

FYH[®]

BALL BEARING UNITS



CAT.NO.3310

NIPPON PILLOW BLOCK CO.,LTD.





Problems with corrosion?

CORROSION RESISTANT UNITS

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.

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Looking for high speed?

AIR HANDLING UNITS

FYH Air Handling units are designed for a wide range of highly demanding HVAC applications. The tighter C2 internal ball clearance reduces noise and vibration in high speed applications. Our original "Bullet Point" set screw is designed so that the threads of the screw expand outward and tightly grasp the threads of the inner ring of the bearing to reduce the possibility of backing out due to vibration.

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High temperature?

Heat resistant units are available in the following temperature ranges: D1K2 (~ 180°C/356°F), D9K2 (~ 220°C/428°F), D9P4 (~ 250°C/482°F).

CERABALL SERIES, with our original Silicon Nitride ceramic balls, operate at temperatures as high as 840°F in extreme operating environments where corrosion, high speed, and vacuum are all factors. (Page 21, 312)



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★The contents of this catalogue are subject to change without prior notice. Every possible effort has been made to ensure that the data listed in this catalog is correct. However, we can not assume responsibility for any errors or omissions.

1 Structure and features

FYH Ball Bearing Units are manufactured to exacting standards comprising 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**).

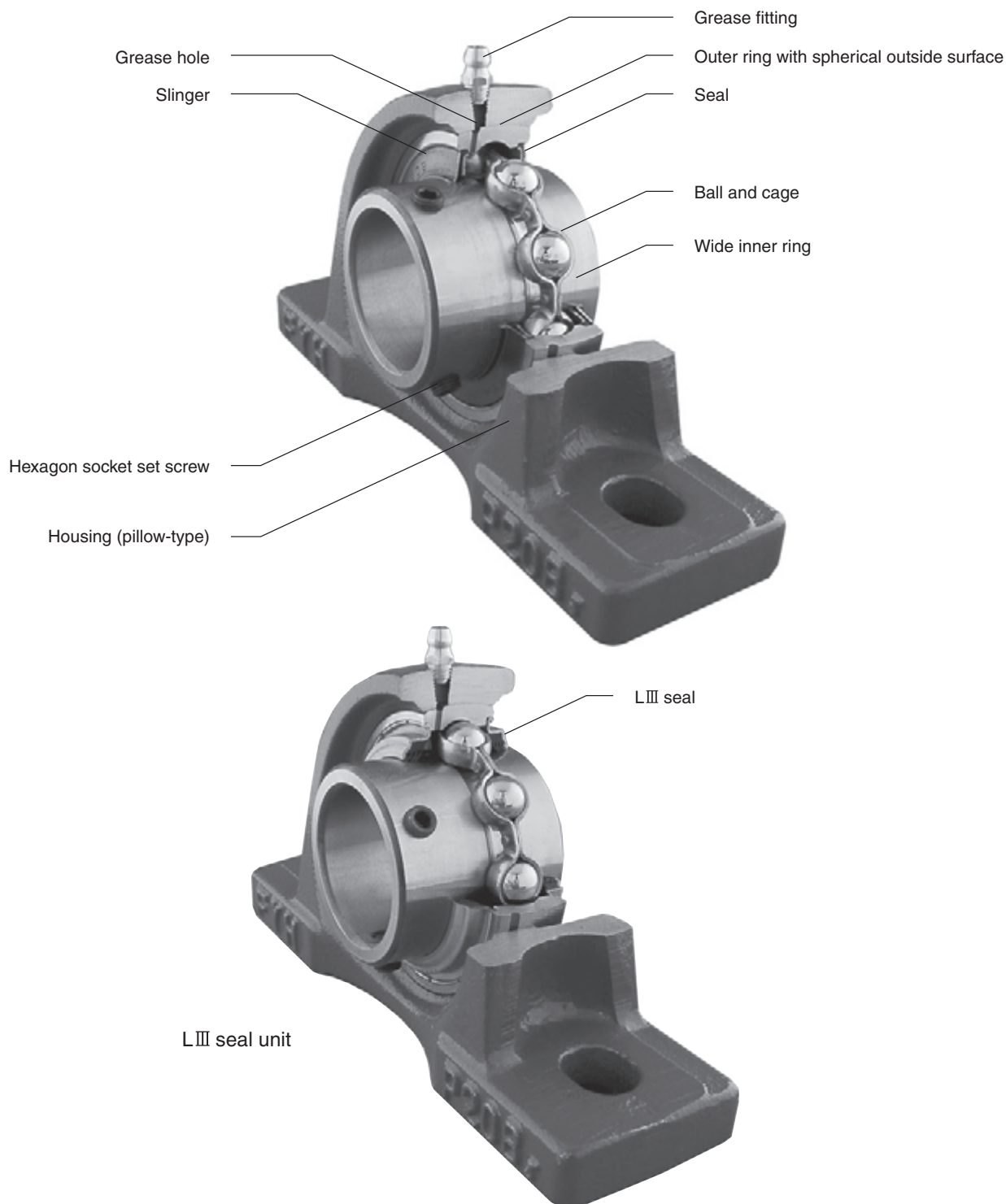


Fig. 1.1 Structure of ball bearing units (representative example)

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°.

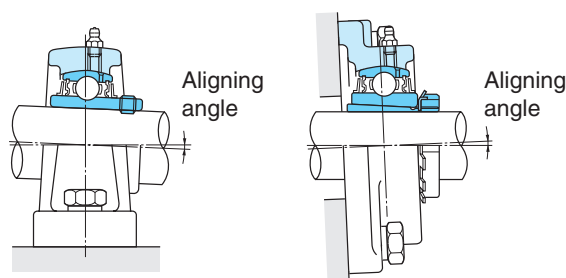


Fig. 1.2 Allowable aligning angle of ball bearing units

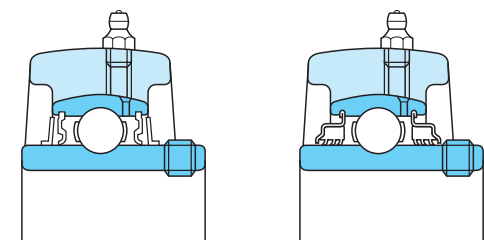
3 Superior sealing performance

FYH Ball Bearing Units efficiently prevent grease from leaking out of the interior of the bearing, and perform extremely well at keeping contaminants, 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 seal is made of synthetic rubber with supreme oil proof characteristics, and the lip of the seal contacts the inner ring of the bearing with optimal tension.

When operating in moist or dusty environments, the triple lip seal unit (suffix code: L3) or a covered unit (accessory code: C, CD, FC, FD) is recommended.

The triple lip seal unit, or unit with cover, helps prevent ingress of water and dust from the outside, and extends the rated life of the bearing.



Standard type

Triple lip seal type
(Suffix code: L3)

	Steel plate cover type	Cast iron cover type
Open type	 (Accessory code: C)	 (Accessory code: C, FC)
Open & Closed type	 (Accessory code: CD)	 (Accessory code: CD, FCD)

Unit with covers

Fig. 1.3 Sealing mechanism of ball bearing units

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.

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. (see **Table 16.6**)

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 special coating helps resist corrosion and protect the surface of the housing for an extended period of time.

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 roller

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.

- Dust resistant series (Dust, water, and debris protection)
 - Triple lip seal inserts
 - Units with covers
- Heat and cold resistant series
- Corrosion resistant series
 - Stainless units
 - Plastic units
 - Nickel plated units
- Tougher casting series
 - Cast steel housings
 - Ductile iron housing
- Compact and lightweight series
 - Small die cast units
 - Lightweight casting units
 - Stamped units
- Special environment series (Ability to withstand severe environments, exposure to water, chemicals, high temperature, or high speed)
 - Ceraball series
- Air handling series
 - S3 & S5 bearing units
 - NU-LOC units

2 Models

2.1 Model list

Table 2.1 and Table 2.2 show the models of FYH Ball Bearing Units and ball bearing inserts.

Table 2.1 FYH Ball Bearing Units models

Model	Type	Bearing bore dia. Surface (fixing to shaft)	Model code	Shaft dia.		Dimension table
				(inch)	(mm)	
1 Pillow type	(1) Standard	Cylindrical bore (with set screws)	UCP	$1/2 - 4$	12 – 140	P.72
		Cylindrical bore (with eccentric locking collar)	NAP	$1/2 - 2 \frac{15}{16}$	12 – 75	P.78
			NAPK	$1/2 - 2 \frac{15}{16}$	12 – 75	P.80
		Cylindrical bore (with concentric locking collar)	NCP	$3/4 - 2 \frac{7}{16}$	20 – 60	P.82
		Tapered bore (with adapter)	UKP	$3/4 - 4 \frac{1}{2}$	20 – 125	P.84
	(2) Cast steel type	Cylindrical bore (with set screws)	UCP-sc	$7/8 - 4$	25 – 140	P.90
		Tapered bore (with adapter)	UKP-sc	$3/4 - 4 \frac{1}{2}$	20 – 125	P.94
	(3) Thick type	Cylindrical bore (with set screws)	UCIP	$1 \frac{1}{2} - 4$	40 – 140	P.98
		Tapered bore (with adapter)	UKIP	$1 \frac{1}{4} - 4 \frac{1}{2}$	35 – 125	P.100
	(4) Tapped-base type	Cylindrical bore (with set screws)	UCPA	$1/2 - 2$	12 – 50	P.102
			UCPAN	$3/4 - 1 \frac{7}{16}$	20 – 35	P.104
		Cylindrical bore (with concentric locking collar)	NCPA	$3/4 - 2$	20 – 50	P.106
			NCPAN	$3/4 - 1 \frac{7}{16}$	20 – 35	P.108
	(5) High centerheight type	Cylindrical bore (with set screws)	UCPH	$1/2 - 2$	12 – 50	P.110
	(6) Lightweight type	Cylindrical bore (with set screw locking)	BLP	$1/2 - 1 \frac{9}{16}$	12 – 40	P.112
		Cylindrical bore (with eccentric locking collar)	ALP			
	(7) Lightweight (die-cast) type	Cylindrical bore (with set screws)	UP	N/A	10 – 30	P.114
	(8) Corrosion resistant type	Cylindrical bore (with set screws)	UCSP-H1S6	$1/2 - 2 \frac{7}{16}$	12 – 60	P.116
			UCSPA-H1S6	$1/2 - 1 \frac{9}{16}$	12 – 40	P.118
			USP-S6	N/A	10 – 30	P.120
			UCVP-S6	$3/4 - 2$	20 – 50	P.122
			UCVP-ES7	$3/4 - 2$	20 – 50	P.124
	(9) Steel plate type	Cylindrical bore (with set screw locking)	SBPP	$1/2 - 1 \frac{1}{4}$	12 – 30	P.126
		Cylindrical bore (with eccentric locking collar)	SAPP			
2 Square four-bolt flange type	(1) Standard	Cylindrical bore (with set screws)	UCF	$1/2 - 4$	12 – 140	P.128
			UCF-E	$1/2 - 3 \frac{7}{16}$	12 – 85	P.134
		Cylindrical bore (with eccentric locking collar)	NANF	$1/2 - 2 \frac{7}{16}$	12 – 60	P.138
		Cylindrical bore (with concentric locking collar)	NCF	$3/4 - 2 \frac{7}{16}$	20 – 60	P.140
			NCF-E	$3/4 - 2 \frac{7}{16}$	20 – 60	P.142
		Tapered bore (with adapter)	UKF	$3/4 - 4 \frac{1}{2}$	20 – 125	P.144
	(2) Piloted cartridge flange type	Cylindrical bore (with set screws)	UCFS	1 – 4	25 – 140	P.150
		Tapered bore (with adapter)	UKFS	$3/4 - 4 \frac{1}{2}$	20 – 125	P.152
	(3) Corrosion resistant type	Cylindrical bore (with set screws)	UCSF-H1S6	$3/4 - 2 \frac{7}{16}$	20 – 60	P.154
			UCSF-EH1S6	$3/4 - 2 \frac{7}{16}$	20 – 60	P.156
			UCVF-S6	$3/4 - 1 \frac{9}{16}$	20 – 40	P.158
			UCVF-ES7	$3/4 - 1 \frac{9}{16}$	20 – 40	P.160
3 Oval flange type	(1) Two-bolt type	Cylindrical bore (with set screws)	UCFL	$1/2 - 4$	12 – 130	P.162
			UCFL-E	$1/2 - 3 \frac{1}{4}$	12 – 85	P.168
		Cylindrical bore (with eccentric locking collar)	NANFL	$1/2 - 2 \frac{3}{16}$	12 – 55	P.172
		Cylindrical bore (with concentric locking collar)	NCFL	$3/4 - 2 \frac{7}{16}$	20 – 60	P.174
			NCFL-E	$3/4 - 2 \frac{7}{16}$	20 – 60	P.176
		Tapered bore (with adapter)	UKFL	$3/4 - 4 \frac{1}{2}$	20 – 115	P.178
	(2) Adjustable oval two-bolt type	Cylindrical bore (with set screws)	UCFA	$1/2 - 2 \frac{3}{16}$	12 – 55	P.182
	(3) Three-bolt type	Cylindrical bore (with set screws)	UCFB	$1/2 - 2$	12 – 50	P.184
	(4) Lightweight two-bolt type	Cylindrical bore (with set screw locking)	BLF	$1/2 - 1 \frac{7}{16}$	12 – 35	P.186
		Cylindrical bore (with eccentric locking collar)	ALF			
	(5) Lightweight three-bolt type	Cylindrical bore (with set screws)	SATFD-FP9	$1/2 - 1 \frac{7}{16}$	12 – 35	P.188
	(6) Lightweight (die-cast) type	Cylindrical bore (with set screws)	UFL	N/A	8 – 30	P.190
			UCSFL-H1S6	$1/2 - 2$	12 – 50	P.192
			UCSFL-EH1S6	$1/2 - 2$	12 – 50	P.194
			USFL-S6	N/A	10 – 30	P.196
			UCVFL-S6	$3/4 - 1 \frac{9}{16}$	20 – 40	P.198
	(7) Corrosion resistant type	Cylindrical bore (with set screws)	UCVFL-ES7	$3/4 - 1 \frac{9}{16}$	20 – 40	P.200

Table 2.1 FYH Ball Bearing Units models (continued)

Model	Type	Bearing bore dia. Surface (fixing to shaft)	Model code	Shaft dia.		Dimension table
				(inch)	(mm)	
4 Round flange cartridge type	Standard	Cylindrical bore (with set screws)	UCFC	$\frac{1}{2} - 4$	12 – 100	P.202
			UCFCX-E	1 – 4	25 – 100	P.206
		Cylindrical bore (with set screw locking)	UCFCF	$\frac{7}{8} - 2 \frac{3}{16}$	25 – 55	P.208
		Cylindrical bore (with concentric locking collar)	NCFC	$\frac{3}{4} - 2 \frac{7}{16}$	20 – 60	P.210
		Tapered bore (with adapter)	UKFC	$\frac{3}{4} - 3 \frac{1}{2}$	20 – 90	P.212
5 Stamped steel plate flange type	(1) Round three-bolt flange type	Cylindrical bore (with set screw locking)	SBPF	$\frac{1}{2} - 1 \frac{7}{16}$	12 – 35	P.216
		Cylindrical bore (with eccentric locking collar)	SAPF			
	(2) Oval two-bolt flange type	Cylindrical bore (with set screw locking)	SBPFL	$\frac{1}{2} - 1 \frac{7}{16}$	12 – 35	P.218
		Cylindrical bore (with eccentric locking collar)	SAPFL			
6 Take-up type	(1) Standard	Cylindrical bore (with set screws)	UCT	$\frac{1}{2} - 4$	12 – 140	P.220
			UCT-E	$\frac{1}{2} - 3 \frac{7}{16}$	12 – 85	P.226
		Cylindrical bore (with eccentric locking collar)	NAT-E	$\frac{1}{2} - 2 \frac{15}{16}$	12 – 75	P.230
		Cylindrical bore (with concentric locking collar)	NCT	$\frac{3}{4} - 2 \frac{7}{16}$	20 – 60	P.232
			NCT-E	$\frac{3}{4} - 2 \frac{7}{16}$	20 – 60	P.234
		Tapered bore (with adapter)	UKT	$\frac{3}{4} - 4 \frac{1}{2}$	20 – 125	P.236
	(2) Corrosion resistant type	Cylindrical bore (with set screws)	UCST-H1S6	$\frac{3}{4} - 2$	20 – 50	P.242
			UCST-EH1S6	$\frac{3}{4} - 2$	20 – 50	P.244
	(3) Section steel frame type	Cylindrical bore (with set screws)	UCTH	$\frac{1}{2} - 2 \frac{1}{2}$	12 – 65	P.246
	(4) Channel steel frame type	Cylindrical bore (with set screws)	UCTL	N/A	20 – 45	P.248
			UCTU	N/A	40 – 90	P.250
	(5) Steel plate frame type	Cylindrical bore (with set screws)	SBPTH	N/A	12 – 25	P.254
			SBNPTH	N/A	12 – 25	P.256
7 Cartridge type		Cylindrical bore (with set screws)	UCC	$\frac{1}{2} - 4$	12 – 140	P.258
		Tapered bore (with adapter)	UKC	$\frac{3}{4} - 4 \frac{1}{2}$	20 – 125	P.262
8 Hanger type		Cylindrical bore (with set screws)	UCHA	$\frac{1}{2} - 3$	12 – 75	P.264

Table 2.2 Bearing insert models

Model	Type	Bearing bore dia. Surface (fixing to shaft)	Model code	Shaft dia.		Dimension table
				(inch)	(mm)	
Ball bearing inserts	(1) Standard	Cylindrical bore (with set screws)	UC	$\frac{1}{2} - 4$	12 – 140	P.266
	(2) Standard	Tapered bore (with adapter)	UK	$\frac{3}{4} - 4 \frac{1}{2}$	20 – 125	P.284
	(3) Standard	Cylindrical bore (with eccentric locking collar)	NA	$\frac{1}{2} - 3$	12 – 75	P.274
	(4) Standard	Cylindrical bore (with concentric locking collar)	NC2	$\frac{3}{4} - 2 \frac{7}{16}$	20 – 60	P.280
	(5) Lightweight	Cylindrical bore (with set screws)	SB	$\frac{1}{2} - 1 \frac{1}{2}$	12 – 40	P.266
	(6) Lightweight	Cylindrical bore (with eccentric locking collar)	SA	$\frac{1}{2} - 1 \frac{9}{16}$	12 – 40	P.274
			SA-F	$\frac{1}{2} - 2 \frac{3}{16}$	12 – 55	
	(7) Small	Cylindrical bore (with set screws)	SU	N/A	8 – 30	P.266
	(8) Stainless steel	Cylindrical bore (with set screws)	UC-S6	$\frac{1}{2} - 2 \frac{7}{16}$	12 – 60	P.272
			SU-S6	N/A	10 – 30	
	(9) Cylindrical O. D. (with lubricating mechanism and snap ring)	Cylindrical bore (with set screws)	ER	$\frac{1}{2} - 2 \frac{7}{16}$	12 – 60	P.290
		Cylindrical bore (with concentric locking collar)	ERC	$\frac{3}{4} - 2 \frac{7}{16}$	20 – 60	P.282
	(10) Cylindrical O. D.	Cylindrical bore (with set screws)	RB	$\frac{1}{2} - 1 \frac{9}{16}$	12 – 40	P.290
	(11) Cylindrical O. D.	Cylindrical bore (with eccentric locking collar)	SAA-F	$\frac{1}{2} - 2 \frac{3}{16}$	12 – 55	P.292
			SBB-RK	$\frac{1}{2} - 1 \frac{1}{2}$	12 – 40	
	(12) Standard	Cylindrical bore	SC	N/A	17 – 40	P.294
	(13) Adapter		H300X	$\frac{3}{4} - 3 \frac{3}{16}$	20 – 80	P.296
			H2300X	$\frac{3}{4} - 5$	20 – 125	

2.2 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.

1 Pillow type units

1 Pillow type units: P.72



UCP

UKP

UCP-C, CD
UKP-C, CDUCP-FC, FCD
UKP-FC, FCD

NAP

NAPK

NO-LOC.



NCP

Cylindrical bore (with set screws)

L3

C, CD (FC, FCD)¹⁾

Cylindrical bore (with eccentric locking collar)

L3

Cylindrical bore (with concentric locking collar)

Tapered bore (with adapter)

L3

C, CD (FC, FCD)¹⁾

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
	C, CD	Cast iron cover type

2 Thick pillow type units: P.98



UCIP

UKIP

Cylindrical bore (with set screws)

L3

C, CD (FC, FCD)¹⁾

Tapered bore (with adapter)

L3

C, CD (FC, FCD)¹⁾

3 Tapped-base pillow type units: P.102



UCPA

UCPAN

NO-LOC.



NCPA

NCPAN

Cylindrical bore (with set screws)

L3

Cylindrical bore (with concentric locking collar)

4 High centerheight pillow type units: P.110



UCPH

Cylindrical bore (with set screws)
L3

5 Lightweight pillow type units: P.112



BLP

ALP

Cylindrical bore (with set screw locking)
Cylindrical bore (with eccentric locking collar)

6 Lightweight (die-cast) pillow type units: P.114



UP

UP-C, CD

Cylindrical bore (with set screws)
C, CD: Rubber coating cover

7 Corrosion resistant series pillow type units: P.116



UCSP-H1S6

USP-S6



UCSPA-H1S6



UCVP-S6

UCVP-ES7

Cylindrical bore (with set screws)
C, CD: Stainless steel plate cover
C, CD: Plastic cover
Lightweight type
C, CD: Rubber coating cover

8 Steel plate pillow type units: P.126



SBPP

SAPP

Cylindrical bore (with set screw locking)
Cylindrical bore (with eccentric locking collar)

2 Square four-bolt flange type units

1 Square four-bolt flange type units: P.128



UCF
UCF-E



UKF

NO-LOC.



NANF



NCF
NCF-E

Cylindrical bore (with set screws)

L3

C, D (FC, FD)¹⁾

Cylindrical bore (with eccentric locking collar)

Cylindrical bore (with concentric locking collar)

Tapered bore (with adapter)

L3

C, D (FC, FD)¹⁾

2 Square four-bolt flange cartridge type units: P.150



UCFS



UKFS

Cylindrical bore (with set screws)

L3

C, D

Tapered bore (with adapter)

L3

C, D

As for the descriptions of Note ¹⁾, see page 10.

3 Corrosion resistant series square four-bolt flange type units: P.154



UCSF-H1S6
UCSF-EH1S6



UCVF-S6



UCVF-ES7

Cylindrical bore (with set screws)

C, D: Stainless steel plate cover

C, D: Plastic cover

3 Oval flange type units

1 Oval two-bolt flange type units: P.162



UCFL
UCFL-E



UKFL

NO-LOC.



NANFL



NCFL
NCFL-E

Cylindrical bore (with set screws)

L3

C, D (FC, FD)¹⁾

Cylindrical bore (with eccentric locking collar)

Cylindrical bore (with concentric locking collar)

Tapered bore (with adapter)

L3

C, D (FC, FD)¹⁾

2 Adjustable oval two-bolt flange type units: P.182



UCFA

Cylindrical bore (with set screws)
L3

3 Three-bolt flange type units: P.184



UCFB

Cylindrical bore (with set screws)
L3

4 Lightweight oval two-bolt flange type units: P.186



BLF

Cylindrical bore (with set screw locking)



ALF

Cylindrical bore (with eccentric locking collar)

5 Lightweight (ductile iron) oval three-bolt flange type units: P.188



SATFD-FP9

Cylindrical bore (with set screws)

6 Lightweight (die-cast) oval two-bolt flange type units: P.190



UFL

Cylindrical bore (with set screws)
C, D: Rubber coating cover



UFL-C, D

7 Corrosion resistant series oval two-bolt flange type units: P.192



**UCSFL-H1S6
UCSFL-EH1S6**



USFL-S6



UCVFL-S6

Cylindrical bore (with set screws)

C, D: Stainless steel cover

C, D: Plastic cover

Lightweight type

C, D: Rubber coating cover



UCVFL-ES7

4 Round flange cartridge type units

Round flange cartridge type units: P.202



UCFC
UCFCX-E
UCFCF



UKFC

NO-LOC



NCFC

Cylindrical bore (with set screws)

L3

C, D (FC, FD)¹⁾

Cylindrical bore (with concentric locking collar)

Tapered bore (with adapter)

L3

C, D (FC, FD)¹⁾

5 Stamped steel plate flange type units

1 Stamped steel plate round three-bolt flange type units: P.216



SBPF



SAPF

Cylindrical bore (with set screw locking)

Cylindrical bore (with eccentric locking collar)

2 Stamped steel plate oval two-bolt flange type units: P.218



SBPFL



SAPFL

Cylindrical bore (with set screw locking)

Cylindrical bore (with eccentric locking collar)

6 Take-up type units

1 Take-up type units: P.220



UCT
UCT-E



UKT

NO-LOC



NAT-E



NCT
NCT-E

Cylindrical bore (with set screws)

L3

C, CD (FC, FCD)¹⁾

Cylindrical bore (with eccentric locking collar)

L3

Cylindrical bore (with concentric locking collar)

Tapered bore (with adapter)

L3

C, CD (FC, FCD)¹⁾

As for the descriptions of Note ¹⁾, see page 10.

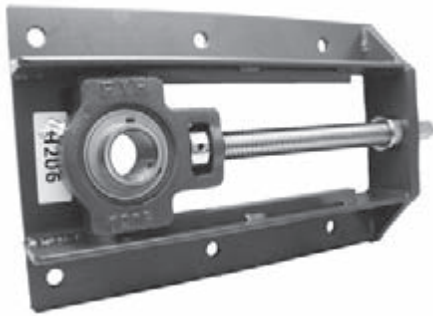
**2 Corrosion resistant series
take-up type units: P.242**



**UCST-H1S6
UCST-EH1S6**

Cylindrical bore (with set screws)
C, CD: Stainless steel plate cover type

3 Section steel frame take-up type units: P.246



UCTH

Cylindrical bore (with set screws)
L3
C, CD (FC, FCD)¹⁾

4 Channel steel frame take-up type units: P.248



UCTL



UCTU

Cylindrical bore (with set screws)
L3
C, CD (FC, FCD)¹⁾

5 Steel plate frame take-up type units: P.254



SBPTH



SBNPTH

Cylindrical bore (with set screws)

7 Other units

1 Cartridge type units: P.258



UCC

Cylindrical bore (with set screws)

L3



UKC

Tapered bore (with adapter)

L3

2 Hanger type units: P.264



UCHA

Cylindrical bore (with set screws)

L3

3 Ceraball bearing series



Cylindrical bore (with set screws)

UC2 (X, 3)...Y1 type

UC2 S6...Y2 type

8 Ball bearing inserts

1 UC type bearing: P.266



UC

Cylindrical bore (with set screws)

L3



UC-S6

2 NC type bearing: P.280

NO-LOC®



NC

Cylindrical bore (with concentric locking collar)



3 UK type bearing: P.284



UK

Tapered bore (with adapter)

L3



UK+H

4 NA type bearing: P.274



NA

Cylindrical bore (with eccentric locking collar)

5 SB type bearing: P.266



SB

Cylindrical bore (with set screws)

6 SA type bearing: P.274



SA

SA-F

Cylindrical bore (with eccentric locking collar)

7 SU type bearing (clean series): P.266



SU

SU-S6

Cylindrical bore (with set screws)

8 ER bearing inserts: P.290

NO-LOC®



ER

ERC

Cylindrical bore (with set screws),
Cylindrical O.D., Relubricable
Cylindrical bore (with concentric locking collar)

9 RB bearing inserts: P.290



RB

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

(8 Ball bearing inserts)

10 SAA, SBB type bearing: P.292



SAA-F

SBB-RK

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

11 SC type bearing: P.294



SC

Cylindrical bore

12 Adapter: P.296



H300X, H2300X

2.3 Units for special use

FYH offers a variety of bearing options to meet the needs of many highly specialized applications. There exist a number of qualities that allow FYH bearings to operate in a wide range of challenging environments and conditions. The following information shows some of the ways FYH can provide solutions to many non-standard bearing needs.

1 Dust Resistant Series

1.1 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 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.

1.2 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.

1.3 Felt Seals (suffix code: K9)

The Felt-Sealed bearing utilizes the standard contact seal and slinger with the addition of a felt disc sandwiched between the seal and the slinger.

It offers less rotational torque than the triple-lip (L3) seal yet still provides great resistance to dust and dry contaminate. Although, it is not appropriate for water resistance or highly humid environments like the L3 seal, it is easy to use and provides good cost performance.

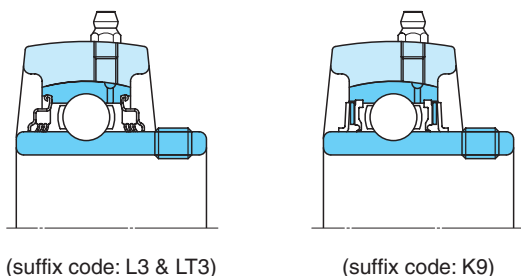


Fig. 2.1 Structure of Dust Resistant Series

1.4 Units with covers

(accessory code C, D, FC, FD)

Covers can be fitted onto most types of housings with some machining necessary. The covers come in both pressed steel type as well as cast iron, and they are available in open and closed designs. The open design has a hole with a rubber seal that allows shafting to pass through it. The closed design would be used on a unit where shafting terminates at the end of the unit. The covers help to ensure that dust and other environmental contaminants will not reach the insert.

The covers help improve the rated life of bearing units where conditions have caused other bearings to fail.

Open pressed steel covers use "C" as a suffix designation, and open cast iron covers use "FC". Closed covers use "D" for pressed steel and "FD" for the cast iron type. Pillow blocks can have covers on both sides, and can come in open/open or open/closed configurations.

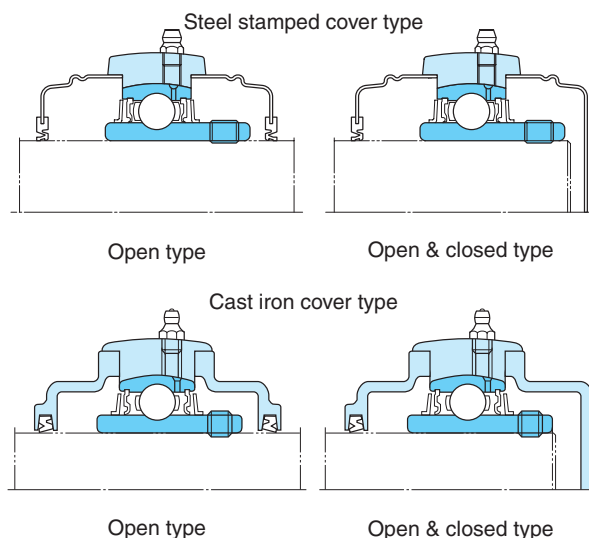


Fig. 2.2 Model and structure of units with cover

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

Table 2.3 Specifications of High / Low Temperature Series

Category	Special code	Operating temperature range		Grease	Seal rubber material	Bearing internal clearance	
		(°C)	(°F)			UC type	UK type
Ordinary	(no code)	-20 to 100	-4 to 212	Gold No.3A or, Alvania No.2 equivalence (lithium soap)	Nitrile	CN	C3
Stainless steel	S6	0 to 100	32 to 212	H1 FOOD GRADE Grease (FDA/USDA)	Nitrile	C3	—
Heat resistant	D1K2	-40 to 180	-40 to 356	SH44M (lithium soap)	Silicone	C4	C5
Heat resistant	D9K2	-20 to 230	-4 to 446	Demnum L-200 (fluorinated grease)	Silicone	C4	C5
Heat resistant	D9P4Y2	-20 to 260	-4 to 500	Demnum L-200 (fluorinated grease)	—	C4	C5
Extreme heat resistant	S6Y3	300 to 450	572 to 842	Solid graphite lubricant	—	Special	Special
Cold resistant	D2K2	-50 to 120	-58 to 248	SH33M (lithium soap)	Silicone	CN	C3

Note¹⁾ For Lubrication intervals see page 66.

with minimal maintenance.

Specifications for the high temperature and low temperature units are shown in **Table 2.3**.

3 High speed units (suffix code: K3)

High speed units are used in applications where low torque and high RPM's are necessary. These units use a non-contact seal that allows for a free spin that cuts down on temperature and allows for low torque start-up. These units are often used in printing and textile machinery applications.

4 Air Handling Series

4.1 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.

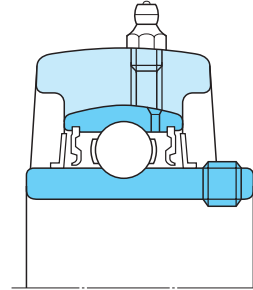
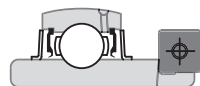


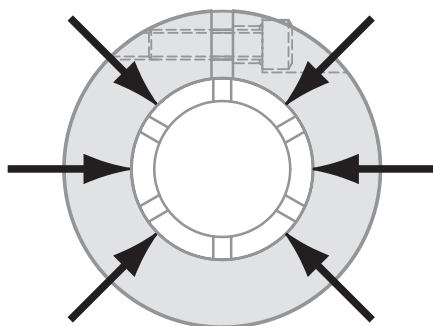
Fig. 2.3 Structure of bearing units for blowers

Table 2.4

SUFFIX																																																																																					
S5 S3 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. Tolerance and tolerance values of inner rings of P18 suffix (unit: μm) <table><tr><th colspan="2">Nominal bearing bore dia. <i>d</i> (mm)</th><th colspan="2">Variation of tolerance of average bore dia. in plane <i>Δd_{mp}</i></th><th>Unequal bore dia. in plane <i>V_{d_p}</i></th><th>Radial runout of inner ring <i>K_{ia}</i></th></tr><tr><th>Over</th><th>Inc.</th><th>Max.</th><th>Min.</th><th>Max.</th><th>Max.</th></tr><tr><td>—</td><td>10</td><td>+13</td><td>0</td><td>6</td><td>7</td></tr><tr><td>10</td><td>18</td><td>+13</td><td>0</td><td>6</td><td>8</td></tr><tr><td>18</td><td>31.75</td><td>+13</td><td>0</td><td>10</td><td>10</td></tr><tr><td>31.75</td><td>50.8</td><td>+15</td><td>0</td><td>10</td><td>10</td></tr><tr><td>50.8</td><td>80</td><td>+18</td><td>0</td><td>14</td><td>13</td></tr></table> Tolerance and tolerance values of inner rings of ISO standard (unit: μm) <table><tr><th colspan="2">Nominal bearing bore dia. <i>d</i> (mm)</th><th colspan="2">Variation of tolerance of average bore dia. in plane <i>Δd_{mp}</i></th><th>Unequal bore dia. in plane <i>V_{d_p}</i></th><th>Radial runout of inner ring <i>K_{ia}</i></th></tr><tr><th>Over</th><th>Inc.</th><th>Max.</th><th>Min.</th><th>Max.</th><th>Max.</th></tr><tr><td>—</td><td>10</td><td>+15</td><td>0</td><td>10</td><td>10</td></tr><tr><td>10</td><td>18</td><td>+15</td><td>0</td><td>10</td><td>15</td></tr><tr><td>18</td><td>31.75</td><td>+18</td><td>0</td><td>12</td><td>18</td></tr><tr><td>31.75</td><td>50.8</td><td>+21</td><td>0</td><td>14</td><td>20</td></tr><tr><td>50.8</td><td>80</td><td>+24</td><td>0</td><td>16</td><td>25</td></tr></table>	Nominal bearing bore dia. <i>d</i> (mm)		Variation of tolerance of average bore dia. in plane <i>Δd_{mp}</i>		Unequal bore dia. in plane <i>V_{d_p}</i>	Radial runout of inner ring <i>K_{ia}</i>	Over	Inc.	Max.	Min.	Max.	Max.	—	10	+13	0	6	7	10	18	+13	0	6	8	18	31.75	+13	0	10	10	31.75	50.8	+15	0	10	10	50.8	80	+18	0	14	13	Nominal bearing bore dia. <i>d</i> (mm)		Variation of tolerance of average bore dia. in plane <i>Δd_{mp}</i>		Unequal bore dia. in plane <i>V_{d_p}</i>	Radial runout of inner ring <i>K_{ia}</i>	Over	Inc.	Max.	Min.	Max.	Max.	—	10	+15	0	10	10	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
	Nominal bearing bore dia. <i>d</i> (mm)		Variation of tolerance of average bore dia. in plane <i>Δd_{mp}</i>		Unequal bore dia. in plane <i>V_{d_p}</i>	Radial runout of inner ring <i>K_{ia}</i>																																																																															
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P11	The anti-rotation pin, in conjunction with the standard “J” fit housing, means very secure housing fit in high speed applications. 																																																																																				
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 noise and vibration in high speed applications.																																																																																				
G23	G23 is our original set screw called Bullet Point. The specialized design greatly reduces the potential for damage to both the setscrew and shaft from normal use to applications with severe vibration, shock load, and high speed. 																																																																																				
K3	Non contact lip seal is available for the lighter torque. 																																																																																				
Sound test	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.																																																																																				

4.2 NU-LOC Bearing Units

The NU-LOC series is produced with the specifications of the S3 designation as a standard which is desirable for high speed applications. NU-LOC bearings have tighter bore tolerance and internal clearance which are features that greatly reduce noise and vibration. Though they are high-precision bearings for demanding applications they are also suitable for a variety of other operating conditions.



360°LOCKING

NU-LOC concentric locking collar with a single cap screw provides great holding power. The collar is installed over the slotted inner ring on the shaft concentrically.

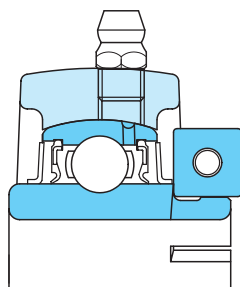


Fig. 2.4 Structure of NU-LOC

The standard NU-LOC series satisfies all the specifications of our air handling series under the "S3" designation.

This series incorporates a C2 ball clearance which is more exacting than the standard style, and this allows for quieter operation and a considerable reduction of vibration.

The NU-LOC series is a high-precision design and, while it is ideal for air handling applications, it is also excellent for many more highly demanding applications.

5 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.

5.1 Stainless insert (S6)

Stainless steel inserts can be assembled with stainless steel housings, thermoplastic housings, and nickel-plated cast iron housings.

5.2 Plated inserts (S7)

Trivalent chrome plated inserts can be assembled with stainless steel housings, thermoplastic housings, and nickel plated cast iron housings.

6 Clean Series / Lightweight Series (Die-cast)

Our clean series unit is a compact design that allows for light conveying in many manufacturing applications. The setscrew design allows for easy installation, as well as reversing. The housing is made of a special alloy which provides excellent corrosion resistance. Covers coated with rubber increase adhesion with the housing and can be ordered separately in both open and closed designs. The clean series only comes in metric sizes from 10 mm to 30 mm. They are available in both pillow block and 2-bolt flange styles.

7 Ceraball Series (suffix code: Y1 to Y8)

Ceraball bearings have Silicon Nitride (Si₃N₄) ceramic balls, and they can provide stable performance for long periods of time even in special operating environments.

These environments include: high temperature, corrosion, high-speed rotation, low torque, and vacuum.

Y1 type - High-speed rotation

- This bearing is designed for applications with high speed rotation in which the dN value exceeds 200,000. This is made possible by the lightweight ceramic balls and high level of sphericity.

Y2 type - Standard

- This is the standard model in the Ceraball series. It is designed to withstand temperatures of 260 °C (Max 300 °C). It resists corrosive conditions such as heated steam, chemicals, and solvents. It can be used in clean room conditions due to its low dust and low torque properties. It will also perform well in insulated or vacuum conditions.

Y3 type - Extremely high temperature

- This bearing is designed for environments that experience temperatures in excess of 300 °C, and where greasing is difficult to execute. For these applications FYH offers the Y3 type of bearing with solid lubricant used for the cage. These bearings are designed to withstand temperatures of up to 450 °C (Max 550 °C). This bearing is best for light loads and low speed rotation (UNDER- Dn 5,000).

Y7 & Y8 type - Anti-corrosion type

- Y7 uses a strong corrosion resistant grade of stainless steel (SUS630) for the inner and outer rings. Y8 employs polyetheretherketone (PEEK) polymer for the inner and outer rings. These bearings are suited to highly corrosive environments where bearings may be exposed to solvents or underwater applications.

See **Appendix table 7** (page 314).

3 Selection of units

3.1 Outline of selection

FYH ball bearings are available in many models and types. To make sure that you are selecting the bearings that will best suit your application many factors must be considered. These include: the structure and space limitations of

the machinery, operating conditions, load, temperature, and speed. The life you will get out of the bearing unit will greatly depend on proper selection.

Procedures for choosing the correct ball bearing unit are shown in **Table 3.1**.

Table 3.1 Procedures of selection of ordinary ball bearing units

Procedures of selection	Items to be examined	Operating conditions to be considered	Reference
1 Selection of model	· Pillow type · Flange type · Take-up type · Cartridge type · Hanger type	Structure of machinery, mounting space, mounting dimensions	2 Models (P.8)
2 Selection of shaft dia. and duty series	· Bearing bore dia.: From 8 to 140 mm · Duty series: 0, 2, X, 3	Rating life of bearings required, load applied to bearings, rotating speed	4 Rating life of bearings (P.25) 5 Bearing load (P.28) 6 Allowable rotating speed (P.35)
3 Selection against atmosphere	· L3 type · Cover type · Clean series · Stainless steel series · Ceramic series · For high speed use · For blower	Environment (dust, mud, water, moisture, chemicals), rotating speed	2 Models (P.8) (P.19) 6 Allowable rotating speed (P.35)
4 Selection against temperature	· Heat resistant type · Cold resistant type · Ceraball series · Measures against expansion and contraction of shaft · Grease supply	Bearing temperature	2 Models (P.8) (P.19) 7 Operating temperature and bearing specifications (P.36) 9 Design of shaft and base (P.45) 14 Handling (P.61)
5 Selection of locking mechanism	· Set screw · Adapter · NU-LOC (concentric locking collar) · Eccentric locking collar	Rotating speed, load conditions, handling	2 Models (P.8) 14 Handling (P.61)
6 Selection of shafts	· Dimensional tolerance · Use of shouldered shaft · Provision of set screw for shaft · Measures against expansion and contraction of shaft	Rotating speed, load conditions, bearing temperature	2 Models (P.8) (P.19) 6 Allowable rotating speed (P.35) 9 Design of shaft and base (P.45) 14 Handling (P.61)
7 Selection of strength of housings	· Cast iron · Cast steel · Steel plate	Load conditions, load directions, presence of impact Temperature	8 Strength of housings (P.37)
8 Selection of lubricant	· Lubricating type · Non-lubricating type · Centralized lubricating type · Greasing interval	Environment, importance of machine, bearing temperature, grease life	14 Handling (P.61)
9 Selection of maintenance and inspection	· Periodic inspection · Grease supply	Environment, importance of machine, bearing temperature, grease life	14 Handling (P.61)

3.2 Selection of model specifications

FYH ball bearing units are available in various models and offer options for different operating environments.

When selecting models and specifications of units care must be taken to consider all factors that can affect the bearing life: **Table 3.2** will help with proper selection of ball bearing unit models.

Table 3.2 Outline of selection of ball bearing unit models and specifications

○: Acceptable or Yes, ×: Unacceptable or No

Category	Performance required		Bearing specifications			Applicable housing
	Operating conditions	Installing to shaft	Sealing structure	Model code	Lubrication	
Bearing	General	Set screw Adapter	Seal and slinger	UC UK	○	C, F, FA, FB, FC, FL, FS, HA, IP, P, PA, PH, T, TH, TL, TU
		Eccentric locking collar		NA	○	C, FC, NF, NFL, P, T
		Concentric locking collar		NC	○	C, F, FA, FB, FC, FL, HA, IP, P, PA, PH, T
	Dustproof and waterproof	Set screw Adapter	L3	UC-L3 UK-L3	○	C, F, FA, FB, FC, FL, FS, HA, IP, P, PA, PH, T, TH, TL, TU
	Weight	Set screw	Seal	SB	×	LF, LP, PF, PFL, PP, PTH, NPTH
	Lightweight	Set screw	Seal	SU	×	FL0, P0
	Anticorrosion	Set screw	Seal and slinger	UC-S6 UC-S7 Y2 · Y7	○	SF-H1, SFL-H1, SP-H1, SPA-H1, ST-H1, VP, VF, VFL
			Seal	SU-S6	×	SFL0, SP0
	Heat resistant Cold resistant For high speed For blower	Set screw Adapter	Seal and slinger	UC UK Y1 · Y2 · Y3 S3 · S5	○	C, F, FA, FB, FC, FL, FS, HA, IP, P, PA, PH, T
		Concentric locking collar		NC	○	C, F, FA, FB, FC, FL, HA, IP, P, PA, PH, T

Category	Performance required		Housing specifications				Applicable bearing	
	Type	Operating conditions	Model code	Material	Presence of cover	Lubrication		
Housing	Pillow type	General	P	Cast iron	○	○	UC (-L3), UK (-L3), NC ¹⁾	
		High strength	PH4	Ductile iron				
		Cast steel (rugged)	Psc	Cast steel				
		Thick (rugged)	IP	Cast iron				
		Tapped-base	PA	Cast iron	×	○	UC (-L3), NC ¹⁾	
		High centerheight	PH			○	UC (-L3), NC ¹⁾	
		Lightweight	LP			×	SB	
		Small	P0	Special light alloy	○	×	SU	
		Anticorrosion	SP-H1,			Stainless steel	○	UC-S6
			SPA-H1			Stainless steel	○	UC-S6
			SP0			Stainless steel	×	SU-S6
			VP			Thermoplastic	○	UC-S6
Steel plate	PP	Steel plate	×	×	SB			
Flange type	Square	F	Cast iron	○	○	UC (L3), UK (L3), NC ¹⁾		
	High strength	FH4	Ductile iron					
	Anticorrosion	SF-H1	Stainless steel			UC-S6		
	Corrosion-resistant	VF	Thermoplastic			UC-S6		

3 Selection of units

Category	Performance required		Housing specifications				Applicable bearing
	Type	Operating conditions	Model code	Material	Presence of cover	Lubrication	
Housing	Flange type	Cartridge (square)	FS	Cast iron	○	○	UC (L3), UK (L3)
		High strength	FSH4	Ductile iron	○	○	
		Cartridge (round)	FC	Cast iron	○	○	UC (L3), UK (L3), NC ¹⁾
		High strength	FCH4	Ductile iron	○	○	
		Oval	FL	Cast iron	○		UC (-L3), NC ¹⁾
		High strength	FLH4	Ductile iron		○	
		Shaft alignment (adjustable oval)	FA	Cast iron	×		
		Flange bracket	FB		×		
		Lightweight (oval)	LF	Cast iron	×	×	SB
			TFD	Ductile iron	×	○	SA-FP9
		Lightweight (die-cast)	FL0	Special light alloy	○	×	SU
		Anticorrosion (oval)	SFL-H1	Stainless steel		○	UC-S6
			SFL	Stainless steel	○	×	SU-S6
			VFL	Thermoplastic		○	UC-S6
		Steel plate (round)	PF	Steel plate	×	×	SB
		(oval)	PFL				
	Take-up type	General	T	Cast iron	○	○	UC (-L3), UK (-L3), NC ¹⁾
		High strength	TH4	Ductile iron	○	○	
		Anticorrosion	ST-H1	Stainless steel	○	○	UC-S6
		Section steel frame type	T	Cast iron	○	○	UC (-L3)
		Channel steel frame type	TL	Cast iron	○	○	UC (-L3), UK (-L3)
			TU				
		Steel plate frame type	PTH	Steel plate	×	×	SB
			NPTH				
	Cartridge type	General	C	Cast iron	×	○	UC (-L3), UK (-L3)
	Hanger type	General	HA	Cast iron	×	○	UC (-L3)

Note¹⁾ Covers are not applicable for NC type bearings.

3.3 Selection of bearings from a maintenance viewpoint

FYH ball bearing units require little if any maintenance when used in general operating conditions. Periodic checks will help ensure that the bearings are performing as required and periodic checks should be based upon your application. Bearings operating in a clean environment with low load, and low RPM need to be checked less often than units in a dirty environment, with higher loads. Care should be taken to make sure that the bearings are being properly lubricated and that the right kind of grease is being used. If great axial load will be present a shouldered shaft should be used. If the bearing environment is wet or dusty a cover or LIII type of insert should be used. In an environment exposed to high or low temperature the type of grease and the material of the seals must be taken fully into consideration.

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)**.

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

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

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.

$$L_{10h} = 500 f_h^3 \dots\dots\dots (4.3)$$

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

$$\begin{aligned} \text{Speed factor} \quad f_n &= \left(\frac{10^6}{500 \times 60n} \right)^{1/3} \\ &= (0.03n)^{-1/3} \dots\dots\dots (4.5) \end{aligned}$$

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

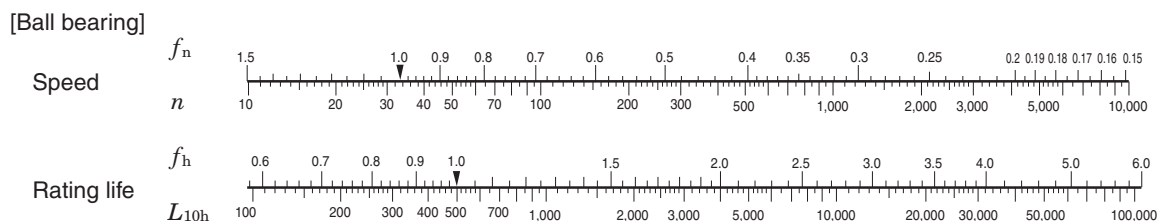


Fig. 4.1 Relation between basic rating life (L_{10h}) and rotating speed (n), speed factor (f_n), and life factor (f_h)

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 °C 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, °C	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.

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

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 mm²/s or less,
Roller bearing: 20 mm²/s or less
- (2) Rotating speed is low:
 d_{mn} : 10,000 or less

Note: d_m (Pitch dia. of ball set in mm) $\times n$ (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.

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

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, $^{\circ}\text{C}$

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

1) Operating temperature of bearing: T $^{\circ}\text{C}$

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: $\frac{P_r}{C_r}$

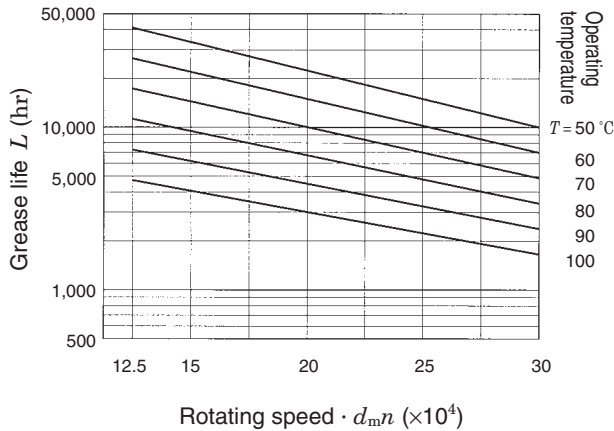
To be applied if the following condition is satisfied:
 $\frac{P_r}{C_r} \leq 0.2$

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

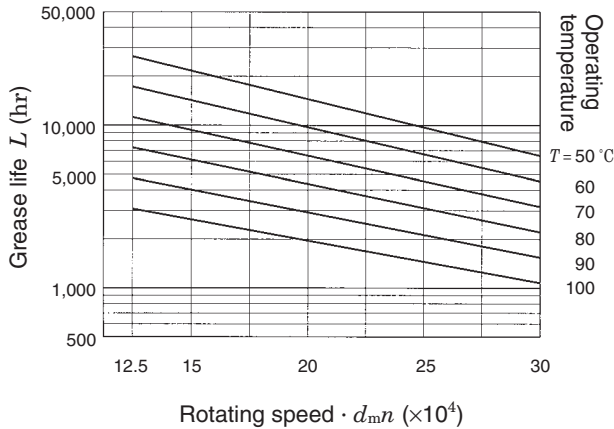
If $\frac{P_r}{C_r}$ is larger than 0.2 ($\frac{P_r}{C_r} > 0.2$), contact FYH.

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

(1) Bearing load $\cdot \frac{P_r}{C_r} = 0.05$



(2) Bearing load $\cdot \frac{P_r}{C_r} = 0.125$



(3) Bearing load $\cdot \frac{P_r}{C_r} = 0.2$

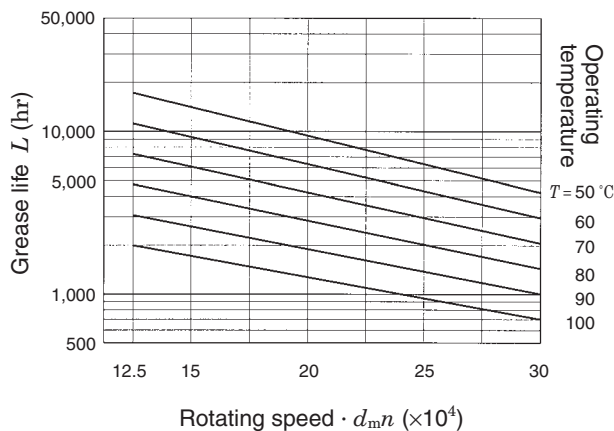


Fig. 4.2 Relation of grease life to bearing load, rotating speed, and operating temperature (reference)

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.

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

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.

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

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

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)

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

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

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

- (3) Synthetic load applied to gear

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

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.

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

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)

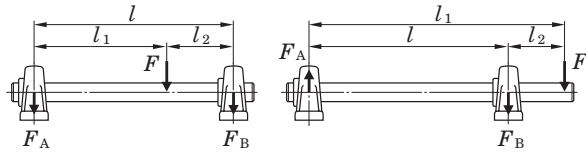
Table 5.3 Gear factor f_g

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

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.



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

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

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.

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

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	$F_a / F_r \leq e$		$F_a / F_r > e$	
		X	Y	X	Y
0.172	0.19	1	0	0.56	2.30
0.345	0.22				1.99
0.689	0.26				1.71
1.03	0.28				1.55
1.38	0.30				1.45
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.

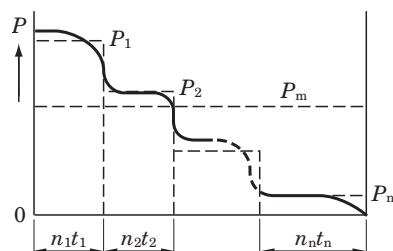
5.3.2 Average dynamic equivalent load in the case of fluctuating loads

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.

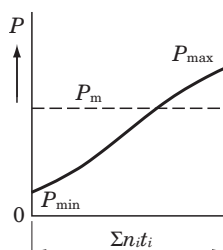
Table 5.5 Calculation of average dynamic equivalent load in case of fluctuated load

(1) Graduated fluctuation



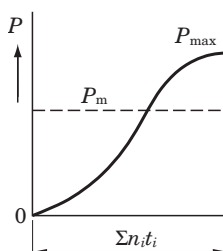
$$P_m = \sqrt[p]{\frac{P_1^p n_1 t_1 + P_2^p n_2 t_2 + \dots + P_n^p n_n t_n}{n_1 t_1 + n_2 t_2 + \dots + n_n t_n}} \quad (5.10)$$

(2) Monotone fluctuation



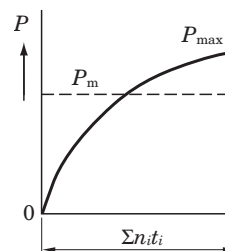
$$P_m = \frac{P_{\min} + 2 P_{\max}}{3} \quad (5.11)$$

(3) Sine curve fluctuation



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

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



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

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

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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

$\Sigma n_i t_i$: 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.

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

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

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.

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

Whereas,

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

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

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

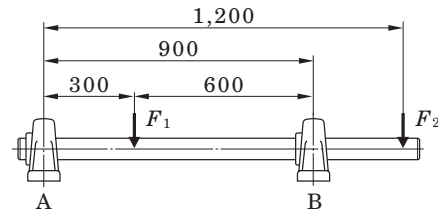
Table 5.6 Safety factor f_s (recommended)

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.

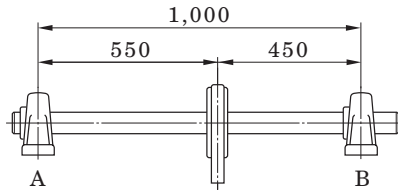
$$F_{1B} = \frac{300}{900} \times 1.5 = 0.5 \text{ (kN)}$$

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

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

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 ($W = 7.5 \text{ kW}$), rotating speed n is 300 min^{-1} ($n = 300 \text{ min}^{-1}$), effective diameter of pulley D_p is 300 mm ($D_p = 300 \text{ mm}$).



- (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 ($F_r = 1.5 \text{ kN}$), and the axial load F_a , 0.85 kN, ($F_a = 0.85 \text{ kN}$) 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 ($C_{0r} = 15.0 \text{ kN}$), and **Table 5.4**.

Find the solutions of the following formulas:

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

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

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 , $1,000 \text{ min}^{-1}$.

- (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 ($C_r = 26.7 \text{ kN}$), 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 $1,000 \text{ min}^{-1}$ ($n = 1,000 \text{ min}^{-1}$), 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 $1,500 \text{ min}^{-1}$ ($n = 1,500 \text{ min}^{-1}$), and radial load F_r is 5 kN ($F_r = 5 \text{ kN}$). 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 ($L_h = 5,000 \text{ hr}$), 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 $1,500 \text{ min}^{-1}$ ($n = 1,500 \text{ min}^{-1}$).

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

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

- (2) Find the flange type unit that meets the following condition: dynamic radial load rating C_r is 38.6 kN ($C_r = 38.6 \text{ kN}$). For the 200 series, UCF211J (dynamic radial load rating C_r is 43.4 kN ($C_r = 43.4 \text{ kN}$)) 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)**.

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

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

$$\begin{aligned} \text{Dynamic radial load rating } C_r &= P_r \cdot \frac{f_h}{f_n} = 12 \times \frac{2.71}{1.61} \\ &\approx 20.2 \text{ (kN)} \end{aligned}$$

- (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} .

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

- (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} ($n = 800 \text{ min}^{-1}$). 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 .

$$C_r = 67.4 \times 0.95 = 64.0 \text{ (kN)}$$

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

$$\begin{aligned} L_{10h} &= \frac{10^6}{60n} \cdot \left(\frac{C_r}{P_r}\right)^3 = \frac{10^6}{60 \times 800} \times \left(\frac{64.0}{4}\right)^3 \\ &\approx 85,000 \text{ (hr)} \end{aligned}$$

- (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} ($n = 800 \text{ min}^{-1}$). 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)**.

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

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)**.

$$\begin{aligned} L_{10h} &= \frac{10^6}{60n} \cdot \left(\frac{C_r}{P_r}\right)^3 = \frac{10^6}{60 \times 800} \times \left(\frac{12.8}{1}\right)^3 \\ &\approx 43,700 \text{ (hr)} \end{aligned}$$

- (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).

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)			L III type (L3)			Heat resistant type (K3), High-speed 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 ring size code (07, 10, 24, etc.)

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
L III type (Accessory code: L3)	—	—	—	1	1	0.9
Heat resistant type (Special code: D1K2)	—	—	—	1	1	0.7
Cold resistant type (Special code: D2K2)	—	—	—	1	1	0.7
For high speed (Special code: K3)	—	1	0.8	0.6	—	—
For blower (Special 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) and low temperature (D2K2) series, in addition to the standard models, to allow selection of the correct bearing for your operational temperature (see **Table 2.3**).

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.

$$S_{t1} = \alpha \cdot D_e \cdot \Delta t \quad (7.1)$$

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

Δt : 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”)

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

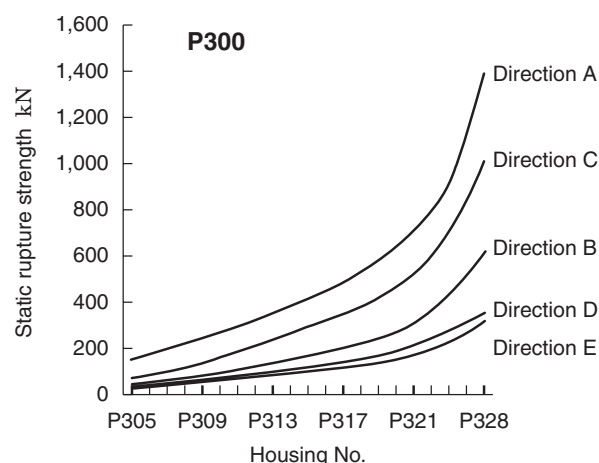
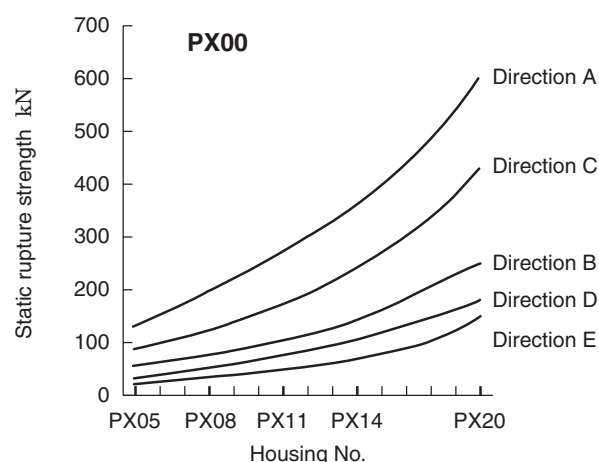
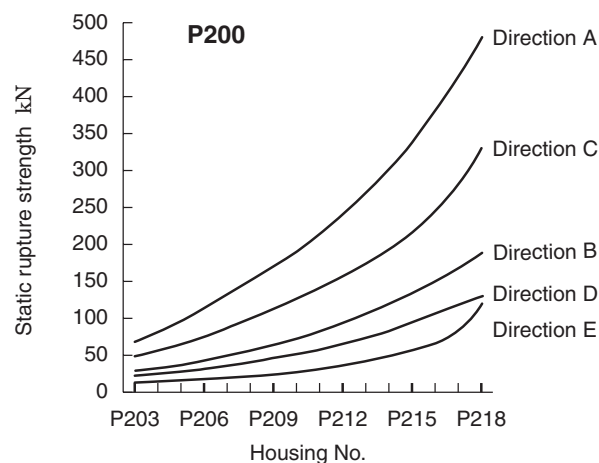
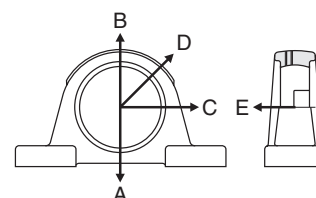


Fig. 8.1 Static rupture strength of pillow type housing (P)

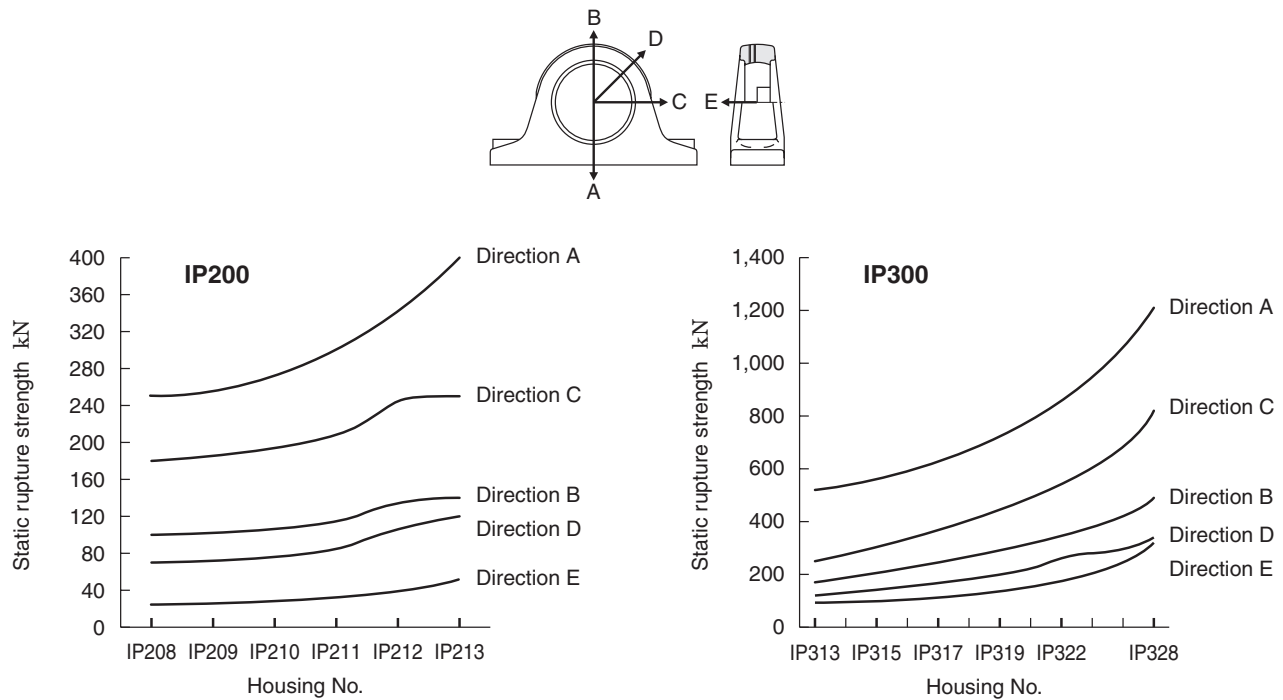


Fig. 8.2 Static rupture strength of thick pillow type housings (IP)

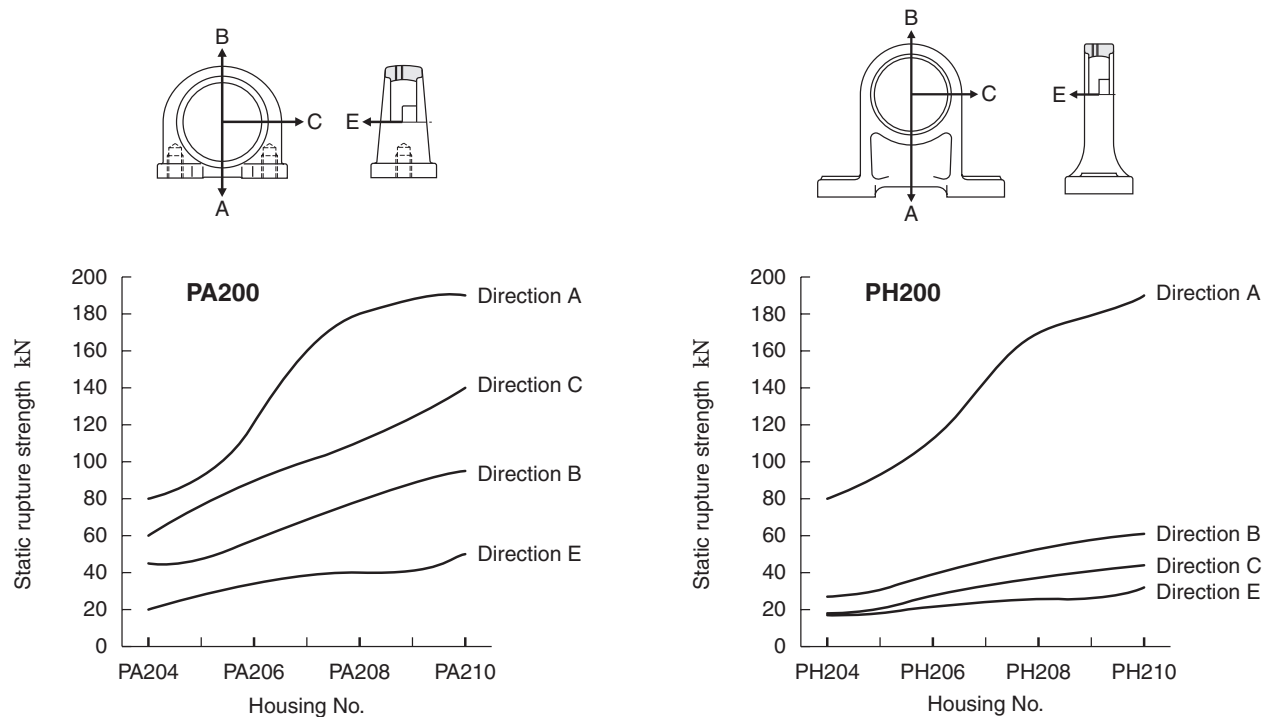


Fig. 8.3 Static rupture strength of tapped base pillow type housings (PA)

Fig. 8.4 Static rupture strength of higher center height pillow type housings (PH)

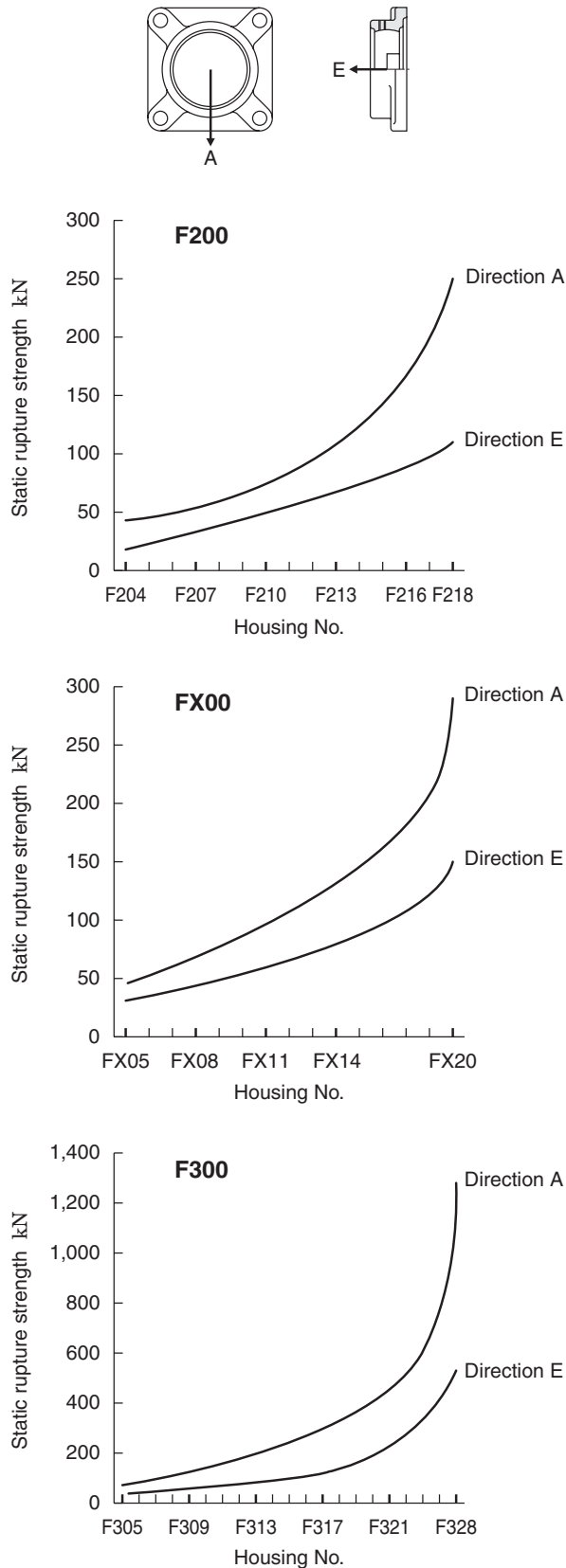


Fig. 8.5 Static rupture strength of square flange type housings (F)

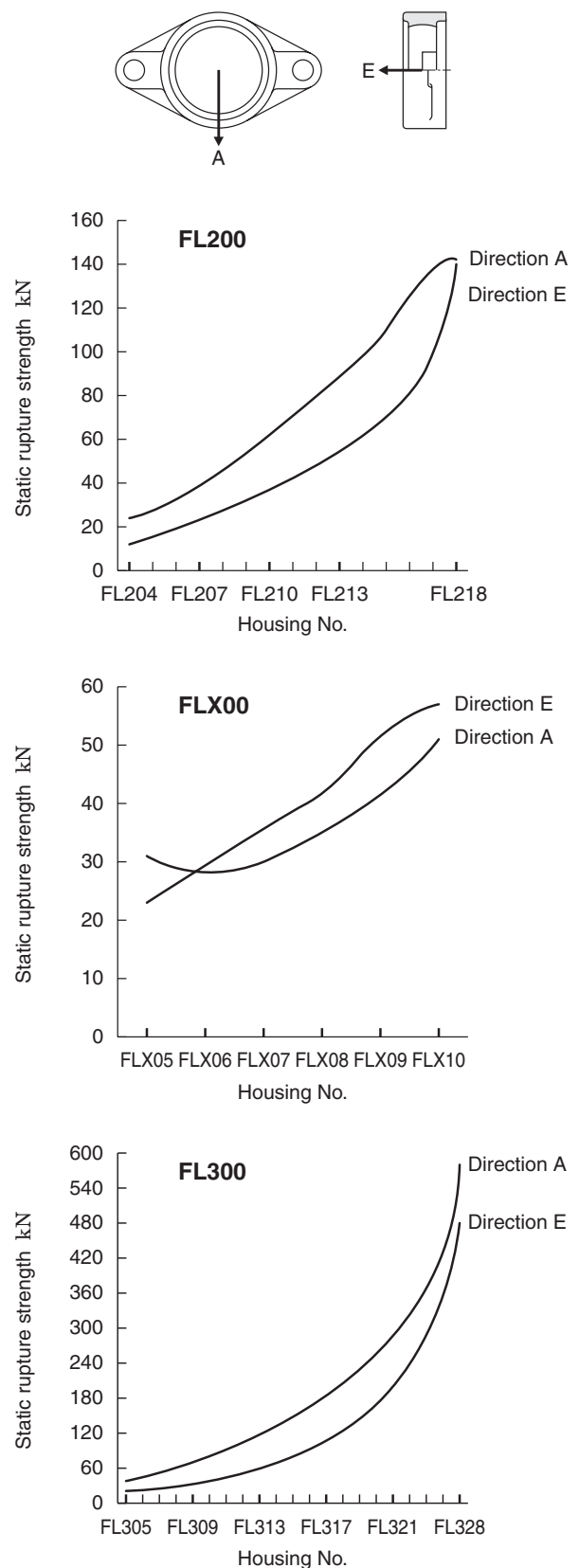


Fig. 8.6 Static rupture strength of oval flange type housings (FL)

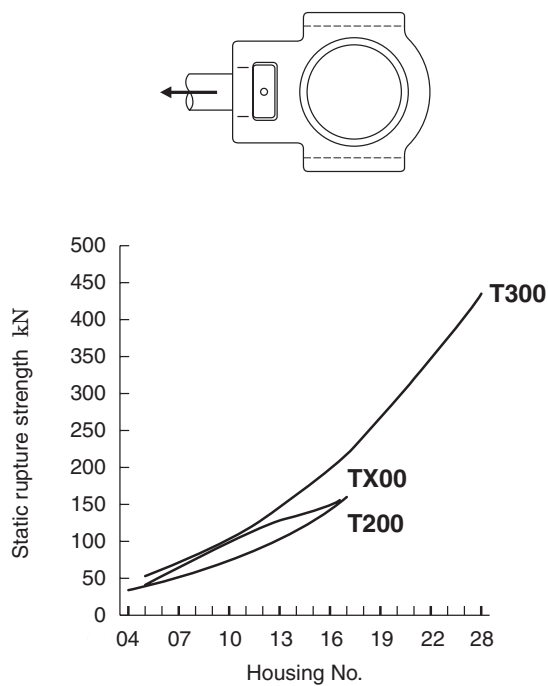


Fig. 8.7 Static rupture strength of take-up type housings (T)

