	SAA211-34FP7	12	0.472	–	–	8	0.315	76.2	3.000	–	3/8-24UNF	1.2
55	–	100	3.937	32.4	1.276	48.4	1.906	24	0.945	1.5	0.059	43.4	29.4	14.4	SAA211FP7	12	0.472	–	–	8	0.315	76.2	3.000	M10×1.25	–	1.2
–	2 3/16	100	3.937	32.4	1.276	48.4	1.906	24	0.945	1.5	0.059	43.4	29.4	14.4	SAA211-35FP7	12	0.472	–	–	8	0.315	76.2	3.000	–	3/8-24UNF	1.2

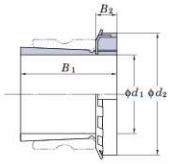
SC
Cylindrical bore
d 17 ~ 40 mm

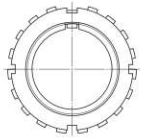


Shaft Dia. mm	Dimensions								Basic Load Ratings kN		Factor	Bearing No.	Mass
d	D		B		C		r (min.)		C_0	C_{0r}	f_0		kg
	mm	inch	mm	inch	mm	inch	mm	inch					
17	40	1.575	12	0.472	12	0.472	0.6	0.024	9.55	4.80	13.2	**SC203**	0.10
20	47	1.850	14	0.551	14	0.551	1	0.039	12.8	6.65	13.2	**SC204**	0.15
25	52	2.047	15	0.591	15	0.591	1	0.039	14.0	7.85	13.9	**SC205**	0.18
30	62	2.441	16	0.630	16	0.630	1	0.039	19.5	11.3	13.9	**SC206**	0.27
35	72	2.835	17	0.669	17	0.669	1.1	0.043	25.7	15.4	13.9	**SC207**	0.42
40	80	3.150	18	0.709	18	0.709	1.1	0.043	29.1	17.8	14.0	**SC208**	0.60

ROYSE
rodamientos y servicios
Desde 1979

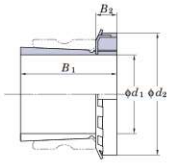
H2300X
d_1 **20 ~ 110 mm**

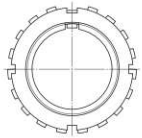




Shaft Dia. d_1 mm (H)	Shaft Dia. d_1 inch (HE)	Shaft Dia. d_1 inch (HS)	Shaft Dia. d_1 inch (HA)	Dimensions inch mm B_1	Dimensions inch mm B_2	Dimensions inch mm d_2	Adapter No. (H)	Adapter No. (HE)	Adapter No. (HS)	Adapter No. (HA)	Sleeve No. (H)	Sleeve No. (HE)	Sleeve No. (HS)	Sleeve No. (HA)	Lock Nut No.	Washer No.	Mass kg (H)	Mass kg (HE)	Mass kg (HS)	Mass kg (HA)
20	–	–	–	1.378	0.315	1.496	H2305X	–	–	–	A2305X	–	–	–	AN05	AW05X	0.095	–	–	–
	3/4	–	–	35	8	38	–	HE2305X	–	–	–	AE2305X	–	–	AN05	AW05X	–	0.085	–	–
25	–	–	–				H2306X	–	–	–	A2306X	–	–	–	AN06	AW06X	0.13	–	–	–
	1	–	–	1.496	0.315	1.772	–	HE2306X	–	–	–	AE2306X	–	–	AN06	AW06X	–	0.12	–	–
	–	7/8	–	38	8	45	–	–	HS2306X	–	–	–	AS2306X	–	–	–	–	–	0.16	–
	–	–	15/16				–	–	–	HA2306X	–	–	–	AA2306X	–	–	–	–	–	0.14
30	–	–	–	1.693	0.354	2.047	H2307X	–	–	–	A2307X	–	–	–	AN07	AW07X	0.17	–	–	–
	–	–	1 3/16	43	9	52	–	–	–	HA2307X	–	–	–	AA2307X	–	–	–	–	–	0.17
35	–	–	–	1.811	0.394	2.283	H2308X	–	–	–	A2308X	–	–	–	AN08	AW08X	0.22	–	–	–
	1 1/4	–	–	46	10	58	–	HE2308X	–	–	–	AE2308X	–	–	AN08	AW08X	–	0.28	–	–
40	–	–	–	1.969	0.433	2.559	H2309X	–	–	–	A2309X	–	–	–	AN09	AW09X	0.28	–	–	–
	1 1/2	–	–	50	11	65	–	HE2309X	–	–	–	AE2309X	–	–	AN09	AW09X	–	0.32	–	–
	–	–	1 7/16				–	–	–	HA2309X	–	–	–	AA2309X	–	–	–	–	–	0.35
45	–	–	–				H2310X	–	–	–	A2310X	–	–	–	AN10	AW10X	0.36	–	–	–
	1 3/4	–	–	2.165	0.472	2.756	–	HE2310X	–	–	–	AE2310X	–	–	AN10	AW10X	–	0.37	–	–
	–	1 5/8	–	55	12	70	–	–	HS2310X	–	–	–	AS2310X	–	–	–	–	–	0.46	–
	–	–	1 11/16				–	–	–	HA2310X	–	–	–	AA2310X	–	–	–	–	–	0.42
50	–	–	–				H2311X	–	–	–	A2311X	–	–	–	AN11	AW11X	0.42	–	–	–
	2	–	–	2.323	0.472	2.953	–	HE2311X	–	–	–	AE2311X	–	–	AN11	AW11X	–	0.40	–	–
	–	1 7/8	–	59	12	75	–	–	HS2311X	–	–	–	AS2311X	–	AN11	AW11X	–	–	0.50	–
	–	–	1 15/16				–	–	–	HA2311X	–	–	–	AA2311X	–	–	–	–	–	0.45
55	–	–	–	2.441	0.512	3.150	H2312X	–	–	–	A2312X	–	–	–	AN12	AW12X	0.48	–	–	–
	–	2 1/8	–	62	13	80	–	–	HS2312X	–	–	–	AS2312X	–	AN12	AW12X	–	–	0.52	–
60	–	–	–				H2313X	–	–	–	A2313X	–	–	–	AN13	AW13X	0.56	–	–	–
	2 1/4	–	–	2.559	0.551	3.346	–	HE2313X	–	–	–	AE2313X	–	–	AN13	AW13X	–	0.69	–	–
	–	2 3/8	–	65	14	85	–	–	HS2313X	–	–	–	AS2313X	–	AN13	AW13X	–	–	0.55	–
	–	–	2 3/16				–	–	–	HA2313X	–	–	–	AA2313X	–	–	–	–	–	0.76
65	–	–	–				H2315X	–	–	–	A2315X	–	–	–	AN15	AW15X	1.05	–	–	–
	2 1/2	–	–	2.874	0.591	3.858	–	HE2315X	–	–	–	AE2315X	–	–	AN15	AW15X	–	1.15	–	–
	–	–	2 7/16	73	15	98	–	–	–	HA2315X	–	–	–	AA2315X	–	–	–	–	–	1.15
	–	2 5/8	–				–	–	HS2315X	–	–	–	AS2315X	–	–	–	–	–	0.9	–
70	–	–	–	3.071	0.669	4.134	H2316X	–	–	–	A2316X	–	–	–	AN16	AW16X	1.3	–	–	–
	2 3/4	–	–	78	17	105	–	HE2316X	–	–	–	AE2316X	–	–	AN16	AW16X	–	1.3	–	–
	–	–	2 11/16				–	–	–	HA2316X	–	–	–	AA2316X	–	–	–	–	–	1.41
75	–	–	–	3.228	0.709	4.331	H2317X	–	–	–	A2317X	–	–	–	AN17	AW17X	1.45	–	–	–
	3	–	–	82	18	110	–	HE2317X	–	–	–	AE2317X	–	–	AN17	AW17X	–	1.35	–	–
	–	–	2 15/16				–	–	–	HA2317X	–	–	–	HA2317X	–	–	–	–	–	1.48
80	–	–	–	3.386	0.709	4.724	H2318X	–	–	–	A2318X	–	–	–	AN18	AW18X	1.7	–	–	–
	3 1/4	–	–	86	18	120	–	HE2318X	–	–	–	AE2318X	–	–	–	–	–	1.49	–	–
	–	–	3 3/16				–	–	–	HA2318X	–	–	–	AA2318X	–	–	–	–	–	1.62
85	–	–	–	3.543	0.748	4.921	H2319X	–	–	–	A2319X	–	–	–	AN19	AW19X	1.95	–	–	–
	3 1/4	–	–	90	19	125	–	HE2319X	–	–	–	AE2319X	–	–	AN19	AW19X	–	2.15	–	–
90	–	–	–	3.819	0.787	5.118	H2320X	–	–	–	A2320X	–	–	–	AN20	AW20X	2.2	–	–	–
	3 1/2	–	–	97	20	130	–	HE2320X	–	–	–	AE2320X	–	–	AN20	AW20X	–	2.3	–	–
	–	–	3 7/16				–	–	–	HA2320X	–	–	–	AA2320X	–	–	–	–	–	2.47
100	–	–	–	4.134	0.827	5.709	H2322X	–	–	–	A2322X	–	–	–	AN22	AW22X	2.75	–	–	–
	4	–	–	105	21	145	–	HE2322X	–	–	–	AE2322X	–	–	AN22	AW22X	–	2.55	–	–
110	–	–	–	4.409	0.866	6.102	H2324	–	–	–	A2324	–	–	–	AN24	AW24	3.2	–	–	–
	4 1/4	–	–	112	22	155	–	HE2324	–	–	–	AE2324	–	–	–	–	–	3.5	–	–
	–	–	4 3/16				–	–	–	HA2324	–	–	–	AA2324	–	–	–	–	–	3.79

H2300X
d_1 **115 ~ 125 mm**





Shaft Dia. d_1 mm (H)	Shaft Dia. d_1 inch (HE)	Shaft Dia. d_1 inch (HS)	Shaft Dia. d_1 inch (HA)	Dimensions inch mm B_1	Dimensions inch mm B_2	Dimensions inch mm d_2	Adapter No. (H)	Adapter No. (HE)	Adapter No. (HS)	Adapter No. (HA)	Sleeve No. (H)	Sleeve No. (HE)	Sleeve No. (HS)	Sleeve No. (HA)	Lock Nut No.	Washer No.	Mass kg (H)	Mass kg (HE)	Mass kg (HS)	Mass kg (HA)
115	–	–	–	4.764	0.906	6.496	**H2326**	–	–	–	A2326	–	–	–	AN26	AW26	4.6	–	–	–
	4 1/2	–	–	121	23	165	–	**HE2326**	–	–	–	AE2326	–	–	AN26	AW26	–	4.7	–	–
	–	–	4 7/16				–	–	–	**HA2326**	–	–	–	AA2326	–	–	–	–	–	4.23
125	–	–	–	5.157	0.945	7.087	**H2328**	–	–	–	A2328	–	–	–	AN28	AW28	5.5	–	–	–
	5	–	–	131	24	180	–	**HE2328**	–	–	–	AE2328	–	–	–	–	–	5.1	–	–
	–	–	4 15/16				–	–	–	**HA2328**	–	–	–	AA2328	–	–	–	–	–	5.42

16 Parts and Accessories

16.1 Part No. of Steel Plate Covers

Table 16.1 Part No. of steel plate cover for UC type bearing

Bearing No.	Shaft dia. (mm)	Steel plate cover No.	
		Open type	Sealed type
UC201	12	C– 4×12	D– 4
UC202	15	C– 4×15	D– 4
UC203	17	C– 4×17	D– 4
UC204	20	C– 4×20	D– 4
UC205	25	C– 5×25	D– 5
UC206	30	C– 6×30	D– 6
UC207	35	C– 7×35	D– 7
UC208	40	C– 8×40	D– 8
UC209	45	C– 9×45	D– 9
UC210	50	C–10×50	D–10
UC211	55	C–11×55	D–11
UC212	60	C–12×60	D–12
UC213	65	C–13×65	D–13
UC214	70	C–14×70	D–14
UC215	75	C–15×75	D–15
UC216	80	C–16×80	D–16
UC217	85	C–17×85	D–17
UC218	90	C–18×90	D–18
UCX05	25	C– 6×25	D– 6
UCX06	30	C– 7×30	D– 7
UCX07	35	C– 8×35	D– 8
UCX08	40	C– 9×40	D– 9
UCX09	45	C–10×45	D–10
UCX10	50	C–11×50	D–11
UCX11	55	C–12×55	D–12
UCX12	60	C–13×60	D–13
UCX13	65	C–14×65	D–14
UCX14	70	C–15×70	D–15
UCX15	75	C–16×75	D–16
UCX16	80	C–17×80	D–17
UCX17	85	C–18×85	D–18

Remark In the Part No. of the steel plate covers for shouldered shaft, shaft diameter follows the basic code of the cover. For example, Part No. of the cover for a shaft with 35 mm diameter for UC207 is C–7×35.

Table 16.2 Part No. of steel plate cover for UK type bearing

Bearing No.	Shaft dia. (mm)	Steel plate cover No.	
		Open type	Sealed type
–			
–			
–			
–			
UK205	20	C– 5×20	D– 5
UK206	25	C– 6×25	D– 6
UK207	30	C– 7×30	D– 7
UK208	35	C– 8×35	D– 8
UK209	40	C– 9×40	D– 9
UK210	45	C–10×45	D–10
UK211	50	C–11×50	D–11
UK212	55	C–12×55	D–12
UK213	60	C–13×60	D–13
–			
UK215	65	C–15×65	D–15
UK216	70	C–16×70	D–16
UK217	75	C–17×75	D–17
UK218	80	C–18×80	D–18
UKX05	20	C– 6×20	D– 6
UKX06	25	C– 7×25	D– 7
UKX07	30	C– 8×30	D– 8
UKX08	35	C– 9×35	D– 9
UKX09	40	C–10×40	D–10
UKX10	45	C–11×45	D–11
UKX11	50	C–12×50	D–12
UKX12	55	C–13×55	D–13
UKX13	60	C–14×60	D–14
–			
UKX15	65	C–16×65	D–16
UKX16	70	C–17×70	D–17
UKX17	75	C–18×75	D–18

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16.2 Part No. of Cast Iron Covers

Table 16.3 Part No. of cast iron cover for UC type bearing

Bearing No.	Shaft dia. (mm)	Cast iron cover No.		Mounting bolt (reference)
		Open type	Closed type	
UC204	20	204FC×20 (204FC3×20)[1]	204FD (204FD3)[1]	M3 (M4)
UC205	25	205FC×25 (205FC3×25)[1]	205FD (205FD3)[1]	M3 (M4)
UC206	30	206FC×30	206FD	M4
UC207	35	207FC×35	207FD	M4
UC208	40	208FC×40	208FD	
UC209	45	209FC×45	209FD	
UC210	50	210FC×50	210FD	M4
UC211	55	211FC×55	211FD	
UC212	60	212FC×60	212FD	
UC213	65	213FC×65	213FD	M4
UC214	70	214FC×70	214FD	
UC215	75	215FC×75	215FD	
UC216	80	216FC×80	216FD	M5
UC217	85	217FC×85	217FD	
UC218	90	218FC×90	218FD	
UCX18	90	X18C×90 (X18C3×90)[2]	X18D (X18D3)[2]	M5
UCX20	100	X20C×100 (X20C3×100)[2]	X20D (X20D3)[2]	
UC305	25	305C×25	305D	M4
UC306	30	306C×30	306D	
UC307	35	307C×35	307D	
UC308	40	308C×40	308D	M5
UC309	45	309C×45	309D	
UC310	50	310C×50	310D	
UC311	55	311C×55	311D	M5
UC312	60	312C×60	312D	
UC313	65	313C×65	313D	
UC314	70	314C×70	314D	M5
UC315	75	315C×75	315D	
UC316	80	316C×80	316D	
UC317	85	317C×85	317D	M5
UC318	90	318C×90	318D	
UC319	95	319C×95	319D	
UC320	100	320C×100	320D	M5
UC321	105	321C×105	321D	
UC322	110	322C×110	322D	
UC324	120	324C×120	324D	M5
UC326	130	326C×130	326D	M8
UC328	140	328C×140	328D	

Table 16.4 Part No. of cast iron cover for UK type bearing

Bearing No.	Shaft dia. (mm)	Cast iron cover No.		Mounting bolt (reference)
		Open type	Closed type	
–				
UK205	20	205FC×20 (205FC3×20)[1]	205FD (205FD3)[1]	M3 (M4)
UK206	25	206FC×25	206FD	M4
UK207	30	207FC×30	207FD	M4
UK208	35	208FC×35	208FD	
UK209	40	209FC×40	209FD	
UK210	45	210FC×45	210FD	M4
UK211	50	211FC×50	211FD	
UK212	55	212FC×55	212FD	
UK213	60	213FC×60	213FD	M4
–				
UK215	65	215FC×65	215FD	
UK216	70	216FC×70	216FD	M5
UK217	75	217FC×75	217FD	
UK218	80	218FC×80	218FD	
UKX18	80	X18C×80 (X18C3×80)[2]	X18D (X18D3)[2]	M5
UKX20	90	X20C×90 (X20C3×90)[2]	X20D (X20D3)[2]	
UK305	20	305C×20	305D	M4
UK306	25	306C×25	306D	
UK307	30	307C×30	307D	
UK308	35	308C×35	308D	M5
UK309	40	309C×40	309D	
UK310	45	310C×45	310D	
UK311	50	311C×50	311D	M5
UK312	55	312C×55	312D	
UK313	60	313C×60	313D	
–				
UK315	65	315C×65	315D	M5
UK316	70	316C×70	316D	
UK317	75	317C×75	317D	M5
UK318	80	318C×80	318D	
UK319	85	319C×85	319D	
UK320	90	320C×90	320D	M5
–				
UK322	100	322C×100	322D	
UK324	110	324C×110	324D	M5
UK326	115	326C×115	326D	M8
UK328	125	328C×125	328D	

Note [1] Items in parentheses are applicable to the pillow type (P), square four-bolt flange type (F), oval flange type (FL), and the take-up type (T) bearings, and can be mounted to housings with three hexagon socket head cap screws (use four to mount other items).
[2] Items in parentheses are applicable to the round flange cartridge type bearing (FC), and can be mounted to housings with three hexagon socket head cap screws (use four to mount other items).

Remark In the nominal codes of the cast iron covers for shouldered shaft, shaft diameter follows the basic code of the cover. For example, Part No. of the cover for a shaft with 60 mm diameter for UC210 is 210FC×60.

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SPHERICAL ROLLER BEARING UNITS

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6 Dimensional Tables for Spherical Roller Bearing Units

XS2P, ZS2P 338
d 1 3/8 ~ 4 inch 40 ~ 100 mm

XSE2P, ZSE2P 340
d 1 3/8 ~ 4 inch 40 ~ 100 mm

XS4F, ZS4F 342
d 1 3/8 ~ 4 inch 40 ~ 100 mm

XSE4F, ZSE4F 344
d 1 3/8 ~ 4 inch 40 ~ 100 mm

XS4FC, ZS4FC 346
d 1 3/8 ~ 4 inch 40 ~ 100 mm

XST, ZST 348
d 1 15/16 ~ 3 1/2 inch 50 ~ 90 mm

XS4P, ZS4P 350
d 2 7/16 ~ 4 inch 60 ~ 100 mm

XDS4P, ZDS4P 352
d 2 7/16 ~ 4 inch 60 ~ 100 mm

XS4, ZS4 354
d 1 3/8 ~ 4 inch 40 ~ 100 mm

XDS4, ZDS4 355
d 2 7/16 ~ 4 inch 60 ~ 100 mm

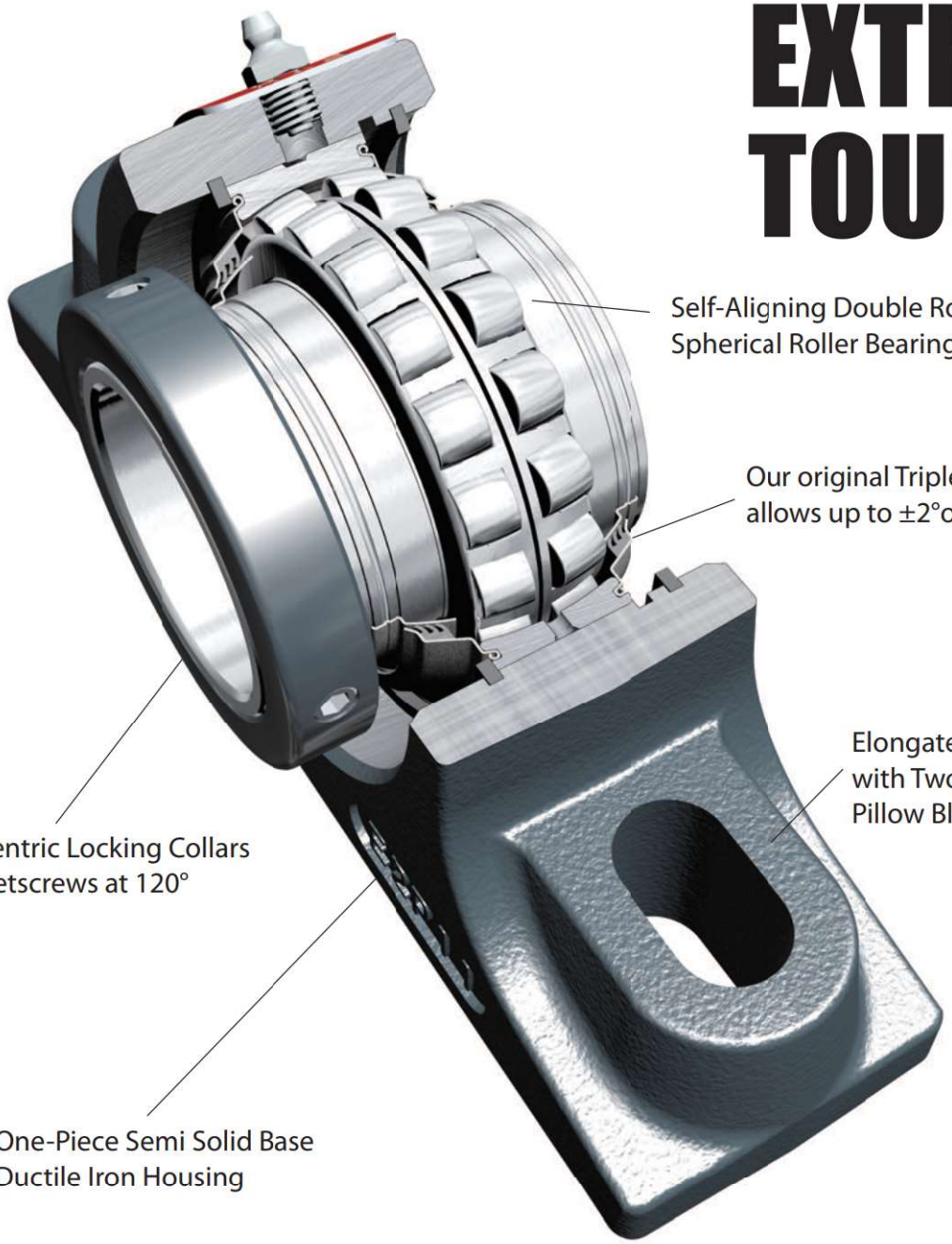
1 Structure and Features

1.1 Structure

More than sixty years of experience and innovation in the field of mounted ball bearing units has lead to the production of mounted spherical roller units that cater to a wide range of applications and industries. Bearing and housing production are accomplished entirely by FYH while utilizing only the highest quality materials available. Through meticulous design enhancements and careful material selection this heavy duty mounted roller series attains the designation of "EXTRA TOUGH".

1.2 Features

FYH spherical roller bearing units have many features and are available in various models. A wide selection of mounted units is offered to fit virtually any application.