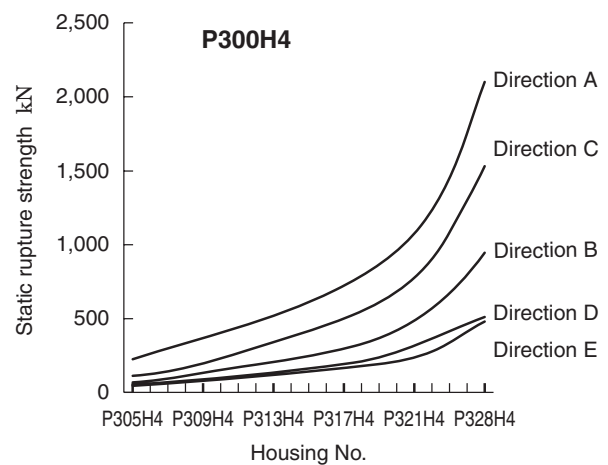
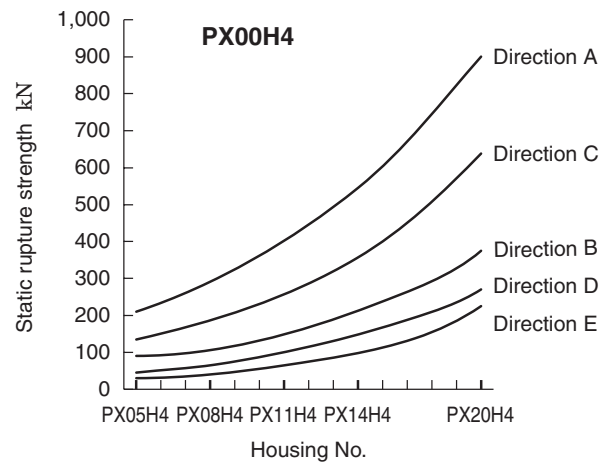
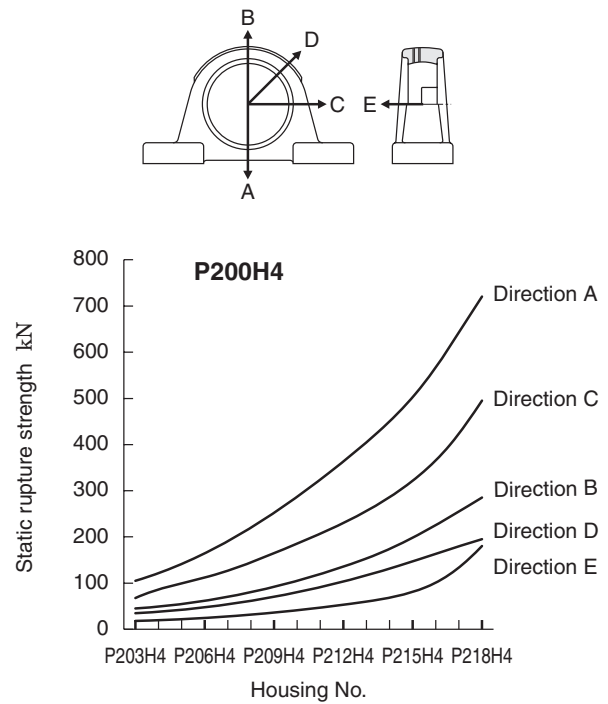


Fig. 8.8 Static rupture strength of ductile cast iron pillow type housings (PH4)

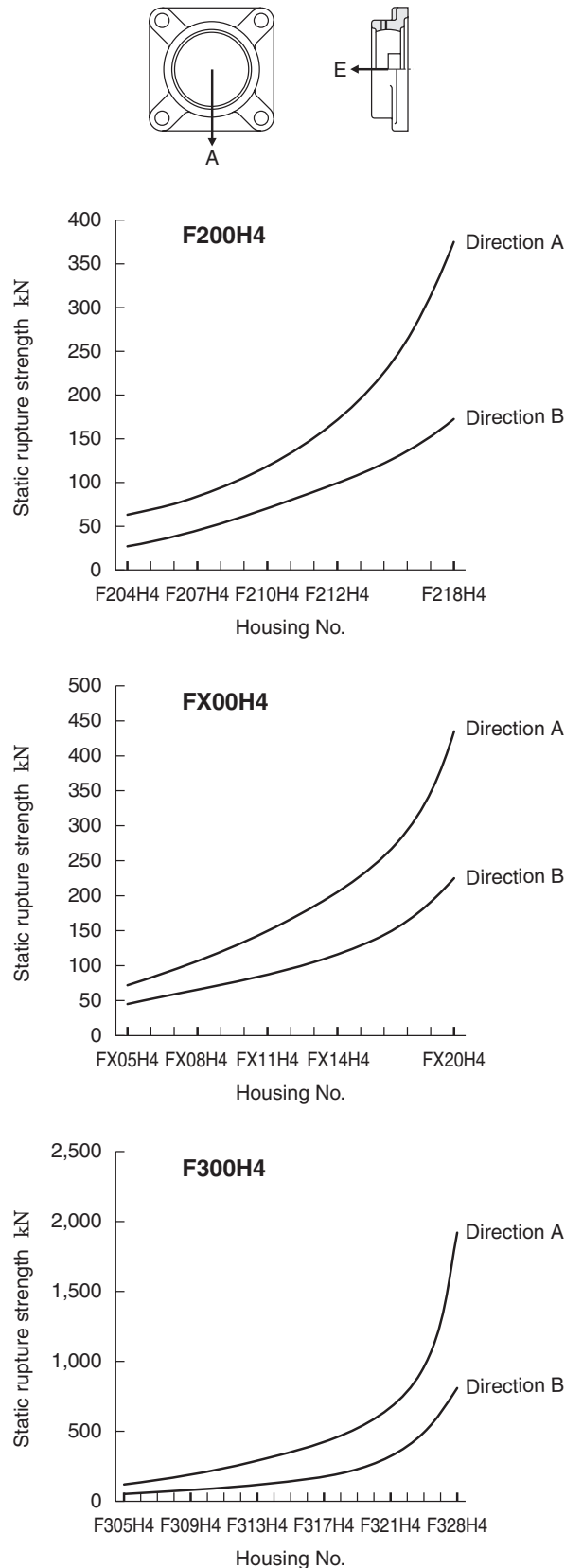


Fig. 8.9 Static rupture strength of ductile cast iron square flange type housings (FH4)

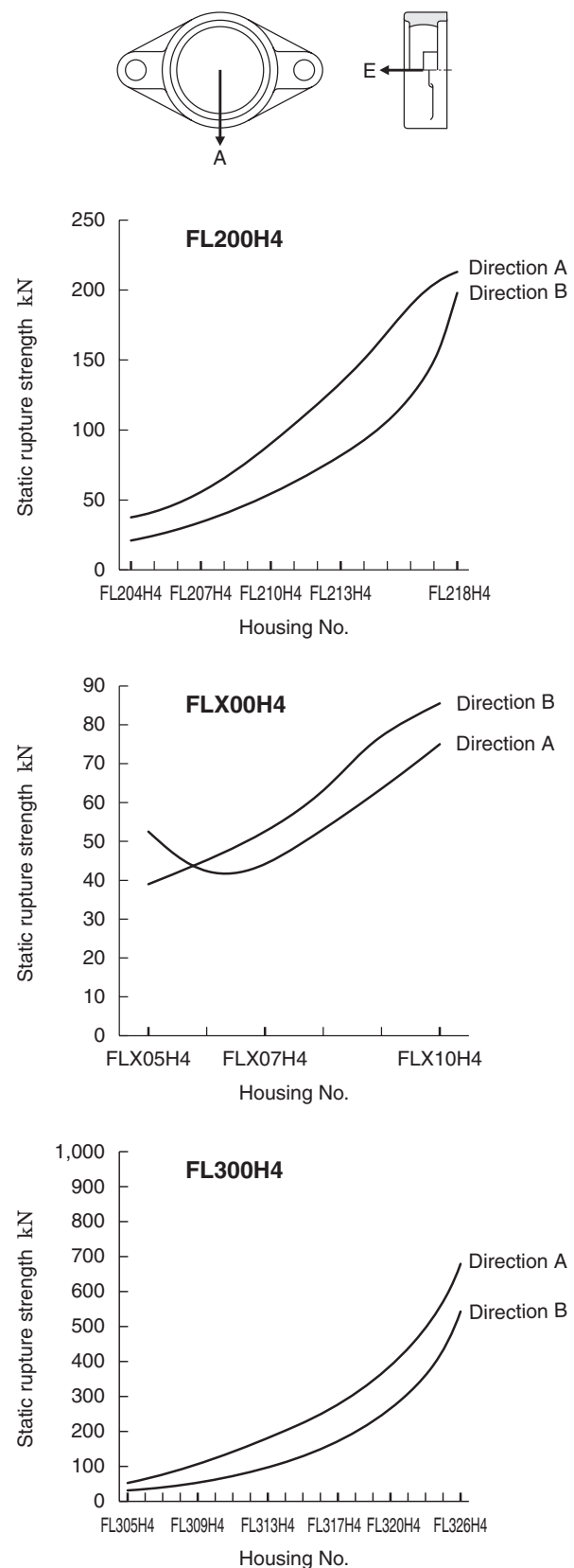


Fig. 8.10 Static rupture strength of ductile cast iron oval flange type housings (FLH4)

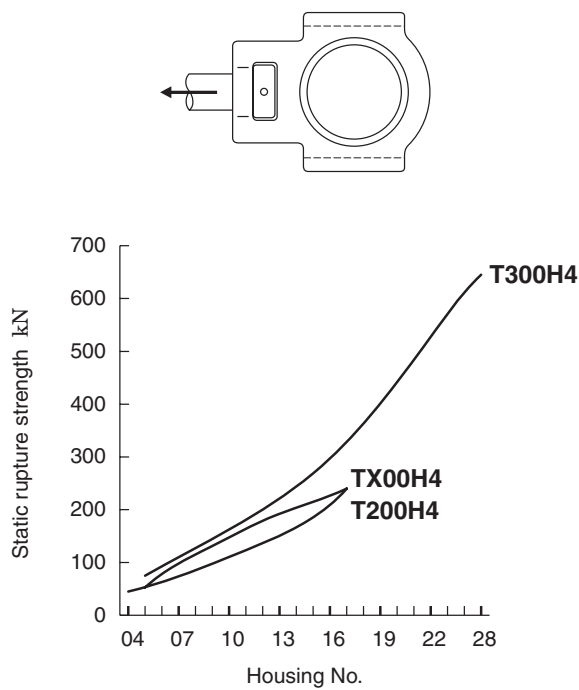


Fig. 8.11 Static rupture strength of ductile cast iron take-up type housings (TH4)

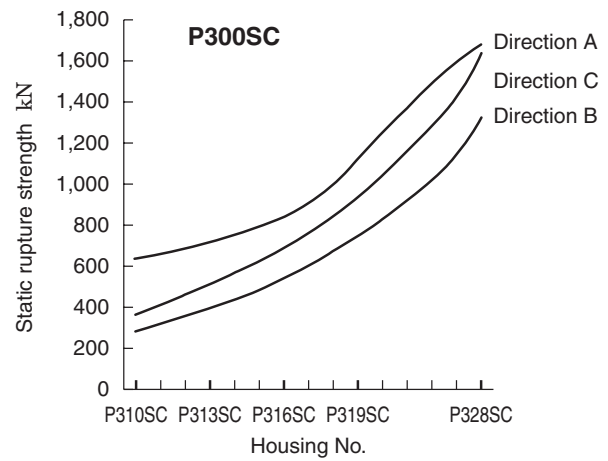
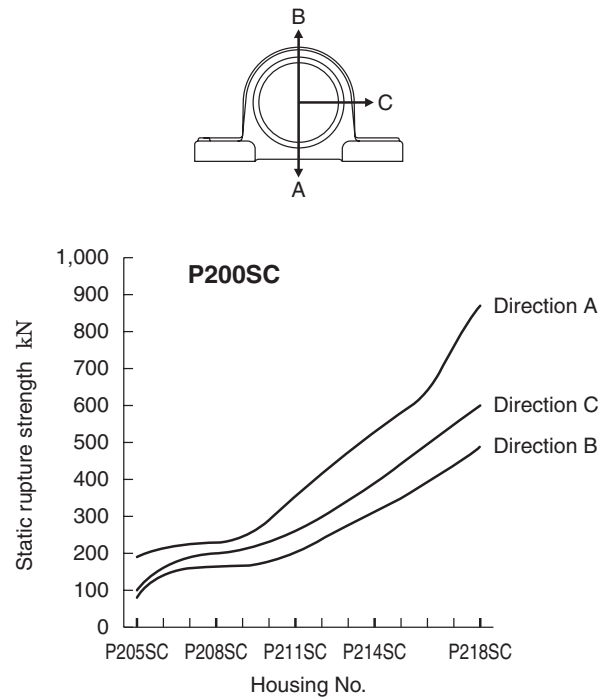


Fig. 8.12 Static rupture strength of cast steel pillow type housings (Psc)

8.3 Strength of cast steel housings

Cast steel housings should be selected where high rupture strength and superior impact resistance are required.

FYH manufactures a cast steel pillow block housing (P200sc, P300sc) series.

To determine the allowable load of a cast steel housing, find the static rupture strength of a steel housing from **Fig. 8.12** and apply the safety factors for steel shown in **Table 8.3**.

Table 8.3 Safety factor of cast steel products (recommended)

Property of load	Safety factor of cast steel product
Static load	3
With vibration	5
With impact	10

8.4 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 8.4**.

Table 8.4 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)

8.5 Strength of stainless steel housings

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

Table 8.5 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 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**. For the basic values of the static rupture strength of the SP and SFL type housings, see P000 of **Fig. 8.13** and FL000 of **Fig. 8.14** and multiply them by 1.5 respectively.

Table 8.5 Safety factor of stainless steel products

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

8.6 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 8.6** shows safety factors for die-cast zinc alloy, and **Fig. 8.13** and **8.14** show the basic values of the static rupture strength of the die-cast zinc alloy housing.

Table 8.6 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

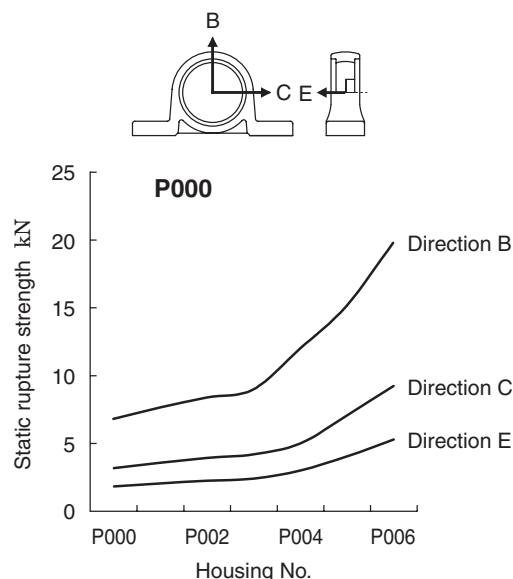


Fig. 8.13 Static rupture strength of clean housings (P)

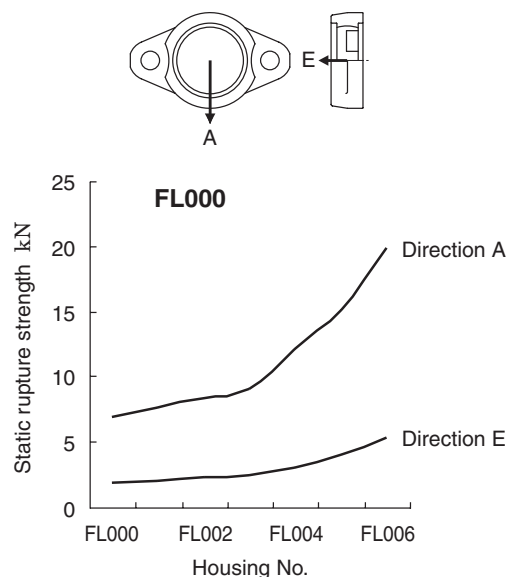


Fig. 8.14 Static rupture strength of clean housings (FL)

8.7 Static rupture strength of plastic housings

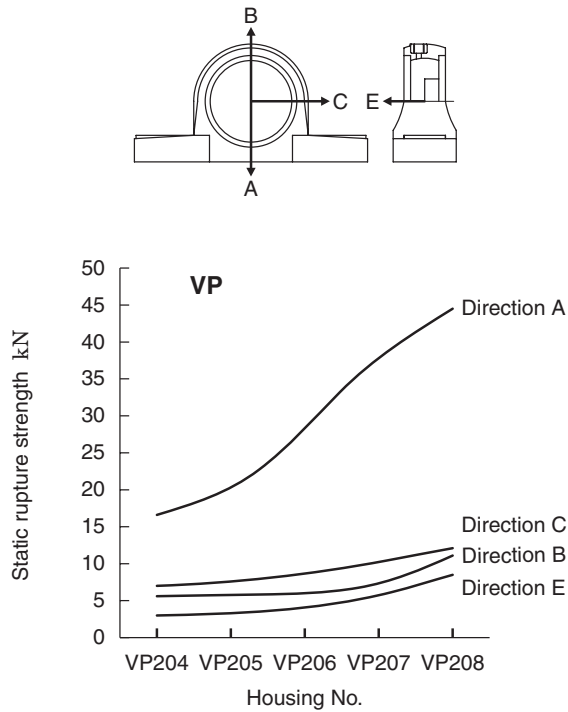


Fig. 8.15 Static rupture strength of plastic housings (VP)

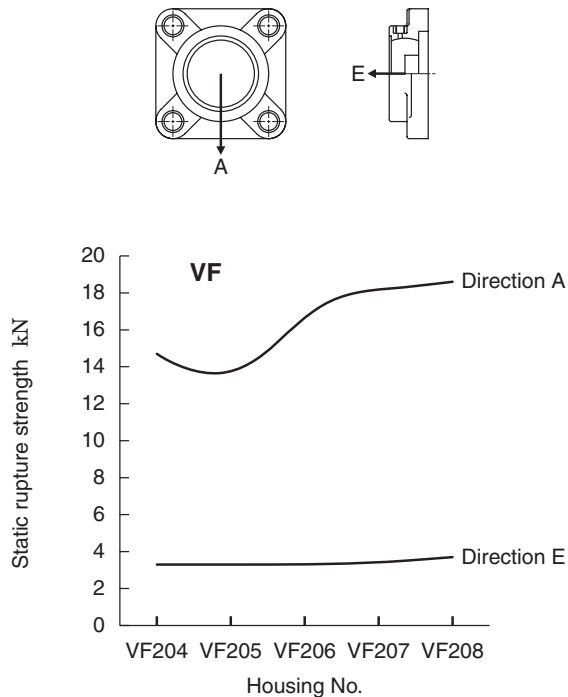


Fig. 8.16 Static rupture strength of plastic housings (VF)

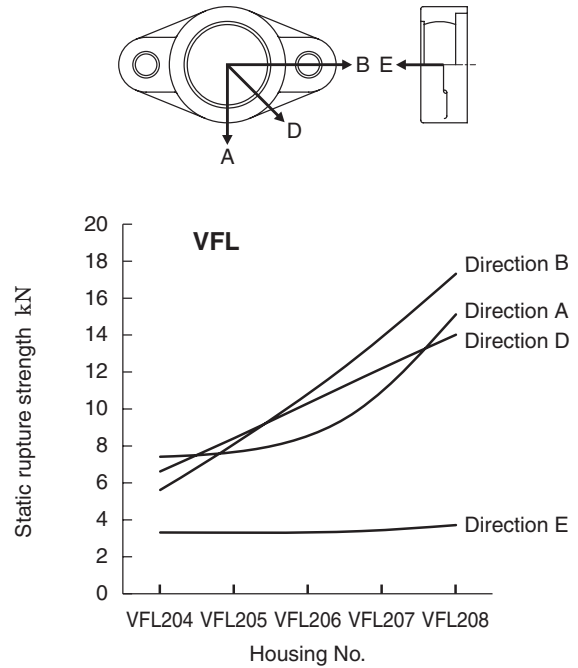


Fig 8.17 Static rupture strength of plastic housings (VFL)

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 ($23\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$).

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

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

For bearings used in blowers (special code: S3, S5), a C2 internal ball clearance is recommended to reduce vibration and noise during operation.

Therefore, the shaft tolerance classes shown in **Table 9.4** are recommended for bearings with set screws.

Table 9.4 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

(3) 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 9.5 shows the dimensional tolerance of the shaft used with tapered bore bearings (with adapters).

Table 9.5 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

(4) 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 9.4**.

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

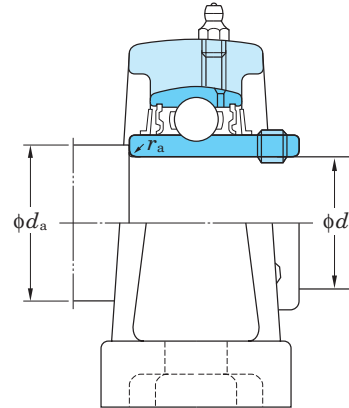
Regarding the shaft used for concentric locking collar bearings, the same clearance (h5 or j5) fits are recommended as with air handling bearings as shown in **Table 9.4**.

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.

Table 9.6 shows the shoulder diameter and the fillet radius of the shouldered shaft.

Table 9.6 Recommended shoulder diameter and fillet radius of a shouldered shaft



Unit: mm

Bore dia. code	Nominal bearing bore dia. d	Diameter Series ¹⁾		Diameter Series ¹⁾	
		UC200, UCX00		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 ring size code (07, 10, 24, etc.)

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)**.

$$\Delta l = \alpha \cdot \Delta t \cdot l \quad (9.1)$$

Whereas,

Δl : Expansion of shaft, mm

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

Δt : Temperature increase, °C

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 (special 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 9.7** 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 corrosion between the shaft and the inner race. In order to prevent fretting corrosion, a high temperature grease must be applied to the inner ring of the bearing and the shaft prior to installation.

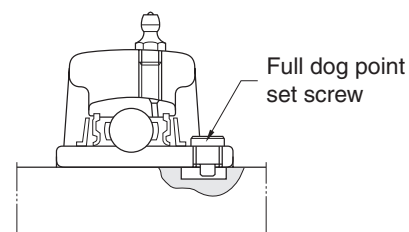
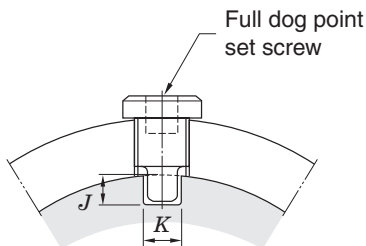


Fig. 9.1 Use on free side with full dog point set screw

Table 9.7 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)



(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.

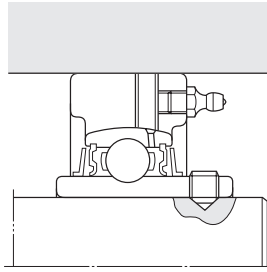


Fig. 9.2 Use of cartridge type units on free side

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”).

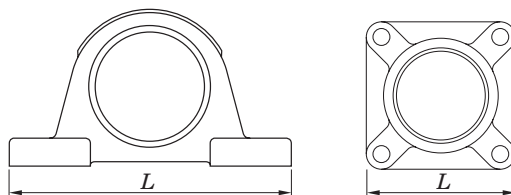
9.2 Mounting base design

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 9.8 shows the dimensional requirements for the cylindrical bore.

Table 9.8 Dimensional tolerance of cylindrical bore for mounting cartridge type units (recommended values)

Unit: μm

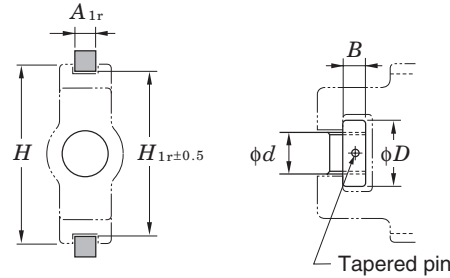
Nominal bore dia. of cylindrical bore (mm)		Dimensional tolerance of cylindrical bore			
		H7		G7	
Over	Incl.	Max.	Min.	Max.	Min.
50	80	+30	0	+40	+10
80	120	+35	0	+47	+12
120	180	+40	0	+54	+14
180	250	+46	0	+61	+15
250	315	+52	0	+69	+17
315	400	+57	0	+75	+18

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

Table 9.9 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 + H309X

Bearing No.:	UK209+H309X
Housing No.:	P209JE1
Steel plate cover No.:	(Open type) C-9x40 (Closed type) D-9

UC F 209 J L3 FD D1K2 G6 A1

UC: Bearing model code (Table 10.1)
 F: Housing model code (Table 10.2)
 209: Diameter series code (Table 10.3)
 J: Bore dia. code (Table 10.4)
 L3: Fitting code (Table 10.5)
 FD: Accessory code (Table 10.6)
 D1K2: Housing special code (Table 10.8)
 G6: Bearing special code (Table 10.7)
 A1: Housing special code (Table 10.8)

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

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	Cylindrical bore, with set screws
UC-S6	Cylindrical bore, with set screws (stainless steel series)
UK	Tapered bore with adapter sleeve
NA	Cylindrical bore, with eccentric locking collar
NC	Cylindrical bore, with concentric locking collar
SB	Cylindrical bore, with set screws (lightweight type)
SU	Cylindrical bore, with set screws (clean series)
SA	Cylindrical bore, with eccentric locking collar (lightweight type)
SU-S6	Cylindrical bore, with set screws (stainless steel series)
ER	Cylindrical bore, with set screws, cylindrical outer diameter, Lubricating mechanism, snap ring
RB	Cylindrical bore, with set screws, cylindrical outer diameter

Table 10.2 Housing model code

Housing model code	Details
P	Pillow type
P-SC	Cast steel pillow type
IP	Thick pillow type
PA	Tapped-base pillow
PAN	Tapped-base pillow
PH	High centerheight 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)
VP	Pillow type (thermoplastic series)

Table 10.2 Housing model code (continued)

Housing model code	Details
SP	Pillow type (stainless steel series)
PP	Stamped steel pillow type
F	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)
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)
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)
T	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
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	(Bore dia. code) $\times 5$ = 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	SH44M
	D2	SH33M
	D9	Demnum L-200
Set Screw	G4	Cone point
	G6	Capped full dog point
	G7	With patch nylon
	G23	Bullet Point
Seal	K2	Silicone rubber
	K3	Non-contact type
Sealing Device	P3	Without seal, slinger
	P4	Without seal
Others	S3	Air handling series Internal clearance and bore accuracy are specially controlled
	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)
	SC	Carbon steel cast steel model (SC450)
Grease Fitting	N1	B type (67.5°)
	N2	C type (90°)
Surface treatment	Z5	Nickel plated housing

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 11.6 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. ΔD_m		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

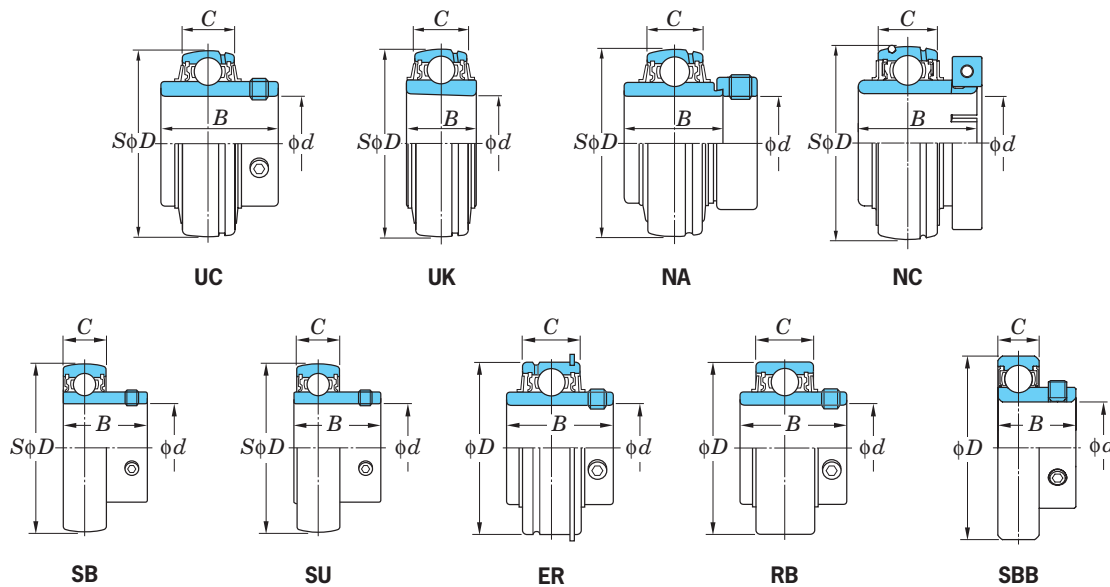


Table 11.1 Tolerances and tolerance values of inner rings of ball bearings for ball bearing units

Unit: μm

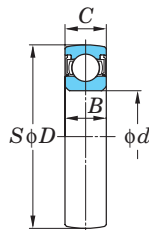
Nominal bearing bore dia. d (mm)		Variation of tolerance of average bore dia. in plane Δd_{mp}		Unequal bore dia. in plane V_{dp}	Variation of tolerance of eccentricity on eccentric surface of inner ring and eccentric locking collar ΔH_s		Variation of tolerance of inner ring width ΔB_s		Radial runout 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 Tolerances and tolerance values of inner rings of ball bearing units for blowers (S5)

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_{dp}	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
80	120	+18	0	14	13
120	180	+23	0	14	18

Table 11.5 Tolerances and tolerance values of inner rings of SC ball bearings

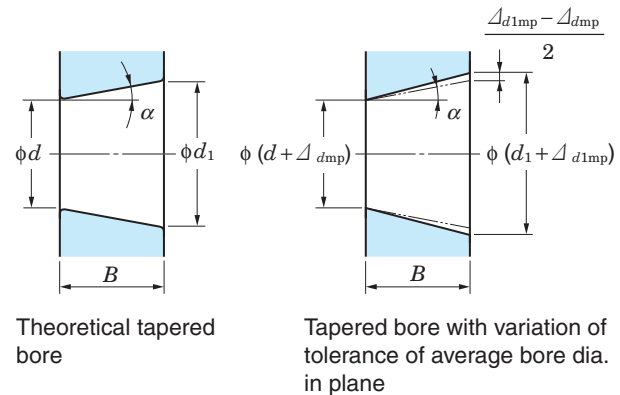


SC

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_{dp}	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

Table 11.4 Variation of tolerances and tolerance values of tapered bore on bearing with tapered bore



Unit: μm

Nominal bearing bore dia. d , mm		Δ_{dmp}		$\Delta_{d1mp} - \Delta_{dmp}$		$V_{dp}^{(1)}$
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

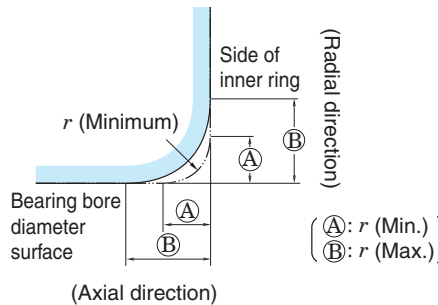
V_{dp} : Unequal bore diameter in plane

B : Nominal inner ring width

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

$\alpha = 2^\circ 23' 9.4''$
 $= 2.385 94^\circ$
 $= 0.041 643 \text{ rad}$

Table 11.6 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 11.7 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.

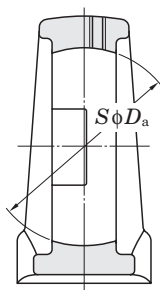
A class H7 tolerance allows greater clearance for applications where minor shaft alignment constantly occurs or in environments where higher temperatures can cause thermal expansion. An anti-rotation pin on the outer ring of the bearing is supplied with these units to prevent the outer ring of the bearing 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 11.7 Allowance of spherical bore diameter of housings

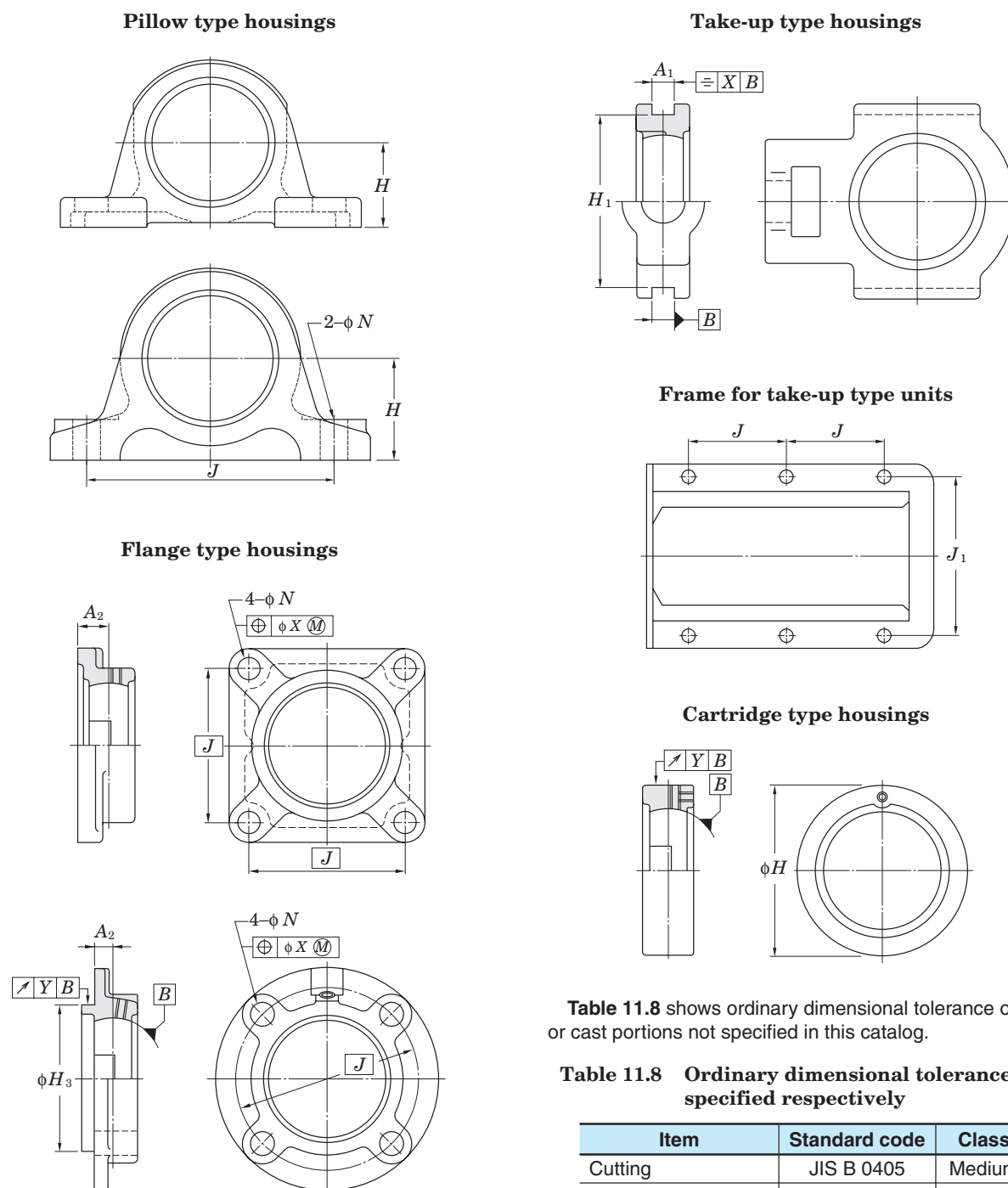
Unit: μm



Nominal dia. of spherical bore D_a (mm)		Tolerance class H7		Tolerance class J7		Tolerance class K7	
		Variation of tolerance of spherical bore dia. ΔD_{am}		Variation of tolerance of spherical bore dia. ΔD_{am}		Variation of tolerance of spherical bore dia. ΔD_{am}	
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.

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



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

Table 11.8 shows ordinary dimensional tolerance of cut or cast portions not specified in this catalog.

Table 11.8 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 11.9 shows the internal clearance applicable to specific operating conditions and Table 11.10 shows the available options for internal clearance.

Table 11.9 Internal clearance applicable to specific operating conditions

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

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

Table 11.10 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.		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	

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, cast carbon steel, 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.

Cast carbon steel (SC450) is also available for the ultimate in durability in extremely difficult operating environments. Cast carbon steel housings provide the highest degree of strength and rupture resistance.

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 **12.9** 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

Table 12.4 Mechanical properties of carbon steel cast steel products (SC450)

Type code	Yielding point N/mm ²	Tensile strength N/mm ²	Elonga- tion %	Reduction %
SC450	225 or more	450 or more	19 or more	30 or more

Table 12.5 Mechanical properties of cast carbon steel products (JIS G 3101)

Type code	Yielding point or bearing force N/mm ²			Tensile strength N/mm ²	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 12.6 Mechanical properties of zinc alloy die-cast (ZDC02) (JIS H 5301) (Reference)

Code	Tensile strength N/mm ²	Elongation %	Impact N · m/cm ²	Hardness HB
ZDC2	285	10	140	82

Table 12.7 Mechanical properties of stainless cast steel products (SCS 13, SCS 14) (JIS G 5121)

Type code	Bearing force N/mm ²	Tensile strength N/mm ²	Elongation %	Hardness 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 12.8 Mechanical properties of cold rolled sheet steel and steel strip (SPCC) (JIS G 3141)

Type code	Tensile strength N/mm ²	Elongation %
SPCC	270 or more	34 or more
SPCD	270 or more	36 or more

Table 12.9 Mechanical properties of ductile cast iron (FCD450-10) (JIS G 5502)

Type code	Tensile strength N/mm ²	Elongation %
FCD	450 or more	10 or more

12.3 Materials of parts and accessories

Table 12.10 shows materials of parts and accessories of a ball bearing unit.

Table 12.10 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 stainless 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 stainless 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 molybdenum steel	SCM435	JIS G 4105
Stainless steel hexagon socket set screw	Stainless bar steel	SUS304	JIS G 4303
Adapter sleeve for bearing	Mechanical structural carbon steel	S25C	JIS G 4051
Lock nut for bearing	Mechanical structural carbon steel	S25C	JIS G 4051
Washer for bearing	Cold rolled steel plate and steel strip	SPCC	JIS G 3141
Eccentric locking collar	Mechanical structural carbon steel	S17C	JIS G 4051
Grease fitting	Copper and copper alloy rod	SUM24L	JIS G 4804

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.

$$M = M_p + M_k \quad (13.1)$$

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

Whereas,

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

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

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

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.

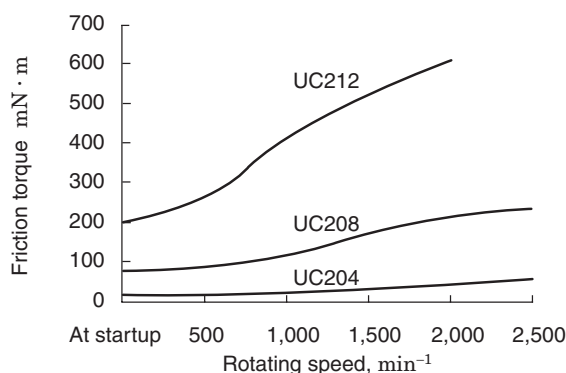


Fig. 13.1 Example of measurement result of ball bearing units

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.

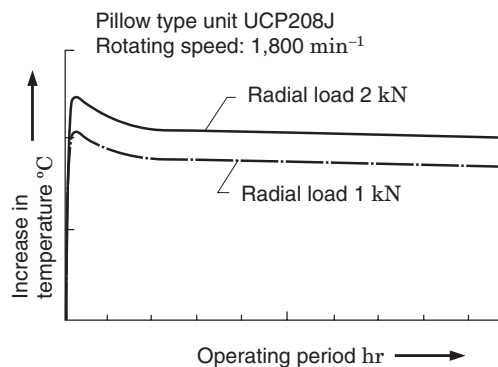


Fig. 13.2 Example of temperature measurement during operation of pillow type units

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.

13.3 Dustproof and waterproof performance

FYH executes various tests to check dustproof and waterproof performance of different models of bearings. Representative results are shown below.

13.3.1 Dust sprinkle rotating test (dust resistance performance)

In this test, dust is sprinkled directly on the bearing as it is operating in a rotating drum machine. Performance and dust resistance for various sealing mechanisms are judged based on this test.

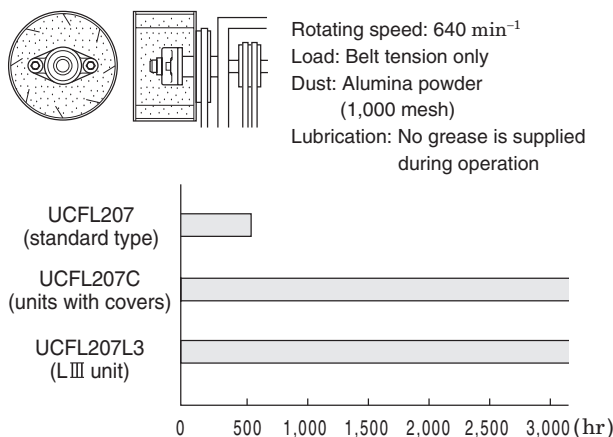


Fig. 13.3 Example result of dust sprinkle rotating test (dust proof performance)

The standard single-lip bearing exhibited abnormal noise after about 500 hours of operation, and ingress of dust was found.

On the other hand, no abnormality was found in either the triple-lip bearing (suffix code: L3) or the covered unit (suffix code: C) even after 3,000 hours of operation, and therefore superior dustproof performance was established.

13.3.2 Dust immersion rotating test (dustproof performance)

In this test, units are completely buried in dust with impellers installed on the shaft to further stir and circulate the dust. This test is executed under the most severe conditions encountered by mounted bearing units.

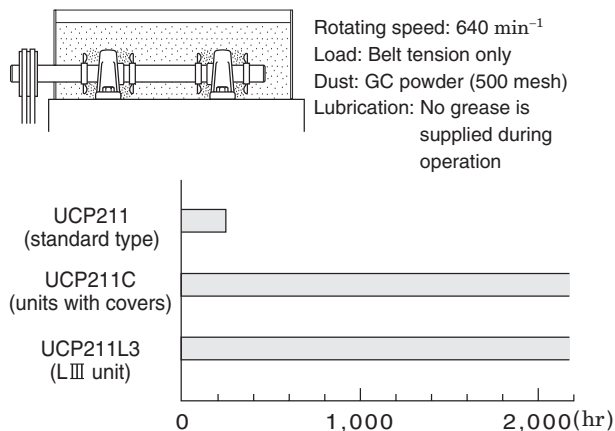


Fig. 13.4 Example result of dust immersion rotating test (dustproof performance)

The standard single-lip bearing exhibited abnormal noise after about 200 hours of operation, and ingress of dust was found.

On the other hand, no abnormality was found in either the triple-lip bearing (suffix code: L3) or the covered unit (suffix code: C) even after 2,000 hours of operation, and therefore superior dustproof performance was established.

13.3.3 Waterproof test

In this test, water is splashed directly onto the units by impellers installed on the shaft.

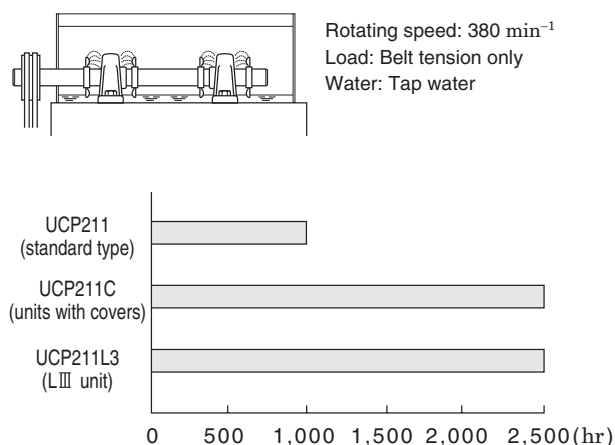


Fig. 13.5 Example result of waterproof performance test

The standard single-lip bearing exhibited rust on the balls and surface of the raceways (inner and outer rings) after about 1,000 hours of operation.

On the other hand, no rust was found in either the triple-lip bearing (suffix code: L3) or the covered unit (suffix code: C) after 2,500 hours of operation.

14 Handling

One of the predominate features of FYH Bearing Units is the simplicity of handling and installation. It is of the utmost importance that these units are handled and installed correctly to ensure reliable performance.

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.

If the unit is mounted in an environment where it is exposed to impact or vibration, or if the shaft is rotated bi-directionally, or if rotation is started and stopped frequently and repeatedly, then grind or drill the surface of the shaft where it is contacted by the setscrew in order to create a flat seat (**Fig. 14.1**) or drilled seat (**Fig. 14.2**). This will significantly improve the tightening effect of the setscrews.

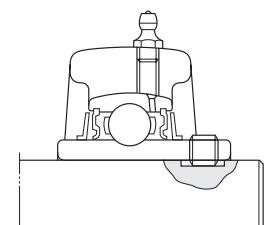


Fig. 14.1 Flat seat provided for shaft
(for improvement in set screw tightening effect)

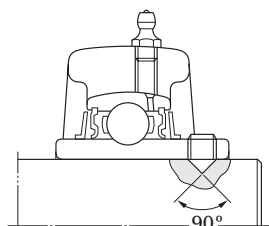


Fig. 14.2 Drilled seat provided for shaft
(for improvement in set screw tightening effect)
For use with Cone Point setscrews

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. 14.3**)

For dimensions of the shouldered shaft, see “9 Design of shaft and base”.

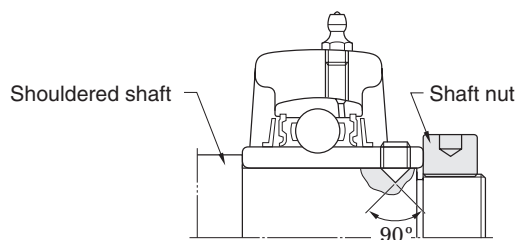


Fig. 14.3 Example of installation with a shouldered shaft and shaft nut

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  Double Point with Locking finish (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 (G7). Prevent looseness with elastic force of nylon film fused to the thread surface.
Cone Point (G4) 	The cone point setscrew has a 90° 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.
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.

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 °C or less). Avoid striking the bearing with a hammer to press-fit the bearing to the shaft.
- (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**).

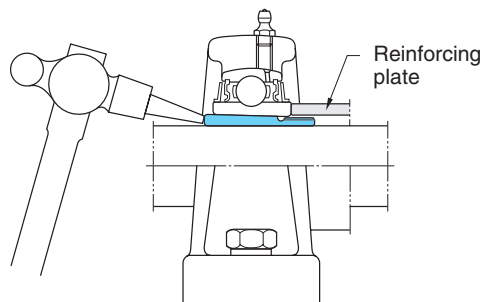


Fig. 14.6 Fitting adapter sleeve to bearing with tapered bore

- (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.



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

(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 of 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).

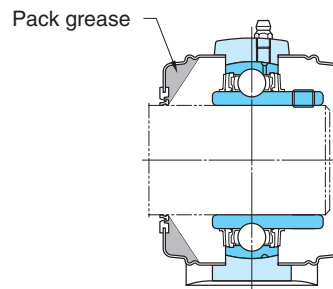


Fig. 14.12 Packing grease in internal space of seal lip of covers

- (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 groove 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.

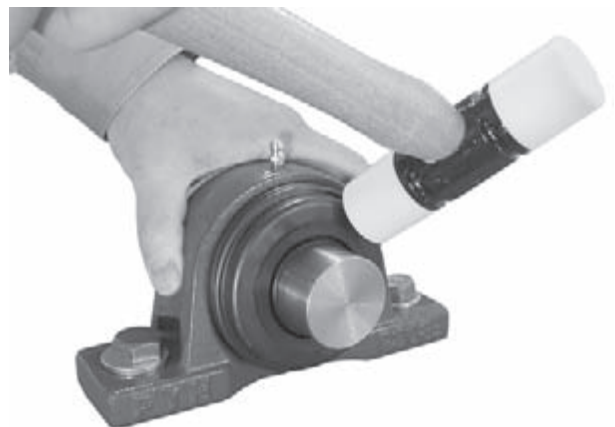


Fig. 14.13 Installing steel plate covers

(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 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 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 14.4**.

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 14.5 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 14.5** 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 (specific gravity: 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 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) not necessary	(2 months) 1 year	(1 month) 4 months	(Low temperature D2K2) ¹⁾	Shell Alvania RL2,
50	70	1 year	4 months	1 month	Standard bearing	Gold No.3, or equivalent
70	100	6 months	2 months	2 weeks		
100	120	2 months	2 weeks	5 days	High temperature D1K2	SH44M
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.

Table 14.5 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 ring size code (07, 10, 24, etc.)

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 2.3** (page 19) 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.

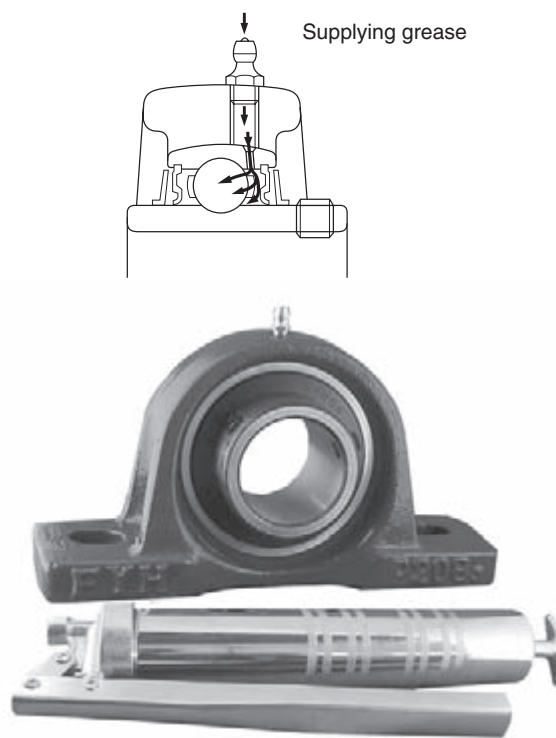


Fig. 14.14 Supplying grease to ball bearing units

- (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, 45° and 90° angled fittings are available as an option. See the images below of these grease fittings. Contact FYH for more information.

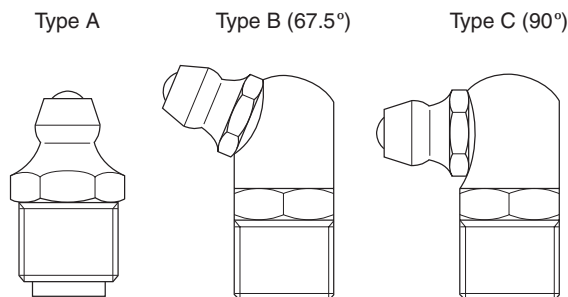


Fig. 14.15 Types of grease fittings for ball bearing units

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 14.5**. The total amount of grease is a multiple of the number of bearings being supplied by the central lubrication system.

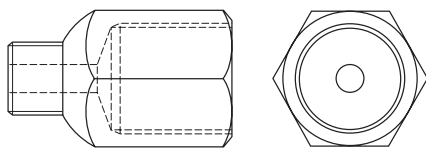


Fig. 14.16 Reducing coupling for centralized lubrication systems

For details of grease fittings and reducing couplings, see “**16 Parts and accessories**” in the back of the catalog.

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

15 Dimensional tables for ball bearing units (contents)

1 Pillow type units

Pillow type units

UCP (d 12 ~ 140).....	72
NAP (d 12 ~ 75).....	78
NAPK (d 12 ~ 75).....	80
NCP (d 20 ~ 60).....	82
UKP (d_1 20 ~ 125).....	84
UCP-sc (d 25 ~ 140).....	90
UKP-sc (d_1 20 ~ 125).....	94

Thick pillow type units

UCIP (d 40 ~ 140).....	98
UKIP (d_1 35 ~ 125).....	100

Tapped-base pillow type units

UCPA (d 12 ~ 50).....	102
UCPAN (d 20 ~ 35).....	104
NCPA (d 20 ~ 50).....	106
NCPAN (d 20 ~ 35).....	108

High centerheight pillow type units

UCPH (d 12 ~ 50).....	110
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Lightweight pillow type units

BLP, ALP (d 12 ~ 40).....	112
------------------------------	-----

Lightweight (die-cast) pillow type units

UP (d 10 ~ 30).....	114
------------------------	-----

Corrosion resistant series stainless steel pillow type units

UCSP-H1S6 (d 12 ~ 60).....	116
-------------------------------	-----

Corrosion resistant series stainless steel tapped-base pillow type units

UCSPA-H1S6 (d 12 ~ 40).....	118
--------------------------------	-----

Corrosion resistant series stainless steel pillow type units

USP-S6 (d 10 ~ 30).....	120
----------------------------	-----

Corrosion resistant series plastic pillow type units

UCVP-S6 (d 20 ~ 50).....	122
UCVP-ES7 (d 20 ~ 50).....	124

Steel plate pillow type units

SBPP, SAPP (d 12 ~ 30).....	126
--------------------------------	-----

2 Square four-bolt flange type units

Square four-bolt flange type units

UCF (d 12 ~ 140).....	128
UCF-E (d 12 ~ 85).....	134
NANF (d 12 ~ 60).....	138
NCF (d 20 ~ 60).....	140
NCF-E (d 20 ~ 60).....	142
UKF (d_1 20 ~ 125).....	144

Square four-bolt flange cartridge type units

UCFS (d 25 ~ 140).....	150
UKFS (d_1 20 ~ 125).....	152

Corrosion resistant series stainless steel square four-bolt flange type units

UCSF-H1S6 (d 20 ~ 60).....	154
UCSF-EH1S6 (d 20 ~ 60).....	156

Corrosion resistant series plastic square four-bolt flange type units

UCVF-S6 (d 20 ~ 40).....	158
UCVF-ES7 (d 20 ~ 40).....	160

3 Oval flange type units

Oval two-bolt flange type units

UCFL (d 12 ~ 130).....	162
UCFL-E (d 12 ~ 85).....	168
NANFL (d 12 ~ 55).....	172
NCFL (d 20 ~ 60).....	174
NCFL-E (d 20 ~ 60).....	176
UKFL (d_1 20 ~ 115).....	178

Adjustable oval two-bolt flange type units

UCFA (d 12 ~ 55).....	182
--------------------------	-----

Three-bolt flange type units

UCFB (d 12 ~ 50).....	184
--------------------------	-----

Lightweight oval two-bolt flange type units

BLF, ALF (d 12 ~ 35).....	186
------------------------------	-----

Lightweight oval three-bolt flange type units

SATFD-FP9 (d 12 ~ 35).....	188
-------------------------------	-----

Lightweight (die-cast) oval two-bolt flange type units

UFL (d 8 ~ 30).....	190
------------------------	-----

Corrosion resistant series stainless steel oval two-bolt flange type units

UCSFL-H1S6 (d 12 ~ 50).....	192
UCSFL-EH1S6 (d 12 ~ 50).....	194
USFL-S6 (d 10 ~ 30).....	196

Corrosion resistant series plastic oval two-bolt flange type units

UCVFL-S6 (d 20 ~ 40).....	198
UCVFL-ES7 (d 20 ~ 40).....	200

4 Round flange cartridge type units

UCFC (d 12 ~ 100).....	202
UCFCX-E (d 25 ~ 100).....	206
UCFCF (d 25 ~ 55).....	208
NCFC (d 20 ~ 60).....	210
UKFC (d_1 20 ~ 90).....	212

5 Stamped steel plate flange type units

Stamped steel plate

round three-bolt flange type units

SBPF, SAPF (d 12 ~ 35) 216

Stamped steel plate

oval two-bolt flange type units

SBPFL, SAPFL (d 12 ~ 35) 218

6 Take-up type units

Take-up type units

UCT (d 12 ~ 140) 220

UCT-E (d 12 ~ 85) 226

NAT-E (d 12 ~ 75) 230

NCT (d 20 ~ 60) 232

NCT-E (d 20 ~ 60) 234

UKT (d_1 20 ~ 125) 236

Corrosion resistant series stainless steel take-up type units

UCST-H1S6 (d 20 ~ 50) 242

UCST-EH1S6 (d 20 ~ 50) 244

Section steel frame take-up type units

UCTH (d 12 ~ 65) 246

Channel steel frame take-up type units

UCTL (d 20 ~ 45) 248

UCTU (d 40 ~ 90) 250

Steel plate frame take-up type units

SBPTH (d 12 ~ 25) 254

SBNPTH (d 12 ~ 25) 256

7 Other units

Cartridge type units

UCC (d 12 ~ 140) 258

UKC (d_1 20 ~ 125) 262

Hanger type units

UCHA (d 12 ~ 75) 264

8 Ball bearing inserts

Cylindrical bore (with set screws)

UC, SB, SU (d 8 ~ 140) 266

Stainless steel series,

Cylindrical bore (with set screws)

UC-S6, SU-S6 (d 10 ~ 60) 272

Cylindrical bore

(with eccentric locking collar)

SA, SA-F, NA (d 12 ~ 75) 274

Cylindrical bore

(with concentric locking collar)

NC2 (d 20 ~ 60) 280

ERC (d 20 ~ 60) 282

Tapered bore (with adapter)

UK (d_1 20 ~ 125) 284

Cylindrical bore (with set screws),

Cylindrical O. D.

ER, RB (d 12 ~ 60) 290

Cylindrical bore

(with eccentric locking collar)

Cylindrical O. D.

SAA, SBB (d 12 ~ 55) 292

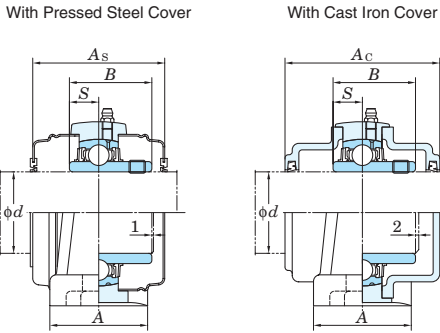
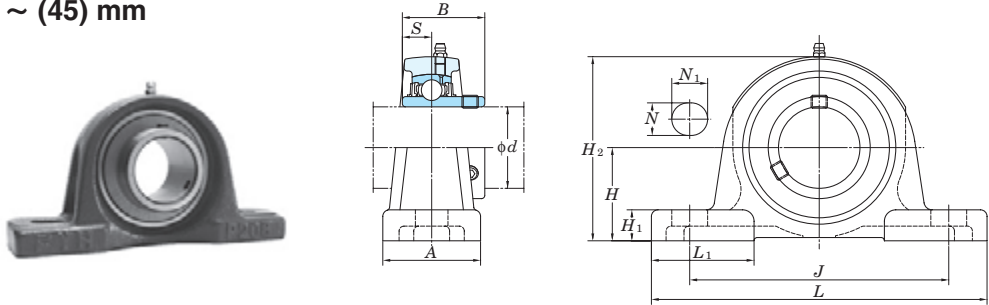
Cylindrical bore

SC (d 17 ~ 40) 294

9 Bearing adapters

H300X, H2300X (d_1 20 ~ 125) 296

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



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

Housing No.			ΔH_s
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.

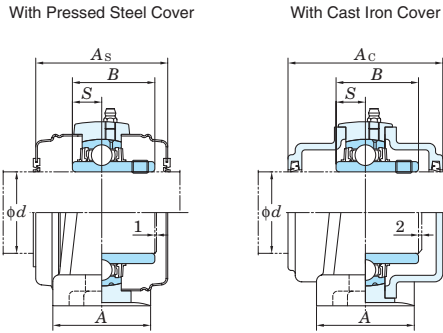
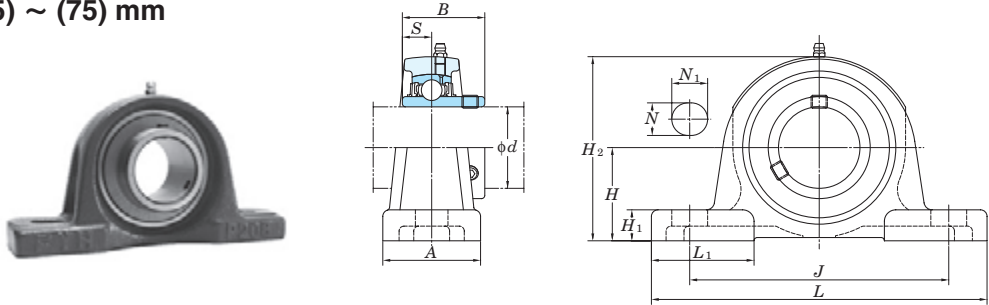
H_{2c}

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

Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Standard				Mass	Basic Load Ratings kN		Factor	With Pressed Steel Cover				With Cast Iron Cover																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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d		H	L	A	J	N	N ₁	H ₁	H ₂	L ₁	B	S																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
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), accessory 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

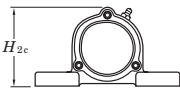


Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_B)

Housing No.			Unit: mm
ΔH_B			
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.

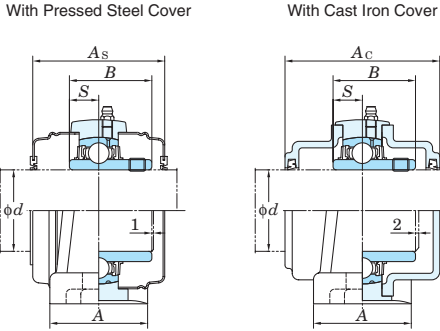
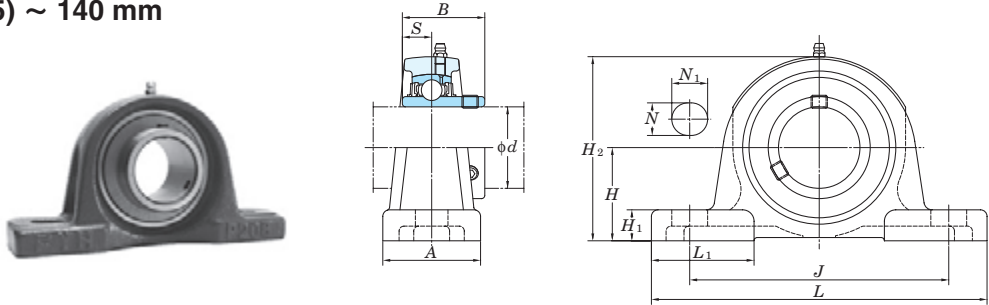
P204JE3 H_{2c} = 70 mm
P205JE3 H_{2c} = 77 mm



Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Standard				Mass kg	Basic		Factor	With Pressed Steel Cover				With Cast Iron Cover							
															Unit No.	Housing No.	Bearing No.		Load Ratings kN			Unit No.		Dimension mm inch	Mass kg	Unit No.		Dimension mm inch	Mass kg				
		Open Type	One Side Closed Type	Open Type	One Side Closed Type	Open Type	One Side Closed Type	Open Type	One Side Closed Type																								
d		H	L	A	J	N	N ₁	H ₁	H ₂	L ₁	B	S					C _r	C _{0r}	f ₀														
45	1 3/4	2 41/64 67	9 21/32 245	2 5/8 67	7 15/32 190	25/32 20	1 3/16 30	13/16 21	5 3/16 132	2 15/16 75	2.244 57	0.866 22	5/8 M16	UCP309-28 UCP309	P309	UC309-28 UC309	4.9 4.9	48.9	29.5	13.3	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
	1 7/8 1 15/16	2 1/4 57.2	8 1/8 206	2 3/8 60	6 1/4 159	25/32 20	7/8 22	3/4 19	4 7/16 113	2 15/32 63	2.031 51.6	0.748 19	5/8 M16	UCP210-30 UCP210-31 UCP210 UCP210-32	P210	UC210-30 UC210-31 UC210 UC210-32	2.9 2.9 2.9 2.9	35.1	23.3	14.4	— — UCP210C —	— — UCP210CD —	— — 73 —	— — 2 7/8 —	— — 2.9 —	— — UCP210FC —	— — UCP210FCD —	— — 97 —	— — 3 13/16 —	— — 3.9 —			
50	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 UCPX10 UCPX10-32	PX10	UCX10-31 UCX10 UCX10-32	4.6 4.6 4.6	43.4	29.4	14.4	— UCPX10C —	— UCPX10CD —	— 75 —	— 2 15/16 —	— 4.6 —	— — —	— — —	— — —	— — —	— — —	— — —		
	2	63.5	241	73	171	20	36	22	126	76	55.6	22.2	M16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	—	2 61/64 75	10 13/16 275	2 15/16 75	8 11/32 212	25/32 20	1 3/8 35	15/16 24	5 13/16 148	3 15/32 88	2.402 61	0.866 22	5/8 M16	UCP310	P310	UC310	6.6	62.0	38.3	13.2	—	—	—	—	—	—	—	—	—	—	—	—	8.2
55	2	2 1/2	8 5/8	2 3/8	6 23/32	25/32	7/8	3/4	4 29/32	2 3/4	2.189	0.874	5/8	UCP211-32 UCP211-34 UCP211 UCP211-35	P211	UC211-32 UC211-34 UC211 UC211-35	3.6 3.6 3.6 3.6	43.4	29.4	14.4	— — UCP211C —	— — UCP211CD —	— — 75 —	— — 2 15/16 —	— — 3.6 —	— — UCP211FC —	— — UCP211FCD —	— — 99 —	— — 3 29/32 —	— — 4.8 —			
	2 3/16	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 UCPX11-35 UCPX11-36	PX11	UCX11 UCX11-35 UCX11-36	6.5 6.5 6.5	52.4	36.2	14.4	— UCPX11C —	— UCPX11CD —	— 88 —	— 3 15/32 —	6.5 — —	— — —	— — —	— — —	— — —	— — —	— — —		
	2 1/4	69.8	260	79	184	25	36	28	139	83	65.1	25.4	M20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
	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 UCP311 UCP311-35	P311	UC311-32 UC311 UC311-35	7.9 7.9 7.9	71.6	45.0	13.2	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —		
	2 3/16	80	310	80	236	20	38	27	158	90	66	25	M16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	2 1/4	2 3/4	9 1/2	2 3/4	7 1/4	25/32	31/32	7/8	5 7/16	3	2.563	1.000	5/8	UCP212-36 UCP212 UCP212-38 UCP212-39	P212	UC212-36 UC212 UC212-38 UC212-39	4.9 4.9 4.9 4.9	52.4	36.2	14.4	— UCP212C — —	— UCP212CD — —	— 88 — —	— 3 15/32 — —	— 4.9 — —	— — — —	— UCP212FC — —	— UCP212FCD — —	— 114 — —	— 4 1/2 — —	— 6.4 — —		
60	2 3/8	69.8	241	70	184	20	25	22	138	76	65.1	25.4	M16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	2 7/16	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 UCPX12-39	PX12	UCX12 UCX12-39	7.7 7.7	57.2	40.1	14.4	— UCPX12C —	— UCPX12CD —	— 88 —	— 3 15/32 —	7.7 —	— — —	— — —	— — —	— — —	— — —	— — —		
	2 7/16	76.2	286	83	203	25	40	28	152	88	65.1	25.4	M20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	2 7/16	85	330	85	250	25	38	29	167	103	71	26	M20	UCP312 UCP312-39	P312	UC312 UC312-39	9.5 9.5	81.9	52.2	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	
65	2 1/2	3	10 7/16	2 3/4	8	31/32	1 3/16	31/32	5 29/32	3 1/16	2.563	1.000	3/4	UCP213-40 UCP213	P213	UC213-40 UC213	5.9 5.9	57.2	40.1	14.4	— UCP213C —	— UCP213CD —	— 88 —	— 3 15/32 —	— 5.9 —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	
	2 1/2	76.2	265	70	203	25	30	25	150	78	65.1	25.4	M20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	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 UCPX13	PX13	UCX13-40 UCX13	8.1 8.1	62.2	44.1	14.5	— UCPX13C —	— UCPX13CD —	— 98 —	— 3 27/32 —	— 8.1 —	— — —	— — —	— — —	— — —	— — —	— — —		
	2 1/2	76.2	286	83	203	25	40	28	155	88	74.6	30.2	M20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
70	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 UCP313	P313	UC313-40 UC313	10.7 10.7	92.7	59.9	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
	2 3/4	90	340	90	260	25	38	32	176	110	75	30	M20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	2 3/4	3 1/8	10 15/32	2 27/32	8 9/32	31/32	1 3/16	1 3/32	6 5/32	3 1/16	2.937	1.189	3/4	UCP214-44 UCP214	P214	UC214-44 UC214	6.8 6.8	62.2	44.1	14.5	— UCP214C —	— UCP214CD —	— 98 —	— 3 27/32 —	— 6.8 —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	
	2 3/4	79.4	266	72	210	25	30	28	156	78	74.6	30.2	M20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
75	2 3/4	3 1/2	13	3 1/2	9	1 1/16	1 31/32	1 1/4	6 29/32	3 27/32	3.063	1.331	7/8	UCPX14-44 UCPX14	PX14	UCX14-44 UCX14	10.2 10.2	67.4	48.3	14.5	— UCPX14C —	— UCPX14CD —	— 98 —	— 3 27/32 —	— 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 UCP314	P314	UC314-44 UC314	12.4 12.4	104	68.2	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
	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 5/32	3.063	1.311	3/4	UCP215-47 UCP215 UCP215-48	P215	UC215-47 UC215 UC215-48	7.4 7.4 7.4	67.4	48.3	14.5	— UCP215C —	— UCP215CD —	— 98 —	— 3 27/32 —	— 7.4 —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	
	2 15/16	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	UCPX15-47 UCPX15 UCPX15-48	PX15	UCX15-47 UCX15 UCX15-48	10.8 10.8 10.8	72.7	53.0	14.6	— UCPX15C —	— UCPX15CD —	— 108 —	— 4 1/4 —	— 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.51.)
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), accessory 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



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

Housing No.			Unit: mm
ΔH_s			
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.

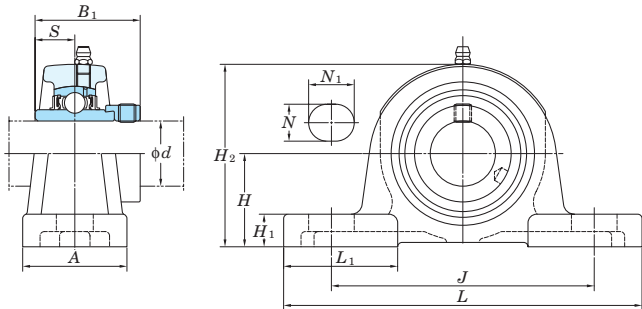
H_{2c}

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

Shaft Dia. mm inch		Dimensions inch mm												Bolt Size inch mm	Standard				Mass kg	Basic Load Ratings kN		Factor <i>f</i> ₀	With Pressed Steel Cover					With Cast Iron Cover				
		Unit No.	Housing No.	Bearing No.	Open Type	One Side Closed Type	Dimension mm inch		Mass kg	Unit No.	One Side Closed Type	Dimension mm inch			Mass kg																	
<i>d</i>	<i>H</i>						<i>L</i>	<i>A</i>				<i>J</i>	<i>N</i>	<i>N</i> ₁		<i>H</i> ₁	<i>H</i> ₂	<i>L</i> ₁	<i>B</i>	<i>S</i>	UCP315-47 UCP315 UCP315-48	P315	UC315-47 UC315 UC315-48	<i>C</i> _r	<i>C</i> _{0r}	<i>f</i> ₀	UCP216C UCP216CD	UCP216FC UCP216FCD	<i>A</i> _s	kg	UCP316C UCP316CD	UCP316FC UCP316FCD
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 UCP315 UCP315-48	P315	UC315-47 UC315 UC315-48	14.8	113	77.2	13.2	—	—	—	—	—	—	—	—	—	—		
	3	100	380	100	290	27	40	35	198	107	82	32	M22				14.8				—	—	—	—	UCP315C	UCP315CD	134	5 9/32	17.3			
																	M22				14.8	—	—	—	—	—	—	—	—	—	—	—
80	3 1/8	3 1/2	11 1/2	3 1/16	9 1/8	31/32	1 3/8	1 1/4	6 27/32	3 3/8	3.252	1.311	3/4	UCP216-50 UCP216 UCPX16	P216	UC216-50 UC216 UCX16	9.0	72.7	53.0	14.6	—	—	—	—	—	—	—	—	—	—		
	—	88.9	292	78	232	25	35	32	174	86	82.6	33.3	M20				9.0				UCP216C	UCP216CD	108	4 1/4	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				15.3	UCPX16C	UCPX16CD	112	4 13/32	15.3	—	—	—	—	—	—
	—	101.6	381	102	283	27	40	34	195	116	85.7	34.1	M22				15.3				UCPX16C	UCPX16CD	112	4 13/32	15.3	—	—	—	—	—	—	—
85	3 1/4	3 3/4	12 7/32	3 9/32	9 23/32	31/32	1 9/16	1 1/4	7 9/32	3 17/32	3.374	1.343	3/4	UCP217-52 UCP217 UCPX17 UCPX17-55	P217	UC217-52 UC217 UCX17 UCX17-55	10.8	84.0	61.9	14.5	—	—	—	—	—	—	—	—	—	—		
	—	95.2	310	83	247	25	40	32	185	90	85.7	34.1	M20				10.8				UCP217C	UCP217CD	112	4 13/32	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				16.1	UCPX17C	UCPX17CD	122	4 13/16	16.1	—	—	—	—	—	—
	3 7/16	101.6	381	102	283	27	60	34	200	116	96	39.7	M22				16.1				—	—	—	—	—	—	—	—	—	—	—	—
90	3 1/2	4	12 7/8	3 15/32	10 5/16	1 1/16	1 25/32	1 11/32	7 25/32	4 3/32	3.780	1.563	7/8	UCP218-56 UCP218 UCPX18 UCP318-56 UCP318	P218	UC218-56 UC218 UCX18 UC318-56 UC318	13.9	96.1	71.5	14.5	—	—	—	—	—	—	—	—	—	—		
	—	101.6	327	88	262	27	45	34	198	104	96	39.7	M22				13.9				UCP218C	UCP218CD	122	4 13/16	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				19.1	UCPX18C	UCPX18C	158	6 7/32	19.1	UCPX18C	UCPX18C	158	6 7/32	22.5	
	3 1/2	101.6	381	111	283	27	60	38	204	116	104	42.9	M22				19.1				—	—	—	—	—	—	—	—	—	—	—	—
95	—	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	UCP319	P319	UC319	22.8	143	107	13.3	—	—	—	—	—	—	—	—	—	—		
		118	430	110	330	33	45	40	234	120	96	40	M27				22.8				UCP318C	UCP318CD	150	5 29/32	22.8	UCP318C	UCP318CD	150	5 29/32	26.6		
	3 1/2	118	430	110	330	33	45	40	234	120	96	40	M27				22.8				—	—	—	—	—	—	—	—	—	—	—	—
100	—	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	—	—	—	—	—	—	—	—	—	—		
		125	470	120	360	36	50	46	248	125	103	41	M30				29.0				UCP319C	UCP319CD	162	6 3/8	29.0	UCP319C	UCP319CD	162	6 3/8	33.3		
	3 15/16	125	470	120	360	36	50	46	248	125	103	41	M30				29.0				—	—	—	—	—	—	—	—	—	—	—	—
105	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 UCPX20-63 UCPX20-64	PX20	UCX20 UCX20-63 UCX20-64	30.4	133	105	14.4	—	—	—	—	—	—	—	—	—	—		
	4	127	432	121	337	33	65	45	245	126	117.5	49.2	M27				30.4				UCPX20C	UCPX20CD	186	7 5/16	30.4	UCPX20C	UCPX20CD	186	7 5/16	34.9		
																	M27				30.4	—	—	—	—	—	—	—	—	—	—	—
110	—	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 UCP320-63 UCP320-64	P320	UC320 UC320-63 UC320-64	35.1	173	141	13.2	—	—	—	—	—	—	—	—	—	—		
	3 15/16	140	490	120	380	36	50	46	273	140	108	42	M30				35.1				UCP320C	UCP320CD	174	6 27/32	35.1	UCP320C	UCP320CD	174	6 27/32	40.7		
																	M30				35.1	—	—	—	—	—	—	—	—	—	—	—
120	—	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	—	—	—	—	—	—	—	—	—	—		
	—	140	490	120	380	36	50	46	278	140	112	44	M30				37.6				UCP321C	UCP321CD	178	7	37.6	UCP321C	UCP321CD	178	7	43.6		
																	M30				37.6	—	—	—	—	—	—	—	—	—	—	—
130	—	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	—	—	—	—	—	—	—	—	—	—		
	—	150	520	140	400	40	55	50	296	150	117	46	M33				44.0				UCP322C	UCP322CD	188	7 13/32	44.0	UCP322C	UCP322CD	188	7 13/32	50.8		
																	M33				44.0	—	—	—	—	—	—	—	—	—	—	—
140	—	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	—	—	—	—	—	—	—	—	—	—		
	—	160	570	140	450	40	55	50	316	160	126	51	M33				55.4				UCP324C	UCP324CD	196	7 23/32	55.4	UCP324C	UCP324CD	196	7 23/32	64.9		
																	M33				55.4	—	—	—	—	—	—	—	—	—	—	—
150	—	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	—	—	—	—	—	—	—	—	—	—		
	—	180	600	140	480	40	55	50	355	195	135	54	M33				72.1				UCP326C	UCP326CD	214	8 7/16	72.1	UCP326C	UCP326CD	214	8 7/16	84.2		
																	M33				72.1	—	—	—	—	—	—	—	—	—	—	—
160	—	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	—	—	—	—	—	—	—	—	—	—		
	—	200	620	140	500	40	55	60	393	185	145	59	M33				92.5				UCP328C	UCP328CD	222	8 3/4	92.5	UCP328C	UCP328CD	222	8 3/4	108		
																	M33				92.5	—	—	—	—	—	—	—	—	—	—	—

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
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), accessory 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.