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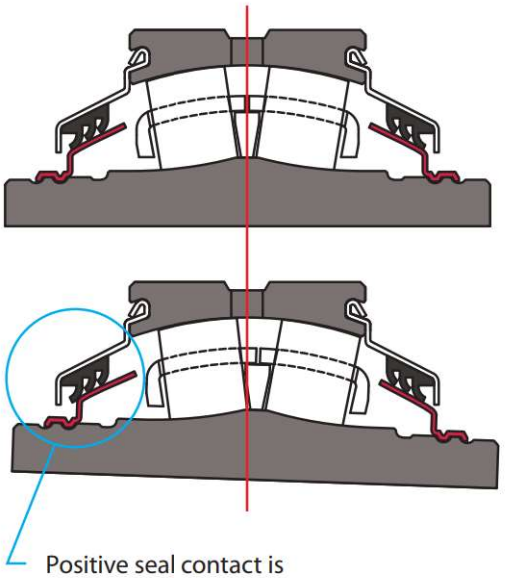
1 Triple Lip Seal

±2° Self Aligning capability

The triple-lip seal maintains positive contact with a special sealing ring at virtually any angle of shaft mis-alignment. Our new patent pending sealing design protects the bearing against a variety of wet and dry contaminants and dramatically improves bearing life. The ability to accommodate shaft expansion is also available.



2 Semi Solid Base

One piece ductile iron housings

Ductile iron housings are approximately twice as strong as cast iron, and the semi-solid base design provides an excellent mounting foundation and superior rigidity over competitive offerings. The standard housing material from FYH is ductile iron, and additional material options may also be available.

3 Lubrication

FYH Roller Grease is a calcium sulfonate complex thickened lubricating grease formulated in 100% synthetic hydrocarbon base oil. FYH Roller Grease has excellent low temperature and high temperature performance, and it provides excellent extreme pressure and anti-wear protection. FYH Roller Grease also provides excellent corrosion protection and water wash-out resistance. Grease temperature range: -40 to 340°F (-40 to 170°C) FYH Roller Grease is also available in automatic lubricators.

4 Designed to Interchange with the Competition

Units are designed to interchange with most spherical roller unit footprints. Elongated bolt holes are dimensioned to allow for a shortened or extended mounting pitch to accommodate practically any competitive tapered roller or spherical roller design.

5 Convertible from Non-expansion to Expansion

By simply moving a snap ring on the back of the unit the bearing can easily be converted from non-expansion to expansion or vice versa.
This procedure can be easily performed in the field even after the unit has been mounted.

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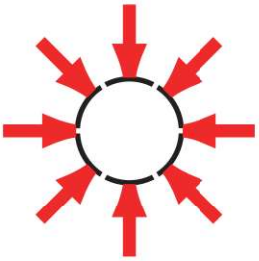
6 Locking Style

The patent pending Z-Lock is the first ever tapered bore locking collar system. Just tighten the cap screws properly and the specialized tapered bore collar provides extreme holding power on the shaft without causing any damage. This is a true 360 degree locking mechanism.
Disassembly is easily accomplished with two threaded holes in the collar for standard withdrawal dismounting.



THE MOST REVOLUTIONARY
LOCKING SYSTEM

TRUE 360° GRIP

http://fyhbearings.com/html/z_lock.html

2 Models

2.1 Model List

Table 2.1 shows the models of FYH Spherical Roller Bearing Units.

Table 2.1 FYH Spherical Roller Bearing Units models

Model	Type	Bearing bore dia. Surface (fixing to shaft)	Model code	Shaft dia. (inch) min.	Shaft dia. (inch) max.	Shaft dia. (mm) min.	Shaft dia. (mm) max.	Dimension table
1 SPHERICAL ROLLER BEARING UNITS	(1) 2-Bolt Base Pillow Block Units	with set screw collar lock	**XS2P**	1 3/8	4	40	100	P.338
		with Z-Lock	**ZS2P**	1 3/8	4	40	100	P.338
	(2) 2-Bolt Base Type E Pillow Units	with set screw collar lock	**XSE2P**	1 3/8	4	40	100	P.340
		with Z-Lock	**ZSE2P**	1 3/8	4	40	100	P.340
	(3) 4-Bolt Flange Units	with set screw collar lock	**XS4F**	1 3/8	4	40	100	P.342
		with Z-Lock	**ZS4F**	1 3/8	4	40	100	P.342
	(4) 4-Bolt Type E Flange Units	with set screw collar lock	**XSE4F**	1 3/8	4	40	100	P.344
		with Z-Lock	**ZSE4F**	1 3/8	4	40	100	P.344
	(5) Flange Cartridge Units	with set screw collar lock	**XS4FC**	1 3/8	4	40	100	P.346
		with Z-Lock	**ZS4FC**	1 3/8	4	40	100	P.346
	(6) Take-Up Units	with set screw collar lock	**XST**	1 15/16	3 1/2	50	90	P.348
		with Z-Lock	**ZST**	1 15/16	3 1/2	50	90	P.348
	(7) 4-Bolt Base Pillow Block Units	with set screw collar lock	**XS4P**	2 7/16	4	60	100	P.350
		with Z-Lock	**ZS4P**	2 7/16	4	60	100	P.350
		with set screw collar lock (both)	**XDS4P**	2 7/16	4	60	100	P.352
		with Z-Lock (both)	**ZDS4P**	2 7/16	4	60	100	P.352
2 SPHERICAL ROLLER BEARING INSERTS	(1) XS Inserts	with set screw collar lock	**XS**	1 3/8	4	40	100	P.354
	(2) ZS Inserts	with Z-Lock	**ZS**	1 3/8	4	40	100	P.354
	(3) XDS Inserts	with set screw collar lock (both)	**XDS**	2 7/16	4	60	100	P.355
	(4) ZDS Inserts	with Z-Lock (both)	**ZDS**	2 7/16	4	60	100	P.355

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2.2 Models and Features

1 SPHERICAL ROLLER BEARING UNITS

1 2-Bolt Base Pillow Block Units

XS2P
XSE2P

ZS2P
ZSE2P

XS2P is a two-bolt pillow block unit with a setscrew locking insert system. This unit is equivalent to many of our competitors SRB style housings.
XSE2P is with Type E mounting dimensions which has a footprint that can accommodate both a tapered roller unit and a spherical roller unit for most shaft sizes.
ZS2P and **ZSE2P** have the same housing dimensions as the above styles but utilize our revolutionary Z-Lock concentric locking collar system.

2 4-Bolt Flange Units

XS4F
XSE4F

ZS4F
ZSE4F

XS4F is a four-bolt flange unit with set screw locking system. It has standard spherical roller unit mounting dimensions and a compact footprint for areas with limited space.
XSE4F has Type E mounting dimensions with the same footprint as a tapered roller unit.
ZS4F and **ZSE4F** have the same housing dimensions as the above units but utilize our revolutionary Z-Lock concentric locking collar system.

3 Flange Cartridge Units

XS4FC

ZS4FC

XS4FC is a piloted flange cartridge unit with a setscrew locking insert system. Its' pilot mounting dimensions are the same as the medium duty ball bearing units that allow for easy upgrades to a heavier duty series. The threaded withdrawal holes make for quick and easy dismounting.
ZS4FC carries as the same housing dimensions as the above unit but incorporate the revolutionary Z-Lock concentric locking collar system.

4 Take-Up Units

XST

ZST

XST is a take-up unit with set screw locking system.
It has rail slots that are compatible with many industrial frame sizes. This unit can safely handle high belt tension and heavy shock loads.
ZST has the same housing dimensions as the XST units but incorporates the revolutionary Z-Lock concentric locking collar system.

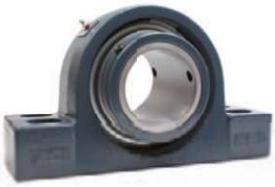
5 4-Bolt Base Pillow Block Units

XS4P

ZS4P

XS4P is a four-bolt base pillow block unit with standard spherical roller bearing mounting dimensions. Four mounting bolt-holes create a firm and secure fit to the mounting surface. The ends of the housing are flat to allow for mounting inside of a fixed frame assembly.
ZS4P is the Z-lock equivalent of the XS4P carrying the same housing dimensions but utilizing the revolutionary Z-Lock concentric locking collar system.

6 4-Bolt Base Pillow Block Units (Double Collar)



XDS4P

ZDS4P

XDS4P is the same as the XS4P above but utilizes a double lock. This insert has a setscrew locking mechanism on both the front and back of the inner ring.
This additional locking mechanism is helpful in applications where the bearing experiences some thrust loads on the inner ring that could cause a single locking unit to slip.
ZDS4P is the Z-lock equivalent of the XDS4P carrying the same housing dimensions but utilizing the revolutionary Z-Lock concentric locking collar system.

2 SPHERICAL ROLLER BEARING INSERTS

1 Spherical Roller Bearing Inserts (Single Collar)

XS

ZS

XS is a setscrew locking insert that utilizes the patented Bullet Point setscrews at 120 degrees apart to hold shafting firmly in place. This is the most economical type of SRB insert and can be utilized in a wide variety of industrial and agricultural applications.

ZS is a concentric locking insert that utilizes a tapered collar that allows for fast mounting while avoiding damage to shafting that a setscrew unit can cause. The tapered collar keeps the 100% true concentric holding power and does not remove any clearance in the insert by over tightening like the adaptor sleeve locking system can. The unit is tightened down using a hex wrench on the cap screws in a star pattern. The insert can be uninstalled by removing all cap screws and using two of them in the withdrawal holes to disengage the collar.

2 Spherical Roller Bearing Inserts (Double Collar)

XDS

ZDS

XDS is the same as the XS above but utilizes a double lock. This insert has a setscrew locking mechanism on both the front and back of the inner ring. This additional locking mechanism is helpful in applications where the bearing experiences some thrust loads on the inner ring that could cause a single locking unit to slip.

ZDS is the same as the ZS above but utilizes a double lock. This insert has a concentric tapered collar on both the front and back of the inner ring. This additional locking mechanism is helpful in applications where a bearing experiences some thrust loads on the inner ring that could cause a single locking unit to slip.

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3 Nomenclature

The nomenclature of a FYH Spherical Roller Unit is comprised of the roller bearing unit model code which is made up using the bearing model code and the housing model code. This in combination with the diameter series code, bore diameter code, accessory code and any special code for individual applications determines the FYH Spherical Roller Units part number.

http://www.fyhbearings.com/html/nomenclature_r.html

X S E2P 4 10 - 32 F **

Bearing No.	XS410-32
Housing No.	E2P10

EXPANSION Type

Bore Size (inch)
Number of 1/16" of Inches
(ex. 39 = 2 7/16")

Bore Size (base)
Metric type x 5 mm of Number
(ex. 13 = 65 mm)

Series code

4	Spherical Roller

Housing model code

2P	2 - Bolt Pillow Block
4P	4 - Bolt Pillow Block
4F	4 - Bolt Flange
4FC	Flange Cartridge
T	Take - Up
E2P	2 - Bolt Pillow Block : TYPE E (inch)
E4F	4 - Bolt Flange : TYPE E (inch)

INSERT-2 model code

S	Spherical Roller
T	Taper Roller

INSERT-1 Locking Type code

X	Set Screw Collar Lock
XD	Set Screw Collar Lock (Double Collar)
Z	Z - Lock Concentric Locking System

4 Engineering Information

Spherical Roller Bearing Life Calculations

The relationship between the basic rating life, the basic dynamic load rating, and the dynamic equivalent load of the spherical roller bearing is indicated in Formula A. If the spherical roller bearing unit is being used at a fixed rotating speed, the life is indicated as time.
This is shown in Formula B.

A. $L_{10} = \left(\frac{C_r}{P_r}\right)^{\frac{10}{3}}$

B. $L_{10h} = \frac{10^6 L_{10}}{60_n} = \frac{10^6}{60_n}\left(\frac{C_r}{P_r}\right)^{\frac{10}{3}}$

L_{10} : Basic Rating Life 10^6 rotations
L_{10h} : Rated Life (hr)
C_r : Basic Dynamic Load Rating (lbf)
P_r : Dynamic equivalent Load (lbf)
n : Speed (min^{-1})

Basic Loads (lbf)		
Size Code	Dynamic C_r	Static C_{or}
XS408	19967	22744
XS409	20834	24491
XS410	21683	26306
XS411	27191	33029
XS413	39006	49591
XS415	42032	54986
XS418	63910	86343
XS420	81897	111863

Limiting Speed for Seals		
Size Code	Standard Triple Lip Seal Limiting Speeds (*dn*=110,000) RPM	Non Contact Seal Limiting Speeds (*dn*=130,000) RPM
XS408	2750	3200
XS409	2450	2800
XS410	2200	2600
XS411	2000	2360
XS413	1692	2000
XS415	1460	1730
XS418	1220	1440
XS420	1100	1300

Allowable Radial Load (lbf) at Various RPM																				
Shaft Size	Size	L_{10} hours	RPM																	
			50	100	150	300	500	750	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200
1 3/8" 1 7/16" 1 1/2" 40 mm	XS408	10000	7197	5846	5177	4205	3607	3194	2930	2774	2649	2545	2456	2380	2313	2253	2200	2151	2107	2067
		25000	5468	4441	3932	3194	2740	2426	2226	2107	2012	1933	1866	1808	1757	1712	1671	1634	1601	1570
		50000	4441	3607	3194	2594	2226	1971	1808	1712	1634	1570	1516	1468	1427	1390	1357	1327	1300	1275
		70000	4015	3261	2887	2345	2012	1782	1634	1547	1477	1419	1370	1327	1290	1257	1227	1200	1175	1153
		100000	3607	2930	2594	2107	1808	1601	1468	1390	1327	1275	1231	1193	1159	1129	1102	1078	1056	1036
1 11/16" 1 3/4" 45 mm	XS409	10000	7510	6100	5401	4387	3764	3333	3057	2894	2764	2655	2563	2483	2413	2351	2295	2245		
		25000	5705	4634	4103	3333	2859	2532	2322	2199	2099	2017	1947	1886	1833	1786	1744	1705		
		50000	4634	3764	3333	2707	2322	2056	1886	1786	1705	1638	1581	1532	1489	1451	1416	1385		
		70000	4189	3402	3013	2447	2099	1859	1705	1615	1542	1481	1430	1385	1346	1311	1280	1252		
		100000	3764	3057	2707	2199	1886	1670	1532	1451	1385	1331	1285	1245	1209	1178	1150	1125		
1 15/16" 2" 50 mm	XS410	10000	7816	6349	5621	4566	3917	3469	3182	3012	2876	2763	2667	2584	2512	2447	2389			
		25000	5937	4823	4270	3469	2976	2635	2417	2288	2185	2099	2026	1963	1908	1859	1815			
		50000	4823	3917	3469	2817	2417	2140	1963	1859	1775	1705	1646	1595	1550	1510	1474			
		70000	4360	3541	3136	2547	2185	1935	1775	1680	1604	1541	1488	1442	1401	1365	1332			
		100000	3917	3182	2817	2288	1963	1738	1595	1510	1442	1385	1337	1295	1259	1226	1197			
2 3/16" 55 mm	XS411	10000	9801	7961	7049	5726	4912	4350	3990	3778	3607	3465	3345	3241	3150					
		25000	7446	6048	5355	4350	3732	3304	3031	2870	2740	2632	2541	2462	2393					
		50000	6048	4912	4350	3533	3031	2684	2462	2331	2226	2138	2064	2000	1943					
		70000	5467	4441	3932	3194	2740	2426	2226	2107	2012	1933	1866	1808	1757					
		100000	4912	3990	3533	2870	2462	2180	2000	1893	1808	1737	1676	1624	1579					
2 7/16" 65 mm	XS413	10000	14060	11421	10113	8214	7047	6240	5724	5419	5174	4971	4798	4649						
		25000	10681	8676	7682	6240	5353	4740	4348	4117	3931	3776	3645	3532						
		50000	8676	7047	6240	5068	4348	3850	3532	3344	3193	3067	2961	2869						
		70000	7843	6370	5641	4582	3931	3480	3193	3023	2886	2773	2677	2593						
		100000	7047	5724	5068	4117	3532	3127	2869	2716	2593	2491	2405	2330						
2 11/16" 2 15/16" 75 mm	XS415	10000	15151	12307	10897	8851	7594	6724	6168	5840	5576	5357								
		25000	11510	9349	8278	6724	5768	5108	4685	4436	4236	4069								
		50000	9349	7594	6724	5461	4685	4149	3806	3603	3440	3305								
		70000	8451	6864	6078	4937	4236	3750	3440	3257	3110	2988								
		100000	7594	6168	5461	4436	3806	3370	3091	2927	2794	2685								
3 7/16" 90 mm	XS418	10000	23037	18712	16569	13458	11546	10224	9378	8879	8478									
		25000	17500	14215	12587	10224	8771	7766	7124	6745	6440									
		50000	14215	11546	10224	8304	7124	6308	5787	5479	5231									
		70000	12850	10437	9242	7507	6440	5703	5231	4953	4729									
		100000	11546	9378	8304	6745	5787	5124	4700	4450	4249									
3 15/16" 100 mm	XS420	10000	29521	23979	21232	17246	14796	13101	12018	11378	10864									
		25000	22426	18215	16129	13101	11240	9952	9129	8643	8253									
		50000	18215	14796	13101	10641	9129	8084	7415	7021	6703									
		70000	16467	13375	11843	9620	8253	7308	6703	6347	6060									
		100000	14796	12018	10641	8643	7415	6566	6023	5703	5445									

1. Blue area: The Standard Triple Lip Seal is used.
2. Green area: A non-contact seal is used.

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5 Installation Guide

5.1 Precautions

- Read the entire installation guide prior to beginning.
- Bearings are precision instruments and they must always be handled carefully to prevent damage.
- Store bearings in a cool and dry location, and always leave bearings in original packaging until ready for installation.
- Bearing life calculations should be performed prior to installation to ensure that the selected unit is acceptable for the application.
- The use of more than two bearings on a single shaft is not recommended.
- To maximize the life of the bearing avoid mis-alignment and pre-loading by carefully following these instructions.
- Always lock out the power source and adhere closely to industry safety standards before performing any work on the equipment.

5.2 Preparation

The mounting surface and housing base must be clean, flat, and of sufficient thickness to support the weight of the entire assembly without deflecting or breaking. Make sure that the mounting surface is parallel to the plane of the shaft for pillow blocks, and perpendicular to the shaft for flanges and take-up units. FYH mounted bearings can accommodate up to ±2 degrees of mis-alignment, however longer bearing life can be achieved if mis-alignment can be minimized during installation.

Check the shaft diameter and make sure that it is within tolerance as indicated in Table 1. Check that the shaft is straight, clean, and free of burrs or other imperfections. Use emery cloth or a fine file to smooth the surface as necessary. A small amount of lubricant may be applied to both the shaft and the bore of the bearing; however lubricant should not be applied to the areas where the bearing locking mechanism contacts the shaft. To ensure adequate locking power between the bearing and shaft the hardness of the shaft should not exceed Rc 45.

Table 1 - Shaft Tolerance

Shaft Size (mm)		h6		h7	
		Shaft Speed Greater Than 50% of Max RPM Rating		Shaft Speed Less Than 50% of Max RPM Rating	
Over	Incl.	Max (mm)	Min (mm)	Max (mm)	Min (mm)
30	50	+0	–0.016	+0	–0.025
50	80	+0	–0.019	+0	–0.03
80	120	+0	–0.022	+0	–0.035
120	180	+0	–0.025	+0	–0.04

Converting units from fixed to expansion

FYH mounted roller units are capable of operating in both a fixed or expansion configuration.

Before bearing installation

On the back side of the unit (opposite the housing markings), remove the bearing retaining ring located on the inner diameter of the housing and move it back to the groove on the outer position of the housing. Slide the bearing insert rearward within the housing until it sits against the retaining ring that was just relocated. When ready for installation, slide the insert forward in the housing approximately one thirty-second of an inch ($^1/_{32}$") and alternately tighten the set screws onto the shaft to the specified torque setting as shown in Table 4.

After bearing installation

Before performing any work on the bearing, lock out the power source and allow the shaft and adjacent machinery to cool down to ambient temperature. Loosen the set screws or other locking mechanism to allow the shaft to move freely within the bore then follow the same procedures explained in the "Before bearing installation" section.

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5.3 Installation

1. Slide the unit onto the shaft while holding the inner ring of the bearing.
   Position the unit on the mounting surface so that the plane of the shaft is perpendicular to the face of the housing, and alternately tighten the mounting bolts to the specified torque as shown in Table 2.
   Make sure to use bolts, washers, and nuts of sufficient strength and grade rating for the application.

Table 2 - Mounting Bolt Tightening Torque				
Bolt Size		Tightening Torque		
mm	inch	N-m	in-lbf	ft-lbf
M6	1/4	5	43	4
M8	5/16	10	92	8
M10	3/8	22	196	17
M12	1/2	38	334	27
M16	5/8	95	840	70
M18	–	139	1231	103
M20	3/4	189	1664	139
M22	7/8	260	2301	192
M27	1	484	4277	358

2. Check the final position of the shaft and alternately tighten the set screws of the non-expansion unit onto the shaft to the specified torque setting as shown in Table 3. The set screws in the bearing on the opposite side of the shaft should line up with the set screws of the bearing that was installed first (See Figure A). Expansion bearings should be installed only after the shaft and adjacent machinery has cooled down to the ambient temperature.
   After positioning the expansion unit on the shaft slide the insert to the rearmost position within the housing until it seats against the retaining ring. Then slide the insert forward in the housing approximately one thirty second of an inch (1/32") and alternately tighten the set screws onto the shaft to the specified torque setting as shown in Table 3. Allowable shaft expansion and expansion calculation data can be found in Table 4 and Formula 1 respectively.

3. Once installed, slowly rotate the bearing by hand to confirm that it turns smoothly and without resistance, vibration, or any other abnormalities.

Table 3 - Set Screw Tightening Torque				
Size Code	Set Screw Size	N-m	in-lbf	ft-lbf
XS408	5/16-28 UNF x 1/2	14.5	128	11
XS409				
XS410	3/8-24 UNF x 5/8	25.5	226	19
XS411				
XS413				
XS415	1/2-20 UNF x 3/4	56.5	500	42
XS418				
XS420				

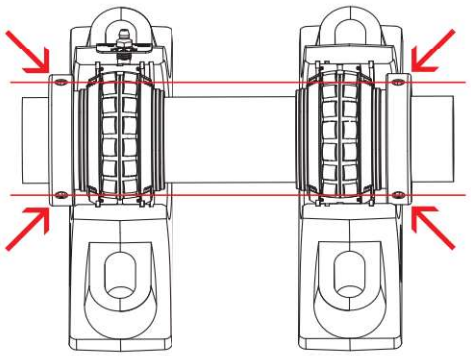
Table 4 - Allowable Shaft Expansion		
Size Code	mm	inch
XS408	5	13/64
XS409	5	13/64
XS410	5	13/64
XS411	6	15/64
XS413	6	15/64
XS415	6	15/64
XS418	6	15/64
XS420	6	15/64

Formula 1 – Linear Shaft Expansion

$L = A \cdot T \cdot D$

L : Expansion of shaft (mm)
A : Linear expansion coefficient of shaft for ordinary steel (11.5×10^{-6})
T : Temperature increase (°C)
D : Installation distance between bearing units (mm)

Figure A – Set Screws Lined Up in Both Bearings



VIDEO ON INSTALLATION

Please scan the QR code with your mobile phone and watch an installation video.
If you don't have the reader, get the QR Reader app at the app store. Or you can find it at our website as well.

5.4 Lubrication

Proper lubrication practices will greatly extend the life of the bearing.
Bearings are factory lubricated with the proper amount and type of lubricant for most general purpose applications as well as many highly demanding operating environments, and except as recommended by FYH, no further lubrication is required upon installation.

Lubrication tips:

- The factory standard lubricant is a **Calcium Sulfonate** grease. Always use the same type of lubricant to avoid compatibility issues and other potential problems.
- When adding lubricant do so slowly and while the bearing is rotating until a small amount of lubricant can be seen coming out of the seals.
- At low speeds (below 200 RPM) it is acceptable to completely fill the bearing with grease.
- At moderate to high speeds it is not advisable to completely fill the bearing with grease as it could lead to overheating and reduced bearing life.
- It is generally better to use less lubrication more frequently than more lubricant less often.
- If the unit will not be operated for an extended period of time extra lubricant should be added to prevent corrosion.
- If the unit has not been operated for an extended period of time fresh lubricant should be added prior to start-up.
- If the unit becomes too hot during operation from over-lubrication remove the grease fitting and operate the unit for approximately thirty minutes to allow excess grease to purge.

Appropriate lubrication intervals can be determined by referring to Table 5; however experience should largely determine the actual lubrication regimen for a particular application. Consult with an FYH representative for assistance.

If a suitable Calcium Sulfonate lubricant is not available for re-lubrication then the following compatible lubricants may also be used:
Barium Complex, Calcium Stearate, Lithium Complex, Polyurea (Shear Stable)

The use of any other type of lubricant should be avoided to prevent compatibility issues with the Calcium Sulfonate grease that is originally supplied.

To find the proper lubrication interval in Table 5 obtain the relevant percentage of max allowable RPM by referring to Table 6.
Example: XS411 with positive contact seals has a max RPM rating of 2000. If the application has an RPM of 600 then the percentage of max RPM is 30% (600/2000 = .30).
The amount of grease for replenishment can be found in Table 7.

Table 5 - Lubrication Schedule

Environment	Clean to Moderately Dirty				Clean to Moderately Dirty			Dirty to Very Dirty
Temperature (°C)	Under 120 degrees				Over 120 degrees			From -20 to 200
% of max allowable RPM	0 - 25%	25 - 50%	50 - 75%	75 - 100%	0 - 25%	25 - 50%	50 - 100%	0 - 100%
Lubrication interval	From three to eight months	From one to three months	From one week to one month	Daily to once per week	From two to six weeks	From one week to one month	Daily to once per week	Daily to once per week

Table 6 - Limiting Speed for Seals		
Size Code	Standard Triple Lip Seal Limiting	Non Contact Seal Limiting
XS408	2750	3200
XS409	2450	2800
XS410	2200	2600
XS411	2000	2360
XS413	1692	2000
XS415	1460	1730
XS418	1220	1440
XS420	1100	1300

Table 7 - Grease Amount for Replenishment	
Size Code	Amount of Grease (grams)
XS408	7-8
XS409	7-9
XS410	8-9
XS411	10-12
XS413	19-22
XS415	22-26
XS418	40-46
XS420	50-59

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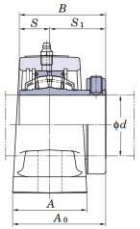
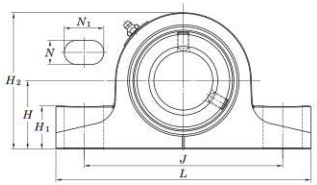
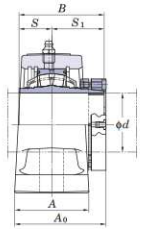
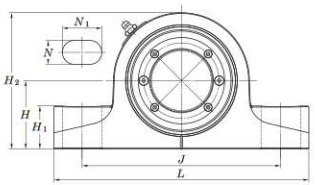
XS2P
Cylindrical bore
(with set screw collar lock)
d **1 3/8 ~ 4 inch**
40 ~ 100 mm





ZS2P
Cylindrical bore
(with Z-Lock)
d **1 3/8 ~ 4 inch**
40 ~ 100 mm

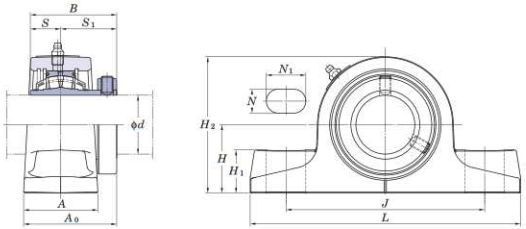




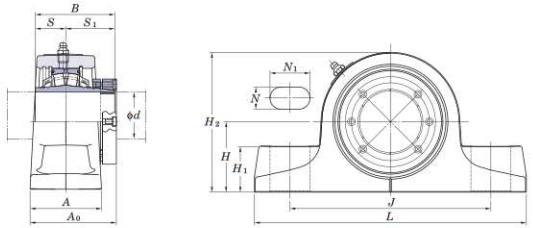
Shaft Dia. inch mm d	Dimensions inch mm H	L	A	J	N	N_1	H_1	H_2	A_0	B	S	S_1	Unit No.	Bearing No.	Unit No.	Bearing No.	Bolt Size inch mm
1 3/8													XS2P408-22	XS408-22	ZS2P408-22	ZS408-22	
1 7/16	1 7/8	6 7/8	2 5/32	5 9/32	19/32	1 3/32	1 1/4	3 25/32	2 5/8	2.531	1	1.531	XS2P408-23	XS408-23	ZS2P408-23	ZS408-23	1/2
1 1/2	47.6	175	55	134	15	28	32	96	66.4	64.3	25.4	38.9	XS2P408-24	XS408-24	ZS2P408-24	ZS408-24	M12
40													XS2P408	XS408	ZS2P408	ZS408	
1 11/16													XS2P409-27	XS409-27	ZS2P409-27	ZS409-27	
1 3/4	2 1/8	7 3/8	2 3/8	5 25/32	19/32	1 3/32	1 5/16	4 1/4	2 27/32	2.657	1	1.657	XS2P409-28	XS409-28	ZS2P409-28	ZS409-28	1/2
45	54	187	60	147	15	28	33	108	72.1	67.5	25.4	42.1	XS2P409	XS409	ZS2P409	ZS409	M12
1 15/16													XS2P410-31	XS410-31	ZS2P410-31	ZS410-31	
50	2 1/4	8 3/8	2 7/16	6 17/32	25/32	1 5/16	1 3/8	4 1/2	3 1/16	2.843	1	1.843	XS2P410	XS410	ZS2P410	ZS410	5/8
2	57.2	213	62	166	20	33	35	114	77.8	72.2	25.4	46.8	XS2P410-32	XS410-32	ZS2P410-32	ZS410-32	M16
55													XS2P411	XS411	ZS2P411	ZS411	
2 3/16	2 1/2	8 7/8	2 5/8	6 7/8	25/32	1 3/16	1 5/8	4 31/32	3 1/8	2.937	1.126	1.811	XS2P411-35	XS411-35	ZS2P411-35	ZS411-35	5/8
2 1/4	63.5	225	67	175	20	30	41	126	79.5	74.6	28.6	46	XS2P411-36	XS411-36	ZS2P411-36	ZS411-36	M16
60													XS2P412	XS412	ZS2P412	ZS412	
2 7/16	2 3/4	9 1/4	2 7/8	7 9/32	25/32	1 3/16	1 25/32	5 19/32	3 3/8	3.205	1.252	1.953	XS2P413-39	XS413-39	ZS2P413-39	ZS413-39	5/8
2 1/2	69.8	235	73	185	20	30	45	142	86.1	81.4	31.8	49.6	XS2P413-40	XS413-40	ZS2P413-40	ZS413-40	M16
65													XS2P413	XS413	ZS2P413	ZS413	
70													XS2P414	XS414	ZS2P414	ZS414	
2 11/16													XS2P415-43	XS415-43	ZS2P415-43	ZS415-43	
2 3/4	3 1/4	10 7/16	3	8 9/32	15/16	1 9/32	1 7/8	6 3/8	3 13/16	3.594	1.252	2.343	XS2P415-44	XS415-44	ZS2P415-44	ZS415-44	3/4
2 15/16	82.6	265	76	210	24	32	48	162	97	91.3	31.8	59.5	XS2P415-47	XS415-47	ZS2P415-47	ZS415-47	M20
75													XS2P415	XS415	ZS2P415	ZS415	
3													XS2P415-48	XS415-48	ZS2P415-48	ZS415-48	
80													XS2P416	XS416	ZS2P416	ZS416	
3 1/4													XS2P417-52	XS417-52	ZS2P417-52	ZS417-52	
85	3 3/4	13	3 3/8	10 5/16	1 1/16	1 23/32	2 1/4	7 15/32	4 1/4	4.079	1.516	2.563	XS2P417	XS417	ZS2P417	ZS417	7/8
3 7/16	95.2	330	86	262	27	44	57	190	108.1	103.6	38.5	65.1	XS2P418-55	XS418-55	ZS2P418-55	ZS418-55	M22
3 1/2													XS2P418-56	XS418-56	ZS2P418-56	ZS418-56	
90													XS2P418	XS418	ZS2P418	ZS418	
100													XS2P420	XS420	ZS2P420	ZS420	
3 15/16	4 1/4	15 1/4	3 3/4	11 1/4	1 5/32	2 5/16	2 17/32	8 11/32	4 23/32	4.484	1.626	2.858	XS2P420-63	XS420-63	ZS2P420-63	ZS420-63	1
4	108	387	95	286	29	59	64	212	120.1	113.9	41.3	72.6	XS2P420-64	XS420-64	ZS2P420-64	ZS420-64	M27

FYH

XSE2P
Cylindrical bore
(with set screw collar lock)
d **1 3/8 ~ 4 inch**
40 ~ 100 mm

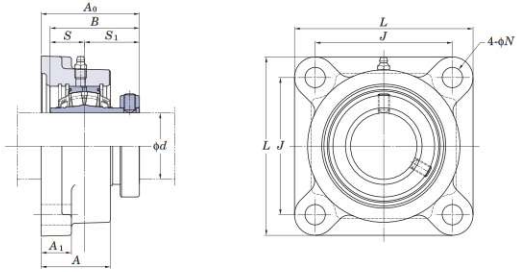


ZSE2P
Cylindrical bore
(with Z-Lock)
d **1 3/8 ~ 4 inch**
40 ~ 100 mm

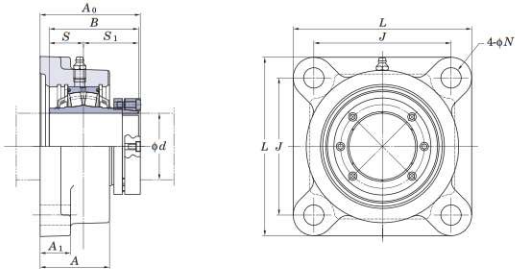


Shaft Dia. inch / mm d	Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	A_0	B	S	S_1	Unit No.	Bearing No.	Unit No.	Bearing No.	Bolt Size inch / mm
1 3/8													XSE2P408-22	XS408-22	ZSE2P408-22	ZS408-22	
1 7/16	1 7/8	7 3/8	2 5/32	5 9/32	19/32	1 3/32	1 1/4	3 25/32	2 5/8	2.531	1	1.531	XSE2P408-23	XS408-23	ZSE2P408-23	ZS408-23	1/2
1 1/2	47.6	187	55	134	15	28	32	96	66.4	64.3	25.4	38.9	XSE2P408-24	XS408-24	ZSE2P408-24	ZS408-24	M12
40													XSE2P408	XS408	ZSE2P408	ZS408	
1 11/16													XSE2P409-27	XS409-27	ZSE2P409-27	ZS409-27	
1 3/4	2 1/8	7 7/8	2 3/8	5 25/32	19/32	1 3/32	1 5/16	4 1/4	2 27/32	2.657	1	1.657	XSE2P409-28	XS409-28	ZSE2P409-28	ZS409-28	1/2
45	54	200	60	147	15	28	33	108	72.1	67.5	25.4	42.1	XSE2P409	XS409	ZSE2P409	ZS409	M12
1 15/16													XSE2P410-31	XS410-31	ZSE2P410-31	ZS410-31	
50	2 1/4	8 29/32	2 7/16	6 17/32	25/32	1 5/16	1 3/8	4 1/2	3 1/16	2.843	1	1.843	XSE2P410	XS410	ZSE2P410	ZS410	5/8
2	57.2	226	62	166	20	33	35	114	77.8	72.2	25.4	46.8	XSE2P410-32	XS410-32	ZSE2P410-32	ZS410-32	M16
55													XSE2P411	XS411	ZSE2P411	ZS411	
2 3/16	2 1/2	9 21/32	2 5/8	7 1/8	25/32	1 13/32	1 5/8	4 31/32	3 1/8	2.937	1.126	1.811	XSE2P411-35	XS411-35	ZSE2P411-35	ZS411-35	5/8
2 1/4	63.5	245	67	181	20	36	41	126	79.5	74.6	28.6	46	XSE2P411-36	XS411-36	ZSE2P411-36	ZS411-36	M16
60													XSE2P412	XS412	ZSE2P412	ZS412	
2 7/16	2 3/4	10 1/4	2 7/8	7 11/16	25/32	1 9/16	1 25/32	5 19/32	3 3/8	3.205	1.252	1.953	XSE2P413-39	XS413-39	ZSE2P413-39	ZS413-39	5/8
2 1/2	69.8	260	73	195	20	40	45	142	86.1	81.4	31.8	49.6	XSE2P413-40	XS413-40	ZSE2P413-40	ZS413-40	M16
65													XSE2P413	XS413	ZSE2P413	ZS413	
70													XSE2P414	XS414	ZSE2P414	ZS414	
2 11/16													XSE2P415-43	XS415-43	ZSE2P415-43	ZS415-43	
2 3/4	3 1/8	11 5/8	3	8 11/16	15/16	1 11/16	1 25/32	6 1/4	3 13/16	3.594	1.252	2.343	XSE2P415-44	XS415-44	ZSE2P415-44	ZS415-44	3/4
2 15/16	79.5	295	76	221	24	43	45	159	97	91.3	31.8	59.5	XSE2P415-47	XS415-47	ZSE2P415-47	ZS415-47	M20
75													XSE2P415	XS415	ZSE2P415	ZS415	
3													XSE2P415-48	XS415-48	ZSE2P415-48	ZS415-48	
80													XSE2P416	XS416	ZSE2P416	ZS416	
3 1/4													XSE2P417-52	XS417-52	ZSE2P417-52	ZS417-52	
85	3 3/4	13 1/2	3 3/8	10 5/16	1 1/16	1 23/32	2 1/4	7 15/32	4 1/4	4.079	1.516	2.563	XSE2P417	XS417	ZSE2P417	ZS417	7/8
3 7/16	95.2	343	86	262	27	44	57	190	108.1	103.6	38.5	65.1	XSE2P418-55	XS418-55	ZSE2P418-55	ZS418-55	M22
3 1/2													XSE2P418-56	XS418-56	ZSE2P418-56	ZS418-56	
90													XSE2P418	XS418	ZSE2P418	ZS418	
100													XSE2P420	XS420	ZSE2P420	ZS420	
3 15/16	4 1/8	15 1/4	3 3/4	11 1/4	1 5/32	2 5/16	2 13/32	8 7/32	4 23/32	4.484	1.626	2.858	XSE2P420-63	XS420-63	ZSE2P420-63	ZS420-63	1
4	104.9	387	95	286	29	59	61	209	120.1	113.9	41.3	72.6	XSE2P420-64	XS420-64	ZSE2P420-64	ZS420-64	M27

XS4F
Cylindrical bore
(with set screw collar lock)
d **1 3/8 ~ 4 inch**
40 ~ 100 mm

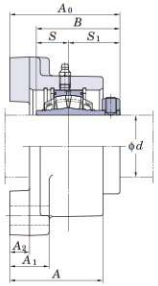


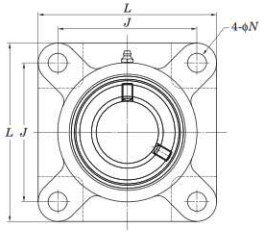
ZS4F
Cylindrical bore
(with Z-Lock)
d **1 3/8 ~ 4 inch**
40 ~ 100 mm



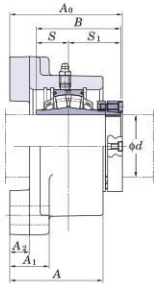
Shaft Dia. inch / mm d	Dimensions inch / mm L	A	J	N	A_1	A_0	B	S	S_1	Unit No.	Bearing No.	Unit No.	Bearing No.	Bolt Size inch / mm
1 3/8										XS4F408-22	XS408-22	ZS4F408-22	ZS408-22	
1 7/16	4 3/4	2 3/32	3 17/32	35/64	3/4	2 3/4	2.531	1	1.531	XS4F408-23	XS408-23	ZS4F408-23	ZS408-23	1/2
1 1/2	121	53	89.7	14	19	70.2	64.3	25.4	38.9	XS4F408-24	XS408-24	ZS4F408-24	ZS408-24	M12
40										XS4F408	XS408	ZS4F408	ZS408	
1 11/16	5 1/8	2 5/32	3 57/64	35/64	3/4	2 31/32	2.657	1	1.657	XS4F409-27	XS409-27	ZS4F409-27	ZS409-27	1/2
1 3/4	130	55	98.8	14	19	75.4	67.5	25.4	42.1	XS4F409-28	XS409-28	ZS4F409-28	ZS409-28	M12
45										XS4F409	XS409	ZS4F409	ZS409	
1 15/16	5 5/16	2 5/32	4 1/16	35/64	3/4	3 5/32	2.843	1	1.843	XS4F410-31	XS410-31	ZS4F410-31	ZS410-31	1/2
50	135	55	103.2	14	19	80.2	72.2	25.4	46.8	XS4F410	XS410	ZS4F410	ZS410	M12
2										XS4F410-32	XS410-32	ZS4F410-32	ZS410-32	
55	5 29/32	2 9/32	4 33/64	21/32	1 1/32	3 1/4	2.937	1.126	1.811	XS4F411	XS411	ZS4F411	ZS411	5/8
2 3/16	150	58	114.7	17	26	82.2	74.6	28.6	46	XS4F411-35	XS411-35	ZS4F411-35	ZS411-35	M16
2 1/4										XS4F411-36	XS411-36	ZS4F411-36	ZS411-36	
60										XS4F412	XS412	ZS4F412	ZS412	
2 7/16	6 1/8	2 9/16	4 25/32	21/32	1 1/32	3 17/32	3.205	1.252	1.953	XS4F413-39	XS413-39	ZS4F413-39	ZS413-39	5/8
2 1/2	156	65	121.4	17	26	89.3	81.4	31.8	49.6	XS4F413-40	XS413-40	ZS4F413-40	ZS413-40	M16
65										XS4F413	XS413	ZS4F413	ZS413	
70										XS4F414	XS414	ZS4F414	ZS414	
2 11/16										XS4F415-43	XS415-43	ZS4F415-43	ZS415-43	
2 3/4	7 7/32	2 5/8	5 9/16	7/8	1 1/32	3 29/32	3.594	1.252	2.343	XS4F415-44	XS415-44	ZS4F415-44	ZS415-44	3/4
2 15/16	183	67	141.3	22	26	99.2	91.3	31.8	59.5	XS4F415-47	XS415-47	ZS4F415-47	ZS415-47	M20
75										XS4F415	XS415	ZS4F415	ZS415	
3										XS4F415-48	XS415-48	ZS4F415-48	ZS415-48	
80										XS4F416	XS416	ZS4F416	ZS416	
3 1/4										XS4F417-52	XS417-52	ZS4F417-52	ZS417-52	
85	8 9/32	3 5/32	6 23/32	7/8	1 5/32	4 3/8	4.079	1.516	2.563	XS4F417	XS417	ZS4F417	ZS417	3/4
3 7/16	210	80	170.7	22	29	111.5	103.6	38.5	65.1	XS4F418-55	XS418-55	ZS4F418-55	ZS418-55	M20
3 1/2										XS4F418-56	XS418-56	ZS4F418-56	ZS418-56	
90										XS4F418	XS418	ZS4F418	ZS418	
100	9 1/4	3 19/32	7 39/64	63/64	1 3/16	4 27/32	4.484	1.626	2.858	XS4F420	XS420	ZS4F420	ZS420	7/8
3 15/16	235	91	193.3	25	30	123	113.9	41.3	72.6	XS4F420-63	XS420-63	ZS4F420-63	ZS420-63	M22
4										XS4F420-64	XS420-64	ZS4F420-64	ZS420-64	

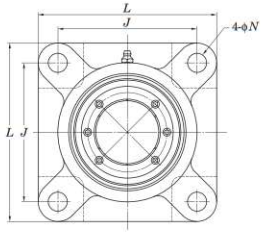
XSE4F
Cylindrical bore
(with set screw collar lock)
d **1 3/8 ~ 4 inch**
40 ~ 100 mm





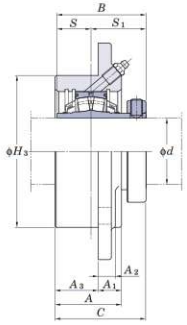
ZSE4F
Cylindrical bore
(with Z-Lock)
d **1 3/8 ~ 4 inch**
40 ~ 100 mm

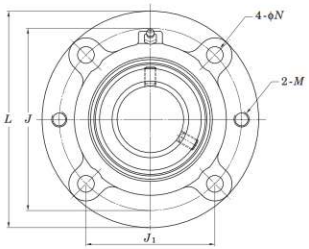




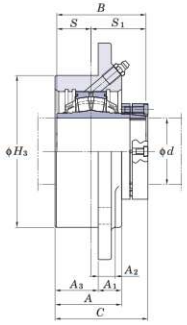
Shaft Dia. inch / mm d	Dimensions inch / mm L	A	J	N	A_1	A_2	A_0	B	S	S_1	Unit No.	Bearing No.	Unit No.	Bearing No.	Bolt Size inch / mm
1 3/8											XSE4F408-22	XS408-22	ZSE4F408-22	ZS408-22	
1 7/16	4 19/32	2 15/32	3 1/2	35/64	1 1/16	1/2	3 1/16	2.531	1	1.531	XSE4F408-23	XS408-23	ZSE4F408-23	ZS408-23	1/2
1 1/2	117	63	88.9	14	27	13	77.8	64.3	25.4	38.9	XSE4F408-24	XS408-24	ZSE4F408-24	ZS408-24	M12
40											XSE4F408	XS408	ZSE4F408	ZS408	
1 11/16											XSE4F409-27	XS409-27	ZSE4F409-27	ZS409-27	
1 3/4	5 11/32	2 15/16	4 1/8	35/64	1 3/16	5/8	3 1/2	2.657	1	1.657	XSE4F409-28	XS409-28	ZSE4F409-28	ZS409-28	1/2
45	136	75	104.9	14	30	16	88.8	67.5	25.4	42.1	XSE4F409	XS409	ZSE4F409	ZS409	M12
1 15/16	5 5/8	2 15/16	4 3/8	35/64	1 3/16	5/8	3 5/8	2.843	1	1.843	XSE4F410-31	XS410-31	ZSE4F410-31	ZS410-31	1/2
50	143	75	111	14	30	16	92	72.2	25.4	46.8	XSE4F410	XS410	ZSE4F410	ZS410	M12
2											XSE4F410-32	XS410-32	ZSE4F410-32	ZS410-32	
55											XSE4F411	XS411	ZSE4F411	ZS411	
2 3/16	6 1/4	3 9/32	4 7/8	21/32	1 3/8	23/32	3 7/8	2.937	1.126	1.811	XSE4F411-35	XS411-35	ZSE4F411-35	ZS411-35	5/8
2 1/4	159	83	123.7	17	35	18	98.2	74.6	28.6	46	XSE4F411-36	XS411-36	ZSE4F411-36	ZS411-36	M16
60											XSE4F412	XS412	ZSE4F412	ZS412	
2 7/16	6 7/8	3 11/32	5 3/8	21/32	1 1/2	25/32	4 3/16	3.205	1.252	1.953	XSE4F413-39	XS413-39	ZSE4F413-39	ZS413-39	5/8
2 1/2	175	85	136.4	17	38	20	106.3	81.4	31.8	49.6	XSE4F413-40	XS413-40	ZSE4F413-40	ZS413-40	M16
65											XSE4F413	XS413	ZSE4F413	ZS413	
70											XSE4F414	XS414	ZSE4F414	ZS414	
2 11/16											XSE4F415-43	XS415-43	ZSE4F415-43	ZS415-43	
2 3/4	7 3/4	3 13/16	6	7/8	1 5/8	15/16	4 11/16	3.594	1.252	2.343	XSE4F415-44	XS415-44	ZSE4F415-44	ZS415-44	3/4
2 15/16	197	97	152.4	22	41	24	119	91.3	31.8	59.5	XSE4F415-47	XS415-47	ZSE4F415-47	ZS415-47	M20
75											XSE4F415	XS415	ZSE4F415	ZS415	
3											XSE4F415-48	XS415-48	ZSE4F415-48	ZS415-48	
80											XSE4F416	XS416	ZSE4F416	ZS416	
3 1/4											XSE4F417-52	XS417-52	ZSE4F417-52	ZS417-52	
85	9 1/4	4 9/32	7	7/8	1 7/8	31/32	5 5/16	4.079	1.516	2.563	XSE4F417	XS417	ZSE4F417	ZS417	3/4
3 7/16	235	109	177.8	22	48	24.5	135.1	103.6	38.5	65.1	XSE4F418-55	XS418-55	ZSE4F418-55	ZS418-55	M20
3 1/2											XSE4F418-56	XS418-56	ZSE4F418-56	ZS418-56	
90											XSE4F418	XS418	ZSE4F418	ZS418	
100											XSE4F420	XS420	ZSE4F420	ZS420	
3 15/16	10 1/4	5 1/2	7 3/4	63/64	2 1/8	1 3/32	6 1/2	4.484	1.626	2.858	XSE4F420-63	XS420-63	ZSE4F420-63	ZS420-63	7/8
4	260	140	196.9	25	54	28	165.2	113.9	41.3	72.6	XSE4F420-64	XS420-64	ZSE4F420-64	ZS420-64	M22