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



Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_6)

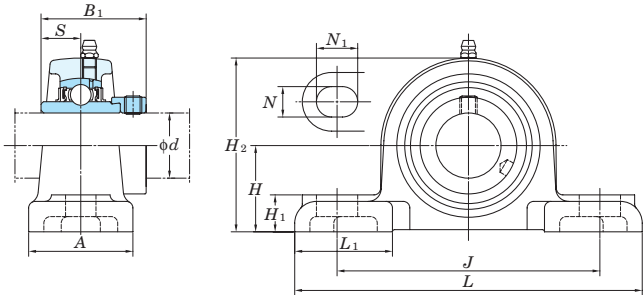
Unit: mm	
Housing No.	ΔH_6
P203~P210	±0.15
P211~P215	±0.2

Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor f_0	Mass kg
d		H	L	A	J	N	N_1	H_1	H_2	L_1	B_1	S					C_r	C_{0r}		
12	1/2	1 3/16	5	1 1/2	3 3/4	1/2	23/32	15/32	2 3/8	1 1/2	1.720	0.673	3/8	NAP201 NAP201-8 NAP202 NAP202-10 NAP203	P203	NA201 NA201-8 NA202 NA202-10 NA203	12.8	6.65	13.2	0.71
15	5/8	30.2	127	38	95	13	18	12	60	38	43.7	17.1	M10							0.69
17																				0.66
20	3/4	1 5/16	5	1 1/2	3 3/4	1/2	23/32	1/2	2 17/32	1 1/2	1.720	0.673	3/8	NAP204-12 NAP204	P204	NA204-12 NA204	12.8	6.65	13.2	0.73
25	7/8	1 7/16	5 1/2	1 1/2	4 1/8	1/2	23/32	1/2	2 25/32	1 11/16	1.748	0.689	3/8	NAP205-14 NAP205-15 NAP205 NAP205-16 NAP206-18	P205	NA205-14 NA205-15 NA205 NA205-16 NA206-18	14.0	7.85	13.9	0.87
30	1 1/8	1 11/16	6 1/2	1 7/8	4 3/4	21/32	13/16	19/32	3 5/16	2 3/32	1.906	0.720	1/2	NAP206 NAP206-19 NAP206-20	P206	NA206 NA206-19 NA206-20	19.5	11.3	13.9	1.4
35	1 3/16	1 7/8	6 9/16	1 7/8	5	21/32	13/16	5/8	3 21/32	2	2.012	0.740	1/2	NAP207-20 NAP207-21 NAP207-22 NAP207 NAP207-23	P207	NA207-20 NA207-21 NA207-22 NA207 NA207-23	25.7	15.4	13.9	1.8
40	1 1/4	1 15/16	7 1/4	2 1/8	5 13/32	21/32	13/16	21/32	3 27/32	2 1/4	2.217	0.843	1/2	NAP208-24 NAP208-25 NAP208	P208	NA208-24 NA208-25 NA208	29.1	17.8	14.0	2.1
45	1 1/2	2 1/8	7 15/32	2 1/8	5 3/4	21/32	13/16	21/32	4 3/16	2 3/8	2.217	0.843	1/2	NAP209-26 NAP209-27 NAP209-28 NAP209	P209	NA209-26 NA209-27 NA209-28 NA209	34.1	21.3	14.0	2.4
50	1 5/8	2 1/4	8 1/8	2 3/8	6 1/4	25/32	7/8	3/4	4 7/16	2 15/32	2.469	0.969	5/8	NAP210-30 NAP210-31 NAP210 NAP210-32	P210	NA210-30 NA210-31 NA210 NA210-32	35.1	23.3	14.4	3.1
55	1 7/8	2 1/2	8 5/8	2 3/8	6 23/32	25/32	7/8	3/4	4 29/32	2 3/4	2.811	1.094	5/8	NAP211-32 NAP211-34 NAP211 NAP211-35	P211	NA211-32 NA211-34 NA211 NA211-35	43.4	29.4	14.4	3.9
60	2	2 3/4	9 1/2	2 3/4	7 1/4	25/32	31/32	7/8	5 7/16	3	3.063	1.220	5/8	NAP212-36 NAP212 NAP212-38 NAP212-39	P212	NA212-36 NA212 NA212-38 NA212-39	52.4	36.2	14.4	5.2
65	2 1/4	3	10 7/16	2 3/4	8	31/32	1 3/16	31/32	5 29/32	3 1/16	3.374	1.343	3/4	NAP213-40 NAP213	P213	NA213-40 NA213	57.2	40.1	14.4	6.5
70	2 1/2	3 1/8	10 15/32	2 27/32	8 9/32	31/32	1 3/16	1 3/32	6 5/32	3 1/16	3.374	1.343	3/4	NAP214-44 NAP214	P214	NA214-44 NA214	62.2	44.1	14.5	7.7
75	2 3/4	3 1/4	10 13/16	2 29/32	8 17/32	31/32	1 3/16	1 3/32	6 3/8	3 5/32	3.626	1.469	3/4	NAP215-47 NAP215	P215	NA215-47 NA215	67.4	48.3	14.5	7.9

Remarks 1. In Part No. of unit, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
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), accessory 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.

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



Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_0)

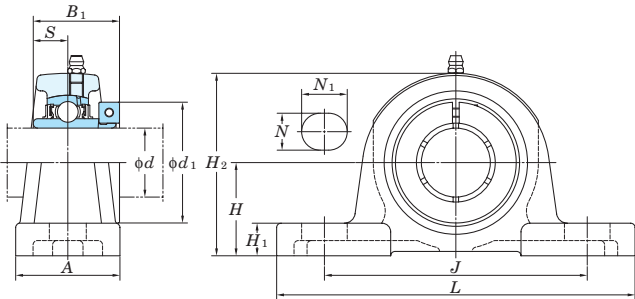
Unit: mm	
Housing No.	ΔH_0
PK204~PK210	±0.15
PK211~PK215	±0.2

Shaft Dia mm inch		Dimensions inch mm											Bolt Size inch	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor f_0	Mass kg
d		H	L	A	J	N	N_1	H_1	H_2	L_1	B_1	S					C_r	C_{0r}		
12	1/2													NAPK201		NA201				
15	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	NAPK201-8	PK204	NA201-8	12.8	6.65	13.2	0.82
17	3/4	31.8	133	41	98	11	14	14	63	45	43.7	17.1		NAPK202		NA202				
20														NAPK202-10		NA202-10				
														NAPK203		NA203				
														NAPK204-12		NA204-12				
														NAPK204		NA204				
25	7/8	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	NAPK205-14	PK205	NA205-14	14.0	7.85	13.9	1
	15/16	33.3	140	44	105	11	14	16	68	45	44.4	17.5		NAPK205-15		NA205-15				
	1													NAPK205		NA205				
														NAPK205-16		NA205-16				
30	1 1/8	1 9/16	6 5/16	1 7/8	4 3/4	9/16	3/4	2 1/32	3 5/32	1 25/32	1.906	0.72	1/2	NAPK206-18	PK206	NA206-18	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		NA206				
	1 1/4													NAPK206-19		NA206-19				
														NAPK206-20		NA206-20				
35	1 1/4	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	NAPK207-20	PK207	NA207-20	25.7	15.4	13.9	2
	1 5/16	46	167	48	127	14	19	19	92	45	51.1	18.8		NAPK207-21		NA207-21				
	1 3/8													NAPK207-22		NA207-22				
	1 7/16													NAPK207		NA207				
														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				
45	1 5/8	2 1/16	7 15/32	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	NAPK209-26	PK209	NA209-26	34.1	21.3	14.0	2.7
	1 11/16	52.4	190	54	149.2	14	28.6	20	106	52	56.3	21.4		NAPK209-27		NA209-27				
	1 3/4													NAPK209-28		NA209-28				
														NAPK209		NA209				
50	1 7/8	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	NAPK210-30	PK210	NA210-30	35.1	23.3	14.4	3.2
	1 15/16	55.6	203	57	159	14	19	22	112	55	62.7	24.6		NAPK210-31		NA210-31				
	2													NAPK210		NA210				
														NAPK210-32		NA210-32				
55	2	2 7/16	9 1/8	2 3/8	7 1/8	23/32	15/16	3 1/32	4 7/8	2 19/32	2.811	1.094	5/8	NAPK211-32	PK211	NA211-32	43.4	29.4	14.4	4.6
	2 1/8	61.9	232	60	181	18	24	25	124	66	71.4	27.8		NAPK211-34		NA211-34				
	2 3/16													NAPK211		NA211				
														NAPK211-35		NA211-35				
60	2 1/4	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	NAPK212-36	PK212	NA212-36	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		NA212				
	2 7/16													NAPK212-38		NA212-38				
														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.51.)
2. Part No. of applicable grease fittings are shown below.
A-1/4-28UNF 201~210
A-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.
5. Housings of nodular graphite cast iron are also available.

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



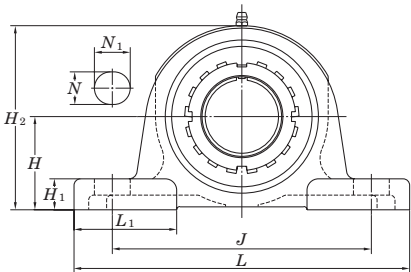
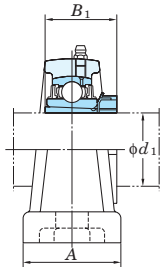
Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_0)

Unit: mm	
Housing No.	ΔH_0
P204~P210	±0.15
P211~P212	±0.2

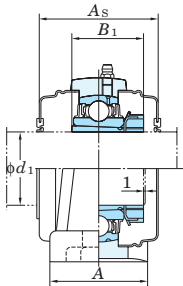
Shaft Dia. mm inch		Dimensions inch mm												Bolt Size inch mm	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor f_0	Mass kg
d		H	L	A	J	N	N_1	H_1	H_2	L_1	B_1	S	d_1				C_r	C_{0r}			
20	$\frac{3}{4}$	$1\frac{5}{16}$ 33.3	5 127	$1\frac{1}{2}$ 38	$3\frac{3}{4}$ 95	$\frac{1}{2}$ 13	$\frac{23}{32}$ 18	$\frac{1}{2}$ 13	$2\frac{17}{32}$ 64	$1\frac{1}{2}$ 38	$1\frac{9}{32}$ 32.5	0.500 12.7	$1\frac{3}{4}$ 44.5	$\frac{3}{8}$ M10	NCP204-12 NCP204	P204	NC204-12 NC204	12.8	6.65	13.2	0.8
	$\frac{7}{8}$ $1\frac{5}{16}$	$1\frac{7}{16}$ 36.5	$5\frac{1}{2}$ 140	$1\frac{1}{2}$ 38	$4\frac{1}{8}$ 105	$\frac{1}{2}$ 13	$\frac{23}{32}$ 18	$\frac{1}{2}$ 13	$2\frac{25}{32}$ 71	$1\frac{11}{16}$ 43	$1\frac{7}{16}$ 36.5	0.563 14.3	$1\frac{15}{16}$ 49.2	$\frac{3}{8}$ M10	NCP205-14 NCP205-15 NCP205 NCP205-16	P205	NC205-14 NC205-15 NC205 NC205-16	14.0	7.85	13.9	1.0
30	$1\frac{1}{8}$	$1\frac{11}{16}$ 42.9	$6\frac{1}{2}$ 165	$1\frac{7}{8}$ 48	$4\frac{3}{4}$ 121	$\frac{21}{32}$ 17	$\frac{13}{16}$ 21	$\frac{19}{32}$ 15	$3\frac{5}{16}$ 84	$2\frac{3}{32}$ 53	$1\frac{9}{16}$ 39.7	0.626 15.9	$2\frac{3}{16}$ 55.6	$\frac{1}{2}$ M14	NCP206-18 NCP206 NCP206-19 NCP206-20	P206	NC206-18 NC206 NC206-19 NC206-20	19.5	11.3	13.9	1.5
	$1\frac{3}{16}$ $1\frac{1}{4}$	$1\frac{7}{8}$ 47.6	$6\frac{9}{16}$ 167	$1\frac{7}{8}$ 48	5 127	$\frac{21}{32}$ 17	$\frac{13}{16}$ 21	$\frac{5}{8}$ 16	$3\frac{21}{32}$ 93	2 51	$1\frac{3}{4}$ 44.5	0.689 17.5	$2\frac{7}{16}$ 61.9	$\frac{1}{2}$ M14	NCP207-20	P207	NC207-20	25.7	15.4	13.9	1.9
	$1\frac{3}{8}$ $1\frac{7}{16}$	$1\frac{7}{8}$ 47.6	$6\frac{9}{16}$ 167	$1\frac{7}{8}$ 48	5 127	$\frac{21}{32}$ 17	$\frac{13}{16}$ 21	$\frac{5}{8}$ 16	$3\frac{21}{32}$ 93	2 51	$1\frac{3}{4}$ 44.5	0.689 17.5	$2\frac{9}{16}$ 65.1	$\frac{1}{2}$ M14	NCP207-22 NCP207 NCP207-23	P207	NC207-22 NC207 NC207-23	25.7	15.4	13.9	1.9
40	$1\frac{1}{2}$	$1\frac{15}{16}$ 49.2	$7\frac{1}{4}$ 184	$2\frac{1}{8}$ 54	$5\frac{13}{32}$ 137	$\frac{21}{32}$ 17	$\frac{13}{16}$ 21	$\frac{21}{32}$ 17	$3\frac{27}{32}$ 98	$2\frac{1}{4}$ 57	2 50.8	0.748 19	$2\frac{11}{16}$ 68.3	$\frac{1}{2}$ M14	NCP208-24 NCP208	P208	NC208-24 NC208	29.1	17.8	14.0	2.4
45	$1\frac{5}{8}$	$2\frac{1}{8}$ 54	$7\frac{15}{32}$ 190	$2\frac{1}{8}$ 54	$5\frac{3}{4}$ 146	$\frac{21}{32}$ 17	$\frac{13}{16}$ 21	$\frac{21}{32}$ 17	$4\frac{3}{16}$ 106	$2\frac{3}{8}$ 60	2 50.8	0.748 19	$2\frac{13}{16}$ 71.4	$\frac{1}{2}$ M14	NCP209-26	P209	NC209-26	34.1	21.3	14.0	2.6
	$1\frac{11}{16}$ $1\frac{3}{4}$	$2\frac{1}{8}$ 54	$7\frac{15}{32}$ 190	$2\frac{1}{8}$ 54	$5\frac{3}{4}$ 146	$\frac{21}{32}$ 17	$\frac{13}{16}$ 21	$\frac{21}{32}$ 17	$4\frac{3}{16}$ 106	$2\frac{3}{8}$ 60	2 50.8	0.748 19	$2\frac{15}{16}$ 74.6	$\frac{1}{2}$ M14	NCP209-27 NCP209-28 NCP209	P209	NC209-27 NC209-28 NC209	34.1	21.3	14.0	2.6
	$1\frac{15}{16}$ 2	$2\frac{1}{4}$ 57.2	$8\frac{1}{8}$ 206	$2\frac{3}{8}$ 60	$6\frac{1}{4}$ 159	$\frac{25}{32}$ 20	$\frac{7}{8}$ 22	$\frac{3}{4}$ 19	$4\frac{7}{16}$ 113	$2\frac{15}{32}$ 63	$2\frac{3}{32}$ 53.1	0.748 19	$3\frac{3}{8}$ 85.7	$\frac{5}{8}$ M16	NCP210-31 NCP210 NCP210-32	P210	NC210-31 NC210 NC210-32	35.1	23.3	14.4	3.5
55	2	$2\frac{1}{2}$ 63.5	$8\frac{5}{8}$ 219	$2\frac{3}{8}$ 60	$6\frac{23}{32}$ 171	$\frac{25}{32}$ 20	$\frac{7}{8}$ 22	$\frac{3}{4}$ 19	$4\frac{29}{32}$ 125	$2\frac{3}{4}$ 70	$2\frac{1}{4}$ 57.1	0.874 22.2	$3\frac{1}{2}$ 88.9	$\frac{5}{8}$ M16	NCP211-32	P211	NC211-32	43.4	29.4	14.4	4.0
	$2\frac{1}{2}$ $2\frac{3}{16}$	$2\frac{1}{2}$ 63.5	$8\frac{5}{8}$ 219	$2\frac{3}{8}$ 60	$6\frac{23}{32}$ 171	$\frac{25}{32}$ 20	$\frac{7}{8}$ 22	$\frac{3}{4}$ 19	$4\frac{29}{32}$ 125	$2\frac{3}{4}$ 70	$2\frac{1}{4}$ 57.1	0.874 22.2	$3\frac{5}{8}$ 92.1	$\frac{5}{8}$ M16	NCP211 NCP211-35	P211	NC211 NC211-35	43.4	29.4	14.4	4.0
	$2\frac{1}{4}$	$2\frac{3}{4}$ 69.8	$9\frac{1}{2}$ 241	$2\frac{3}{4}$ 70	$7\frac{1}{4}$ 184	$\frac{25}{32}$ 20	$\frac{31}{32}$ 25	$\frac{7}{8}$ 22	$5\frac{7}{16}$ 138	3 76	$2\frac{5}{8}$ 66.7	1.000 25.4	$4\frac{1}{16}$ 103.2	$\frac{5}{8}$ M16	NCP212-36	P212	NC212-36	52.4	36.2	14.4	5.6
60	$2\frac{3}{8}$ $2\frac{7}{16}$	$2\frac{3}{4}$ 69.8	$9\frac{1}{2}$ 241	$2\frac{3}{4}$ 70	$7\frac{1}{4}$ 184	$\frac{25}{32}$ 20	$\frac{31}{32}$ 25	$\frac{7}{8}$ 22	$5\frac{7}{16}$ 138	3 76	$2\frac{5}{8}$ 66.7	1.000 25.4	$4\frac{1}{8}$ 104.8	$\frac{5}{8}$ M16	NCP212 NCP212-39	P212	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.51.)
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.

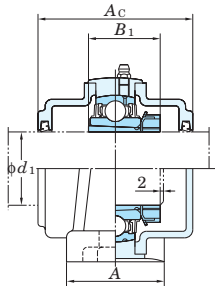
UKP
Tapered bore (with adapter)
d₁ 20 ~ (50) mm



With Pressed Steel Cover



With Cast Iron Cover



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

Housing No.			Unit: mm
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.



Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard Unit No.	Housing No.	Bearing No.	Adapter ¹⁾ No.	Mass kg	Basic Load Ratings kN C _r C _{0r}	Factor f ₀	With Pressed Steel Cover				With Cast Iron Cover			
d ₁		H	L	A	J	N	N ₁	H ₁	H ₂	L ₁	B ₁ ¹⁾									Open Type	One Side Closed Type	Dimension mm inch	Mass kg	Open Type	One Side Closed Type	Dimension mm inch	Mass kg
20	3/4	1 7/16	5 1/2	1 1/2	4 1/8	1/2	23/32	1/2	2 25/32	1 11/16	1 5/32(1 3/8)	3/8	UKP205	P205	UK205		0.84	14.0 7.85	13.9	—	—	—	—	—	—	—	—
		36.5	140	38	105	13	18	13	71	43	29(35)	M10								UKP205C	UKP205CD	48 1 7/8	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		1.5	19.5 11.3	13.9	—	—	—	—	—	—	—	—
25	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		1.5	21.2 10.9	12.6	—	—	—	—	—	—	—	—
		45	175	45	132	17	20	16	85	55	35	M14								—	—	—	—	UKP305C	UKP305CD	76 3	2.3
	1	1 11/16	6 1/2	1 7/8	4 3/4	21/32	13/16	19/32	3 5/16	2 3/32	1 7/32(1 1/2)	1/2	UKP206	P206	UK206		1.7	19.5 11.3	13.9	—	—	—	—	—	—	—	—
30	1	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	UKPX06	PX06	UKX06		1.7	25.7 15.4	13.9	—	—	—	—	—	—	—	—
		47.6	175	57	127	17	25	17	93	55	38	M14								—	—	—	—	—	—	—	—
	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		2.1	26.7 15.0	13.3	—	—	—	—	—	—	—	—
35	1 1/8	1 7/8	6 9/16	1 7/8	5	21/32	13/16	5/8	3 21/32	2	1 3/8(1 11/16)	1/2	UKP207	P207	UK207		2.3	25.7 15.4	13.9	—	—	—	—	—	—	—	—
		47.6	167	48	127	17	21	16	93	51	35(43)	M14								—	—	—	—	—	—	—	—
	1 1/8	2 1/8	8	2 1/4	5 11/16	21/32	1 3/16	3/4	4 1/8	2 17/32	1 11/16	1/2	UKPX07	PX07	UKX07		2.3	29.1 17.8	14.0	—	—	—	—	—	—	—	—
40	1 1/8	2 13/64	8 3/32	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		2.7	33.4 19.3	13.2	—	—	—	—	—	—	—	—
		56	210	56	160	17	25	19	107	65	43	M14								—	—	—	—	—	—	—	—
	1 1/4	1 15/16	7 1/4	2 1/8	5 13/32	21/32	13/16	21/32	3 27/32	2 1/4	1 13/32(1 13/16)	1/2	UKP208	P208	UK208		3.0	29.1 17.8	14.0	—	—	—	—	—	—	—	—
45	1 3/8	2 5/16	8 3/4	2 5/8	6 1/8	25/32	1 1/4	13/16	4 1/2	2 25/32	1 13/16	5/8	UKPX08	PX08	UKX08		3.0	34.1 21.3	14.0	—	—	—	—	—	—	—	—
		58.7	222	67	156	20	32	21	114	71	46	M16								—	—	—	—	—	—	—	—
	1 1/4	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		3.5	40.7 24.0	13.2	—	—	—	—	—	—	—	—
50	1 3/8	60	220	60	170	17	27	19	118	65	46	M14								—	—	—	—	—	—	—	—
	1 1/2	2 1/8	7 15/32	2 1/8	5 3/4	21/32	13/16	21/32	4 3/16	2 3/8	1 17/32(1 31/32)	1/2	UKP209	P209	UK209		3.8	34.1 21.3	14.0	—	—	—	—	—	—	—	—
	1 1/2	54	190	54	146	17	21	17	106	60	39(50)	M14								—	—	—	—	—	—	—	—
55	1 1/2	2 5/16	8 3/4	2 5/8	6 1/8	25/32	1 5/16	13/16	4 9/16	2 25/32	1 31/32	5/8	UKPX09	PX09	UKX09		3.8	35.1 23.3	14.4	—	—	—	—	—	—	—	—
		58.7	222	67	156	20	33	21	116	71	50	M16								—	—	—	—	—	—	—	—
	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		3.7	48.9 29.5	13.3	—	—	—	—	—	—	—	—
60	1 3/4	2 1/4	8 1/8	2 3/8	6 1/4	25/32	7/8	3/4	4 7/16	2 15/32	1 21/32(2 5/32)	5/8	UKP210	P210	UK210		5.0	35.1 23.3	14.4	—	—	—	—	—	—	—	—
		57.2	206	60	159	20	22	19	113	63	42(55)	M16								—	—	—	—	—	—	—	—
	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		5.0	43.4 29.4	14.4	—	—	—	—	—	—	—	—
65	1 3/4	63.5	241	73	171	20	36	22	126	76	55	M16								—	—	—	—	—	—	—	—
	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		4.6	62.0 38.3	13.2	—	—	—	—	—	—	—	—
		75	275	75	212	20	35	24	148	88	55	M16								—	—	—	—	—	—	—	—
70	1 7/8	2 1/2	8 5/8	2 3/8	6 23/32	25/32	7/8	3/4	4 29/32	2 3/4	1 25/32(2 5/16)	5/8	UKP211	P211	UK211		6.2	43.4 29.4	14.4	—	—	—	—	—	—	—	—
	2	63.5	219	60	171	20	22	19	125	70	45(59)	M16								—	—	—	—	—	—	—	—
	1 7/8	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		6.2	52.4 36.2	14.4	—	—	—	—	—	—	—	—
75	2	69.8	260	79	184	25	36	28	139	83	59	M20								—	—	—	—	—	—	—	—
																				—	—	—	—	—	—	—	—

Note 1) Codes shown in parentheses indicate the dimensions and Part No. of applicable adapter (H2300X series) for UK200L3 series (triple seal type).

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)

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 + H306X, UK206 + H306X)

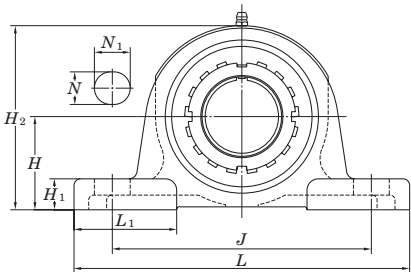
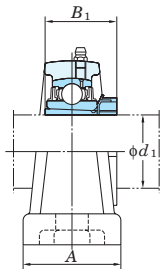
4. As for the triple seal type product (205 is the double seal type product), accessory code L3 (or L2) follows the Part No. of unit or bearing.

5. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter.

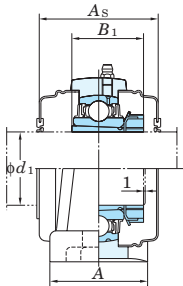
6. Representative examples of the forms of housing are indicated.

7. Housings of nodular graphite cast iron are also available.

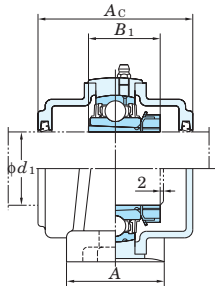
UKP
Tapered bore (with adapter)
d₁ (50) ~ (90) mm



With Pressed Steel Cover



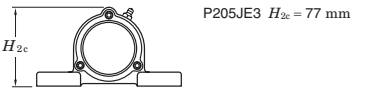
With Cast Iron Cover



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

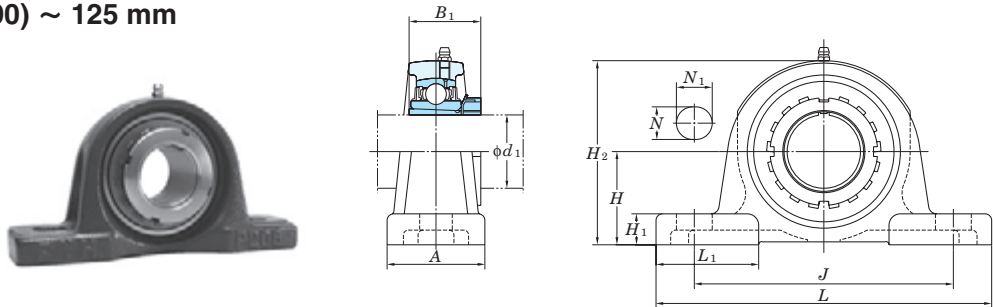
Housing No.			Unit: mm
ΔH_s			
P205~P210	PX05~PX10	P305~P310	±0.15
P211~P218	PX11~PX18	P311~P318	±0.2
	PX20	P319~P328	±0.3

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



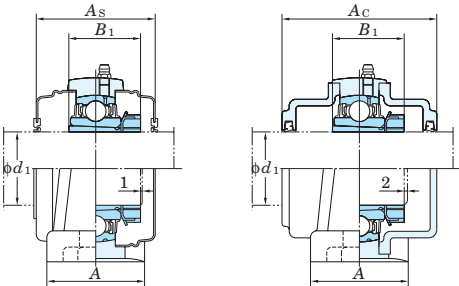
Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard				Adapter ¹⁾ No.	Mass kg	Basic Load Ratings kN		Factor f ₀	With Pressed Steel Cover				With Cast Iron Cover																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
		Unit No.	Housing No.	Bearing No.	Open Type	One Side Closed Type	Dimension mm inch	Mass kg	Open Type	One Side Closed Type	Dimension mm inch		Mass kg																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
d ₁		H	L	A	J	N	N ₁	H ₁	H ₂	L ₁	B ₁ ¹⁾					C _r	C _{0r}																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					</

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



With Pressed Steel Cover

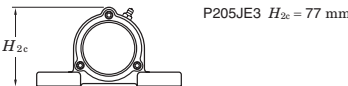
With Cast Iron Cover



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

Housing No.			Unit: mm
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.



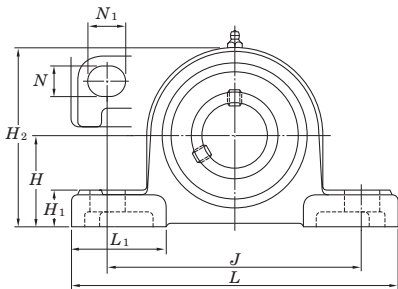
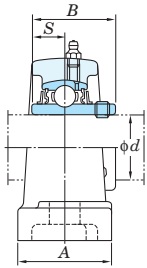
Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard				Adapter ¹⁾ No.	Mass kg	Basic Load Ratings kN		Factor <i>f</i> ₀	With Pressed Steel Cover				With Cast Iron Cover			
		<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>N</i> ₁	<i>H</i> ₁	<i>H</i> ₂	<i>L</i> ₁	<i>B</i> ₁ ¹⁾		Unit No.	Housing No.	Bearing No.	<i>C</i> _r			<i>C</i> _{0r}	Unit No. Open Type One Side Closed Type		Dimension mm inch <i>A</i> _s	Mass kg	Unit No. Open Type One Side Closed Type	Dimension mm inch <i>A</i> _c	Mass kg			
90	3 1/2	5 33/64 140	19 9/32 490	4 23/32 120	14 31/32 380	1 13/32 36	1 31/32 50	1 13/16 46	10 3/4 273	5 1/2 140	3 13/16 97	1 1/8 M30	UKP320	P320	UK320		34.8 34.8	173 141	13.2	—	—	—	—	—	—	—	—	—	—
		—	—	—	—	—	—	—	—	—	—	—								—	—	—	—	—	—	—	—	—	—
100	4	5 29/32 150	20 15/32 520	5 1/2 140	15 3/4 400	1 9/16 40	2 5/32 55	1 31/32 50	11 21/32 296	5 29/32 150	4 1/8 105	1 1/4 M33	UKP322	P322	UK322		43.9 43.9	205 180	13.2	—	—	—	—	—	—	—	—	—	—
		—	—	—	—	—	—	—	—	—	—	—								—	—	—	—	—	—	—	—	—	—
110	—	6 19/64 160	22 7/16 570	5 1/2 140	17 23/32 450	1 9/16 40	2 5/32 55	1 31/32 50	12 7/16 316	6 5/16 160	4 13/32 112	1 1/4 M33	UKP324	P324	UK324		55.7	207 185	13.5	—	—	—	—	—	—	—	—	—	—
		—	—	—	—	—	—	—	—	—	—	—								—	—	—	—	—	—	—	—	—	—
115	4 1/2	7 3/32 180	23 5/8 600	5 1/2 140	18 29/32 480	1 9/16 40	2 5/32 55	1 31/32 50	13 21/32 355	7 11/16 195	4 3/4 121	1 1/4 M33	UKP326	P326	UK326		71.9 71.9	229 214	13.6	—	—	—	—	—	—	—	—	—	—
		—	—	—	—	—	—	—	—	—	—	—								—	—	—	—	—	—	—	—	—	—
125	—	7 7/8 200	24 13/32 620	5 1/2 140	19 11/16 500	1 9/16 40	2 5/32 55	2 3/8 60	15 15/32 393	7 9/32 185	5 5/32 131	1 1/4 M33	UKP328	P328	UK328		92.5	253 246	13.6	—	—	—	—	—	—	—	—	—	—
		—	—	—	—	—	—	—	—	—	—	—								—	—	—	—	—	—	—	—	—	—

Note 1) Codes shown in parentheses indicate the dimensions and Part No. of applicable adapter (H2300X series) for UK200L3 series (triple seal type).
Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)

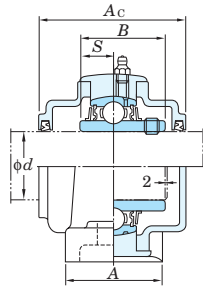
2. Part No. of applicable grease fittings are shown below.
A-1/4-28UNF.....205~210, X05~X09, 305~308
A-R1/8.....211~218, X10~X20, 309~328

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 + H306X, UK206 + H306X)
4. As for the triple seal type product (205 is the double seal type product), accessory 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.

UCP-SC
Cylindrical bore (with set screws),
cast steel housing
d 25 ~ 70 mm



With Cast Iron Cover



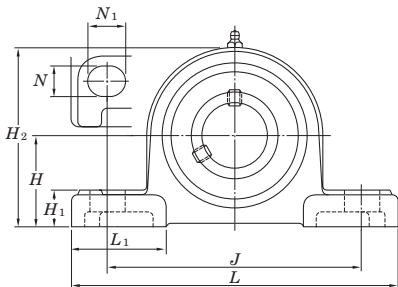
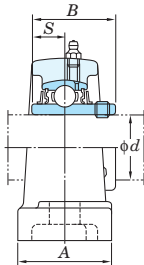
Variations of tolerance of distance from mounting
bottom to center of spherical bore (ΔH_s)

Housing No.		Unit: mm
P205SC-P210SC	P310SC	± 0.15
P211SC-P218SC	P311SC-P318SC	± 0.2
	P319SC-P328SC	± 0.3

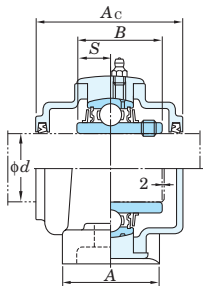
Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Standard				Mass	Basic		Factor	With Cast Iron Cover			
		Unit No.	Housing No.	Bearing No.		kg	Load Ratings kN		f ₀	Unit No.		Dimension mm inch		Mass kg											
d	H						L	A		J	N	N ₁	H ₁		H ₂	L ₁	B	S	Open Type	One Side Closed Type	A _c				
25	7/8 15/16	1 7/16 36.5	5 1/2 140	1 1/2 38	4 1/8 105	1/2 13	23/32 18	5/8 16	2 25/32 71	1 11/16 43	1.343 34.1	0.563 14.3	3/8 M10	UCP205-14SC UCP205-15SC UCP205SC UCP205-16SC	P205SC	UC205-14 UC205-15 UC205 UC205-16	0.90 0.90 0.90 0.90	14.0	7.85	13.9	-	-	-	-	
	1 1/8	1 11/16 42.9	6 1/2 165	1 7/8 48	4 3/4 121	21/32 17	13/16 21	23/32 18	3 3/8 86	2 3/32 53	1.500 38.1	0.626 15.9	1/2 M14	UCP206-18SC UCP206SC UCP206-19SC UCP206-20SC	P206SC	UC206-18 UC206 UC206-19 UC206-20	1.5 1.5 1.5 1.5	19.5	11.3	13.9	UCP206SCFC	UCP206SCFCD	70	2 3/4	2.0
	1 1/4	1 7/8 47.6	6 9/16 167	1 7/8 48	5 127	21/32 17	13/16 21	3/4 19	3 25/32 96	2 51	1.689 42.9	0.689 17.5	1/2 M14	UCP207-20SC UCP207-21SC UCP207-22SC UCP207SC	P207SC	UC207-20 UC207-21 UC207-22 UC207	1.9 1.9 1.9 1.9	25.7	15.4	13.9	UCP207SCFC	UCP207SCFCD	78	3 1/16	2.6
	1 7/16	1 15/16 49.2	7 1/4 184	2 1/8 54	5 13/32 137	21/32 17	13/16 21	3/4 19	3 15/16 100	2 1/4 57	1.937 49.2	0.748 19	1/2 M14	UCP208-24SC UCP208-25SC UCP208SC	P208SC	UC208-24 UC208-25 UC208	2.3 2.3 2.3	29.1	17.8	14.0	UCP208SCFC	UCP208SCFCD	86	3 3/8	3.1
45	1 5/8 1 11/16 1 3/4	2 1/8 54	7 15/32 190	2 1/8 54	5 3/4 146	21/32 17	13/16 21	25/32 20	4 1/4 108	2 3/8 60	1.937 49.2	0.748 19	1/2 M14	UCP209-26SC UCP209-27SC UCP209-28SC UCP209SC	P209SC	UC209-26 UC209-27 UC209-28 UC209	2.5 2.5 2.5 2.5	34.1	21.3	14.0	-	-	-	-	
	1 7/8 1 15/16	2 1/4 57.2	8 1/8 206	2 3/8 60	6 1/4 159	25/32 20	7/8 22	7/8 22	4 17/32 115	2 15/32 63	2.031 51.6	0.748 19	5/8 M16	UCP210-30SC UCP210-31SC UCP210SC	P210SC	UC210-30 UC210-31 UC210	3.2 3.2 3.2	35.1	23.3	14.4	UCP210SCFC	UCP210SCFCD	97	3 13/16	4.2
	2	2 51/64 75	10 13/16 275	2 15/16 75	8 11/32 212	25/32 20	1 3/8 35	1 1/16 27	5 13/16 148	3 15/32 88	2.402 61	0.866 22	5/8 M16	UCP310SC	P310SC	UC310	9.2	62.0	38.3	13.2	UCP310SCC	UCP310SCCD	110	4 11/32	10.8
	-	2 1/2 63.5	8 5/8 219	2 3/8 60	6 23/32 171	25/32 20	7/8 22	15/16 24	5 127	2 3/4 70	2.189 55.6	0.874 22.2	5/8 M16	UCP211-32SC UCP211-34SC UCP211SC UCP211-35SC	P211SC	UC211-32 UC211-34 UC211 UC211-35	4.0 4.0 4.0 4.0	43.4	29.4	14.4	UCP211SCFC	UCP211SCFCD	99	3 29/32	5.2
50	1 7/8 1 15/16	3 5/32 80	12 7/32 310	3 5/32 80	9 9/32 236	25/32 20	1 1/2 38	1 3/16 30	6 7/32 158	3 17/32 90	2.598 66	0.984 25	5/8 M16	UCP311-32SC UCP311SC	P311SC	UC311-32 UC311	10.9 10.9	71.6	45.0	13.2	UCP311SCC	UCP311SCCD	114	4 1/2	12.7
	2	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 15/32 139	3 76	2.563 65.1	1.000 25.4	5/8 M16	UCP212-36SC UCP212SC UCP212-38SC UCP212-39SC	P212SC	UC212-36 UC212 UC212-38 UC212-39	5.2 5.2 5.2 5.2	52.4	36.2	14.4	UCP212SCFC	UCP212SCFCD	114	4 1/2	6.7
	2 7/16	3 11/32 85	13 330	3 11/32 85	9 27/32 250	31/32 25	1 1/2 38	1 1/4 32	6 5/8 168	4 1/16 103	2.795 71	1.024 26	3/4 M20	UCP312SC UCP312-39SC	P312SC	UC312 UC312-39	12.6 12.6	81.9	52.2	13.2	UCP312SCC	UCP312SCCD	124	4 7/8	14.9
	2 1/2	3 76.2	10 7/16 265	2 3/4 70	8 203	31/32 25	1 3/16 30	1 3/32 28	5 15/16 151	3 1/16 78	2.563 65.1	1.000 25.4	3/4 M20	UCP213-40SC UCP213SC	P213SC	UC213-40 UC213	6.4 6.4	57.2	40.1	14.4	UCP213SCFC	UCP213SCFCD	114	4 1/2	8.1
60	2 1/2	3 35/64 90	13 3/8 340	3 17/32 90	10 1/4 260	31/32 25	1 1/2 38	1 1/2 35	7 178	4 11/32 110	2.953 75	1.181 30	3/4 M20	UCP313-40SC UCP313SC	P313SC	UC313-40 UC313	14.2 14.2	92.7	59.9	13.2	UCP313SCC	UCP313SCCD	122	4 13/16	16.3
	2 3/4	3 1/8 79.4	10 15/32 266	2 27/32 72	8 9/32 210	31/32 25	1 3/16 30	1 3/32 28	6 3/16 157	3 1/16 78	2.937 74.6	1.189 30.2	3/4 M20	UCP214-44SC UCP214SC	P214SC	UC214-44 UC214	7.1 7.1	62.2	44.1	14.5	UCP214SCFC	UCP214SCFCD	124	4 7/8	9.0
	2 3/4	3 47/64 95	14 3/16 360	3 17/32 90	11 1/32 280	1 1/2 27	1 9/16 40	1 1/2 38	7 13/32 188	4 11/32 110	3.071 78	1.299 33	7/8 M22	UCP314-44SC UCP314SC	P314SC	UC314-44 UC314	14.9 14.9	104	68.2	13.2	UCP314SCC	UCP314SCCD	124	4 7/8	17.2

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
2. Part No. of applicable grease fittings are shown below.
A-1/4-28UNF 205~210
A-R1/8 211~218, 310~328
3. As for the triple seal type product (205 is the double seal type product), accessory code L3 (or L2) follows the Part No. of unit or bearing.
(Example of Part No. : UCP206JSCL3, UC206L3)
4. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit.

UCP-SC
Cylindrical bore (with set screws),
cast steel housing
d 75 ~ 140 mm



With Cast Iron Cover



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

Housing No.		Unit: mm
P205SC-P210SC	P310SC	±0.15
P211SC-P218SC	P311SC-P318SC	±0.2
	P319SC-P328SC	±0.3

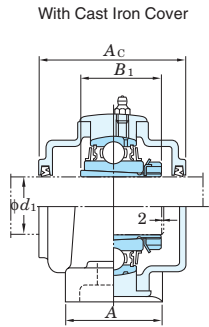
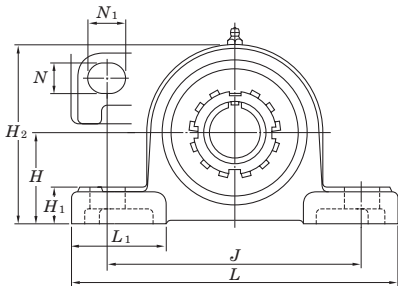
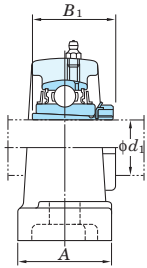
Shaft Dia.		Dimensions											Bolt Size	Standard				Mass	Basic		Factor	With Cast Iron Cover				Mass
mm	inch	inch mm												Unit No.	Housing No.	Bearing No.	Load Ratings kN		Open Type	One Side Closed Type		Dimension mm inch	mm inch			
d		H	L	A	J	N	N ₁	H ₁	H ₂	L ₁	B	S	inch mm				kg	C _r	C _{0r}	f ₀			A _c			
75	2 15/16	3 1/4	10 13/16	2 29/32	8 17/32	3 1/32	1 3/16	1 5/32	6 15/32	3 5/32	3.063	1.311	3/4	UCP215-47SC	P215SC	UC215-47	7.7	67.4	48.3	14.5	—	—	—	—		
	3	82.6	275	74	217	25	30	29	164	80	77.8	33.3	M20	UCP215SC		UC215	7.7				UCP215SCFC	UCP215SCFCD	124	4 7/8	9.6	
														UCP215-48SC		UC215-48	7.7				—	—	—	—		
75	2 15/16	3 15/16	14 31/32	3 15/16	11 13/32	1 1/16	1 9/16	1 1/2	7 7/8	4 7/32	3.228	1.260	7/8	UCP315-47SC	P315SC	UC315-47	20.7	113	77.2	13.2	—	—	—	—		
	3	100	380	100	290	27	40	38	200	107	82	32	M22	UCP315SC		UC315	20.7				UCP315SCC	UCP315SCCD	134	5 9/32	23.2	
														UCP315-48SC		UC315-48	20.7				—	—	—	—		
80	3 1/8	3 1/2	11 1/2	3 1/16	9 1/8	3 1/32	1 3/8	1 7/32	6 15/16	3 3/8	3.252	1.311	3/4	UCP216-50SC	P216SC	UC216-50	9.3	72.7	53.0	14.6	—	—	—	—		
		88.9	292	78	232	25	35	31	176	86	82.6	33.3	M20	UCP216SC		UC216	9.3				UCP216SCFC	UCP216SCFCD	138	5 7/16	11.7	
	—	4 11/64	15 3/4	4 11/32	11 13/16	1 1/16	1 9/16	1 1/2	8 5/16	4 23/32	3.386	1.339	7/8	UCP316SC	P316SC	UC316	24.2				UCP316SCC	UCP316SCCD	138	5 7/16	27.1	
85	3 1/4	3 3/4	12 7/32	3 9/32	9 23/32	3 1/32	1 9/16	1 5/16	7 13/32	3 17/32	3.374	1.343	3/4	UCP217-52SC	P217SC	UC217-52	11.7	84.0	61.9	14.5	—	—	—	—		
		95.2	310	83	247	25	40	33	188	90	85.7	34.1	M20	UCP217SC		UC217	11.7				UCP217SCFC	UCP217SCFCD	142	5 19/32	14.4	
	—	4 13/32	16 17/32	4 11/32	12 19/32	1 5/16	1 25/32	1 25/32	8 3/4	4 23/32	3.780	1.575	1	UCP317SC	P317SC	UC317	28.4				UCP317SCC	UCP317SCCD	146	5 3/4	31.7	
90	3 1/2	4	12 7/8	3 15/32	10 5/16	1 1/16	1 25/32	1 3/8	7 7/8	4 3/32	3.780	1.563	7/8	UCP218-56SC	P218SC	UC218-56	13.5	96.1	71.5	14.5	—	—	—	—		
		101.6	327	88	262	27	45	35	200	104	96	39.7	M22	UCP218SC		UC218	13.5				UCP218SCFC	UCP218SCFCD	152	6	16.6	
	3 1/2	4 41/64	16 15/16	4 11/32	13	1 5/16	1 25/32	1 25/32	9 7/32	4 23/32	3.780	1.575	1	UCP318-56SC	P318SC	UC318-56	30.9				—	—	—	—		
95	—	4 59/64	18 1/2	4 23/32	14 3/16	1 13/32	1 31/32	2	9 3/4	4 29/32	4.055	1.614	1 1/8	UCP319SC	P319SC	UC319	37.9	153	119	13.3	UCP319SCC	UCP319SCCD	162	6 3/8	42.2	
		125	470	120	360	36	50	51	248	125	103	41	M30								—	—	—	—		
100	3 15/16	5 33/64	19 9/32	4 23/32	14 31/32	1 13/32	1 31/32	2	10 3/4	5 1/2	4.252	1.654	1 1/8	UCP320SC	P320SC	UC320	45.2	173	141	13.2	UCP320SCC	UCP320SCCD	174	6 27/32	50.8	
	4	140	490	120	380	36	50	51	273	140	108	42	M30	UCP320-63SC		UC320-63	45.2				—	—	—	—		
														UCP320-64SC		UC320-64	45.2				—	—	—	—		
110	—	5 29/32	20 15/32	5 1/2	15 3/4	1 9/16	2 5/32	2 1/4	11 21/32	5 29/32	4.606	1.811	1 1/4	UCP322SC	P322SC	UC322	53.1	205	180	13.2	UCP322SCC	UCP322SCCD	188	7 13/32	59.9	
		150	520	140	400	40	55	57	296	150	117	46	M33								—	—	—	—		
		6 19/64	22 7/16	5 1/2	17 23/32	1 9/16	2 5/32	2 1/4	12 7/16	6 5/16	4.961	2.008	1 1/4	UCP324SC	P324SC	UC324	69.0				UCP324SCC	UCP324SCCD	196	7 23/32	78.5	
120	—	160	570	140	450	40	55	57	316	160	126	51	M33					207	185	13.5	UCP324SCC	UCP324SCCD	196	7 23/32	78.5	
		7 3/32	23 5/8	5 1/2	18 29/32	1 9/16	2 5/32	2 1/4	13 21/32	7 11/16	5.315	2.126	1 1/4	UCP326SC	P326SC	UC326	85.6				UCP326SCC	UCP326SCCD	214	8 7/16	97.7	
		180	600	140	480	40	55	57	355	195	135	54	M33								—	—	—	—		
130	—	7 7/8	24 13/32	5 1/2	19 11/16	1 9/16	2 5/32	2 3/4	15 15/32	7 9/32	5.709	2.323	1 1/4	UCP328SC	P328SC	UC328	114	253	246	13.6	UCP328SCC	UCP328SCCD	222	8 3/4	129	
		200	620	140	500	40	55	70	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.51.)
2. Part No. of applicable grease fittings are shown below.
A-1/4-28UNF 205~210
A-R1/8 211~218, 310~328

3. As for the triple seal type product (205 is the double seal type product), accessory code L3 (or L2) follows the Part No. of unit or bearing.
(Example of Part No. : UCP206JSCL3, UC206L3)

4. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit.

UKP-SC
Tapered bore (with adapter),
cast steel housing
d₁ 20 ~ (80) mm

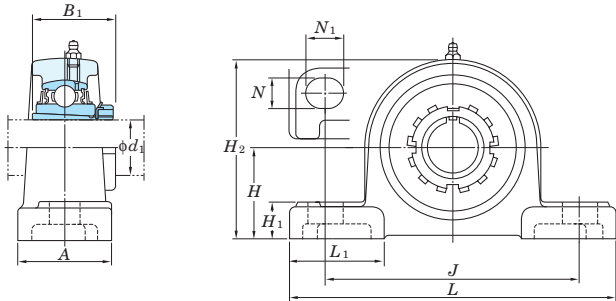


Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_b)

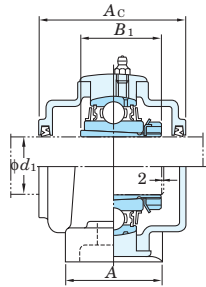
Housing No.		Unit: mm
P205SC-P210SC	P310SC	±0.15
P211SC-P218SC	P311SC-P318SC	±0.2
	P319SC-P328SC	±0.3

Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard			Adapter ¹⁾ No.	Mass kg	Basic Load Ratings kN		Factor f ₀	With Cast Iron Cover				
													Unit No.	Housing No.	Bearing No.			Unit No.	Dimension mm inch		Mass kg				
d ₁		H	L	A	J	N	N ₁	H ₁	H ₂	L ₁	B ₁ ¹⁾					C _r	C _{0r}		Open Type	One Side Closed Type	A _c				
20	3/4	1 7/16	5 1/2	1 1/2	4 1/8	1/2	23/32	5/8	2 25/32	1 11/16	1 5/32(1 3/8)	3/8	UKP205SC	P205SC	UK205	HE305X(HE2305X)	1.0	14.0	7.85	13.9	—	—	—	—	
		36.5	140	38	105	13	18	16	71	43	29(35)	M10				H305X(H2305X)	1.0				—	—	—		
25	1	1 11/16	6 1/2	1 7/8	4 3/4	21/32	13/16	23/32	3 3/8	2 3/32	1 7/32(1 1/2)	1/2	UKP206SC	P206SC	UK206	H306X(H2306X)	1.6	19.5	11.3	13.9	UKP206SCFC	UKP206SCFCD	70	2 3/4	2.1
		42.9	165	48	121	17	21	18	86	53	31(38)	M14				HE306X(HE2306X)	1.6				—	—	—		
30	1 1/8	1 7/8	6 9/16	1 7/8	5	21/32	13/16	3/4	3 25/32	2	1 3/8(1 11/16)	1/2	UKP207SC	P207SC	UK207	HS307X(HS2307X)	2.1	25.7	15.4	13.9	—	—	—	—	
		47.6	167	48	127	17	21	19	96	51	35(43)	M14				H307X(H2307X)	2.1				UKP207SCFC	UKP207SCFCD	78	3 1/16	2.8
35	1 1/4 1 3/8	1 15/16	7 1/4	2 1/8	5 13/32	21/32	13/16	3/4	3 15/16	2 1/4	1 13/32(1 13/16)	1/2	UKP208SC	P208SC	UK208	HE308X(HE2308X)	2.4				—	—	—	—	
		49.2	184	54	137	17	21	19	100	57	36(46)	M14				HS308X(HS2308X)	2.4	29.1	17.8	14.0	—	—	—		
40	1 1/2	2 1/8	7 15/32	2 1/8	5 3/4	21/32	13/16	25/32	4 1/4	2 3/8	1 17/32(1 31/32)	1/2	UKP209SC	P209SC	UK209	HE309X(HE2309X)	2.7	34.1	21.3	14.0	—	—	—	—	
		54	190	54	146	17	21	20	108	60	39(50)	M14				H309X(H2309X)	2.7				UKP209SCFC	UKP209SCFCD	88	3 15/32	3.5
45	1 3/4	2 1/4	8 1/8	2 3/8	6 1/4	25/32	7/8	7/8	4 17/32	2 15/32	1 21/32(2 5/32)	5/8	UKP210SC	P210SC	UK210	HE310X(HE2310X)	3.3	35.1	23.3	14.4	—	—	—	—	
		57.2	206	60	159	20	22	22	115	63	42(55)	M16				H310X(H2310X)	3.3				UKP210SCFC	UKP210SCFCD	97	3 13/16	4.3
	1 3/4	2 51/64	10 13/16	2 15/16	8 11/32	25/32	1 3/8	1 1/16	5 13/16	3 15/32	2 5/32	5/8	UKP310SC	P310SC	UK310	HE2310X	9.3	62.0	38.3	13.2	—	—	—	—	
	75	275	75	212	20	35	27	148	88	55	M16	H2310X				9.3				UKP310SCC	UKP310SCCD	110	4 11/32	11.0	
50	1 7/8 2	2 1/2	8 5/8	2 3/8	6 23/32	25/32	7/8	15/16	5	2 3/4	1 25/32(2 5/16)	5/8	UKP211SC	P211SC	UK211	HS311X(HS2311X)	4.2				—	—	—	—	
		63.5	219	60	171	20	22	24	127	70	45(59)	M16				H311X(H2311X)	4.2	43.4	29.4	14.4	UKP211SCFC	UKP211SCFCD	99	3 29/32	5.4
	1 7/8 2	3 5/32	12 7/32	3 5/32	9 9/32	25/32	1 1/2	1 3/16	6 7/32	3 17/32	2 5/16	5/8	UKP311SC	P311SC	UK311	HS2311X	11.2	71.6	45.0	13.2	—	—	—	—	
	80	310	80	236	20	38	30	158	90	59	M16	H2311X				11.2				UKP311SCC	UKP311SCCD	114	4 1/2	13.1	
55	2 1/8	2 3/4	9 1/2	2 3/4	7 1/4	25/32	31/32	31/32	5 15/32	3	1 27/32(2 7/16)	5/8	UKP212SC	P212SC	UK212	HS312X(HS2312X)	5.1	52.4	36.2	14.4	—	—	—	—	
		69.8	241	70	184	20	25	25	139	76	47(62)	M16				H312X(H2312X)	5.1				UKP212SCFC	UKP212SCFCD	114	4 1/2	6.6
	2 1/8	3 11/32	13	3 11/32	9 27/32	31/32	1 1/2	1 1/4	6 5/8	4 1/16	2 7/16	3/4	UKP312SC	P312SC	UK312	HS2312X	12.5	81.9	52.2	13.2	—	—	—	—	
	85	330	85	250	25	38	32	168	103	62	M20	H2312X								UKP312SCC	UKP312SCCD	124	4 7/8	14.9	
60	2 1/4 2 3/8	3	10 7/16	2 3/4	8	31/32	1 3/16	1 3/32	5 15/16	3 1/16	1 31/32(2 9/16)	3/4	UKP213SC	P213SC	UK213	HE313X(HE2313X)	6.3	57.2	40.1	14.4	—	—	—	—	
		76.2	265	70	203	25	30	28	151	78	50(65)	M20				H313X(H2313X)	6.3				UKP213SCFC	UKP213SCFCD	114	4 1/2	8.0
	2 1/4 2 3/8	3 35/64	13 3/8	3 17/32	10 1/4	31/32	1 1/2	1 3/8	7	4 11/32	2 9/16	3/4	UKP313SC	P313SC	UK313	HE2313X	14.3	92.7	59.9	13.2	—	—	—	—	
	90	340	90	260	25	38	35	178	110	65	M20	H2313X				14.3				UKP313SCC	UKP313SCCD	122	4 13/16	16.5	
65	2 1/2	3 1/4	10 13/16	2 29/32	8 17/32	31/32	1 3/16	1 5/32	6 15/32	3 5/32	2 5/32(2 7/8)	3/4	UKP215SC	P215SC	UK215	HE315X(HE2315X)	7.9	67.4	48.3	14.5	—	—	—	—	
		82.6	275	74	217	25	30	29	164	80	55(73)	M20				H315X(H2315X)	7.9				UKP215SCFC	UKP215SCFCD	124	4 7/8	9.8
	2 1/2	3 15/16	14 31/32	3 15/16	11 13/32	1 1/16	1 9/16	1 1/2	7 7/8	4 7/32	2 7/8	7/8	UKP315SC	P315SC	UK315	HE2315X	20.9	113	77.2	13.2	—	—	—	—	
	100	380	100	290	27	40	38	200	107	73	M22	H2315X				20.9				UKP315SCC	UKP315SCCD	134	5 9/32	23.7	
70	2 3/4	3 1/2	11 1/2	3 1/16	9 1/8	31/32	1 3/8	1 7/32	6 15/16	3 3/8	2 5/16(3 1/16)	3/4	UKP216SC	P216SC	UK216	HE316X(HE2316X)	9.6	72.7	53.0	14.6	—	—	—	—	
		88.9	292	78	232	25	35	31	176	86	59(78)	M20				H316X(H2316X)	9.6				UKP216SCFC	UKP216SCFCD	138	5 7/16	12.0
	2 3/4	4 11/64	15 3/4	4 11/32	11 13/16	1 1/16	1 9/16	1 1/2	8 5/16	4 23/32	3 1/16	7/8	UKP316SC	P316SC	UK316	HE2316X	24.2	123	86.7	13.3	—	—	—	—	
	106	400	110	300	27	40	38	211	120	78	M22	H2316X				24.2				UKP316SCC	UKP316SCCD	138	5 7/16	27.3	
75	3	3 3/4	12 7/32	3 9/32	9 23/32	31/32	1 9/16	1 5/16	7 13/16	3 17/32	2 15/32(3 7/32)	3/4	UKP217SC	P217SC	UK217	H317X(H2317X)	12.0	84.0	61.9	14.5	UKP217SCFC	UKP217SCFCD	142	5 19/32	14.7
		95.2	310	83	247	25	40	33	188	90	63(82)	M20				HE317X(HE2317X)	12.0				—	—	—		
	3	4 13/32	16 17/32	4 11/32	12 19/32	1 5/16	1 25/32	1 25/32	8 3/4	4 23/32	3 7/32	1	UKP317SC	P317SC	UK317	H2317X	28.3	133	96.8	13.3	UKP317SCC	UKP317SCCD	146	5 3/4	31.8
	112	420	110	320	33	45	45	222	120	82	M27	HE2317X				28.3				—	—	—			
80	—	4	12 7/8	3 15/32	10 5/16	1 1/16	1 25/32	1 3/8	7 7/8	4 3/32	2 9/16(3 3/8)	7/8	UKP218SC	P218SC	UK218	H318X(H2318X)	15.3	96.1	71.5	14.5	UKP218SCFC	UKP218SCFCD	152	6	18.4
	101.6	327	88	262	27	45	35	200	104	65(86)	M22														

UKP-SC
Tapered bore (with adapter),
cast steel housing
 d_1 (80) ~ 125 mm



With Cast Iron Cover



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

Housing No.		Unit: mm
P205SC-P210SC	P310SC	±0.15
P211SC-P218SC	P311SC-P318SC	±0.2
	P319SC-P328SC	±0.3

Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Unit No.	Standard Housing No.	Bearing No.		Adapter ¹⁾ No.	Mass kg	Basic Load Ratings kN		Factor f_0	With Cast Iron Cover Unit No.		Dimension mm inch	Mass kg
d_1		H	L	A	J	N	N_1	H_1	H_2	L_1	$B_1^{1)}$								C_r	C_{0r}		Open Type	One Side Closed Type	A_c	
80	—	4 41/64 118	16 15/16 430	4 11/32 110	13 330	1 5/16 33	1 25/32 45	1 25/32 45	9 7/32 234	4 23/32 120	3 3/8 86	1 M27	UKP318SC	P318SC	UK318		H2318X	31.0	143	107	13.3	UKP318SCC	UKP318SCCD	150	5 29/32 35.2
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	2 51	9 3/4 248	4 29/32 125	3 17/32 90	1 1/8 M30	UKP319SC	P319SC	UK319		HE2319X H2319X	38.2 38.2	153	119	13.3	— UKP319SCC	— UKP319SCCD	— 162	— 6 3/8 42.9
90	3 1/2	5 33/64 140	19 9/32 490	4 23/32 120	14 31/32 380	1 13/32 36	1 31/32 50	2 51	10 3/4 273	5 1/2 140	3 13/16 97	1 1/8 M30	UKP320SC	P320SC	UK320		HE2320X H2320X	44.9 44.9	173	141	13.2	— UKP320SCC	— UKP320SCCD	— 174	— 6 27/32 51.1
100	4	5 29/32 150	20 15/32 520	5 1/2 140	15 3/4 400	1 9/16 40	2 5/32 55	2 1/4 57	11 21/32 296	5 29/32 150	4 1/8 105	1 1/4 M33	UKP322SC	P322SC	UK322		H2322X HE2322X	53.0 53.0	205	180	13.2	— UKP322SCC	— UKP322SCCD	— 188	— 7 13/32 59.9
110	—	6 19/64 160	22 7/16 570	5 1/2 140	17 23/32 450	1 9/16 40	2 5/32 55	2 1/4 57	12 7/16 316	6 5/16 160	4 13/32 112	1 1/4 M33	UKP324SC	P324SC	UK324		H2324	69.3	207	185	13.5	UKP324SCC	UKP324SCCD	196	7 23/32 79.6
115	4 1/2	7 3/32 180	23 5/8 600	5 1/2 140	18 29/32 480	1 9/16 40	2 5/32 55	2 1/4 57	13 21/32 355	7 11/16 195	4 3/4 121	1 1/4 M33	UKP326SC	P326SC	UK326		HE2326 H2326	85.4 85.4	229	214	13.6	— UKP326SCC	— UKP326SCCD	— 214	— 8 7/16 98.7
125	—	7 7/8 200	24 13/32 620	5 1/2 140	19 11/16 500	1 9/16 40	2 5/32 55	2 3/4 70	15 15/32 393	7 9/32 185	5 5/32 131	1 1/4 M33	UKP328SC	P328SC	UK328		H2328	114	253	246	13.6	UKP328SCC	UKP328SCCD	222	8 3/4 131

Note 1) Codes shown in parentheses indicate the dimensions and Part No. of applicable adapter (H2300X series) for UK200L3 series (triple seal type).

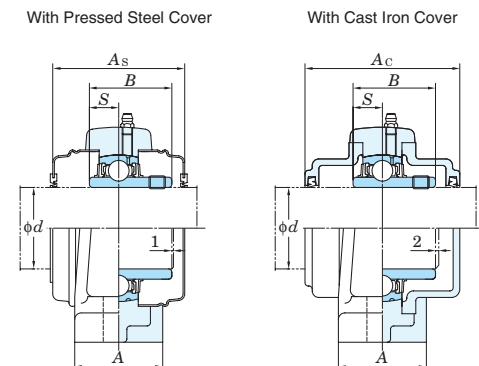
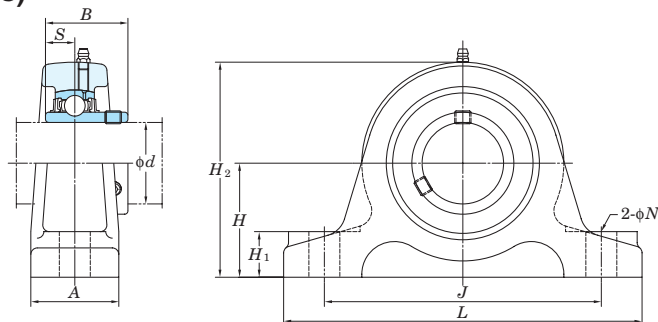
Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)

2. Part No. of applicable grease fittings are shown below.
A-1/4-28UNF.....205~210
A-R1/8.....211~218, 310~328

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. : UKP206JSC + H306X, UK206 + H306X)

4. As for the triple seal type product (205 is the double seal type product), accessory code L3 (or L2) follows the Part No. of unit or bearing.
(Example of Part No. : UKP206JSCL3 + 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.



Housing No.		Δ_{Hs}	Δ_{Js}
IP208-IP210		± 0.15	± 0.5
IP211-IP213	IP313-IP318	± 0.2	± 0.7
	IP319-IP328	± 0.3	

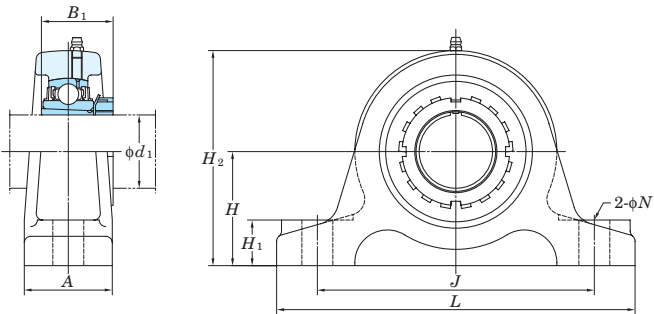
[illegible]

3. As for the triple seal type product, accessory code L3 follows the Part No. of unit or bearing.
(Example of Part No. : UCIP208JL3, UC208L3)

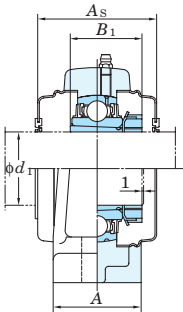
4. As for the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

5. Housings of nodular graphite cast iron are also available.

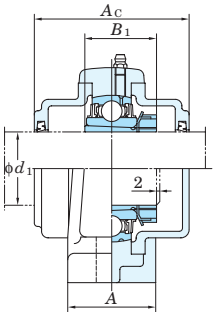
UKIP
Tapered bore (with adapter)
d₁ 35 ~ 125 mm



With Pressed Steel Cover



With Cast Iron Cover



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

Housing No.	ΔH_s	ΔJ_s
IP208-IP210	± 0.15	± 0.5
IP211-IP213	± 0.2	± 0.7
IP319-IP328	± 0.3	± 0.7

Unit: mm

Shaft Dia. mm inch		Dimensions inch mm								Bolt Size inch mm	Standard				Mass kg	Basic Load Ratings kN		Factor f ₀	With Pressed Steel Cover				With Cast Iron Cover					
		Unit No.	Housing No.	Bearing No.	Adapter ¹⁾ No.	Open Type	One Side Closed Type	Dimension mm inch			Mass kg	Open Type	One Side Closed Type	Dimension mm inch		Mass kg												
d ₁	H							L	A	J				N	H ₁		H ₂	B ₁ ¹⁾	C _r	C _{0r}	A _s	A _c						
35	1 1/4	2 23/64	7 7/8	2 3/8	5 29/32	3/4	3 1/32	4 17/32	1 13/32(1 13/16)	5/8	UKIP208	IP208	UK208	HE308X(HE2308X) HS308X(HS2308X) H308X(H2308X)	3.5	29.1	17.8	14.0	—	—	—	—	—	—				
	1 3/8	60	200	60	150	19	25	115	36(46)	M16					3.5				—	—	—	—	—	—	—	—	—	
															3.5				UKIP208C	UKIP208CD	68	2 11/16	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	3 1/32	5 1/32	1 17/32(1 31/32)	5/8	UKIP209	IP209	UK209	HE309X(HE2309X) H309X(H2309X)	4.0	34.1	21.3	14.0	—	—	—	—	—	—				
		70	210	60	160	19	25	128	39(50)	M16					4.0				UKIP209C	UKIP209CD	68	2 11/16	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	1 21/32(2 5/32)	5/8	UKIP210	IP210	UK210	HE310X(HE2310X) H310X(H2310X)	4.8	35.1	23.3	14.4	—	—	—	—	—	—				
		70	220	60	170	19	28	132	42(55)	M16					4.8				UKIP210C	UKIP210CD	73	2 7/8	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	1 25/32(2 5/16)	5/8	UKIP211	IP211	UK211	HS311X(HS2311X) H311X(H2311X) HE311X(HE2311X)	5.3	43.4	29.4	14.4	—	—	—	—	—	—				
		80	230	60	180	19	28	148	45(59)	M16					5.3				UKIP211C	UKIP211CD	75	2 15/16	5.3	UKIP211FC	UKIP211FCD	99	3 29/32	5.9
	2														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	1 27/32(2 7/16)	3/4	UKIP212	IP212	UK212	HS312X(HS2312X) H312X(H2313X)	7.1	52.4	36.2	14.4	—	—	—	—	—	—				
		80	260	70	200	22	30	155	47(62)	M20					7.1				UKIP212C	UKIP212CD	88	3 15/32	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	1 31/32(2 9/16)	3/4	UKIP213	IP213	UK213	HE313X(HE2313X) H313X(H2313X) HS313X(HS2313X)	8.7	57.2	40.1	14.4	—	—	—	—	—	—				
		90	280	70	220	22	30	172	50(65)	M20					8.7				UKIP213C	UKIP213CD	88	3 15/32	8.7	UKIP213FC	UKIP213FCD	114	4 1/2	10.4
	2 3/8														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					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 H2315X	17.7	113	77.2	13.2	—	—	—	—	—	—				
		120	340	75	280	25	35	230	73	M22					17.7				—	—	—	—	—	—	—	—	—	—
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 H2316X	20.4	123	86.7	13.3	—	—	—	—	—	—				
		120	350	85	290	25	40	235	78	M22					20.4				—	—	—	—	—	—	—	—	—	—
75	3	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 HE2317X	25.7	133	96.8	13.3	—	—	—	—	—	—				
		130	370	85	310	25	40	255	82	M22					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	—	—	—	—	—	—				
		130	400	85	330	29	45	260	86	M27					28.7				—	—	—	—	—	—	—	—	—	—
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 H2319X	32.0	153	119	13.3	—	—	—	—	—	—				
		150	410	85	340	29	45	285	90	M27					32.0				—	—	—	—	—	—	—	—	—	—
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 H2320X	36.6	173	141	13.2	—	—	—	—	—	—				
		150	430	85	360	29	45	295	97	M27					36.6				—	—	—	—	—	—	—	—	—	—
100	4	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 HE2322X	52.2	205	180	13.2	—	—	—	—	—	—				
		170	490	100	410	32	50	335	105	M30					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	—	—	—	—	—	—				
		170	510	100	430	32	50	345	112	M30					59.0				—	—	—	—	—	—	—	—	—	—
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 H2326	76.0	229	214	13.6	—	—	—	—	—	—				
		200	550	110	470	32	50	390	121	M30					76.0				—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—				
		200	590	110	500	35	55	400	131	M33					87.0				—	—	—	—	—	—	—	—	—	—

Note 1) Codes shown in parentheses indicate the dimensions and Part No. of applicable adapter (H2300X series) for UK200L3 series (triple seal type).