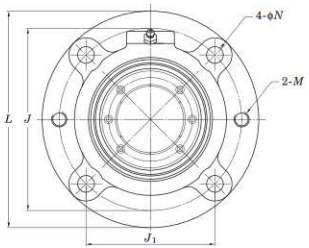
XS4FC
Cylindrical bore
(with set screw collar lock)
d 1 3/8 ~ 4 inch
40 ~ 100 mm





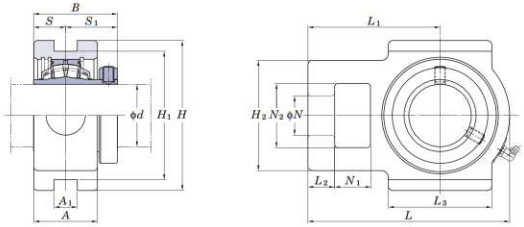
ZS4FC
Cylindrical bore
(with Z-Lock)
d 1 3/8 ~ 4 inch
40 ~ 100 mm



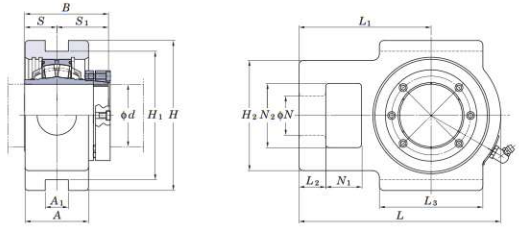


Shaft Dia. inch / mm d	Dimensions inch / mm L	H_3	J	J_1	N	A	A_1	A_2	A_3	C	M	B	S	S_1	Unit No.	Bearing No.	Unit No.	Bearing No.	Bolt Size inch / mm
1 3/8															XS4FC408-22	XS408-22	ZS4FC408-22	ZS408-22	
1 7/16	5 1/4	3.625	4 3/8	3 3/32	15/32	1 27/32	13/16	11/16	1 1/32	2 17/32		2.531	1	1.531	XS4FC408-23	XS408-23	ZS4FC408-23	ZS408-23	1/2
1 1/2	133	92.1	111.1	78.6	12	46.8	21	17.3	26	64.3	3/8-16UNC	64.3	25.4	38.9	XS4FC408-24	XS408-24	ZS4FC408-24	ZS408-24	M12
40															XS4FC408	XS408	ZS4FC408	ZS408	
1 11/16	6 5/32	4.25	5 1/8	3 5/8	9/16	1 29/32	5/8	1/2	1 17/64	2 23/32		2.657	1	1.657	XS4FC409-27	XS409-27	ZS4FC409-27	ZS409-27	1/2
1 3/4	156	107.8	130.2	92.1	14	48.4	16	12.7	32.2	69.1	7/16-14UNC	67.5	25.4	42.1	XS4FC409-28	XS409-28	ZS4FC409-28	ZS409-28	M12
45															XS4FC409	XS409	ZS4FC409	ZS409	
1 15/16	6 3/8	4.5	5 3/8	3 51/64	9/16	2	3/4	9/16	1 17/64	2 55/64		2.843	1	1.843	XS4FC410-31	XS410-31	ZS4FC410-31	ZS410-31	5/8
50	162	114.3	136.5	96.5	14	50.8	19	14.3	32.2	72.6	7/16-14UNC	72.2	25.4	46.8	XS4FC410	XS410	ZS4FC410	ZS410	M16
2															XS4FC410-32	XS410-32	ZS4FC410-32	ZS410-32	
55	7 1/8	5	6	4 1/4	35/64	2 3/16	25/32	9/16	1 27/64	3		2.937	1.126	1.811	XS4FC411	XS411	ZS4FC411	ZS411	5/8
2 3/16	181	127	152.4	107.8	14	55.6	20	14.3	36.1	76.1	1/2-13UNC	74.6	28.6	46	XS4FC411-35	XS411-35	ZS4FC411-35	ZS411-35	M16
2 1/4															XS4FC411-36	XS411-36	ZS4FC411-36	ZS411-36	
60															XS4FC412	XS412	ZS4FC412	ZS412	
2 7/16	7 5/8	5.5	6 1/2	4 19/32	35/64	2 1/2	15/16	5/8	1 9/16	3 7/16		3.205	1.252	1.953	XS4FC413-39	XS413-39	ZS4FC413-39	ZS413-39	5/8
2 1/2	194	139.7	165.1	116.7	14	63.5	24	15.9	39.7	87.4	1/2-13UNC	81.4	31.8	49.6	XS4FC413-40	XS413-40	ZS4FC413-40	ZS413-40	M16
65															XS4FC413	XS413	ZS4FC413	ZS413	
70															XS4FC414	XS414	ZS4FC414	ZS414	
2 11/16															XS4FC415-43	XS415-43	ZS4FC415-43	ZS415-43	
2 3/4	8 3/4	6.375	7 1/2	5 19/64	43/64	2 5/8	31/32	3/4	1 5/8	3 41/64		3.594	1.252	2.343	XS4FC415-44	XS415-44	ZS4FC415-44	ZS415-44	3/4
2 15/16	222	161.9	190.5	134.7	17	66.7	25	19.1	41.3	92.5	5/8-11UNC	91.3	31.8	59.5	XS4FC415-47	XS415-47	ZS4FC415-47	ZS415-47	M20
75															XS4FC415	XS415	ZS4FC415	ZS415	
3															XS4FC415-48	XS415-48	ZS4FC415-48	ZS415-48	
80															XS4FC416	XS416	ZS4FC416	ZS416	
3 1/4															XS4FC417-52	XS417-52	ZS4FC417-52	ZS417-52	
85	10 1/4	7.375	8 5/8	6 3/32	29/32	3	1 15/32	15/16	1 33/64	4 5/32		4.079	1.516	2.563	XS4FC417	XS417	ZS4FC417	ZS417	7/8
3 7/16	260	187.3	219.1	154.9	23	76.2	38	23.8	38.5	105.6	3/4-10UNC	103.6	38.5	65.1	XS4FC418-55	XS418-55	ZS4FC418-55	ZS418-55	M22
3 1/2															XS4FC418-56	XS418-56	ZS4FC418-56	ZS418-56	
90															XS4FC418	XS418	ZS4FC418	ZS418	
100	10 7/8	8.125	9 3/8	6 5/8	29/32	3 1/2	1 9/16	1 1/4	1 29/32	4 9/16		4.484	1.626	2.858	XS4FC420	XS420	ZS4FC420	ZS420	1
3 15/16	276	206.4	238.1	168.4	23	88.9	40	31.4	48.4	115.9	3/4-10UNC	113.9	41.3	72.6	XS4FC420-63	XS420-63	ZS4FC420-63	ZS420-63	M27
4															XS4FC420-64	XS420-64	ZS4FC420-64	ZS420-64	

XST
Cylindrical bore
(with set screw collar lock)
d 1 15/16 ~ 3 1/2 inch
50 ~ 90 mm

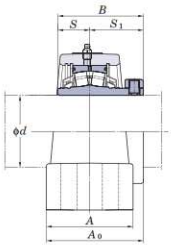


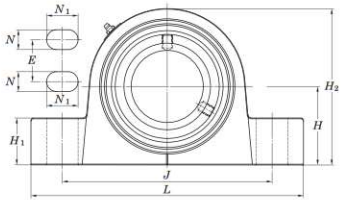
ZST
Cylindrical bore
(with Z-Lock)
d 1 15/16 ~ 3 1/2 inch
50 ~ 90 mm



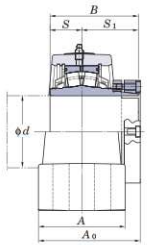
Shaft Dia. inch / mm d	Dimensions inch / mm A	A_1	H	H_1	H_2	L	L_1	L_2	L_3	N	N_1	N_2	B	S	S_1	Unit No.	Bearing No.	Unit No.	Bearing No.
1 15/16	2	11/16	4 3/4	4	3 5/16	6 3/16	3 15/16	15/16	3 5/8	1 1/8	3/4	1 15/16	2.843	1	1.843	XST410-31	XS410-31	ZST410-31	ZS410-31
50	51	17.5	121	101.6	84	157.2	100	23.8	92	28.6	19.1	49.2	72.2	25.4	46.8	XST410	XS410	ZST410	ZS410
2																XST410-32	XS410-32	ZST410-32	ZS410-32
55	2 7/32	13/16	5 1/4	4 1/2	3 27/32	7 1/16	4 5/8	15/16	3 5/8	1 3/8	1 1/4	2 1/4	2.937	1.126	1.811	XST411	XS411	ZST411	ZS411
2 3/16	56	20.6	133	114.3	98	179.4	117.5	23.8	92	34.9	31.8	57.2	74.6	28.6	46	XST411-35	XS411-35	ZST411-35	ZS411-35
2 1/4																XST411-36	XS411-36	ZST411-36	ZS411-36
60																XST412	XS412	ZST412	ZS412
2 7/16	2 7/16	1 1/16	5 7/8	5 1/8	4 1/4	7 25/32	5	15/16	4 3/8	1 3/8	1 1/4	2 1/2	3.205	1.252	1.953	XST413-39	XS413-39	ZST413-39	ZS413-39
2 1/2	62	27	149	130.2	108	198	127	23.8	111	34.9	31.8	63.5	81.4	31.8	49.6	XST413-40	XS413-40	ZST413-40	ZS413-40
65																XST413	XS413	ZST413	ZS413
70																XST414	XS414	ZST414	ZS414
2 11/16																XST415-43	XS415-43	ZST415-43	ZS415-43
2 3/4	2 11/16	1 13/16	6 11/16	5 15/16	4 7/8	8 7/8	5 3/4	1 1/8	4 1/2	1 5/8	1 1/2	2 3/4	3.594	1.252	2.343	XST415-44	XS415-44	ZST415-44	ZS415-44
2 15/16	68	46	170	150.8	124	225.4	146.1	28.6	114.3	41.3	38.1	69.9	91.3	31.8	59.5	XST415-47	XS415-47	ZST415-47	ZS415-47
75																XST415	XS415	ZST415	ZS415
3																XST415-48	XS415-48	ZST415-48	ZS415-48
80																XST416	XS416	ZST416	ZS416
3 1/4																XST417-52	XS417-52	ZST417-52	ZS417-52
85	3 1/16	1 13/16	7 25/32	6 13/16	5 1/8	10 1/16	6 3/8	1 1/16	5 1/2	1 7/8	1 5/8	2 7/8	4.079	1.516	2.563	XST417	XS417	ZST417	ZS417
3 7/16	78	46	198	173	130	255.6	161.9	27	139.7	47.6	41.3	73	103.6	38.5	65.1	XST418-55	XS418-55	ZST418-55	ZS418-55
3 1/2																XST418-56	XS418-56	ZST418-56	ZS418-56
90																XST418	XS418	ZST418	ZS418

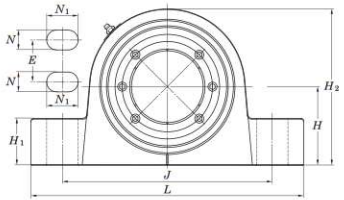
XS4P
Cylindrical bore
(with set screw collar lock)
d 2 7/16 ~ 4 inch
60 ~ 100 mm





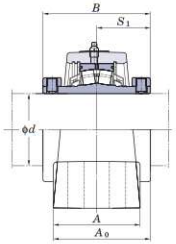
ZS4P
Cylindrical bore
(with Z-Lock)
d 2 7/16 ~ 4 inch
60 ~ 100 mm

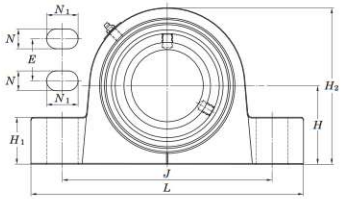




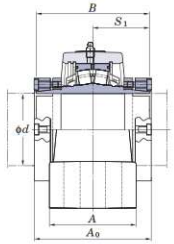
Shaft Dia. inch mm d	Dimensions inch mm H	L	A	J	N	N_1	E	H_1	H_2	A_0	B	S	S_1	Unit No.	Bearing No.	Unit No.	Bearing No.	Bolt Size inch mm
60														**XS4P412**	XS412	**ZS4P412**	ZS412	
2 7/16	2 3/4	9 1/4	3 3/8	7 1/8	19/32	13/16	1 3/4	1 5/8	5 19/32	3 21/32	3.205	1.252	1.953	**XS4P413-39**	XS413-39	**ZS4P413-39**	ZS413-39	1/2
2 1/2	69.8	235	86	181	15	21	44	41	142	92.6	81.4	31.8	49.6	**XS4P413-40**	XS413-40	**ZS4P413-40**	ZS413-40	M12
65														**XS4P413**	XS413	**ZS4P413**	ZS413	
70														**XS4P414**	XS414	**ZS4P414**	ZS414	
2 11/16														**XS4P415-43**	XS415-43	**ZS4P415-43**	ZS415-43	
2 3/4	3 1/4	10 7/16	3 3/4	8 1/8	25/32	15/16	1 7/8	1 7/8	6 3/8	4 7/32	3.594	1.252	2.343	**XS4P415-44**	XS415-44	**ZS4P415-44**	ZS415-44	5/8
2 15/16	82.6	265	95	206	20	24	48	48	162	107	91.3	31.8	59.5	**XS4P415-47**	XS415-47	**ZS4P415-47**	ZS415-47	M16
75														**XS4P415**	XS415	**ZS4P415**	ZS415	
3														**XS4P415-48**	XS415-48	**ZS4P415-48**	ZS415-48	
80														**XS4P416**	XS416	**ZS4P416**	ZS416	
3 1/4														**XS4P417-52**	XS417-52	**ZS4P417-52**	ZS417-52	
85	3 3/4	13	4 1/8	10	15/16	1 1/2	2	2 1/4	7 9/16	4 5/8	4.079	1.516	2.563	**XS4P417**	XS417	**ZS4P417**	ZS417	3/4
3 7/16	95.2	330	105	254	24	38	50.8	57	192	117.6	103.6	38.5	65.1	**XS4P418-55**	XS418-55	**ZS4P418-55**	ZS418-55	M20
3 1/2														**XS4P418-56**	XS418-56	**ZS4P418-56**	ZS418-56	
90														**XS4P418**	XS418	**ZS4P418**	ZS418	
100	4 1/4	15 1/4	4 1/2	12 1/2	15/16	1 17/32	2 1/4	2 7/16	8 3/8	5 3/32	4.484	1.626	2.858	**XS4P420**	XS420	**ZS4P420**	ZS420	3/4
3 15/16	108	387	114	318	24	39	57	62	213	129.6	113.9	41.3	72.6	**XS4P420-63**	XS420-63	**ZS4P420-63**	ZS420-63	M20
4														**XS4P420-64**	XS420-64	**ZS4P420-64**	ZS420-64	

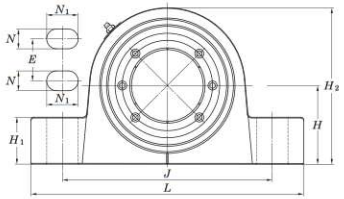
XDS4P
Cylindrical bore
(with set screw collar lock)
d 2 7/16 ~ 4 inch
60 ~ 100 mm





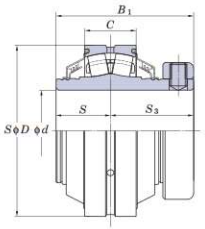
ZDS4P
Cylindrical bore
(with Z-Lock)
d 2 7/16 ~ 4 inch
60 ~ 100 mm



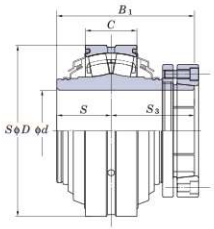


Shaft Dia. inch / mm d	Dimensions inch / mm H	L	A	J	N	N_1	E	H_1	H_2	A_0	B	S_1	Unit No.	Bearing No.	Unit No.	Bearing No.	Bolt Size inch / mm
60													**XDS4P412**	XDS412	**ZDS4P412**	ZDS412	
2 7/16	2 3/4	9 1/4	3 3/8	7 1/8	19/32	13/16	1 3/4	1 5/8	5 19/32	3 21/32	3.906	1.953	**XDS4P413-39**	XDS413-39	**ZDS4P413-39**	ZDS413-39	1/2
2 1/2	69.8	235	86	181	15	21	44	41	142	92.6	99.2	49.6	**XDS4P413-40**	XDS413-40	**ZDS4P413-40**	ZDS413-40	M12
65													**XDS4P413**	XDS413	**ZDS4P413**	ZDS413	
70													**XDS4P414**	XDS414	**ZDS4P414**	ZDS414	
2 11/16													**XDS4P415-43**	XDS415-43	**ZDS4P415-43**	ZDS415-43	
2 3/4	3 1/4	10 7/16	3 3/4	8 1/8	25/32	15/16	1 7/8	1 7/8	6 3/8	4 7/32	4.686	2.343	**XDS4P415-44**	XDS415-44	**ZDS4P415-44**	ZDS415-44	5/8
2 15/16	82.6	265	95	206	20	24	48	48	162	107	119	59.5	**XDS4P415-47**	XDS415-47	**ZDS4P415-47**	ZDS415-47	M16
75													**XDS4P415**	XDS415	**ZDS4P415**	ZDS415	
3													**XDS4P415-48**	XDS415-48	**ZDS4P415-48**	ZDS415-48	
80													**XDS4P416**	XDS416	**ZDS4P416**	ZDS416	
3 1/4													**XDS4P417-52**	XDS417-52	**ZDS4P417-52**	ZDS417-52	
85	3 3/4	13	4 1/8	10	15/16	1 1/2	2	2 1/4	7 9/16	4 5/8	5.126	2.563	**XDS4P417**	XDS417	**ZDS4P417**	ZDS417	3/4
3 7/16	95.2	330	105	254	24	38	50.8	57	192	117.6	130.2	65.1	**XDS4P418-55**	XDS418-55	**ZDS4P418-55**	ZDS418-55	M20
3 1/2													**XDS4P418-56**	XDS418-56	**ZDS4P418-56**	ZDS418-56	
90													**XDS4P418**	XDS418	**ZDS4P418**	ZDS418	
100	4 1/4	15 1/4	4 1/2	12 1/2	15/16	1 17/32	2 1/4	2 7/16	8 3/8	5 3/32	5.716	2.858	**XDS4P420**	XDS420	**ZDS4P420**	ZDS420	3/4
3 15/16	108	387	114	318	24	39	57	62	213	129.6	145.2	72.6	**XDS4P420-63**	XDS420-63	**ZDS4P420-63**	ZDS420-63	M20
4													**XDS4P420-64**	XDS420-64	**ZDS4P420-64**	ZDS420-64	

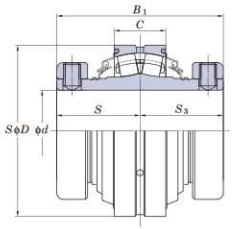
XS4
Cylindrical bore
(with set screw collar lock)
d **1 3/8 ~ 4 inch**
40 ~ 100 mm



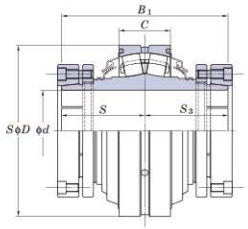
ZS4
Cylindrical bore
(with Z-Lock)



XDS4
Cylindrical bore
(with set screw collar lock (both))
d **2 7/16 ~ 4 inch**
60 ~ 100 mm



ZDS4
Cylindrical bore
(with Z-Lock (both))



Shaft Dia. inch / mm d	Dimensions inch / mm C	D	B_1	S	S_3	Bearing No.	Bearing No.
1 3/8						XS408-22	ZS408-22
1 7/16	15/16	3 5/32	2.531	1	1.531	XS408-23	ZS408-23
1 1/2	24	80	64.3	25.4	38.9	XS408-24	ZS408-24
40						XS408	ZS408
1 11/16	15/16	3 11/32	2.657	1	1.657	XS409-27	ZS409-27
1 3/4	24	85	67.5	25.4	42.1	XS409-28	ZS409-28
45						XS409	ZS409
1 15/16	15/16	3 17/32	2.843	1	1.843	XS410-31	ZS410-31
50	24	90	72.2	25.4	46.8	XS410	ZS410
2						XS410-32	ZS410-32
55	1 1/32	3 15/16	2.937	1.126	1.811	XS411	ZS411
2 3/16	26	100	74.6	28.6	46	XS411-35	ZS411-35
2 1/4						XS411-36	ZS411-36
60						XS412	ZS412
2 7/16	1 1/4	4 23/32	3.205	1.252	1.953	XS413-39	ZS413-39
2 1/2	32	120	81.4	31.8	49.6	XS413-40	ZS413-40
65						XS413	ZS413
70						XS414	ZS414
2 11/16						XS415-43	ZS415-43
2 3/4	1 1/4	5 1/8	3.594	1.252	2.343	XS415-44	ZS415-44
2 15/16	32	130	91.3	31.8	59.5	XS415-47	ZS415-47
75						XS415	ZS415
3						XS415-48	ZS415-48
80						XS416	ZS416
3 1/4						XS417-52	ZS417-52
85	1 5/8	6 5/16	4.079	1.516	2.563	XS417	ZS417
3 7/16	41	160	103.6	38.5	65.1	XS418-55	ZS418-55
3 1/2						XS418-56	ZS418-56
90						XS418	ZS418
100	1 27/32	7 3/32	4.484	1.626	2.858	XS420	ZS420
3 15/16	47	180	113.9	41.3	72.6	XS420-63	ZS420-63
4						XS420-64	ZS420-64

Shaft Dia. inch / mm d	Dimensions inch / mm C	D	B_1	S	S_3	Bearing No.	Bearing No.
60						XDS412	ZDS412
2 7/16	1 1/4	4 23/32	3.905	1.953	1.953	XDS413-39	ZDS413-39
2 1/2	32	120	99.2	49.6	49.6	XDS413-40	ZDS413-40
65						XDS413	ZDS413
70						XDS414	ZDS414
2 11/16						XDS415-43	ZDS415-43
2 3/4	1 1/4	5 1/8	4.685	2.343	2.343	XDS415-44	ZDS415-44
2 15/16	32	130	119	59.5	59.5	XDS415-47	ZDS415-47
75						XDS415	ZDS415
3						XDS415-48	ZDS415-48
80						XDS416	ZDS416
3 1/4						XDS417-52	ZDS417-52
85	1 5/8	6 5/16	5.126	2.563	2.563	XDS417	ZDS417
3 7/16	41	160	130.2	65.1	65.1	XDS418-55	ZDS418-55
3 1/2						XDS418-56	ZDS418-56
90						XDS418	ZDS418
100	1 27/32	7 3/32	5.716	2.858	2.858	XDS420	ZDS420
3 15/16	47	180	145.2	72.6	72.6	XDS420-63	ZDS420-63
4						XDS420-64	ZDS420-64

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Appendix Table 1 Simplified Chart of Ball Bearing Unit Combinations

Type	Housing for units	Insert bearing units							
		Cylindrical bore (with set screws)					Tapered bore (with adapter)		
		UC200	UCX00	UC300	Stainless steel UC200S6	Plated UC200S7	UK200	UKX00	UK300
Pillow type	P200, PX00, P300, P300E PK200 P200H4, PX00H4, P300H4	UCP200 UCP200H4	UCPX00 UCPX00H4	UCP300 UCP300H4			UKP200 UKP200H4	UKPX200 UKPX200H4	UKP300 UKP300H4
	IP200, IP300 IP200H4, IP300H4	UCIP200 UCIP200H4		UCIP300 UCIP300H4			UKIP200 UKIP200H4		UKIP300 UKIP300H4
	PA200 PA200H4 PAN200	UCPA200 UCPA200H4 UCPAN200					UKPA200 UKPA200H4		
	PH200	UCPH200					UKPH200		
	PH200H4	UCPH200H4					UKPH200H4		
	LP200								
	SP200H1 SPA200H1 P000, SP000				UCSP200H1S6 UCSPA200H1S6				
	VP200 VP200E				UCVP200S6	UCVP200ES7			
	PP200								
Square four-bolt flange type	F200, FX00, F300 F200E, FX00E NF200 F200H4, FX00H4, F300H4	UCF200 UCF200E UCF200H4	UCFX00 UCFX00E UCFX00H4	UCF300 UCF300H4			UKF200 UKF200H4	UKFX00 UKFX00H4	UKF300 UKF300H4
	FS300 FS300H4			UCFS300 UCFS300H4					UKFS300 UKFS300H4
	SF200H1 SF200EH1 VF200 VF200E				UCSF200H1S6 UCSF200EH1S6 UCVF200S6	UCVF200ES7			
Oval flange type	FL200, FLX00, FL300 FL200E FL200H4, FLX00H4, FL300H4	UCFL200 UCFL200E UCFL200H4	UCFLX00 UCFLX00H4	UCFL300 UCFL300H4			UKFL200 UKFL200H4	UKFLX00 UKFLX00H4	UKFL300 UKFL300H4
	LF200								
	FL000, SFL000 SFL200H1 SFL200EH1 VFL200 VFL200E				UCSFL200H1S6 UCSFL200EH1S6 UCVFL200S6	UCVFL200ES7			
	TFD200H4								
	FA200	UCFA200					UKFA200		
	FB200	UCFB200					UKFB200		
	PFL200								
Round flange cartridge type	FC200, FCX00 FC200H4, FCX00H4 FCX00E FCF200 SFC200H1	UCFC200 UCFC200H4 UCFCF200	UCFCX00 UCFCX00H4 UCFCX00E		UCSFC200H1S6		UKFC200 UKFC200H4	UKFCX00 UKFCX00H4	
Stamped steel plate flange type	PF200								
Take-up type	T200, TX00, T300 T200E, TX00E T200H4, TX00H4, T300H4	UCT200 UCT200E UCT200H4	UCTX00 UCTX00E UCTX00H4	UCT300 UCT300H4			UKT200 UKT200H4	UKTX00 UKTX00H4	UKT300 UKT300H4
	ST200H1 VT200 VT200E				UCST200H1S6 UCVT200S6	UCVT200ES7			
	T200+H	UCTH200							
	TL200 TU200, TU300	UCTL200 UCTU200		UCTU300			(UKTL200) (UKTU200)		(UKTU300)
	PTH200 NPTH200								
Cartridge type	C200, CX00, C300	UCC200	UCCX00	UCC300			UKC200	UKCX00	UKC300
Hanger type	HA200	UCHA200					UKHA200		

Insert bearing units								Housing for units	Type
Cylindrical bore									
NU-LOC	with set screws			with eccentric looking collar					
NC200	SU000	Stainless steel SU000S6	SB200	SA200	SA200F	NA200	NA300		
NCP200						NAP200 NAPK200	NAP300E	P200, PX00, P300, P300E PK200 P200H4, PX00H4, P300H4	Pillow type
								IP200, IP300 IP200H4, IP300H4	
NCPA200 NCPAN200								PA200 PA200H4 PAN200	
NCPH200								PH200	
								PH200H4	
			BLP200	ALP200				LP200	
	UP000	USP000S6						SP200H1 SPA200H1 P000, SP000	
								VP200 VP200E	
			SBPP200	SAPP200				PP200	
NCF200 NCF200E						NAF200 NANF200		F200, FX00, F300 F200E, FX00E NF200 F200H4, FX00H4, F300H4	Square four-bolt flange type
								FS300 FS300H4	
								SF200H1 SF200EH1 VF200 VF200E	
NCFL200 NCFL200E						NAFL200		FL200, FLX00, FL300 FL200E FL200H4, FLX00H4, FL300H4	Oval flange type
			BLF200	ALF200				LF200	
	UFL000	USFL000S6						FL000, SFL000 SFL200H1 SFL200EH1 VFL200 VFL200E	
					SATFD200FH4P9			TFD200H4	
NCFA200								FA200	
NCFB200								FB200	
			SBPFL200	SAPFL200				PFL200	
NCFC200						NAFC200		FC200, FCX00 FC200H4, FCX00H4 FCX00E FCF200 SFC200H1	Round flange cartridge type
			SBPF200	SAPF200				PF200	Stamped steel plate flange type
NCT200 NCT200E						NAT200 NAT200E		T200, TX00, T300 T200E, TX00E T200H4, TX00H4, T300H4	Take-up type
								ST200H1 VT200 VT200E	
								T200+H	
								TL200 TU200, TU300	
			SBPTH200 SBNPTH200					PTH200 NPTH200	
NCC200						NAC200		C200, CX00, C300	Cartridge type
NCHA200								HA200	Hanger type

Appendix Table 2 Tightening Torques of Housings and Cast Iron Cover Mounting Bolts

(1) Tightening torques of housings mounting bolts (recommended)

Nominal size of screws	Tightening torques N · m
M 6	2.6– 4.7
M 8	6 – 10
M10	12 – 21
M12	21 – 37
M14	34 – 60
M16	53 – 93
M18	77 – 137
M20	104 – 186
M22	143 – 256
M27	266 – 478
M30	360 – 645
M33	494 – 886
M36	631 –1,130

(2) Tightening torques of plastic housings mounting bolts (recommended)

Nominal size of screws	Tightening torques N · m
M10	17.7–24.5
M12	29.4–44.1

(3) Tightening torques of cast iron cover mounting bolts (recommended)

Nominal size of screws	Tightening torques, N · m	Part No. of applicable cast iron covers (reference)		
		200 series	X00 series	300 series
M3	0.3– 0.6	204, 205	–	–
M4	0.8– 1.4	204FC3 (FD3), 205FC3 (FD3), 206–215	–	305–307
M5	1.5– 2.8	216–218	X18, X20	308–324
M8	6 –10	–	–	326, 328

Appendix Table 3 Tightening Torques of Inner Rings and Eccentric Locking Collar Set Screws

(1) Tightening torques of inner rings and eccentric locking collar set screws (metric series) (recommended)

Nominal size of screws	Tightening torques, N · m	Part No. of applicable bearings						
		UC2, RB	UCX	UC3	NA	SB	SU	ER
M 3X0.35	0.7						08, 000, 001	
M 4X0.5	1.8	–				–	002, 003	
M 5X0.5	3	201X–203X	–	–		201–203	004–006	–
M 6X0.75	4	201–206	X05	305, 306	204, 205	204–207	–	201–206
M 8X1	8.5	207–209	X06–X08	307	206–210	208		207–209
M10X1.25	17.5	210–212	X09–X11	308, 309	211, 212	–		210–212
M12X1.5	28	213–218	X12–X17	310–314	–			–
M14X1.5	35	–	X18	315, 316				
M16X1.5	56		X20	317–319				
M18X1.5	62		–	320–324				
M20X1.5	83			326, 328				

Remarks 1) Tightening torques of set screws for UC2-S6 are identical to that of UC2. As for UC210S6, tightening torque of the set screw M8 × 1 should be applied.
2) When the application will be exposed to vibration and shock load additional tightening will be required. The maximum torque tightening should not exceed 1.5 times the normal torque tightening specifications.

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(2) Tightening torques of inner rings and eccentric locking collar set screws (inch series) (recommended)

Nominal size of screws	Tightening torques, N · m	Part No. of applicable bearings		
		UC2-, ER2-, RB2-	UCX-	SB-
10-32UNF	3	–	–	201, 202
1/4-28UNF	4	201–206	X05	204–207
5/16-24UNF	8.5	207–209	X06–X08	208
3/8-24UNF	17.5	210–212	X09–X11	–
1/2-20UNF	28	213–218	X12–X18	
5/8-18UNF	56	–	X20	

Remark When the application will be exposed to vibration and shock load additional tightening will be required. The maximum torque tightening should not exceed 1.5 times the normal torque tightening specifications.

(3) NC concentric cap screw tightening torque

Nominal size of screws	Tightening torques, N · m
M4	7.4– 8.2
M5	10.2–11.2
M6	17.6–19.4
M8	41.6–46
No.8-32UNC	7.4– 8.2
No.10-24UNC	10.2–11.2
1/4-20UNC	17.6–19.4
5/16-18UNC	41.6–46

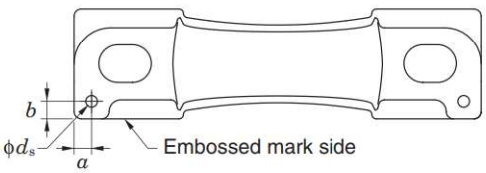
Remark When the application will be exposed to vibration and shock load additional tightening will be required. The maximum torque tightening should not exceed 1.5 times the normal torque tightening specifications.

Appendix Table 4 Tightening Torques of Adapter Lock Nuts (reference)

Bore code	Tightening torques, N · m								
	UK200			UKX00			UK300		
	Standard load		Heavy load	Standard load		Heavy load	Standard load		Heavy load
	min.	Max.	(Max. × 1.5)	min.	Max.	(Max. × 1.5)	min.	Max.	(Max. × 1.5)
05	25	38	56	35	53	79	30	45	68
06	30	45	68	40	60	90	45	68	101
07	40	60	90	50	75	113	60	90	135
08	50	75	113	75	113	169	80	120	180
09	60	90	135	75	113	169	120	180	270
10	75	113	169	110	165	248	150	225	338
11	100	150	225	140	210	315	180	270	405
12	130	195	293	165	248	371	225	338	506
13	150	225	338	195	293	439	265	398	596
15	170	255	383	215	323	484	375	563	844
16	200	300	450	255	383	574	450	675	1,013
17	220	330	495	295	443	664	530	795	1,193
18	260	390	585	340	510	765	610	915	1,373
19	–	–	–	–	–	–	710	1,065	1,598
20	–	–	–	490	735	1,103	885	1,328	1,991
22	–	–	–	–	–	–	1,220	1,830	2,745
24	–	–	–	–	–	–	1,470	2,205	3,308
26	–	–	–	–	–	–	1,770	2,655	3,983
28	–	–	–	–	–	–	2,150	3,225	4,838

Appendix Table 5 Machining Dimensions of Holes of Housing Dowel Pins

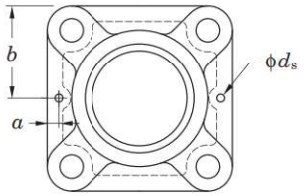
(1) Machining dimensions of holes of pillow type housing (P) dowel pins (recommended)



Unit: mm

Nominal code	a	b	d_s (reference)	Pin seat thickness
P203	6	6	4	16
P204	6	6	4	16
P205	6	6	4	16
P206	6	6	4	17
P207	8	8	5	18
P208	8	8	5	18
P209	8	8	5	20
P210	10	10	5	21
P211	10	10	6	23
P212	10	10	6	25
P213	10	10	6	27
P214	10	10	8	27
P215	12.5	12.5	8	28
P216	12	12	8	30
P217	12	12	8	32
P218	14	14	8	33
PX05	7	7	5	16
PX06	8	8	5	17
PX07	8	8	5	19
PX08	8	8	5	21
PX09	8	8	5	21
PX10	9	9	6	22
PX11	9	9	6	28
PX12	9	9	6	28
PX13	10	10	8	28
PX14	10	10	8	32
PX15	10	10	8	32
PX16	12	12	8	34
PX17	12	12	8	34
PX18	15	15	10	38
PX20	19	19	10	45
P305	8	8	5	16
P306	10	10	5	17
P307	10	10	5	19
P308	11	11	6	19
P309	11	11	6	21
P310	11	11	6	24
P311	12	12	8	27
P312	12	12	8	29
P313	12	12	8	32
P314	12	12	10	35
P315	14	14	10	35
P316	15	15	10	35
P317	15	15	10	40
P318	15	15	10	40
P319	15	15	10	46
P320	17	17	13	46
P321	17	17	13	46
P322	17	17	13	50
P324	17	17	13	50
P326	20	20	13	50
P328	20	20	13	60

(2) Machining dimensions of holes of square flange type housing (F) dowel pins (recommended)



Unit: mm

Nominal code	a	b	d_s (reference)	Pin seat thickness
F204	6	43	4	11
F205	6	47.5	4	13
F206	7.5	54	4	13
F207	7.5	58.5	5	15
F208	7.5	65	5	15
F209	7.5	68.5	5	16
F210	7.5	71.5	5	16
F211	9	81	6	18
F212	9	87.5	6	18
F213	9	93.5	6	22
F214	10	96.5	8	22
F215	10	100	8	22
F216	10	104	8	22
F217	10	110	8	24
F218	10	117.5	8	25
FX05	7.5	54	5	13
FX06	7.5	58.5	5	14
FX07	7.5	65	5	14
FX08	7.5	68.5	5	14
FX09	7.5	71.5	5	14
FX10	9	81	6	20
FX11	9	87.5	6	20
FX12	9	93.5	6	21
FX13	10	93.5	8	21
FX14	10	98.5	8	22
FX15	10	142	8	24
FX16	10	107	8	24
FX17	10	155	8	24
FX18	12	155	10	24
FX20	12	134	10	28
F305	7.5	55	5	13
F306	7.5	62.5	5	15
F307	7.5	67.5	5	16
F308	9	75	6	17
F309	9	80	6	18
F310	9	87.5	6	19
F311	10	92.5	8	20
F312	10	97.5	8	22
F313	10	104	8	22
F314	12	113	10	25
F315	12	118	10	25
F316	12	125	10	27
F317	12	130	10	27
F318	12	140	10	30
F319	12	145	10	30
F320	16	155	13	32
F321	16	155	13	32
F322	16	170	13	35
F324	16	185	13	40
F326	16	205	13	45
F328	16	225	13	55

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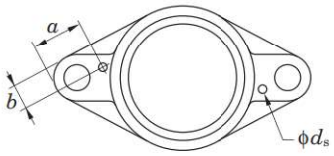
(3) Machining dimensions of holes of oval flange type housing (FL) dowel pins (recommended)



Unit: mm

Nominal code	a	b	d_s (reference)	Pin seat thickness
FL204	26	9	4	11
FL205	32	10	4	13
FL206	34	12	4	13
FL207	34	14	5	14
FL208	35	15	5	14
FL209	40	15	5	15
FL210	41	16	5	15
FL211	43	19	6	18
FL212	52	22	6	18
FL213	50	21	6	20
FL214	52	22	8	20
FL215	53	23	8	20
FL216	56	23	8	20
FL217	57	25	8	22
FL218	57	26	8	23
FLX05	27	12	5	13
FLX06	30	14	5	14
FLX07	32	15	5	14
FLX08	33	15	5	14
FLX09	35	16	5	14
FLX10	37	19	6	20
FL305	32	12	5	13
FL306	46	14	5	15
FL307	44	14	5	16
FL308	45	17	6	17
FL309	53	19	6	18
FL310	53	19	6	19
FL311	52	20	8	20
FL312	60	21	8	22
FL313	60	25	8	25
FL314	68	26	10	28
FL315	64	26	10	30
FL316	74	29	10	32
FL317	75	31	10	32
FL318	74	32	10	36
FL319	80	32	10	40
FL320	86	34	13	40
FL322	86	36	13	42
FL324	94	41	13	48

Appendix Table 6 Dimensional Tolerances of Shafts

Classification of shaft (mm)		Tolerance range class of shaft															
Over	Incl.	d 6	e 6	f 6	g 5	g 6	h 5	h 6	h 7	h 8	h 9	h 10	js 5	js 6	js 7	j 5	j 6
3	6	−30 −38	−20 −28	−10 −18	−4 −9	−4 −12	0 −5	0 −8	0 −12	0 −18	0 −30	0 −48	±2.5	±4	±6	+3 −2	+6 −2
6	10	−40 −49	−25 −34	−13 −22	−5 −11	−5 −14	0 −6	0 −9	0 −15	0 −22	0 −36	0 −58	±3	±4.5	±7.5	+4 −2	+7 −2
10	18	−50 −61	−32 −43	−16 −27	−6 −14	−6 −17	0 −8	0 −11	0 −18	0 −27	0 −43	0 −70	±4	±5.5	±9	+5 −3	+8 −3
18	30	−65 −78	−40 −53	−20 −33	−7 −16	−7 −20	0 −9	0 −13	0 −21	0 −33	0 −52	0 −84	±4.5	±6.5	±10.5	+5 −4	+9 −4
30	50	−80 −96	−50 −66	−25 −41	−9 −20	−9 −25	0 −11	0 −16	0 −25	0 −39	0 −62	0 −100	±5.5	±8	±12.5	+6 −5	+11 −5
50	80	−100 −119	−60 −79	−30 −49	−10 −23	−10 −29	0 −13	0 −19	0 −30	0 −46	0 −74	0 −120	±6.5	±9.5	±15	+6 −7	+12 −7
80	120	−120 −142	−72 −94	−36 −58	−12 −27	−12 −34	0 −15	0 −22	0 −35	0 −54	0 −87	0 −140	±7.5	±11	±17.5	+6 −9	+13 −9
120	180	−145 −170	−85 −110	−43 −68	−14 −32	−14 −39	0 −18	0 −25	0 −40	0 −63	0 −100	0 −160	±9	±12.5	±20	+7 −11	+14 −11
180	250	−170 −199	−100 −129	−50 −79	−15 −35	−15 −44	0 −20	0 −29	0 −46	0 −72	0 −115	0 −185	±10	±14.5	±23	+7 −13	+16 −13
250	315	−190 −222	−110 −142	−56 −88	−17 −40	−17 −49	0 −23	0 −32	0 −52	0 −81	0 −130	0 −210	±11.5	±16	±26	+7 −16	±16
315	400	−210 −246	−125 −161	−62 −98	−18 −43	−18 −54	0 −25	0 −36	0 −57	0 −89	0 −140	0 −230	±12.5	±18	±28.5	+7 −18	±18
400	500	−230 −270	−135 −175	−68 −108	−20 −47	−20 −60	0 −27	0 −40	0 −63	0 −97	0 −155	0 −250	±13.5	±20	±31.5	+7 −20	±20
500	630	−260 −304	−145 −189	−76 −120	−22 −54	−22 −66	0 −32	0 −44	0 −70	0 −110	0 −175	0 −280	±16	±22	±35	–	–
630	800	−290 −340	−160 −210	−80 −130	−24 −60	−24 −74	0 −36	0 −50	0 −80	0 −125	0 −200	0 −320	±18	±25	±40	–	–
800	1,000	−320 −376	−170 −226	−86 −142	−26 −66	−26 −82	0 −40	0 −56	0 −90	0 −140	0 −230	0 −360	±20	±28	±45	–	–

*Δ_{dmp}: Variation of tolerance of average bore diameter in plane

Unit: μm

k 5	k 6	k 7	m 5	m 6	m 7	n 5	n 6	p 6	r 6	r 7	Classification of shaft (mm) Over	Incl.	(Reference) Δ_{dmp}* of bearing (class 0)
+ 6 + 1	+ 9 + 1	+13 + 1	+ 9 + 4	+12 + 4	+ 16 + 4	+13 + 8	+ 16 + 8	+ 20 + 12	+ 23 + 15	+ 27 + 15	3	6	0 − 8
+ 7 + 1	+10 + 1	+16 + 1	+12 + 6	+15 + 6	+ 21 + 6	+16 +10	+ 19 + 10	+ 24 + 15	+ 28 + 19	+ 34 + 19	6	10	0 − 8
+ 9 + 1	+12 + 1	+19 + 1	+15 + 7	+18 + 7	+ 25 + 7	+20 +12	+ 23 + 12	+ 29 + 18	+ 34 + 23	+ 41 + 23	10	18	0 − 8
+11 + 2	+15 + 2	+23 + 2	+17 + 8	+21 + 8	+ 29 + 8	+24 +15	+ 28 + 15	+ 35 + 22	+ 41 + 28	+ 49 + 28	18	30	0 − 10
+13 + 2	+18 + 2	+27 + 2	+20 + 9	+25 + 9	+ 34 + 9	+28 +17	+ 33 + 17	+ 42 + 26	+ 50 + 34	+ 59 + 34	30	50	0 − 12
+15 + 2	+21 + 2	+32 + 2	+24 +11	+30 +11	+ 41 + 11	+33 +20	+ 39 + 20	+ 51 + 32	+ 60 + 41	+ 71 + 41	50	65	0 − 15
									+ 62 + 43	+ 73 + 43	65	80	
+18 + 3	+25 + 3	+38 + 3	+28 +13	+35 +13	+ 48 + 13	+38 +23	+ 45 + 23	+ 59 + 37	+ 73 + 51	+ 86 + 51	80	100	0 − 20
									+ 76 + 54	+ 89 + 54	100	120	
+21 + 3	+28 + 3	+43 + 3	+33 +15	+40 +15	+ 55 + 15	+45 +27	+ 52 + 27	+ 68 + 43	+ 88 + 63	+103 + 63	120	140	0 − 25
									+ 90 + 65	+105 + 65	140	160	
									+ 93 + 68	+108 + 68	160	180	
+24 + 4	+33 + 4	+50 + 4	+37 +17	+46 +17	+ 63 + 17	+51 +31	+ 60 + 31	+ 79 + 50	+106 + 77	+123 + 77	180	200	0 − 30
									+109 + 80	+126 + 80	200	225	
									+113 + 84	+130 + 84	225	250	
+27 + 4	+36 + 4	+56 + 4	+43 +20	+52 +20	+ 72 + 20	+57 +34	+ 66 + 34	+ 88 + 56	+126 + 94	+146 + 94	250	280	0 − 35
									+130 + 98	+150 + 98	280	315	
+29 + 4	+40 + 4	+61 + 4	+46 +21	+57 +21	+ 78 + 21	+62 +37	+ 73 + 37	+ 98 + 62	+144 +108	+165 +108	315	355	0 − 40
									+150 +114	+171 +114	355	400	
+32 + 5	+45 + 5	+68 + 5	+50 +23	+63 +23	+ 86 + 23	+67 +40	+ 80 + 40	+108 + 68	+166 +126	+189 +126	400	450	0 − 45
									+172 +132	+195 +132	450	500	
+32 0	+44 0	+70 0	+58 +26	+70 +26	+ 96 + 26	+76 +44	+ 88 + 44	+122 + 78	+194 +150	+220 +150	500	560	0 − 50
									+199 +155	+225 +155	560	630	
+36 0	+50 0	+80 0	+66 +30	+80 +30	+110 + 30	+86 +50	+100 + 50	+138 + 88	+225 +175	+255 +175	630	710	0 − 75
									+235 +185	+265 +185	710	800	
+40 0	+56 0	+90 0	+74 +34	+90 +34	+124 + 34	+96 +56	+112 + 56	+156 +100	+266 +210	+300 +210	800	900	0 −100
									+276 +220	+310 +220	900	1,000	