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)

2. Part No. of applicable grease fittings are shown below.

A-1/4-28UNF.....208~210
A-R1/8.....211~213, 313~328

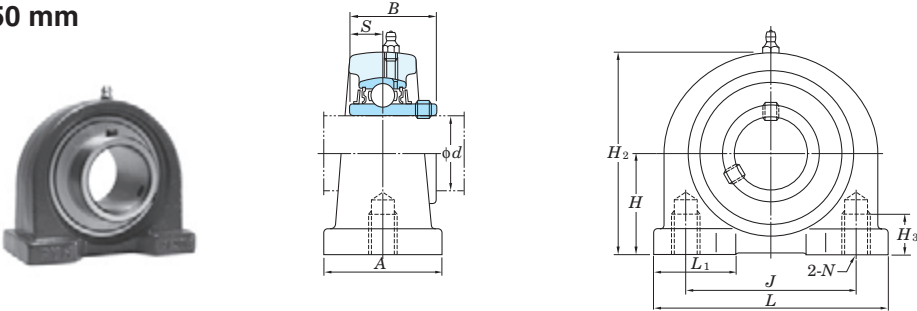
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables. (Example of Part No. : UKIP208J + H308X, UK208 + H308X)

4. As for the triple seal type product, accessory 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_s) and variations of tolerance of distance between centers of bolt holes (ΔJ_s)

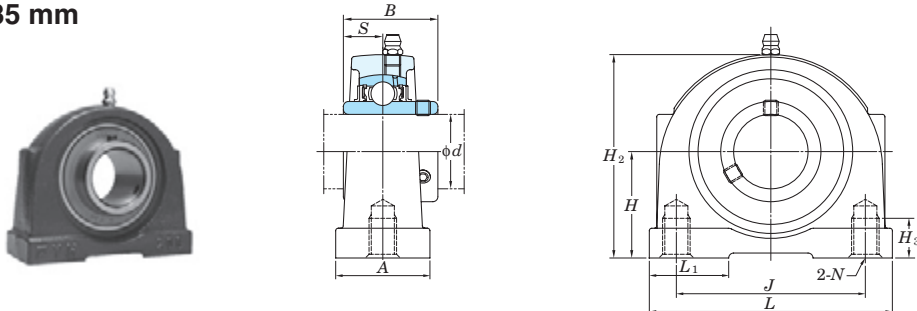
Unit: mm		
Housing No.	ΔH_s	ΔJ_s
PA204-PA210	±0.15	±0.5

Shaft Dia. mm inch		Dimensions inch mm										Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor	Mass
d		H	L	A	J	N	H ₂	H ₃	L ₁	B	S				C _r	C _{0r}	f ₀	kg
12	1/2											UCPA201		UC201				0.64
15	5/8	1 3/16	3	1 9/16	2 3/64	M10×1.5	2 3/8	1/2	1 1/16	1.220	0.500	UCPA201-8		UC201-8	12.8	6.65	13.2	0.62
17	3/4	30.2	76	40	52		60	13	27	31	12.7	UCPA202	PA204	UC202				0.61
20												UCPA202-10		UC202-10				0.59
												UCPA203		UC203				
												UCPA204-12		UC204-12				
												UCPA204		UC204				
25	7/8	1 7/16	3 5/16	1 25/32	2 13/64	M10×1.5	2 25/32	1/2	1 3/16	1.343	0.563	UCPA205-14		UC205-14	14.0	7.85	13.9	0.83
	15/16	36.5	84	45	56		71	13	30	34.1	14.3	UCPA205-15	PA205	UC205-15				
	1											UCPA205		UC205				
												UCPA205-16		UC205-16				
30	1 1/8	1 11/16	3 11/16	1 31/32	2 19/32		3 5/16	23/32	1 13/32	1.500	0.626	UCPA206-18		UC206-18	19.5	11.3	13.9	1.2
	1 3/16	42.9	94	50	66	M14×2	84	18	36	38.1	15.9	UCPA206	PA206	UC206				
	1 1/4											UCPA206-19		UC206-19				
												UCPA206-20		UC206-20				
35	1 1/4	1 7/8	3 11/32	2 5/32	3 5/32	M14×2	3 21/32	25/32	1 5/8	1.689	0.689	UCPA207-20		UC207-20	25.7	15.4	13.9	1.7
	1 5/16	47.6	110	55	80		93	20	41	42.9	17.5	UCPA207-21	PA207	UC207-21				
	1 3/8											UCPA207-22		UC207-22				
	1 7/16											UCPA207		UC207				
												UCPA207-23		UC207-23				
40	1 1/2	1 15/16	4 9/16	2 9/32	3 5/16	M14×2	3 15/16	25/32	1 5/8	1.937	0.748	UCPA208-24		UC208-24	29.1	17.8	14.0	2.0
	1 9/16	49.2	116	58	84		100	20	41	49.2	19	UCPA208-25	PA208	UC208-25				
												UCPA208		UC208				
45	1 5/8	2 9/64	4 23/32	2 3/8	3 35/64	M14×2	4 3/16	31/32	1 21/32	1.937	0.748	UCPA209-26		UC209-26	34.1	21.3	14.0	2.2
	1 11/16	54.2	120	60	90		106	25	42	49.2	19	UCPA209-27	PA209	UC209-27				
	1 3/4											UCPA209-28		UC209-28				
												UCPA209		UC209				
50	1 7/8	2 1/4	5 1/8	2 17/32	3 45/64	M16×2	4 7/16	31/32	1 27/32	2.031	0.748	UCPA210-30		UC210-30	35.1	23.3	14.4	2.8
	1 15/16	57.2	130	64	94		113	25	47	51.6	19	UCPA210-31	PA210	UC210-31				
	2											UCPA210		UC210				
												UCPA210-32		UC210-32				

Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See **Table 10.5** in P.51.)
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), accessory 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 + H305X, UK205 + H305X)
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_s) and variations of tolerance of distance between centers of bolt holes (ΔJ_s)

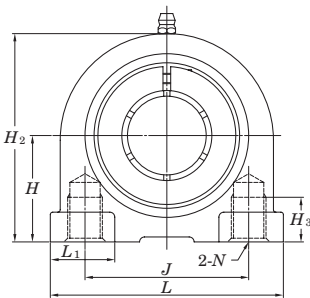
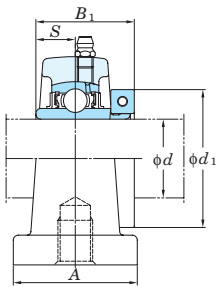
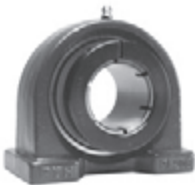
Unit: mm		
Housing No.	ΔH_s	ΔJ_s
PAN204~PAN207	±0.15	±0.5

Shaft Dia. mm inch		Dimensions inch mm										Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor f_0	Mass kg
d		H	L	A	J	N	H_2	H_3	L_1	B	S				C_r	C_{0r}		
20	$\frac{3}{4}$	$1\frac{5}{16}$ 33.3	$2\frac{9}{16}$ 65	$1\frac{1}{4}$ 32	2 50.8	$\frac{3}{8}$ -16UNC	$2\frac{17}{32}$ 64	$\frac{1}{2}$ 12.7	$\frac{7}{8}$ 22	1.220 31	0.500 12.7	UCPAN204-12 UCPAN204	PAN204	UC204-12 UC204	12.8	6.65	13.2	0.55
25	$\frac{7}{8}$ $\frac{15}{16}$	$1\frac{7}{16}$ 36.5	$2\frac{3}{4}$ 70	$1\frac{13}{32}$ 36	2 50.8	$\frac{3}{8}$ -16UNC	$2\frac{3}{4}$ 70	$\frac{1}{2}$ 13	$\frac{15}{16}$ 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 $1\frac{1}{8}$ $1\frac{3}{16}$ $1\frac{1}{4}$	$1\frac{11}{16}$ 42.9	$3\frac{27}{32}$ 98	$1\frac{1}{2}$ 38	3 76.2	$\frac{7}{16}$ -14UNC	$3\frac{7}{32}$ 82	$\frac{5}{8}$ 16	$1\frac{11}{32}$ 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	$1\frac{1}{4}$ $1\frac{5}{16}$ $1\frac{3}{8}$ $1\frac{7}{16}$	$1\frac{7}{8}$ 47.6	$4\frac{11}{32}$ 110	$1\frac{7}{8}$ 48	$3\frac{1}{4}$ 82.6	$\frac{1}{2}$ -13UNC	$3\frac{21}{32}$ 93	$\frac{3}{4}$ 19	$1\frac{3}{32}$ 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.51.)
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), accessory 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 + H305X, UK205 + H305X)
6. Housings of nodular graphite cast iron are also available.

NCPA
Cylindrical bore
(with concentric locking collar)
d 20 ~ 50 mm



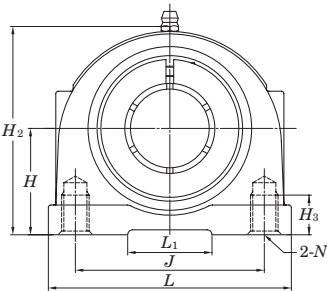
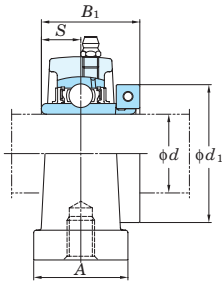
Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_s) and variations of tolerance of distance between centers of bolt holes (ΔJ_s)

Unit: mm		
Housing No.	ΔH_s	ΔJ_s
PA204~PA210	±0.15	±0.5

Shaft Dia. mm inch		Dimensions inch mm											Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor	Mass
d		H	L	A	J	N	H ₂	H ₃	L ₁	B ₁	S	d ₁				C _r	C _{0r}	f ₀	kg
20	3/4	1 3/16 30.2	3 76	1 9/16 40	2 3/64 52	M10×1.5	2 3/8 60	1/2 13	1 1/16 27	1 9/32 32.5	0.500 12.7	1 3/4 44.5	NCPA204-12 NCPA204	PA204	NC204-12 NC204	12.8	6.65	13.2	0.73
25	7/8 15/16	1 7/16 36.5	3 5/16 84	1 25/32 45	2 13/64 56	M10×1.5	2 25/32 71	1/2 13	1 3/16 30	1 7/16 36.5	0.563 14.3	1 15/16 49.2	NCPA205-14 NCPA205-15 NCPA205 NCPA205-16	PA205	NC205-14 NC205-15 NC205 NC205-16	14.0	7.85	13.9	1.0
	1																		
30	1 1/8	1 11/16 42.9	3 11/16 94	1 31/32 50	2 19/32 66	M14×2	3 5/16 84	23/32 18	1 13/32 36	1 9/16 39.7	0.626 15.9	2 3/16 55.6	NCPA206-18 NCPA206 NCPA206-19 NCPA206-20	PA206	NC206-18 NC206 NC206-19 NC206-20	19.5	11.3	13.9	1.4
	1 3/16																		
	1 1/4																		
35	1 1/4	1 7/8 47.6	3 11/32 110	2 5/32 55	3 5/32 80	M14×2	3 21/32 93	25/32 20	1 5/8 41	1 3/4 44.5	0.689 17.5	2 7/16 61.9	NCPA207-20	PA207	NC207-20	25.7	15.4	13.9	2.0
	1 3/8	1 7/8 47.6	3 11/32 110	2 5/32 55	3 5/32 80	M14×2	3 21/32 93	25/32 20	1 5/8 41	1 3/4 44.5	0.689 17.5	2 9/16 65.1	NCPA207-22 NCPA207 NCPA207-23	PA207	NC207-22 NC207 NC207-23	25.7	15.4	13.9	2.0
	1 7/16																		
40	1 1/2	1 15/16 49.2	4 9/16 116	2 9/32 58	3 5/16 84	M14×2	3 15/16 100	25/32 20	1 5/8 41	2 50.8	0.748 19	2 11/16 68.3	NCPA208-24 NCPA208	PA208	NC208-24 NC208	29.1	17.8	14.0	2.4
45	1 5/8	2 9/64 54.2	4 23/32 120	2 3/8 60	3 35/64 90	M14×2	4 3/16 106	31/32 25	1 21/32 42	2 50.8	0.748 19	2 13/16 71.4	NCPA209-26	PA209	NC209-26	34.1	21.3	14.0	2.6
	1 11/16	2 9/64 54.2	4 23/32 120	2 3/8 60	3 35/64 90	M14×2	4 3/16 106	31/32 25	1 21/32 42	2 50.8	0.748 19	2 15/16 74.6	NCPA209-27 NCPA209-28 NCPA209	PA209	NC209-27 NC209-28 NC209	34.1	21.3	14.0	2.6
	1 3/4																		
50	1 15/16 2	2 1/4 57.2	5 1/8 130	2 17/32 64	3 45/64 94	M16×2	4 7/16 113	31/32 25	1 27/32 47	2 3/32 53.1	0.748 19	3 3/8 85.7	NCPA210-31 NCPA210 NCPA210-32	PA210	NC210-31 NC210 NC210-32	35.1	23.3	14.4	3.4

Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See Table 10.5 in P.51.)
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



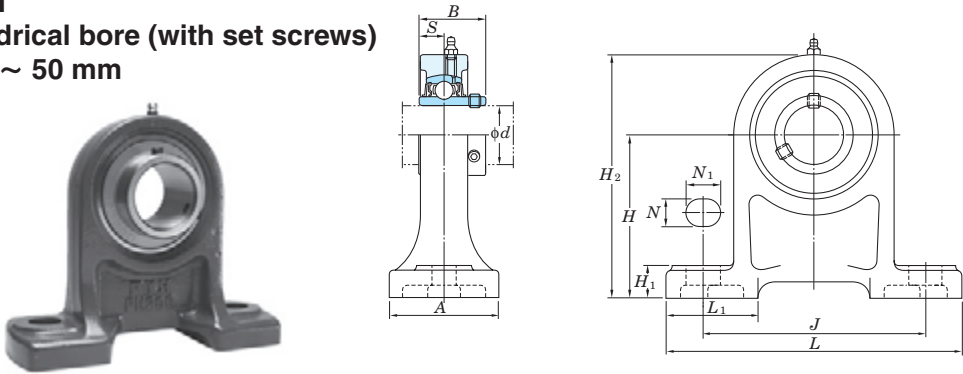
Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_s) and variations of tolerance of distance between centers of bolt holes (ΔJ_s)

Unit: mm		
Housing No.	ΔH_s	ΔJ_s
PAN204~PAN207	±0.15	±0.5

Shaft Dia. mm inch		Dimensions inch mm											Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor	Mass
<i>d</i>		<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>H</i> ₂	<i>H</i> ₃	<i>L</i> ₁	<i>B</i> ₁	<i>S</i>	<i>d</i> ₁				<i>C</i> _r	<i>C</i> _{0r}	<i>f</i> ₀	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 NC204	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						
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 NC205-15 NC205	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						
	1												NCPAN205-16						
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 NC206 NC206-19 NC206-20	19.5	11.3	13.9	1.5
	1 3/16	42.9	98	38	76.2		82	16	34	39.7	15.9	55.6	NCPAN206						
	1 1/4												NCPAN206-19						
													NCPAN206-20						
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 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 11/32	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 NC207	25.7	15.4	13.9	2.1
	1 7/16	47.6	110	48	82.6		93	19	28	44.5	17.5	65.1	NCPAN207						
													NCPAN207-23		NC207-23				

Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See Table 10.5 in P.51.)
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.

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



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

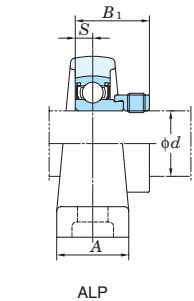
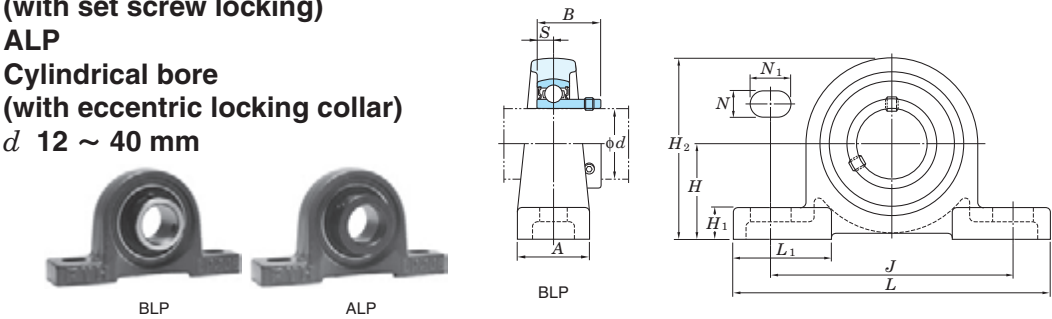
Unit: mm	
Housing No.	ΔH_2
PH204~PH210	±0.15

Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor f_0	Mass kg
d		H	L	A	J	N	N_1	H_1	H_2	L_1	B	S					C_r	C_{0r}		
12	1/2	70	127	40	95	13	19	15	101	46	31	12.7	3/8 M10	UCPH201 UCPH201-8 UCPH202 UCPH202-10 UCPH203 UCPH204-12 UCPH204	PH204	UC201 UC201-8 UC202 UC202-10 UC203 UC204-12 UC204	12.8	6.65	13.2	0.96
15	5/8	80	140	50	105	13	19	16	114	49	34.1	14.3	3/8 M10	UCPH205-14 UCPH205-15 UCPH205 UCPH205-16	PH205	UC205-14 UC205-15 UC205 UC205-16	14.0	7.85	13.9	1.2
17	3/4	90	165	50	121	17	21	18	130	56	38.1	15.9	1/2 M14	UCPH206-18 UCPH206 UCPH206-19 UCPH206-20	PH206	UC206-18 UC206 UC206-19 UC206-20	19.5	11.3	13.9	1.6
20	7/8	95	167	60	127	17	21	18	140	54	42.9	17.5	1/2 M14	UCPH207-20 UCPH207-21 UCPH207-22 UCPH207 UCPH207-23	PH207	UC207-20 UC207-21 UC207-22 UC207 UC207-23	25.7	15.4	13.9	2.0
25	1 1/8	100	184	70	137	17	21	20	150	57	49.2	19	1/2 M14	UCPH208-24 UCPH208-25 UCPH208	PH208	UC208-24 UC208-25 UC208	29.1	17.8	14.0	2.7
30	1 1/4	105	190	70	146	17	21	20	158	58	49.2	19	1/2 M14	UCPH209-26 UCPH209-27 UCPH209-28 UCPH209	PH209	UC209-26 UC209-27 UC209-28 UC209	34.1	21.3	14.0	3.0
35	1 1/2	110	206	70	159	20	22	22	165	65	51.6	19	5/8 M16	UCPH210-30 UCPH210-31 UCPH210 UCPH210-32	PH210	UC210-30 UC210-31 UC210 UC210-32	35.1	23.3	14.4	3.5

Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See Table 10.5 in P.51.)
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), accessory 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 + H305X, UK205 + H305X)

BLP
Cylindrical bore
(with set screw locking)
ALP
Cylindrical bore
(with eccentric locking collar)
d 12 ~ 40 mm



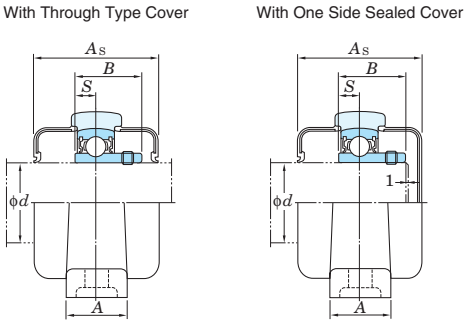
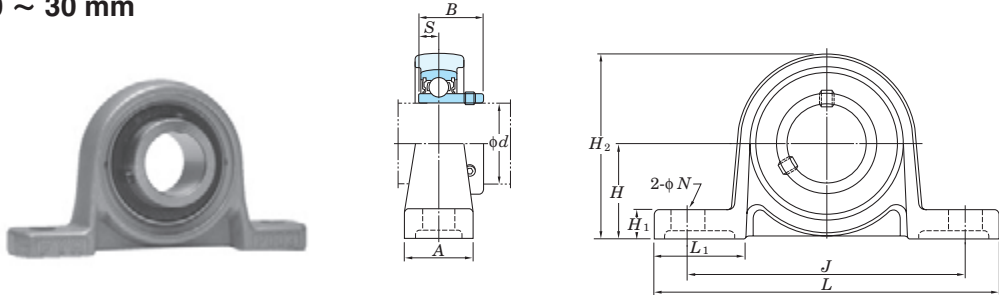
Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_2)

Housing No.	Unit: mm ΔH_2
LP203~LP208	± 0.15

Shaft Dia. mm inch	Dimensions inch mm												Bolt Size inch mm	Unit No.	Bearing No.		Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN		Factor <i>f</i> ₀	Mass kg	
	<i>d</i>	<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>N</i> ₁	<i>H</i> ₁	<i>H</i> ₂	<i>L</i> ₁	<i>S</i>	BLP <i>B</i>	ALP <i>B</i> ₁							<i>C</i> _r	<i>C</i> _{0r}		BLP	ALP
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm							mm	mm		mm	mm
12	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	SB201		ALP201	SA201	LP203	9.55 4.80	13.2	0.36	0.39
15	5/8	30.2	114	25	87	11	16	12	57	35	6	22	28.5	M10	BLP201-8	SB201-8		ALP201-8	SA201-8					
															BLP202	SB202		ALP202	SA202					
															BLP202-10	SB202-10		ALP202-10	SA202-10					
17															BLP203	SB203		ALP203	SA203	LP204	12.8 6.65	13.2	0.51	0.51
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					
		33.3	125	27	97	11	16	13	65	38	7	25	29.5	M10	BLP204	SB204		ALP204	SA204					
															BLP205-14	SB205-14		ALP205-14	SA205-14					
25	7/8	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
	15/16	36.5	130	29	100	11	16	13	71	39	7.5	27	30.5	M10	BLP205	SB205		ALP205	SA205					
															BLP205-16	SB205-16		ALP205-16	SA205-16					
															BLP206-18	SB206-18		ALP206-18	SA206-18					
30	1 1/8	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					
															BLP206-20	SB206-20		ALP206-20	SA206-20					
	1 1/4														BLP207-20	SB207-20		ALP207-20	SA207-20					
35	1 1/4	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
	1 5/16	47.6	165	35	127	14	21	16	93	50	8.5	32	36.5	M12	BLP207	SB207		ALP207	SA207					
	1 3/8														BLP207-23	SB207-23		ALP207-23	SA207-23					
	1 7/16														BLP208-24	SB208-24		ALP208-24	SA208-24					
40	1 1/2	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	BLP208	SB208		ALP208	SA208	LP208	29.1 17.8	14.0	1.8	1.9
	1 9/16	50.8	184	37	140	14	22	18	102	55	9	34	40.5	M12				ALP208-25	SA208-25					

Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See Table 10.5 in P.51.)
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 (ΔH_s) and variations of tolerance of distance between centers of bolt holes (ΔJ_s)

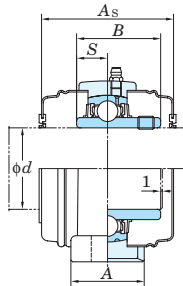
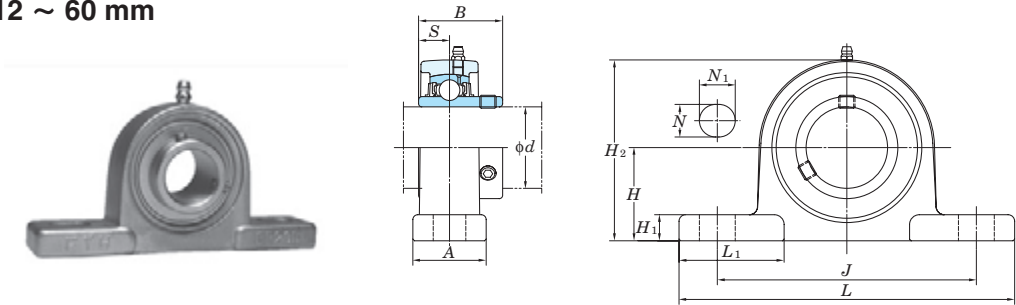
Unit: mm		
Housing No.	ΔH_s	ΔJ_s
P000-P006	±0.15	±0.3

Shaft Dia. mm	Dimensions										Bolt Size	Standard				Mass	Basic		Factor	With Rubber Coated Cover				
	inch											Unit No.	Housing No.	Bearing No.	Load Ratings kN		Open Type	One Side Closed Type		Dimension		Mass		
	mm																			mm	inch		kg	
<i>d</i>	<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>H</i> ₁	<i>H</i> ₂	<i>L</i> ₁	<i>B</i>	<i>S</i>	inch mm				kg	<i>C</i> _r	<i>C</i> _{0r}	<i>f</i> ₀			<i>A</i> _s		kg	
10	⁴⁵ / ₆₄	2 ⁵ / ₈	⁵ / ₈	2 ³ / ₃₂	⁹ / ₃₂	¹ / ₄	1 ³ / ₈	²³ / ₃₂	0.591	0.197	¹ / ₄	UP000	P000	SU000	0.070	4.55	1.95	12.3	UP000C	UP000CD	29	1 ⁵ / ₃₂	0.07	
	18	67	16	53	7	6	35	18	15	5	M6													
12	³ / ₄	2 ²⁵ / ₃₂	⁵ / ₈	2 ¹³ / ₆₄	⁹ / ₃₂	¹ / ₄	1 ¹ / ₂	³ / ₄	0.591	0.197	¹ / ₄	UP001	P001	SU001	0.090	5.10	2.40	13.2	UP001C	UP001CD	29	1 ⁵ / ₃₂	0.09	
	19	71	16	56	7	6	38	19	15	5	M6													
15	⁵⁵ / ₆₄	3 ⁵ / ₃₂	⁵ / ₈	2 ³¹ / ₆₄	⁹ / ₃₂	⁹ / ₃₂	1 ¹¹ / ₁₆	¹³ / ₁₆	0.650	0.217	¹ / ₄	UP002	P002	SU002	0.11	5.60	2.85	13.9	UP002C	UP002CD	31	1 ⁷ / ₃₂	0.11	
	22	80	16	63	7	7	43	21	16.5	5.5	M6													
17	¹⁵ / ₁₆	3 ¹¹ / ₃₂	²³ / ₃₂	2 ⁴¹ / ₆₄	⁹ / ₃₂	⁹ / ₃₂	1 ²⁷ / ₃₂	¹³ / ₁₆	0.689	0.236	¹ / ₄	UP003	P003	SU003	0.15	6.00	3.25	14.4	UP003C	UP003CD	33	1 ⁵ / ₁₆	0.15	
	24	85	18	67	7	7	47	21	17.5	6	M6													
20	1 ⁷ / ₆₄	3 ¹⁵ / ₁₆	²⁵ / ₃₂	3 ⁵ / ₃₂	¹³ / ₃₂	¹¹ / ₃₂	2 ⁵ / ₃₂	³¹ / ₃₂	0.827	0.276	⁵ / ₁₆	UP004	P004	SU004	0.23	9.40	5.05	13.9	UP004C	UP004CD	38	1 ¹ / ₂	0.23	
	28	100	20	80	10	9	55	25	21	7	M8													
25	1 ¹⁷ / ₆₄	4 ¹³ / ₃₂	²⁵ / ₃₂	3 ³⁵ / ₆₄	¹³ / ₃₂	¹³ / ₃₂	2 ⁷ / ₁₆	1 ³ / ₃₂	0.866	0.276	⁵ / ₁₆	UP005	P005	SU005	0.28	10.1	5.85	14.5	UP005C	UP005CD	40	1 ⁹ / ₁₆	0.28	
	32	112	20	90	10	10	62	28	22	7	M8													
30	1 ²⁷ / ₆₄	5 ³ / ₁₆	1 ¹ / ₃₂	4 ¹¹ / ₆₄	¹ / ₂	⁷ / ₁₆	2 ³ / ₄	1 ¹¹ / ₃₂	0.965	0.295	³ / ₈	UP006	P006	SU006	0.42	13.2	8.25	14.7	UP006C	UP006CD	44	1 ²³ / ₃₂	0.42	
	36	132	26	106	13	11	70	34	24.5	7.5	M10													

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See Table 10.5 in P.51.)
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



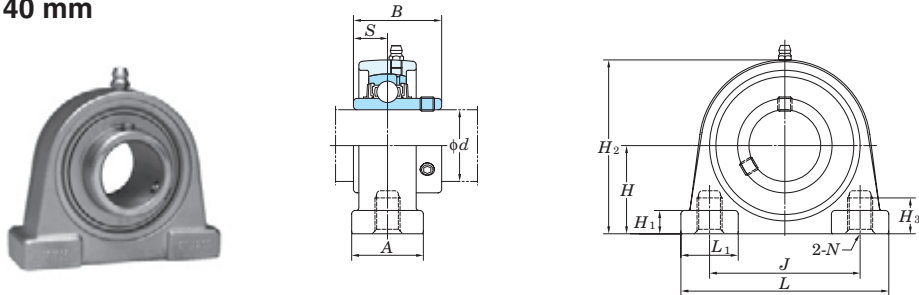
Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_0)

Housing No.	Unit: mm
SP203H1-SP210H1	± 0.15
SP211H1-SP212H1	± 0.2

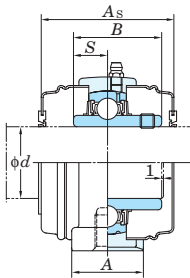
Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Standard				Mass kg	Basic Load Ratings kN		Factor <i>f</i> ₀	With Pressed Stainless Steel Cover				
		Unit No.	Housing No.	Bearing No.		Unit No.		Dimension mm inch		Mass kg																
<i>d</i>	<i>H</i>					<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>		<i>N</i> ₁	<i>H</i> ₁	<i>H</i> ₂	<i>L</i> ₁	<i>B</i>	<i>S</i>	Open Type	One Side Closed Type	<i>A</i> _s							
12	1/2 5/8	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	UCSP201XH1S6 UCSP201-8XH1S6 UCSP202XH1S6 UCSP202-10XH1S6 UCSP203XH1S6	SP203H1	UC201XS6 UC201-8XS6 UC202XS6 UC202-10XS6 UC203XS6	0.47	8.15	3.85	13.2	—	—	—	—	—	
15		30.2	127	30	95	13	18	11	56	42	27.4	11.5	M10	UCSP204-12H1S6 UCSP204H1S6	SP204H1	UC204-12S6 UC204S6	0.6	10.9	5.35	13.2	UCSP204H1CS6	UCSP204H1CDS6	45	1 25/32	0.6	
17		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	UCSP205-14H1S6 UCSP205-15H1S6 UCSP205H1S6 UCSP205-16H1S6	SP205H1	UC205-14S6 UC205-15S6 UC205S6 UC205-16S6	0.7	11.9	6.3	13.9	—	—	—	—	—
20		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	UCSP206-18H1S6 UCSP206H1S6 UCSP206-19H1S6 UCSP206-20H1S6	SP206H1	UC206-18S6 UC206S6 UC206-19S6 UC206-20S6	1.1	16.5	9.05	13.9	UCSP206H1CS6	UCSP206H1CDS6	53	2 3/32	1.1	
25	7/8 15/16 1	1 7/8	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	UCSP207-20H1S6 UCSP207-21H1S6 UCSP207-22H1S6 UCSP207H1S6 UCSP207-23H1S6	SP207H1	UC207-20S6 UC207-21S6 UC207-22S6 UC207S6 UC207-23S6	1.4	21.8	12.3	13.9	—	—	—	—	—	
30		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	UCSP208-24H1S6 UCSP208-25H1S6 UCSP208H1S6	SP208H1	UC208-24S6 UC208-25S6 UC208S6	1.7	24.8	14.3	14.0	—	—	—	—	—	
35		1 3/16	42.9	165	36	121	17	21	13	81	54	38.1	15.9	M14	UCSP209-26H1S6 UCSP209-27H1S6 UCSP209-28H1S6 UCSP209H1S6	SP209H1	UC209-26S6 UC209-27S6 UC209-28S6 UC209S6	2	27.8	16.2	14.0	—	—	—	—	—
40		1 1/4	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	UCSP210-30H1S6 UCSP210-31H1S6 UCSP210H1S6 UCSP210-32H1S6 UCSP211-32H1S6	SP210H1	UC210-30S6 UC210-31S6 UC210S6 UC210-32S6 UC211-32S6	2.5	29.8	18.6	14.4	—	—	—	—	—
45	1 5/8 1 11/16 1 3/4	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	UCSP211-34H1S6 UCSP211H1S6 UCSP211-35H1S6	SP211H1	UC211-34S6 UC211S6 UC211-35S6	3.4	36.8	23.5	14.4	—	—	—	—	—	
50		1 15/16	57.2	206	45	159	20	22	16	111	65	51.6	19	M16	UCSP212-36H1S6	SP212H1	UC212-36S6	4.5	44.5	29	14.4	—	—	—	—	—
55		2	2 1/8	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	UCSP212H1S6 UCSP212-38H1S6 UCSP212-39H1S6	SP212H1	UC212S6 UC212-38S6 UC212-39S6	4.5	44.5	29	14.4	UCSP212H1CS6	UCSP212H1CDS6	88	3 15/32	4.5
60		2 3/16																								

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See Table 10.5 in P.51.)
2. Part No. of the applicable grease fitting is shown below.
A-1/4-28UNFN12201X-210
A-R1/8N12211-212
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



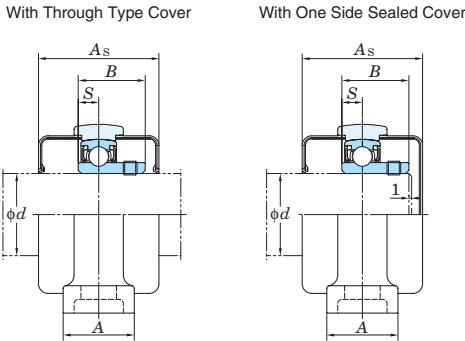
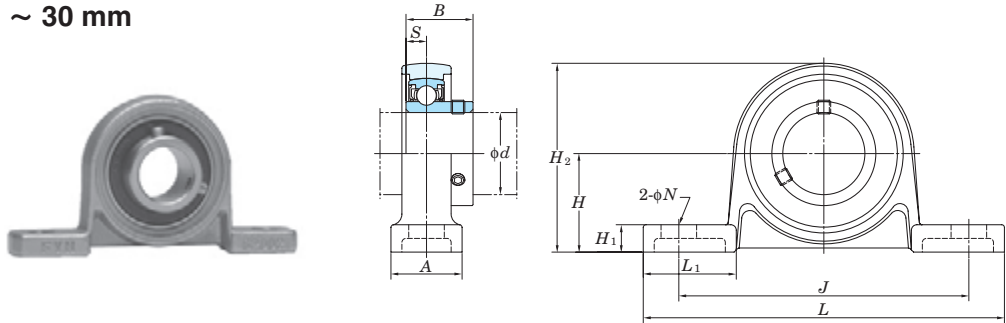
Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_s) and variations of tolerance of distance between centers of bolt holes (ΔJ_s)

Unit: mm		
Housing No.	ΔH_s	ΔJ_s
SPA203H1~SPA208H1	±0.15	±0.5

Shaft Dia. mm inch		Dimensions inch mm										Standard				Mass kg	Basic Load Ratings kN		Factor <i>f</i> ₀	With Pressed Stainless Steel Cover			
												Unit No.	Housing No.	Bearing No.	Open Type		One Side Closed Type	Dimension mm inch		Mass kg			
<i>d</i>	<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>H</i> ₁	<i>H</i> ₂	<i>L</i> ₁	<i>B</i>	<i>S</i>						<i>C</i> _r		<i>C</i> _{0r}			<i>A</i> _s		
12	1/2 5/8	1 3/16 30.2	3 76	1 3/16 30	2 3/64 52	M10×1.5	13/32 10	2 1/4 57	7/8 22	1.079 27.4	0.453 11.5	UCSPA201XH1S6	SPA203H1	UC201XS6	0.43	8.15	3.85	13.2	—	—	—	—	
15												UCSPA201-8XH1S6		UC201-8XS6					—	—	—	—	
												UCSPA202XH1S6		UC202XS6					—	—	—	—	
												UCSPA202-10XH1S6		UC202-10XS6					—	—	—	—	
17	UCSPA203XH1S6	UC203XS6	—	—	—	—																	
20	3/4	1 3/16 30.2	3 76	1 3/16 30	2 3/64 52	M10×1.5	13/32 10	2 3/8 60	7/8 22	1.220 31	0.500 12.7	UCSPA204-12H1S6	SPA204H1	UC204-12S6	0.47	10.9	5.35	13.2	—	—	—	—	
25	UCSPA204H1S6	UC204S6	UCSPA204H1CS6	UCSPA204H1CDS6	45	1 25/32	0.46																
	UCSPA205-14H1S6	UC205-14S6	—	—	—	—																	
	UCSPA205-15H1S6	UC205-15S6	—	—	—	—																	
	UCSPA205H1S6	UC205S6	UCSPA205H1CS6	UCSPA205H1CDS6	49	1 15/16	0.63																
30	1	1 11/16 42.9	3 5/16 94	1 3/16 36	2 13/64 56	M10×1.5	15/32 12	2 23/32 69	15/16 24	1.343 34.1	0.563 14.3	UCSPA205-16H1S6	SPA205H1	UC205-16S6	0.63	11.9	6.3	13.9	—	—	—	—	
	UCSPA206-18H1S6											UC206-18S6		—					—	—	—		
	UCSPA206H1S6											UC206S6		UCSPA206H1CS6					UCSPA206H1CDS6	53	2 3/32	0.91	
	UCSPA206-19H1S6											UC206-19S6		—					—	—	—		
35	1 1/8	1 11/16 42.9	3 11/16 94	1 13/32 36	2 19/32 66	M14×2	15/32 12	3 3/16 81	1 3/32 28	1.500 38.1	0.626 15.9	UCSPA206-20H1S6	SPA206H1	UC206-20S6	0.91	16.5	9.05	13.9	—	—	—	—	
	UCSPA207-20H1S6											UC207-20S6		—					—	—	—		
	UCSPA207-21H1S6											UC207-21S6		—					—	—	—		
	UCSPA207-22H1S6											UC207-22S6		—					—	—	—		
40	1 1/4	1 7/8 47.6	3 11/32 110	1 1/2 38	3 5/32 80	M14×2	1/2 13	3 19/32 91	1 3/16 30	1.689 42.9	0.689 17.5	UCSPA207H1S6	SPA207H1	UC207S6	1.3	21.8	12.3	13.9	UCSPA207H1CS6	UCSPA207H1CDS6	60	2 3/8	1.3
	UCSPA207-23H1S6											UC207-23S6		—					—	—	—		
	UCSPA208-24H1S6											UC208-24S6		—					—	—	—		
	UCSPA208-25H1S6											UC208-25S6		—					—	—	—		
40	1 7/16	1 15/16 49.2	4 9/16 116	1 9/16 40	3 5/16 84	M14×2	1/2 13	3 13/16 97	1 1/4 32	1.937 49.2	0.748 19	UCSPA208H1S6	SPA208H1	UC208S6	1.6	24.8	14.3	14.0	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.51.)
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



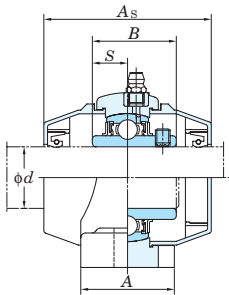
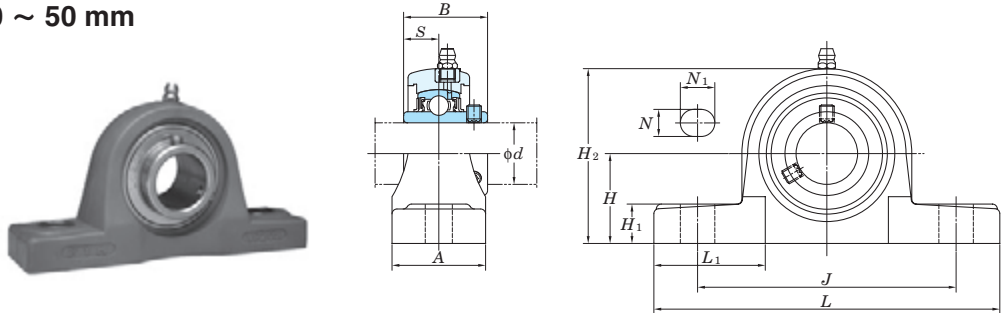
Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_s) and variations of tolerance of distance between centers of bolt holes (ΔJ_s)

Unit: mm		
Housing No.	ΔH_s	ΔJ_s
SP000-SP006	±0.15	±0.3

Shaft Dia. mm	Dimensions										Bolt Size inch mm	Standard				Mass	Basic		Factor	With Rubber Coated Cover				Mass	
	inch mm											Unit No.	Housing No.	Bearing No.			Load Ratings kN			Open Type	Unit No.		Dimension mm inch		
	<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>H</i> ₁	<i>H</i> ₂	<i>L</i> ₁	<i>B</i>	<i>S</i>							<i>C</i> _r	<i>C</i> _{0r}			<i>f</i> ₀	One Side Closed Type	<i>A</i> _s		
<i>d</i>	<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>H</i> ₁	<i>H</i> ₂	<i>L</i> ₁	<i>B</i>	<i>S</i>	mm				kg	<i>C</i> _r	<i>C</i> _{0r}	<i>f</i> ₀					kg		
10	⁴⁵ / ₆₄	2 ⁵ / ₈	⁵ / ₈	2 ³ / ₃₂	⁹ / ₃₂	³ / ₁₆	1 ³ / ₈	²³ / ₃₂	0.591	0.197	¹ / ₄	USP000S6	SP000	SU000S6	0.076	3.9	1.55	12.3	USP000CS6	USP000CDS6	29	1 ⁵ / ₃₂	0.08		
	18	67	16	53	7	5	35	18	15	5	M6														
12	³ / ₄	2 ²⁵ / ₃₂	⁵ / ₈	2 ⁷ / ₃₂	⁹ / ₃₂	³ / ₁₆	1 ¹⁵ / ₃₂	²³ / ₃₂	0.591	0.197	¹ / ₄	USP001S6	SP001	SU001S6	0.08	4.3	1.9	13.2	USP001CS6	USP001CDS6	29	1 ⁵ / ₃₂	0.08		
	19	71	16	56	7	5	37	18.5	15	5	M6														
15	⁵⁵ / ₆₄	3 ⁵ / ₃₂	⁵ / ₈	2 ¹⁵ / ₃₂	⁹ / ₃₂	¹ / ₄	1 ¹¹ / ₁₆	¹³ / ₁₆	0.650	0.217	¹ / ₄	USP002S6	SP002	SU002S6	0.11	4.7	2.25	13.9	USP002CS6	USP002CDS6	31	1 ⁷ / ₃₂	0.11		
	22	80	16	63	7	6	42.5	20.5	16.5	5.5	M6														
17	¹⁵ / ₁₆	3 ¹¹ / ₃₂	²³ / ₃₂	2 ⁵ / ₈	⁹ / ₃₂	¹ / ₄	1 ¹³ / ₁₆	¹³ / ₁₆	0.689	0.236	¹ / ₄	USP003S6	SP003	SU003S6	0.14	5.1	2.6	14.4	USP003CS6	USP003CDS6	33	1 ⁵ / ₁₆	0.14		
	24	85	18	67	7	6	46	21	17.5	6	M6														
20	1 ⁷ / ₆₄	3 ¹⁵ / ₁₆	²⁵ / ₃₂	3 ⁵ / ₃₂	¹³ / ₃₂	⁵ / ₁₆	2 ⁵ / ₃₂	³¹ / ₃₂	0.827	0.276	⁵ / ₁₆	USP004S6	SP004	SU004S6	0.23	7.9	4	13.9	USP004CS6	USP004CDS6	38	1 ¹ / ₂	0.23		
	28	100	20	80	10	8	54.5	25	21	7	M8														
25	1 ¹⁷ / ₆₄	4 ¹³ / ₃₂	²⁵ / ₃₂	3 ¹⁷ / ₃₂	¹³ / ₃₂	¹¹ / ₃₂	2 ¹³ / ₃₂	1 ³ / ₃₂	0.866	0.276	⁵ / ₁₆	USP005S6	SP005	SU005S6	0.28	8.5	4.65	14.5	USP005CS6	USP005CDS6	40	1 ⁹ / ₁₆	0.28		
	32	112	20	90	10	9	61	27.5	22	7	M8														
30	1 ²⁷ / ₆₄	5 ³ / ₁₆	1 ¹ / ₃₂	4 ³ / ₁₆	¹ / ₂	¹³ / ₃₂	2 ²³ / ₃₂	1 ¹¹ / ₃₂	0.965	0.295	³ / ₈	USP006S6	SP006	SU006S6	0.43	11.2	6.5	14.7	USP006CS6	USP006CDS6	44	1 ²³ / ₃₂	0.43		
	36	132	26	106	13	10	69	34	24.5	7.5	M10														

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See Table 10.5 in P.51.)
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



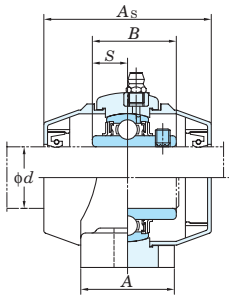
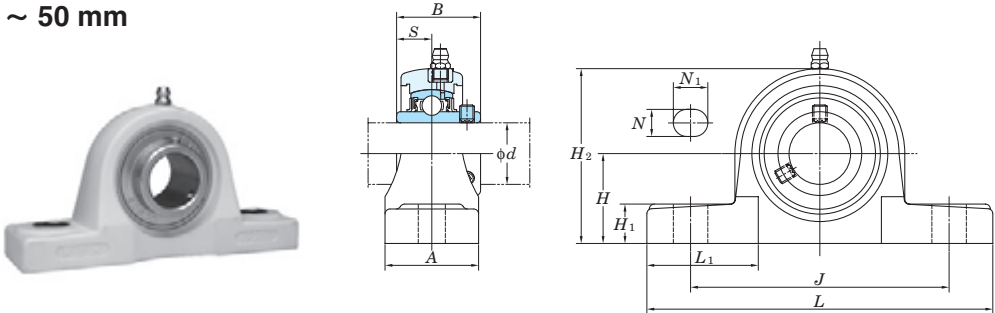
Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_s)

Unit: mm	
Housing No.	ΔH_s
VP204~VP208	±0.15

Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard				Mass kg	Basic Load Ratings kN		Factor <i>f</i> ₀	With Plastic Cover				
		Unit No.	Housing No.	Bearing No.		C _r	C _{0r}	Unit No.		Dimension mm inch	Mass kg														
Open Type	One Side Closed Type							A _s																	
20	3/4	1 5/16 33.3	5 127	1 1/2 38	3 3/4 95	7/16 11	9/16 14	9/16 14.2	2 19/32 65.5	1.220 31	0.500 12.7	3/8 M10	UCVP204-12S6 UCVP204S6	VP204	UC204-12S6 UC204S6		0.29	10.9	5.35	13.2	UCVP204-12CS6 UCVP204CS6	UCVP204-12CDS6 UCVP204CDS6	63	2 15/32	0.31
25	7/8 15/16	1 7/16 36.5	5 17/32 140.5	1 1/2 38	4 1/8 105	7/16 11	9/16 14	5/8 16	2 25/32 71	1.343 34.1	0.563 14.3	3/8 M10	UCVP205-14S6 UCVP205-15S6 UCVP205S6 UCVP205-16S6	VP205	UC205-14S6 UC205-15S6 UC205S6 UC205-16S6		0.41	11.9	6.3	13.9	UCVP205-14CS6 UCVP205-15CS6 UCVP205CS6 UCVP205-16CS6	UCVP205-14CDS6 UCVP205-15CDS6 UCVP205CDS6 UCVP205-16CDS6	68	2 11/16	0.43
	1																								
30	1 1/8 1 3/16 1 1/4	1 11/16 42.9	6 13/32 163	1 13/16 46	4 11/16 119	9/16 14	23/32 18	11/16 17.8	3 5/16 84	1.500 38.1	0.626 15.9	1/2 M12	UCVP206-18S6 UCVP206S6 UCVP206-19S6 UCVP206-20S6	VP206	UC206-18S6 UC206S6 UC206-19S6 UC206-20S6		0.6	16.5	9.05	13.9	UCVP206-18CS6 UCVP206CS6 UCVP206-19CS6 UCVP206-20CS6	UCVP206-18CDS6 UCVP206CDS6 UCVP206-19CDS6 UCVP206-20CDS6	79	3 1/8	0.63
35	1 1/4 1 5/16 1 3/8 1 7/16	1 7/8 47.6	6 5/8 168	1 7/8 48	5 127	9/16 14	23/32 18	23/32 18	3 23/32 94.5	1.689 42.9	0.689 17.5	1/2 M12	UCVP207-20S6 UCVP207-21S6 UCVP207-22S6 UCVP207S6 UCVP207-23S6	VP207	UC207-20S6 UC207-21S6 UC207-22S6 UC207S6 UC207-23S6		0.84	21.8	12.3	13.9	UCVP207-20CS6 UCVP207-21CS6 UCVP207-22CS6 UCVP207CS6 UCVP207-23CS6	UCVP207-20CDS6 UCVP207-21CDS6 UCVP207-22CDS6 UCVP207CDS6 UCVP207-23CDS6	85	3 11/32	0.89
40	1 1/2 1 9/16	1 15/16 49.2	7 1/4 184	2 1/8 54	5 13/32 137	9/16 14	23/32 18	25/32 19.5	3 31/32 101	1.937 49.2	0.748 19	1/2 M12	UCVP208-24S6 UCVP208-25S6 UCVP208S6	VP208	UC208-24S6 UC208-25S6 UC208S6		1.1	24.8	14.3	14.0	UCVP208-24CS6 UCVP208-25CS6 UCVP208CS6	UCVP208-24CDS6 UCVP208-25CDS6 UCVP208CDS6	96	3 25/32	1.10
45	1 5/8 1 11/16 1 3/4	2 1/8 54	7 9/16 192	2 1/8 54	5 3/4 146	21/32 17	25/32 20	29/32 23	4 3/16 106	1.937 49.2	0.748 19	5/8 M14	UCVP209-26S6 UCVP209-27S6 UCVP209-28S6 UCVP209S6	VP209	UC209-26S6 UC209-27S6 UC209-28S6 UC209S6		1.2	27.8	16.2	14.0	UCVP209-26CS6 UCVP209-27CS6 UCVP209-28CS6 UCVP209CS6	UCVP209-26CDS6 UCVP209-27CDS6 UCVP209-28CDS6 UCVP209CDS6	107	4 7/32	1.26
50	1 7/8 1 15/16 2	2 1/4 57.2	8 1/8 206	2 3/8 60	6 1/4 159	21/32 17	25/32 20	29/32 23	4 1/2 114	2.031 51.6	0.748 19	5/8 M14	UCVP210-30S6 UCVP210-31S6 UCVP210S6 UCVP210-32S6	VP210	UC210-30S6 UC210-31S6 UC210S6 UC210-32S6		1.4	29.8	18.6	14.4	UCVP210-30CS6 UCVP210-31CS6 UCVP210CS6 UCVP210-32CS6	UCVP210-30CDS6 UCVP210-31CDS6 UCVP210CDS6 UCVP210-32CDS6	120	4 23/32	1.46

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
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



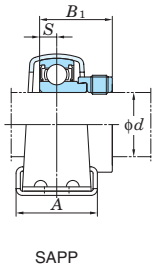
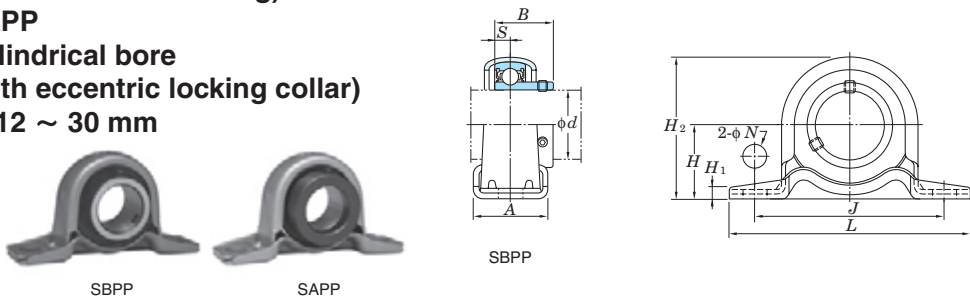
Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_s)

Unit: mm	
Housing No.	ΔH_s
VP204E~VP208E	±0.15

Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard				Mass	Basic Load Ratings kN		Factor	With Plastic Cover			
d		H	L	A	J	N	N_1	H_1	H_2	B	S		Unit No.	Housing No.	Bearing No.					Open Type	One Side Closed Type	Dimension mm inch	Mass kg	
																	kg	C_r	C_{0r}	f_0			A_s	kg
20	$\frac{3}{4}$	$1\frac{5}{16}$ 33.3	5 127	$1\frac{1}{2}$ 38	$3\frac{3}{4}$ 95	$\frac{7}{16}$ 11	$\frac{9}{16}$ 14	$\frac{9}{16}$ 14.2	$2\frac{19}{32}$ 65.5	1.220 31	0.500 12.7	$\frac{3}{8}$ M10	UCVP204-12ES7 UCVP204ES7	VP204E	UC204-12S7 UC204S7		0.29	12.8	6.65	13.2	UCVP204-12ECS7 UCVP204ECS7	UCVP204-12ECDS7 UCVP204ECDS7	63	$2\frac{15}{32}$ 0.31
	$\frac{7}{8}$ $\frac{15}{16}$	$1\frac{7}{16}$ 36.5	$5\frac{17}{32}$ 140.5	$1\frac{1}{2}$ 38	$4\frac{1}{8}$ 105	$\frac{7}{16}$ 11	$\frac{9}{16}$ 14	$\frac{5}{8}$ 16	$2\frac{25}{32}$ 71	1.343 34.1	0.563 14.3	$\frac{3}{8}$ M10	UCVP205-14ES7 UCVP205-15ES7 UCVP205ES7 UCVP205-16ES7	VP205E	UC205-14S7 UC205-15S7 UC205S7 UC205-16S7		0.41	14.0	7.85	13.9	UCVP205-14ECS7 UCVP205-15ECS7 UCVP205ECS7 UCVP205-16ECS7	UCVP205-14ECDS7 UCVP205-15ECDS7 UCVP205ECDS7 UCVP205-16ECDS7	68	$2\frac{11}{16}$ 0.43
30	$1\frac{1}{8}$	$1\frac{11}{16}$ 42.9	$6\frac{13}{32}$ 163	$1\frac{13}{16}$ 46	$4\frac{11}{16}$ 119	$\frac{9}{16}$ 14	$\frac{23}{32}$ 18	$\frac{11}{16}$ 17.8	$3\frac{5}{16}$ 84	1.500 38.1	0.626 15.9	$\frac{1}{2}$ M12	UCVP206-18ES7 UCVP206ES7 UCVP206-19ES7 UCVP206-20ES7	VP206E	UC206-18S7 UC206S7 UC206-19S7 UC206-20S7		0.6	19.5	11.3	13.9	UCVP206-18ECS7 UCVP206ECS7 UCVP206-19ECS7 UCVP206-20ECS7	UCVP206-18ECDS7 UCVP206CDS7 UCVP206-19ECDS7 UCVP206-20ECDS7	79	$3\frac{1}{8}$ 0.63
	$1\frac{3}{16}$																							
	$1\frac{1}{4}$																							
35	$1\frac{1}{4}$												UCVP207-20ES7 UCVP207-21ES7 UCVP207-22ES7 UCVP207ES7 UCVP207-23ES7	VP207E	UC207-20S7 UC207-21S7 UC207-22S7 UC207S7 UC207-23S7		0.84	25.7	15.4	13.9	UCVP207-20ECS7 UCVP207-21ECS7 UCVP207-22ECS7 UCVP207ECS7 UCVP207-23ECS7	UCVP207-20ECDS7 UCVP207-21ECDS7 UCVP207-22ECDS7 UCVP207ECDS7 UCVP207-23ECDS7	85	$3\frac{11}{32}$ 0.89
	$1\frac{5}{16}$	$1\frac{7}{8}$ 47.6	$6\frac{5}{8}$ 168	$1\frac{7}{8}$ 48	5 127	$\frac{9}{16}$ 14	$\frac{23}{32}$ 18	$\frac{23}{32}$ 18	$3\frac{23}{32}$ 94.5	1.689 42.9	0.689 17.5	$\frac{1}{2}$ M12												
	$1\frac{3}{8}$																							
	$1\frac{7}{16}$																							
40	$1\frac{1}{2}$	$1\frac{15}{16}$ 49.2	$7\frac{1}{4}$ 184	$2\frac{1}{8}$ 54	$5\frac{13}{32}$ 137	$\frac{9}{16}$ 14	$\frac{23}{32}$ 18	$\frac{25}{32}$ 19.5	$3\frac{31}{32}$ 101	1.937 49.2	0.748 19	$\frac{1}{2}$ M12	UCVP208-24ES7 UCVP208-25ES7 UCVP208ES7	VP208E	UC208-24S7 UC208-25S7 UC208S7		1.1	29.1	17.8	14.0	UCVP208-24ECS7 UCVP208-25ECS7 UCVP208ECS7	UCVP208-24ECDS7 UCVP208-25ECDS7 UCVP208ECDS7	96	$3\frac{25}{32}$ 1.10
	$1\frac{9}{16}$																							
45	$1\frac{5}{8}$												UCVP209-26ES7 UCVP209-27ES7 UCVP209-28ES7 UCVP209ES7	VP209E	UC209-26S7 UC209-27S7 UC209-28S7 UC209S7		1.2	34.1	21.3	14.0	UCVP209-26ECS7 UCVP209-27ECS7 UCVP209-28ECS7 UCVP209ECS7	UCVP209-26ECDS7 UCVP209-27ECDS7 UCVP209-28ECDS7 UCVP209ECDS7	107	$4\frac{7}{32}$ 1.26
	$1\frac{11}{16}$	$2\frac{1}{8}$ 54	$7\frac{9}{16}$ 192	$2\frac{1}{8}$ 54	$5\frac{3}{4}$ 146	$\frac{21}{32}$ 17	$\frac{25}{32}$ 20	$\frac{29}{32}$ 23	$4\frac{3}{16}$ 106	1.937 49.2	0.748 19	$\frac{5}{8}$ M14												
	$1\frac{3}{4}$																							
50	$1\frac{7}{8}$												UCVP210-30ES7 UCVP210-31ES7 UCVP210ES7 UCVP210-32ES7	VP210E	UC210-30S7 UC210-31S7 UC210S7 UC210-32S7		1.4	35.1	23.3	14.4	UCVP210-30ECS7 UCVP210-31ECS7 UCVP210ECS7 UCVP210-32ECS7	UCVP210-30ECDS7 UCVP210-31ECDS7 UCVP210ECDS7 UCVP210-32ECDS7	120	$4\frac{23}{32}$ 1.46
	$1\frac{15}{16}$	$2\frac{1}{4}$ 57.2	$8\frac{1}{8}$ 206	$2\frac{3}{8}$ 60	$6\frac{1}{4}$ 159	$\frac{21}{32}$ 17	$\frac{25}{32}$ 20	$\frac{29}{32}$ 23	$4\frac{1}{2}$ 114	2.031 51.6	0.748 19	$\frac{5}{8}$ M14												
	2																							

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
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 screw locking)
SAPP
Cylindrical bore
(with eccentric locking collar)
d 12 ~ 30 mm



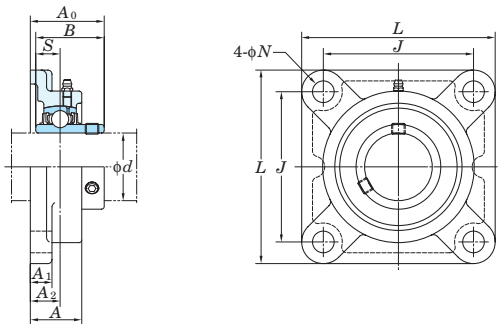
Variations of tolerance of distance between centers of bolt holes (ΔJ_s) and variations of tolerance of bolt hole diameter (ΔN_s)

Unit: mm		
Housing No.	ΔJ_s	ΔN_s
PP203-PP206	±0.4	±0.5

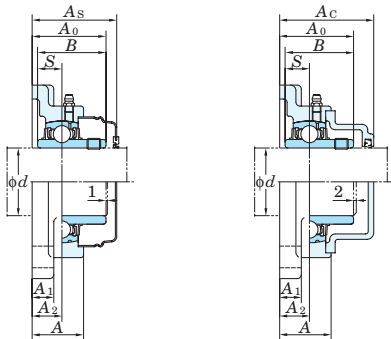
Shaft Dia mm inch		Dimensions inch mm										Bolt Size inch mm	Unit No.	Bearing No.		Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN		Factor <i>f</i> ₀	Mass kg	
<i>d</i>		<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>H</i> ₁	<i>H</i> ₂	<i>S</i>	SBPP <i>B</i>	SAPP <i>B</i> ₁								<i>C</i> _r	<i>C</i> _{0r}		SBPP	SAPP
12	1/2												SBPP201	SB201									
15	5/8	22.2	86	25	68	9.5	3.2	43.8	6	0.866	1.122	5/16 M8	SBPP201-8	SB201-8				PP203	9.55	4.80	13.2	0.16	0.19
17													SBPP202	SB202									
													SBPP202-10	SB202-10									
													SBPP203	SB203									
20	3/4	25.4	98	32	76	9.5	3.2	50.5	7	0.984	1.161	5/16 M8	SBPP204-12	SB204-12				PP204	12.8	6.65	13.2	0.23	0.23
													SBPP204	SB204									
25	7/8												SBPP205-14	SB205-14									
	15/16	28.6	108	32	86	11.5	4	56.6	7.5	1.063	1.201	3/8 M10	SBPP205-15	SB205-15				PP205	14.0	7.85	13.9	0.28	0.32
													SBPP205	SB205									
	1												SBPP205-16	SB205-16									
30	1 1/8	33.3	117	38	95	11.5	4	66.3	8	1.181	1.335	3/8 M10	SBPP206-18	SB206-18									
	1 3/16												SBPP206	SB206				PP206	19.5	11.3	13.9	0.47	0.50
	1 1/4												SBPP206-19	SB206-19									
													SBPP206-20	SB206-20									

Remark For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

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



With Pressed Steel Cover With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Housing No.			Unit: mm	
			ΔA_{2s}	X
F204~F210	FX05~FX10	F305~F310	±0.5	0.7
F211~F218	FX11~FX20	F311~F328	±0.8	1

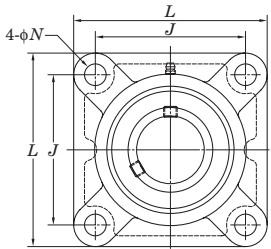
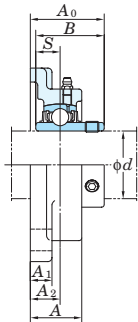
Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.			Unit: mm	
			ΔN_s	
F204~F218	FX05~FX18	F305~F315	±0.2	
	FX20	F316~F328	±0.3	

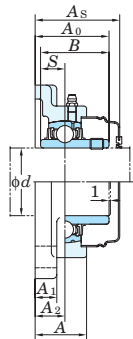
Shaft Dia. mm inch		Dimensions inch mm									Bolt Size inch mm	Standard			Mass kg	Basic Load Ratings kN		Factor f_0	With Pressed Steel Cover				With Cast Iron Cover			
d		L	A	J	N	A ₁	A ₂	A ₀	B	S		Unit No.	Housing No.	Bearing No.		C _r	C _{0r}		Unit No.		Dimension mm inch	Mass kg	Unit No.		Dimension mm inch	Mass kg
																			Open Type	Closed Type	A _s		Open Type	Closed Type	A _c	
12	1/2											UCF201		UC201	0.64				UCF201C	UCF201D	37 1 15/32	0.64	—	—	—	—
												UCF201-8		UC201-8	0.64				—	—	—	—	—	—	—	—
												UCF202		UC202	0.62				UCF202C	UCF202D	37 1 15/32	0.62	—	—	—	—
												UCF202-10	F204	UC202-10	0.62	12.8	6.65	13.2	—	—	—	—	—	—	—	—
15	5/8											UCF203		UC203	0.61				UCF203C	UCF203D	37 1 15/32	0.61	—	—	—	—
												UCF204-12		UC204-12	0.61				—	—	—	—	—	—	—	—
												UCF204		UC204	0.59				UCF204C	UCF204D	37 1 15/32	0.59	UCF204FC	UCF204FD	46 1 13/16	0.74
												UCF205-14		UC205-14	0.83				—	—	—	—	—	—	—	—
17	3/4											UCF205-15		UC205-15	0.83				—	—	—	—	—	—	—	—
												UCF205	F205	UC205	0.83	14.0	7.85	13.9	UCF205C	UCF205D	40 1 9/16	0.83	UCF205FC	UCF205FD	49 1 15/16	1.0
												UCF205-16		UC205-16	0.83				—	—	—	—	—	—	—	—
												UCF205-16		UC205-16	0.83				—	—	—	—	—	—	—	—
20	7/8											UCFX05		UCX05	1.2				UCFX05C	UCFX05D	44 1 23/32	1.2	—	—	—	—
												UCFX05-16	FX05	UCX05-16	1.2	19.5	11.3	13.9	—	—	—	—	—	—	—	—
												UCF305		UC305	1.3				—	—	—	—	UCF305C	UCF305D	54 2 1/8	1.6
												UCF305-16	F305	UC305-16	1.3	21.2	10.9	12.6	—	—	—	—	—	—	—	—
25	1											UCF206-18		UC206-18	1.1				—	—	—	—	—	—	—	—
												UCF206		UC206	1.1				UCF206C	UCF206D	44 1 23/32	1.1	UCF206FC	UCF206FD	53 2 3/32	1.4
												UCF206-19	F206	UC206-19	1.1	19.5	11.3	13.9	—	—	—	—	—	—	—	—
												UCF206-20		UC206-20	1.1				—	—	—	—	—	—	—	—
30	1 1/8											UCFX06		UCX06	1.6				UCFX06C	UCFX06D	49 1 15/16	1.6	—	—	—	—
												UCFX06-19	FX06	UCX06-19	1.6	25.7	15.4	13.9	—	—	—	—	—	—	—	—
												UCFX06-20		UCX06-20	1.6				—	—	—	—	—	—	—	—
												UCF306	F306	UC306	1.9	26.7	15.0	13.3	—	—	—	—	UCF306C	UCF306D	59 2 5/16	2.2
35	1 1/4											UCF207-20		UC207-20	1.5				—	—	—	—	—	—	—	—
												UCF207-21		UC207-21	1.5				—	—	—	—	—	—	—	—
												UCF207-22		UC207-22	1.5				—	—	—	—	—	—	—	—
												UCF207	F207	UC207	1.5	25.7	15.4	13.9	UCF207C	UCF207D	49 1 15/16	1.5	UCF207FC	UCF207FD	58 2 9/32	1.9
40	1 1/2											UCF207-23		UC207-23	1.5				—	—	—	—	—	—	—	—
												UCFX07-22		UCX07-22	2.0				—	—	—	—	—	—	—	—
												UCFX07		UCX07	2.0				—	—	—	—	—	—	—	—
												UCFX07-23	FX07	UCX07-23	2.0	29.1	17.8	14.0	UCFX07C	UCFX07D	55 2 5/32	2.0	—	—	—	—
45	1 3/4											UCF307		UC307	2.3				—	—	—	—	UCF307C	UCF307D	64 2 17/32	2.7
												UCF208-24		UC208-24	1.9				—	—	—	—	—	—	—	—
												UCF208-25		UC208-25	1.9				—	—	—	—	—	—	—	—
												UCF208	F208	UC208	1.9	29.1	17.8	14.0	UCF208C	UCF208D	55 2 5/32	1.9	UCF208FC	UCF208FD	64 2 17/32	2.3
50	2											UCFX08-24		UCX08-24	2.4				—	—	—	—	—	—	—	—
												UCFX08		UCX08	2.4				UCFX08C	UCFX08D	56 2 7/32	2.4	—	—	—	—
												UCF308-24		UC308-24	3.1				—	—	—	—	—	—	—	—
												UCF308	F308	UC308	3.1	40.7	24.0	13.2	—	—	—	—	UCF308C	UCF308D	71 2 25/32	3.6
55	2 1/4											UCF209-26		UC209-26	2.2				—	—	—	—	—	—	—	—
												UCF209-27		UC209-27	2.2				—	—	—	—	—	—	—	—
												UCF209-28		UC209-28	2.2				—	—	—	—	—	—	—	—
												UCF209	F209	UC209	2.2	34.1	21.3	14.0	UCF209C	UCF209D	56 2 7/32	2.2	UCF209FC	UCF209FD	66 2 19/32	2.6
60	2 3/4											UCFX09-28		UCX09-28	2.7				—	—	—	—	—	—	—	—
												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.51.)
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), accessory 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.

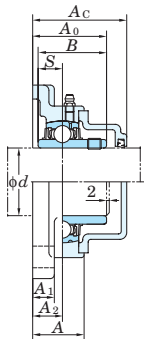
UCF
Cylindrical bore (with set screws)
d (45) ~ (75) mm



With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Housing No.			Unit: mm	
			ΔA_{2s}	X
F204~F210	FX05~FX10	F305~F310	±0.5	0.7
F211~F218	FX11~FX20	F311~F328	±0.8	1

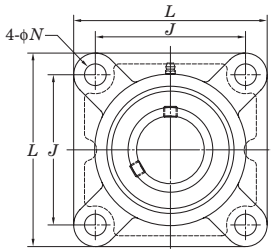
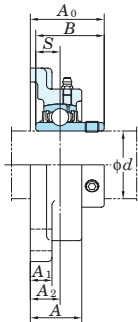
Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.			Unit: mm	
			ΔN_s	
F204~F218	FX05~FX18	F305~F315	±0.2	
	FX20	F316~F328	±0.3	

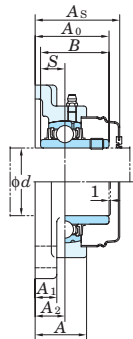
Shaft Dia. mm inch		Dimensions inch mm									Bolt Size inch mm	Standard				Mass	Basic		Factor	With Pressed Steel Cover				With Cast Iron Cover				
		Unit No.	Housing No.	Bearing No.		C _r	Load Ratings kN		f ₀	Unit No.		Dimension		Mass	Unit No.		Dimension			Mass								
Open Type	Closed Type						mm	inch		Open Type	Closed Type	mm	inch															
d	L	A	J	N	A ₁	A ₂	A ₀	B	S					kg	C _r	C _{0r}												
45	1 3/4	6 5/16	1 23/32	4 59/64	3/4	23/32	63/64	2 3/8	2.244	0.866	5/8	UCF309-28	F309	UC309-28	4.0	48.9	29.5	13.3	—	—	—	—	—	—	—	—	—	—
		160	44	125	19	18	25	60	57	22	M16	UCF309		UC309	4.0				UCF309C	UCF309D	76	3					4.6	
50	1 7/8											UCF210-30		UC210-30	2.5				—	—	—	—	—	—	—	—	—	
	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	UCF210-31	F210	UC210-31	2.5	35.1	23.3	14.4	—	—	—	—	—	—	—	—	—	
		143	40	111	16	16	22	54.6	51.6	19	M14	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	5/8	UCFX10-31		UCX10-31	3.7				—	—	—	—	—	—	—	—	—	
	2	162	44	130	19	20	26	59.4	55.6	22.2	M16	UCFX10	FX10	UCX10	3.7	43.4	29.4	14.4	UCFX10C	UCFX10D	64	2 17/32	3.7	—	—	—	—	
55		6 7/8	1 7/8	5 13/64	29/32	3/4	1 7/64	2 5/8	2.402	0.866	3/4	UCF310	F310	UC310	5.1	62.0	38.3	13.2	—	—	—	—	—	—	—	—	—	
	2											UCF211-32		UC211-32	3.4				—	—	—	—	—	—	—	—	—	
	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	5/8	UCF211-34	F211	UC211-34	3.4	43.4	29.4	14.4	—	—	—	—	—	—	—	—	—	
	2 3/16											UCF211		UC211	3.4				UCF211C	UCF211D	63	2 15/32	3.4	UCF211FC	UCF211FD	74.5	2 15/16	4.0
	2 1/4	6 7/8	1 15/16	5 5/8	3/4	25/32	1 9/64	2 23/32	2.563	1.000	5/8	UCFX11	FX11	UCX11	4.9	52.4	36.2	14.4	UCFX11C	UCFX11D	73	2 7/8	4.9	—	—	—	—	
	2	175	49	143	19	20	29	68.7	65.1	25.4	M16	UCFX11-35		UCX11-35	4.9				—	—	—	—	—	—	—	—	—	
60	2 3/16											UXPX11-36		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	3/4	UCF311-32		UC311-32	5.6				—	—	—	—	—	—	—	—	—	
	2 3/16	185	52	140	23	20	30	71	66	25	M20	UCF311	F311	UC311	5.6	71.6	45.0	13.2	—	—	—	—	—	—	—	—	—	
												UCF311-35		UC311-35	5.6				—	—	—	—	—	—	—	—	—	
	2 1/4											UCF212-36		UC212-36	4.2				—	—	—	—	—	—	—	—	—	
	2 3/8	6 7/8	1 7/8	5 5/8	3/4	23/32	1 9/64	2 23/32	2.563	1.000	5/8	UCF212	F212	UC212	4.2	52.4	36.2	14.4	UCF212C	UCF212D	73	2 7/8	4.2	UCF212FC	UCF212FD	86	3 3/8	5.0
65	2 7/16											UCF212-38		UC212-38	4.2				—	—	—	—	—	—	—	—	—	
		7 3/8	2 5/16	5 55/64	3/4	13/16	1 11/32	2 29/32	2.563	1.000	5/8	UCFX12		UCX12	5.7				UCFX12C	UCFX12D	78	3 1/16	5.7	—	—	—	—	
	2 7/16	187	59	149	19	21	34	73.7	65.1	25.4	M16	UCFX12-39	FX12	UCX12-39	5.7	57.2	40.1	14.4	—	—	—	—	—	—	—	—	—	
	2 7/16	7 11/16	2 7/32	5 29/32	29/32	7/8	1 19/64	3 1/16	2.795	1.024	3/4	UCF312		UC312	6.9				—	—	—	—	—	—	—	—	—	
		195	56	150	23	22	33	78	71	26	M20	UCF312-39	F312	UC312-39	6.9	81.9	52.2	13.2	—	—	—	—	—	—	—	—	—	
	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	5/8	UCF213-40		UC213-40	5.2				—	—	—	—	—	—	—	—	—	
70		187	50	149	19	22	30	69.7	65.1	25.4	M16	UCF213	F213	UC213	5.2	57.2	40.1	14.4	UCF213C	UCF213D	74	2 29/32	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	5/8	UCFX13-40		UCX13-40	6.3				—	—	—	—	—	—	—	—	—	
		187	59	149	19	21	34	78.4	74.6	30.2	M16	UCFX13	FX13	UCX13	6.3	62.2	44.1	14.5	UCFX13C	UCFX13D	83	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	3/4	UCF313-40		UC313-40	7.8				—	—	—	—	—	—	—	—	—	
		208	58	166	23	22	33	78	75	30	M20	UCF313	F313	UC313	7.8	92.7	59.9	13.2	—	—	—	—	—	—	—	—	—	
	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	UCF214-44		UC214-44	5.9				—	—	—	—	—	—	—	—	—	
75		193	54	152	19	22	31	75.4	74.6	30.2	M16	UCF214	F214	UC214	5.9	62.2	44.1	14.5	UCF214C	UCF214D	80	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	3/4	UCFX14-44		UCX14-44	7.0				—	—	—	—	—	—	—	—	—	
		197	60	152	23	22	37	81.5	77.8	33.3	M20	UCFX14	FX14	UCX14	7.0	67.4	48.3	14.5	UCFX14C	UCFX14D	86	3 3/8	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	7/8	UCF314-44		UC314-44	10.1				—	—	—	—	—	—	—	—	—	
75		226	61	178	25	25	36	81	78	33	M22	UCF314	F314	UC314	10.1	104	68.2	13.2	—	—	—	—	—	—	—	—	—	
	2 15/16											UCF215-47		UC215-47	6.4				—	—	—	—	—	—	—	—	—	
		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	F215	UC215	6.4	67.4	48.3	14.5	UCF215C	UCF215D	83	3 9/32	6.4	UCF215FC	UCF215FD	96	3 25/32	7.4
	3	200	56	159	19	22	34	78.5	77.8	33.3	M16	UCF215-48		UC215-48	6.4				—	—	—	—	—	—	—	—	—	
75	2 15/16											UCFX15-47		UCX15-47	8.4				—	—	—	—	—	—	—	—	—	
		7 3/4	2 11/16	5 63/64	29/32	15/16	1 9/16	3 17/32	3.252	1.311	3/4	UCFX15		UCX15	8.4				—	—	—	—	—	—	—	—	—	
	3	197	68	152	23	24	40	89.3	82.6	33.3	M20	UCFX15-48	FX15	UCX15-48	8.4	72.7	53.0	14.6	UCFX15C	UCFX15D	94	3 11/16	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.51.)
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), accessory 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.