Appendix Table 7 Dimensional Tolerances of Housing Bores

Classification of shaft (mm)		Tolerance range class of bore														
Over	Incl.	E 6	F 6	F 7	G 6	G 7	H 6	H 7	H 8	H 9	H 10	JS 5	JS 6	JS 7	J 6	J 7
10	18	+43 +32	+27 +16	+34 +16	+17 +6	+24 +6	+11 0	+18 0	+27 0	+43 0	+70 0	±4	±5.5	±9	+6 −5	+10 −8
18	30	+53 +40	+33 +20	+41 +20	+20 +7	+28 +7	+13 0	+21 0	+33 0	+52 0	+84 0	±4.5	±6.5	±10.5	+8 −5	+12 −9
30	50	+66 +50	+41 +25	+50 +25	+25 +9	+34 +9	+16 0	+25 0	+39 0	+62 0	+100 0	±5.5	±8	±12.5	+10 −6	+14 −11
50	80	+79 +60	+49 +30	+60 +30	+29 +10	+40 +10	+19 0	+30 0	+46 0	+74 0	+120 0	±6.5	±9.5	±15	+13 −6	+18 −12
80	120	+94 +72	+58 +36	+71 +36	+34 +12	+47 +12	+22 0	+35 0	+54 0	+87 0	+140 0	±7.5	±11	±17.5	+16 −6	+22 −13
120	180	+110 +85	+68 +43	+83 +43	+39 +14	+54 +14	+25 0	+40 0	+63 0	+100 0	+160 0	±9	±12.5	±20	+18 −7	+26 −14
180	250	+129 +100	+79 +50	+96 +50	+44 +15	+61 +15	+29 0	+46 0	+72 0	+115 0	+185 0	±10	±14.5	±23	+22 −7	+30 −16
250	315	+142 +110	+88 +56	+108 +56	+49 +17	+69 +17	+32 0	+52 0	+81 0	+130 0	+210 0	±11.5	±16	±26	+25 −7	+36 −16
315	400	+161 +125	+98 +62	+119 +62	+54 +18	+75 +18	+36 0	+57 0	+89 0	+140 0	+230 0	±12.5	±18	±28.5	+29 −7	+39 −18
400	500	+175 +135	+108 +68	+131 +68	+60 +20	+83 +20	+40 0	+63 0	+97 0	+155 0	+250 0	±13.5	±20	±31.5	+33 −7	+43 −20
500	630	+189 +145	+120 +76	+146 +76	+66 +22	+92 +22	+44 0	+70 0	+110 0	+175 0	+280 0	±16	±22	±35	–	–
630	800	+210 +160	+130 +80	+160 +80	+74 +24	+104 +24	+50 0	+80 0	+125 0	+200 0	+320 0	±18	±25	±40	–	–
800	1,000	+226 +170	+142 +86	+176 +86	+82 +26	+116 +26	+56 0	+90 0	+140 0	+230 0	+360 0	±20	±28	±45	–	–
1,000	1,250	+261 +195	+164 +98	+203 +98	+94 +28	+133 +28	+66 0	+105 0	+165 0	+260 0	+420 0	±23.5	±33	±52.5	–	–

*Δ_{Dmp}: Variation of tolerance of average outside diameter in plate

Unit: μm

K 5	K 6	K 7	M 5	M 6	M 7	N 5	N 6	N 7	P 6	P 7	R 7	Classification of basic size (mm) Over	Incl.	(Reference) Δ_{Dmp}* of bearing (class 0)
+2 −6	+2 −9	+6 −12	−4 −12	−4 −15	0 −18	−9 −17	−9 −20	−5 −23	−15 −26	−11 −29	−16 −34	10	18	0 −8
+1 −8	+2 −11	+6 −15	−5 −14	−4 −17	0 −21	−12 −21	−11 −24	−7 −28	−18 −31	−14 −35	−20 −41	18	30	0 −9
+2 −9	+3 −13	+7 −18	−5 −16	−4 −20	0 −25	−13 −24	−12 −28	−8 −33	−21 −37	−17 −42	−25 −50	30	50	0 −11
+3 −10	+4 −15	+9 −21	−6 −19	−5 −24	0 −30	−15 −28	−14 −33	−9 −39	−26 −45	−21 −51	−30 −60	50	65	0 −13
											−32 −62	65	80	
+2 −13	+4 −18	+10 −25	−8 −23	−6 −28	0 −35	−18 −33	−16 −38	−10 −45	−30 −52	−24 −59	−38 −73	80	100	0 −15
											−41 −76	100	120	
+3 −15	+4 −21	+12 −28	−9 −27	−8 −33	0 −40	−21 −39	−20 −45	−12 −52	−36 −61	−28 −68	−48 −88	120	140	(150 max.) 0 −18 (Over 150)
											−50 −90	140	160	
											−53 −93	160	180	0 −25
+2 −18	+5 −24	+13 −33	−11 −31	−8 −37	0 −46	−25 −45	−22 −51	−14 −60	−41 −70	−33 −79	−60 −106	180	200	0 −30
											−63 −109	200	225	
											−67 −113	225	250	
+3 −20	+5 −27	+16 −36	−13 −36	−9 −41	0 −52	−27 −50	−25 −57	−14 −66	−47 −79	−36 −88	−74 −126	250	280	0 −35
											−78 −130	280	315	
+3 −22	+7 −29	+17 −40	−14 −39	−10 −46	0 −57	−30 −55	−26 −62	−16 −73	−51 −87	−41 −98	−87 −144	315	355	0 −40
											−93 −150	355	400	
+2 −25	+8 −32	+18 −45	−16 −43	−10 −50	0 −63	−33 −60	−27 −67	−17 −80	−55 −95	−45 −108	−103 −166	400	450	0 −45
											−109 −172	450	500	
0 −32	0 −44	0 −70	−26 −58	−26 −70	−26 −96	−44 −76	−44 −88	−44 −114	−78 −122	−78 −148	−150 −220	500	560	0 −50
											−155 −225	560	630	
0 −36	0 −50	0 −80	−30 −66	−30 −80	−30 −110	−50 −86	−50 −100	−50 −130	−88 −138	−88 −168	−175 −255	630	710	0 −75
											−185 −265	710	800	
0 −40	0 −56	0 −90	−34 −74	−34 −90	−34 −124	−56 −96	−56 −112	−56 −146	−100 −156	−100 −190	−210 −300	800	900	0 −100
											−220 −310	900	1,000	
0 −47	0 −66	0 −105	−40 −87	−40 −106	−40 −145	−66 −113	−66 −132	−66 −171	−120 −186	−120 −225	−250 −355	1,000	1,120	0 −125
											−260 −365	1,120	1,250	

Appendix Table 8 Basic Tolerance Values

Classification of basic size (mm)		Tolerance class (IT)																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14[1]	15[1]	16[1]	17[1]	18[1]
Over	Incl.	Basic tolerance value (μm)											Basic tolerance value (mm)						
–	3	0.8	1.2	2	3	4	6	10	14	25	40	60	0.10	0.14	0.26	0.40	0.60	1.00	1.40
3	6	1	1.5	2.5	4	5	8	12	18	30	48	75	0.12	0.18	0.30	0.48	0.75	1.20	1.80
6	10	1	1.5	2.5	4	6	9	15	22	36	58	90	0.15	0.22	0.36	0.58	0.90	1.50	2.20
10	18	1.2	2	3	5	8	11	18	27	43	70	110	0.18	0.27	0.43	0.70	1.10	1.80	2.70
18	30	1.5	2.5	4	6	9	13	21	33	52	84	130	0.21	0.33	0.52	0.84	1.30	2.10	3.30
30	50	1.5	2.5	4	7	11	16	25	39	62	100	160	0.25	0.39	0.62	1.00	1.60	2.50	3.90
50	80	2	3	5	8	13	19	30	46	74	120	190	0.30	0.46	0.74	1.20	1.90	3.00	4.60
80	120	2.5	4	6	10	15	22	35	54	87	140	220	0.35	0.54	0.87	1.40	2.20	3.50	5.40
120	180	3.5	5	8	12	18	25	40	63	100	160	250	0.40	0.63	1.00	1.60	2.50	4.00	6.30
180	250	4.5	7	10	14	20	29	46	72	115	185	290	0.46	0.72	1.15	1.85	2.90	4.60	7.20
250	315	6	8	12	16	23	32	52	81	130	210	320	0.52	0.81	1.30	2.10	3.20	5.20	8.10
315	400	7	9	13	18	25	36	57	89	140	230	360	0.57	0.89	1.40	2.30	3.60	5.70	8.90
400	500	8	10	15	20	27	40	63	97	155	250	400	0.63	0.97	1.55	2.50	4.00	6.30	9.70
500	630	–	–	–	–	–	44	70	110	175	280	440	0.70	1.10	1.75	2.80	4.40	7.00	11.00
630	800	–	–	–	–	–	50	80	125	200	320	500	0.80	1.25	2.00	3.20	5.00	8.00	12.50
800	1,000	–	–	–	–	–	56	90	140	230	360	560	0.90	1.40	2.30	3.60	5.60	9.00	14.00
1,000	1,250	–	–	–	–	–	66	105	165	260	420	660	1.05	1.65	2.60	4.20	6.60	10.50	16.50
1,250	1,600	–	–	–	–	–	78	125	195	310	500	780	1.25	1.95	3.10	5.00	7.80	12.50	19.50
1,600	2,000	–	–	–	–	–	92	150	230	370	600	920	1.50	2.30	3.70	6.00	9.20	15.00	23.00
2,000	2,500	–	–	–	–	–	110	175	280	440	700	1,100	1.75	2.80	4.40	7.00	11.00	17.50	28.00
2,500	3,150	–	–	–	–	–	135	210	330	540	860	1,350	2.10	3.30	5.40	8.60	13.50	21.00	33.00

Note [1] Tolerance classes from IT14 to IT18 can not be applied to basic size 1 mm or less.

ROYSE
rodamientos y servicios
Desde 1979

Appendix Table 9 SI Unit Conversion Charts

ROYSE
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Desde 1979

Force

N	dyn	kgf
1	1×10^{5}	$1.019\,72\times10^{-1}$
1×10^{-5}	1	$1.019\,72\times10^{-6}$
9.806 65	$9.806\,65\times10^{5}$	1

Moment of force (torque)

N · m	mN · m	μN · m	kgf · m	kgf · cm	gf · cm
1	1×10^{3}	1×10^{6}	$1.019\,72\times10^{-1}$	$1.019\,72\times10$	$1.019\,72\times10^{4}$
1×10^{-3}	1	1×10^{3}	$1.019\,72\times10^{-4}$	$1.019\,72\times10^{-2}$	$1.019\,72\times10$
1×10^{-6}	1×10^{-3}	1	$1.019\,72\times10^{-7}$	$1.019\,72\times10^{-5}$	$1.019\,72\times10^{-2}$
9.806 65	$9.806\,65\times10^{3}$	$9.806\,65\times10^{6}$	1	1×10^{2}	1×10^{5}
$9.806\,65\times10^{-2}$	$9.806\,65\times10$	$9.806\,65\times10^{4}$	1×10^{-2}	1	1×10^{3}
$9.806\,65\times10^{-5}$	$9.806\,65\times10^{-2}$	$9.806\,65\times10$	1×10^{-5}	1×10^{-3}	1

Stress

Pa or N/m^2	MPa or N/mm^2	kgf/mm^2	kgf/cm^2
1	1×10^{-6}	$1.019\,72\times10^{-7}$	$1.019\,72\times10^{-5}$
1×10^{6}	1	$1.019\,72\times10^{-1}$	$1.019\,72\times10$
$9.806\,65\times10^{6}$	9.806 65	1	1×10^{2}
$9.806\,65\times10^{4}$	$9.806\,65\times10^{-2}$	1×10^{-2}	1

Remark 1 Pa = 1 N/m^2, 1 MPa = 1 N/mm^2

Pressure

Pa	kPa	MPa	bar	kgf/cm^2	atm	mmH$_2$O	mmHg or Torr
1	1×10^{-3}	1×10^{-6}	1×10^{-5}	$1.019\,72\times10^{-5}$	$9.869\,23\times10^{-6}$	$1.019\,72\times10^{-1}$	$7.500\,62\times10^{-3}$
1×10^{3}	1	1×10^{-3}	1×10^{-2}	$1.019\,72\times10^{-2}$	$9.869\,23\times10^{-3}$	$1.019\,72\times10^{2}$	7.500 62
1×10^{6}	1×10^{3}	1	1×10	$1.019\,72\times10$	9.869 23	$1.019\,72\times10^{5}$	$7.500\,62\times10^{3}$
1×10^{5}	1×10^{2}	1×10^{-1}	1	1.019 72	$9.869\,23\times10^{-1}$	$1.019\,72\times10^{4}$	$7.500\,62\times10^{2}$
$9.806\,65\times10^{4}$	$9.806\,65\times10$	$9.806\,65\times10^{-2}$	$9.806\,65\times10^{-1}$	1	$9.678\,41\times10^{-1}$	1×10^{4}	$7.355\,59\times10^{2}$
$1.013\,25\times10^{5}$	$1.013\,25\times10^{2}$	$1.013\,25\times10^{-1}$	1.013 25	1.033 23	1	$1.033\,23\times10^{4}$	$7.600\,00\times10^{2}$
9.806 65	$9.806\,65\times10^{-3}$	$9.806\,65\times10^{-6}$	$9.806\,65\times10^{-5}$	1×10^{-4}	$9.678\,41\times10^{-5}$	1	$7.355\,59\times10^{-2}$
$1.333\,22\times10^{2}$	$1.333\,22\times10^{-1}$	$1.333\,22\times10^{-4}$	$1.333\,22\times10^{-3}$	$1.359\,51\times10^{-3}$	$1.315\,79\times10^{-3}$	$1.359\,51\times10$	1

Remark 1 Pa = 1 N/m^2

Kinematic viscosity

m^2/s	cSt	St
1	1×10^{6}	1×10^{4}
1×10^{-6}	1	1×10^{-2}
1×10^{-4}	1×10^{2}	1

Remark 1 cSt = 1 mm^2/s, 1 St = 1 cm^2/s

Appendix Table 10 Inch-meter Conversion Chart

Inch		Inches										
		0	1	2	3	4	5	6	7	8	9	10
		mm										
0	0	**0**	**25.4000**	**50.8000**	**76.2000**	**101.6000**	**127.0000**	**152.4000**	**177.8000**	**203.2000**	**228.6000**	**254.0000**
1/64	0.015625	0.3969	25.7969	51.1969	76.5969	101.9969	127.3969	152.7969	178.1969	203.5969	228.9969	254.3969
1/32	0.03125	0.7938	26.1938	51.5938	76.9938	102.3938	127.7938	153.1938	178.5938	203.9938	229.3938	254.7938
3/64	0.046875	1.1906	26.5906	51.9906	77.3906	102.7906	128.1906	153.5906	178.9906	204.3906	229.7906	255.1906
1/16	0.0625	1.5875	26.9875	52.3875	77.7875	103.1875	128.5875	153.9875	179.3875	204.7875	230.1875	255.5875
5/64	0.078125	1.9844	27.3844	52.7844	78.1844	103.5844	128.9844	154.3844	179.7844	205.1844	230.5844	255.9844
3/32	0.09375	2.3812	27.7812	53.1812	78.5812	103.9812	129.3812	154.7812	180.1812	205.5812	230.9812	256.3812
7/64	0.109375	2.7781	28.1781	53.5781	78.9781	104.3781	129.7781	155.1781	180.5781	205.9781	231.3781	256.7781
1/8	0.125	**3.1750**	**28.5750**	**53.9750**	**79.3750**	**104.7750**	**130.1750**	**155.5750**	**180.9750**	**206.3750**	**231.7750**	**257.1750**
9/64	0.140625	3.5719	28.9719	54.3719	79.7719	105.1719	130.5719	155.9719	181.3719	206.7719	232.1719	257.5719
5/32	0.15625	3.9688	29.3688	54.7688	80.1688	105.5688	130.9688	156.3688	181.7688	207.1688	232.5688	257.9688
11/64	0.171875	4.3656	29.7656	55.1656	80.5656	105.9656	131.3656	156.7656	182.1656	207.5656	232.9656	258.3656
3/16	0.1875	4.7625	30.1625	55.5625	80.9625	106.3625	131.7625	157.1625	182.5625	207.9625	233.3625	258.7625
13/64	0.203125	5.1594	30.5594	55.9594	81.3594	106.7594	132.1594	157.5594	182.9594	208.3594	233.7594	259.1594
7/32	0.21875	5.5562	30.9562	56.3562	81.7562	107.1562	132.5562	157.9562	183.3562	208.7562	234.1562	259.5562
15/64	0.234375	5.9531	31.3531	56.7531	82.1531	107.5531	132.9531	158.3531	183.7531	209.1531	234.5531	259.9531
1/4	0.25	**6.3500**	**31.7500**	**57.1500**	**82.5500**	**107.9500**	**133.3500**	**158.7500**	**184.1500**	**209.5500**	**234.9500**	**260.3500**
17/64	0.265625	6.7469	32.1469	57.5469	82.9469	108.3469	133.7469	159.1469	184.5469	209.9469	235.3469	260.7469
9/32	0.28125	7.1438	32.5438	57.9438	83.3438	108.7438	134.1438	159.5438	184.9438	210.3438	235.7438	261.1438
19/64	0.296875	7.5406	32.9406	58.3406	83.7406	109.1406	134.5406	159.9406	185.3406	210.7406	236.1406	261.5406
5/16	0.3125	7.9375	33.3375	58.7375	84.1375	109.5375	134.9375	160.3375	185.7375	211.1375	236.5375	261.9375
21/64	0.328125	8.3344	33.7344	59.1344	84.5344	109.9344	135.3344	160.7344	186.1344	211.5344	236.9344	262.3344
11/32	0.34375	8.7312	34.1312	59.5312	84.9312	110.3312	135.7312	161.1312	186.5312	211.9312	237.3312	262.7312
23/64	0.359375	9.1281	34.5281	59.9281	85.3281	110.7281	136.1281	161.5281	186.9281	212.3281	237.7281	263.1281
3/8	0.375	**9.5250**	**34.9250**	**60.3250**	**85.7250**	**111.1250**	**136.5250**	**161.9250**	**187.3250**	**212.7250**	**238.1250**	**263.5250**
25/64	0.390625	9.9219	35.3219	60.7219	86.1219	111.5219	136.9219	162.3219	187.7219	213.1219	238.5219	263.9219
13/32	0.40625	10.3188	35.7188	61.1188	86.5188	111.9188	137.3188	162.7188	188.1188	213.5188	238.9188	264.3188
27/64	0.421875	10.7156	36.1156	61.5156	86.9156	112.3156	137.7156	163.1156	188.5156	213.9156	239.3156	264.7156
7/16	0.4375	11.1125	36.5125	61.9125	87.3125	112.7125	138.1125	163.5125	188.9125	214.3125	239.7125	265.1125
29/64	0.453125	11.5094	36.9094	62.3094	87.7094	113.1094	138.5094	163.9094	189.3094	214.7094	240.1094	265.5094
15/32	0.46875	11.9062	37.3062	62.7062	88.1062	113.5062	138.9062	164.3062	189.7062	215.1062	240.5062	265.9062
31/64	0.484375	12.3031	37.7031	63.1031	88.5031	113.9031	139.3031	164.7031	190.1031	215.5031	240.9031	266.3031
1/2	0.5	**12.7000**	**38.1000**	**63.5000**	**88.9000**	**114.3000**	**139.7000**	**165.1000**	**190.5000**	**215.9000**	**241.3000**	**266.7000**
33/64	0.515625	13.0969	38.4969	63.8969	89.2969	114.6969	140.0969	165.4969	190.8969	216.2969	241.6969	267.0969
17/32	0.53125	13.4938	38.8938	64.2938	89.6938	115.0938	140.4938	165.8938	191.2938	216.6938	242.0938	267.4938
35/64	0.546875	13.8906	39.2906	64.6906	90.0906	115.4906	140.8906	166.2906	191.6906	217.0906	242.4906	267.8906
9/16	0.5625	14.2875	39.6875	65.0875	90.4875	115.8875	141.2875	166.6875	192.0875	217.4875	242.8875	268.2875
37/64	0.578125	14.6844	40.0844	65.4844	90.8844	116.2844	141.6844	167.0844	192.4844	217.8844	243.2844	268.6844
19/32	0.59375	15.0812	40.4812	65.8812	91.2812	116.6812	142.0812	167.4812	192.8812	218.2812	243.6812	269.0812
39/64	0.609375	15.4781	40.8781	66.2781	91.6781	117.0781	142.4781	167.8781	193.2781	218.6781	244.0781	269.4781
5/8	0.625	**15.8750**	**41.2750**	**66.6750**	**92.0750**	**117.4750**	**142.8750**	**168.2750**	**193.6750**	**219.0750**	**244.4750**	**269.8750**
41/64	0.640625	16.2719	41.6719	67.0719	92.4719	117.8719	143.2719	168.6719	194.0719	219.4719	244.8719	270.2719
21/32	0.65625	16.6688	42.0688	67.4688	92.8688	118.2688	143.6688	169.0688	194.4688	219.8688	245.2688	270.6688
43/64	0.671875	17.0656	42.4656	67.8656	93.2656	118.6656	144.0656	169.4656	194.8656	220.2656	245.6656	271.0656
11/16	0.6875	17.4625	42.8625	68.2625	93.6625	119.0625	144.4625	169.8625	195.2625	220.6625	246.0625	271.4625
45/64	0.703125	17.8594	43.2594	68.6594	94.0594	119.4594	144.8594	170.2594	195.6594	221.0594	246.4594	271.8594
23/32	0.71875	18.2562	43.6562	69.0562	94.4562	119.8562	145.2562	170.6562	196.0562	221.4562	246.8562	272.2562
47/64	0.734375	18.6531	44.0531	69.4531	94.8531	120.2531	145.6531	171.0531	196.4531	221.8531	247.2531	272.6531
3/4	0.75	**19.0500**	**44.4500**	**69.8500**	**95.2500**	**120.6500**	**146.0500**	**171.4500**	**196.8500**	**222.2500**	**247.6500**	**273.0500**
49/64	0.765625	19.4469	44.8469	70.2469	95.6469	121.0469	146.4469	171.8469	197.2469	222.6469	248.0469	273.4469
25/32	0.78125	19.8438	45.2438	70.6438	96.0438	121.4438	146.8438	172.2438	197.6438	223.0438	248.4438	273.8438
51/64	0.796875	20.2406	45.6406	71.0406	96.4406	121.8406	147.2406	172.6406	198.0406	223.4406	248.8406	274.2406
13/16	0.8125	20.6375	46.0375	71.4375	96.8375	122.2375	147.6375	173.0375	198.4375	223.8375	249.2375	274.6375
53/64	0.828125	21.0344	46.4344	71.8344	97.2344	122.6344	148.0344	173.4344	198.8344	224.2344	249.6344	275.0344
27/32	0.84375	21.4312	46.8312	72.2312	97.6312	123.0312	148.4312	173.8312	199.2312	224.6312	250.0312	275.4312
55/64	0.859375	21.8281	47.2281	72.6281	98.0281	123.4281	148.8281	174.2281	199.6281	225.0281	250.4281	275.8281
7/8	0.875	**22.2250**	**47.6250**	**73.0250**	**98.4250**	**123.8250**	**149.2250**	**174.6250**	**200.0250**	**225.4250**	**250.8250**	**276.2250**
57/64	0.890625	22.6219	48.0219	73.4219	98.8219	124.2219	149.6219	175.0219	200.4219	225.8219	251.2219	276.6219
29/32	0.90625	23.0188	48.4188	73.8188	99.2188	124.6188	150.0188	175.4188	200.8188	226.2188	251.6188	277.0188
59/64	0.921875	23.4156	48.8156	74.2156	99.6156	125.0156	150.4156	175.8156	201.2156	226.6156	252.0156	277.4156
15/16	0.9375	23.8125	49.2125	74.6125	100.0125	125.4125	150.8125	176.2125	201.6125	227.0125	252.4125	277.8125
61/64	0.953125	24.2094	49.6094	75.0094	100.4094	125.8094	151.2094	176.6094	202.0094	227.4094	252.8094	278.2094
31/32	0.96875	24.6062	50.0062	75.4062	100.8062	126.2062	151.6062	177.0062	202.4062	227.8062	253.2062	278.6062
63/64	0.984375	25.0031	50.4031	75.8031	101.2031	126.6031	152.0031	177.4031	202.8031	228.2031	253.6031	279.0031