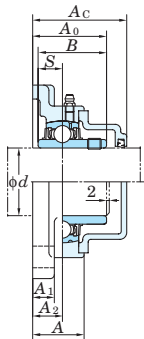
UCF
Cylindrical bore (with set screws)
d (75) ~ 140 mm



With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Housing No.			Unit: mm	
			ΔA_{2s}	X
F204~F210	FX05~FX10	F305~F310	±0.5	0.7
F211~F218	FX11~FX20	F311~F328	±0.8	1

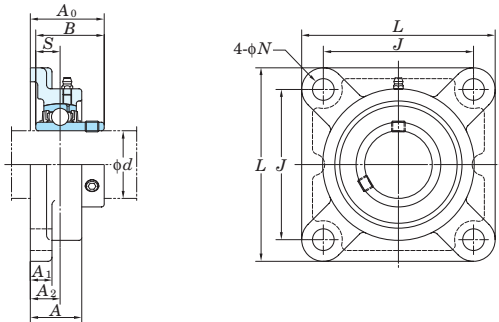
Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.			Unit: mm	
			ΔN_s	
F204~F218	FX05~FX18	F305~F315	±0.2	
	FX20	F316~F328	±0.3	

Shaft Dia. mm inch		Dimensions inch mm									Bolt Size inch mm	Standard				Mass	Basic		Factor	With Pressed Steel Cover					With Cast Iron Cover				
		Unit No.	Housing No.	Bearing No.	C _r	C _{0r}	f ₀	Unit No.		Dimension		Mass	Unit No.		Dimension		Mass												
Open Type	Closed Type							mm	inch	Open Type	Closed Type		mm	inch															
d		L	A	J	N	A ₁	A ₂	A ₀	B	S				kg	C _r	C _{0r}	f ₀												
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			13.2	—	—	—	—	—	—	—	—	—	—	
		236	66	184	25	25	39	89	82	32	M22	UCF315			11.6	113	77.2		—	—	—	—	UCF315C	UCF315D	106	4 3/16	12.9		
	3											UCF315-48			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			14.6	—	—	—	—	—	—	—	—	—	—	
		208	58	165	23	22	34	83.3	82.6	33.3	M20	UCF216			7.3	72.7	53.0		UCF216C	UCF216D	88	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			9.4	84.0	61.9		UCFX16C	UCFX16D	96	3 25/32	9.4	—	—	—	—	—	—
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			14.5	—	—	—	—	—	—	—	—	—	—	
		220	63	175	23	24	36	87.6	85.7	34.1	M20	UCF217			8.9	84.0	61.9		UCF217C	UCF217D	92	3 5/8	8.9	UCF217FC	UCF217FD	107	4 7/32	10.3	
	3 7/16	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			10.8	96.1	71.5		UCFX17C	UCFX17D	101	3 31/32	10.8	—	—	—	—	—	—
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			14.5	—	—	—	—	—	—	—	—	—	—	
		235	68	187	23	25	40	96.3	96	39.7	M20	UCF218			11.4	96.1	71.5		UCF218C	UCF218D	101	3 31/32	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			11.9	109	81.9		—	—	—	—	—	—	—	—	—	—	
95	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			13.3	—	—	—	—	—	—	—	—	—	—	
		280	76	216	35	30	44	100	96	40	M30	UCF318			18.9	143	107		—	—	—	—	—	—	—	—	—	—	
	—	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			21.6	153	119		—	—	—	—	—	—	—	—	—	—	
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			14.4	—	—	—	—	—	—	—	—	—	—	
	4	268	97	211	31	28	59	127.3	117.5	49.2	M27	UCFX20-63			19.4	133	105		—	—	—	—	—	—	—	—	—	—	
												UCFX20-64			19.4				—	—	—	—	—	—	—	—	—	—	
105	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			13.2	—	—	—	—	—	—	—	—	—	—	
	4	310	94	242	38	32	59	125	108	42	M33	UCF320-63			25.8	173	141		—	—	—	—	—	—	—	—	—	—	
												UCF320-64			25.8				—	—	—	—	—	—	—	—	—	—	
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	UCF321	F321	UC321	30.2			13.2	—	—	—	—	—	—	—	—	—	—	
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	UCF322			35.3	205	180		—	—	—	—	—	—	—	—	—	—	—
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	UCF323			47.3	207	185		—	—	—	—	—	—	—	—	—	—	—
140	3 15/16	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	UCF324	F324	UC324	65.5			13.6	—	—	—	—	—	—	—	—	—	—	
	4	410	115	320	41	45	65	146	135	54	M36	UCF325			65.5	229	214		—	—	—	—	—	—	—	—	—	—	
		17 23/32	4 29/32	13 25/32	1 39/64	2 5/32	2 61/64	6 11/32	5.709	2.323	1 3/8	UCF326			80.4	253	246		—	—	—	—	—	—	—	—	—	—	—
140	—	450	125	350	41	55	75	161	145	59	M36	UCF327	F328	UC328				13.6	—	—	—	—	—	—	—	—	—	—	
											UCF328								—	—	—	—	—	—	—	—	—	—	—
											UCF329								—	—	—	—	—	—	—	—	—	—	—

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
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), accessory 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.

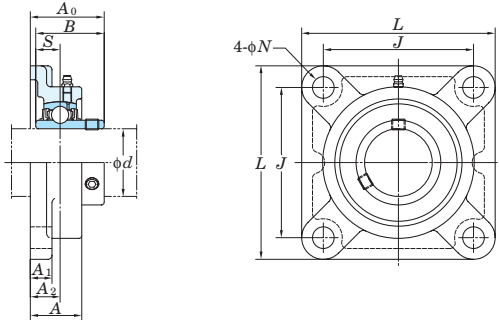
UCF-E
Cylindrical bore (with set screws)
d 12 ~ 60 mm



Shaft Dia. mm inch		Dimensions inch mm									Bolt Size inch	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor <i>f</i> ₀	Mass kg
<i>d</i>		<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>	<i>S</i>					<i>C</i> _r	<i>C</i> _{0r}		
12	1/2 5/8 3/4										3/8	UCF201E	F204E	UC201			13.2	0.64
15		3 3/8	1	2 33/64	7/16	7/16	19/32	1 5/16	1.220	0.500		UCF201-8E		UC201-8	12.8	6.65		0.62
17		86	25.5	64	11	11	15	33.3	31	12.7		UCF202E		UC202				0.61
20												UCF202-10E		UC202-10				

Remarks 1. In Part No. of unit, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
2. Part No. of applicable grease fittings are shown below.
A-1/4-28UNF 201~208, 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), accessory 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 65 ~ 85 mm



Shaft Dia. mm inch		Dimensions inch mm									Bolt Size inch	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor	Mass
d		L	A	J	N	A ₁	A ₂	A ₀	B	S					C _r	C _{0r}	f ₀	kg
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 UCF213E	F213E	UC213-40 UC213	57.2	40.1	14.4	5.2
	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 UCFX13E	FX13E	UCX13-40 UCX13	62.2	44.1	14.5	6.3
70	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 UCFX14E	FX14E	UCX14-44 UCX14	67.4	48.3	14.5	7.0
	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 UCFX15E UCFX15-48E	FX15E	UCX15-47 UCX15 UCX15-48	72.7	53.0	14.6	8.4
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 UCF216E	F216E	UC216-50 UC216	72.7	53.0	14.6	7.3
	—	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
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 UCF217E	F217E	UC217-52 UC217	84.0	61.9	14.5	8.9
	3 7/16	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 UCFX17-55E	FX17E	UCX17 UCX17-55	96.1	71.5	14.5	10.8

Remarks 1. In Part No. of unit, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease fittings are shown below.
A-1/4-28UNF 201~208, 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), accessory 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.

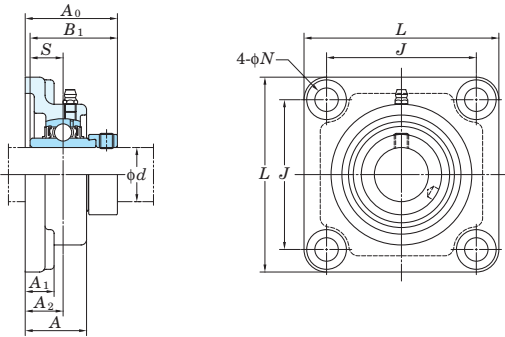
Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Housing No.		Unit: mm	
F204E-F210E	FX05E-FX10E	ΔA_{2s}	X
F211E-F217E	FX11E-FX17E	± 0.5	0.7
		± 0.8	1

Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.		Unit: mm	
F204E-F217E	FX05E-FX17E	ΔN_s	
		± 0.2	

NANF
Cylindrical bore
(with eccentric locking collar)
d 12 ~ 60 mm



Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Unit: mm		
Housing No.	ΔA_{2s}	X
NF204~NF210	± 0.5	0.7
NF211~NF212	± 0.8	1

Variations of tolerance of bolt hole diameter (ΔN_b)

Unit: mm		
Housing No.	ΔN_b	
NF204~NF212	± 0.2	

Shaft Dia mm inch		Dimensions inch mm									Bolt Size inch	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor f_0	Mass kg
d		L	A	J	N	A_1	A_2	A_0	B_1	S					C_r	C_{0r}		
12	1/2											NANF201		NA201	12.8	6.65	13.2	0.73
15	5/8	3 3/8	1 5/32	2 33/64	7/16	19/32	3/4	1 25/32	1.720	0.673	3/8	NANF201-8	NF204	NA201-8				
17	3/4	86	29.5	64	11	15	19	45.6	43.7	17.1		NANF202		NA202				
												NANF202-10		NA202-10				
20												NANF203		NA203				
												NANF204-12		NA204-12				
												NANF204		NA204				
25	7/8	3 3/4	1 7/32	2 3/4	15/32	19/32	25/32	1 27/32	1.748	0.689	7/16	NANF205-14	NF205	NA205-14	14.0	7.85	13.9	0.95
	15/16	95	31	70	12	15	20	46.9	44.4	17.5		NANF205-15		NA205-15				
	1											NANF205		NA205				
												NANF205-16		NA205-16				
												NANF206-18		NA206-18				
30	1 1/8	4 1/4	1 11/32	3 17/64	33/64	5/8	53/64	2	1.906	0.720	7/16	NANF206	NF206	NA206	19.5	11.3	13.9	1.4
	1 3/16	108	34	83	13	16	21	51.1	48.4	18.3		NANF206-19		NA206-19				
	1 1/4											NANF206-20		NA206-20				
												NANF207-20		NA207-20				
35	1 5/16	4 19/32	1 7/16	3 5/8	33/64	21/32	27/32	2 1/8	2.012	0.740	7/16	NANF207-21	NF207	NA207-21	25.7	15.4	13.9	1.8
	1 3/8	117	36.5	92	13	17	21.5	53.8	51.1	18.8		NANF207-22		NA207-22				
												NANF207		NA207				
	1 7/16											NANF207-23		NA207-23				
												NANF208-24		NA208-24				
40	1 1/2	5 1/8	1 17/32	4 1/64	35/64	21/32	15/16	2 5/16	2.217	0.843	1/2	NANF208-25	NF208	NA208-25	29.1	17.8	14.0	2.2
	1 9/16	130	39	102	14	17	24	58.9	56.3	21.4		NANF208		NA208				
												NANF209-26		NA209-26				
45	1 5/8	5 13/32	1 9/16	4 9/64	5/8	23/32	15/16	2 5/16	2.217	0.843	9/16	NANF209-27	NF209	NA209-27	34.1	21.3	14.0	2.6
	1 11/16	137	40	105	16	18	24	58.9	56.3	21.4		NANF209-28		NA209-28				
	1 3/4											NANF209		NA209				
												NANF210-30		NA210-30				
50	1 7/8	5 5/8	1 27/32	4 3/8	43/64	25/32	1 1/8	2 5/8	2.469	0.969	9/16	NANF210-31	NF210	NA210-31	35.1	23.3	14.4	3.0
	1 15/16	143	46.5	111	17	20	28.5	66.6	62.7	24.6		NANF210		NA210				
	2											NANF210-32		NA210-32				
												NANF211-32		NA211-32				
55	2	6 3/8	1 31/32	5 1/8	43/64	13/16	1 17/64	2 31/32	2.811	1.094	5/8	NANF211-34	NF211	NA211-34	43.4	29.4	14.4	4.1
	2 1/8	162	50	130	17	21	32	75.6	71.4	27.8		NANF211		NA211				
	2 3/16											NANF211-35		NA211-35				
												NANF212-36		NA212-36				
60	2 1/4	6 7/8	2 5/32	5 5/8	43/64	13/16	1 27/64	3 1/4	3.063	1.220	5/8	NANF212	NF212	NA212	52.4	36.2	14.4	4.9
	2 3/8	175	55	143	17	21	36	82.8	77.8	31		NANF212-38		NA212-38				
	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.51.)

2. Part No. of applicable grease fittings are shown below.

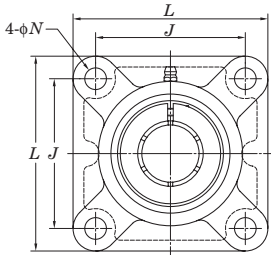
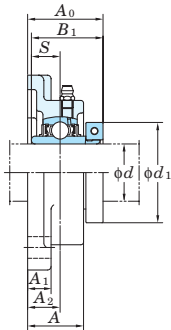
A-1/4-28UNF..... 201~210

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.

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



Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Housing No.	Unit: mm	
	ΔA_{2s}	X
F204~F210	±0.5	0.7
F211~F212	±0.8	1

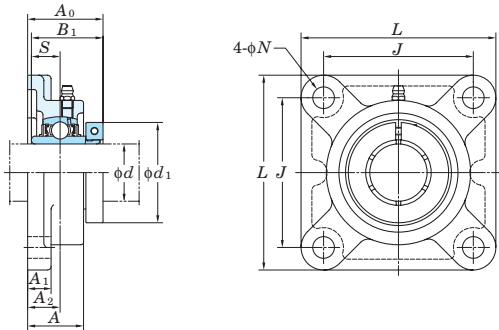
Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.	Unit: mm	
	ΔN_s	
F204~F212	±0.2	

Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor	Mass
d		L	A	J	N	A ₁	A ₂	A ₀	B ₁	S	d ₁					C _r	C _{0r}	f ₀	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 NCF204	F204	NC204-12 NC204	12.8	6.65	13.2	0.73
		86	25.5	64	12	11	15	34.8	32.5	12.7	44.5	M10							
25	7/8	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	NCF205-14 NCF205-15 NCF205 NCF205-16	F205	NC205-14 NC205-15 NC205 NC205-16	14.0	7.85	13.9	1.0
	15/16	95	27	70	12	13	16	38.2	36.5	14.3	49.2	M10							
30	1 1/8	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	NCF206-18 NCF206 NCF206-19 NCF206-20	F206	NC206-18 NC206 NC206-19 NC206-20	19.5	11.3	13.9	1.3
	1 3/16	108	31	83	12	13	18	41.8	39.7	15.9	55.6	M10							
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							
40	1 3/8	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	NCF207-22 NCF207 NCF207-23	F207	NC207-22 NC207 NC207-23	25.7	15.4	13.9	1.8
	1 7/16	117	34	92	14	15	19	46	44.5	17.5	65.1	M12							
45	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 NCF208	F208	NC208-24 NC208	29.1	17.8	14.0	2.3
		130	36	102	16	15	21	52.8	50.8	19	68.3	M14							
50	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							
55	1 11/16	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	NCF209-27 NCF209-28 NCF209	F209	NC209-27 NC209-28 NC209	34.1	21.3	14.0	2.6
	1 3/4	137	38	105	16	16	22	53.8	50.8	19	74.6	M14							
60	1 15/16	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	NCF210-31 NCF210 NCF210-32	F210	NC210-31 NC210 NC210-32	35.1	23.3	14.4	3.1
	2	143	40	111	16	16	22	56.1	53.1	19	85.7	M14							
65	2 1/8	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							
70	2 3/16	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 NCF211-35	F211	NC211 NC211-35	43.4	29.4	14.4	3.8
		162	43	130	19	18	25	59.9	57.1	22.2	92.1	M16							
75	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							
80	2 3/8	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 NCF212-39	F212	NC212 NC212-39	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							

Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See Table 10.5 in P.51.)
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.

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 (ΔA_{2s}) and tolerance of position of bolt hole (X)

Unit: mm		
Housing No.	ΔA_{2s}	X
F204E-F208E	±0.5	0.7
F211E-F212E	±0.8	1

Variations of tolerance of bolt hole diameter (ΔN_s)

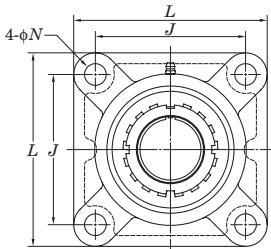
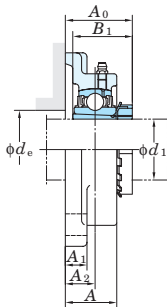
Unit: mm	
Housing No.	ΔN_s
F204E-F212E	±0.2

Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor	Mass
d		L	A	J	N	A ₁	A ₂	A ₀	B ₁	S	d ₁					C _r	C _{0r}	f ₀	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 NCF204E	F204E	NC204-12 NC204	12.8	6.65	13.2	0.73
25	7/8 1 15/16 1	Please refer to the NCF.																	
30	1 1/8 1 3/16 1 1/4	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	7/16	NCF206-18E NCF206E NCF206-19E NCF206-20E	F206E	NC206-18 NC206 NC206-19 NC206-20	19.5	11.3	13.9	1.3
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
	1 3/8 1 7/16	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	7/16	NCF207-22E NCF207E NCF207-23E	F207E	NC207-22 NC207 NC207-23	25.7	15.4	13.9	1.8
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 NCF208E	F208E	NC208-24 NC208	29.1	17.8	14.0	2.3
45	1 5/8 1 11/16 1 3/4	Please refer to the NCF.																	
50	1 15/16 2	Please refer to the NCF.																	
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
	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 NCF211-35E	F211E	NC211 NC211-35	43.4	29.4	14.4	3.8
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
	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 NCF212-39E	F212E	NC212 NC212-39	52.4	36.2	14.4	4.9

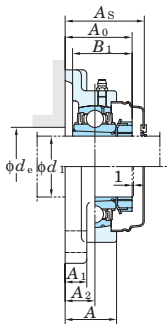
Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease fittings are shown below.
A-1/4-28UNF 204~208
A-R1/8 211~212

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.

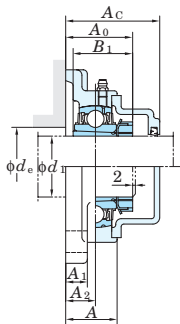
UKF
Tapered bore (with adapter)
d₁ 20 ~ (50) mm



With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Housing No.		ΔA_{2s}	X
F205~F210	FX05~FX10	±0.5	0.7
F211~F218	FX11~FX20	±0.8	1

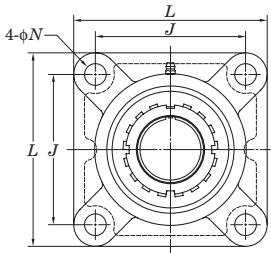
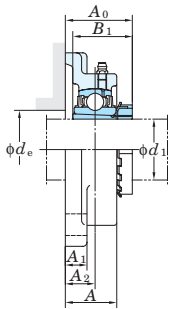
Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.		ΔN_s
F205~F218	FX05~FX18	±0.2
	FX20	±0.3

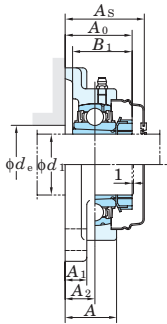
Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard			Adapter ¹⁾ No.	Mass kg	Basic Load Ratings kN		Factor f ₀	With Pressed Steel Cover				With Cast Iron Cover				
		Unit No.	Housing No.	Bearing No.	Unit No.		Dimension mm inch		Mass kg	Unit No.			Dimension mm inch		Mass kg														
d ₁	L				A	J	N	A ₁		A ₂	A ₀ ¹⁾	B ₁ ¹⁾	d _e (min.)	Open Type		Closed Type	mm	inch	Open Type	Closed Type	mm	inch							
20	3/4	3 3/4 95	1 1/16 27	2 3/4 70	15/32 12	1/2 13	5/8 16	1 11/32(1 13/32) 34.5(36)	1 5/32(1 3/8) 29(35)	1 3/16 30	3/8 M10	UKF205	F205	UK205		HE305X(HE2305X) H305X(H2305X)	0.87 0.87	14.0 7.85	13.9	— UKF205C	— UKF205D	— 40	— 1 9/16	— 0.87	— UKF205FC	— UKF205FD	— 49	— 1 15/16	— 1.1
	3/4	4 1/4 108	1 3/16 30	3 17/64 83	15/32 12	1/2 13	45/64 18	1 15/32 37.5	1 3/8 35	1 3/16 30	3/8 M10	UKFX05	FX05	UKX05		HE2305X H2305X	1.2 1.2	19.5 11.3	13.9	— UKFX05C	— UKFX05D	— 44	— 1 23/32	— 1.2	— —	— —	— —	— —	
	3/4	4 11/32 110	1 5/32 29	3 5/32 80	5/8 16	1/2 13	5/8 16	1 15/32 37.5	1 3/8 35	— —	1/2 M14	UKF305	F305	UK305		HE2305X H2305X	1.4 1.4	21.2 10.9	12.6	— —	— —	— —	— —	— —	— —	— —	— —	— —	
		1	4 1/4 108	1 7/32 31	3 17/64 83	15/32 12	1/2 13	45/64 18	1 15/32(1 9/16) 37.5(39.5)	1 7/32(1 1/2) 31(38)	1 13/32 36	3/8 M10	UKF206	F206	UK206		H306X(H2306X) HE306X(HE2306X)	1.3 1.3	19.5 11.3	13.9	UKF206C —	UKF206D —	44 —	1 23/32 —	1.3 —	UKF206FC —	UKF206FD —	53 —	2 3/32 —
25	1	4 19/32 117	1 11/32 34	3 5/8 92	5/8 16	9/16 14	3/4 19	1 9/16 40	1 1/2 38	1 13/32 36	1/2 M14	UKFX06	FX06	UKX06		H2306X HE2306X	1.6 1.6	25.7 15.4	13.9	UKFX06C —	UKFX06D —	49 —	1 15/16 —	1.6 —	— —	— —	— —	— —	— —
	1	4 29/32 125	1 1/4 32	3 47/64 95	5/8 16	19/32 15	45/64 18	1 5/8 41	1 1/2 38	— —	1/2 M14	UKF306	F306	UK306		H2306X HE2306X	1.9 1.9	26.7 15.0	13.3	— —	— —	— —	— —	— —	UKF306C —	UKF306D —	59 —	2 5/16 —	2.2 —
		1 1/8	4 19/32 117	1 11/32 34	3 5/8 92	35/64 14	19/32 15	3/4 19	1 5/8(1 11/16) 41(43)	1 3/8(1 11/16) 35(43)	1 5/8 41	7/16 M12	UKF207	F207	UK207		HS307X(HS2307X) H307X(H2307X)	1.6 1.6	25.7 15.4	13.9	— UKF207C	— UKF207D	— 49	— 1 15/16	— 1.6	— UKF207FC	— UKF207FD	— 58	— 2 9/32
30	1 1/8	5 1/8 130	1 1/2 38	4 1/64 102	5/8 16	9/16 14	53/64 21	1 23/32 43.5	1 11/16 43	1 5/8 41	1/2 M14	UKFX07	FX07	UKX07		HS2307X H2307X	2.0 2.0	29.1 17.8	14.0	— UKFX07C	— UKFX07D	— 55	— 2 5/32	— 2.0	— —	— —	— —	— —	— —
	1 1/8	5 5/16 135	1 13/32 36	3 15/16 100	3/4 19	5/8 16	25/32 20	1 25/32 45.5	1 11/16 43	— —	5/8 M16	UKF307	F307	UK307		HS2307X H2307X	2.3 2.3	33.4 19.3	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	
		1 1/4	5 1/8 130	1 13/32 36	4 1/64 102	5/8 16	19/32 15	53/64 21	1 3/4(1 7/8) 44.5(48)	1 13/32(1 13/16) 36(46)	1 13/16 46	1/2 M14	UKF208	F208	UK208		HE308X(HE2308X) HS308X(HS2308X) H308X(H2308X)	1.9 1.9 1.9	29.1 17.8	14.0	— — UKF208C	— — UKF208D	— — 55	— — 2 5/32	— — 1.9	— — UKF208FC	— — UKF208FD	— — 64	— — 2 17/32
35	1 1/4	5 13/32 137	1 9/16 40	4 9/64 105	3/4 19	9/16 14	55/64 22	1 27/32 46.5	1 13/16 46	1 13/16 46	5/8 M16	UKFX08	FX08	UKX08		HE2308X HS2308X H2308X	2.3 2.3 2.3	34.1 21.3	14.0	— — UKFX08C	— — UKFX08D	— — 56	— — 2 7/32	— — 2.3	— — —	— — —	— — —	— — —	— — —
	1 3/8	5 29/32 150	1 9/16 40	4 13/32 112	3/4 19	21/32 17	29/32 23	2 50.5	1 13/16 46	— —	5/8 M16	UKF308	F308	UK308		HE2308X HS2308X H2308X	3.1 3.1 3.1	40.7 24.0	13.2	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	
		1 1/2	5 13/32 137	1 1/2 38	4 9/64 105	5/8 16	5/8 16	55/64 22	1 7/8(2) 47.5(51)	1 17/32(1 31/32) 39(50)	2 1/16 52	1/2 M14	UKF209	F209	UK209		HE309X(HE2309X) H309X(H2309X)	2.3 2.3	34.1 21.3	14.0	— UKF209C	— UKF209D	— 56	— 2 7/32	— 2.3	— UKF209FC	— UKF209FD	— 66	— 2 19/32
40	1 1/2	5 5/8 143	1 9/16 40	4 3/8 111	3/4 19	9/16 14	29/32 23	1 29/32 48.5	1 31/32 50	2 1/16 52	5/8 M16	UKFX09	FX09	UKX09		HE2309X H2309X	2.7 2.7	35.1 23.3	14.4	— UKFX09C	— UKFX09D	— 60	— 2 3/8	— 2.7	— —	— —	— —	— —	— —
	1 1/2	6 5/16 160	1 23/32 44	4 59/64 125	3/4 19	23/32 18	63/64 25	2 5/32 55	1 31/32 50	— —	5/8 M16	UKF309	F309	UK309		HE2309X H2309X	4.1 4.1	48.9 29.5	13.3	— —	— —	— —	— —	— —	— —	— —	— —	— —	
		1 3/4	5 5/8 143	1 9/16 40	4 3/8 111	5/8 16	5/8 16	55/64 22	1 29/32(2 1/16) 48.5(52)	1 21/32(2 5/32) 42(55)	2 9/32 58	1/2 M14	UKF210	F210	UK210		HE310X(HE2310X) H310X(H2310X)	2.6 2.6	35.1 23.3	14.4	— UKF210C	— UKF210D	— 59	— 2 5/16	— 2.6	— UKF210FC	— UKF210FD	— 70.5	— 2 25/32
45	3/4	6 3/8 162	1 23/32 44	5 1/8 130	3/4 19	25/32 20	1 1/32 26	2 3/32 53.5	2 5/32 55	2 9/32 58	5/8 M16	UKFX10	FX10	UKX10		HE2310X H2310X	3.6 3.6	43.4 29.4	14.4	— UKFX10C	— UKFX10D	— 64	— 2 17/32	— 3.6	— —	— —	— —	— —	— —
	1 3/4	6 7/8 175	1 7/8 48	5 13/64 132	29/32 23	3/4 19	1 7/64 28	2 3/8 60	2 5/32 55	— —	3/4 M20	UKF310	F310	UK310		HE2310X H2310X	5.1 5.1	62.0 38.3	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	
		1 7/8	6 3/8 162	1 11/16 43	5 1/8 130	3/4 19	23/32 18	63/64 25	2 3/32(2 1/4) 53(57.5)	1 25/32(2 5/16) 45(59)	2 17/32 64	5/8 M16	UKF211	F211	UK211		HS311X(HS2311X) H311X(H2311X) HE311X(HE2311X)	3.5 3.5 3.5	43.4 29.4	14.4	— UKF211C	— UKF211D	— 63	— 2 15/32	— 3.5	— UKF211FC	— UKF211FD	— 74.5	— 2 15/16
50	1 7/8	6 7/8 175	1 15/16 49	5 5/8 143	3/4 19	25/32 20	1 9/64 29	2 9/32 58	2 5/16 59	2 17/32 64	5/8 M16	UKFX11	FX11	UKX11		HS2311X H2311X HE2311X	4.6 4.6 4.6	52.4 36.2	14.4	— UKFX11C	— UKFX11D	— 73	— 2 7/8	— 4.6	— —	— —	— —	— —	— —

Note 1) Codes shown in parentheses indicate the dimensions and Part No. of applicable adapter (H2300X series) for UK200L3 series (triple seal type).
Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
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 + H306X, UK206 + H306X)
4. As for the triple seal type product (205 is the double seal type product), accessory 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.

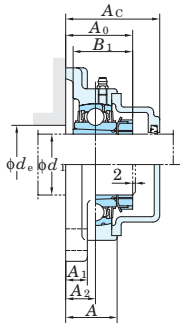
UKF
Tapered bore (with adapter)
d₁ (50) ~ (90) mm



With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Housing No.		ΔA_{2s}	X
F205~F210	FX05~FX10	±0.5	0.7
F211~F218	FX11~FX20	±0.8	1

Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.		ΔN_s
F205~F218	FX05~FX18	±0.2
	FX20	±0.3

Shaft Dia. mm inch		Dimensions inch mm									Bolt Size inch mm	Standard				Adapter ¹⁾ No.	Mass kg	Basic		Factor	With Pressed Steel Cover				With Cast Iron Cover													
		Unit No.	Housing No.	Bearing No.		Load Ratings kN	f ₀	Unit No.		Dimension		Mass kg	Unit No.		Dimension			Mass kg																				
d ₁	L							A	J	N	A ₁		A ₂	A ₀ ¹⁾	B ₁ ¹⁾	d _e (min.)	Open Type		Closed Type	mm	inch	Open Type	Closed Type	mm	inch													
50	1 7/8	7 9/32	2 1/16	5 33/64	29/32	25/32	1 3/16	2 17/32	2 5/16	—	3/4	UKF311	F311	UK311		HS2311X H2311X HE2311X	5.9	71.6	45.0	13.2	—	—	—	—	—	—	—	—	—									
	2	185	52	140	23	20	30	64	59	—	M20						—				—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		175	48	143	19	18	29	58.5(65.5)	47(62)	69	M16						UKF212				F212	UK212		HS312X(HS2312X) H312X(H2313X)	4.1 4.1	52.4	36.2	14.4	—	—	—	—	—	—	—	—	—	
55	2 1/8	6 7/8	1 7/8	5 5/8	3/4	23/32	1 9/64	2 5/16(2 19/32)	1 27/32(2 7/16)	2 23/32	5/8	UKFX12	FX12	UKX12		HS2312X H2312X	5.5 5.5	57.2	40.1	14.4	—	—	—	—	—	—	—	—	—									
	2 1/8	187	59	149	19	21	34	65	62	69	M16						UKF312				F312	UK312		HS2312X H2312X	6.8 6.8	81.9	52.2	13.2	UKF212C	UKF212D	73	2 7/8	4.1	UKF212FC	UKF212FD	86	3 3/8	4.9
		187	59	149	19	21	34	65	62	69	M16						UKFX12C				UKFX12D	78	3 1/16	5.5	—	—	—	—	—	—	—	—	—	—	—	—		
60	2 1/8	7 11/16	2 7/32	5 29/32	29/32	7/8	1 19/64	2 3/4	2 7/16	—	3/4	UKF312	F312	UK312		HS2312X H2312X	6.8 6.8	81.9	52.2	13.2	—	—	—	—	—	—	—	—	—									
	2 1/8	195	56	150	23	22	33	69.5	62	—	M20						UKF312C				UKF312D	95	3 3/4	8.0	—	—	—	—	—	—	—	—	—	—				
		195	56	150	23	22	33	69.5	62	—	M20						UKFX312				FX312	UKX312		HS2312X H2312X	6.8 6.8	81.9	52.2	13.2	—	—	—	—	—	—	—	—		
60	2 1/4	7 3/8	1 31/32	5 55/64	3/4	7/8	1 3/16	2 7/16(2 21/32)	1 31/32(2 9/16)	2 29/32	5/8	UKF213	F213	UK213		HE313X(HE2313X) H313X(H2313X) HS313X(HS2313X)	5.1 5.1 5.1	57.2	40.1	14.4	—	—	—	—	—	—	—	—	—									
	2 3/8	187	50	149	19	22	30	62(67.5)	50(65)	74	M16						UKF213C				UKF213D	74	2 29/32	5.1	UKF213FC	UKF213FD	87	3 7/16	6.0	—	—	—	—	—				
		187	50	149	19	22	30	62(67.5)	50(65)	74	M16						UKFX313				FX313	UKX313		HE2313X H2313X HS2313X	6.0 6.0 6.0	62.2	44.1	14.5	—	—	—	—	—	—	—	—		
65	2 1/4	8 3/16	2 9/32	6 17/32	29/32	7/8	1 19/64	2 13/16	2 9/16	—	3/4	UKF313	F313	UK313		HE2313X H2313X HS2313X	7.9 7.9 7.9	92.7	59.9	13.2	—	—	—	—	—	—	—	—	—									
	2 3/8	208	58	166	23	22	33	71.5	65	—	M20						UKF313C				UKF313D	94	3 11/16	9.0	—	—	—	—	—	—	—	—	—	—				
		208	58	166	23	22	33	71.5	65	—	M20						UKFX313				FX313	UKX313		HE2313X H2313X HS2313X	7.9 7.9 7.9	92.7	59.9	13.2	—	—	—	—	—	—	—	—		
65	2 1/2	7 7/8	2 7/32	6 17/64	3/4	7/8	1 11/32	2 23/32(2 15/16)	2 5/32(2 7/8)	3 11/32	5/8	UKF215	F215	UK215		HE315X(HE2315X) H315X(H2315X)	6.5 6.5	67.4	48.3	14.5	—	—	—	—	—	—	—	—	—									
	2 1/2	200	56	159	19	22	34	69(74.5)	55(73)	85	M16						UKF215C				UKF215D	83	3 9/32	6.5	UKF215FC	UKF215FD	96	3 25/32	7.5	—	—	—	—	—				
		197	68	152	23	24	40	76	73	85	M20						UKFX15				FX15	UKX15		HE2315X H2315X	8.1 8.1	72.7	53.0	14.6	—	—	—	—	—	—	—	—		
70	2 1/2	9 9/32	2 19/32	7 1/4	63/64	31/32	1 17/32	3 7/32	2 7/8	—	7/8	UKF315	F315	UK315		HE2315X H2315X	11.7 11.7	113	77.2	13.2	—	—	—	—	—	—	—	—	—									
	2 3/4	236	66	184	25	25	39	81.5	73	—	M22						UKF315C				UKF315D	106	4 3/16	13.1	—	—	—	—	—	—	—	—	—	—				
		236	66	184	25	25	39	81.5	73	—	M22						UKFX315				FX315	UKX315		HE2315X H2315X	11.7 11.7	113	77.2	13.2	—	—	—	—	—	—	—	—		
70	2 3/4	8 3/16	2 9/32	6 1/2	29/32	7/8	1 11/32	2 27/32(3 3/32)	2 5/16(3 1/16)	3 17/32	3/4	UKF216	F216	UK216		HE316X(HE2316X) H316X(H2316X)	7.6 7.6	72.7	53.0	14.6	—	—	—	—	—	—	—	—	—									
	2 3/4	208	58	165	23	22	34	72(78.5)	59(78)	90	M20						UKF216C				UKF216D	88	3 15/32	7.6	UKF216FC	UKF216FD	103	4 1/16	8.9	—	—	—	—	—				
		214	70	171	23	24	40	79	78	90	M20						UKFX16				FX16	UKX16		HE2316X H2316X	9.5 9.5	84.0	61.9	14.5	—	—	—	—	—	—	—	—		
75	2 3/4	9 27/32	2 11/16	7 23/32	1 7/32	1 1/16	1 1/2	3 1/4	3 1/16	—	1	UKF316	F316	UK316		HE2316X H2316X	12.9 12.9	123	86.7	13.3	—	—	—	—	—	—	—	—	—									
	3	250	68	196	31	27	38	82.5	78	—	M27						UKF316C				UKF316D	107	4 7/32	14.5	—	—	—	—	—	—	—	—	—	—				
		250	68	196	31	27	38	82.5	78	—	M27						UKFX316				FX316	UKX316		HE2316X H2316X	12.9 12.9	123	86.7	13.3	—	—	—	—	—	—	—	—		
75	3	8 21/32	2 15/32	6 57/64	29/32	15/16	1 13/32	3(3 1/4)	2 15/32(3 7/32)	3 25/32	3/4	UKF217	F217	UK217		H317X(H2317X) HE317X(HE2317X)	9.0 9.0	84.0	61.9	14.5	—	—	—	—	—	—	—	—	—									
	3	220	63	175	23	24	36	76(82.5)	63(82)	96	M20						UKF217C				UKF217D	92	3 5/8	9.0	UKF217FC	UKF217FD	107	4 7/32	10.4	—	—	—	—	—				
		220	63	175	23	24	36	76(82.5)	63(82)	96	M20						UKFX17				FX17	UKX17		H2317X HE2317X	10.4 10.4	96.1	71.5	14.5	—	—	—	—	—	—	—	—		
80	3	10 1/4	2 29/32	8 1/32	1 7/32	1 1/16	1 47/64	3 5/8	3 7/32	—	1	UKF317	F317	UK317		H2317X HE2317X	15.2 15.2	133	96.8	13.3	—	—	—	—	—	—	—	—	—									
	3	260	74	204	31	27	44	92	82	—	M27						UKF317C				UKF317D	117	4 19/32	17.0	—	—	—	—	—	—	—	—	—	—				
		260	74	204	31	27	44	92	82	—	M27						UKFX317				FX317	UKX317		H2317X HE2317X	15.2 15.2	133	96.8	13.3	—	—	—	—	—	—	—	—		
80	—	9 1/4	2 11/16	7 23/64	29/32	31/32	1 9/16	3 7/32(3 17/32)	2 9/16(3 3/8)	4 1/32	3/4	UKF218	F218	UK218		H318X(H2318X)	11.4	96.1	71.5	14.5	—	—	—	—	—	—	—	—	—									
	—	235	68	187	23	25	40	82(89.5)	65(86)	102	M20						UKF218C				UKF218D	101	3 31/32	11.4	UKF218FC	UKF218FD	116	4 9/16	13.0	—	—	—	—	—				
		235	68	187	23	25	40	82(89.5)	65(86)	102	M20						UKFX18				FX18	UKX18		H2318X	11.4	109	81.9	14.4	—	—	—	—	—	—	—	—		
85	—	11 1/32	3	8 1/2	1 3/8	1 3/16	1 47/64	3 5/8	3 3/8	—	1 1/8	UKF318	F318	UK318		H2318X	19.0	143	107	13.3	—	—	—	—	—	—	—	—	—									
	—	280	76	216	35	30	44	92	86	—	M30						UKF318C				UKF318D	119	4 11/16	21.1	—	—	—	—	—	—	—	—	—	—				
		280	76	216	35	30	44	92	86	—	M30						UKFX318				FX318	UKX318		H2318X	19.0	143	107	13.3	—	—	—	—	—	—	—	—		
85	3 1/4	11 13/32	3 11/16	8 31/32	1 3/8	1 3/16	2 21/64	4 3/8	3 17/32	—	1 1/8	UKF319	F319	UK319		HE2319X H2319X	21.9 21.9	153	119	13.3	—	—	—	—	—	—	—	—	—									
	290	94	228	35	30	59	111	90	—	M30	UKF319C						UKF319D				140	5 1/2	24.3	—	—	—	—	—	—	—	—	—	—					
90	3 1/2	10 9/16	3 13/16	8 5/16	1 7/32	1 3/32	2 21/64	4 3/16	3 13/16	4 13/32	1	UKFX20	FX20	UKX20		HE2320X H2320X	18.4 18.4	133	105	14.4	—	—	—	—	—	—	—	—	—									
	268	97	211	31	28	59	106	97	112	M27	UKFX20C						UKFX20D				152	5 31/32	20.9	—	—	—	—	—	—	—	—	—	—					

Note 1) Codes shown in parentheses indicate the dimensions and Part No. of applicable adapter (H2300X series) for UK200L3 series (triple seal type).

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)

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

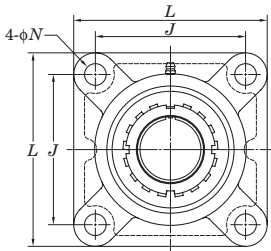
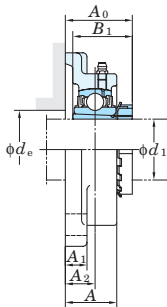
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables.
(Example of Part No. : UKF206J + H306X, UK206 + H306X)

4. As for the triple seal type product (205 is the double seal type product), accessory code L3 (L2) follows the Part No. of unit or bearing.
(Example of Part No. : UKF206JL3 + H2306X, UK206L3 + H2306X)

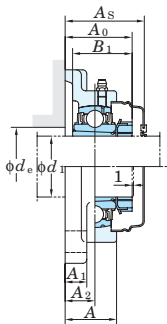
5. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter.

6. Housings of nodular graphite cast iron are also available.

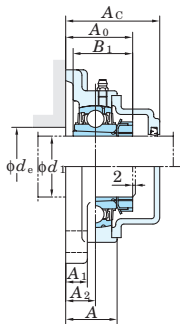
UKF
Tapered bore (with adapter)
 d_1 (90) ~ 125 mm



With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Housing No.		ΔA_{2s}	X
F205~F210	FX05~FX10	±0.5	0.7
F211~F218	FX11~FX20	±0.8	1

Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.		ΔN_s
F205~F218	FX05~FX18	±0.2
F305~F315	F316~F328	±0.3

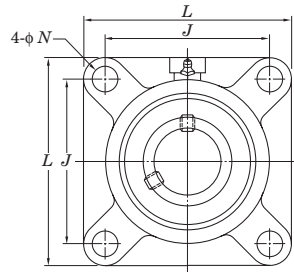
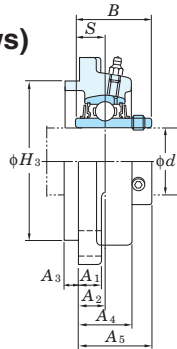
Shaft Dia. mm inch		Dimensions inch mm									Bolt Size inch mm	Standard				Adapter ¹⁾ No.	Mass kg	Basic Load Ratings kN		Factor <i>f</i> ₀	With Pressed Steel Cover				With Cast Iron Cover																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
		<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀ ¹⁾	<i>B</i> ₁ ¹⁾	<i>d</i> _e (min.)		Unit No.	Housing No.	Bearing No.	<i>C</i> _r			<i>C</i> _{0r}	Unit No. Open Type Closed Type		Dimension mm inch	Mass kg	Unit No. Open Type Closed Type	Dimension mm inch	Mass kg																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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Note 1) Codes shown in parentheses indicate the dimensions and Part No. of applicable adapter (H2300X series) for UK200L3 series (triple seal type).
Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)

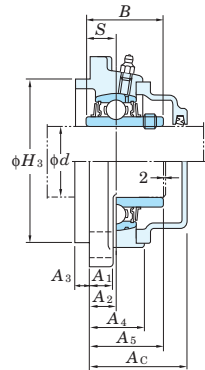
2. Part No. of applicable grease fittings are shown below.
A-1/4-28UNF.....205~210, X05~X09, 305~308
A-R1/8.....211~218, X10~X20, 309~328

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 + H306X, UK206 + H306X)
4. As for the triple seal type product (205 is the double seal type product), accessory 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 (ΔH_{3s}), variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}), tolerance of position of bolt hole (X), and tolerance of circumferential runout of spigot joint (Y)

Unit: mm				
Housing No.	ΔH_{3s}	ΔA_{2s}	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
FS311~FS313	0 -0.072			~FS318 FS319~
FS314~FS319	0 -0.081			0.4
FS320~FS322	0 -0.089			
FS324~FS328	0 -0.089			

Variations of tolerance of bolt hole diameter (ΔN_s)

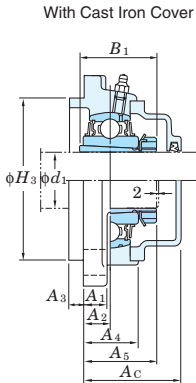
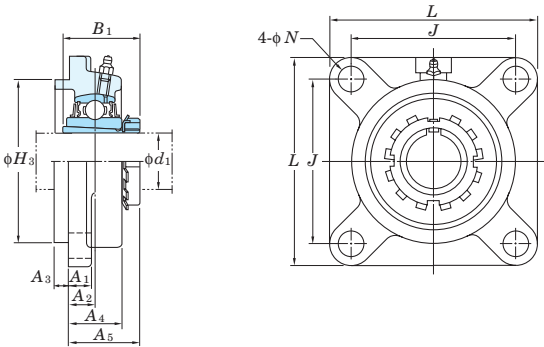
Unit: mm	
Housing No.	ΔN_s
FS305~315	±0.2
FS316~328	±0.3

Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Standard				Mass kg	Basic Load Ratings kN		Factor <i>f</i> ₀	With Cast Iron Cover				
		<i>d</i>	<i>L</i>	<i>H</i> ₃	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₃	<i>A</i> ₄	<i>A</i> ₅	<i>B</i>		<i>S</i>	Unit No.	Housing No.	Bearing No.		UCFS	Unit No.		Dimension mm inch		Mass kg		
Open Type	Closed Type												<i>A</i> _e													
25	1	4 11/32	3.1496	3 5/32	5/8	1/2	23/64	9/32	7/8	1 1/4	1.496	0.591	1/2	UCFS305	FS305	UC305	UC305-16	1.4	21.2	10.9	12.6	UCFS305C	UCFS305D	47	1 27/32	1.7
		110	80	80	16	13	9	7	22	32	38	15	M14	UCFS305-16				1.4				—	—	—	—	—
30	—	4 29/32	3.5433	3 47/64	5/8	19/32	25/64	5/16	15/16	1 13/32	1.693	0.669	1/2	UCFS306	FS306	UC306		1.9	26.7	15.0	13.3	UCFS306C	UCFS306D	51	2	2.2
		125	90	95	16	15	10	8	24	36	43	17	M14	—			—	—				—	—			
35	—	5 5/16	3.9370	3 15/16	3/4	5/8	7/16	23/64	1 1/16	1 9/16	1.890	0.748	5/8	UCFS307	FS307	UC307		2.3	33.4	19.3	13.2	UCFS307C	UCFS307D	55	2 5/32	2.7
		135	100	100	19	16	11	9	27	40	48	19	M16	—			—	—				—	—			
40	1 1/2	5 29/32	4.5276	4 13/32	3/4	21/32	33/64	25/64	1 3/16	1 13/16	2.047	0.748	5/8	UCFS308-24	FS308	UC308-24	UC308	3.4	40.7	24.0	13.2	—	—	—	—	—
		150	115	112	19	17	13	10	30	46	52	19	M16	UCFS308				3.4				UCFS308C	UCFS308D	61	2 13/32	3.9
45	1 3/4	6 5/16	4.9213	4 59/64	3/4	23/32	35/64	7/16	1 5/16	1 15/16	2.244	0.866	5/8	UCFS309-28	FS309	UC309-28	UC309	4.4	48.9	29.5	13.3	—	—	—	—	—
		160	125	125	19	18	14	11	33	49	57	22	M16	UCFS309				4.4				UCFS309C	UCFS309D	65	2 9/16	5.0
50	—	6 7/8	5.5118	5 13/64	29/32	3/4	5/8	15/32	1 13/32	2 5/32	2.402	0.866	3/4	UCFS310	FS310	UC310		5.3	62.0	38.3	13.2	UCFS310C	UCFS310D	71	2 25/32	6.1
		175	140	132	23	19	16	12	36	55	61	22	M20	—			—	—				—	—			
55	2 2 3/16	7 9/32	5.9055	5 33/64	29/32	25/32	43/64	33/64	1 17/32	2 9/32	2.598	0.984	3/4	UCFS311-32	FS311	UC311-32	UC311	6.1	71.6	45.0	13.2	—	—	—	—	—
		185	150	140	23	20	17	13	39	58	66	25	M20	UCFS311				6.1				UCFS311C	UCFS311D	74	2 29/32	7.0
60	2 7/16	7 11/16	6.2992	5 29/32	29/32	7/8	3/4	35/64	1 21/32	2 17/32	2.795	1.024	3/4	UCFS312	FS312	UC312	UC312-39	7.4	81.9	52.2	13.2	UCFS312C	UCFS312D	81	3 3/16	8.6
		195	160	150	23	22	19	14	42	64	71	26	M20	UCFS312-39				7.4				—	—	—	—	
65	2 1/2	8 3/16	6.8898	6 17/32	29/32	7/8	19/32	45/64	1 9/16	2 3/8	2.953	1.181	3/4	UCFS313-40	FS313	UC313-40	UC313	8.8	92.7	59.9	13.2	—	—	—	—	—
		208	175	166	23	22	15	18	40	60	75	30	M20	UCFS313				8.8				UCFS313C	UCFS313D	76	3	9.9
70	2 3/4	8 29/32	7.2835	7 1/64	63/64	31/32	45/64	45/64	1 11/16	2 15/32	3.071	1.299	7/8	UCFS314-44	FS314	UC314-44	UC314	11.2	104	68.2	13.2	—	—	—	—	—
		226	185	178	25	25	18	18	43	63	78	33	M22	UCFS314				11.2				UCFS314C	UCFS314D	80	3 5/32	12.3
75	2 15/16 3	9 9/32	7.8740	7 1/4	63/64	31/32	53/64	45/64	1 7/8	2 25/32	3.228	1.260	7/8	UCFS315-47	FS315	UC315-47	UC315	13.7	113	77.2	13.2	—	—	—	—	—
		236	200	184	25	25	21	18	48	71	82	32	M22	UCFS315				13.7				UCFS315C	UCFS315D	88	3 15/32	15.0
80	—	9 27/32	8.2677	7 23/32	1 7/32	1 1/16	45/64	25/32	1 7/8	2 3/4	3.386	1.339	1	UCFS316	FS316	UC316		15.1	123	86.7	13.3	UCFS316C	UCFS316D	87	3 7/16	16.5
		250	210	196	31	27	18	20	48	70	86	34	M27	—			—	—				—	—			
85	—	10 1/4	8.6614	8 1/32	1 7/32	1 1/16	15/16	25/32	2 1/8	3 5/32	3.780	1.575	1	UCFS317	FS317	UC317		17.3	133	96.8	13.3	UCFS317C	UCFS317D	97	3 13/16	18.9
		260	220	204	31	27	24	20	54	80	96	40	M27	—			—	—				—	—			
90	3 1/2	11 1/32	9.4488	8 1/2	1 3/8	1 3/16	15/16	25/32	2 7/32	3 5/32	3.780	1.575	1 1/8	UCFS318-56	FS318	UC318-56	UC318	21.3	143	107	13.3	—	—	—	—	—
		280	240	216	35	30	24	20	56	80	96	40	M30	UCFS318				21.3				UCFS318C	UCFS318D	99	3 29/32	23.2
95	—	11 13/32	9.8425	8 31/32	1 3/8	1 3/16	1 17/32	25/32	2 29/32	3 31/32	4.055	1.614	1 1/8	UCFS319	FS319	UC319		24.5	153	119	13.3	UCFS319C	UCFS319D	120	4 23/32	26.7
		290	250	228	35	30	39	20	74	101	103	41	M30	—			—	—				—	—			
100	3 15/16 4	12 7/32	10.2362	9 17/32	1 1/2	1 1/4	1 17/32	25/32	2 29/32	4 1/8	4.252	1.654	1 1/4	UCFS320	FS320	UC320	UC320-63	29.5	173	141	13.2	UCFS320C	UCFS320D	126	4 31/32	32.3
		310	260	242	38	32	39	20	74	105	108	42	M33	UCFS320-63				29.5				—	—	—	—	
105	—	12 7/32	10.2362	9 17/32	1 1/2	1 1/4	1 17/32	25/32	2 29/32	4 7/32	4.409	1.732	1 1/4	UCFS321	FS321	UC321		32.7	184	153	13.2	UCFS321C	UCFS321D	128	5 1/32	35.7
		310	260	242	38	32	39	20	74	107	112	44	M33	—			—	—				—	—			
110	—	13 3/8	11.8110	10 15/32	1 39/64	1 3/8	1 3/8	63/64	2 25/32	4 3/16	4.606	1.811	1 3/8	UCFS322	FS322	UC322		39.0	205	180	13.2	UCFS322C	UCFS322D	129	5 3/32	42.4
		340	300	266	41	35	35	25	71	106	117	46	M36	—			—	—				—	—			
120	—	14 9/16	12.9921	11 27/64	1 39/64	1 9/16	1 3/8	1 3/16	3 5/32	4 11/32	4.961	2.008	1 3/8	UCFS324	FS324	UC324		50.6	207	185	13.5	UCFS324C	UCFS324D	133	5 1/4	55.4
		370	330	290	41	40	35	30	80	110	126	51	M36	—			—	—				—	—			
130	—	16 5/32	14.1732	12 19/32	1 39/64	1 25/32	1 3/8	1 3/16	3 11/32	4 9/16	5.315	2.126	1 3/8	UCFS326	FS326	UC326		67.7	229	214	13.6	UCFS326C	UCFS326D	142	5 29/32	73.8
		410	360	320	41	45	35	30	85	116	135	54	M36	—			—	—				—	—			
140	—	17 23/32	15.7480	13 25/32	1 39/64	2 5/32	1 49/64	1 3/16	3 3/4	5 5/32	5.709	2.323	1 3/8	UCFS328	FS328	UC328		94.0	253	246	13.6	UCFS328C	UCFS328D	156	6 5/32	102
		450	400	350	41	55	45	30	95	131	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.51.)
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, accessory 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.

UKFS
Tapered bore (with adapter)
d₁ 20 ~ 125 mm



Variations of tolerance of spigot joint outside diameter (Δ_{H3s}), 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)

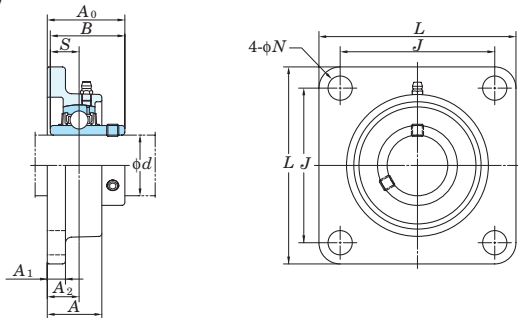
Unit: mm				
Housing No.	Δ_{H3s}	Δ_{A2s}	X	Y
FS305	0 -0.046	±0.5	0.7	0.2
FS306~FS308	0 -0.054			
FS309~FS310	0 -0.063			
FS311~FS313	0 -0.072	±0.8	1	0.3
FS315~FS319	0 -0.081			~FS318 FS319~
FS320~FS322	0 -0.089			0.4
FS324~FS328	0 -0.089			

Variations of tolerance of bolt hole diameter (Δ_{Ns})

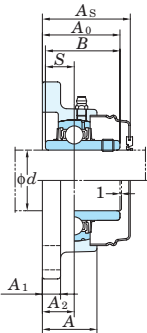
Unit: mm	
Housing No.	Δ_{Ns}
FS305~315	±0.2
FS316~328	±0.3

Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard				Adapter No.	Mass kg	Basic		Factor	With Cast Iron Cover				
													Unit No.	Housing No.	Bearing No.				Load Ratings kN	f ₀		Unit No.		Dimension		Mass
		Open Type	Closed Type	mm	inch																					
d ₁		L	H ₃	J	N	A ₁	A ₂	A ₃	A ₄	A ₅	B ₁					C _r	C _{0r}									
20	3/4	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 3/16 30.5	1 3/8 35	1/2 M14	UKFS305	FS305	UK305		HE2305X H2305X	1.4 1.4	21.2	10.9	12.6	— UKFS305C	— UKFS305D	— 47	— 1 27/32	— 1.7
25	1	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 5/16 33	1 1/2 38	1/2 M14	UKFS306	FS306	UK306		H2306X HE2306X	1.9 1.9	26.7	15.0	13.3	UKFS306C	UKFS306D	51	2	2.2
30	1 1/8	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 7/16 36.5	1 11/16 43	5/8 M16	UKFS307	FS307	UK307		HS2307X H2307X	2.4 2.4	33.4	19.3	13.2	— UKFS307C	— UKFS307D	— 55	— 2 5/32	— 2.9
35	1 1/4 1 3/8	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 19/32 40.5	1 13/16 46	5/8 M16	UKFS308	FS308	UK308		HE2308X HS2308X H2308X	3.4 3.4 3.4	40.7	24.0	13.2	— — UKFS308C	— — UKFS308D	— — 61	— — 2 13/32	— — 3.9
40	1 1/2	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 23/32 44	1 31/32 50	5/8 M16	UKFS309	FS309	UK309		HE2309X H2309X	4.4 4.4	48.9	29.5	13.3	— UKFS309C	— UKFS309D	— 65	— 2 9/16	— 5.0
45	1 3/4	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	1 7/8 48	2 5/32 55	3/4 M20	UKFS310	FS310	UK310		HE2310X H2310X	5.3 5.3	62.0	38.3	13.2	— UKFS310C	— UKFS310D	— 71	— 2 25/32	— 6.1
50	1 7/8 2	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 51	2 5/16 59	3/4 M20	UKFS311	FS311	UK311		HS2311X H2311X HE2311X	6.3 6.3 6.3	71.6	45.0	13.2	— UKFS311C	— UKFS311D	— 74	— 2 29/32	— 7.2
55	2 1/8	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 3/16 55.5	2 7/16 62	3/4 M20	UKFS312	FS312	UK312		HS2312X H2312X	7.3 7.3	81.9	52.2	13.2	— UKFS312C	— UKFS312D	— 81	— 3 3/16	— 8.5
60	2 1/4 2 3/8	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 3/32 53.5	2 9/16 65	3/4 M20	UKFS313	FS313	UK313		HE2313X H2313X HS2313X	8.9 8.9 8.9	92.7	59.9	13.2	— UKFS313C	— UKFS313D	— 76	— 3	— 10.0
65	2 1/2	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 1/2 63.5	2 7/8 73	7/8 M22	UKFS315	FS315	UK315		HE2315X H2315X	13.4 13.4	113	77.2	13.2	— UKFS315C	— UKFS315D	— 88	— 3 15/32	— 14.8
70	2 3/4	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 15/32 62.5	3 1/16 78	1 M27	UKFS316	FS316	UK316		HE2316X H2316X	15.1 15.1	123	86.7	13.3	— UKFS316C	— UKFS316D	— 87	— 3 7/16	— 16.7
75	3	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	2 27/32 72	3 7/32 82	1 M27	UKFS317	FS317	UK317		H2317X HE2317X	17.1 17.1	133	96.8	13.3	UKFS317C	UKFS317D	97	3 13/16	18.9
80	—	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	2 27/32 72	3 3/8 86	1 1/8 M30	UKFS318	FS318	UK318		H2318X	21.4	143	107	13.3	UKFS318C	UKFS318D	99	3 29/32	23.5
85	3 1/4	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	2 19/32 91	3 17/32 90	1 1/8 M30	UKFS319	FS319	UK319		HE2319X H2319X	24.8 24.8	153	119	13.3	— UKFS319C	— UKFS319D	— 120	— 4 23/32	— 26.2
90	3 1/2	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	2 21/32 93	3 13/16 97	1 1/4 M33	UKFS320	FS320	UK320		HE2320X H2320X	29.1 29.1	173	141	13.2	— UKFS320C	— UKFS320D	— 126	— 4 31/32	— 32.2
100	4	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	2 3/4 95	4 1/8 105	1 3/8 M36	UKFS322	FS322	UK322		H2322X HE2322X	38.6 38.6	205	180	13.2	UKFS322C	UKFS322D	129	5 3/32	42.1
110	—	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	3 21/32 100.5	4 13/32 112	1 3/8 M36	UKFS324	FS324	UK324		H2324	50.9	207	185	13.5	UKFS324C	UKFS324D	133	5 1/4	56.0
115	4 1/2	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	4 101.5	4 3/4 121	1 3/8 M36	UKFS326	FS326	UK326		HE2326 H2326	67.5 67.5	229	214	13.6	— UKFS326C	— UKFS326D	— 142	— 5 29/32	— 74.1
125	—	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	4 5/8 117.5	5 5/32 131	1 3/8 M36	UKFS328	FS328	UK328		H2328	94.0	253	246	13.6	UKFS328C	UKFS328D	156	6 5/32	102

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 (ΔA_{2s}) and tolerance of position of bolt hole (X)

Unit: mm		
Housing No.	ΔA_{2s}	X
SF204H1~210H1	± 0.5	0.7
SF211H1~212H1	± 0.8	1

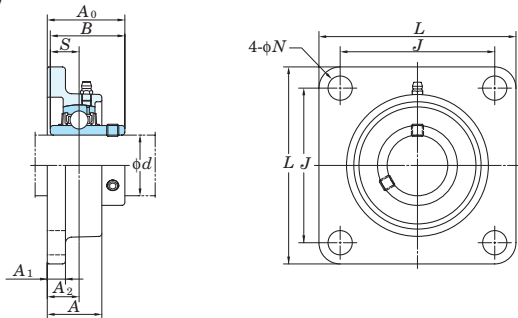
Variations of tolerance of bolt hole diameter (ΔN_s)

Unit: mm		
Housing No.	ΔN_s	
SF204H1~212H1	± 0.2	

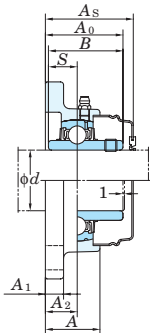
Shaft Dia. mm inch		Dimensions inch mm									Bolt Size inch mm	Standard				Mass kg	Basic Load Ratings kN		Factor f ₀	With Pressed Stainless Steel Cover				
		Unit No.	Housing No.	Bearing No.		Open Type	Closed Type	Dimension mm inch		Mass kg														
d	L							A	J		N	A ₁	A ₂	A ₀	B	S					C _r	C _{0r}		A _s
20	3/4	3 3/8 86	1 1/32 26	2 33/64 64	15/32 12	13/32 10	19/32 15	1 5/16 33.3	1.220 31	0.500 12.7	3/8 M10	UCSF204-12H1S6 UCSF204H1S6	SF204H1	UC204-12S6 UC204S6	0.66	10.9	5.35	13.2	— UCSF204H1CS6	— UCSF204H1DS6	— 38	— 1 1/2	— 0.66	
25	7/8 15/16	3 3/4 95	1 3/32 27.5	2 3/4 70	15/32 12	13/32 10	5/8 16	1 13/32 35.8	1.343 34.1	0.563 14.3	3/8 M10	UCSF205-14H1S6 UCSF205-15H1S6 UCSF205H1S6	SF205H1	UC205-14S6 UC205-15S6 UC205S6	0.85	11.9	6.3	13.9	— UCSF205H1CS6	— UCSF205H1DS6	— 40	— 1 9/16	— 0.85	
	1											UCSF205-16H1S6		UC205-16S6					— —	— —	— —			
	1 1/8	4 1/4 108	1 7/32 31	3 17/64 83	15/32 12	13/32 10	45/64 18	1 19/32 40.2	1.500 38.1	0.626 15.9	3/8 M10	UCSF206-18H1S6 UCSF206H1S6 UCSF206-19H1S6 UCSF206-20H1S6	SF206H1	UC206-18S6 UC206S6 UC206-19S6 UC206-20S6	1.2	16.5	9.05	13.9	— UCSF206H1CS6	— UCSF206H1DS6	— 45	— 1 25/32	— 1.2	
35	1 1/4 1 5/16 1 3/8	4 19/32 117	1 11/32 34	3 5/8 92	35/64 14	7/16 11	3/4 19	1 3/4 44.4	1.689 42.9	0.689 17.5	7/16 M12	UCSF207-20H1S6 UCSF207-21H1S6 UCSF207-22H1S6 UCSF207H1S6	SF207H1	UC207-20S6 UC207-21S6 UC207-22S6 UC207S6	1.5	21.8	12.3	13.9	— UCSF207H1CS6	— UCSF207H1DS6	— 49	— 1 15/16	— 1.5	
	1 7/16											UCSF207-23H1S6		UC207-23S6					— —	— —	— —			
	1 1/2 1 9/16	5 1/8 130	1 13/32 36	4 1/64 102	5/8 16	15/32 12	53/64 21	2 1/32 51.2	1.937 49.2	0.748 19	1/2 M14	UCSF208-24H1S6 UCSF208-25H1S6 UCSF208H1S6	SF208H1	UC208-24S6 UC208-25S6 UC208S6	2	24.8	14.3	14.0	— UCSF208H1CS6	— UCSF208H1DS6	— 56	— 2 7/32	— 2.0	
45	1 5/8 1 11/16 1 3/4	5 13/32 137	1 1/2 38	4 9/64 105	5/8 16	1/2 13	55/64 22	2 1/16 52.2	1.937 49.2	0.748 19	1/2 M14	UCSF209-26H1S6 UCSF209-27H1S6 UCSF209-28H1S6 UCSF209H1S6	SF209H1	UC209-26S6 UC209-27S6 UC209-28S6 UC209S6	2.3	27.8	16.2	14.0	— UCSF209H1CS6	— UCSF209H1DS6	— 57	— 2 1/4	— 2.3	
	1 7/8 1 15/16	5 5/8 143	1 9/16 40	4 3/8 111	5/8 16	1/2 13	55/64 22	2 5/32 54.6	2.031 51.6	0.748 19	1/2 M14	UCSF210-30H1S6 UCSF210-31H1S6 UCSF210H1S6	SF210H1	UC210-30S6 UC210-31S6 UC210S6	2.6	29.8	18.6	14.4	— UCSF210H1CS6	— UCSF210H1DS6	— 59	— 2 5/16	— 2.6	
	2											UCSF210-32H1S6		UC210-32S6					— —	— —	— —			
55	2 2 1/8 2 3/16	6 3/8 162	1 11/16 43	5 1/8 130	3/4 19	19/32 15	63/64 25	2 5/16 58.4	2.189 55.6	0.874 22.2	5/8 M16	UCSF211-32H1S6 UCSF211-34H1S6 UCSF211H1S6	SF211H1	UC211-32S6 UC211-34S6 UC211S6	4	36.8	23.5	14.4	— UCSF211H1CS6	— UCSF211H1DS6	— 63	— 2 15/32	— 4.0	
	2 3/16											UCSF211-35H1S6		UC211-35S6					— —	— —	— —			
	2 1/4	6 7/8 175	1 7/8 48	5 5/8 143	3/4 19	19/32 15	1 9/64 29	2 23/32 68.7	2.563 65.1	1.000 25.4	5/8 M16	UCSF212-36H1S6 UCSF212H1S6 UCSF212-38H1S6 UCSF212-39H1S6	SF212H1	UC212-36S6 UC212S6 UC212-38S6 UC212-39S6	4.7	44.5	29	14.4	— UCSF212H1CS6	— UCSF212H1DS6	— 73	— 2 7/8	— 4.7	
60	2 3/8 2 7/16																		— —	— —	— —			

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See Table 10.5 in P.51.)
2. Part No. of the applicable grease fitting is shown below.
A-1/4-28UNFN12204~210
A-R1/8N12211~212
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 (ΔA_{2s}) and tolerance of position of bolt hole (X)

Housing No.	ΔA_{2s}	X
SF204EH1~208EH1	± 0.5	0.7
SF211EH1~212EH1	± 0.8	1

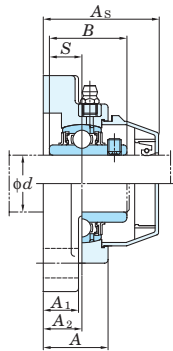
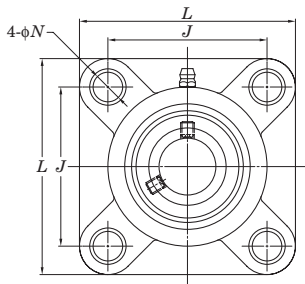
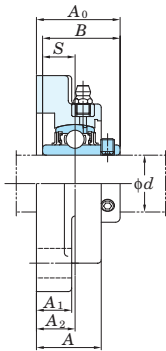
Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.	ΔN_s
SF204EH1~212EH1	± 0.2

Shaft Dia. mm inch		Dimensions inch mm									Bolt Size inch	Standard				Mass	Basic Load Ratings kN		Factor	With Pressed Stainless Steel Cover				
d		L	A	J	N	A_1	A_2	A_0	B	S		Unit No.	Housing No.	Bearing No.		kg	C_r	C_{0r}	f_0	Unit No. Open Type Closed Type		Dimension mm inch		Mass
																						A_s	kg	
20	3/4	3 3/8 86	1 1/32 26	2 33/64 64	7/16 11	13/32 10	19/32 15	1 5/16 33.3	1.220 31	0.500 12.7	3/8	UCSF204-12EH1S6 UCSF204EH1S6	SF204EH1	UC204-12S6 UC204S6		0.66	10.9	5.35	13.2	— UCSF204EH1CS6	— UCSF204EH1DS6	— 38	— 1 1/2	— 0.66
25	7/8 15/16 1	Please refer to the UCSF-H1S6.																						
30	1 1/8 1 3/16 1 1/4	4 1/4 108	1 7/32 31	3 17/64 83	33/64 13	13/32 10	45/64 18	1 19/32 40.2	1.500 38.1	0.626 15.9	7/16	UCSF206-18EH1S6 UCSF206EH1S6 UCSF206-19EH1S6 UCSF206-20EH1S6	SF206EH1	UC206-18S6 UC206S6 UC206-19S6 UC206-20S6		1.2	16.5	9.05	13.9	— UCSF206EH1CS6	— UCSF206EH1DS6	— 45	— 1 25/32	— 1.2
35	1 1/4 1 5/16 1 3/8 1 7/16	4 19/32 117	1 11/32 34	3 5/8 92	33/64 13	7/16 11	3/4 19	1 3/4 44.4	1.689 42.9	0.689 17.5	7/16	UCSF207-20EH1S6 UCSF207-21EH1S6 UCSF207-22EH1S6 UCSF207EH1S6 UCSF207-23EH1S6	SF207EH1	UC207-20S6 UC207-21S6 UC207-22S6 UC207S6 UC207-23S6		1.5	21.8	12.3	13.9	— — — UCSF207EH1CS6	— — — UCSF207EH1DS6	— — — 49	— — — 1 15/16	— — — 1.5
40	1 1/2 1 9/16	5 1/8 130	1 13/32 36	4 1/64 102	35/64 14	15/32 12	53/64 21	2 1/32 51.2	1.937 49.2	0.748 19	1/2	UCSF208-24EH1S6 UCSF208-25EH1S6 UCSF208EH1S6	SF208EH1	UC208-24S6 UC208-25S6 UC208S6		2	24.8	14.3	14.0	— — UCSF208EH1CS6	— — UCSF208EH1DS6	— — 56	— — 2 7/32	— — 2.0
45	1 5/8 1 11/16 1 3/4	Please refer to the UCSF-H1S6.																						
50	1 7/8 1 15/16 2	Please refer to the UCSF-H1S6.																						
55	2 2 1/8 2 3/16	6 3/8 162	1 11/16 43	5 1/8 130	43/64 17	19/32 15	63/64 25	2 5/16 58.4	2.189 55.6	0.874 22.2	5/8	UCSF211-32EH1S6 UCSF211-34EH1S6 UCSF211EH1S6 UCSF211-35EH1S6	SF211EH1	UC211-32S6 UC211-34S6 UC211S6 UC211-35S6		4	30.7	23.5	14.4	— — UCSF211EH1CS6	— — UCSF211EH1DS6	— — 63	— — 2 15/32	— — 4.0
60	2 3/16 2 1/4 2 3/8 2 7/16	6 7/8 175	1 7/8 48	5 5/8 143	43/64 17	19/32 15	1 9/64 29	2 23/32 68.7	2.563 65.1	1.000 25.4	5/8	UCSF212-36EH1S6 UCSF212EH1S6 UCSF212-38EH1S6 UCSF212-39EH1S6	SF212EH1	UC212-36S6 UC212S6 UC212-38S6 UC212-39S6		4.7	31.6	29	14.4	— UCSF212EH1CS6	— UCSF212EH1DS6	— 73	— 2 7/8	— 4.7

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See Table 10.5 in P.51.)
2. Part No. of the applicable grease fitting is shown below.
A-1/4-28UNFN12204~208
A-R1/8N12211~212
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



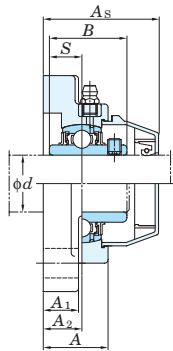
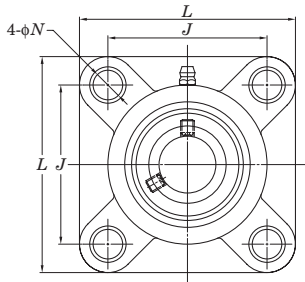
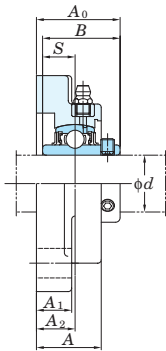
Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Housing No.	Unit: mm	
	ΔA_{2s}	X
VF204~VF208	±0.5	0.7

Shaft Dia. mm inch		Dimensions inch mm									Bolt Size inch mm	Standard				Mass kg	Basic Load Ratings kN		Factor <i>f</i> ₀	With Plastic Cover				Mass kg
		<i>d</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>		<i>S</i>	Unit No.	Housing No.	Bearing No.		<i>C</i> _r	<i>C</i> _{0r}		Unit No.		Dimension mm inch		
Open Type	Closed Type										<i>A</i> _s													
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 M10	UCVF204-12S6 UCVF204S6	VF204	UC204-12S6 UC204S6	0.3	10.9	5.35	13.2	UCVF204-12CS6 UCVF204CS6	UCVF204-12DS6 UCVF204DS6	48	1 7/8	0.31	
25	7/8 15/16	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	3/8 M10	UCVF205-14S6 UCVF205-15S6 UCVF205S6 UCVF205-16S6	VF205	UC205-14S6 UC205-15S6 UC205S6 UC205-16S6	0.41	11.9	6.3	13.9	UCVF205-14CS6 UCVF205-15CS6 UCVF205CS6 UCVF205-16CS6	UCVF205-14DS6 UCVF205-15DS6 UCVF205DS6 UCVF205-16DS6	50.7	2	0.42	
	1 1/8	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	3/8 M10	UCVF206-18S6 UCVF206S6 UCVF206-19S6 UCVF206-20S6	VF206	UC206-18S6 UC206S6 UC206-19S6 UC206-20S6	0.56	16.5	9.05	13.9	UCVF206-18CS6 UCVF206CS6 UCVF206-19CS6 UCVF206-20CS6	UCVF206-18DS6 UCVF206DS6 UCVF206-19DS6 UCVF206-20DS6	58.3	1 9/32	0.57	
35	1 1/4 1 5/16 1 3/8	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	UCVF207-20S6 UCVF207-21S6 UCVF207-22CS6 UCVF207S6 UCVF207-23S6	VF207	UC207-20S6 UC207-21S6 UC207-22S6 UC207S6 UC207-23S6	0.83	21.8	12.3	13.9	UCVF207-20CS6 UCVF207-21CS6 UCVF207-22CS6 UCVF207CS6 UCVF207-23CS6	UCVF207-20DS6 UCVF207-21DS6 UCVF207-22DS6 UCVF207DS6 UCVF207-23DS6	63.7	2 1/2	0.85	
	1 7/16	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	UCVF208-24S6 UCVF208-25S6 UCVF208S6	VF208	UC208-24S6 UC208-25S6 UC208S6	1.08	24.8	14.3	14.0	UCVF208-24CS6 UCVF208-25CS6 UCVF208CS6	UCVF208-24DS6 UCVF208-25DS6 UCVF208DS6	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.51.)
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



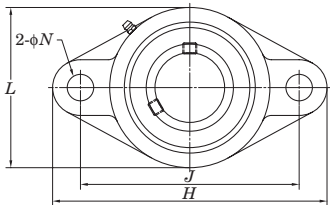
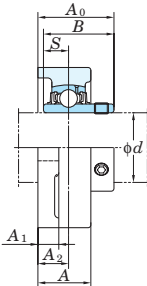
Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Housing No.	ΔA_{2s}	Unit: mm X
VF204E-VF208E	±0.5	0.7

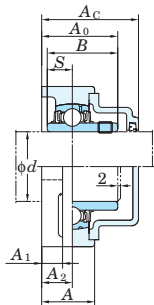
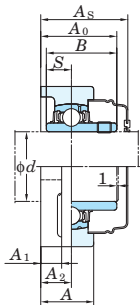
Shaft Dia. mm inch		Dimensions inch mm									Bolt Size inch mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN		Factor f_0	With Plastic Cover			
d		L	A	J	N	A_1	A_2	A_0	B	S						C_r	C_{0r}		Unit No. Open Type	Unit No. Closed Type	Dimension mm inch A_s	Mass kg
20	3/4	3 3/8	1 3/32	2 1/2	7/16	17/32	45/64	1 7/16	1.220	0.500	3/8	UCVF204-12ES7	VF204E	UC204-12S7	0.3	12.8	6.65	13.2	UCVF204-12ECS7	UCVF204-12EDS7	48	1 7/8
		86	27.8	63.5	11	13.4	18	36.3	31	12.7	M8	UCVF204ES7		UC204S7					UCVF204ECS7	UCVF204EDS7		
25	7/8	3 3/4	1 1/8	2 3/4	33/64	5/8	43/64	1 7/16	1.343	0.563	7/16	UCVF205-14ES7	VF205E	UC205-14S7	0.41	14.0	7.85	13.9	UCVF205-14ECS7	UCVF205-14EDS7	50.7	2
		95	28.5	70	13	15.5	17	36.8	34.1	14.3	M10	UCVF205-15ES7		UC205-15S7					UCVF205-15ECS7	UCVF205-15EDS7		
30	1 1/8	4 7/32	1 1/4	3 17/64	33/64	9/16	3/4	1 5/8	1.500	0.626	7/16	UCVF205-16ES7	VF206E	UC205-16S7	0.56	19.5	11.3	13.9	UCVF205-16ECS7	UCVF205-16EDS7	58.5	1 5/16
		107	31.7	83	13	14.5	19.2	41.4	38.1	15.9	M10	UCVF206-18ES7		UC206-18S7					UCVF206-18ECS7	UCVF206-18EDS7		
35	1 1/4	4 21/32	1 11/32	3 5/8	35/64	5/8	27/32	1 27/32	1.689	0.689	1/2	UCVF206ES7	VF207E	UC206S7	0.83	25.7	15.4	13.9	UCVF206ECS7	UCVF206EDS7	63.7	2 1/2
		118	34.5	92	14	15.5	21.5	46.9	42.9	17.5	M12	UCVF206-19ES7		UC206-19S7					UCVF206-19ECS7	UCVF206-19EDS7		
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	UCVF207-20ES7	VF208E	UC207-20S7	1.08	29.1	17.8	14.0	UCVF207-20ECS7	UCVF207-20EDS7	70.7	2 25/32
		130	36.5	102	14	17	23	53.2	49.2	19	M12	UCVF207-21ES7		UC207-21S7					UCVF207-21ECS7	UCVF207-21EDS7		
	1 5/16											UCVF207-22ES7		UC207-22S7					UCVF207-22ECS7	UCVF207-22EDS7		
												UCVF207ES7		UC207S7					UCVF207ECS7	UCVF207EDS7		
	1 7/16											UCVF207-23ES7		UC207-23S7					UCVF207-23ECS7	UCVF207-23EDS7		
												UCVF208-24ES7		UC208-24S7					UCVF208-24ECS7	UCVF208-24EDS7		
	1 9/16											UCVF208-25ES7		UC208-25S7					UCVF208-25ECS7	UCVF208-25EDS7		
												UCVF208ES7		UC208S7					UCVF208ECS7	UCVF208EDS7		

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
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



With Pressed Steel Cover With Cast Iron Cover



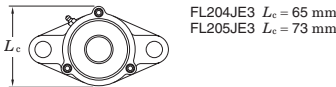
Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Housing No.			ΔA_{2s}	X
FL204-FL210	FLX05-FLX10	FL305-FL310	± 0.5	0.7
FL211-FL218		FL311-FL326	± 0.8	1

Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.			ΔN_s
FL204-FL218	FLX05-FLX10	FL305-FL311	± 0.2
		FL312-FL326	± 0.3

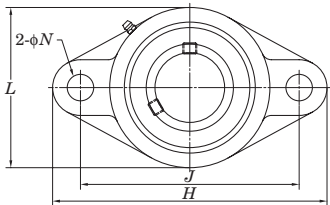
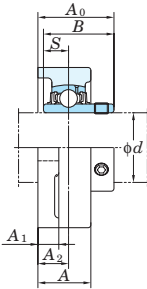
Forms and dimensions of L_c of FL204JE3 and FL205JE3 (housing with cast iron cover) are shown below.



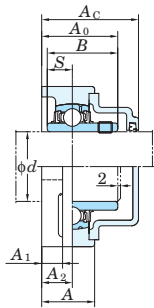
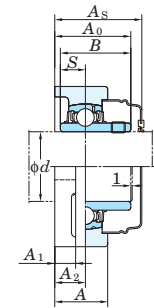
Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard				Mass	Basic		Factor	With Pressed Steel Cover				With Cast Iron Cover					
													Unit No.	Housing No.	Bearing No.			kN	f ₀		Unit No.		Dimension		Mass	Unit No.		Dimension		Mass
Open Type	Closed Type	mm	inch	Open Type	Closed Type	mm	inch																							
d		H	L	A	J	N	A ₁	A ₂	A ₀	B	S			kg	C _r	C _{0r}														
12 15 17 20	1/2 5/8 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 5/16 33.3	1.220 31	0.500 12.7	3/8 M10	UCFL201 UCFL201-8 UCFL202 UCFL202-10 UCFL203 UCFL204-12 UCFL204	FL204	UC201 UC201-8 UC202 UC202-10 UC203 UC204-12 UC204	0.50 0.50 0.48 0.48 0.47 0.47 0.45	12.8	6.65	13.2	UCFL201C — UCFL202C — UCFL203C — UCFL204C	UCFL201D — UCFL202D — UCFL203D — UCFL204D	37 — 37 — 37 — 37	1 15/32 — 1 15/32 — 1 15/32 — 1 15/32	0.50 — 0.48 — 0.47 — 0.45	— — — — — — —	— — — — — — —	— — — — — — —	— — — — — — —		
	UCFL205-14 UCFL205-15 UCFL205 UCFL205-16												UC205-14 UC205-15 UC205 UC205-16		— — — —					— — — —	— — — —	— — — —	— — — —	— — — —	— — — —					
	UCFLX05 UCFLX05-16												UCX05 UCX05-16		— —					— —	— —	— —	— —	— —	— —					
	UCFL305 UCFL305-16												UC305 UC305-16		— —					— —	— —	— —	— —	— —	— —					
25	7/8 15/16 1 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 13/32 35.8	1.343 34.1	0.563 14.3	1/2 M14	UCFL205-14 UCFL205-15 UCFL205 UCFL205-16	FL205	UC205-14 UC205-15 UC205 UC205-16	0.64 0.64 0.64 0.64	14.0	7.85	13.9	— — UCFL205C —	— — UCFL205D —	— — 40 —	— — 1 9/16 —	— — 0.64 —	— — — —	— — UCFL205FC —	— — UCFL205FD —	— — 49 —	— — 1 15/16 —	— — 0.83 —
	UCFLX05 UCFLX05-16												UCX05 UCX05-16		— —					— —	— —	— —	— —	— —						
	UCFL305 UCFL305-16												UC305 UC305-16		— —					— —	— —	— —	— —	— —						
	UCFLX05 UCFLX05-16												UCX05 UCX05-16		— —					— —	— —	— —	— —	— —						
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 19/32 40.2	1.500 38.1	0.626 15.9	1/2 M14	UCFL206-18 UCFL206 UCFL206-19 UCFL206-20	FL206	UC206-18 UC206 UC206-19 UC206-20	0.93 0.93 0.93 0.93	19.5	11.3	13.9	— — UCFL206C — —	— — UCFL206D — —	— — 44 — —	— — 1 23/32 — —	— — 0.93 — —	— — — — —	— — UCFL206FC — —	— — UCFL206FD — —	— — 53 — —	— — 2 3/32 — —	— — 1.2 — —
	UCFLX06 UCFLX06-19 UCFLX06-20												UCX06 UCX06-19 UCX06-20		— — —					— — —	— — —	— — —	— — —	— — —						
	UCFL306												UC306		— —					— —	— —	— —	— —	— —						
	UCFLX06 UCFLX06-19 UCFLX06-20												UCX06 UCX06-19 UCX06-20		— — —					— — —	— — —	— — —	— — —	— — —						
35	1 1/4 1 5/16 1 3/8 1 7/16 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 3/4 44.4	1.689 42.9	0.689 17.5	1/2 M14	UCFL207-20 UCFL207-21 UCFL207-22 UCFL207 UCFL207-23	FL207	UC207-20 UC207-21 UC207-22 UC207 UC207-23	1.2 1.2 1.2 1.2 1.2	25.7	15.4	13.9	— — — — UCFL207C	— — — — UCFL207D	— — — — 49	— — — — 1 15/16	— — — — 1.2	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	
	UCFLX07 UCFLX07-22 UCFLX07-23												UCX07 UCX07-22 UCX07-23		— — —					— — —	— — —	— — —	— — —	— — —						
	UCFL307												UC307		— —					— —	— —	— —	— —	— —						
	UCFLX07 UCFLX07-22 UCFLX07-23												UCX07 UCX07-22 UCX07-23		— — —					— — —	— — —	— — —	— — —	— — —						
40	1 1/2 1 9/16 1 1/2 1 1/2	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 1/32 51.2	1.937 49.2	0.748 19	1/2 M14	UCFL208-24 UCFL208-25 UCFL208	FL208	UC208-24 UC208-25 UC208	1.6 1.6 1.6	29.1	17.8	14.0	— — — UCFL208C	— — — UCFL208D	— — — 55	— — — 2 5/32	— — — 1.6	— — — —	— — — —	— — — —	— — — —	— — — —	
	UCFLX08 UCFLX08-24 UCFLX08												UCX08 UCX08-24 UCX08		— — —					— — —	— — —	— — —	— — —	— — —						
	UCFL308-24 UCFL308												UC308 UC308-24 UC308		— — —					— — —	— — —	— — —	— — —	— — —						
	UCFLX08 UCFLX08-24 UCFLX08												UCX08 UCX08-24 UCX08		— — —					— — —	— — —	— — —	— — —	— — —						
45	1 5/8 1 11/16 1 3/4 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 1/16 52.2	1.937 49.2	0.748 19	5/8 M16	UCFL209-26 UCFL209-27 UCFL209-28 UCFL209	FL209	UC209-26 UC209-27 UC209-28 UC209	1.9 1.9 1.9 1.9	34.1	21.3	14.0	— — — — UCFL209C	— — — — UCFL209D	— — — — 56	— — — — 2 7/32	— — — — 1.9	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	
	UCFLX09-28 UCFLX09												UCX09-28 UCX09		— —					— —	— —	— —	— —	— —						
	UCFL309-28 UCFL309												UC309-28 UC309		— —					— —	— —	— —	— —	— —						
	UCFLX09-28 UCFLX09												UCX09-28 UCX09		— —					— —	— —	— —	— —	— —						

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
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, 309~326
3. As for the triple seal type product (from 201 to 205 are the double seal type products), accessory 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 (45) ~ (90) mm



With Pressed Steel Cover With Cast Iron Cover



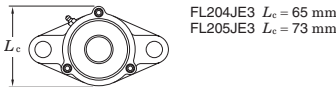
Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Housing No.		ΔA_{2s}	X
FL204-FL210	FLX05-FLX10	± 0.5	0.7
FL211-FL218	FL311-FL326	± 0.8	1

Variations of tolerance of bolt hole diameter (ΔN_s)

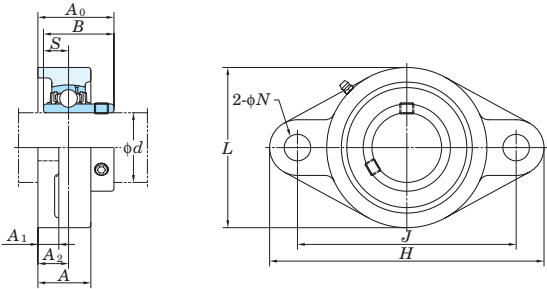
Housing No.		ΔN_s
FL204-FL218	FLX05-FLX10	± 0.2
	FL312-FL326	± 0.3

Forms and dimensions of L_c of FL204JE3 and FL205JE3 (housing with cast iron cover) are shown below.

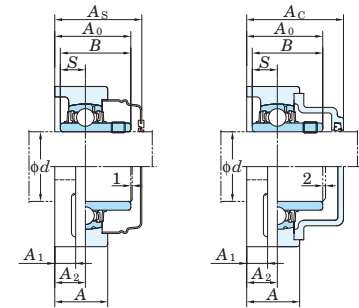


Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard				Mass	Basic		Factor	With Pressed Steel Cover				Mass	With Cast Iron Cover						
													Unit No.	Housing No.	Bearing No.	Load Ratings kN			Unit No. Open Type Closed Type		Dimension mm inch		Unit No. Open Type Closed Type	Dimension mm inch								
<i>d</i>		<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>	<i>S</i>					<i>C</i> _r	<i>C</i> _{0r}	<i>f</i> ₀														
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 UCFL309	FL309	UC309-28 UC309	3.5 3.5	48.9	29.5	13.3	—	—	—	—	—	—	—	—	—	—			
		230	125	44	177	25	18	25	60	57	22	M22								UCFL309C	UCFL309D	76	3					4.1				
50	1 7/8												UCFL210-30 UCFL210-31 UCFL210	FL210	UC210-30 UC210-31 UC210	2.2 2.2 2.2	35.1	23.3	14.4	—	—	—	—	—	—	—	—	—	—			
	1 15/16	7 3/4	4 17/32	1 9/16	6 3/16	3/4	19/32	55/64	2 5/32	2.031	0.748	5/8	UCFL210-31 UCFL210		UC210-31 UC210	— —				— —	— —	— —	UCFL210C	UCFL210D	59	2 5/16	2.2	UCFL210FC	UCFL210FD	70.5	2 25/32	2.7
	2												UCFL210-32		UC210-32	—				—	—	—	—	—	—	—	—	—	—	—	—	
	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 UCFLX10 UCFLX10-32	FLX10	UCX10-31 UCX10 UCX10-32	3.8 3.8 3.8	43.4	29.4	14.4	—	—	—	—	—	—	—	—	—	—	—		
	2	216	133	44	184	19	20	26	59.4	55.6	22.2	M16											UCFLX10C	UCFLX10D	64	2 17/32	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 UCFL211-34 UCFL211	FL211	UC211-32 UC211-34 UC211	3.3 3.3 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 UCFL211		UC211-34 UC211	— —				— —	— —	— —	UCFL211C	UCFL211D	63	2 15/32	3.3	UCFL211FC	UCFL211FD	74.5	2 15/16	3.9
	2 3/16												UCFL211-35		UC211-35	—				—	—	—	—	—	—	—	—	—	—	—	—	
	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	UCFL311-32 UCFL311 UCFL311-35	FL311	UC311-32 UC311 UC311-35	5.3 5.3 5.3	71.6	45.0	13.2	—	—	—	—	—	—	—	—	—	—	—		
	2 3/16	250	150	52	198	25	20	30	71	66	25	M22											UCFL311C	UCFL311D	87	3 7/16		6.2	—	—	—	
	60	2 1/4												UCFL212-36 UCFL212 UCFL212-38 UCFL212-39	FL212	UC212-36 UC212 UC212-38 UC212-39	4.2 4.2 4.2 4.2	52.4	36.2	14.4	—	—	—	—	—	—	—	—	—	—	—	—
2 3/8		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		—	—				—	—	UCFL212C	UCFL212D	73	2 7/8	4.2	UCFL212FC	UCFL212FD	86	3 3/8	5.0
2 7/16																				—	—	—	—	—	—	—	—	—				
		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 UCFL312-39	FL312	UC312 UC312-39	6.5 6.5	81.9	52.2	13.2	—	—	—	—	—	—	—	—	—	—	—		
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 UCFL213	FL213	UC213-40 UC213	5.1 5.1	57.2	40.1	14.4	—	—	—	—	—	—	—	—	—	—			
		258	155	50	210	23	20	30	69.7	65.1	25.4	M20	UCFL213		UC213					UCFL213C	UCFL213D	74	2 29/32	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 UCFL313	FL313	UC313-40 UC313	8.5 8.5	92.7	59.9	13.2	—	—	—	—	—	—	—	—	—	—			
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 UCFL214	FL214	UC214-44 UC214	5.7 5.7	62.2	44.1	14.5	—	—	—	—	—	—	—	—	—	—			
		265	160	54	216	23	20	31	75.4	74.6	30.2	M20	UCFL214		UC214					UCFL214C	UCFL214D	80	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 UCFL314	FL314	UC314-44 UC314	9.7 9.7	104	68.2	13.2	—	—	—	—	—	—	—	—	—	—			
75	2 15/16												UCFL215-47 UCFL215 UCFL215-48	FL215	UC215-47 UC215 UC215-48	6.4 6.4 6.4	67.4	48.3	14.5	—	—	—	—	—	—	—	—	—	—	—		
	3	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	—				—	—	—	UCFL215C	UCFL215D	83	3 9/32	6.4	UCFL215FC	UCFL215FD	96	3 25/32	7.4
	2 15/16	12 19/32	7 11/16	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	UCFL315-47 UCFL315 UCFL315-48	FL315	UC315-47 UC315 UC315-48	11.3 11.3 11.3	113	77.2	13.2	—	—	—	—	—	—	—	—	—	—	—		
	3	320	195	66	260	35	30	39	89	82	32	M30											UCFL315C	UCFL315D	106	4 9/16		12.6	—	—	—	
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 UCFL216	FL216	UC216-50 UC216	7.8 7.8	72.7	53.0	14.6	—	—	—	—	—	—	—	—	—	—	—		
		290	180	58	233	25	20	34	83.3	82.6	33.3	M22	UCFL216									UCFL216C	UCFL216D	88	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	—	—	—	—	—	—	—	—	—			
85	3 1/4	12	7 15/32	2 15/32	9 49/64	63/64	7/8	1 27/64	3 7/16	3.374	1.343	7/8	UCFL217-52 UCFL217	FL217	UC217-52 UC217	9.8 9.8	84.0	61.9	14.5	—	—	—	—	—	—	—	—	—	—	—		
		305	190	63	248	25	22	36	87.6	85.7	34.1	M22	UCFL217									UCFL217C	UCFL217D	92	3 5/8	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	—	—	—	—	—	—	—	—	—			
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 UCFL218	FL218	UC218-56 UC218	12.3 12.3	96.1	71.5	14.5	—	—	—	—	—	—	—	—	—	—	—		
		320	205	68	265	25	23	40	96.3	96	39.7	M22											UCFL218C	UCFL218D	101	3 31/32	12.3	UCFL218FC	UCFL218FD	116	4 9/16	13.8

UCFL
Cylindrical bore (with set screws)
d (90) ~ 130 mm



With Pressed Steel Cover With Cast Iron Cover

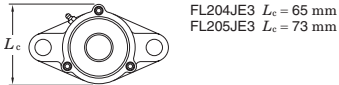


Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X) Unit: mm

Housing No.		ΔA_{2s}	X	
FL204-FL210	FLX05-FLX10	FL305-FL310	± 0.5	0.7
FL211-FL218		FL311-FL326	± 0.8	1

Variations of tolerance of bolt hole diameter (ΔN_s)			Unit: mm
Housing No.			ΔN_s
FL204~FL218	FLX05~FLX10	FL305~FL311	± 0.2
		FL312~FL326	± 0.3

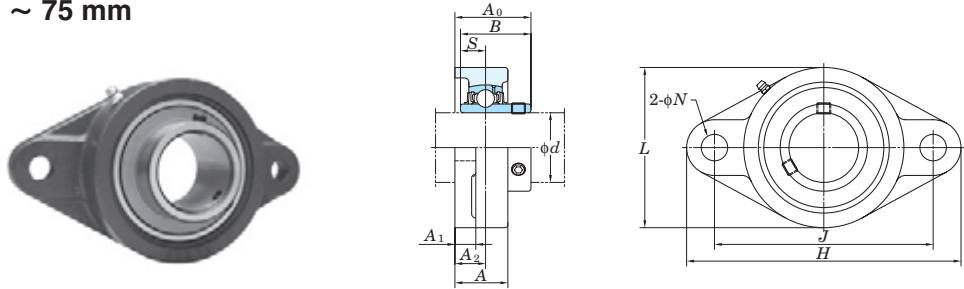
Forms and dimensions of L_c of FL204JE3 and FL205JE3 (housing with cast iron cover) are shown below.



Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard				Basic		Factor	With Pressed Steel Cover				With Cast Iron Cover										
													Unit No.	Housing No.	Bearing No.	Mass	Load Ratings kN			Unit No. Open Type Closed Type	Dimension mm inch		Mass	Unit No. Open Type Closed Type	Dimension mm inch		Mass							
		<i>C_r</i>	<i>C_{0r}</i>	<i>f₀</i>	<i>A_s</i>	kg	<i>A_c</i>	kg																										
<i>d</i>		<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>	<i>S</i>																							
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 UCFL318	FL318	UC318-56 UC318		19.0	143	107	13.3	—	—	—	—	—	—	—	—	—	—				
		385	235	76	315	38	36	44	100	96	40	M33					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	—	—	—	—	—	—	—	—	—	—				
		405	250	94	330	41	40	59	121	103	41	M36					—				—	—	—	UCFL319C	UCFL319D	140	5 1/2	26.8						
100	3 15/16 4	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 UCFL320-63 UCFL320-64	FL320	UC320 UC320-63 UC320-64		29.4	173	141	13.2	—	—	—	—	—	—	—	—	—	—				
		440	270	94	360	44	40	59	125	108	42	M39					29.4				—	—	—	—	—	—	—	—	—	—	—	—	—	
																	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	—	—	—	—	—	—	—	—	—	—				
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	—	—	—	—	—	—	—	—	—	—				
		520	330	110	430	47	48	65	140	126	51	M42					—				—	—	—	UCFL324C	UCFL324D	163	6 13/32	56.4						
130	—	21 21/32	14 3/16	4 17/32	18 7/64	1 27/32	1 31/32	2 9/16	5 3/4	5.315	2.126	1 5/8	UCFL326	FL326	UC326		61.6	229	214	13.6	—	—	—	—	—	—	—	—	—	—				
		550	360	115	460	47	50	65	146	135	54	M42					—				—	—	—	UCFL326C	UCFL326D	172	6 25/32	67.7						

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
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, 309~326
3. As for the triple seal type product (from 201 to 205 are the double seal type products), accessory 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-E
Cylindrical bore (with set screws)
d 12 ~ 75 mm



Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Unit: mm		
Housing No.	ΔA_{2s}	X
FL203E-FL210E	±0.5	0.7
FL211E-FL217E	±0.8	1

Variations of tolerance of bolt hole diameter (ΔN_s)

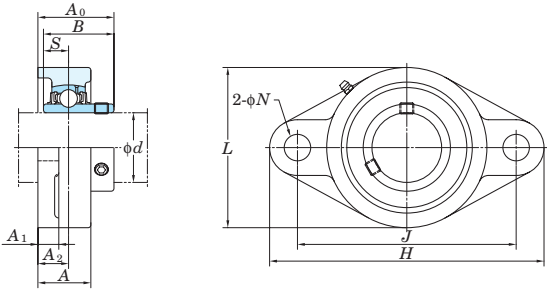
Unit: mm	
Housing No.	ΔN_s
FL203E-FL217E	±0.2

Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor f_0	Mass kg
d		H	L	A	J	N	A ₁	A ₂	A ₀	B	S					C _r	C _{0r}		
12	1/2												UCFL201E		UC201				0.42
15	5/8	3 27/32	2 7/32	1	3	25/64	7/16	19/32	1 5/16	1.220	0.500	5/16	UCFL201-8E	FL203E	UC201-8	12.8	6.65	13.2	0.4
		98	56	25.5	76.2	10	11	15	33.3	31	12.7		UCFL202E		UC202				
17													UCFL202-10E		UC202-10				0.39
													UCFL203E		UC203				
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				
25	7/8	5 1/8	2 11/16	1 1/16	3 57/64	15/32	1/2	5/8	1 13/32	1.343	0.563	3/8	UCFL205-14E	FL205E	UC205-14	14.0	7.85	13.9	0.64
	15/16	130	68	27	98.8	12	13	16	35.8	34.1	14.3		UCFL205-15E		UC205-15				
	1												UCFL205E		UC205				
													UCFL205-16E		UC205-16				
30	1 1/8	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	UCFL206-18E	FL206E	UC206-18	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		UCFL206E		UC206				
	1 1/4												UCFL206-19E		UC206-19				
													UCFL206-20E		UC206-20				
35	1 1/4	6 11/32	3 17/32	1 11/32	5 1/8	33/64	9/16	3/4	1 3/4	1.689	0.689	7/16	UCFL207-20E	FL207E	UC207-20	25.7	15.4	13.9	1.2
	1 5/16	161	90	34	130.2	13	14	19	44.4	42.9	17.5		UCFL207-21E		UC207-21				
	1 3/8												UCFL207-22E		UC207-22				
													UCFL207E		UC207				
	1 7/16												UCFL207-23E		UC207-23				
40	1 1/2	6 7/8	3 15/16	1 13/32	5 21/32	33/64	9/16	53/64	2 1/32	1.937	0.748	7/16	UCFL208-24E	FL208E	UC208-24	29.1	17.8	14.0	1.6
	1 9/16	175	100	36	143.7	13	14	21	51.2	49.2	19		UCFL208-25E		UC208-25				
													UCFL208E		UC208				
45	1 5/8	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	UCFL209-26E	FL209E	UC209-26	34.1	21.3	14.0	1.9
	1 11/16	188	108	38	148.4	15	15	22	52.2	49.2	19		UCFL209-27E		UC209-27				
	1 3/4												UCFL209-28E		UC209-28				
													UCFL209E		UC209				
50	1 7/8	7 3/4	4 17/32	1 9/16	6 3/16	19/32	19/32	55/64	2 5/32	2.031	0.748	1/2	UCFL210-30E	FL210E	UC210-30	35.1	23.3	14.4	2.2
	1 15/16	197	115	40	157	15	15	22	54.6	51.6	19		UCFL210-31E		UC210-31				
	2												UCFL210E		UC210				
													UCFL210-32E		UC210-32				
55	2	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	UCFL211-32E	FL211E	UC211-32	43.4	29.4	14.4	3.3
	2 1/8	224	130	43	184	16.5	18	25	58.4	55.6	22.2		UCFL211-34E		UC211-34				
													UCFL211E		UC211				
	2 3/16												UCFL211-35E		UC211-35				
60	2 1/4	9 27/32	5 1/2	1 7/8	7 61/64	21/32	23/32	1 9/64	2 23/32	2.563	1.000	9/16	UCFL212-36E	FL212E	UC212-36	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		UCFL212E		UC212				
	2 7/16												UCFL212-38E		UC212-38				
													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				
75	2 15/16	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	1 1/16	UCFL215-47E	FL215E	UC215-47	67.4	48.3	14.5	6.4
	3	275	165	56	225	19	20	34	78.5	77.8	33.3		UCFL215E		UC215				
													UCFL215-48E		UC215-48				

Remarks 1. In Part No. of unit, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
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), accessory 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.

UCFL-E
Cylindrical bore (with set screws)
d 80 ~ 85 mm



Shaft Dia.		Dimensions										Bolt Size	Unit No.	Housing No.	Bearing No.	Basic Load Ratings		Factor	Mass
mm	inch	inch														kN			
<i>d</i>		<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>	<i>S</i>					<i>C</i> _r	<i>C</i> _{0r}		
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 UCFL216E	FL216E	UC216-50 UC216	72.7	53.0	14.6	7.8
		290	180	58	233	19	20	34	83.3	82.6	33.3								
85	3 1/4	12	7 15/32	2 15/32	9 49/64	3/4	7/8	1 27/64	3 7/16	3.374	1.343	11/16	UCFL217-52E UCFL217E	FL217E	UC217-52 UC217	84.0	61.9	14.5	9.8
		305	190	63	248	19	22	36	87.6	85.7	34.1								

Remarks 1. In Part No. of unit, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
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), accessory 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.

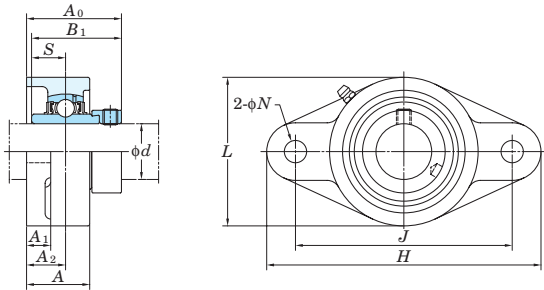
Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Unit: mm		
Housing No.	ΔA_{2s}	X
FL203E-FL210E	± 0.5	0.7
FL211E-FL217E	± 0.8	1

Variations of tolerance of bolt hole diameter (ΔN_s)

Unit: mm	
Housing No.	ΔN_s
FL203E-FL217E	± 0.2

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_{A2s}) and tolerance of position of bolt hole (X)

Housing No.	Unit: mm	
	Δ_{A2s}	X
NFL204~NFL210	±0.5	0.7
NFL211	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{Ns})

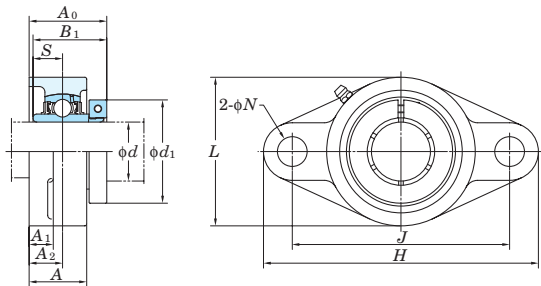
Housing No.	Unit: mm	
	Δ_{Ns}	
NFL204~NFL211	±0.2	

Shaft Dia mm inch		Dimensions inch mm										Bolt Size inch	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor f_0	Mass kg
d		H	L	A	J	N	A ₁	A ₂	A ₀	B ₁	S					C_r	C_{0r}		
12	1/2												NANFL201 NANFL201-8 NANFL202 NANFL202-10 NANFL203 NANFL204-12 NANFL204	NFL204	NA201 NA201-8 NA202 NA202-10 NA203 NA204-12 NA204	12.8	6.65	13.2	0.59
15	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							
17	3/4	113	60	29.5	89.7	10	11	19	45.6	43.7	17.1								
20													NANFL205-14 NANFL205-15 NANFL205 NANFL205-16 NANFL206-18 NANFL206 NANFL206-19 NANFL206-20	NFL205	NA205-14 NA205-15 NA205 NA205-16 NA206-18 NA206 NA206-19 NA206-20	14.0	7.85	13.9	0.9
25	7/8	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							
	15/16	130	68	31	98.8	12	13	20	46.9	44.4	17.5								
	1												NANFL206-18 NANFL206 NANFL206-19 NANFL206-20	NFL206	NA206-18 NA206 NA206-19 NA206-20	19.5	11.3	13.9	1.1
30	1 1/8	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							
	1 3/16	148	80	34	116.7	12	13	21	51.1	48.4	18.3								
	1 1/4												NANFL207-20 NANFL207-21 NANFL207-22 NANFL207 NANFL207-23	NFL207	NA207-20 NA207-21 NA207-22 NA207 NA207-23	25.7	15.4	13.9	1.6
35	1 5/16	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							
	1 3/8	161	90	36.5	130.2	13	14	21.5	53.8	51.1	18.8								
	1 7/16												NANFL208-24 NANFL208-25 NANFL208	NFL208	NA208-24 NA208-25 NA208	29.1	17.8	14.0	2.0
40	1 1/2	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							
	1 9/16	175	100	39	143.7	13	14	24	58.9	56.3	21.4								
45	1 5/8	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							
	1 11/16	188	108	40	148.4	15	14	24	58.9	56.3	21.4								
	1 3/4												NANFL209-26 NANFL209-27 NANFL209-28 NANFL209	NFL209	NA209-26 NA209-27 NA209-28 NA209	34.1	21.3	14.0	2.3
50	1 7/8	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							
	1 15/16	197	115	46.5	157	15	14	28.5	66.6	62.7	24.6								
	2												NANFL210-30 NANFL210-31 NANFL210 NANFL210-32	NFL210	NA210-30 NA210-31 NA210 NA210-32	35.1	23.3	14.4	2.7
55	2												NANFL211-32 NANFL211-34 NANFL211 NANFL211-35	NFL211	NA211-32 NA211-34 NA211 NA211-35	43.4	29.4	14.4	4.1
	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							
	2 3/16	224	130	50	184	16.5	20	32	75.6	71.4	27.8								

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
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.

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}	<i>X</i>
FL204~FL210	±0.5	0.7
FL211~FL212	±0.8	1

Variations of tolerance of bolt hole diameter (Δ_{Ns})

Unit: mm	
Housing No.	Δ_{Ns}
FL204~FL212	±0.2

Shaft Dia. mm inch		Dimensions inch mm												Bolt Size inch mm	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor	Mass
<i>d</i>		<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i> ₁	<i>S</i>	<i>d</i> ₁						<i>C</i> _r	<i>C</i> _{0r}	<i>f</i> ₀	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	1 3/4	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	44.5	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 15/16	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	49.2	M14	NCFL205-15		NC205-15					
30	1													NCFL205		NC205					
														NCFL205-16		NC205-16					
	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	2 3/16	1/2	NCFL206-18	FL206	NC206-18		19.5	11.3	13.9	1.1
	1 3/16	148	80	31	117	16	13	18	41.8	39.7	15.9	55.6	M14	NCFL206		NC206					
	1 1/4													NCFL206-19		NC206-19					
														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	2 7/16	1/2	NCFL207-20	FL207	NC207-20		25.7	15.4	13.9	1.5
	1 3/8	161	90	34	130	16	14	19	46	44.5	17.5	61.9	M14								
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	2 11/16	1/2	NCFL207-22	FL207	NC207-22		25.7	15.4	13.9	1.5
		175	100	36	144	16	14	21	52.8	50.8	19	68.3	M14	NCFL207		NC207					
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	2 13/16	5/8	NCFL207-23	FL208	NC207-23		29.1	17.8	14.0	2.0
		188	108	38	148	19	15	22	53.8	50.8	19	71.4	M16	NCFL208-24		NC208-24					
														NCFL208		NC208					
	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	2 15/16	5/8	NCFL209-26	FL209	NC209-26		34.1	21.3	14.0	2.3
50	1 3/4	188	108	38	148	19	15	22	53.8	50.8	19	74.6	M16								
														NCFL209-27	FL209	NC209-27		34.1	21.3	14.0	2.3
55	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	3 3/8	5/8	NCFL209-28	FL210	NC209-28					
	2	197	115	40	157	19	15	22	56.1	53.1	19	85.7	M16	NCFL209		NC209					
60	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	3 3/8	5/8	NCFL210-31	FL211	NC210-31		35.1	23.3	14.4	2.8
	2	197	115	40	157	19	15	22	56.1	53.1	19	85.7	M16	NCFL210		NC210					
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	3 1/2	5/8	NCFL210-32	FL211	NC210-32		43.4	29.4	14.4	3.7
		224	130	43	184	19	18	25	59.9	57.1	22.2	88.9	M16	NCFL211		NC211					
60	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	3 5/8	5/8	NCFL211-35	FL212	NC211-35		43.4	29.4	14.4	3.7
		224	130	43	184	19	18	25	59.9	57.1	22.2	92.1	M16	NCFL212-36		NC212-36					
	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	4 1/16	3/4					52.4	36.2	14.4	4.9
		250	140	48	202	23	18	29	70.3	66.7	25.4	103.2	M20	NCFL212	FL212	NC212					
60	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	4 1/8	3/4	NCFL212-39		NC212-39					
		250	140	48	202	23	18	29	70.3	66.7	25.4	104.8	M20								

Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See Table 10.5 in P.51.)

2. Part No. of applicable grease fittings are shown below.

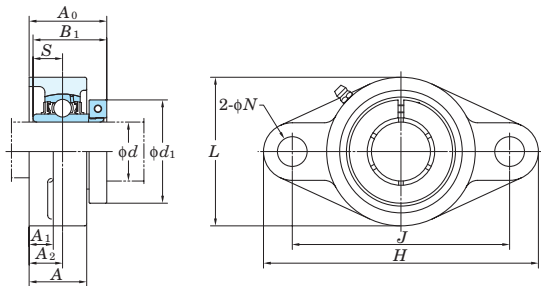
A-1/4-28UNF 204~210

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.

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_{Ns})

Unit: mm	
Housing No.	Δ_{Ns}
FL204E-FL212E	±0.2

Shaft Dia. mm inch		Dimensions inch mm												Bolt Size inch	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor	Mass
d		H	L	A	J	N	A ₁	A ₂	A ₀	B ₁	S	d ₁						C _r	C _{0r}	f ₀	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	1 3/4						12.8	6.65	13.2	0.62
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	1 15/16	3/8	NCFL205-14E NCFL205-15E NCFL205E NCFL205-16E	FL205E	NC205-14 NC205-15 NC205 NC205-16		14.0	7.85	13.9	0.84
	15/16	130	68	27	98.8	12	13	16	38.2	36.5	14.3	49.2									
30	1	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	2 3/16	3/8	NCFL206-18E NCFL206E NCFL206-19E NCFL206-20E	FL206E	NC206-18 NC206 NC206-19 NC206-20		19.5	11.3	13.9	1.1
	1 3/16	148	80	31	116.7	12	13	18	41.8	39.7	15.9	55.6									
	1 1/4	161	90	34	130.2	13	14	19	46	44.5	17.5	61.9									
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	2 7/16	7/16	NCFL207-20E	FL207E	NC207-20		25.7	15.4	13.9	1.5
	1 3/8	161	90	34	130.2	13	14	19	46	44.5	17.5	65.1									
40	1 7/16	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	2 9/16	7/16	NCFL207-22E NCFL207E NCFL207-23E	FL207E	NC207-22 NC207 NC207-23		25.7	15.4	13.9	1.5
	1 1/2	175	100	36	143.7	13	14	21	52.8	50.8	19	68.3									
45	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	2 11/16	1/2	NCFL208-24E NCFL208E	FL208E	NC208-24 NC208		29.1	17.8	14.0	2.0
	1 5/8	188	108	38	148.4	15	15	22	53.8	50.8	19	71.4									
	1 11/16	188	108	38	148.4	15	15	22	53.8	50.8	19	74.6									
50	1 3/4	7 13/32	4 1/4	1 1/2	5 27/32	19/32	19/32	55/64	2 1/8	2	0.748	2 13/16	1/2	NCFL209-26E	FL209E	NC209-26		34.1	21.3	14.0	2.3
	1 11/16	188	108	38	148.4	15	15	22	53.8	50.8	19	74.6									
55	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	3 3/8	1/2	NCFL209-27E NCFL209-28E NCFL209E	FL209E	NC209-27 NC209-28 NC209		34.1	21.3	14.0	2.3
	2	197	115	40	157	15	15	22	56.1	53.1	19	85.7									
	2 1/4	224	130	43	184	16.5	18	25	59.9	57.1	22.2	88.9									
60	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	3 1/2	9/16	NCFL210-31E NCFL210E NCFL210-32E	FL210E	NC210-31 NC210 NC210-32		35.1	23.3	14.4	2.8
	2 1/4	224	130	43	184	16.5	18	25	59.9	57.1	22.2	92.1									
60	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	3 5/8	9/16	NCFL211-32E NCFL211E NCFL211-35E	FL211E	NC211-32 NC211 NC211-35		43.4	29.4	14.4	3.7
	2 1/4	224	130	43	184	16.5	18	25	59.9	57.1	22.2	92.1									
	2 1/4	250	140	48	202	16.5	18	29	70.3	66.7	25.4	103.2									
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	4 1/16	9/16	NCFL212-36E	FL212E	NC212-36		52.4	36.2	14.4	4.9
	2 7/16	250	140	48	202	16.5	18	29	70.3	66.7	25.4	104.8									
60	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	4 1/8	9/16	NCFL212E NCFL212-39E	FL212E	NC212 NC212-39		52.4	36.2	14.4	4.9
	2 7/16	250	140	48	202	16.5	18	29	70.3	66.7	25.4	104.8									

Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See Table 10.5 in P.51.)

2. Part No. of applicable grease fittings are shown below.

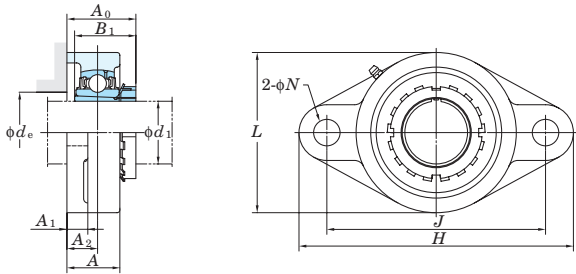
A-1/4-28UNF 204~210

A-R1/8 211~212

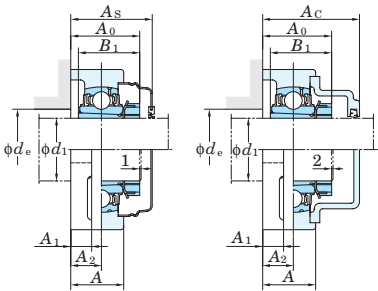
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

4. Representative examples of the forms of housing are indicated.

UKFL
Tapered bore (with adapter)
d₁ 20 ~ 50 mm



With Pressed Steel Cover With Cast Iron Cover



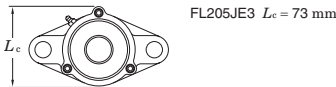
Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X) Unit: mm

Housing No.		ΔA_{2s}	X
FL205~FL210	FLX05~FLX10	±0.5	0.7
FL211~FL218	FL311~FL326	±0.8	1

Variations of tolerance of bolt hole diameter (ΔN_s) Unit: mm

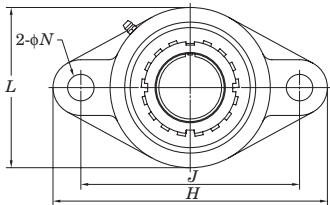
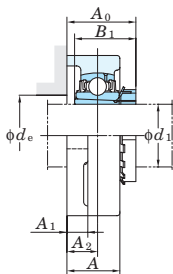
Housing No.		ΔN_s
FL205~FL218	FLX05~FLX10	±0.2
	FL312~FL326	±0.3

Forms and dimensions of L_c of FL205JE3 (housing with cast iron cover) are shown below.

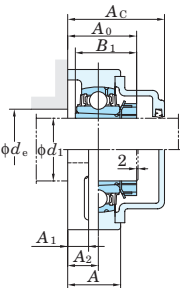
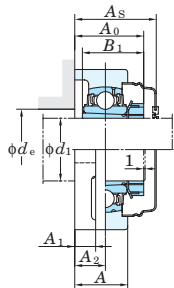


Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Standard				Adapter ¹⁾ No.	Mass kg	Basic		Factor	With Pressed Steel Cover				With Cast Iron Cover			
		Unit No.		Housing No.	Bearing No.	Load Ratings kN	C _r	C _{0r}	f ₀	Unit No.		Dimension mm inch		Mass kg	Unit No.		Dimension mm inch			Mass kg										
d ₁	H	L	A							J	N		A ₁		A ₂	A ₀ ¹⁾		B ₁ ¹⁾	d _e (min.)		UKFL205	FL205	UK205	HE305X(HE2305X) H305X(H2305X)	0.68 0.68	14.0	7.85	13.9	—	—
20	3/4	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 11/32(1 13/32) 34.5(36)	1 5/32(1 3/8) 29(35)	1 3/16 30	1/2 M14	UKFL205	FL205	UK205	HE305X(HE2305X) H305X(H2305X)	0.68 0.68	14.0	7.85	13.9	—	—	—	—	—	—	—	—	—	
	3/4	5 9/16 141	3 9/32 83	1 3/16 30	4 39/64 117	15/32 12	1/2 13	45/64 18	1 15/32 37.5	1 3/8 35	1 3/16 30	3/8 M10	UKFLX05	FLX05	UKX05	HE2305X H2305X	1.0 1.0	19.5	11.3	13.9	—	—	—	—	—	—	—	—		
	3/4	5 29/32 150	3 5/32 80	1 5/32 29	4 29/64 113	3/4 19	1/2 13	5/8 16	1 15/32 37.5	1 3/8 35	—	5/8 M16	UKFL305	FL305	UK305	HE2305X H2305X	1.1 1.1	21.2	10.9	12.6	—	—	—	—	—	—	—	—		
	1	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 15/32(1 9/16) 37.5(39.5)	1 7/32(1 1/2) 31(38)	1 13/32 36	3/8 M14	UKFL206	FL206	UK206	H306X(H2306X) HE306X(HE2306X)	0.97 0.97	19.5	11.3	13.9	UKFL206C —	UKFL206D —	44 1 23/32 —	0.97	UKFL206FC —	UKFL206FD —	53 2 3/32 —	1.2		
25	1	6 5/32 156	3 3/4 95	1 11/32 34	5 1/8 130	5/8 16	9/16 14	3/4 19	1 9/16 40	1 1/2 38	1 13/32 36	3/8 M14	UKFLX06	FLX06	UKX06	H2306X HE2306X	1.5 1.5	25.7	15.4	13.9	UKFLX06C —	UKFLX06D —	49 1 15/16 —	1.5	—	—	—	—		
	1	7 3/32 180	3 17/32 90	1 1/4 32	5 9/32 134	29/32 23	19/32 15	45/64 18	1 5/8 41	1 1/2 38	—	3/4 M20	UKFL306	FL306	UK306	H2306X HE2306X	1.5 1.5	26.7	15.0	13.3	—	—	—	—	—	—	—			
	1 1/8	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 5/8(1 11/16) 41(43)	1 3/8(1 11/16) 35(43)	1 5/8 41	3/8 M14	UKFL207	FL207	UK207	HS307X(HS2307X) H307X(H2307X)	1.3 1.3	25.7	15.4	13.9	—	—	—	—	—	—	—	—		
	1 1/8	6 23/32 171	4 1/8 105	1 1/2 38	5 43/64 144	5/8 16	9/16 14	53/64 21	1 23/32 43.5	1 11/16 43	1 5/8 41	3/8 M14	UKFLX07	FLX07	UKX07	HS2307X H2307X	1.8 1.8	29.1	17.8	14.0	UKFLX07C —	UKFLX07D —	55 2 5/32 —	1.8	—	—	—	—		
30	1 1/8	7 9/32 185	3 15/16 100	1 13/32 36	5 35/64 141	29/32 23	5/8 16	25/32 20	1 25/32 45.5	1 11/16 43	—	3/4 M20	UKFL307	FL307	UK307	HS2307X H2307X	1.9 1.9	33.4	19.3	13.2	—	—	—	—	—	—	—	—		
	1 3/8	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	1 3/4(1 7/8) 44.5(48)	1 13/32(1 13/16) 36(46)	1 13/16 46	3/8 M14	UKFL208	FL208	UK208	HE308X(HE2308X) HS308X(HS2308X) H308X(H2308X)	1.6 1.6 1.6	29.1	17.8	14.0	—	—	—	—	—	—	—	—		
	1 1/4	7 1/16 179	4 3/8 111	1 9/16 40	5 53/64 148	5/8 16	9/16 14	55/64 22	1 27/32 46.5	1 13/16 46	1 13/16 46	3/8 M14	UKFLX08	FLX08	UKX08	HE2308X HS2308X H2308X	2.1 2.1 2.1	34.1	21.3	14.0	—	—	—	—	—	—	—	—		
	1 3/8	7 7/8 200	4 13/32 112	1 9/16 40	6 7/32 158	29/32 23	21/32 17	29/32 23	2 50.5	1 13/16 46	—	3/4 M20	UKFL308	FL308	UK308	HE2308X HS2308X H2308X	2.5 2.5 2.5	40.7	24.0	13.2	—	—	—	—	—	—	—	—		
40	1 1/2	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	1 7/8(2) 47.5(51)	1 17/32(1 31/32) 39(50)	2 1/16 52	5/8 M16	UKFL209	FL209	UK209	HE309X(HE2309X) H309X(H2309X)	2.0 2.0	34.1	21.3	14.0	—	—	—	—	—	—	—	—		
	1 1/2	7 7/16 189	4 9/16 116	1 9/16 40	6 3/16 157	5/8 16	9/16 14	29/32 23	1 29/32 48.5	1 31/32 50	2 1/16 52	3/8 M14	UKFLX09	FLX09	UKX09	HE2309X H2309X	2.5 2.5	35.1	23.3	14.4	—	—	—	—	—	—	—			
	1 1/2	9 1/16 230	4 29/32 125	1 23/32 44	6 31/32 177	63/64 25	23/32 18	63/64 25	2 5/32 55	1 31/32 50	—	7/8 M22	UKFL309	FL309	UK309	HE2309X H2309X	3.6 3.6	48.9	29.5	13.3	—	—	—	—	—	—	—			
	1 3/4	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	1 29/32(2 1/16) 48.5(52)	1 21/32(2 5/32) 42(55)	2 9/32 58	5/8 M16	UKFL210	FL210	UK210	HE310X(HE2310X) H310X(H2310X)	2.3 2.3	35.1	23.3	14.4	—	—	—	—	—	—	—	—		
45	1 3/4	8 1/2 216	5 1/4 133	1 23/32 44	7 1/4 184	3/4 19	25/32 20	1 1/32 26	1 3/32 53.5	2 3/32 55	2 9/32 58	5/8 M16	UKFLX10	FLX10	UKX10	HE2310X H2310X	3.7 3.7	43.4	29.4	14.4	—	—	—	—	—	—	—	—		
	1 3/4	9 7/16 240	5 1/2 140	1 7/8 48	7 23/64 187	63/64 25	3/4 19	1 7/64 28	2 3/8 60	2 5/32 55	—	7/8 M22	UKFL310	FL310	UK310	HE2310X H2310X	4.4 4.4	62.0	38.3	13.2	—	—	—	—	—	—	—			
	1 7/8	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 3/32(2 1/4) 53(57.5)	1 25/32(2 5/16) 45(59)	2 17/32 64	5/8 M16	UKFL211	FL211	UK211	HS311X(HS2311X) H311X(H2311X) HE311X(HE2311X)	3.3 3.3 3.3	43.4	29.4	14.4	—	—	—	—	—	—	—	—		
	1 7/8	9 27/32 250	5 29/32 150	2 1/16 52	7 51/64 198	63/64 25	25/32 20	1 3/16 30	2 17/32 64	2 5/16 59	—	7/8 M22	UKFL311	FL311	UK311	HS2311X H2311X HE2311X	5.6 5.6 5.6	71.6	45.0	13.2	—	—	—	—	—	—	—	—		

UKFL
Tapered bore (with adapter)
d₁ 55 ~ 115 mm



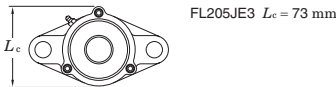
With Pressed Steel Cover With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA _{2s}) and tolerance of position of bolt hole (X)				Unit: mm
Housing No.		ΔA _{2s}	X	
FL205~FL210	FLX05~FLX10	FL305~FL310	±0.5	0.7
FL211~FL218		FL311~FL326	±0.8	1

Variations of tolerance of bolt hole diameter (ΔN _s)				Unit: mm
Housing No.		ΔN _s		
FL205~FL218	FLX05~FLX10	FL305~FL311	±0.2	
		FL312~FL326	±0.3	

Forms and dimensions of L_c of FL205JE3 (housing with cast iron cover) are shown below.



Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Standard				Adapter ¹⁾ No.	Mass kg	Basic		Factor	With Pressed Steel Cover				With Cast Iron Cover																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
		<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀ ¹⁾	<i>B</i> ₁ ¹⁾	<i>d</i> _e (min.)	Unit No.		Housing No.	Bearing No.	<i>C</i> _r	<i>C</i> _{0r}			<i>f</i> ₀	Unit No. Open Type Closed Type		Dimension mm inch	Mass kg	Unit No. Open Type Closed Type		Dimension mm inch	Mass kg																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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Note 1) Codes shown in parentheses indicate the dimensions and Part No. of applicable adapter (H2300X series) for UK200L3 series (triple seal type).

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)

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, 309~326

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 + H306X, UK206 + H306X)

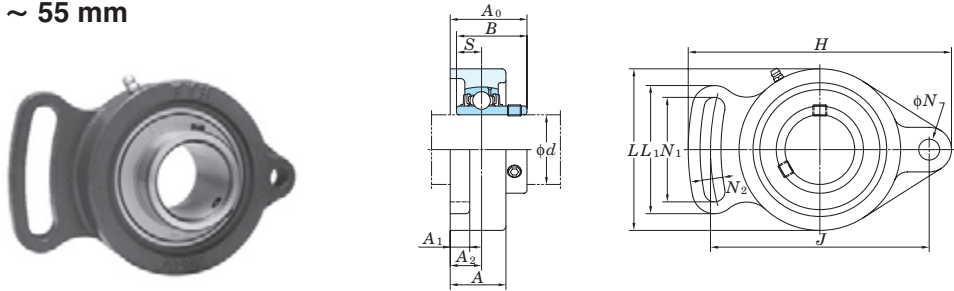
4. As for the triple seal type product (205 is the double seal type product), accessory code L3 (or L2) follows the Part No. of unit or bearing.

(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.

UCFA
Cylindrical bore (with set screws)
d 12 ~ 55 mm



Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s})

Unit: mm	
Housing No.	ΔA_{2s}
FA204-FA210	±0.5
FA211	±0.8

Variations of tolerance of bolt hole diameter (ΔN_s)

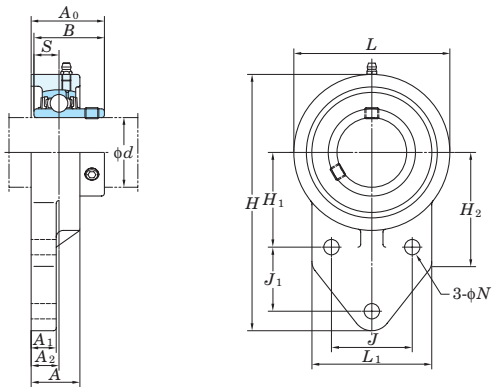
Unit: mm	
Housing No.	ΔN_s
FA204-FA211	±0.2

Shaft Dia. mm inch		Dimensions inch mm													Bolt Size inch mm	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor f_0	Mass kg
d		H	L	A	J	N	N_1	N_2	L_1	A_1	A_2	A_0	B	S					C_r	C_{0r}		
12	1/2															UCFA201		UC201				0.47
15	5/8	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	UCFA201-8	FA204	UC201-8	12.8	6.65	13.2	0.45
17	3/4	98	59	24	78	10	40	10	50	11	13.8	32.1	31	12.7	M8	UCFA202		UC202				
																UCFA202-10		UC202-10				0.44
																UCFA203		UC203				
																UCFA204-12		UC204-12				
20																UCFA204		UC204				0.42
																UCFA205-14	FA205	UC205-14				
25	7/8	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	14.0	7.85	13.9	0.68
	15/16	124	70	27	98	11	49	11	64	13	16	35.8	34.1	14.3	M10	UCFA205		UC205				
	1															UCFA205-16		UC205-16				
																UCFA206-18	FA206	UC206-18				
30	1 1/8	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	19.5	11.3	13.9	1.0
	1 3/16	141	83	30	117	11	56	12	68	13	17.8	40	38.1	15.9	M10	UCFA206-19		UC206-19				
	1 1/4															UCFA206-20		UC206-20				
																UCFA207-20	FA207	UC207-20				
35	1 1/4	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	UCFA207-21		UC207-21	25.7	15.4	13.9	1.5
	1 5/16	155	96	34	130	13	63	13	75	14	18.6	44	42.9	17.5	M12	UCFA207-22		UC207-22				
	1 3/8															UCFA207		UC207				
	1 7/16															UCFA207-23		UC207-23				
																UCFA208-24	FA208	UC208-24				
40	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	UCFA208-25		UC208-25	29.1	17.8	14	1.9
	1 9/16	171	105	38	144	13	70	13	84	14	20.8	51	49.2	19	M12	UCFA208		UC208				
																UCFA209-26	FA209	UC209-26				
45	1 5/8	7 1/16	4 3/8	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	34.1	21.3	14	1.7
	1 11/16	179	111	40	148	15	72	15	88	14	21.8	52	49.2	19	M14	UCFA209-28		UC209-28				
	1 3/4															UCFA209		UC209				
																UCFA210-30	FA210	UC210-30				
50	1 7/8	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	35.1	23.3	14.4	2.0
	1 15/16	189	116	40	157	15	75	15	92	14	22.5	55.1	51.6	19	M14	UCFA210		UC210				
	2															UCFA210-32		UC210-32				
																UCFA211-32	FA211	UC211-32				
55	2	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	43.4	29.4	14.4	3.6
	2 1/8	216	133	44	184	16	86	16	102	20	25.7	59.1	55.6	22.2	M14	UCFA211		UC211				
	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.51.)
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), accessory 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 + H305X, UK205 + H305X)

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



Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}), variations of tolerance of distance between centers of bolt holes (ΔJ_s , ΔJ_{1s}), variations of tolerance of distance between both grooves (ΔH_{1s})

Unit: mm				
Housing No.	ΔA_{2s}	ΔJ_s	ΔJ_{1s}	ΔH_{1s}
FB204~FB210	±0.5			

Variations of tolerance of bolt hole diameter (ΔN_s)

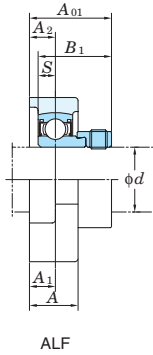
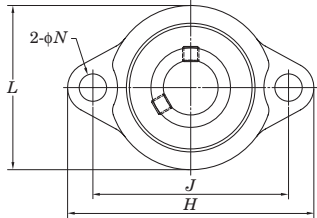
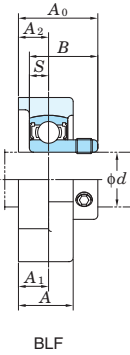
Unit: mm	
Housing No.	ΔN_s
FB204~FB210	±0.2

Shaft Dia. mm inch		Dimensions inch mm														Bolt Size inch mm	Unit No.	Housing No.		Bearing No.	Basic Load Ratings kN		Factor	Mass
<i>d</i>		<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>J</i> ₁	<i>N</i>	<i>H</i> ₁	<i>H</i> ₂	<i>L</i> ₁	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>	<i>S</i>				<i>C</i> _r	<i>C</i> _{0r}	<i>f</i> ₀	kg		
12	1/2															5/16 M8	UCFB201	FB204		UC201	12.8	6.65	13.2	0.64
15	5/8	4 11/32	2 7/16	15/16	1 17/64	1 11/16	3/8	1 21/32	2 1/16	2 1/16	1/2	17/32	1 1/4	1.220	0.500		UCFB201-8			UC201-8				0.62
17	3/4	110	62	24	32	27	9.5	42	52	52	13	13.5	31.8	31	12.7		UCFB202			UC202				0.61
20																	UCFB202-10			UC202-10				0.59
																5/16 M8	UCFB203	FB205		UC203	14.0	7.85	13.9	0.68
25	7/8	4 9/16	2 11/16	1 1/32	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		UCFB203			UC203				
	15/16	116	68	26	34	27	9.5	45	52	56	13	15	34.8	34.1	14.3		UCFB204-12			UC204-12				
	1																UCFB204			UC204				
																5/16 M8	UCFB205-14	FB206		UC205-14	19.5	11.3	13.9	0.92
30	1 1/8	5 1/8	3 1/16	1 5/32	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		UCFB205-15			UC205-15				
	1 3/16	130	78	29	40	29	9.5	50	55	65	13	17	39.2	38.1	15.9		UCFB205			UC205				
	1 1/4																UCFB205-16			UC205-16				
																5/16 M8	UCFB206-18	FB207		UC206-18	25.7	15.4	13.9	1.3
35	1 1/4	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		UCFB206			UC206				
	1 5/16	144	90	33	46	32	9.5	55	62	70	15	19	44.4	42.9	17.5		UCFB206-19			UC206-19				
	1 3/8																UCFB206-20			UC206-20				
																3/8 M10	UCFB207-20	FB208		UC207-20	29.1	17.8	14.0	1.8
40	1 1/2	6 15/32	3 15/16	1 11/32	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		UCFB207-21			UC207-21				
	1 9/16	164	100	34	50	41	11	60	72	78	16	20	50.2	49.2	19		UCFB207-22			UC207-22				
															UCFB207		UC207							
																3/8 M10	UCFB207-23	FB209		UC207-23	34.1	21.3	14.0	2.0
45	1 5/8	6 27/32	4 3/16	1 11/32	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		UCFB208-24			UC208-24				
	1 11/16	174	106	34	54	43	11	65	76	80	18	20	50.2	49.2	19		UCFB208-25			UC208-25				
	1 3/4																UCFB208			UC208				
																3/8 M10	UCFB209-26	FB210		UC209-26	35.1	23.3	14.4	2.3
50	1 7/8	7 1/4	4 13/32	1 3/8	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		UCFB209-27			UC209-27				
	1 15/16	184	112	35	58	46	11	68	82	86	18	20	52.6	51.6	19		UCFB209-28			UC209-28				
	2																UCFB209			UC209				
																M10	UCFB210-30			UC210-30	35.1	23.3	14.4	2.3
																	UCFB210-31			UC210-31				
																M10	UCFB210			UC210	35.1	23.3	14.4	2.3
																	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.51.)
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), accessory 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 + H305X, UK205 + H305X)

BLF
Cylindrical bore
(with set screw locking)
ALF
Cylindrical bore
(with eccentric locking collar)
d 12 ~ 35 mm



Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and variations of tolerance of distance between centers of bolt holes (ΔJ_s)

Unit: mm		
Housing No.	ΔA_{2s}	ΔJ_s
LF203-LF207	±0.5	±0.7

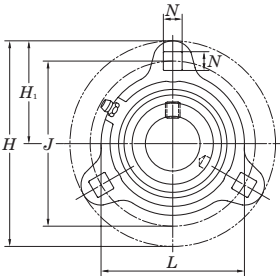
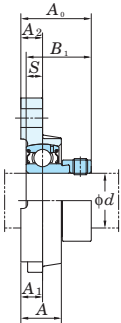
Variations of tolerance of bolt hole diameter (ΔN_s)

Unit: mm	
Housing No.	ΔN_s
LF203-LF207	±0.2

Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Unit No.	Bearing No.		Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN		Factor	Mass kg	
<i>d</i>		<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>S</i>	BLF <i>A</i> ₀ <i>B</i>		ALF <i>A</i> ₀₁ <i>B</i> ₁						<i>C</i> _r	<i>C</i> _{0r}	<i>f</i> ₀	BLF	ALF	
12	1/2 5/8	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	SB201		LF203	9.55	4.80	13.2	0.25	0.28
15		81	52	18	63.5	8	9.5	9.5	6	25.5	22	32	28.5	M6	BLF201-8	SB201-8							
															BLF202	SB202							
															BLF202-10	SB202-10							
17															BLF203	SB203							
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		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							
25	7/8 15/16 1	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	BLF205-14	SB205-14		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	BLF205-15	SB205-15							
															BLF205	SB205							
															BLF205-16	SB205-16							
30	1 1/8 1 3/16 1 1/4	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	BLF206-18	SB206-18		LF206	19.5	11.3	13.9	0.57	0.60
		113	76	22.5	90.5	12	12	12	8	34	30	37.9	33.9	M10	BLF206	SB206							
															BLF206-19	SB206-19							
															BLF206-20	SB206-20							
35	1 1/4 1 5/16 1 3/8 1 7/16	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	BLF207-20	SB207-20		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	BLF207-22	SB207-22							
															BLF207	SA207							
															BLF207-23	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.51.)
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.

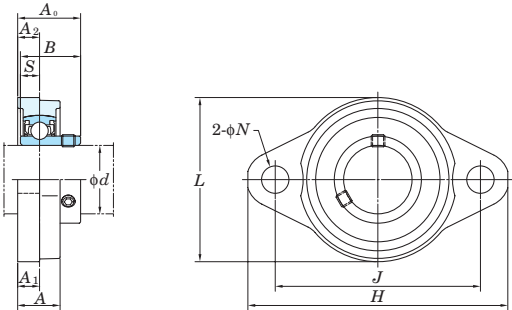
SATFD-FP9
Cylindrical bore (with set screws)
d 12 ~ 35 mm



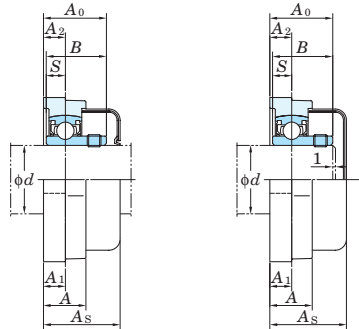
Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Unit No.	Housing No.		Bearing No.	Basic Load Ratings kN		Factor <i>f</i> ₀	Mass kg
<i>d</i>		<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>H</i> ₁	<i>A</i> ₀	<i>A</i> ₁	<i>A</i> ₂	<i>B</i> ₁	<i>S</i>						<i>C</i> _r	<i>C</i> _{0r}		
12	1/2													SATFD201FP9 SATFD201-8FP9 SATFD202FP9 SATFD202-10FP9 SATFD203FP9	TFD203		SA201FP9 SA201-8FP9 SA202FP9 SA202-10FP9 SA203FP9	9.55	4.80	13.2	0.26
15	5/8	3 3/16	2 3/32	11/16	2 1/2	9/32	1 19/32	1 1/4	3/8	3/8	1.126	0.256	1/4								
17		81	53.2	17.5	63.5	7.1	40.5	31.6	9.5	9.5	28.6	6.5									
20	3/4	3 9/16	2 3/8	25/32	2 13/16	11/32	1 25/32	1 11/32	27/64	27/64	1.220	0.295	5/16	SATFD204-12FP9 SATFD204FP9	TFD204		SA204-12FP9 SA204FP9	12.8	6.65	13.2	0.34
		90.5	60.3	19.8	71.4	8.7	45.2	34.2	10.7	10.7	31	7.5									
25	7/8	3 3/4	2 5/8	25/32	3	11/32	1 7/8	1 11/32	27/64	27/64	1.220	0.295	5/16	SATFD205-14FP9 SATFD205-15FP9 SATFD205FP9 SATFD205-16FP9 SATFD206-18FP9	TFD205		SA205-14FP9 SA205-15FP9 SA205FP9 SA205-16FP9 SA206-18FP9	14.0	7.85	13.9	0.39
	15/16	95.2	66.7	19.8	76.2	8.7	47.6	34.2	10.7	10.7	31	7.5									
	1																				
30	1 1/8	4 7/16	3 3/32	7/8	3 9/16	13/32	2 7/32	1 17/32	15/32	15/32	1.406	0.354	3/8	SATFD206FP9 SATFD206-19FP9 SATFD206-20FP9	TFD206		SA206FP9 SA206-19FP9 SA206-20FP9	19.5	11.3	13.9	0.61
	1 3/16	112.7	78.6	22.2	90.5	10.3	56.4	38.6	11.9	11.9	35.7	9									
	1 1/4																				
35	1 1/4	4 13/16	3 1/2	15/16	3 15/16	13/32	2 13/32	1 21/32	1/2	1/2	1.531	0.374	3/8	SATFD207-20FP9 SATFD207-21FP9 SATFD207-22FP9 SATFD207FP9 SATFD207-23FP9	TFD207		SA207-20FP9 SA207-21FP9 SA207-22FP9 SA207FP9 SA207-23FP9	25.7	15.4	13.9	0.82
	1 5/16	122.2	88.9	23.8	100	10.3	61.1	42.1	12.7	12.7	38.9	9.5									
	1 3/8																				
	1 7/16																				

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See Table 10.5 in P.51.)
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.