Appendix Table 11 Hardness Conversion Chart

Rockwell	Vickers	Brinell		Rockwell		Shore
C scale 1,471.0 N (150 kgf)		Standard steel ball	Tungsten carbide steel ball	A scale 588.4 N (60 kgf)	B scale 980.7 N (100 kgf)	
68	940			85.6		97
67	900			85.0		95
66	865			84.5		92
65	832		739	83.9		91
64	800		722	83.4		88
63	772		705	82.8		87
62	746		688	82.3		85
61	720		670	81.8		83
60	697		654	81.2		81
59	674		634	80.7		80
58	653		615	80.1		78
57	633		595	79.6		76
56	613		577	79.0		75
55	595	–	560	78.5		74
54	577	–	543	78.0		72
53	560	–	525	77.4		71
52	544	500	512	76.8		69
51	528	487	496	76.3		68
50	513	475	481	75.9		67
49	498	464	469	75.2		66
48	484	451	455	74.7		64
47	471	442	443	74.1		63
46	458	432	432	73.6		62
45	446	421		73.1		60
44	434	409		72.5		58
43	423	400		72.0		57
42	412	390		71.5		56
41	402	381		70.9		55
40	392	371		70.4	–	54
39	382	362		69.9	–	52
38	372	353		69.4	–	51
37	363	344		68.9	–	50
36	354	336		68.4	(109.0)	49
35	345	327		67.9	(108.5)	48
34	336	319		67.4	(108.0)	47
33	327	311		66.8	(107.5)	46
32	318	301		66.3	(107.0)	44
31	310	294		65.8	(106.0)	43
30	302	286		65.3	(105.5)	42
29	294	279		64.7	(104.5)	41
28	286	271		64.3	(104.0)	41
27	279	264		63.8	(103.0)	40
26	272	258		63.3	(102.5)	38
25	266	253		62.8	(101.5)	38
24	260	247		62.4	(101.0)	37
23	254	243		62.0	100.0	36
22	248	237		61.5	99.0	35
21	243	231		61.0	98.5	35
20	238	226		60.5	97.8	34
(18)	230	219		–	96.7	33
(16)	222	212		–	95.5	32
(14)	213	203		–	93.9	31
(12)	204	194		–	92.3	29
(10)	196	187			90.7	28
(8)	188	179			89.5	27
(6)	180	171			87.1	26
(4)	173	165			85.5	25
(2)	166	158			83.5	24
(0)	160	152			81.7	24

Appendix Table 12 Viscosity Conversion Chart

Kinematic viscosity mm^2/s	Saybolt SUS (second)		Redwood R (second)		Engler E (degree)
	100 °F	210 °F	50 °C	100 °C	
2	32.6	32.8	30.8	31.2	1.14
3	36.0	36.3	33.3	33.7	1.22
4	39.1	39.4	35.9	36.5	1.31
5	42.3	42.6	38.5	39.1	1.40
6	45.5	45.8	41.1	41.7	1.48
7	48.7	49.0	43.7	44.3	1.56
8	52.0	52.4	46.3	47.0	1.65
9	55.4	55.8	49.1	50.0	1.75
10	58.8	59.2	52.1	52.9	1.84
11	62.3	62.7	55.1	56.0	1.93
12	65.9	66.4	58.2	59.1	2.02
13	69.6	70.1	61.4	62.3	2.12
14	73.4	73.9	64.7	65.6	2.22
15	77.2	77.7	68.0	69.1	2.32
16	81.1	81.7	71.5	72.6	2.43
17	85.1	85.7	75.0	76.1	2.54
18	89.2	89.8	78.6	79.7	2.64
19	93.3	94.0	82.1	83.6	2.76
20	97.5	98.2	85.8	87.4	2.87
21	102	102	89.5	91.3	2.98
22	106	107	93.3	95.1	3.10
23	110	111	97.1	98.9	3.22
24	115	115	101	103	3.34
25	119	120	105	107	3.46
26	123	124	109	111	3.58
27	128	129	112	115	3.70
28	132	133	116	119	3.82
29	137	138	120	123	3.95
30	141	142	124	127	4.07
31	145	146	128	131	4.20
32	150	150	132	135	4.32
33	154	155	136	139	4.45
34	159	160	140	143	4.57

Kinematic viscosity mm^2/s	Saybolt SUS (second)		Redwood R (second)		Engler E (degree)
	100 °F	210 °F	50 °C	100 °C	
35	163	164	144	147	4.70
36	168	170	148	151	4.83
37	172	173	153	155	4.96
38	177	178	156	159	5.08
39	181	183	160	164	5.21
40	186	187	164	168	5.34
41	190	192	168	172	5.47
42	195	196	172	176	5.59
43	199	201	176	180	5.72
44	204	205	180	185	5.85
45	208	210	184	189	5.98
46	213	215	188	193	6.11
47	218	219	193	197	6.24
48	222	224	197	202	6.37
49	227	228	201	206	6.50
50	231	233	205	210	6.63
55	254	256	225	231	7.24
60	277	279	245	252	7.90
65	300	302	266	273	8.55
70	323	326	286	294	9.21
75	346	349	306	315	9.89
80	371	373	326	336	10.5
85	394	397	347	357	11.2
90	417	420	367	378	11.8
95	440	443	387	399	12.5
100	464	467	408	420	13.2
120	556	560	490	504	15.8
140	649	653	571	588	18.4
160	742	747	653	672	21.1
180	834	840	734	757	23.7
200	927	933	816	841	26.3
250	1,159	1,167	1,020	1,051	32.9
300	1,391	1,400	1,224	1,241	39.5

Remark 1 mm^2/s = 1 cSt (centistokes)

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Appendix Table 13 Mechanical Properties of Metal Materials (reference)

(1) Modulus of longitudinal elasticity, elastic limit, and ultimate strength

Material	Main components and others	Specific gravity	Modulus of longitudinal elasticity (GPa)	Elastic limit σ_e (MPa)	Ultimate strength (MPa)		
					Tensile K_t	Compression K_c	Shear K_s
Gray cast iron (FC150)		7.1–7.3	69	29	118	590	108
(FC200)		7.1–7.3	98	88	137– 216	740	206
(FC250)		7.1–7.3	103	88	176– 314	880	206
White heart malleable cast iron	Residual carbon: 1.6% or less	7.1–7.3	158	196	314– 392	820	382
Black heart malleable cast iron		7.2–7.6	158	196	274– 392	820	382
Carbon steel	General	7.7–7.8	196–216	176–245	314– 830	–	–
Extra mild steel	C 0.05–0.15%	7.8	196	118	Over 372	Virtually identical to tensile strength, provided buckling can be ignored	0.8 K_t
Mild steel	C 0.15–0.25%	7.8	204	157	372– 392		0.75 K_t
Middle hard steel	C 0.25–0.40%	7.8	206	245–294	490– 590		0.75 K_t
Hard steel	C 0.40–0.50%	7.8	216	343	590– 690		0.7 K_t
Maximum hard steel	C 0.50–0.65%	7.8	216	372	690– 830		0.65 K_t
Mild steel	C 0.18% hot rolling	7.8	206	176	421		314
Hard steel	Oil hardening, tempering at 700 ℃	7.8	206	343	590		461
Tool steel	C 0.60–1.50% hardening	7.8	216	441	660		820
Cast steel	General	7.8–7.9	206–211	176–245	343– 600	343–600	284–382
Cast steel (mild)	C 0.15–0.22%	7.8–7.9	206	196	363– 431	363–431	284
Cast steel (middle hard)	C 0.22–0.30%	7.8–7.9	211	225	392– 490	392–490	333
Cast steel (hard)	C 0.30–0.40%	7.9	211	245	490– 590	490–590	382
Nickel steel	C 0.25–0.35% Ni 2–5%	7.85	206–216	333	640– 830	640	401
Chrome steel	C 0.13–0.48% Cr 0.9–1.2%	7.85	206–216	–	780– 980	–	–
Nickel chrome steel	C, Ni, Cr included	7.85	206–216	–	740– 980	–	382–500
Chromium molybdenum steel	C, Cr, Mo included	7.85	206–216	–	830– 980	–	–
Manganese steel	C 0.2–0.46% Mn 1–1.4%	7.85	206–216	–	440–1,080	–	–
Spring steel		7.86	216	735	1,080–1,670	1,670	–
Stainless steel	C, Cr, Ni included	7.75	206–216	–	620	–	410
Brass casting	Cu 60% Zn 40%	8.5	69	–	176– 216	108	147
Brass (forged plate)	Cu 60% Zn 40%	8.4	78– 98	–	274– 392	314	206
Brass (forged rod)	Cu 60% Zn 40%	8.4	82	–	520	314	314
Phosphor bronze casting	Cu 90% Sn 10% P 0.1%	8.8	93–103	–	196– 294	137	176
Phosphor bronze (forging)	Cu 90% Sn 10% P 0.1%	8.8	132	–	294– 980	206	382
Tin		7.28	39– 54	–	27	–	–
Lead		11.34	15– 17	–	20	–	–
Zinc		7.1	78–127	–	78– 176	–	–

(2) Allowable stress

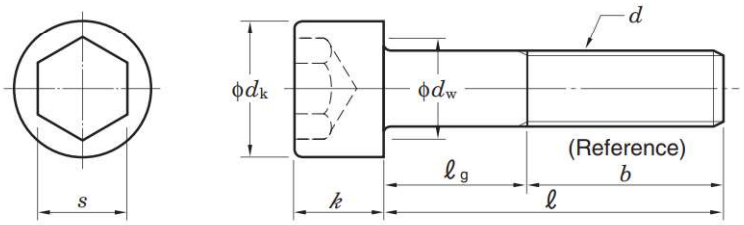
Unit: MPa

Material	Tensile K_t			Compression K_c		Bending K_b			Shear K_s			Torsion K_d		
	a	b	c	a	b	a	b	c	a	b	c	a	b	c
Cast iron (cast)	29– 34	20– 23	10–12	88– 98	59– 65	45– 59	30– 39	15–20	29– 34	20–23	10–12	26– 34	18–23	88–118
Cast iron (machined)	29– 34	20– 23	10–12	88– 98	59– 65	55– 71	–	–	29– 34	20–23	10–12	26– 34	18–23	88–118
Malleable cast iron	44– 69	29– 46	15–23	59– 88	39– 59	44– 98	29– 46	15–23	–	–	–	29– 39	20–26	10– 13
Cast steel	59–118	39– 78	20–39	88–147	59– 98	74–118	49– 78	25–39	47– 94	31–63	16–31	47– 94	31–63	16– 31
Mild steel	98–157	66–105	32–52	98–157	66–105	88–147	59– 98	35–49	78–127	52–85	26–42	78–137	52–91	26– 46
Middle hard steel	118–176	78–118	39–59	118–176	78–118	118–176	78–118	39–59	94–137	63–94	31–47	88–137	59–94	29– 47
Nickel steel	118–176	78–118	39–59	118–176	78–118	118–176	78–118	39–59	94–137	63–94	31–47	88–137	59–92	29– 47
Carbon steel casting	88–118	59– 78	29–39	88–118	59– 78	88–118	59– 78	29–39	71– 93	47–63	24–31	35– 47	24–31	12– 16
Brass (rolled)	10– 59	26– 35	13–20	39– 59	26– 39	39– 59	26– 39	13–20	34– 47	21–31	11–16	31– 47	21–31	11– 16
Bronze	29– 39	20– 26	10–13	29– 39	20– 26	29– 39	20– 26	10–13	–	–	–	–	–	–
Phosphor bronze	59– 88	39– 59	20–29	59– 88	39– 59	59– 88	39– 59	20–29	44– 69	29–46	15–23	44– 69	29–46	15– 23
Aluminum casting	10– 12	7– 8	2– 4	–	–	15– 20	10– 13	5– 7	–	–	–	–	–	–

Remarks 1. a is applicable in the case of static load, b is applicable in the case of dynamic load, and c is applicable to in the case of repeated load.
2. Bending allowable stress K_b and torsion allowable stress K_d of cast iron are applicable when the cross section is round and safety factor is within a range from 5 to 6.

Appendix Table 14 (1) Hexagon Socket Head Cap Screws (abstract from JIS B 1176: 1988)

M 1.6 – 24



Allowance of bolt length (ℓ)

Unit: mm

Bolt length (ℓ) Over	Incl.	Allowance of length
–	3	±0.2
3	6	±0.24
6	10	±0.29
10	16	±0.35
16	30	±0.42
30	50	±0.5
50	80	±0.6
80	120	±0.7
120	180	±0.8
180	240	±0.95
240	300	±1.05

(1) Parts class A M 1.6–24

Unit: mm

Nominal size of screw d	Coarse screw thread pitch	M 1.6	M 2	M 2.5	M 3	M 4	M 5	M 6	M 8	M 10	M 12	(M 14)	M 16	(M 18)	M 20	(M 22)	M 24
		0.35	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2	2.5	2.5	2.5	3
Head dia. d_k		3	3.8	4.5	5.5	7	8.5	10	13	16	18	21	24	27	30	33	36
Head height k		1.6	2	2.5	3	4	5	6	8	10	12	14	16	18	20	22	24
Bearing surface dia. d_w (min.)		2.72	3.4	4.18	5.07	6.53	8.03	9.38	12.33	15.33	17.23	20.17	23.17	25.87	28.87	31.81	34.81
Nominal size of hexagon socket s		1.5	1.5	2	2.5	3	4	5	6	8	10	12	14	14	17	17	19
Thread length b (reference)		15	16	17	18	20	22	24	28	32	36	40	44	48	52	56	60

Nominal length ℓ	M 1.6	M 2	M 2.5	M 3	M 4	M 5	M 6	M 8	M 10	M 12	(M 14)	M 16	(M 18)	M 20	(M 22)	M 24
	Body length ℓ_g (max.)															
2.5																
3																
4																
5																
6																
8																
10																
12																
16																
20		4	8	7	10	8	11	12	13	14	16	18	20	22	24	26
25				12	15	13	16	17	18	19	21	23	25	27	29	31
30					20	18	21	22	23	24	26	28	30	32	34	36
35						23	26	27	28	29	31	33	35	37	39	41
40						28	31	32	33	34	36	38	40	42	44	46
45							36	37	38	39	41	43	45	47	49	51
50								42	43	44	46	48	50	52	54	56
55								47	48	49	51	53	55	57	59	61
60								52	53	54	56	58	60	62	64	66
65								57	58	59	61	63	65	67	69	71
70								62	63	64	66	68	70	72	74	76
80								72	73	74	76	78	80	82	84	86
90									83	84	86	88	90	92	94	96
100									93	94	96	98	100	102	104	106
110										104	106	108	110	112	114	116
120										114	116	118	120	122	124	126
130											126	128	130	132	134	136
140											136	138	140	142	144	146
150												148	150	152	154	156
160												158	160	162	164	166
180													180	182	184	186
200														202	204	206

Remarks 1. Priority is given to the nominal sizes of screws without parentheses.
2. Nominal lengths (ℓ) to be recommended for the nominal sizes of screw are within the range enclosed by bold lines in the column of "Body length ℓ_g". In the column of "Body length ℓ_g", thread of the screw with length shorter than that indicated under dotted lines should be continuous. For the continuous thread stud screw, the incomplete thread portion length under the neck of the screw should be approximately three times of the thread pitch.
3. The sides of the head of screw should be single or double knurled. The d_k values in the table are the maximum values without knurls.
4. Roundness or chamfers on the bearing surface should be provided between the diameter of the head (d_k) and the diameter of bearing surface (d_w), and the surface should be free from burrs.

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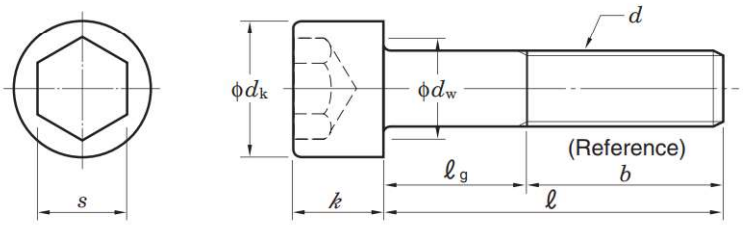
Appendix Table 14 (2) Hexagon Socket Head Cap Screws (abstract from JIS B 1176: 1988)

M 27 – 52



Allowance of bolt length (ℓ)

Unit: mm

Bolt length (ℓ) Over	Incl.	Allowance of length
–	3	±0.2
3	6	±0.24
6	10	±0.29
10	16	±0.35
16	30	±0.42
30	50	±0.5
50	80	±0.6
80	120	±0.7
120	180	±0.8
180	240	±0.95
240	300	±1.05

(2) Parts class A M 27–52

Unit: mm

Nominal size of screw d	Coarse screw thread pitch	(M 27)	M 30	(M 33)	M 36	(M 39)	M 42	(M 45)	M 48	(M 52)
		3	3.5	3.5	4	4	4.5	4.5	5	5
Head dia. d_k		40	45	50	54	58	63	68	72	78
Head height k		27	30	33	36	39	42	45	48	52
Bearing surface dia. d_w (min.)		38.61	43.61	48.61	52.54	56.34	61.34	66.34	70.34	76.34
Nominal size of hexagon socket s		19	22	24	27	27	32	32	36	36
Thread length b (reference)		66	72	78	84	90	96	102	108	116

Nominal length ℓ	(M 27)	M 30	(M 33)	M 36	(M 39)	M 42	(M 45)	M 48	(M 52)
	Body length ℓ_g (max.)								
45									
50			(M 33)	M 36					
55									
60					(M 39)	M 42			
65									
70							(M 45)	M 48	
80	(M 27)								(M 52)
90	24	M 30	(M 33)						
100	34	28	22						
110	44	38	32	M 36	(M 39)	M 42			
120	54	48	42	36	30	24	(M 45)		
130	64	58	52	46	40	34	28	M 48	
140	74	68	62	56	50	44	38	32	(M 52)
150	84	78	72	66	60	54	48	42	34
160	94	88	82	76	70	64	58	52	44
180	114	108	102	96	90	84	78	72	64
200	134	128	122	116	110	104	98	92	84
220	154	148	142	136	130	124	118	112	104
240	174	168	162	156	150	144	138	132	124
260	194	188	182	176	170	164	158	152	144
280	214	208	202	196	190	184	178	172	164
300	234	228	222	216	210	204	198	192	184

Remarks
1. Priority is given to the nominal sizes of screws without parentheses.
2. Nominal lengths (ℓ) to be recommended for the nominal sizes of screw are within the range enclosed by bold lines in the column of "Body length ℓ_g". In the column of "Body length ℓ_g", thread of the screw with length shorter than that indicated under dotted lines should be continuous. For the continuous thread stud screw, the incomplete thread portion length under the neck of the screw should be approximately three times of the thread pitch.
3. The sides of the head of screw should be single or double knurled. The d_k values in the table are the maximum values without knurls.
4. Roundness or chamfers on the bearing surface should be provided between the diameter of the head (d_k) and the diameter of bearing surface (d_w), and the surface should be free from burrs.

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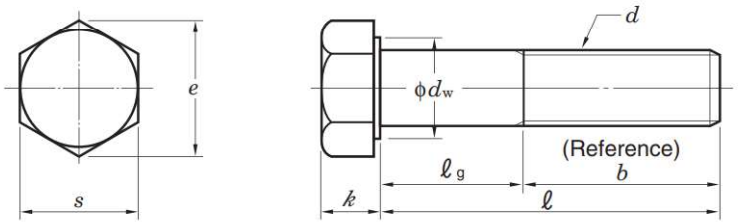
Appendix Table 15 (1) Hexagon Head Bolts (abstract from JIS B 1180: 1994)

Parts class A M 1.6 – 24



Allowance of bolt length (ℓ)

Unit: mm

Bolt length (ℓ) Over	Incl.	Allowance of length
–	20	±0.35
20	30	±0.42
30	50	±0.5
50	80	±0.6
80	120	±0.7
120	150	±0.8

(1) Parts class A M 1.6–24

Unit: mm

Nominal size of screw d		M 1.6	M 2	M 2.5	M 3	(M 3.5)	M 4	M 5	M 6	M 8	M 10	M 12	(M 14)	M 16	(M 18)	M 20	(M 22)	M 24
	Coarse screw thread pitch	0.35	0.4	0.45	0.5	0.6	0.7	0.8	1	1.25	1.5	1.75	2	2	2.5	2.5	2.5	3
	Fine thread	–	–	–	–	–	–	–	–	**M 8 × 1**	**M 10 × 1**	**M 12 ×1.5**	–	**M 16 ×1.5**	–	**M 20 ×1.5**	–	**M 24 × 2**
		–	–	–	–	–	–	–	–	–	(M 10 ×1.25)	(M 12 ×1.25)	(M 14 ×1.5)	–	(M 18 ×1.5)	(M 20 × 2)	(M 22 ×1.5)	–
Bearing surface dia. d_w (min.)		2.27	3.07	4.07	4.57	5.07	5.88	6.88	8.88	11.63	14.63	16.63	19.64	22.49	25.34	28.19	31.71	33.61
Width across flats s (max.)		3.2	4	5	5.5	6	7	8	10	13	16	18	21	24	27	30	34	36
Width across corners e (min.)		3.41	4.32	5.45	6.01	6.58	7.66	8.79	11.05	14.38	17.77	20.03	23.36	26.75	30.14	33.53	37.72	39.98
Head height k (basic)		1.1	1.4	1.7	2	2.4	2.8	3.5	4	5.3	6.4	7.5	8.8	10	11.5	12.5	14	15
Thread length b (reference)	$\ell \leq 125$	9	10	11	12	13	14	16	18	22	26	30	34	38	42	46	50	54
	$125 < \ell \leq 150$	–	–	–	–	–	–	–	–	–	–	–	40	44	48	52	56	60

Nominal length ℓ	M 1.6	M 2	M 2.5	M 3	(M 3.5)	M 4	M 5	M 6	M 8	M 10	M 12	(M 14)	M 16	(M 18)	M 20	(M 22)	M 24
	Body length ℓ_g (max.)																
12	3																
16	7	6	5														
20		10	9	8	7												
25			14	13	12	11	9										
30				18	17	16	14	12									
35					22	21	19	17									
40						26	24	22	18								
45							29	27	23	19							
50							34	32	28	24	20						
55								37	33	29	25						
60								42	38	34	30	26					
65									43	39	35	31	27				
70									48	44	40	36	32	28			
80									58	54	50	46	42	38	34		
90										64	60	56	52	48	44	40	36
100										74	70	66	62	58	54	50	46
110											80	76	72	68	64	60	56
120											90	86	82	78	74	70	66
130												90	86	82	78	74	70
140												100	96	92	88	84	80
150													106	102	98	94	90

As for the bolts with nominal length within this area, standards of continuous thread stud hexagon head bolt (parts class A) should be observed.