UFL
Cylindrical bore (with set screws)
d 8 ~ 30 mm



With Through Type Cover With One Side Sealed Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and variations of tolerance of distance between centers of bolt holes (ΔJ_s)

Housing No.	ΔA_{2s}	ΔJ_s
FL08	±0.5	±0.3
FL000~FL006		

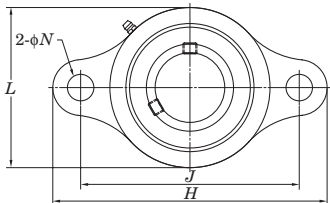
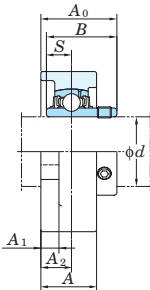
Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.	ΔN_s
FL08	±0.2
FL000~FL006	

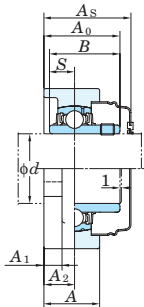
Shaft Dia. mm	Dimensions										Bolt Size	Standard				Mass	Basic		Factor	With Rubber Coated Cover			
	inch											Unit No.	Housing No.	Bearing No.	Load Ratings kN		Open Type	Unit No.		Dimension mm	Mass		
	mm																	mm	inch			kg	C _r
d	H	L	A	J	N	A ₁	A ₂	A ₀	B	S	inch mm				kg	C _r	C _{0r}	f ₀			A _s		
8	1 7/8	1 1/16	11/32	1 29/64	3/16	5/32	5/32	1/2	0.472	0.1378	No.8	UFL08	FL08	SU08	0.030	3.27	1.37	12.4	—	—	—	—	
	48	27	8.5	37	4.8	4	4	12.5	12	3.5	M4												
10	2 3/8	1 13/32	15/32	1 49/64	9/32	1/4	15/64	5/8	0.591	0.197	1/4	UFL000	FL000	SU000	0.050	4.55	1.95	12.3	UFL000C	UFL000D	20.5	13/16	0.05
	60	36	12	45	7	6	6	16	15	5	M6												
12	2 15/32	1 1/2	15/32	1 57/64	9/32	1/4	15/64	5/8	0.591	0.197	1/4	UFL001	FL001	SU001	0.065	5.10	2.40	13.2	UFL001C	UFL001D	20.5	13/16	0.07
	63	38	12	48	7	6	6	16	15	5	M6												
15	2 5/8	1 21/32	1/2	2 3/32	9/32	1/4	1/4	11/16	0.650	0.217	1/4	UFL002	FL002	SU002	0.085	5.60	2.85	13.9	UFL002C	UFL002D	22	7/8	0.09
	67	42	13	53	7	6.5	6.5	17.5	16.5	5.5	M6												
17	2 25/32	1 13/16	9/16	2 13/64	9/32	9/32	9/32	23/32	0.689	0.236	1/4	UFL003	FL003	SU003	0.11	6.00	3.25	14.4	UFL003C	UFL003D	23.5	15/16	0.11
	71	46	14	56	7	7	7	18.5	17.5	6	M6												
20	3 17/32	2 5/32	5/8	2 51/64	13/32	5/16	5/16	7/8	0.827	0.276	5/16	UFL004	FL004	SU004	0.18	9.40	5.05	13.9	UFL004C	UFL004D	27	1 1/16	0.18
	90	55	16	71	10	8	8	22	21	7	M8												
25	3 3/4	2 3/8	5/8	2 61/64	13/32	5/16	5/16	29/32	0.866	0.276	5/16	UFL005	FL005	SU005	0.23	10.1	5.85	14.5	UFL005C	UFL005D	28	1 3/32	0.23
	95	60	16	75	10	8	8	23	22	7	M8												
30	4 13/32	2 3/4	23/32	3 11/32	1/2	11/32	23/64	1 1/32	0.965	0.295	3/8	UFL006	FL006	SU006	0.31	13.2	8.25	14.7	UFL006C	UFL006D	31	1 7/32	0.31
	112	70	18	85	13	9	9	26	24.5	7.5	M10												

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See Table 10.5 in P.51.)
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 (ΔA_{2s}) and variations of tolerance of distance between centers of bolt holes (ΔJ_s)

Unit: mm		
Housing No.	ΔA_{2s}	ΔJ_s
SFL203H1~SFL210H1	±0.5	±0.3

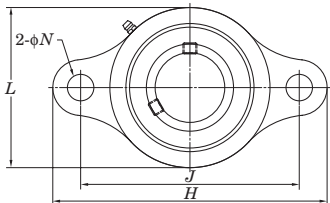
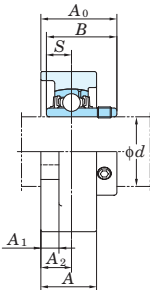
Variations of tolerance of bolt hole diameter (ΔN_s)

Unit: mm	
Housing No.	ΔN_s
SFL203H1~SFL210H1	±0.2

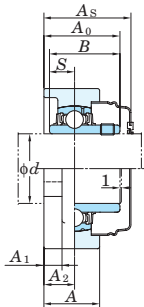
Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard Unit No.	Housing No.		Bearing No.	Mass kg	Basic Load Ratings kN		Factor f_0	With Pressed Stainless Steel Cover Unit No.		Dimension mm inch		Mass kg
d		H	L	A	J	N	A_1	A_2	A_0	B	S							C_r	C_{0r}		Open Type	Closed Type	A_s		
12	1/2												UCSFL201XSH1S6	SFL203H1		UC201XS6	0.33	8.15	3.85	13.2	—	—	—	—	—
15	5/8	1 27/32	2 1/16	1 15/16	3	15/32	13/32	9/16	2 3/16	1.079	0.453	3/8	UCSFL201-8XSH1S6			UC201-8XS6					—	—	—	—	—
		98	52	24	76.5	12	10	14	29.9	27.4	11.5	M10	UCSFL202XSH1S6			UC202XS6					—	—	—	—	—
													UCSFL202-10XSH1S6			UC202-10XS6					—	—	—	—	—
17													UCSFL203XSH1S6			UC203XS6					—	—	—	—	—
20	3/4	4 7/16	2 3/8	1 1/32	3 35/64	15/32	13/32	13/32	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	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	UCSFL205-14H1S6	SFL205H1		UC205-14S6	0.61	11.9	6.30	13.9	—	—	—	—	—
	15/16												UCSFL205-15H1S6			UC205-15S6					—	—	—	—	—
		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					—	—	—	—	—
	1 1/8												UCSFL206-18H1S6			UC206-18S6					—	—	—	—	—
30	1 3/16	5 13/16	3 5/32	1 7/32	4 19/32	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	—	—	—	—	—
	1 1/4												UCSFL206-19H1S6			UC206-19S6					UCSFL206H1CS6	UCSFL206H1DS6	45	1 15/32	0.9
		148	80	31	117	16	10	18	40.2	38.1	15.9	M14	UCSFL206-20H1S6			UC206-20S6					—	—	—	—	—
	1 1/4												UCSFL207-20H1S6			UC207-20S6					—	—	—	—	—
	1 5/16												UCSFL207-21H1S6			UC207-21S6					—	—	—	—	—
35	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	—	—	—	—	—
	1 7/16												UCSFL207H1S6			UC207S6					UCSFL207H1CS6	UCSFL207H1DS6	49	1 15/16	1.1
		161	85	34	130	16	11	19	44.4	42.9	17.5	M14	UCSFL207-23H1S6			UC207-23S6					—	—	—	—	—
	1 1/2												UCSFL208-24H1S6			UC208-24S6					—	—	—	—	—
	1 9/16												UCSFL208-25H1S6			UC208-25S6					—	—	—	—	—
40		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	UCSFL208H1S6	SFL208H1		UC208S6	1.4	24.8	14.3	14.0	—	—	—	—	—
		175	94	36	144	16	12	21	51.2	49.2	19	M14	UCSFL209-26H1S6			UC209-26S6					UCSFL208H1CS6	UCSFL208H1DS6	56	2 7/32	1.4
	1 5/8												UCSFL209-27H1S6			UC209-27S6					—	—	—	—	—
	1 11/16												UCSFL209-28H1S6			UC209-28S6					—	—	—	—	—
	1 3/4												UCSFL209H1S6			UC209S6					UCSFL209H1CS6	UCSFL209H1DS6	57	2 7/32	1.6
45		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	UCSFL210-30H1S6	SFL209H1		UC210-30S6	1.6	27.8	16.2	14.0	—	—	—	—	—
		188	100	38	148	19	13	22	52.2	49.2	19	M16	UCSFL210-31H1S6			UC210-31S6					—	—	—	—	—
	1 7/8												UCSFL210-32H1S6			UC210-32S6					—	—	—	—	—
	1 15/16												UCSFL210H1S6			UC210S6					UCSFL210H1CS6	UCSFL210H1DS6	59	2 5/16	1.9
50	2	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	UCSFL210H1S6			UC210S6					—	—	—	—	—
		197	106	40	157	19	13	22	54.6	51.6	19	M16	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.51.)
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 (ΔA_{2s}) and variations of tolerance of distance between centers of bolt holes (ΔJ_s)

Housing No.	ΔA_{2s}	ΔJ_s
SFL203EH1~SFL210EH1	± 0.5	± 0.3

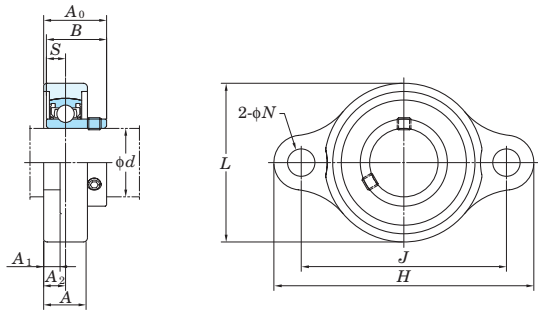
Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.	ΔN_s
SFL203EH1~SFL210EH1	± 0.2

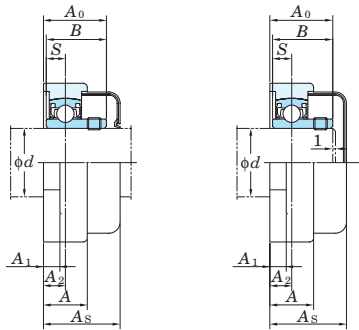
Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard Unit No.	Housing No.		Bearing No.	Mass kg	Basic Load Ratings kN C_r C_{0r}		Factor f_0	With Pressed Stainless Steel Cover Unit No. Open Type Closed Type		Dimension mm inch A_s	Mass kg
d		H	L	A	J	N	A_1	A_2	A_0	B	S													
12	1/2												UCSFL201XESH1S6 UCSFL201-8XESH1S6 UCSFL202XESH1S6 UCSFL202-10XESH1S6 UCSFL203XESH1S6	SFL203EH1		UC201XS6 UC201-8XS6 UC202XS6 UC202-10XS6 UC203XS6	0.33	8.15 3.85	13.2					
15	5/8	1 27/32	2 1/16	1 15/16	3	25/64	13/32	9/16	2 3/16	1.079	0.453	5/16												
17		98	52	24	76.2	10	10	14	29.9	27.4	11.5													
20	3/4	4 7/16	2 3/8	1 1/32	3 17/32	25/64	13/32	13/32	1 5/16	1.220	0.500	5/16	UCSFL204-12EH1S6 UCSFL204EH1S6	SFL204EH1		UC204-12S6 UC204S6	0.47	10.9 5.35	13.2					
25	7/8	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	UCSFL205-14EH1S6 UCSFL205-15EH1S6 UCSFL205EH1S6 UCSFL205-16EH1S6 UCSFL206-18EH1S6	SFL205EH1		UC205-14S6 UC205-15S6 UC205S6 UC205-16S6 UC206-18S6	0.61	11.9 6.30	13.9					
30	1 1/8	5 13/16	3 5/32	1 7/32	4 19/32	15/32	13/32	45/64	1 19/32	1.500	0.626	3/8	UCSFL206EH1S6 UCSFL206-19EH1S6 UCSFL206-20EH1S6	SFL206EH1		UC206S6 UC206-19S6 UC206-20S6	0.9	16.5 9.05	13.9					
35	1 1/4	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	UCSFL207-20EH1S6 UCSFL207-21EH1S6 UCSFL207-22EH1S6 UCSFL207EH1S6 UCSFL207-23EH1S6	SFL207EH1		UC207-20S6 UC207-21S6 UC207-22S6 UC207S6 UC207-23S6	1.1	21.8 12.3	13.9					
40	1 1/2	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	UCSFL208-24EH1S6 UCSFL208-25EH1S6 UCSFL208EH1S6	SFL208EH1		UC208-24S6 UC208-25S6 UC208S6	1.4	24.8 14.3	14.0					
45	1 5/8	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	UCSFL209-26EH1S6 UCSFL209-27EH1S6 UCSFL209-28EH1S6 UCSFL209EH1S6	SFL209EH1		UC209-26S6 UC209-27S6 UC209-28S6 UC209S6	1.6	27.8 16.2	14.0					
50	1 7/8	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	UCSFL210-30EH1S6 UCSFL210-31EH1S6 UCSFL210EH1S6 UCSFL210-32EH1S6	SFL210EH1		UC210-30S6 UC210-31S6 UC210S6 UC210-32S6	1.9	29.8 18.6	14.4					

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See Table 10.5 in P.51.)
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 (ΔA_{2s}) and variations of tolerance of distance between centers of bolt holes (ΔJ_s)

Unit: mm		
Housing No.	ΔA_{2s}	ΔJ_s
SFL000-SFL006	±0.5	±0.3

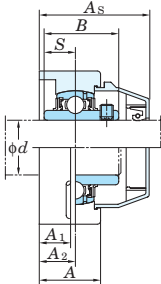
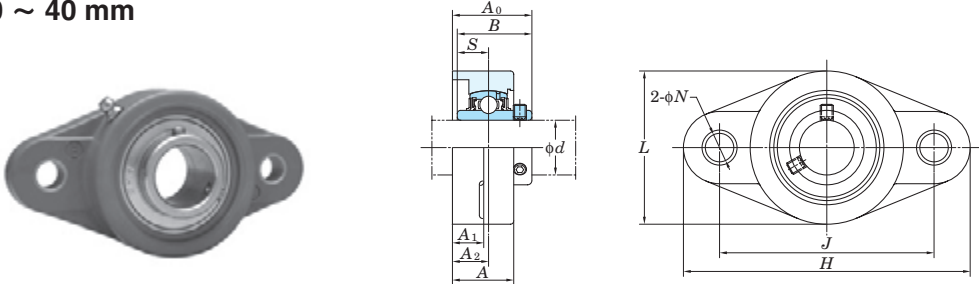
Variations of tolerance of bolt hole diameter (ΔN_s)

Unit: mm	
Housing No.	ΔN_s
SFL000-SFL006	±0.2

Shaft Dia. mm	Dimensions inch mm										Bolt Size inch mm	Standard				Mass kg	Basic Load Ratings kN		Factor <i>f</i> ₀	With Rubber Coated Cover				Mass kg
	<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>	<i>S</i>		Unit No.	Housing No.	Bearing No.	Unit No.		Dimension mm inch							
															Open Type		Closed Type	<i>A</i> _s						
<i>d</i>																<i>C</i> _r	<i>C</i> _{0r}							
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.51.)
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



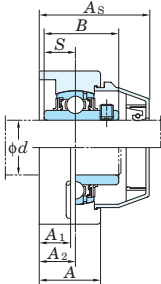
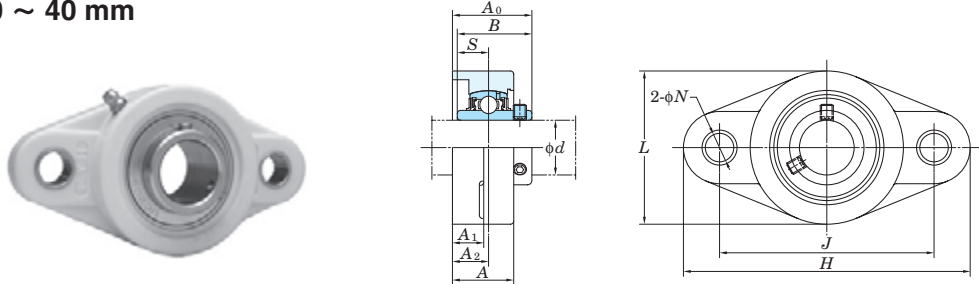
Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Housing No.	Unit: mm	
	ΔA_{2s}	X
VFL204~VFL208	±0.5	0.7

Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard				Mass kg	Basic Load Ratings kN		Factor f_0	With Plastic Cover					
		Unit No.	Housing No.	Bearing No.		Unit No.		Dimension mm inch A_s	Mass kg																	
Open Type	Closed Type																									
20	3/4	4 7/16 113	2 9/16 65	1 1/32 26.5	3 35/64 90	27/64 11	17/32 13.4	19/32 15	1 5/16 33.3	1.220 31	0.500 12.7	3/8 M8	UCVFL204-12S6 UCVFL204S6	VFL204	UC204-12S6 UC204S6	0.25	10.9	5.35	13.2	UCVFL204-12CS6 UCVFL204CS6	UCVFL204-12DS6 UCVFL204DS6	46.5	1 27/32	0.26		
	25	7/8 15/16	5 5/32 131	2 3/4 70	1 3/32 27.5	3 57/64 99	27/64 11	17/32 13.8	5/8 16	1 13/32 35.8	1.343 34.1	0.563 14.3	3/8 M8	UCVFL205-14S6 UCVFL205-15S6 UCVFL205S6 UCVFL205-16S6	VFL205	UC205-14S6 UC205-15S6 UC205S6 UC205-16S6	0.35	11.9	6.3	13.9	UCVFL205-14CS6 UCVFL205-15DS6 UCVFL205CS6 UCVFL205-16CS6	UCVFL205-14DS6 UCVFL205-15DS6 UCVFL205DS6 UCVFL205-16DS6	50.2	1 31/32	0.36	
30		1 1/8 1 3/16 1 1/4	5 13/16 148	3 5/32 80	1 3/16 30.5	4 39/64 117	27/64 11	9/16 14.3	45/64 18	1 19/32 40.2	1.500 38.1	0.626 15.9	3/8 M8	UCVFL206-18S6 UCVFL206S6 UCVFL206-19S6 UCVFL206-20S6	VFL206	UC206-18S6 UC206S6 UC206-19S6 UC206-20S6	0.49	16.5	9.05	13.9	UCVFL206-18CS6 UCVFL206CS6 UCVFL206-19CS6 UCVFL206-20CS6	UCVFL206-18DS6 UCVFL206DS6 UCVFL206-19DS6 UCVFL206-20DS6	57.5	1 1/4	0.50	
		35	1 1/4 1 5/16 1 3/8 1 7/16	6 15/32 164	3 17/32 90	1 1/4 32	5 1/8 130	33/64 13	5/8 15.5	3/4 19	1 3/4 44.4	1.689 42.9	0.689 17.5	7/16 M10	UCVFL207-20S6 UCVFL207-21S6 UCVFL207-22S6 UCVFL207S6 UCVFL207-23S6	VFL207	UC207-20S6 UC207-21S6 UC207-22S6 UC207S6 UC207-23S6	0.73	21.8	12.3	13.9	UCVFL207-20CS6 UCVFL207-21CS6 UCVFL207-22CS6 UCVFL207CS6 UCVFL207-23CS6	UCVFL207-20DS6 UCVFL207-21DS6 UCVFL207-22DS6 UCVFL207DS6 UCVFL207-23DS6	61.2	2 13/32	0.75
			40	1 1/2 1 9/16	6 15/16 176	3 15/16 100	1 11/32 34.5	5 43/64 144	35/64 14	21/32 16.5	53/64 21	2 1/32 51.2	1.937 49.2	0.748 19	1/2 M12	UCVFL208-24S6 UCVFL208-25S6 UCVFL208S6	VFL208	UC208-24S6 UC208-25S6 UC208S6	0.92	24.8	13.3	14.0	UCVFL208-24CS6 UCVFL208-25CS6 UCVFL208CS6	UCVFL208-24DS6 UCVFL208-25DS6 UCVFL208DS6	69.2	2 23/32

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
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.

UCVFL-ES7
Cylindrical bore (with set screws)
d 20 ~ 40 mm

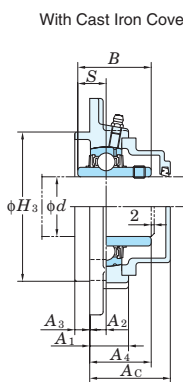
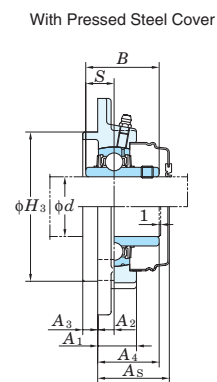
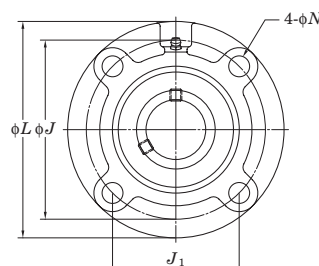
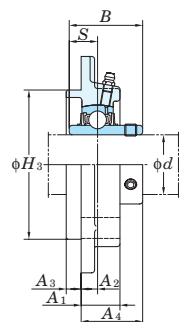


Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Housing No.	Unit: mm	
	ΔA_{2s}	X
VFL204E-VFL208E	±0.5	0.7

Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard				Mass kg	Basic Load Ratings kN		Factor <i>f</i> ₀	With Plastic Cover																		
		<i>d</i>	<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>		<i>S</i>	Unit No.	Housing No.	Bearing No.		Unit No.	Housing No.		Bearing No.	Mass kg	<i>C</i> _r	<i>C</i> _{0r}	<i>f</i> ₀	Unit No.		Dimension mm inch		Mass kg									
Open Type	Closed Type											<i>A</i> _s																											
20	3/4	4 7/16 113	2 9/16 65	1 1/32 26.5	3 35/64 90	7/16 11	17/32 13.4	19/32 15	1 5/16 33.3	1.220 31	0.500 12.7	3/8 M8	UCVFL204-12ES7 UCVFL204ES7	VFL204E	UC204-12S7 UC204S7	0.25	12.8	6.65	13.2	UCVFL204-12ECS7 UCVFL204ECS7	UCVFL204-12EDS7 UCVFL204EDS7	46.5	1 27/32	0.26															
	25	7/8 15/16	5 5/32 131	2 3/4 70	1 3/32 27.5	3 57/64 99	33/64 13	17/32 13.8	5/8 16	1 13/32 35.8	1.343 34.1	0.563 14.3	7/16 M10	UCVFL205-14ES7 UCVFL205-15ES7 UCVFL205ES7 UCVFL205-16ES7	VFL205E					UC205-14S7 UC205-15S7 UC205S7 UC205-16S7	0.35				14.0	7.85	13.9	UCVFL205-14ECS7 UCVFL205-15ECS7 UCVFL205ECS7 UCVFL205-16ECS7	UCVFL205-14EDS7 UCVFL205-15EDS7 UCVFL205EDS7 UCVFL205-16EDS7	50.2	1 31/32	0.36							
1		5 13/16 148	3 5/32 80	1 3/16 30.5	4 39/64 117	33/64 13	9/16 14.3	45/64 18	1 19/32 40.2	1.500 38.1	0.626 15.9	7/16 M10	UCVFL206-18ES7 UCVFL206ES7 UCVFL206-19ES7 UCVFL206-20ES7	VFL206E	UC206-18S7 UC206S7 UC206-19S7 UC206-20S7	0.49	19.5	11.3	13.9	UCVFL206-18ECS7 UCVFL206ECS7 UCVFL206-19ECS7 UCVFL206-20ECS7		UCVFL206-18EDS7 UCVFL206EDS7 UCVFL206-19EDS7 UCVFL206-20EDS7	57.5	1 1/4				0.50											
		1 1/4	6 15/32 164	3 17/32 90	1 1/4 32	5 1/8 130	35/64 14	5/8 15.5	3/4 19	1 3/4 44.4	1.689 42.9	0.689 17.5	1/2 M12	UCVFL207-20ES7 UCVFL207-21ES7 UCVFL207-22ES7 UCVFL207ES7 UCVFL207-23ES7	VFL207E					UC207-20S7 UC207-21S7 UC207-22S7 UC207S7 UC207-23S7		0.73							25.7				15.4	13.9	UCVFL207-20ECS7 UCVFL207-21ECS7 UCVFL207-22ECS7 UCVFL207ECS7 UCVFL207-23ECS7	UCVFL207-20EDS7 UCVFL207-21EDS7 UCVFL207-22EDS7 UCVFL207EDS7 UCVFL207-23EDS7	61.2	2 13/32	0.75
		1 7/16	6 15/16 176	3 15/16 100	1 11/32 34.5	5 43/64 144	35/64 14	21/32 16.5	53/64 21	2 1/32 51.2	1.937 49.2	0.748 19	1/2 M12	UCVFL208-24ES7 UCVFL208-25ES7 UCVFL208ES7	VFL208E					UC208-24S7 UC208-25S7 UC208S7															0.92	29.1			

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
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.

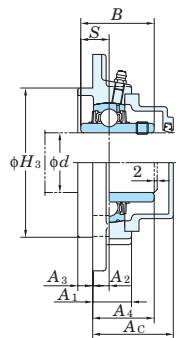
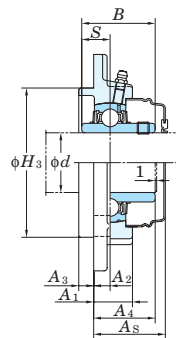
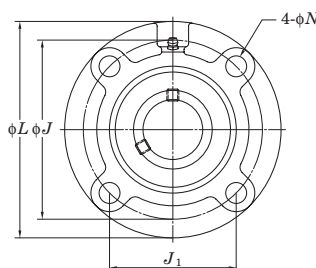
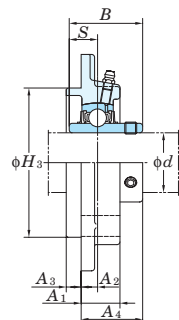


Variations of tolerance of bolt hole diameter (Δ_{Ns})

Housing No.		Δ_{Ns}
FC204~FC218	FCX05~FCX20	+0.2

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
 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), accessory 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.

Cylindrical bore (with set screws)
 d 55 ~ 100 mm



Variations of tolerance of bolt hole diameter (Δ_{Ns})

Housing No.		ΔH_{3s}	ΔA_{2s}	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			
	FCX20	0 -0.072			

Housing No.		Δ_{Ns}
FC204~FC218	FCX05~FCX20	+0.2

Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Standard				Mass kg	Basic Load Ratings kN		Factor <i>f</i> ₀	With Pressed Steel Cover				With Cast Iron Cover			
		Unit No.	Housing No.	Bearing No.		C _r	C _{0r}	Unit No. Open Type Closed Type		Dimension mm inch		Mass kg		Unit No. Open Type Closed Type		Dimension mm inch			Mass kg										
<i>d</i>	<i>L</i>							<i>H</i> ₃	<i>J</i>	<i>J</i> ₁	<i>N</i>		<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₃	<i>A</i> ₄	<i>B</i>	<i>S</i>		UCFC	UCX	UCFC	UCX	UCFC	UCX	A _s	A _c		
55	2	7 9/32 185	4.9213 125	5 29/32 150	4 11/64 106.1	3/4 19	1 7/32 31	33/64 13	15/32 12	1 13/16 46.4	2.189 55.6	0.874 22.2	5/8 M16	UCFC211-32	FC211	UC211-32	4.2 43.4 29.4	14.4	—	—	—	—	—	—	—	—	—	—	
	UCFC211-34													UC211-34		—			—	—	—	—	—	—	—				
	UCFC211													UC211		UCFC211C			UCFC211D	51	2	4.2	UCFC211FC	UCFC211FD	62.5	2 15/32	4.8		
	UCFC211-35													UC211-35		—			—	—	—	—	—	—	—				
60	2 3/16	7 3/32 180	5 127	5 63/64 152	4 15/64 107.5	5/8 16	1 1/32 26	5/32 4	55/64 22	1 23/32 43.7	2.563 65.1	1.000 25.4	1/2 M14	UCFCX11	FCX11	UCX11	4.3 52.4 36.2	14.4	UCFCX11C	UCFCX11D	46	1 13/16	4.3	—	—	—	—		
	UCFCX11-35													UCX11-35		—			—	—	—	—	—	—	—				
	UCFCX11-36													UCX11-36		—			—	—	—	—	—	—	—				
	UCFC212-36													UC212-36		—			—	—	—	—	—	—	—				
65	2 3/8	7 11/16 195	5.3150 135	6 19/64 160	4 29/64 113.1	3/4 19	1 13/32 36	43/64 17	15/32 12	2 7/32 56.7	2.563 65.1	1.000 25.4	5/8 M16	UCFC212	FC212	UC212	5.0 52.4 36.2	14.4	UCFC212C	UCFC212D	61	2 13/32	5.0	UCFC212FC	UCFC212FD	74	2 29/32	5.8	
	UCFC212-38													UC212-38		—			—	—	—	—	—	—	—				
	UCFC212-39													UC212-39		—			—	—	—	—	—	—	—				
	UCFCX12													UCX12		—			—	—	—	—	—	—	—				
70	2 7/16	7 5/8 194	5.5118 140	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	UCFCX12-39	FCX12	UCX12-39	5.3 57.2 40.1	14.4	UCFCX12C	UCFCX12D	55	2 5/32	5.3	—	—	—	—		
	UCFC213-40													UC213-40		—			—	—	—	—	—	—	—				
	UCFC213													UC213		UCFC213C			UCFC213D	60	2 3/8	5.6	UCFC213FC	UCFC213FD	73	2 7/8	6.4		
	UCFCX13-40													UCX13-40		—			—	—	—	—	—	—	—				
75	2 1/2	8 1/16 205	5.7087 145	6 11/16 170	4 47/64 120.2	3/4 19	1 13/32 36	5/8 16	35/64 14	2 3/16 55.7	2.563 65.1	1.000 25.4	5/8 M16	UCFC213	FC213	UC213	5.6 57.2 40.1	14.4	—	—	—	—	—	—	—	—	—		
	UCFCX13-40													UCX13-40		—			—	—	—	—	—	—	—				
	UCFCX13													UCX13		UCFCX13C			UCFCX13D	60	2 3/8	5.7	—	—	—	—			
	UCFC214-44													UC214-44		—			—	—	—	—	—	—	—				
80	2 3/4	8 15/32 215	5.9055 150	6 31/32 177	4 59/64 125.1	3/4 19	1 9/16 40	43/64 17	35/64 14	2 13/32 61.4	2.937 74.6	1.189 30.2	5/8 M16	UCFC214	FC214	UC214	6.8 62.2 44.1	14.5	UCFC214C	UCFC214D	66	2 19/32	6.8	UCFC214FC	UCFC214FD	79	3 1/8	7.7	
	UCFCX14-44													UCX14-44		—			—	—	—	—	—	—	—				
	UCFCX14													UCX14		UCFCX14C			UCFCX14D	63	2 15/32	7.3	—	—	—	—			
	UCFC215-47													UC215-47		—			—	—	—	—	—	—	—				
85	3	8 21/32 220	6.2992 160	7 1/4 184	5 1/8 130.1	3/4 19	1 9/16 40	45/64 18	5/8 16	2 15/32 62.5	3.063 77.8	1.331 33.3	5/8 M16	UCFC215	FC215	UC215	7.2 67.4 48.3	14.5	UCFC215C	UCFC215D	67	2 5/8	7.2	UCFC215FC	UCFC215FD	80	3 5/32	8.2	
	UCFC215-48													UC215-48		—			—	—	—	—	—	—	—				
	UCFCX15-47													UCX15-47		—			—	—	—	—	—	—	—				
	UCFCX15													UCX15		—			—	—	—	—	—	—	—				
90	3 1/8	8 3/4 222	6.4567 164	7 3/16 190	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	UCFCX15-48	FCX15	UCX15-48	8.0 72.7 53.0	14.6	UCFCX15C	UCFCX15D	66	2 19/32	8.0	—	—	—	—		
	UCFC216-50													UC216-50		—			—	—	—	—	—	—	—				
	UCFCX16													UCX16		UCFCX16C			UCFCX16D	72	2 27/32	8.7	UCFC216FC	UCFC216FD	87	3 7/16	9.9		
	UCFC217-52													UC217-52		—			—	—	—	—	—	—	—				
95	—	10 1/4 260	7.3228 186	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	UCFCX16	FCX16	UCX16	11.3 84.0 61.9	14.5	—	—	—	—	—	—	—	—	—		
	UCFC217-52													UC217-52		—			—	—	—	—	—	—	—				
	UCFCX17													UCX17		UCFCX17C			UCFCX17D	71	2 25/32	12.9	—	—	—	—			
	UCFCX17-55													UCX17-55		—			—	—	—	—	—	—	—				
100	3 1/4	10 7/16 265	7.4803 190	8 21/32 220	6 1/8 155.5	29/32 23	1 31/32 50	55/64 22	45/64 18	3 3/32 78.3	3.780 96	1.563 39.7	3/4 M20	UCFC218-56	FC218	UC218-56	13.3 96.1 71.5	14.5	—	—	—	—	—	—	—	—	—		
	UCFC218													UC218		UCFC218C			UCFC218D	83	3 9/32	13.3	UCFC218FC	UCFC218FD	98	3 27/32	14.8		
	UCFCX18													UCX18		—			—	—	—	—	—	—	—				
	UCFCX18													UCX18		—			—	—	—	—	—	—	—				
105	3 1/2	10 1/4 260	7.3228 186	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	UCFCX18	FCX18	UCX18	13.5 109 81.9	14.4	—	—	—	—	—	—	—	—	—		
	UCFCX18													UCX18		—			—	—	—	—	—	—	—				
	UCFCX18													UCX18		—			—	—	—	—	—	—	—				
	UCFCX18													UCX18		—			—	—	—	—	—	—	—				
110	4	10 7/8 276	8.1102 206	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	UCFCX20	FCX20	UCX20	18.2 133 105	14.4	—	—	—	—	—	—	—	—	—		
	UCFCX20-63													UCX20-63		—			—	—	—	—	—	—	—				
	UCFCX20-64													UCX20-64		—			—	—	—	—	—	—	—				
	UCFCX20													UCX20		—			—	—	—	—	—	—	—				

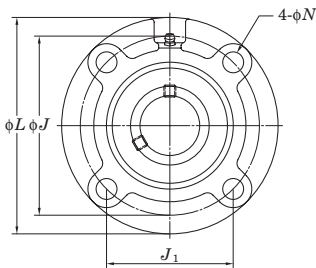
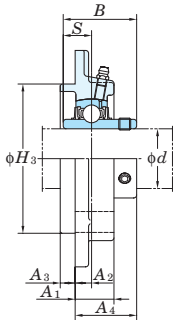
3. As for the triple seal type product (from 201 to 205 are the double seal type products), accessory code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UCFC206JL3, UC206L3)

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.

Castings of nodular graphite cast iron are also available.

UCFCX-E
Cylindrical bore (with set screws)
d 25 ~ 100 mm



Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor	Mass
d		L	H ₃	J	J ₁	N	A ₁	A ₂	A ₃	A ₄	B	S					C _r	C _{0r}	f ₀	kg
25	1	4 3/8	3.000	3 5/8	2 9/16	3/8	15/16	25/64	15/64	1 9/32	1.500	0.626	5/16	UCFCX05E UCFCX05E-16	FCX05E	UCX05 UCX05-16	19.5	11.3	13.9	1.2
		111	76.2	92	65	9.5	24	10	6	32.2	38.1	15.9	M8							
30	1 3/16 1 1/4	5	3.375	4 9/64	2 59/64	15/32	7/8	5/16	3/8	1 5/16	1.689	0.689	3/8	UCFCX06E UCFCX06E-19 UCFCX06E-20	FCX06E	UCX06 UCX06-19 UCX06-20	25.7	15.4	13.9	1.5
		127	85.725	105	74.2	12	22.5	8	9.5	33.4	42.9	17.5	M10							
35	1 3/8 1 7/16	5 1/4	3.625	4 3/8	3 3/32	15/32	1 1/32	23/64	7/16	1 17/32	1.937	0.748	3/8	UCFCX07E-22 UCFCX07E UCFCX07E-23	FCX07E	UCX07-22 UCX07 UCX07-23	29.1	17.8	14.0	1.9
		133	92.075	111	78.5	12	26	9	11	39.2	49.2	19	M10							
40	1 1/2	5 1/4	3.625	4 3/8	3 3/32	15/32	1 1/32	23/64	7/16	1 17/32	1.937	0.748	3/8	UCFCX08E-24 UCFCX08E	FCX08E	UCX08-24 UCX08	34.1	21.3	14.0	2.0
45	1 3/4	6 3/32	4.250	5 1/8	3 5/8	35/64	31/32	5/16	15/32	1 19/32	2.031	0.748	7/16	UCFCX09E-28 UCFCX09E	FCX09E	UCX09-28 UCX09	35.1	23.3	14.4	2.6
		155	107.95	130	91.9	14	25	8	12	40.6	51.6	19	M12							
50	1 15/16 2	6 3/8	4.5	5 23/64	3 25/32	35/64	31/32	9/32	5/8	1 19/32	2.189	0.874	7/16	UCFCX10E-31 UCFCX10E UCFCX10E-32	FCX10E	UCX10-31 UCX10 UCX10-32	43.4	29.4	14.4	3.2
		162	114.3	136	96.2	14	25	7	16	40.4	55.6	22.2	M12							
60	2 7/16	7 5/8	5.500	6 1/2	4 19/32	5/8	1 5/16	7/16	25/32	2	2.563	1.000	1/2	UCFCX12E UCFCX12E-39	FCX12E	UCX12 UCX12-39	57.2	40.1	14.4	5.3
65	2 1/2	7 5/8	5.500	6 1/2	4 19/32	5/8	1 5/16	7/16	25/32	2 3/16	2.937	1.189	1/2	UCFCX13E-40 UCFCX13E	FCX13E	UCX13-40 UCX13	62.2	44.1	14.5	5.7
		194	139.7	165	116.7	16	33	11	20	55.4	74.6	30.2	M14							
70	2 3/4	8 3/4	6.375	7 31/64	5 9/32	3/4	1 13/32	35/64	25/32	2 5/16	3.063	1.331	5/8	UCFCX14E-44 UCFCX14E	FCX14E	UCX14-44 UCX14	67.4	48.3	14.5	7.3
		222	161.925	190	134.3	19	36	14	20	58.5	77.8	33.3	M16							
75	2 15/16 3	8 3/4	6.375	7 31/64	5 9/32	3/4	1 3/8	15/32	55/64	2 13/32	3.252	1.311	5/8	UCFCX15E-47 UCFCX15E UCFCX15E-48	FCX15E	UCX15-47 UCX15 UCX15-48	72.7	53.0	14.6	8.0
		222	161.925	190	134.3	19	35	12	22	61.3	82.6	33.3	M16							
80	—	10 1/4	7.375	8 5/8	6 3/32	29/32	1 13/32	25/64	63/64	2 7/16	3.374	1.343	3/4	UCFCX16E	FCX16E	UCX16	84.0	61.9	14.5	11.3
85	3 7/16	10 1/4	7.375	8 5/8	6 3/32	29/32	1 13/32	25/64	63/64	2 5/8	3.780	1.563	3/4	UCFCX17E UCFCX17E-55	FCX17E	UCX17 UCX17-55	96.1	71.5	14.5	12.9
		260	187.325	219	154.8	23	36	10	25	66.3	96	39.7	M20							
90	—	10 1/4	7.375	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	UCFCX18E	FCX18E	UCX18	109	81.9	14.4	13.5
		260	187.325	219	154.8	23	43	12	28	73.1	104	42.9	M20							
100	3 15/16 4	10 7/8	8.125	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	UCFCX20E UCFCX20E-63 UCFCX20E-64	FCX20E	UCX20 UCX20-63 UCX20-64	133	105	14.4	18.2
		276	206.375	238	168.3	23	66	22	28	90.3	117.5	49.2	M20							

Remarks 1. In Part No. of unit, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
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 (from 201 to 205 are the double seal type products), accessory code L3 (L2) 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.

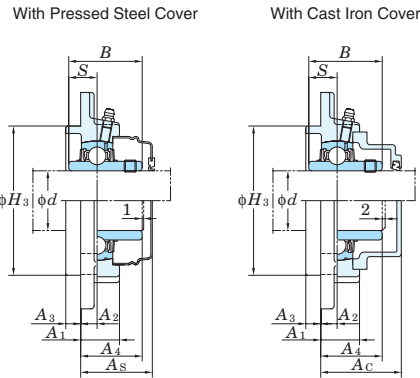
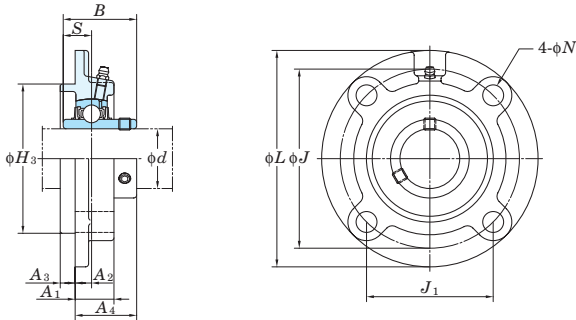
Variations of tolerance of spigot joint outside diameter (ΔH_{3s}), variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}), tolerance of position of bolt hole (X), and tolerance of circumferential runout of spigot joint (Y)

Unit: mm				
Housing No.	ΔH_{3s}	ΔA_{2s}	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 (ΔN_s)

Unit: mm	
Housing No.	ΔN_s
FCX05E~FCX20E	±0.2

UCFCF
Cylindrical bore
(with set screw locking)
d 25 ~ 55 mm



Variations of tolerance of spigot joint outside diameter (Δ_{H3s}), 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_{H3s}	Δ_{A2s}	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_{N6})

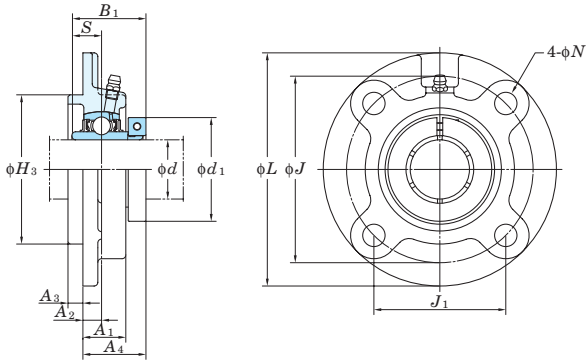
Unit: mm	
Housing No.	Δ_{N6}
FCF205~FCF211	±0.2

Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Standard			Mass kg	Basic Load Ratings kN		Factor f_0
d		L	H_3	J	J_1	N	A_1	A_2	A_3	A_4	B	S	Unit No.	Housing No.	Bearing No.	C_r		C_{0r}		
25	$\frac{7}{8}$ $\frac{15}{16}$	$4\frac{3}{8}$ 111	3 76.2	$3\frac{5}{8}$ 92.1	$2\frac{9}{16}$ 65.1	$\frac{13}{32}$ 10.5	$\frac{7}{8}$ 22.1	$\frac{7}{16}$ 11.1	$\frac{1}{4}$ 6.4	$1\frac{7}{32}$ 30.9	1.343 34.1	0.563 14.3	$\frac{5}{16}$ M8	UCFCF205-14 UCFCF205-15 UCFCF205 UCFCF205-16	FCF205	UC205-14 UC205-15 UC205 UC205-16	1.2	14.0	7.85	13.9
	1																			
30	$1\frac{1}{8}$ $1\frac{3}{16}$ $1\frac{1}{4}$	5 127	3.375 85.725	$4\frac{1}{8}$ 104.8	$2\frac{29}{32}$ 74.1	$\frac{15}{32}$ 12	$\frac{25}{32}$ 20	$\frac{19}{64}$ 7.5	$\frac{27}{64}$ 10.5	$1\frac{5}{32}$ 29.7	1.500 38.1	0.626 15.9	$\frac{7}{16}$ M10	UCFCF206-18 UCFCF206 UCFCF206-19 UCFCF206-20	FCF206	UC206-18 UC206 UC206-19 UC206-20	1.8	19.5	11.3	13.9
35	$1\frac{1}{4}$ $1\frac{5}{16}$ $1\frac{3}{8}$ $1\frac{7}{16}$	$5\frac{1}{4}$ 133	3.625 92.075	$4\frac{3}{8}$ 111.1	$3\frac{3}{32}$ 78.6	$\frac{15}{32}$ 12	$\frac{7}{8}$ 22.2	$\frac{9}{32}$ 7.1	$\frac{15}{32}$ 11.9	$1\frac{9}{32}$ 32.5	1.689 42.9	0.689 17.5	$\frac{7}{16}$ M10	UCFCF207-20 UCFCF207-21 UCFCF207-22 UCFCF207 UCFCF207-23	FCF207	UC207-20 UC207-21 UC207-22 UC207 UC207-23	1.8	25.7	15.4	13.9
40	$1\frac{1}{2}$ $1\frac{9}{16}$	$5\frac{1}{4}$ 133	3.625 92.075	$4\frac{3}{8}$ 111.1	$3\frac{3}{32}$ 78.6	$\frac{15}{32}$ 12	$1\frac{1}{32}$ 26.1	$\frac{3}{8}$ 9.5	$\frac{15}{32}$ 11.9	$1\frac{9}{16}$ 39.7	1.937 49.2	0.748 19	$\frac{7}{16}$ M10	UCFCF208-24 UCFCF208-25 UCFCF208	FCF208	UC208-24 UC208-25 UC208	2.1	29.1	17.8	14.0
45	$1\frac{5}{8}$ $1\frac{11}{16}$ $1\frac{3}{4}$	$6\frac{5}{32}$ 156	4.25 107.95	$5\frac{1}{8}$ 130.2	$3\frac{5}{8}$ 92.05	$\frac{17}{32}$ 13.5	$\frac{7}{8}$ 22	$\frac{7}{32}$ 5.5	$\frac{15}{32}$ 12	$1\frac{13}{32}$ 35.7	1.937 49.2	0.748 19	$\frac{1}{2}$ M12	UCFCF209-26 UCFCF209-27 UCFCF209-28 UCFCF209	FCF209	UC209-26 UC209-27 UC209-28 UC209	2.8	34.1	21.3	14.0
50	$1\frac{7}{8}$ $1\frac{15}{16}$ 2	$6\frac{3}{8}$ 162	4.5 114.3	$5\frac{3}{8}$ 136.5	$3\frac{51}{64}$ 96.5	$\frac{17}{32}$ 13.5	$1\frac{1}{16}$ 27.1	$\frac{11}{32}$ 8.7	$\frac{5}{8}$ 15.9	$1\frac{5}{8}$ 41.3	2.031 51.6	0.748 19	$\frac{1}{2}$ M12	UCFCF210-30 UCFCF210-31 UCFCF210 UCFCF210-32	FCF210	UC210-30 UC210-31 UC210 UC210-32	3.2	35.1	23.3	14.4
55	2 $2\frac{1}{8}$ $2\frac{3}{16}$	$7\frac{1}{8}$ 181	5 127	6 152.4	$4\frac{1}{4}$ 107.8	$\frac{19}{32}$ 15	$\frac{7}{8}$ 22.2	$\frac{7}{32}$ 5.5	$\frac{7}{8}$ 22.2	$1\frac{17}{32}$ 38.9	2.189 55.6	0.874 22.2	$\frac{1}{2}$ M14	UCFCF211-32 UCFCF211-34 UCFCF211 UCFCF211-35	FCF211	UC211-32 UC211-34 UC211 UC211-35	4.2	43.4	29.4	14.4

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
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), accessory 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.

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



Shaft Dia. mm inch		Dimensions inch mm												Bolt Size	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor	Mass
d		L	H ₃	J	J ₁	N	A ₁	A ₂	A ₃	A ₄	B ₁	S	d ₁	inch mm				C _r	C _{0r}	f ₀	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	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	NCFC205-14	FC205	NC205-14	14.0	7.85	13.9	1.15
		115	70	90	63.6	12	21	10	6	32.2	36.5	14.3	49.2	M10	NCFC205-15		NC205-15				
30	1 1/8	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	NCFC206-18	FC206	NC206-18	19.5	11.3	13.9	1.5
		125	80	100	70.7	12	23	10	8	33.8	39.7	15.9	55.6	M10	NCFC206		NC206				
35	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 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	NCFC207-22		NC207-22				
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	NCFC207-23	FC208	NC207-23	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	NCFC208-24		NC208-24				
45	1 5/8	6 5/16	4.1339	5 13/64	4 33/64	5/8	1 1/32	25/64	15/32	1 21/32	2	0.748	2 13/16	1/2	NCFC208	FC209	NC208	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	NCFC209-26		NC209-26				
50	1 11/16	6 5/16	4.1339	5 13/64	4 33/64	5/8	1 1/32	25/64	15/32	1 21/32	2	0.748	2 15/16	1/2	NCFC209-27	FC209	NC209-27	34.1	21.3	14.0	3.0
		160	105	132	93.3	16	26	10	12	41.8	50.8	19	74.6	M14	NCFC209-28		NC209-28				
55	2	7 9/32	4.3307	5 7/16	4 27/32	5/8	1 3/32	25/64	15/32	1 3/4	2 3/32	0.748	3 3/8	1/2	NCFC209	FC210	NC209-29	35.1	23.3	14.4	3.5
		185	125	150	106.1	19	31	13	12	47.9	57.1	22.2	88.9	M16	NCFC210-31		NC210-31				
60	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 1/2	5/8	NCFC210-32	FC211	NC210-32	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		NC211				
60	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 1/16	5/8	NCFC211-35	FC212	NC211-35	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	NCFC212-36		NC212-36				
60	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.51.)
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.

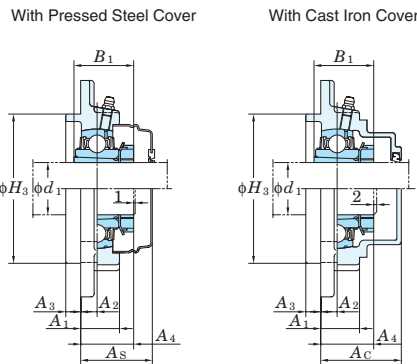
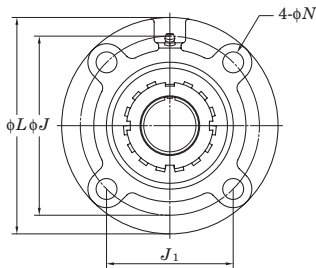
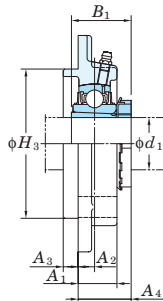
Variations of tolerance of spigot joint outside diameter (ΔH_{3s}), variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}), tolerance of position of bolt hole (X), and tolerance of circumferential runout of spigot joint (Y)
Unit: mm

Housing No.	ΔH_{3s}	ΔA_{2s}	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 (ΔN_s)
Unit: mm

Housing No.	ΔN_s
FC204-FC212	±0.2

UKFC
Tapered bore (with adapter)
d₁ 20 ~ 65 mm



Variations of tolerance of spigot joint outside diameter (ΔH_{3s}), variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}), tolerance of position of bolt hole (X), and tolerance of circumferential runout of spigot joint (Y)

Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.		ΔH_{3s}	ΔA_{2s}	X	Y
FC205-FC206	FCX05	0	±0.5	0.7	0.2
		-0.046			
FC207-FC210	FCX06-FCX10	0	±0.8	1	0.3
		-0.054			
FC211-FC217	FCX11-FCX15	0	±0.8	1	0.3
		-0.063			
FC218	FCX16-FCX18 FCX20	0	±0.8	1	0.4
		-0.072			

Housing No.		ΔN_s
FC204-FC218	FCX05-FCX20	±0.2

Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard				Adapter ¹⁾ No.	Mass	Basic		Factor	With Pressed Steel Cover				With Cast Iron Cover				
		Unit No.	Housing No.	Bearing No.		C _r	C _{0r}	f ₀	Unit No. Open Type Closed Type	Dimension mm inch	Mass		Unit No. Open Type Closed Type	Dimension mm inch	Mass															
d ₁		L	H ₃	J	J ₁	N	A ₁	A ₂	A ₃	A ₄ ¹⁾	B ₁ ¹⁾					kg	C _r	C _{0r}	f ₀											
20	3/4	4 17/32 115	2.7559 70	3 35/64 90	2 1/2 63.6	15/32 12	13/16 21	25/64 10	15/64 6	1 1/8(1 3/16) 28.5(30)	1 5/32(1 3/8) 29(35)	3/8 M10	UKFC205	FC205	UK205		0.99 0.99	14.0	7.85	13.9	—	—	—	—	—	—	—	—	—	—
																					UKFC205C	UKFC205D	34	1 11/32	0.99	UKFC205FC	UKFC205FD	43	1 21/32	1.2
	3/4	4 3/8 111	2.9921 76	3 5/8 92	2 9/16 65	3/8 9.5	15/16 24	25/64 10	15/64 6	1 9/32 29.5	1 3/8 35	5/16 M8	UKFCX05	FCX05	UKX05		1.2 1.2	19.5	11.3	13.9	—	—	—	—	—	—	—	—	—	—
25	1	4 29/32 125	3.1496 80	3 15/16 100	2 25/32 70.7	15/32 12	29/32 23	25/64 10	5/16 8	1 5/32(1 1/4) 29.5(31.5)	1 7/32(1 1/2) 31(38)	3/8 M10	UKFC206	FC206	UK206		1.3 1.3	19.5	11.3	13.9	UKFC206C	UKFC206D	36	1 13/32	1.3	UKFC206FC	UKFC206FD	45	1 25/32	1.6
																					—	—	—	—	—	—	—	—	—	
	1	5 127	3.3465 85	4 9/64 105	2 59/64 74.2	15/32 12	7/8 22.5	5/16 8	3/8 9.5	1 9/32 29	1 1/2 38	3/8 M10	UKFCX06	FCX06	UKX06		1.5 1.5	25.7	15.4	13.9	UKFCX06C	UKFCX06D	38	1 1/2	1.5	—	—	—	—	—
30	1 1/8	5 5/16 135	3.5433 90	4 21/64 110	3 1/16 77.8	35/64 14	1 1/32 26	7/16 11	5/16 8	1 5/16(1 3/8) 33(35)	1 3/8(1 11/16) 35(43)	7/16 M12	UKFC207	FC207	UK207		1.7 1.7	25.7	15.4	13.9	—	—	—	—	—	—	—	—	—	—
																					UKFC207C	UKFC207D	41	1 9/8	1.7	UKFC207FC	UKFC207FD	50	1 31/32	2.1
	1 1/8	5 1/4 133	3.6220 92	4 3/8 111	3 3/32 78.5	15/32 12	1 1/32 26	23/64 9	7/16 11	1 1/4 31.5	1 11/16 43	3/8 M10	UKFCX07	FCX07	UKX07		1.9 1.9	29.1	17.8	14.0	—	—	—	—	—	—	—	—	—	—
35	1 1/4 1 3/8	5 23/32 145	3.9370 100	4 23/32 120	3 11/32 84.8	35/64 14	1 1/32 26	7/16 11	25/64 10	1 11/32(1 1/2) 34.5(38)	1 13/32(1 13/16) 36(46)	7/16 M12	UKFC208	FC208	UK208		2.0 2.0 2.0	29.1	17.8	14.0	—	—	—	—	—	—	—	—	—	—
																					UKFC208C	UKFC208D	45	1 25/32	2.0	UKFC208FC	UKFC208FD	54	2 1/8	2.4
	1 1/4 1 3/8	5 1/4 133	3.6220 92	4 3/8 111	3 3/32 78.5	15/32 12	1 1/32 26	23/64 9	7/16 11	1 5/16 33.5	1 13/16 46	3/8 M10	UKFCX08	FCX08	UKX08		1.9 1.9 1.9	34.1	21.3	14.0	—	—	—	—	—	—	—	—	—	—
40	1 1/2	6 5/16 160	4.1339 105	5 13/64 132	3 43/64 93.3	5/8 16	1 1/32 26	25/64 10	15/32 12	1 13/32(1 17/32) 35.5(39)	1 17/32(1 31/32) 39(50)	1/2 M14	UKFC209	FC209	UK209		2.7 2.7	34.1	21.3	14.0	—	—	—	—	—	—	—	—	—	—
																					UKFC209C	UKFC209D	44	1 23/32	2.7	UKFC209FC	UKFC209FD	54	2 1/8	3.2
	1 1/2	6 3/32 155	4.2520 108	5 1/8 130	3 5/8 91.9	35/64 14	31/32 25	5/16 8	15/32 12	1 5/16 33.5	1 31/32 50	7/16 M12	UKFCX09	FCX09	UKX09		2.6 2.6	35.1	23.3	14.4	—	—	—	—	—	—	—	—	—	—
45	1 3/4	6 1/2 165	4.3307 110	5 7/16 138	3 27/32 97.6	5/8 16	1 3/32 28	25/64 10	15/32 12	1 7/16(1 9/16) 36.5(40)	1 21/32(2 5/32) 42(55)	1/2 M14	UKFC210	FC210	UK210		3.0 3.0	35.1	23.3	14.4	—	—	—	—	—	—	—	—	—	—
																					UKFC210C	UKFC210D	47	1 27/32	3.0	UKFC210FC	UKFC210FD	58.5	2 5/16	3.5
	1 3/4	6 3/8 162	4.6457 118	5 23/64 136	3 25/32 96.2	35/64 14	31/32 25	9/32 7	5/8 16	1 11/32 34.5	2 5/32 55	7/16 M12	UKFCX10	FCX10	UKX10		3.1 3.1	43.4	29.4	14.4	—	—	—	—	—	—	—	—	—	—
50	1 7/8 2	7 9/32 185	4.9213 125	5 29/32 150	4 11/64 106.1	3/4 19	1 7/32 31	33/64 13	15/32 12	1 5/8(1 25/32) 41(45.5)	1 25/32(2 5/16) 45(59)	5/8 M16	UKFC211	FC211	UK211		4.3 4.3 4.3	43.4	29.4	14.4	—	—	—	—	—	—	—	—	—	—
																					UKFC211C	UKFC211D	51	2	4.3	UKFC211FC	UKFC211FD	62.5	2 15/32	4.9
	1 7/8 2	7 3/32 180	5 127	5 63/64 152	4 15/64 107.5	5/8 16	1 1/32 26	5/32 4	55/64 22	1 5/16 33	2 5/16 59	1/2 M14	UKFCX11	FCX11	UKX11		4.0 4.0 4.0	52.4	36.2	14.4	—	—	—	—	—	—	—	—	—	—
55	2 1/8	7 11/16 195	5.3150 135	6 19/64 160	4 29/64 113.1	3/4 19	1 13/32 36	43/64 17	15/32 12	1 27/32(2 3/32) 46.5(53.5)	1 27/32(2 7/16) 47(62)	5/8 M16	UKFC212	FC212	UK212		4.9 4.9	52.4	36.2	14.4	—	—	—	—	—	—	—	—	—	—
																					UKFC212C	UKFC212D	61	2 13/32	4.9	UKFC212FC	UKFC212FD	74	2 29/32	5.7
	2 1/8	7 5/8 194	5.5118 140	6 1/2 165	4 19/32 116.7	5/8 16	1 5/16 33	7/16 11	25/32 20	1 21/32 42	2 7/16 62	1/2 M14	UKFCX12	FCX12	UKX12		5.1 5.1	57.2	40.1	14.4	—	—	—	—	—	—	—	—	—	—
60	2 1/4	8 1/16 205	5.7087 145	6 11/16 170	4 47/64 120.2	3/4 19	1 13/32 36	5/8 16	35/64 14	1 7/8(2 3/32) 48(53.5)	1 31/32(2 9/16) 50(65)	5/8 M16	UKFC213	FC213	UK213		5.5 5.5 5.5	57.2	40.1	14.4	—	—	—	—	—	—	—	—	—	—
																					UKFC213C	UKFC213D	60	2 3/8	5.5	UKFC213FC	UKFC213FD	73	2 7/8	6.4
	2 1/4 2 3/8	7 5/8 194	5.5118 140	6 1/2 165	4 19/32 116.7	5/8 16	1 5/16 33	7/16 11	25/32 20	1 25/32 45	2 9/16 65	1/2 M14	UKFCX13	FCX13	UKX13		5.3 5.3 5.3	62.2	44.1	14.5	—	—	—	—	—	—	—	—	—	—
65	2 1/2	8 21/32 220	6.2992 160	7 1/4 184	5 1/8 130.1	3/4 19	1 9/16 40	45/64 18	5/8 16	2 3/32(2 5/16) 53(58.5)	2 5/32(2 7/8) 55(73)	5/8 M16	UKFC215	FC215	UK215		7.4 7.4	67.4	48.3	14.5	—	—	—	—	—	—	—	—	—	—
																					UKFC215C	UKFC215D	67	2 5/8	7.4	UKFC215FC	UKFC215FD	80	3 5/32	8.4
	2 1/2	8 3/4 222	6.4567 164	7 31/64 190	5 9/32 134.3	3/4 19	1 3/8 35	15/32 12	55/64 22	1 7/8 48	2 7/8 73	5/8 M16	UKFCX15	FCX15	UKX15		7.7 7.7	72.7	53.0	14.6	—	—	—	—	—	—	—	—	—	—

Note 1) Codes shown in parentheses indicate the dimensions and Part No. of applicable adapter (H2300X series) for UK200L3 series (triple seal type).

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 + H306X, UK206 + H306X)

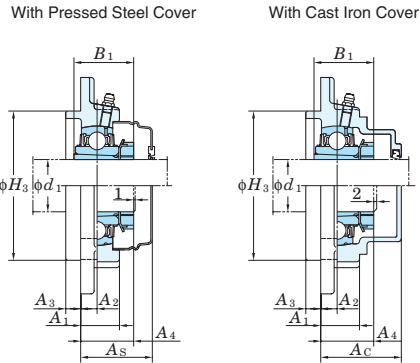
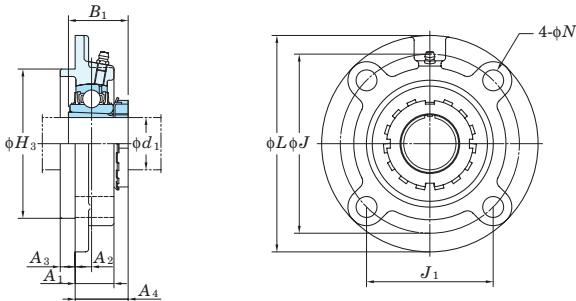
4. As for the triple seal type product (205 is the double seal type product), accessory code L3 (or L2) follows the Part No. of unit or bearing.
(Example of Part No. : UKFC206JL3 + H2306X, UK206L3 + H2306X)

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.

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)

UKFC
Tapered bore (with adapter)
d₁ 70 ~ 90 mm



Variations of tolerance of spigot joint outside diameter (ΔH_{3s}), variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}), tolerance of position of bolt hole (X), and tolerance of circumferential runout of spigot joint (Y)

Housing No.		ΔH_{3s}	ΔA_{2s}	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 FCX20	0 -0.072			0.4

Unit: mm

Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.		ΔN_s
FC204-FC218	FCX05-FCX20	±0.2

Unit: mm

Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard				Adapter ¹⁾ No.	Mass kg	Basic		Factor <i>f</i> ₀	With Pressed Steel Cover				With Cast Iron Cover					
		<i>L</i>	<i>H</i> ₃	<i>J</i>	<i>J</i> ₁	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₃	<i>A</i> ₄ ¹⁾	<i>B</i> ₁ ¹⁾		Unit No.	Housing No.	Bearing No.				<i>C</i> _r	<i>C</i> _{0r}		Load Ratings kN		Unit No.		Dimension mm inch	Mass kg	Unit No.		Dimension mm inch	Mass kg
																						Open Type	Closed Type	Open Type	Closed Type			Open Type	Closed Type		
<i>d</i> ₁																															
70	2 ¾	9 7/16	6.6929	7 7/8	5 9/16	29/32	1 31/32	45/64	5/8	2 7/32(2 15/32)	2 5/16(3 1/16)	¾	UKFC216	FC216	UK216		HE316X(HE2316X) H316X(H2316X)	9.0 9.0	72.7 53.0	14.6	— —	— —	— —	— —	— —	— —	— —	— —			
		240	170	200	141.4	23	42	18	16	56(62.5)	59(78)	M20					HE2316X H2316X	11.4 11.4	84.0 61.9	14.5	UKFC216C UKFC216D	72 2 27/32	9.0	UKFC216FC UKFC216FD	87 3 7/16	10.3					
	2 ¾	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	¾	UKFCX16	FCX16	UKX16																
75		9 27/32	7.0866	8 3/16	5 51/64	29/32	1 25/32	45/64	45/64	2 9/32(3 17/32)	2 15/32(3 7/32)	¾	UKFC217	FC217	UK217		H317X(H2317X) HE317X(HE2317X)	10.4 10.4	84.0 61.9	14.5	UKFC217C UKFC217D	74 2 29/32	10.4	UKFC217FC UKFC217FD	89 3 1/2	11.8					
	3	250	180	208	147.1	23	45	18	18	58(64.5)	63(82)	M20																			
		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	¾	UKFCX17	FCX17	UKX17		H2317X HE2317X	12.6 12.6	96.1 71.5	14.5	UKFCX17C UKFCX17D	71 2 25/32	12.6	— —	— —	— —					
80		10 7/16	7.4803	8 21/32	6 1/8	29/32	1 31/32	55/64	45/64	2 17/32(2 13/16)	2 9/16(3 3/8)	¾	UKFC218	FC218	UK218		H318X(H2318X)	13.3	96.1 71.5	14.5	UKFC218C UKFC218D	83 3 9/32	13.3	UKFC218FC UKFC218FD	98 3 27/32	14.9					
	—	265	190	220	155.5	23	50	22	18	64(71.5)	65(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	¾	UKFCX18	FCX18	UKX18		H2318X	13.0	109 81.9	14.4	— —	— —	— —	— —	UKFCX18C UKFCX18D	92 3 5/8	15.1				
90		260	186	219	154.8	23	43	12	28	55	86	M20																			
	3 ½	10 7/8	8.1102	9 3/8	6 5/8	29/32	2 19/32	55/64	1 7/64	2 23/32	3 13/16	¾	UKFCX20	FCX20	UKX20		HE2320X H2320X	17.1 17.1	133 105	14.4	— —	— —	— —	— —	— —	— —	— —				
		276	206	238	168.3	23	66	22	28	69	97	M20																			

Note 1) Codes shown in parentheses indicate the dimensions and Part No. of applicable adapter (H2300X series) for UK200L3 series (triple seal type).

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)

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 + H306X, UK206 + H306X)

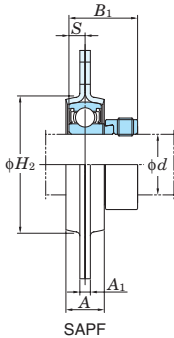
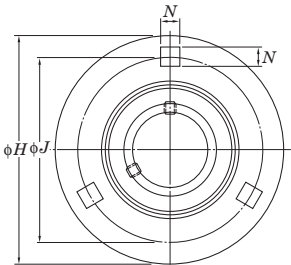
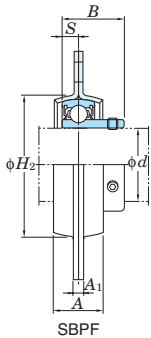
4. As for the triple seal type product (205 is the double seal type product), accessory code L3 (or L2) follows the Part No. of unit or bearing.

(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.

SBPF
Cylindrical bore
(with set screw locking)
SAPF
Cylindrical bore
(with eccentric locking collar)
d 12 ~ 35 mm



Variations of tolerance of distance between centers of bolt holes (Δ_{LH})	
Unit: mm	
Housing No.	Δ_{LH}
PF203~PF207	±0.4

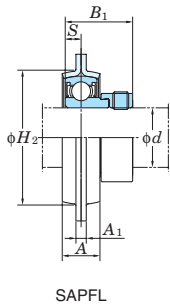
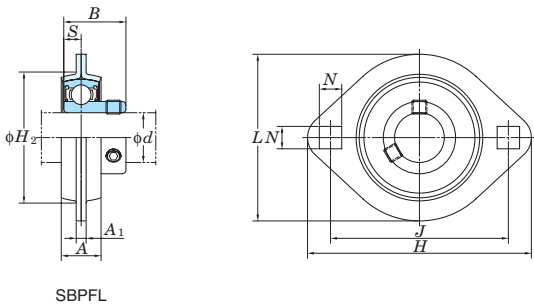
Variations of tolerance of bolt hole diameter (Δ_{Ns})	
Unit: mm	
Housing No.	Δ_{Ns}
PF203~PF207	±0.25

Shaft Dia mm inch		Dimensions inch mm								SBPF <i>B</i>	SAPF <i>B</i> ₁	Bolt Size inch mm	Unit No.	Bearing No.		Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN		Factor <i>f</i> ₀	Mass kg	
<i>d</i>		<i>H</i>	<i>A</i>	<i>A</i> ₁	<i>J</i>	<i>N</i>	<i>H</i> ₂	<i>S</i>	<i>C</i> _r										<i>C</i> _{0r}	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	25/32	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	3 3/4	23/32	5/32	2 63/64	23/64	2 3/8	0.295	1.063	1.201	5/16	SBPF205-14	SB205-14		SAPF205-14	SA205-14	PF205	14.0	7.85	13.9	0.38	0.42	
	15/16											SBPF205-15	SB205-15		SAPF205-15	SA205-15							
												SBPF205	SB205		SAPF205	SA205							
	1											SBPF205-16	SB205-16		SAPF205-16	SA205-16							
30	1 1/8	4 7/16	3/4	13/64	3 9/16	7/16	2 25/32	0.315	1.181	1.335	3/8	SBPF206-18	SB206-18		SAPF206-18	SA206-18	PF206	19.5	11.3	13.9	0.62	0.65	
	13/16											SBPF206	SB206		SAPF206	SA206							
												SBPF206-19	SB206-19		SAPF206-19	SA206-19							
	1 1/4											SBPF206-20	SB206-20		SAPF206-20	SA206-20							
35	1 1/4	4 13/16	7/8	13/64	3 15/16	7/16	3 3/16	0.335	1.260	1.437	3/8	SBPF207-20	SB207-20		SAPF207-20	SA207-20	PF207	25.7	15.4	13.9	0.82	0.9	
	15/16											SBPF207-22	SB207-22		SAPF207-21	SA207-21							
												1 3/8	122	22	5.2	100							11
	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.

SBPFL
Cylindrical bore
(with set screw locking)
SAPFL
Cylindrical bore
(with eccentric locking collar)
d 12 ~ 35 mm

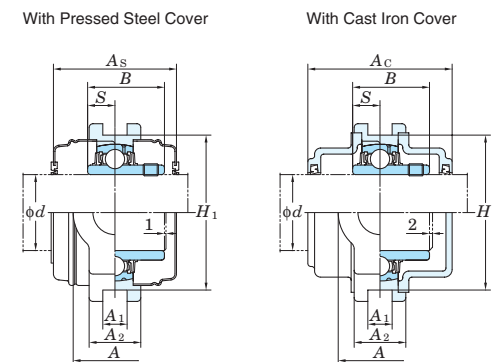
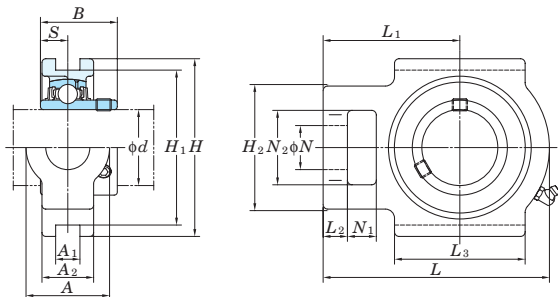


Shaft Dia mm inch		Dimensions inch mm										Bolt Size inch mm	Unit No.	Bearing No.		Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN		Factor	Mass kg	
<i>d</i>		<i>H</i>	<i>L</i>	<i>A</i>	<i>A</i> ₁	<i>J</i>	<i>N</i>	<i>H</i> ₂	<i>S</i>	SBPFL <i>B</i>	SAPFL <i>B</i> ₁								<i>C</i> _r	<i>C</i> _{0r}	<i>f</i> ₀	SBPFL	SAPFL
12	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 SBPFL201-8 SBPFL202 SBPFL202-10 SBPFL203	SB201 SB201-8 SB202 SB202-10 SB203		SAPFL201 SAPFL201-8 SAPFL202 SAPFL202-10 SAPFL203	SA201 SA201-8 SA202 SA202-10 SA203	PFL203	9.55	4.80	13.2	0.19	0.22
15	5/8	81	59	14	4	63.5	7.1	49	6	22	28.5	M6											
17																							
20	3/4	3 17/32	2 5/8	5/8	5/32	2 13/16	23/64	25/32	0.276	0.984	1.161	5/16	SBPFL204-12 SBPFL204	SB204-12 SB204		SAPFL204-12 SAPFL204	SA204-12 SA204	PFL204	12.8	6.65	13.2	0.24	0.24
25	7/8	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	SBPFL205-14 SBPFL205-15 SBPFL205 SBPFL205-16 SBPFL206-18	SB205-14 SB205-15 SB205 SB205-16 SB206-18		SAPFL205-14 SAPFL205-15 SAPFL205 SAPFL205-16 SAPFL206-18	SA205-14 SA205-15 SA205 SA205-16 SA206-18	PFL205	14.0	7.85	13.9	0.28	0.32
30	1 1/8	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 SBPFL206-19 SBPFL206-20 SBPFL207-20	SB206 SB206-19 SB206-20 SB207-20		SAPFL206 SAPFL206-19 SAPFL206-20 SAPFL207-20	SA206 SA206-19 SA206-20 SA207-20	PFL206	19.5	11.3	13.9	0.38	0.41
35	1 1/4	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 SBPFL207 SBPFL207-23	SB207-22 SB207 SB207-23		SAPFL207-21 SAPFL207-22 SAPFL207 SAPFL207-23	SA207-21 SA207-22 SA207 SA207-23	PFL207	25.7	15.4	13.9	0.66	0.74

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.

Variations of tolerance of distance between centers of bolt holes (ΔL_s)	
Unit: mm	
Housing No.	ΔL_s
PFL203~PFL207	±0.4
Variations of tolerance of bolt hole diameter (ΔN_s)	
Unit: mm	
Housing No.	ΔN_s
PFL203~PFL207	±0.25

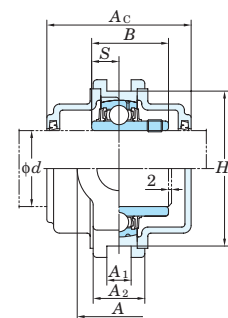
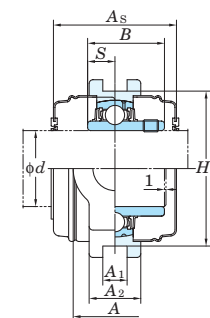
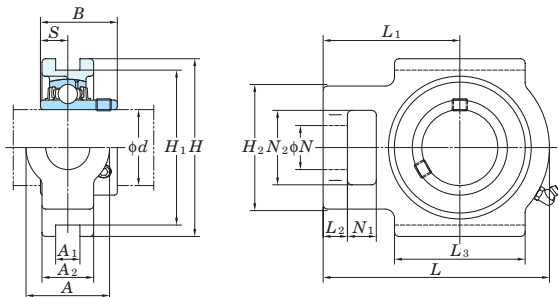


Housing No.			ΔI_{15}	ΔH_{15}	X
T204-T210	TX05-TX10	T305-T310	+0.2	0	0.5
T211-T217	TX11-TX17	T311-T318	+0.3	0	0.6
		T319-T322			0.7
		T324-T328			0.8

 L_c T204JE3 $L_c = 97 \text{ mm}$
T205JE3 $L_c = 102 \text{ mm}$

[illegible]

4. As for the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.



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	0.6
		T319-T322		-0.8	0.7
		T324-T328			0.8

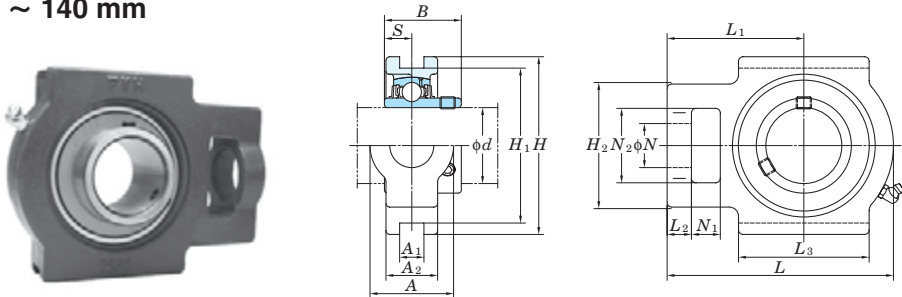
T204JE3 $L_c = 97$ mm
T205JE3 $L_c = 102$ mm

Shaft Dia. mm inch		Dimensions inch mm															Standard			Bearing No.	Mass kg	Basic		Factor <i>f</i> ₀	With Pressed Steel Cover				With Cast Iron Cover					
																	Unit No.	Housing No.				Load Ratings kN <i>C</i> _r <i>C</i> _{0r}	Unit No. Open Type One Side Closed Type		Dimension mm inch <i>A</i> _s		Mass kg	Unit No. Open Type One Side Closed Type	Dimension mm inch <i>A</i> _c		Mass kg			
<i>d</i>	<i>A</i>	<i>A</i> ₁	<i>A</i> ₂	<i>H</i>	<i>H</i> ₁	<i>H</i> ₂	<i>L</i>	<i>L</i> ₁	<i>L</i> ₂	<i>L</i> ₃	<i>N</i>	<i>N</i> ₁	<i>N</i> ₂	<i>B</i>	<i>S</i>	UCT309-28 UCT309				T309	UC309-28 UC309			4.1 4.1	48.9	29.5			13.3	— —		— —	— —	— —
45	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 UCT309	T309	UC309-28 UC309	4.1 4.1	48.9	29.5	13.3	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
	1 7/8	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	UCT210-30 UCT210-31 UCT210 UCT210-32	T210	UC210-30 UCT210-31 UC210 UC210-32	2.6 2.6 2.6 2.6	35.1	23.3	14.4	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —		
50	2	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 UCTX10 UCTX10-32	TX10	UCX10-31 UCX10 UCTX10-32	4.4 4.4 4.4	43.4	29.4	14.4	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	
	—	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	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	
	2	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	UCT211-32 UCT211-34 UCT211 UCT211-35	T211	UC211-32 UCT211-34 UC211 UCT211-35	4.0 4.0 4.0 4.0	43.4	29.4	14.4	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	
	2 3/16	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 UCTX11-35 UCTX11-36	TX11	UCX11 UCX11-35 UCX11-36	5.3 5.3 5.3	52.4	36.2	14.4	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —
55	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 UCT311 UCT311-35	T311	UC311-32 UC311 UC311-35	6.1 6.1 6.1	71.6	45.0	13.2	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —
	2 3/16	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	UCT212-36 UCT212 UCT212-38 UCT212-39	T212	UC212-36 UC212 UC212-38 UCT212-39	4.9 4.9 4.9 4.9	52.4	36.2	14.4	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	
60	2 1/4	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	UCTX12 UCTX12-39	TX12	UCX12 UCX12-39	7.4 7.4	57.2	40.1	14.4	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
	2 7/16	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 UCT312-39	T312	UC312 UC312-39	7.6 7.6	81.9	52.2	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
	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 UCT213	T213	UC213-40 UCT213	6.9 6.9	57.2	40.1	14.4	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
	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 UCTX13	TX13	UCX13-40 UCX13	7.6 7.6	62.2	44.1	14.5	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
65	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	1 11/16	1 1/4	2 3/4	2.953	1.181	UCT313-40 UCT313	T313	UC313-40 UCT313	9.3 9.3	92.7	59.9	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
	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 UCT214	T214	UC214-44 UCT214	7.0 7.0	62.2	44.1	14.5	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
70	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 UCTX14	TX14	UCX14-44 UCX14	7.9 7.9	67.4	48.3	14.5	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
	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 UCT314	T314	UC314-44 UCT314	11.1 11.1	104	68.2	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
75	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 UCT215 UCT215-48	T215	UC215-47 UCT215 UCT215-48	7.3 7.3 7.3	67.4	48.3	14.5	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —
	3	2 15/16	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	UCTX15-47 UCTX15 UCTX15-48	TX15	UCX15-47 UCTX15 UCTX15-48	8.7 8.7 8.7	72.7	53.0	14.6	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —
	3	70	28	48	184	165	111	235	140	21	121	41	32	70	82.6	33.3																		

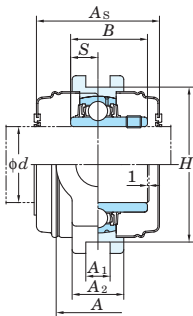
D-111/0 Z11~Z17, X10~X17, 509~520

5. Housings of nodular graphite cast iron are also available.

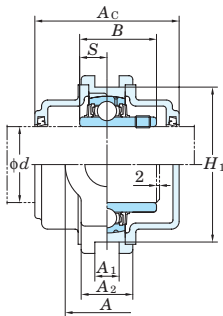
UCT
Cylindrical bore (with set screws)
d (75) ~ 140 mm



With Pressed Steel Cover



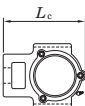
With Cast Iron Cover



Variations of tolerance of groove width (ΔA_{1s}), variations of tolerance of distance between both grooves (ΔH_{1s}), and tolerance of symmetry of both groove sides (X)

Housing No.			Unit: mm		
			ΔA_{1s}	ΔH_{1s}	X
T204~T210	TX05~TX10	T305~T310	+0.2 0	0 -0.5	0.5
T211~T217	TX11~TX17	T311~T318 T319~T322 T324~T328	+0.3 0	0 -0.8	0.6 0.7 0.8

Form and dimensions of L_c of T204JE3 and T205JE3 (housing with cast iron cover) are shown below.