Remarks 1. Priority is given to the nominal sizes of screws without parentheses.
2. Nominal lengths (ℓ) to be recommended for the nominal sizes of screw are within the range enclosed by bold lines.
3. Body length ℓ_g (maximum) should be found by the following formula : ℓ_g (maximum) = Nominal length (ℓ) – Thread length (b)

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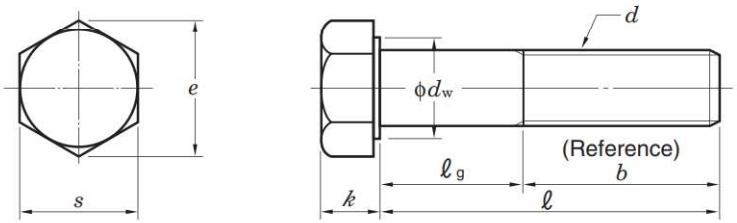
Appendix Table 15 (2) Hexagon Head Bolts (abstract from JIS B 1180: 1994)

Parts class B M 16 – 64



Allowance of bolt length (ℓ)

Unit: mm

Bolt length (ℓ) Over	Incl.	Allowance of length
–	80	±1.5
80	90	±1.7
90	120	±1.75
120	180	±2
180	240	±2.3
240	300	±2.6
300	400	±2.85
400	500	±3.15

(2) Parts class B M 16–64

Unit: mm

Nominal size of screw d																		
	Coarse screw thread pitch	**M 16**	**(M 18)**	**M 20**	**(M 22)**	**M 24**	**(M 27)**	**M 30**	**(M 33)**	**M 36**	**(M 39)**	**M 42**	**(M 45)**	**M 48**	**(M 52)**	**M 56**	**(M 60)**	**M 64**
		2	2.5	2.5	2.5	3	3	3.5	3.5	4	4	4.5	4.5	5	5	5.5	5.5	6
	Fine thread	**M 16 ×1.5**	–	**M 20 ×1.5**	–	**M 24 × 2**	–	**M 30 × 2**	–	**M 36 × 3**	–	**M 42 × 3**	–	**M 48 × 3**	–	**M 56 × 4**	–	**M 64 × 4**
		–	(M 18 ×1.5)	(M 20 × 2)	(M 22 ×1.5)	–	(M 27 × 2)	–	(M 33 × 2)	–	(M 39 × 3)	–	(M 45 × 3)	–	(M 52 × 4)	–	(M 60 × 4)	–
Bearing surface dia. d_w (min.)		22	24.85	27.7	31.35	33.25	38	42.75	46.55	51.11	55.86	59.95	64.7	69.45	74.2	78.66	83.41	88.16
Width across flats s (max.)		24	27	30	34	36	41	46	50	55	60	65	70	75	80	85	90	95
Width across corners e (min.)		26.17	29.56	32.95	37.29	39.55	45.2	50.85	55.37	60.79	66.44	71.3	76.95	82.6	88.25	93.56	99.21	104.86
Head height k (basic)		10	11.5	12.5	14	15	17	18.7	21	22.5	25	26	28	30	33	35	38	40
Thread length b (reference)	$\ell \leq 125$	38	42	46	50	54	60	66	–	–	–	–	–	–	–	–	–	–
	$125 < \ell \leq 200$	44	48	52	56	60	66	72	78	84	90	96	102	108	116	–	–	–
	$200 < \ell \leq 500$	–	–	–	69	73	79	85	91	97	103	109	115	121	129	137	145	153

Nominal length ℓ	M 16	(M 18)	M 20	(M 22)	M 24	(M 27)	M 30	(M 33)	M 36	(M 39)	M 42	(M 45)	M 48	(M 52)	M 56	(M 60)	M 64
	Body length ℓ_g (max.)																
65																	
70		(M 18)															
80			M 20														
90				(M 22)	M 24												
100						(M 27)											
110						40	M 30										
120						50	44										
130						60	54	(M 33)									
140						64	58	52	M 36								
150						74	68	62	56	(M 39)							
160	116	112	108	104	100	84	78	72	66	60	M 42						
180		132	128	124	120	94	88	82	76	70	64	(M 45)	M 48				
200			148	144	140	114	108	102	96	90	84	78	72	(M 52)			
220				151	147	134	128	122	116	110	104	98	92	84	M 56		
240					167	141	135	129	123	117	111	105	99	91	83	(M 60)	
260						161	155	149	143	137	131	125	119	111	103	95	M 64
280						181	175	169	163	157	151	145	139	131	123	115	107
300							195	189	183	177	171	165	159	151	143	135	127
320							215	209	203	197	191	185	179	171	163	155	147
340								229	223	217	211	205	199	191	183	175	167
360									243	237	231	225	219	211	203	195	187
380									263	257	251	245	239	231	223	215	207
400										277	271	265	259	251	243	235	227
420											291	285	279	271	263	255	247
440											311	305	299	291	283	275	267
460												325	319	311	303	295	287
480													339	331	323	315	307
500													359	351	343	335	327
														371	363	355	347

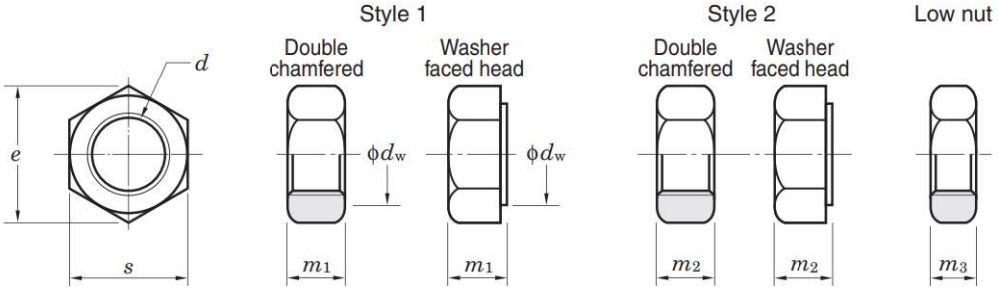
As for the bolts with nominal length within this area, standards of (1) parts class A should be observed.

As for the bolts with nominal length within this area, standards of continuous thread stud hexagon head bolt (parts class A or B) should be observed.

Remarks 1. Priority is given to the nominal sizes of screws without parentheses.
2. Nominal lengths (ℓ) to be recommended for the nominal sizes of screw are within the range enclosed by bold lines.
3. Body length ℓ_g (maximum) should be found by the following formula : ℓ_g (maximum) = Nominal length (ℓ) – Thread length (b)

Appendix Table 16 Hexagon Head Nuts (abstract from JIS B 1181: 1993)

Parts class A M 1.6 – 16
Parts class B M 18 – 64



(1) Parts class A M 1.6–16

Unit: mm

Nominal size of screw d		M 1.6	M 2	M 2.5	M 3	(M 3.5)	M 4	M 5	M 6	M 8	M 10	M 12	(M 14)	M 16
	Coarse screw thread pitch	0.35	0.4	0.45	0.5	0.6	0.7	0.8	1	1.25	1.5	1.75	2	2
	Fine thread	–	–	–	–	–	–	–	–	M 8 × 1	M 10 × 1	M 12 × 1.5	–	M 16 × 1.5
		–	–	–	–	–	–	–	–	–	(M 10 ×1.25)	(M 12 ×1.25)	(M 14 × 1.5)	–
Bearing surface dia. d_w (min.)		2.27	3.07	4.07	4.57	5.07	5.88	6.88	8.88	11.63	14.63	16.63	19.64	22.49
Width across flats s (max.)		3.2	4	5	5.5	6	7	8	10	13	16	18	21	24
Width across corners e (min.)		3.41	4.32	5.45	6.01	6.58	7.66	8.79	11.05	14.38	17.77	20.03	23.36	26.75
Height	m_1 (max.)	1.3	1.6	2	2.4	2.8	3.2	4.7	5.2	6.8	8.4	10.8	12.8	14.8
	m_2 (max.)	–	–	–	–	–	–	5.1	5.7	7.5	9.3	12	14.1	16.4
	m_3 (max.)	1	1.2	1.6	1.8	2	2.2	2.7	3.2	4	5	6	7	8

Remark Priority is given to the nominal sizes of screws without parentheses.

(2) Parts class B M 18–64

Unit: mm

Nominal size of screw d		(M 18)	M 20	(M 22)	M 24	(M 27)	M 30	(M 33)	M 36	(M 39)	M 42	(M 45)	M 48	(M 52)	M 56	(M 60)	M 64
	Coarse screw thread pitch	2.5	2.5	2.5	3	3	3.5	3.5	4	4	4.5	4.5	5	5	5.5	5.5	6
	Fine thread	–	M 20 ×1.5	–	M 24 × 2	–	M 30 × 2	–	M 36 × 3	–	M 42 × 3	–	M 48 × 3	–	M 56 × 4	–	M 64 × 4
		(M 18 ×1.5)	(M 20 × 2)	(M 22 ×1.5)	–	(M 27 × 2)	–	(M 33 × 2)	–	(M 39 × 3)	–	(M 45 × 3)	–	(M 52 × 4)	–	(M 60 × 4)	–
Bearing surface dia. d_w (min.)		24.85	27.7	31.35	33.25	38	42.75	46.55	51.11	55.86	59.95	64.7	69.45	74.2	78.66	83.41	88.16
Width across flats s (max.)		27	30	34	36	41	46	50	55	60	65	70	75	80	85	90	95
Width across corners e (min.)		29.56	32.95	37.29	39.55	45.2	50.85	55.37	60.79	66.44	71.3	76.95	82.6	88.25	93.56	99.21	104.86
Height	m_1 (max.)	15.8	18	19.4	21.5	23.8	25.6	28.7	31	33.4	34	36	38	42	45	48	51
	m_2 (max.)	17.6	20.3	21.8	23.9	26.7	28.6	32.5	34.7	–	–	–	–	–	–	–	–
	m_3 (max.)	9	10	11	12	13.5	15	16.5	18	19.5	21	22.5	24	26	28	30	32

Remark Priority is given to the nominal sizes of screws without parentheses.

Appendix Table 17 Ball Bearing Units Interchange Guide

17.1 Pillow Block Units

	FYH · JTEKT	ASAHI	NTN
With pressed steel cover	UCP2··C UCP2··CD	UCP2··C UCP2··E	S-UCP2··D1 SM-UCP2··D1
With cast iron cover	UCP2··FC UCP2··FCD UCP3··C UCP3··CD	CUCP2··C CUCP2··CE CUCP3··C CUCP3··CE	C-UCP2··D1 CM-UCP2··D1 C-UCP3··D1 CM-UCP3··D1
Thick Pillow Block Units	UCIP2·· UCIP3··	UCIP2·· UCIP3··	UCIP2·· UCIP3··
Tapped-Base Pillow Block Units	UCPA2··	UCPA2··	UCUP2··D1
High-Base Pillow Block Units	UCPH2··	UCPH2··	UCHP2··D1
Light Pillow Block Units	BLP2·· ALP2··	BLLP··	ASPB2·· AELPB2··
Compact Pillow Block Units	UP0··	UP0··	
Corrosion resistant series Pillow Block Units	UCSP2··H1S6 UCSPA2··H1S6 USP0··S6	MUCP2·· MUCPA2	
Stamped Steel Pillow Block Units	SBPP2·· SAPP2··	BPP··	ASPP2·· AELPP2··

17.2 Flange Units

	FYH · JTEKT	ASAHI	NTN
With pressed steel cover	UCF2··C UCF2··D UCFC2··C	UCF2··C UCF2··E UCFC2··C	S-UCF2··D1 SM-UCF2··D1 S-UCFC2··D1
	UCFC2··D UCFL2··C UCFL2··D	UCFC2··E UCFL2··C UCFL2··E	SM-UCFC2··D1 S-UCFL2··D1 SM-UCFL2··D1
With cast iron cover	UCF2··FC UCF2··FD UCF3··C	CUCF2··C CUCF2··CE CUCF3··C	C-UCF2··D1 CM-UCF2··D1 C-UCF3··D1
	UCF3··D UCFC2··FC UCFC2··FD	CUCF3··CE CUCFC2··C CUCFC2··CE	CM-UCF3··D1 C-UCFC2··D1 CM-UCFC2··D1
	UCFS3··C UCFS3··D UCFL2··FC	CUCFS3··C CUCFS3··CE CUCFL2··C	C-UCFS3··D1 CM-UCFS3··D1 C-UCFL2··D1
	UCFL2··FD UCFL3··C UCFL3··D	CUCFL2··CE CUCFL3··C CUCFL3··CE	CM-UCFL2··D1 C-UCFL3··D1 CM-UCFL3··D1
Adjustable 2-Bolt Flange Units	UCFA2··	UCFA2··	UCFA2··D1
3-Bolt Flange Units	UCFB2··	UCFK2··	UCFH2··D1
Light 2-Bolt Flange Units	BLF2·· ALF2··	BLFL··	ASFB2·· AELFB2··
Compact 2-Bolt Flange Units	UFL0··	UFL0··	
Corrosion resistant series 4-Bolt Flange Units	UCSF2··H1S6	MUCF2	
Corrosion resistant series 2-Bolt Flange Units	UCSFL2··H1S6	MUCFL2··	
Stamped steel plate Flange	SBPF2·· SAPF2·· SBPFL2·· SAPFL2··	BPF·· BPFL··	ASPF2·· AELPF2·· ASPFL2·· AELPFL2··

17.3 Take-Up Units

	FYH · JTEKT	ASAHI	NTN
With pressed steel cover	UCT2··C UCT2··CD	UCT2··C UCT2··E	S-UCT2··D1 SM-UCT2··D1
With cast iron cover	UCT2··FC UCT2··FCD UCT3··C UCT3··CD	CUCT2··C CUCT2··CE CUCT3··C CUCT3··CE	C-UCT2··D1 CM-UCT2··D1 C-UCT3··D1 CM-UCT3··D1
Corrosion resistant series Take-Up Units	UCST2··H1S6	MUCT2	
Take-Up Units with frame	UCTH2····· UCTL2····· UCTU2····· UCTU3·····	UCT2···WB UCTL2···+WL·· UCTU2···+WU·· UCTU3···+WU··	UCT2···D1 UCL2··D1 UCM2··D1 UCM3··D1
Steel Plate Frame Take-Up Units	SBPTH2····· SBNPTH2·····	BTAW201,X	ASPT2·····

17.4 Other Units

	FYH · JTEKT	ASAHI	NTN
Hanger Units	UCHA2··	UCECH2··	UCHB2··D1

17.5 Ball Bearing Inserts

	FYH · JTEKT	ASAHI	NTN
Ball bearing inserts	UC2·· UK2·· NA2·· SB2·· SA2··	UC2·· UK2·· UG2··+ER B·· 	UC2··D1 UK2··D1 UEL2··D1 AS2·· AEL2··
Cylindrical O. D.	RB2·· ER2··	UR2·· *1 SER2·· *1	 UCS2··LN *1

*1 Width of the outer ring for these items differs from that of others.

17.6 Special Specification Items

	FYH · JTEKT	ASAHI	NTN
Grease (heat temperature) **(cold temperature)** **(heat temperature)**	D1K2 D2K2 D9K2	HR5 CR2A HR23	HT2 CT1
Non-contact Seal	K3		U
Ductile cast iron	H4		N1
Lubricated type			D1
Non-lubricated type	E4	GOO	

Appendix Table 18 Spherical Roller Bearing Units Interchange Guide

Set Screw Collar Lock 2-Bolt Pillow Block

FYH		DODGE	REXNORD	LB	TIMKEN
UNIT NO.	SHAFT SIZE	PART NUMBERS			
XSE2P408-22	1 3/8	P2B-S2-106R & EP2B-S2-106R	–	–	–
XSE2P408-23	1 7/16	P2B-S2-107R & EP2B-S2-107R	ZA2107 & ZEP2107	PB22423H & PEB22423H	–
XSE2P408-24	1 1/2	P2B-S2-108R	ZA2108	PB22424H	–
XSE2P408	40MM	–	–	–	–
XSE2P409-27	1 11/16	P2B-S2-111R & EP2B-S2-111R	ZA2111 & ZEP2111	PB22427H & PEB22427H	–
XSE2P409-28	1 3/4	P2B-S2-112R	ZA2112	PB22428H	–
XSE2P409	45MM	–	–	–	–
XSE2P410-31	1 15/16	P2B-S2-115R & EP2B-S2-115R	ZA2115 & ZEP2115	PB22431H & PEB22431H	QAP10A115S & QAPL10A115S
XSE2P410-32	2	P2B-S2-200R & EP2B-S2-200R	ZA2200 & ZEP2200	PB22432H & PEB22432H	QAP10A200S & QAPL10A200S
XSE2P410	50MM	–	ZA2050MM	PB224M50H & PEB224M50H	QAP10A050S & QAPL10A050S
XSE2P411-35	2 3/16	P2B-S2-203R & EP2B-S2-203R	ZA2203 & ZEP2203	PB22435H & PEB22435H	QAP11A203S & QAPL11A203S
XSE2P411	55MM	–	ZA2055MM	PB224M55H & PEB224M55H	QAP11A055S & QAPL11A055S
XSE2P413-39	2 7/16	P2B-S2-207R & EP2B-S2-207R	ZA2207 & ZEP2207	PB22439H & PEB22439H	QAP13A207S & QAPL13A207S
XSE2P413-40	2 1/2	–	ZA2208 & ZEP2208	PB22440H & PEB22440H	QAP13A208S & QAPL13A208S
XSE2P413	65MM	–	ZA2065MMF & ZEP2065MM	–	QAP13A065S & QAPL13A065S
XSE2P415-43	2 11/16	–	ZEP2211	PEB22443H	QAP15A211S
XSE2P415-44	2 3/4	–	ZEP2212	PEB22444H	QAP15A212S
XSE2P415-47	2 15/16	–	ZEP2215	PEB22447H	QAP15A215S
XSE2P415-48	3	–	ZEP2300	PEB22448H	QAP15A300S
XSE2P415	75MM	–	–	PEB224M75H	QAP15A075S
XS2P415-43	2 11/16	P2B-S2-211R & EP2B-S2-211R	ZA2211	PB22443H	QAPL15A211S
XS2P415-44	2 3/4	–	ZA2212	PB22444H	QAPL15A212S
XS2P415-47	2 15/16	P2B-S2-215R & EP2B-S2-215R	ZA2215	PB22447H	QAPL15A215S
XS2P415-48	3	P2B-S2-300R & EP2B-S2-300R	ZA2300	PB22448H	QAPL15A300S
XS2P415	75MM	–	–	PB224M75H	QAPL15A075S
XSE2P418-55	3 7/16	P2B-S2-307R & EP2B-S2-307R	ZA2307 & ZEP2307	PB22455H & PEB22455H	QAP18A307S & QAPL18A307S
XSE2P418-56	3 1/2	–	ZA2308 & ZEP2308	PB22456H & PEB22456H	QAP18A308S & QAPL18A308S
XSE2P418	90MM	–	–	–	QAP18A090S & QAPL18A090S
XSE2P420-63	3 15/16	–	ZA2315	–	QAP20A315S
XSE2P420-64	4	–	ZA2400	–	QAP20A400S
XSE2P420	100MM	–	–	–	QAP20A100S
XS2P420-63	3 15/16	P2B-S2-315R	–	PB22463H	QAPL20A315S
XS2P420-64	4	–	–	PB22464H	QAPL20A400S
XS2P420	100MM	–	–	PB224M100H	QAPL20A100S

Set Screw Collar Lock 2-Bolt Pillow Block

FYH		SEALMASTER	BROWNING	MOLINE
UNIT NO.	SHAFT SIZE	PART NUMBERS		
XSE2P408-22	1 3/8	USRB5000-106	SPB1000 1 3/8	–
XSE2P408-23	1 7/16	USRB5000-107	SPB1000 1 7/16	19121107 & 19221107
XSE2P408-24	1 1/2	USRB5000-108	SPB1000 1 1/2	19121108 & 19221108
XSE2P408	40MM	–	–	–
XSE2P409-27	1 11/16	USRB5000-111	SPB1000 1 11/16	19121111 & 19221111
XSE2P409-28	1 3/4	USRB5000-112	SPB1000 1 3/4	19121112 & 19221112
XSE2P409	45MM	–	–	–
XSE2P410-31	1 15/16	USRB5000-115 & USRBE5000-115	SPB1100 1 15/16	19121115 & 19221115
XSE2P410-32	2	USRB5000-200 & USRBE5000-200	SPB1100 2	19121200 & 19221200
XSE2P410	50MM	–	–	–
XSE2P411-35	2 3/16	USRB5000-203 & USRBE5000-203	SPB1100 2 3/16	19121203 & 19221203
XSE2P411	55MM	–	–	–
XSE2P413-39	2 7/16	USRB5000-207 & USRBE5000-207	SPB1100 2 7/16	19121207 & 19221207
XSE2P413-40	2 1/2	USRB5000-208 & USRBE5000-208	SPB1100 2 1/2	19121208 & 19221208
XSE2P413	65MM	–	–	–
XSE2P415-43	2 11/16	USRBE5000-211	–	–
XSE2P415-44	2 3/4	USRBE5000-212	–	–
XSE2P415-47	2 15/16	USRBE5000-215	–	–
XSE2P415-48	3	USRBE5000-300	–	–
XSE2P415	75MM	–	–	–
XS2P415-43	2 11/16	USRB5000-211	SPB1000 2 11/16	19121211 & 19221211
XS2P415-44	2 3/4	USRB5000-212	SPB1000 2 3/4	19121212 & 19221212
XS2P415-47	2 15/16	USRB5000-215	SPB1000 2 15/16	19121215 & 19221215
XS2P415-48	3	USRB5000-300	SPB1000 3	19121300 & 19221300
XS2P415	75MM	–	–	–
XSE2P418-55	3 7/16	USRB5000-307 & USRBE5000-307	SPB1100 3 7/16	19121307 & 19221307
XSE2P418-56	3 1/2	USRB5000-308 & USRBE5000-308	SPB1100 3 1/2	19121308 & 19221308
XSE2P418	90MM	–	–	–
XSE2P420-63	3 15/16	USRB5000-315 & USRBE5000-315	SPB1100 3 15/16	19121315 & 19221315
XSE2P420-64	4	USRB5000-400 & USRBE5000-400	SPB1100 4	19121400 & 19221400
XSE2P420	100MM	–	–	–
XS2P420-63	3 15/16	–	–	–
XS2P420-64	4	–	–	–
XS2P420	100MM	–	–	–

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