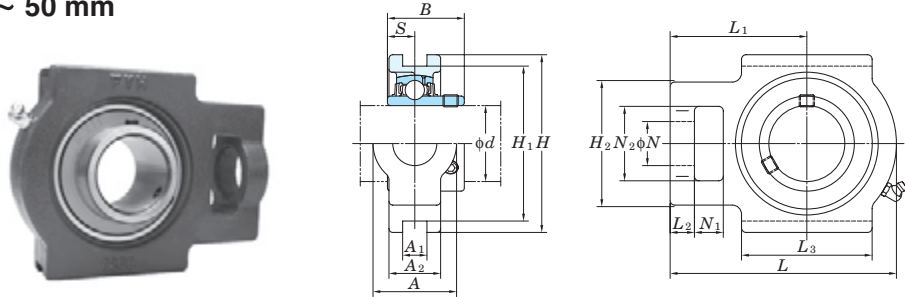
T204JE3 $L_c = 97$ mm
T205JE3 $L_c = 102$ mm

Shaft Dia. mm inch		Dimensions inch mm															Standard		Bearing No.	Mass kg	Basic Load Ratings kN		Factor f_0	With Pressed Steel Cover			With Cast Iron Cover		
d		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.			C _r	C _{0r}		Unit No. Open Type One Side Closed Type	Dimension mm inch	Mass kg	Unit No. Open Type One Side Closed Type	Dimension mm inch	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	3 1/32	5 29/32	1 13/16	1 13/32	3 11/32	3.228	1.260	UCT315-47 UCT315 UCT315-48	T315	UC315-47 UC315 UC315-48	13.0 13.0 13.0	113	77.2	13.2	— — —	— — —	— — —	— — —	— — —	— — —
	3	90	26	55	216	192	132	262	160	25	150	46	36	85	82	32	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	
	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	1.311	UCT216-50 UCT216	T216	UC216-50 UC216	8.2 8.2	72.7	53.0	14.6	UCT216C UCT216CD	108 4 1/4	8.2	UCT216FC UCT216FCD	138 5 7/16	10.6
80	—	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	1.343	UCTX16	TX16	UCX16	11.7	84.0	61.9	14.5	UCTX16C UCTX16CD	112 4 13/32	11.7	— —	— —	— —
	—	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	1.339	UCT316	T316	UC316	16.2	123	86.7	13.3	— —	— —	— —	— —	— —	— —
	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	1.343	UCT217-52 UCT217	T217	UC217-52 UC217	11.0 11.0	84.0	61.9	14.5	UCT217C UCT217CD	112 4 13/32	11.0	UCT217FC UCT217FCD	142 5 19/32	13.7
85	—	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	1.563	UCTX17 UCTX17-55	TX17	UCX17 UCX17-55	11.7 11.7	96.1	71.5	14.5	UCTX17C UCTX17CD	122 4 13/16	11.7	— —	— —	— —
	3 7/16	4 1/32	1 17/64	2 1/32	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	1.575	UCT317	T317	UC317	19.0	133	96.8	13.3	— —	— —	— —	— —	— —	— —
	—	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	1.575	UCT318-56 UCT318	T318	UC318-56 UC318	21.6 21.6	143	107	13.3	— —	— —	— —	— —	— —	— —
	—	110	32	66	255	228	160	312	192	30	175	57	46	106	96	40	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	
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	1.614	UCT319	T319	UC319	24.9	153	119	13.3	— —	— —	— —	— —	— —	— —
	—	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	1.654	UCT320 UCT320-63 UCT320-64	T320	UC320 UC320-63 UC320-64	30.7 30.7 30.7	173	141	13.2	— — —	— — —	— — —	— — —	— — —	— — —
	4	120	35	75	290	260	175	345	210	32	200	59	48	115	108	42	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	
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	1.732	UCT321	T321	UC321	36.7	184	153	13.2	— —	— —	— —	— —	— —	— —
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	1.811	UCT322	T322	UC322	39.7	205	180	13.2	— —	— —	— —	— —	— —	— —
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	2.008	UCT324	T324	UC324	54.4	207	185	13.5	— —	— —	— —	— —	— —	— —
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	2.126	UCT326	T326	UC326	69.3	229	214	13.6	— —	— —	— —	— —	— —	— —
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	2.323	UCT328	T328	UC328	85.1	253	246	13.6	— —	— —	— —	— —	— —	— —

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
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), accessory 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 (ΔA_{1s}), variations of tolerance of distance between both grooves (ΔH_{1s}), and tolerance of symmetry of both groove sides (X)

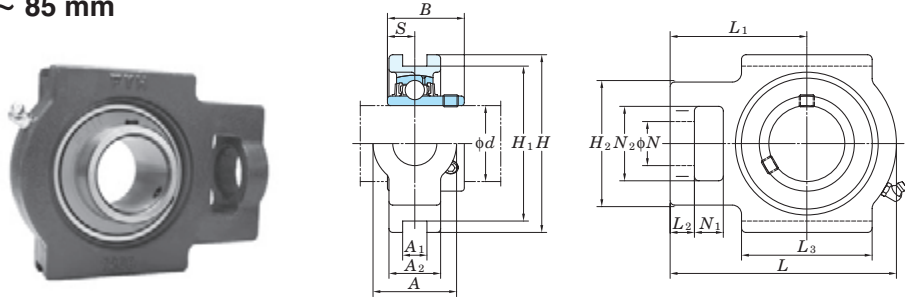
Unit: mm

Housing No.		ΔA_{1s}	ΔH_{1s}	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		Dimensions inch mm															Unit No.		Housing No.	Bearing No.	Basic Load Ratings kN		Factor	Mass				
d		A	A ₁	A ₂	H	H ₁	H ₂	L	L ₁	L ₂	L ₃	N	N ₁	N ₂	B	S				C _r	C _{0r}	f ₀	kg					
12	1/2 5/8 3/4																UCT201E UCT201E-8 UCT202E UCT202E-10 UCT203E UCT204E-12 UCT204E		T204E	UC201 UC201-8 UC202 UC202-10 UC203 UC204-12 UC204	12.8	6.65	13.2					
15		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	1.220 31	0.500 12.7												
17																												
20																												
25	7/8 15/16	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	1.343 34.1	0.563 14.3	UCT205E-14 UCT205E-15 UCT205E UCT205E-16		T205E	UC205-14 UC205-15 UC205 UC205-16	14.0	7.85	13.9	0.84				
	1	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	1.500 38.1	0.626 15.9	UCTX05E UCTX05E-16	TX05E		UCX05 UCX05-16					19.5	11.3	13.9	1.4
	1																											
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	1.500 38.1	0.626 15.9	UCT206E-18 UCT206E UCT206E-19 UCT206E-20		T206E	UC206-18 UC206 UC206-19 UC206-20	19.5	11.3	13.9	1.3				
	1 3/16 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	1.689 42.9	0.689 17.5	UCTX06E UCTX06E-19 UCTX06E-20	TX06E		UCX06 UCX06-19 UCX06-20					25.7	15.4	13.9	1.7
35	1 1/4 1 5/16 1 3/8	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	1.689 42.9	0.689 17.5	UCT207E-20 UCT207E-21 UCT207E-22 UCT207E UCT207E-23		T207E	UC207-20 UC207-21 UC207-22 UC207 UC207-23	25.7	15.4	13.9	1.6				
	1 3/8 1 7/16	1 15/16 49	11/16 17.5	1 13/32 36	4 1/2 114	4 101.6	3 9/32 83	5 21/32 144	3 15/32 88	19/32 15	3 9/32 83	1 5/32 29	3/4 19	1 15/16 49	1.937 49.2	0.748 19	UCTX07E-22 UCTX07E UCTX07E-23	TX07E		UCX07-22 UCX07 UCX07-23					29.1	17.8	14.0	2.7
	1 7/16																											
40	1 1/2 1 9/16	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	19/32 16	3 9/32 83	1 5/32 29	3/4 19	1 15/16 49	1.937 49.2	0.748 19	UCT208E-24 UCT208E-25 UCT208E		T208E	UC208-24 UC208-25 UC208	29.1	17.8	14.0	2.5				
	1 1/2	1 15/16 49	11/16 17.5	1 13/32 36	4 19/32 117	4 101.6	3 9/32 83	5 21/32 144	3 7/16 87	19/32 15	3 9/32 83	1 5/32 29	3/4 19	1 15/16 49	1.937 49.2	0.748 19	UCTX08E-24 UCTX08E	TX08E		UCX08-24 UCX08					34.1	21.3	14.0	2.6
45	1 5/8 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	1.937 49.2	0.748 19	UCT209E-26 UCT209E-27 UCT209E-28 UCT209E		T209E	UC209-26 UC209-27 UC209-28 UC209	34.1	21.3	14.0	2.4				
	1 3/4	1 15/16 49	11/16 17.5	1 1/2 38	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	2.031 51.6	0.748 19	UCTX09E-28 UCTX09E	TX09E		UCX09-28 UCX09					35.1	23.3	14.4	2.9
50	1 7/8 1 15/16	1 15/16 49	11/16 17.5	1 13/32 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	2.031 51.6	0.748 19	UCT210E-30 UCT210E-31 UCT210E UCT210E-32		T210E	UC210-30 UC210-31 UC210 UC210-32	35.1	23.3	14.4	2.6				
	2																											
	1 15/16 2	2 17/32 64	1 1/16 27	1 21/32 42	5 3/4 146	5 1/8 130.17	4 1/64 102	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	2.189 55.6	0.874 22.2	UCTX10E-31 UCTX10E UCTX10E-32			TX10E					UCX10-31 UCX10 UCX10-32	43.4	29.4	14.4

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
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), accessory 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 (ΔA_{1s}), variations of tolerance of distance between both grooves (ΔH_{1s}), and tolerance of symmetry of both groove sides (X)

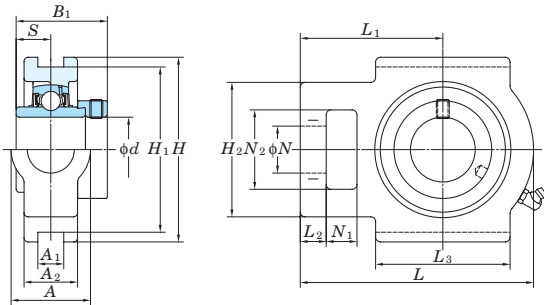
Unit: mm

Housing No.	ΔA_{1s}	ΔH_{1s}	X
T204E-T210E	+0.2 0	0 -0.5	0.5
T211E-T217E	+0.3 0	0 -0.8	0.6

Shaft Dia. mm inch		Dimensions inch mm															Unit No.		Housing No.	Bearing No.	Basic Load Ratings kN		Factor	Mass
d		A	A ₁	A ₂	H	H ₁	H ₂	L	L ₁	L ₂	L ₃	N	N ₁	N ₂	B	S					C _r	C _{0r}	f ₀	kg
55	2																UCT211E-32		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	UCT211E-34			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																UCT211E-35			UC211-35				
60	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
	2 1/4	64	27	44	146	130.17	102	194	119	19	102	35	32	64	65.1	25.4	UCTX11E-35			UCX11-35				
																	UCTX11E-36			UCX11-36				
	2 1/4	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-36		T212E	UC212-36	52.4	36.2	14.4	4.9
65	2 3/8	64	27	42	146	130.17	102	194	119	19	102	35	32	64	65.1	25.4	UCT212E			UC212				
	2 7/16																UCT212E-38			UC212-38				
																	UCT212E-39			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	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	UCTX12E-39			UCX12-39				
		70	27	44	167	150.8	111	224	137	21	121	41	32	70	65.1	25.4	UCT213E-40		T213E	UC213-40	57.2	40.1	14.4	6.9
	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	UCTX13E		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-40			UCX13				
75	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	UCTX13E			UCX13				
		70	27	46	167	150.8	111	224	137	21	121	41	32	70	74.6	30.2	UCT214E-44		T214E	UC214-44	62.2	44.1	14.5	7.0
	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	UCTX14E-44		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				
80	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	UCT215E-47		T215E	UC215-47	67.4	48.3	14.5	7.3
	3	70	27	48	167	150.8	111	232	140	21	121	41	32	70	77.8	33.3	UCT215E			UC215				
																	UCT215E-48			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	UCTX15E-47		TX15E	UCX15-47	72.7	53.0	14.6	8.7
85	3	70	27	48	184	165	111	235	140	21	121	41	32	70	82.6	33.3	UCTX15E			UCX15				
																	UCTX15E-48			UCX15-48				
	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	UCT216E-50		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				
85	3 1/2	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								
	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	UCT217E-52		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				
85	3 1/2	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	UCTX17E-55			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.51.)
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), accessory 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.

NAT-E
Cylindrical bore
(with eccentric locking collar)
d 12 ~ 75 mm



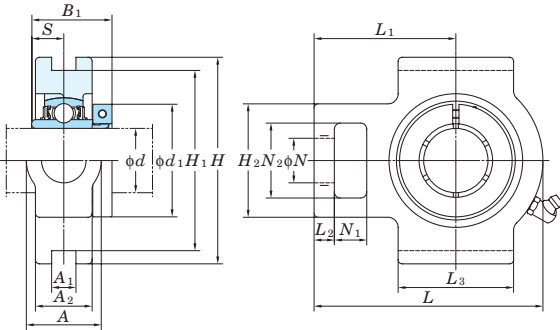
Variations of tolerance of groove width (ΔA_{1s}), variations of tolerance of distance between both grooves (ΔH_{1s}), and tolerance of symmetry of both groove sides (X)

Unit: mm

Housing No.	ΔA_{1s}	ΔH_{1s}	X
T204E~T210E	+0.2 0	0 -0.5	0.5
T211E~T215E	+0.3 0	0 -0.8	0.6

Shaft Dia. mm inch		Dimensions inch mm															Unit No.		Housing No.	Bearing No.	Basic Load Ratings kN		Factor	Mass
d		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					C _r	C _{0r}	f ₀	kg
12	1/2																NAT201E NAT201-8E NAT202E NAT202-10E NAT203E NAT204-12E NAT204E		T204E	NA201 NA201-8 NA202 NA202-10 NA203 NA204-12 NA204	12.8	6.65	13.2	0.83 0.81 0.8 0.84
15	5/8	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								
17	3/4	32	13.5	21	89	76.2	51	94	61	10	51	19	16	32	43.7	17.1								
20																	NAT205-14E NAT205-15E NAT205E NAT205-16E NAT206-18E NAT206E NAT206-19E NAT206-20E		T205E	NA205-14 NA205-15 NA205 NA205-16 NA206-18 NA206 NA206-19 NA206-20	14.0	7.85	13.9	0.89
25	7/8	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								
	15/16	32	13.5	24	89	76.2	51	97	62	10	51	19	16	32	44.4	17.5								
	1																NAT206-18E NAT206E NAT206-19E NAT206-20E		T206E	NA206-18 NA206 NA206-19 NA206-20	19.5	11.3	13.9	1.39
30	1 1/8	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								
	1 3/16	37	13.5	28	102	88.9	56	113	70	10	57	22	16	37	48.4	18.3								
	1 1/4																NAT207-20E NAT207-21E NAT207-22E NAT207E NAT207-23E NAT208-24E NAT208-25E NAT208E		T207E	NA207-20 NA207-21 NA207-22 NA207 NA207-23 NA208-24 NA208-25 NA208	25.7	15.4	13.9	1.73
35	1 1/4	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								
	1 5/16	37	13.5	30	102	88.9	64	129	78	13	64	22	16	37	51.1	18.8								
	1 3/8																NAT207-20E NAT207-21E NAT207-22E NAT207E NAT207-23E NAT208-24E NAT208-25E NAT208E		T207E	NA207-20 NA207-21 NA207-22 NA207 NA207-23 NA208-24 NA208-25 NA208	25.7	15.4	13.9	1.73
	1 7/16																NAT207-20E NAT207-21E NAT207-22E NAT207E NAT207-23E NAT208-24E NAT208-25E NAT208E		T207E	NA207-20 NA207-21 NA207-22 NA207 NA207-23 NA208-24 NA208-25 NA208	25.7	15.4	13.9	1.73
40	1 1/2	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								
	1 9/16	49	17.5	33	114	101.6	83	144	88	16	83	29	19	49	56.3	21.4								
45	1 5/8	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								
	1 11/16	49	17.5	35	117	101.6	83	144	87	16	83	29	19	49	56.3	21.4								
	1 3/4																NAT209-26E NAT209-27E NAT209-28E NAT209E NAT210-30E NAT210-31E NAT210E NAT210-32E NAT211-32E NAT211-34E NAT211E NAT211-35E		T209E	NA209-26 NA209-27 NA209-28 NA209 NA210-30 NA210-31 NA210 NA210-32 NA211-32 NA211-34 NA211 NA211-35	34.1	21.3	14.0	2.57
50	1 7/8	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								
	1 15/16	49	17.5	37	117	101.6	83	149	90	16	86	29	19	49	62.7	24.6								
	2																NAT210-30E NAT210-31E NAT210E NAT210-32E NAT211-32E NAT211-34E NAT211E NAT211-35E		T210E	NA210-30 NA210-31 NA210 NA210-32 NA211-32 NA211-34 NA211 NA211-35	35.1	23.3	14.4	2.81
55	2	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								
	2 1/8	64	27	38	146	130.17	102	171	106	19	95	35	25	64	71.4	27.8								
	2 3/16																NAT210-30E NAT210-31E NAT210E NAT210-32E NAT211-32E NAT211-34E NAT211E NAT211-35E		T210E	NA210-30 NA210-31 NA210 NA210-32 NA211-32 NA211-34 NA211 NA211-35	35.1	23.3	14.4	2.81
60	2 1/4	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								
	2 3/8	64	27	42	146	130.17	102	194	119	19	102	35	32	64	77.8	31								
	2 7/16																NAT212-36E NAT212E NAT212-38E NAT212-39E		T212E	NA212-36 NA212 NA212-38 NA212-39	52.4	36.2	14.4	5.23
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								
		70	27	44	167	150.8	111	224	137	21	121	41	32	70	85.7	34.1								
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								
		70	27	46	167	150.8	111	224	137	21	121	41	32	70	85.7	34.1								
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								
		70	27	48	167	150.8	111	232	140	21	121	41	32	70	92.1	37.3								
																	NAT213-40E NAT213E NAT214-44E NAT214E NAT215-47E NAT215E		T213E	NA213-40 NA213 NA214-44 NA214 NA215-47 NA215	57.2	40.1	14.4	7.49
																	NAT213-40E NAT213E NAT214-44E NAT214E NAT215-47E NAT215E		T214E	NA213-40 NA213 NA214-44 NA214 NA215-47 NA215	62.2	44.1	14.5	7.87
																	NAT213-40E NAT213E NAT214-44E NAT214E NAT215-47E NAT215E		T215E	NA213-40 NA213 NA214-44 NA214 NA215-47 NA215	67.4	48.3	14.5	7.83

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



Variations of tolerance of groove width (ΔA_{1s}), variations of tolerance of distance between both grooves (ΔH_{1s}), and tolerance of symmetry of both groove sides (X)

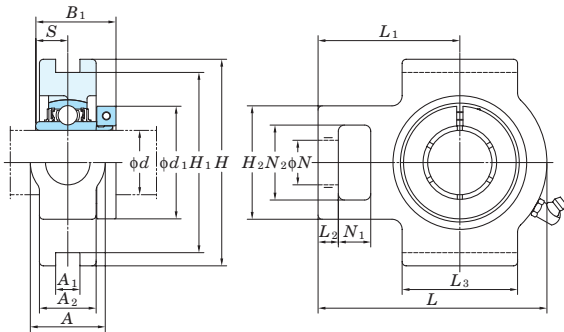
Unit: mm

Housing No.	ΔA_{1s}	ΔH_{1s}	X
T204~T210	+0.2 0	0 -0.5	0.5
T211~T212	+0.3 0	0 -0.8	0.6

Shaft Dia. mm inch		Dimensions inch mm																Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor <i>f</i> ₀	Mass kg
<i>d</i>		<i>A</i>	<i>A</i> ₁	<i>A</i> ₂	<i>H</i>	<i>H</i> ₁	<i>H</i> ₂	<i>L</i>	<i>L</i> ₁	<i>L</i> ₂	<i>L</i> ₃	<i>N</i>	<i>N</i> ₁	<i>N</i> ₂	<i>B</i> ₁	<i>S</i>	<i>d</i> ₁				<i>C</i> _r	<i>C</i> _{0r}		
20	3/4	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 9/32	0.500	1 3/4	NCT204-12 NCT204	T204	NC204-12 NC204	12.8	6.65	13.2	0.9
		32	12	21	89	76	51	94	61	10	51	19	16	32	32.5	12.7	44.5							
25	7/8	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 7/16	0.563	1 15/16	NCT205-14 NCT205-15 NCT205 NCT205-16	T205	NC205-14 NC205-15 NC205 NC205-16	14.0	7.85	13.9	1.0
	15/16	32	12	24	89	76	51	97	62	10	51	19	16	32	36.5	14.3	49.2							
30	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 9/16	0.626	2 3/16	NCT206-18 NCT206 NCT206-19 NCT206-20	T206	NC206-18 NC206 NC206-19 NC206-20	19.5	11.3	13.9	1.5
	1 3/16	37	12	28	102	89	56	113	70	10	57	22	16	37	39.7	15.9	55.6							
35	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 3/4	0.689	2 7/16	NCT207-20	T207	NC207-20	25.7	15.4	13.9	1.9
		37	12	30	102	89	64	129	78	13	64	22	16	37	44.5	17.5	61.9							
40	1 3/8	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 3/4	0.689	2 9/16	NCT207-22 NCT207 NCT207-23	T207	NC207-22 NC207 NC207-23	25.7	15.4	13.9	1.9
	1 7/16	37	12	30	102	89	64	129	78	13	64	22	16	37	44.5	17.5	65.1							
45	1 1/2	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	2	0.748	2 11/16	NCT208-24 NCT208	T208	NC208-24 NC208	29.1	17.8	14.0	2.9
		49	16	33	114	102	83	144	88	16	83	29	19	49	50.8	19	68.3							
50	1 5/8	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	2	0.748	2 13/16	NCT209-26	T209	NC209-26	34.1	21.3	14.0	2.8
		49	16	35	117	102	83	144	87	16	83	29	19	49	50.8	19	71.4							
55	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	2	0.748	2 15/16	NCT209-27 NCT209-28 NCT209	T209	NC209-27 NC209-28 NC209	34.1	21.3	14.0	2.8
	1 3/4	49	16	35	117	102	83	144	87	16	83	29	19	49	50.8	19	74.6							
60	2	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 3/32	0.748	3 3/8	NCT210-31 NCT210 NCT210-32	T210	NC210-31 NC210 NC210-32	35.1	23.3	14.4	3.2
		49	16	37	117	102	83	149	90	16	86	29	19	49	53.1	19	85.7							
65	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 1/4	0.874	3 1/2	NCT211-32	T211	NC211-32	43.4	29.4	14.4	4.4
		64	22	38	146	130	102	171	106	19	95	35	25	64	57.1	22.2	88.9							
70	2 1/4	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 1/4	0.874	3 5/8	NCT211 NCT211-35	T211	NC211 NC211-35	43.4	29.4	14.4	4.4
	2 3/16	64	22	38	146	130	102	171	106	19	95	35	25	64	57.1	22.2	92.1							
75	2 1/2	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 5/8	1.000	4 1/16	NCT212-36	T212	NC212-36	52.4	36.2	14.4	5.6
		64	22	42	146	130	102	194	119	19	102	35	32	64	66.7	25.4	103.2							
80	2 5/8	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 5/8	1.000	4 1/8	NCT212 NCT212-39	T212	NC212 NC212-39	52.4	36.2	14.4	5.6
	2 7/16	64	22	42	146	130	102	194	119	19	102	35	32	64	66.7	25.4	104.8							

Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See Table 10.5 in P.51.)
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.

NCT-E
Cylindrical bore
(with concentric locking collar)
d 20 ~ 60 mm



Variations of tolerance of groove width (ΔA_{1s}), variations of tolerance of distance between both grooves (ΔH_{1s}), and tolerance of symmetry of both groove sides (X)

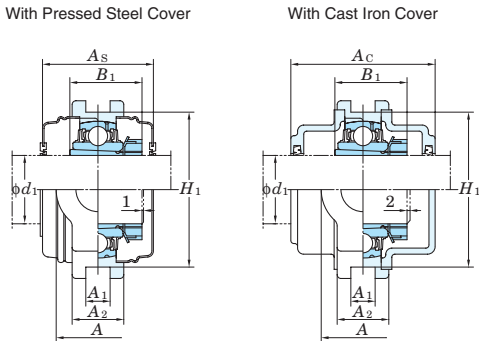
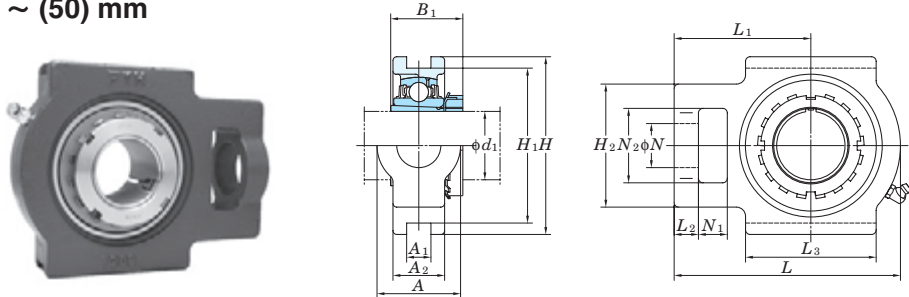
Unit: mm

Housing No.	ΔA_{1s}	ΔH_{1s}	X
T204E~T210E	+0.2 0	0 -0.5	0.5
T211E~T212E	+0.3 0	0 -0.8	0.6

Shaft Dia. mm inch		Dimensions inch mm																Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor <i>f</i> ₀	Mass kg
<i>d</i>		<i>A</i>	<i>A</i> ₁	<i>A</i> ₂	<i>H</i>	<i>H</i> ₁	<i>H</i> ₂	<i>L</i>	<i>L</i> ₁	<i>L</i> ₂	<i>L</i> ₃	<i>N</i>	<i>N</i> ₁	<i>N</i> ₂	<i>B</i> ₁	<i>S</i>	<i>d</i> ₁				<i>C</i> _r	<i>C</i> _{0r}		
20	3/4	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 9/32	0.500	1 3/4	NCT204-12E NCT204E	T204E	NC204-12 NC204	12.8	6.65	13.2	0.9
		32	13.5	21	89	76.2	51	94	61	10	51	19	16	32	32.5	12.7	44.5							
25	7/8	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 7/16	0.563	1 15/16	NCT205-14E NCT205-15E NCT205E NCT205-16E	T205E	NC205-14 NC205-15 NC205 NC205-16	14.0	7.85	13.9	1.0
	15/16	32	13.5	24	89	76.2	51	97	62	10	51	19	16	32	36.5	14.3	49.2							
30	1	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 9/16	0.626	2 3/16	NCT206-18E NCT206E NCT206-19E NCT206-20E	T206E	NC206-18 NC206 NC206-19 NC206-20	19.5	11.3	13.9	1.5
	1 3/16	37	13.5	28	102	88.9	56	113	70	10	57	22	16	37	39.7	15.9	55.6							
35	1 1/8	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 3/4	0.689	2 7/16	NCT207-20E	T207E	NC207-20	25.7	15.4	13.9	1.9
		37	13.5	30	102	88.9	64	129	78	13	64	22	16	37	44.5	17.5	61.9							
40	1 1/4	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 3/4	0.689	2 9/16	NCT207-22E NCT207E NCT207-23E	T207E	NC207-22 NC207 NC207-23	25.7	15.4	13.9	1.9
	1 3/8	37	13.5	30	102	88.9	64	129	78	13	64	22	16	37	44.5	17.5	65.1							
45	1 1/2	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 5/32	3/4	1 15/16	2	0.748	2 11/16	NCT208-24E NCT208E	T208E	NC208-24 NC208	29.1	17.8	14.0	2.9
		49	17.5	33	114	101.6	83	144	88	16	83	29	19	49	50.8	19	68.3							
50	1 5/8	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	0.748	2 13/16	NCT209-26E	T209E	NC209-26	34.1	21.3	14.0	2.8
		49	17.5	35	117	101.6	83	144	87	16	83	29	19	49	50.8	19	71.4							
55	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	0.748	2 15/16	NCT209-27E NCT209-28E NCT209E	T209E	NC209-27 NC209-28 NC209	34.1	21.3	14.0	2.8
	1 3/4	49	17.5	35	117	101.6	83	144	87	16	83	29	19	49	50.8	19	74.6							
60	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 3/32	0.748	3 3/8	NCT210-31E NCT210E NCT210-32E	T210E	NC210-31 NC210 NC210-32	35.1	23.3	14.4	3.2
	2	49	17.5	37	117	101.6	83	149	90	16	86	29	19	49	53.1	19	85.7							
65	2 1/4	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 1/4	0.874	3 1/2	NCT211-32E	T211E	NC211-32	43.4	29.4	14.4	4.4
		64	27	38	146	130.17	102	171	106	19	95	35	25	64	57.1	22.2	88.9							
70	2 3/8	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 1/4	0.874	3 5/8	NCT211E NCT211-35E	T211E	NC211 NC211-35	43.4	29.4	14.4	4.4
		64	27	38	146	130.17	102	171	106	19	95	35	25	64	57.1	22.2	92.1							
75	2 1/2	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	2 5/8	1.000	4 1/16	NCT212-36E	T212E	NC212-36	52.4	36.2	14.4	5.6
		64	27	42	146	130.17	102	194	119	19	102	35	32	64	66.7	25.4	103.2							
80	2 7/16	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	2 5/8	1.000	4 1/8	NCT212E NCT212-39E	T212E	NC212 NC212-39	52.4	36.2	14.4	5.6
		64	27	42	146	130.17	102	194	119	19	102	35	32	64	66.7	25.4	104.8							

Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See Table 10.5 in P.51.)
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.

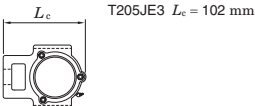
UKT
Tapered bore (with adapter)
d₁ 20 ~ (50) mm



Variations of tolerance of groove width (ΔA_{1s}), variations of tolerance of distance between both grooves (ΔH_{1s}), and tolerance of symmetry of both groove sides (X)

Housing No.			Unit: mm		
			ΔA_{1s}	ΔH_{1s}	X
T205~T210	TX05~TX10	T305~T310	+0.2 0	0 -0.5	0.5
T211~T217	TX11~TX17	T311~T318 T319~T322 T324~T328	+0.3 0	0 -0.8	0.6 0.7 0.8

Form and dimension of L_c of T205JE3 (housing with cast iron cover) are shown below.



Shaft Dia. mm inch		Dimensions inch mm														Standard						Adapter ¹⁾ No.		Mass kg	Basic		Factor	With Pressed Steel Cover				With Cast Iron Cover			
																Unit No.	Housing No.	Bearing No.							Load Ratings kN	C _r		C _{0r}	f ₀	Unit No.		Dimension mm inch	Mass kg	Unit No.	
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 ¹⁾						C _r	C _{0r}	f ₀	Open Type	One Side Closed Type	A _s			Open Type	One Side Closed Type	A _c				
20	3/4	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 5/32(1 3/8) 29(35)	UKT205	T205	UK205	HE305X(HE2305X) H305X(H2305X)	0.88 0.88	14.0	7.85	13.9	—	—	—	—	—	—	—	—	—	—	—	
	3/4	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 3/8 35	UKTX05	TX05	UKX05	HE2305X H2305X	1.3 1.3	19.5	11.3	13.9	—	—	—	—	—	—	—	—	—	—		
		3/4	1 13/32 36	15/32 12	1 1/32 26	3 1/2 89	3 5/32 80	2 7/16 62	4 13/16 122	3 76	15/32 12	2 9/16 65	1 1/32 26	5/8 16	1 13/32 36	1 3/8 35	UKT305	T305	UK305	HE2305X H2305X	1.5 1.5	21.2	10.9	12.6	—	—	—	—	—	—	—	—	—		
	25	1	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 7/32(1 1/2) 31(38)	UKT206	T206	UK206	H306X(H2306X) HE306X(HE2306X)	1.3 1.3	19.5	11.3	13.9	UKT206C	UKT206CD	52	2 1/16	1.3	UKT206FC	UKT206FCD	70	2 3/4	1.8	
1		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 1/2 38	UKTX06	TX06	UKX06	H2306X HE2306X	1.7 1.7	25.7	15.4	13.9	UKTX06C	UKTX06CD	59	2 5/16	1.7	—	—	—	—	—		
		1	1 5/8 41	5/8 16	1 3/32 28	3 15/16 100	3 35/64 90	2 3/4 70	5 13/32 137	3 11/32 85	9/16 14	2 29/32 74	1 3/32 28	1 5/8 18	1 1/2 41	1 1/2 38	UKT306	T306	UK306	H2306X HE2306X	1.9 1.9	26.7	15.0	13.3	—	—	—	—	—	—	—	—	—		
30		1 1/8	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 3/8(1 11/16) 35(43)	UKT207	T207	UK207	HS307X(HS2307X) H307X(H2307X)	1.7 1.7	25.7	15.4	13.9	—	—	—	—	—	—	—	—	—	—	
	1 1/8	1 15/16 49	5/8 16	1 13/32 36	4 1/2 114	4 1/64 102	3 9/32 83	5 21/32 144	3 15/32 88	19/32 15	3 9/32 83	1 5/32 29	3/4 19	1 15/16 49	1 11/16 43	UKTX07	TX07	UKX07	HS2307X H2307X	2.6 2.6	29.1	17.8	14.0	—	—	—	—	—	—	—	—	—	—		
		1 1/8	1 25/32 45	5/8 16	1 1/4 32	4 3/8 111	3 15/16 100	2 15/16 75	5 29/32 150	3 11/16 94	19/32 15	3 5/32 80	1 3/16 30	25/32 20	1 25/32 45	1 11/16 43	UKT307	T307	UK307	HS2307X H2307X	2.4 2.4	33.4	19.3	13.2	—	—	—	—	—	—	—	—	—		
	35	1 1/4	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	1 13/32(1 13/16) 36(46)	UKT208	T208	UK208	HE308X(HE2308X) HS308X(HS2308X) H308X(H2308X)	2.5 2.5 2.5	29.1	17.8	14.0	—	—	—	—	—	—	—	—	—	—	—
1 1/4		1 15/16 49	5/8 16	1 13/32 36	4 19/32 117	4 1/64 102	3 9/32 83	5 21/32 144	3 7/16 87	19/32 15	3 9/32 83	1 5/32 29	3/4 19	1 15/16 49	1 13/16 46	UKTX08	TX08	UKX08	HE2308X HS2308X H2308X	2.6 2.6 2.6	34.1	21.3	14.0	—	—	—	—	—	—	—	—	—	—		
		1 3/8	1 31/32 50	45/64 18	1 11/32 34	4 7/8 124	4 13/32 112	3 9/32 83	6 3/8 162	3 15/16 100	21/32 17	3 1/2 89	1 1/4 32	7/8 22	1 31/32 50	1 13/16 46	UKT308	T308	UK308	HE2308X HS2308X H2308X	3.0 3.0 3.0	40.7	24.0	13.2	—	—	—	—	—	—	—	—	—		
40		1 1/2	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	1 17/32(1 31/32) 39(50)	UKT209	T209	UK209	HE309X(HS2309X) H309X(H2309X)	2.5 2.5	34.1	21.3	14.0	—	—	—	—	—	—	—	—	—	—	
	1 1/2	1 15/16 49	5/8 16	1 1/2 38	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	1 31/32 50	UKTX09	TX09	UKX09	HE2309X H2309X	2.9 2.9	35.1	23.3	14.4	—	—	—	—	—	—	—	—	—	—		
		1 1/2	2 5/32 55	45/64 18	1 1/2 38	5 7/16 138	4 59/64 125	3 17/32 90	4 11/32 178	2 11/32 110	3 13/16 18	1 11/32 34	15/16 24	2 5/32 55	1 31/32 50	UKT309	T309	UK309	HE2309X H2309X	4.2 4.2	48.9	29.5	13.3	—	—	—	—	—	—	—	—	—	—		
45	1 3/4	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	1 21/32(2 5/32) 42(55)	UKT210	T210	UK210	HE310X(HS2310X) H310X(H2310X)	2.7 2.7	35.1	23.3	14.4	—	—	—	—	—	—	—	—	—	—	—	
	1 3/4	2 17/32 64	55/64 22	1 21/32 42	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 3/32 55	UKTX10	TX10	UKX10	HE2310X H2310X	4.4 4.4	43.4	29.4	14.4	—	—	—	—	—	—	—	—	—	—		
		1 3/4	2 13/32 61	25/32 20	1 9/16 40	5 15/16 151	5 33/64 140	3 27/32 98	7 17/32 191	4 19/32 117	25/32 20	4 3/16 106	1 15/32 37	1 1/16 27	2 13/32 61	2 3/32 55	UKT310	T310	UK310	HE2310X H2310X	5.0 5.0	62.0	38.3	13.2	—	—	—	—	—	—	—	—	—		
	50	1 7/8	2 17/32 64	55/64 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	1 25/32(2 5/16) 45(59)	UKT211	T211	UK211	HS311X(HS2311X) H311X(H2311X) HE311X(HE2311X)	4.1 4.1 4.1	43.4	29.4	14.4	—	—	—	—	—	—	—	—	—	—	—
2		2 17/32 64	55/64 22	1 23/32 44	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 5/16 59	UKTX11	TX11	UKX11	HS2311X H2311X HE2311X	5.1 5.1 5.1	52.4	36.2	14.4	—	—	—	—	—	—	—	—	—	—		
		2	2 17/32 64	55/64 22	1 23/32 44	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 5/16 59	UKTX11	TX11	UKX11	HS2311X H2311X HE2311X	5.1 5.1 5.1	52.4	36.2	14.4	—	—	—	—	—	—	—	—	—	—	

Note 1) Codes shown in parentheses indicate the dimensions and Part No. of applicable adapter (H2300X series) for UK200L3 series (triple seal type).
Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)

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 + H306X, UK206 + H306X)

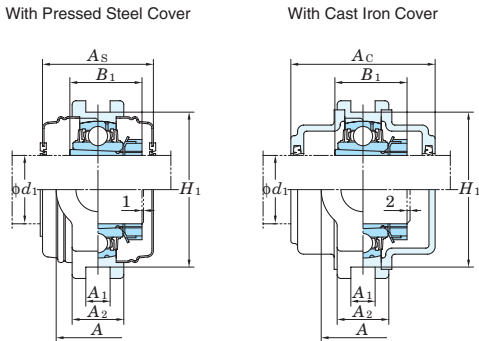
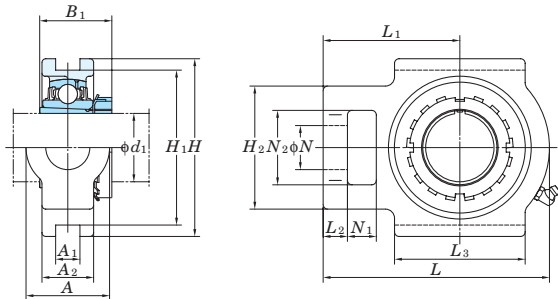
4. As for the triple seal type product (205 is the double seal type product), accessory code L3 (or L2) follows the Part No. of unit or bearing.
(Example of Part No. : UKT206JL3 + H2306X, UK206L3 + H2306X)

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.



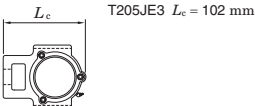
UKT
Tapered bore (with adapter)
 d_1 115 ~ 125 mm



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)

Housing No.			Unit: mm		
			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.



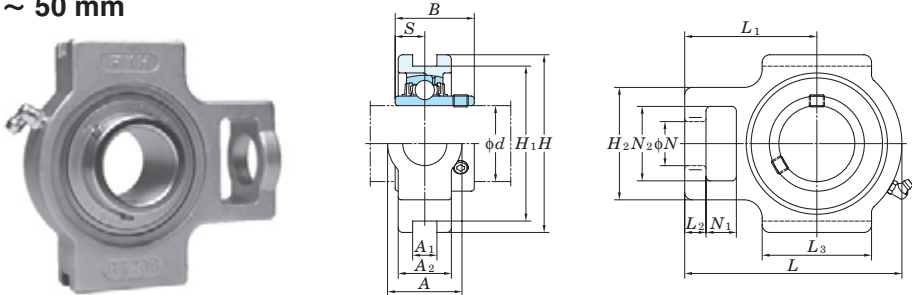
Shaft Dia. mm inch		Dimensions inch mm														Standard				Adapter ¹⁾ No.	Mass kg	Basic		Factor	With Pressed Steel Cover				With Cast Iron Cover						
																Unit No.	Housing No.	Bearing No.	Load Ratings kN			Mass	Unit No.		Dimension mm inch		Mass	Unit No.		Dimension mm inch		Mass			
		Open Type	One Side Closed Type	mm	inch	kg	Open Type	One Side Closed Type	mm	inch	kg																								
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 ¹⁾					kg	C _r	C _{0r}	f ₀												
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 H2326	69.1	229	214	13.6	—	—	—	—	—	—	—	—	—	—	—	
		150	50	100	385	350	220	465	285	45	240	75	65	150	121					69.1	—	—													—
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 3/32	UKT328	T328	UK328	H2328	85.1	253	246	13.6	—	—	—	—	—	—	—	—	—	—	—	—
		155	50	100	415	380	230	515	315	50	255	80	70	160	131					85.1	—	—													

Note 1) Codes shown in parentheses indicate the dimensions and Part No. of applicable adapter (H2300X series) for UK200L3 series (triple seal type).
Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)

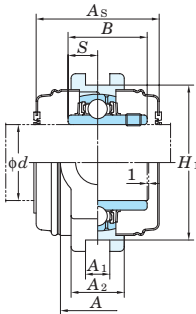
2. Part No. of applicable grease fittings are shown below.
B-1/4-28UNF.....205~210, X05~X09, 305~308
B-R1/8.....211~217, X10~X17, 309~328

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 + H306X, UK206 + H306X)
4. As for the triple seal type product (205 is the double seal type product), accessory 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.

UCST-H1S6
Cylindrical bore (with set screws)
d 20 ~ 50 mm



With Pressed Stainless Steel Cover



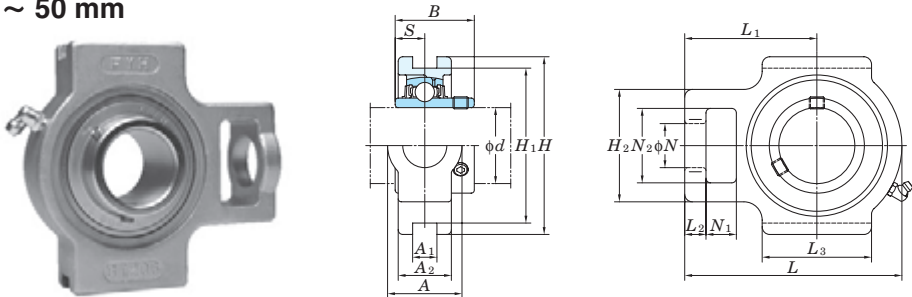
Variations of tolerance of groove width (ΔA_{1s}), variations of tolerance of distance between both grooves (ΔH_{1s}), and tolerance of symmetry of both groove sides (X)

Housing No.	Unit: mm		
	ΔA_{1s}	ΔH_{1s}	X
ST204H1~210H1	+0.2 0	0 -0.5	0.5

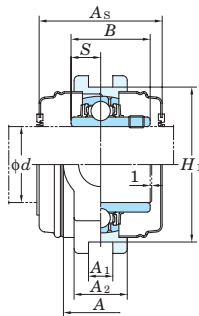
Shaft Dia. mm inch		Dimensions inch mm															Unit No.		Housing No.	Bearing No.	Basic Load Ratings kN		Factor f ₀	Mass kg	With Pressed Stainless Steel Cover									
		A	A ₁	A ₂	H	H ₁	H ₂	L	L ₁	L ₂	L ₃	N	N ₁	N ₂	B	S					Open Type	One Side Closed Type			Dimension mm inch	Mass kg								
d																	C _r	C _{0r}																
20	³ / ₄	1 ¹ / ₄ 32	¹⁷ / ₃₂ 13.5	²⁹ / ₃₂ 23	3 ¹ / ₂ 89	3 76.2	1 ¹³ / ₁₆ 46	3 ¹ / ₂ 89	2 ⁵ / ₁₆ 59	¹¹ / ₃₂ 9	1 ²³ / ₃₂ 44	³ / ₄ 19	²³ / ₃₂ 18	1 ¹ / ₄ 32	1.220 31	0.500 12.7			ST204H1	UC204-12S6 UC204S6	10.9	5.35	13.2	0.73	— UCST204H1CS6	— UCST204H1CDS6	— 45	— ^{1 25} / ₃₂	— 0.73					
25	⁷ / ₈ ¹⁵ / ₁₆	1 ¹ / ₄ 32	¹⁷ / ₃₂ 13.5	³¹ / ₃₂ 25	3 ¹ / ₂ 89	3 76.2	1 ¹³ / ₁₆ 46	3 ²¹ / ₃₂ 93	2 ³ / ₈ 60	¹¹ / ₃₂ 9	1 ²³ / ₃₂ 44	³ / ₄ 19	²³ / ₃₂ 18	1 ¹ / ₄ 32	1.343 34.1	0.563 14.3			ST205H1	UC205-14S6 UC205-15S6 UC205S6 UC205-16S6	11.9	6.30	13.9	0.79	— UCST205H1CS6	— UCST205H1CDS6	— 49	— ^{1 15} / ₁₆	— 0.79					
	1																			ST206H1	UC206-18S6 UC206H1S6 UC206-19S6 UC206-20S6	16.5	9.05	13.9	1.1	— UCST206H1CS6	— UCST206H1CDS6	— 53	— ^{2 3} / ₃₂	— 1.1				
35	^{1 1} / ₄ ^{1 5} / ₁₆ ^{1 3} / ₈	1 ¹⁵ / ₃₂ 37	¹⁷ / ₃₂ 13.5	1 ⁷ / ₃₂ 31	4 ¹ / ₃₂ 102	3 ¹ / ₂ 88.9	2 ⁷ / ₃₂ 56	4 ¹¹ / ₁₆ 119	2 ¹⁵ / ₁₆ 75	⁷ / ₁₆ 11	2 ⁷ / ₃₂ 56	⁷ / ₈ 22	²³ / ₃₂ 18	1 ¹⁵ / ₃₂ 37	1.689 42.9	0.689 17.5			ST207H1	UC207-20S6 UC207-21S6 UC207-22S6 UC207S6 UC207-23S6	21.8	12.3	13.9	1.5	— UCST207H1CS6	— UCST207H1CDS6	— 60	— ^{2 3} / ₈	— 1.5					
	^{1 7} / ₁₆																			ST208H1	UC208-24S6 UC208-254S6 UC208S6	24.8	14.3	14.0	2.0	— UCST208H1CS6	— UCST208H1CDS6	— 69	— ^{2 23} / ₃₂	— 2.0				
45	^{1 5} / ₈ ^{1 11} / ₁₆ ^{1 3} / ₄	1 ¹⁵ / ₁₆ 49	¹¹ / ₁₆ 17.5	1 ¹¹ / ₃₂ 34	4 ¹⁹ / ₃₂ 117	4 101.6	2 ²⁹ / ₃₂ 74	5 ¹³ / ₃₂ 137	3 ¹¹ / ₃₂ 85	⁹ / ₁₆ 14	2 ¹⁹ / ₃₂ 66	1 ⁵ / ₃₂ 29	²⁵ / ₃₂ 20	1 ¹⁵ / ₁₆ 49	1.937 49.2	0.748 19			ST209H1	UC209-26S6 UC209-27S6 UC209-28S6 UC209S6	27.8	16.2	14.0	2.1	— UCST209H1CS6	— UCST209H1CDS6	— 69	— ^{2 23} / ₃₂	— 2.1					
	1																			ST210H1	UC210-30S6 UC210-31S6 UC210S6 UC210-32S6	29.8	18.6	14.4	2.3	— UCST210H1CS6	— UCST210H1CDS6	— 74	— ^{2 29} / ₃₂	— 2.3				

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See Table 10.5 in P.51.)
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



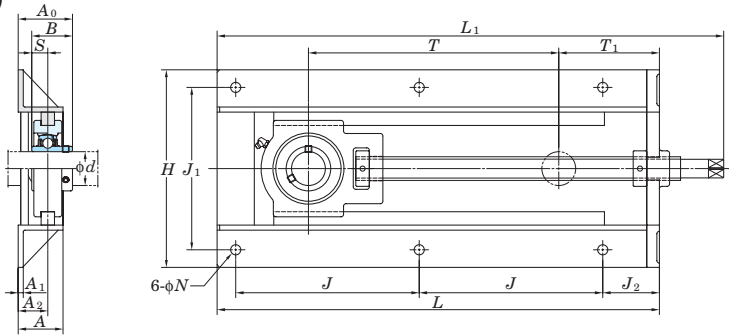
Variations of tolerance of groove width (ΔA_{1s}), variations of tolerance of distance between both grooves (ΔH_{1s}), and tolerance of symmetry of both groove sides (X)

Housing No.	Unit: mm		
	ΔA_{1s}	ΔH_{1s}	X
ST204EH1~210EH1	+0.2 0	0 -0.5	0.5

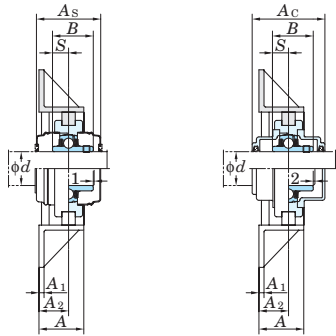
Shaft Dia. mm inch		Dimensions inch mm															Unit No.		Housing No.	Bearing No.	Basic Load Ratings kN		Factor <i>f</i> ₀	Mass kg	With Pressed Stainless Steel Cover			
<i>d</i>		<i>A</i>	<i>A</i> ₁	<i>A</i> ₂	<i>H</i>	<i>H</i> ₁	<i>H</i> ₂	<i>L</i>	<i>L</i> ₁	<i>L</i> ₂	<i>L</i> ₃	<i>N</i>	<i>N</i> ₁	<i>N</i> ₂	<i>B</i>	<i>S</i>					Unit No.				Dimension mm inch		Mass kg	
																					Open Type	One Side Closed Type			<i>A</i> _s			
20	³ / ₄	1 ¹ / ₄ 32	¹⁷ / ₃₂ 13.5	²⁹ / ₃₂ 23	3 ¹ / ₂ 89	3 76.2	1 ¹³ / ₁₆ 46	3 ¹ / ₂ 89	² / ₅ ^{16 59}	¹¹ / ₃₂ 9	1 ²³ / ₃₂ 44	³ / ₄ 19	²³ / ₃₂ 18	1 ¹ / ₄ 32	1.220 31	0.500 12.7	UCST204-12EH1S6 UCST204EH1S6		ST204EH1	UC204-12S6 UC204S6	10.9 5.35	13.2	0.73	— UCST204EH1CS6	— UCST204EH1CDS6	— 45	— ¹ / ₂₅ ³²	— 0.73
25	⁷ / ₈ ¹⁵ / ₁₆	1 ¹ / ₄ 32	¹⁷ / ₃₂ 13.5	³¹ / ₃₂ 25	3 ¹ / ₂ 89	3 76.2	1 ¹³ / ₁₆ 46	3 ²¹ / ₃₂ 93	² / ₈ 60	¹¹ / ₃₂ 9	1 ²³ / ₃₂ 44	³ / ₄ 19	²³ / ₃₂ 18	1 ¹ / ₄ 32	1.343 34.1	0.563 14.3	UCST205-14EH1S6 UCST205-15EH1S6 UCST205EH1S6 UCST205-16EH1S6		ST205EH1	UC205-14S6 UC205-15S6 UC205S6 UC205-16S6	11.9 6.30	13.9	0.79	— UCST205EH1CS6	— UCST205EH1CDS6	— 49	— ¹ / ₁₅ ¹⁶	— 0.79
	1																UCST206-18EH1S6 UCST206EH1S6 UCST206-19EH1S6 UCST206-20EH1S6		ST206EH1	UC206-18S6 UC206S6 UC206-19S6 UC206-20S6	16.5 9.05	13.9	1.1	— UCST206EH1CS6	— UCST206EH1CDS6	— 53	— ² / ₃ ³²	— 1.1
30	¹ / ₈ ³ / ₁₆ ¹ / ₄	1 ¹⁵ / ₃₂ 37	¹⁷ / ₃₂ 13.5	1 ¹ / ₁₆ 27	4 ¹ / ₃₂ 102	3 ¹ / ₂ 88.9	2 ¹ / ₁₆ 52	4 ³ / ₁₆ 106	² / ₈ 67	¹¹ / ₃₂ 9	1 ³¹ / ₃₂ 50	⁷ / ₈ 22	²³ / ₃₂ 18	1 ¹⁵ / ₃₂ 37	1.500 38.1	0.626 15.9	UCST207-20EH1S6 UCST207-21EH1S6 UCST207-22EH1S6 UCST207EH1S6 UCST207-23EH1S6		ST207EH1	UC207-20S6 UC207-21S6 UC207-22S6 UC207S6 UC207-23S6	21.8 12.3	13.9	1.5	— UCST207EH1CS6	— UCST207EH1CDS6	— 60	— ² / ₈	— 1.5
	¹ / ₂ ⁹ / ₁₆	1 ¹⁵ / ₁₆ 49	¹¹ / ₁₆ 17.5	1 ¹ / ₄ 32	4 ¹ / ₂ 114	4 101.6	2 ²⁹ / ₃₂ 74	⁵ / ₈ ^{16 135}	3 ¹¹ / ₃₂ 85	⁹ / ₁₆ 14	2 ¹⁷ / ₃₂ 64	1 ⁵ / ₃₂ 29	²⁵ / ₃₂ 20	1 ¹⁵ / ₁₆ 49	1.937 49.2	0.748 19	UCST208-24EH1S6 UCST208-25EH1S6 UCST208EH1S6		ST208EH1	UC208-24S6 UC208-254S6 UC208S6	24.8 14.3	14.0	2.0	— UCST208EH1CS6	— UCST208EH1CDS6	— 69	— ² / ₂₃ ³²	— 2.0
45	⁵ / ₈ ¹¹ / ₁₆ ³ / ₄	1 ¹⁵ / ₁₆ 49	¹¹ / ₁₆ 17.5	1 ¹¹ / ₃₂ 34	4 ¹⁹ / ₃₂ 117	4 101.6	2 ²⁹ / ₃₂ 74	⁵ / ₈ ^{32 137}	3 ¹¹ / ₃₂ 85	⁹ / ₁₆ 14	2 ¹⁹ / ₃₂ 66	1 ⁵ / ₃₂ 29	²⁵ / ₃₂ 20	1 ¹⁵ / ₁₆ 49	1.937 49.2	0.748 19	UCST209-26EH1S6 UCST209-27EH1S6 UCST209-28EH1S6 UCST209EH1S6		ST209EH1	UC209-26S6 UC209-27S6 UC209-28S6 UC209S6	27.8 16.2	14.0	2.1	— UCST209EH1CS6	— UCST209EH1CDS6	— 69	— ² / ₂₃ ³²	— 2.1
	¹ / ₈ ¹⁵ / ₁₆ 2	1 ¹⁵ / ₁₆ 49	¹¹ / ₁₆ 17.5	1 ³ / ₈ 35	4 ¹⁹ / ₃₂ 117	4 101.6	2 ²⁹ / ₃₂ 74	⁵ / ₈ 143	3 ⁷ / ₁₆ 87	⁹ / ₁₆ 14	2 ²⁷ / ₃₂ 72	1 ⁵ / ₃₂ 29	²⁵ / ₃₂ 20	1 ¹⁵ / ₁₆ 49	2.031 51.6	0.748 19	UCST210-30EH1S6 UCST210-31EH1S6 UCST210EH1S6 UCST210-32EH1S6		ST210EH1	UC210-30S6 UC210-31S6 UC210S6 UC210-32S6	29.8 18.6	14.4	2.3	— UCST210EH1CS6	— UCST210EH1CDS6	— 74	— ² / ₂₉ ³²	— 2.3

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See Table 10.5 in P.51.)
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_s , ΔJ_{1s})

Nominal unit code	ΔJ_s	ΔJ_{1s}
UCTH201~UCTH213	±0.5	±0.5

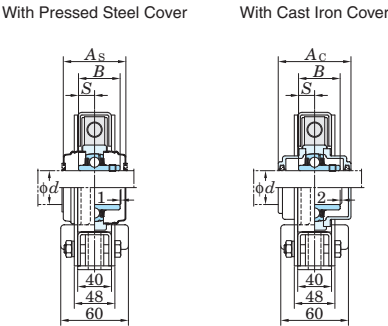
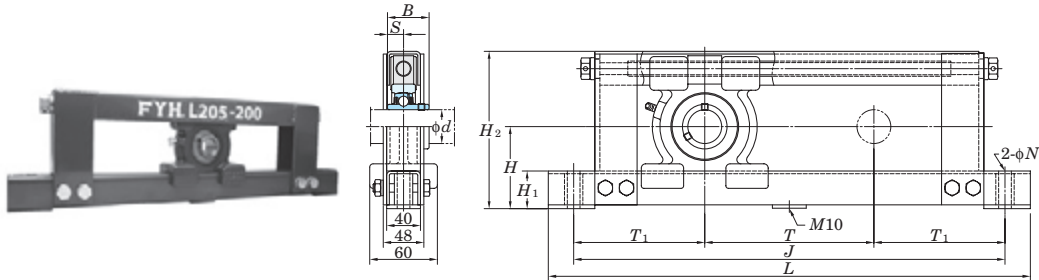
Unit: mm

Shaft Dia. mm inch		Dimensions inch mm															Bolt Size inch mm	Standard		Bearing No.	Mass kg	Basic Load Ratings kN		Factor <i>f</i> ₀	With Pressed Steel Cover				With Cast Iron Cover																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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<i>d</i>		<i>H</i>	<i>L</i>	<i>L</i> ₁	<i>A</i>	<i>J</i>	<i>J</i> ₁	<i>J</i> ₂	<i>N</i>	<i>T</i>	<i>T</i> ₁	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>	<i>S</i>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
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), accessory 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 + H305X, UK205 + H305X)

UCTL
Cylindrical bore (with set screws)
d 20 ~ 45 mm



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

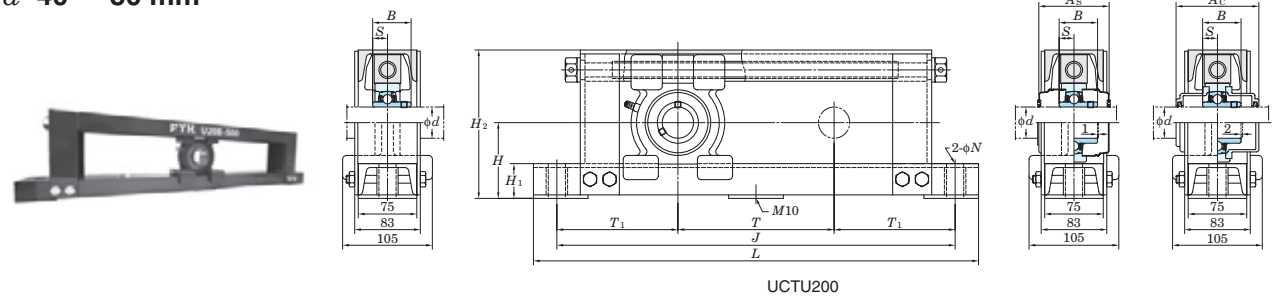
Nominal unit code	Unit: mm	
	ΔH_s	ΔJ_s
UCTL204~207	± 2	± 0.5
UCTL208, 209		± 0.8

Shaft Dia. mm	Dimensions mm										Bolt Size mm	Standard				Basic		Factor	With Pressed Steel Cover				With Cast Iron Cover			
												Unit No.	Bearing No.	Mass		Load Ratings kN			Unit No.	Dimension mm	Mass	Unit No.		Dimension mm	Mass	
	C_r	C_{0r}	f_0	Open Type	One Side Closed Type	A_s	kg	Open Type	One Side Closed Type	A_c						kg										
d	H	H_1	H_2	L	J	N	T	T_1	B	S																
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	44	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	44	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	44	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	44	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	48	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	48	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	48	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	48	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	52	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	52	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	52	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	52	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	59	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	59	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	59	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	59	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	68	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	68	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	68	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	68	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	68	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	68	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	68	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	68	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.51.)
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), accessory 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 + H306X, UK206 + H306X)
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



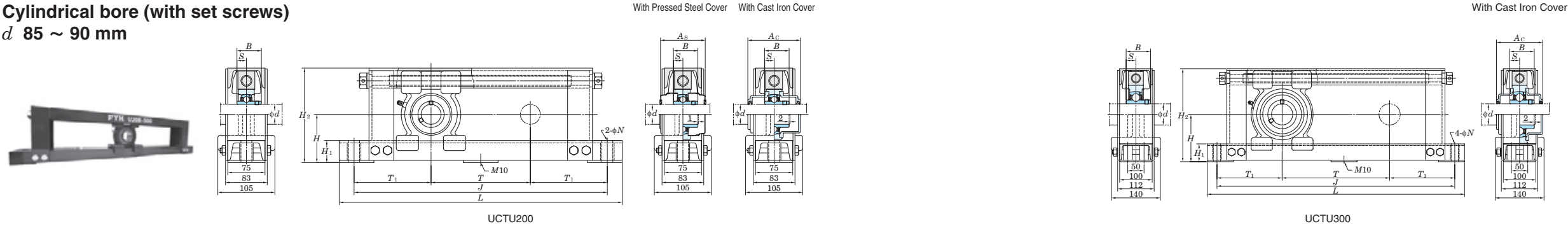
With Cast Iron Cover

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

Nominal unit code	ΔH_s	ΔJ_s
UCTU208-212	± 2	± 0.8
UCTU313-315		± 0.8
UCTU316-318		± 1.2

Shaft Dia. mm	Dimensions mm										Bolt Size mm	Standard				Basic Load Ratings kN		Factor f_0	With Pressed Steel Cover				With Cast Iron Cover			
												Unit No.	Bearing No.	Mass kg		Unit No.			Dimension mm	Mass kg	Unit No.		Dimension mm	Mass kg		
	H	H_1	H_2	L	J	N	T	T_1	B	S						Open Type	One Side Closed Type				Open Type	One Side Closed Type			Open Type	One Side Closed Type
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	68	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	68	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	68	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	68	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	68	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	68	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	68	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	68	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	68	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	68	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	73	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	73	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	73	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	73	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	73	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	75	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	75	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	75	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	75	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	75	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	88	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	88	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	88	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	88	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	88	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	

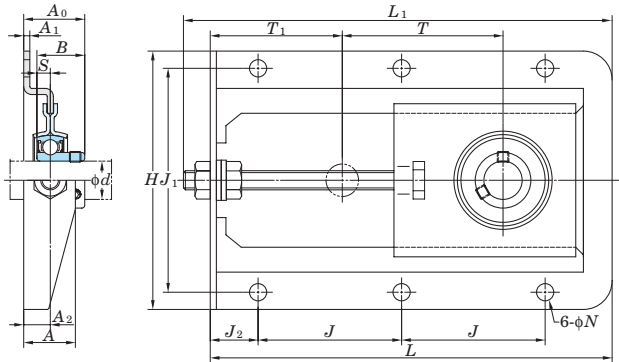
UCTU
Cylindrical bore (with set screws)
d 85 ~ 90 mm



Shaft Dia. mm	Dimensions mm										Bolt Size mm	Standard				Basic		Factor	With Pressed Steel Cover				With Cast Iron Cover					
												Unit No.	Bearing No.	Mass		Load Ratings kN			Unit No.	Dimension mm	Mass	Unit No.		Dimension mm	Mass			
																C_r	C_{0r}					f_0	Open Type			One Side Closed Type	A_s	kg
d	H	H_1	H_2	L	J	N	T	T_1	B	S																		
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	UCTU318-500	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	UCTU318-500	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	UCTU318-500	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	UCTU318-500	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.51.)
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, accessory 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 + H308X, UK208 + H308X)
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_{fs} , ΔJ_{ts})

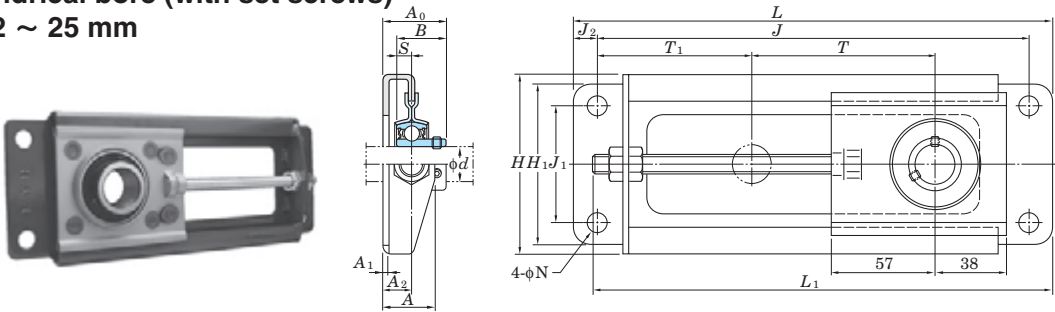
Nominal unit code	ΔJ_{fs}	ΔJ_{ts}
SBPTH201~SBPTH205	±0.7	±0.7

Unit: mm

Shaft Dia. mm <i>d</i>	Dimensions inch mm															Bolt Size inch mm	Unit No.	Bearing No.	Basic Load Ratings kN		Factor <i>f</i> ₀	Mass kg
	<i>H</i>	<i>L</i>	<i>L</i> ₁	<i>A</i>	<i>J</i>	<i>J</i> ₁	<i>J</i> ₂	<i>N</i>	<i>T</i>	<i>T</i> ₁	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>	<i>S</i>				<i>C</i> _r	<i>C</i> _{0r}		
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_s , ΔL_{1s})

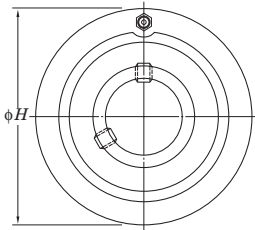
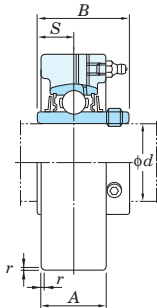
Nominal unit code	ΔJ_s	ΔL_{1s}
SBNPTH201~SBNPTH205	± 0.7	± 0.7

Unit: mm

Shaft Dia. mm <i>d</i>	Dimensions inch mm																	Bolt Size inch mm	Unit No.		Bearing No.	Basic Load Ratings kN		Factor <i>f</i> ₀	Mass kg
	<i>H</i>	<i>H</i> ₁	<i>L</i>	<i>L</i> ₁	<i>A</i>	<i>J</i>	<i>J</i> ₁	<i>J</i> ₂	<i>N</i>	<i>T</i>	<i>T</i> ₁	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>	<i>S</i>	<i>C</i> _r					<i>C</i> _{0r}			
12	3 15/16 100	3 17/32 90	10 1/4 260	9 11/16 246	1 1/16 27	9 1/4 235	2 9/16 65	1/2 12.5	7/16 11	3 15/16 100	3 9/32 83.5	1/8 3.2	19/32 15	1 7/32 22	0.866 6	0.236	5/16 M8	SBNPTH201-100	SB201	9.55	4.80	13.2	0.93		
15	3 15/16 100	3 17/32 90	10 1/4 260	9 11/16 246	1 1/16 27	9 1/4 235	2 9/16 65	1/2 12.5	7/16 11	3 15/16 100	3 9/32 83.5	1/8 3.2	19/32 15	1 7/32 31	0.866 22	0.236 6	5/16 M8	SBNPTH202-100	SB202	9.55	4.80	13.2	0.93		
17	3 15/16 100	3 17/32 90	10 1/4 260	9 11/16 246	1 1/16 27	9 1/4 235	2 9/16 65	1/2 12.5	7/16 11	3 15/16 100	3 9/32 83.5	1/8 3.2	19/32 15	1 7/32 31	0.866 22	0.236 6	5/16 M8	SBNPTH203-100	SB203	9.55	4.80	13.2	0.93		
20	3 15/16 100	3 17/32 90	10 1/4 260	9 11/16 246	1 1/16 27	9 1/4 235	2 9/16 65	1/2 12.5	7/16 11	3 15/16 100	3 9/32 83.5	1/8 3.2	19/32 15	1 5/16 33	0.984 25	0.276 7	5/16 M8	SBNPTH204-100	SB204	12.8	6.65	13.2	0.93		
25	3 15/16 100	3 17/32 90	10 1/4 260	9 11/16 246	1 1/16 27	9 1/4 235	2 9/16 65	1/2 12.5	7/16 11	3 15/16 100	3 9/32 83.5	1/8 3.2	19/32 15	1 11/32 34.5	1.063 27	0.295 7.5	5/16 M8	SBNPTH205-100	SB205	14.0	7.85	13.9	0.93		

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 inch		Dimensions inch mm					Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor <i>f</i> ₀	Mass kg
<i>d</i>		<i>H</i>	<i>A</i>	<i>r</i>	<i>B</i>	<i>S</i>				<i>C</i> _r	<i>C</i> _{0r}		
12	1/2						UCC201		UC201				0.52
15	5/8	2.835	25/32	0.06	1.220	0.500	UCC201-8		UC201-8				0.50
							UCC202		UC202				
17	3/4	72	20	1.5	31	12.7	UCC202-10	C204	UC202-10	12.8	6.65	13.2	0.49
							UCC203		UC203				0.47
20							UCC204-12		UC204-12				
							UCC204		UC204				
25	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
							UCC205		UC205				
	1						UCC205-16		UC205-16				
30							UCCX05		UCX05				
							UCCX05-16	CX05	UCX05-16	19.5	11.3	13.9	1.0
	1	90	27	1.5	38.1	15.9	UCC305		UC305				
							UCC305-16	C305	UC305-16	21.2	10.9	12.6	1.5
35	1 1/8						UCC206-18		UC206-18				
							UCC206		UC206				
	1 3/16	3.346	11/16	0.06	1.500	0.626	UCC206-19	C206	UC206-19	19.5	11.3	13.9	0.81
	1 1/4						UCC206-20		UC206-20				
							UCCX06		UCX06				
							UCCX06-19	CX06	UCX06-19	25.7	15.4	13.9	1.3
40	1 3/16						UCCX06-20		UCX06-20				
	1 1/4						UCC306		UC306				
								C306	UC306	26.7	15.0	13.3	1.7
	1 1/4						UCC207-20		UC207-20				
	1 5/16						UCC207-21		UC207-21				
	1 3/8	3.543	17/64	0.08	1.689	0.689	UCC207-22	C207	UC207-22	25.7	15.4	13.9	0.93
45							UCC207		UC207				
	1 7/16						UCC207-23		UC207-23				
	1 3/8	4.331	1 11/32	0.08	1.937	0.748	UCCX07-22		UCX07-22				
							UCCX07	CX07	UCX07	29.1	17.8	14.0	1.7
50	1 7/16						UCCX07-23		UCX07-23				
							UCC307		UC307				
								C307	UC307	33.4	19.3	13.2	2.2
	1 1/2						UCC208-24		UC208-24				
55	1 9/16						UCC208-25		UC208-25				
							UCC208	C208	UC208	29.1	17.8	14.0	1.2
	1 1/2	4.724	1 1/2	0.08	1.937	0.748	UCCX08-24		UCX08-24				
							UCCX08	CX08	UCX08	34.1	21.3	14.0	2.3
60	1 1/2	4.724	1 11/32	0.12	2.047	0.748	UCC308-24		UC308-24				
							UCC308	C308	UC308	40.7	24.0	13.2	2.2
	1 5/8						UCC209-26		UC209-26				
	1 11/16	4.331	1 7/32	0.08	1.937	0.748	UCC209-27		UC209-27				
65	1 3/4						UCC209-28		UC209-28				
							UCC209	C209	UC209	34.1	21.3	14.0	1.5

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
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), accessory 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.

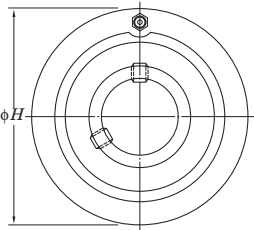
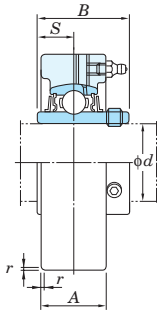
d (45) ~ 85 mm

Shaft Dia. mm inch		Dimensions inch mm					Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor <i>f</i> ₀	Mass kg
<i>d</i>		<i>H</i>	<i>A</i>	<i>r</i>	<i>B</i>	<i>S</i>				<i>C</i> _r	<i>C</i> _{0r}		
45	1 3/4	4.724	1 1/2	0.08	2.031	0.748	UCCX09-28		UCX09-28				
		120	38	2	51.6	19	UCCX09	CX09	UCX09	35.1	23.3	14.4	2.3
50	1 3/4	5.118	1 1/2	0.12	2.244	0.866	UCC309-28		UC309-28				
		130	38	3	57	22	UCC309	C309	UC309	48.9	29.5	13.3	2.8
55	1 7/8						UCC210-30		UC210-30				
	1 15/16	4.724	1 19/64	0.08	2.031	0.748	UCC210-31		UC210-31				
		120	33	2	51.6	19	UCC210	C210	UC210	35.1	23.3	14.4	2.0
	2						UCC210-32		UC210-32				
60	1 15/16	5.118	1 37/64	0.1	2.189	0.874	UCCX10-31		UCX10-31				
		130	40	2.5	55.6	22.2	UCCX10	CX10	UCX10	43.4	29.4	14.4	2.8
	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
65	2						UCC211-32		UC211-32				
	2 1/8	4.921	1 3/8	0.1	2.189	0.874	UCC211-34		UC211-34				
		125	35	2.5	55.6	22.2	UCC211	C211	UC211	43.4	29.4	14.4	2.2
	2 3/16						UCC211-35		UC211-35				
							UCCX11		UCX11				
							UCCX11-35	CX11	UCX11-35	52.4	36.2	14.4	4.0
70	2 1/4						UCC311-32		UC311-32				
							UCC311		UC311				
	2 3/16	5.906	1 21/32	0.1	2.563	1.000	UCC311-35	C311	UC311-35	71.6	45.0	13.2	3.9
	2 1/4						UCC311-35		UC311-35				
75	2 3/16						UCC212-36		UC212-36				
							UCC212		UC212				
	2 3/8	5.118	1 1/2	0.1	2.563	1.000	UCC212-38	C212	UC212-38	52.4	36.2	14.4	2.6
	2 7/16						UCC212-39		UC212-39				
80							UCCX12		UCX12				
							UCCX12-39	CX12	UCX12-39	57.2	40.1	14.4	4.6
	2 7/16	6.299	1 47/64	0.1	2.563	1.000	UCC312		UC312				
							UCC312-39	C312	UC312-39	81.9	52.2	13.2	4.8
85	2 7/16	6.299	1 13/16	0.12	2.795	1.024	UCC213-40		UC213-40				
							UCC213		UC213				
	2 1/2	5.512	1 37/64	0.1	2.563	1.000	UCC313-40	C213	UC313-40	57.2	40.1	14.4	3.0
							UCC313-40		UC313-40				
90	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
							UCC314-44		UC314-44				
	2 3/4	7.087	2 3/64	0.12	3.071	1.299	UCC314	C314	UC314	104	68.2	13.2	6.7
							UCC315-47		UC315-47				
95							UCC315		UC315				
							UCC315-48	C315	UC315-48	113	77.2	13.2	7.8
	3	7.480	2 11/64	0.16	3.228	1.260	UCC316		UC316				
							UCC317	C317	UC317	123	86.7	13.3	9.2
100	—	7.874	2 23/64	0.16	3.386	1.339							
		200	60	4	86	34							
105	—	8.465	2 33/64	0.16	3.780	1.575							
		215	64	4	96	40							

Variations of tolerance of outside diameter (ΔH_s), variations of tolerance of width (ΔA_s), and tolerance of circumferential runout of outside diameter (Y)

Housing No.		ΔH_s	ΔA_s	Y
C204-C205		0 -0.030	±0.2	0.2
C206-C210	CX05-CX08	0 -0.035		
	C305-C308	0 -0.040	±0.3	0.3
C211-C213	CX09-CX10	0 -0.046		
	C309-C310	0 -0.052		
	C311-C314	0 -0.057		
	C315-C318	0 -0.057	±0.4	0.4
	C319	0 -0.057		
	C320-C322	0 -0.057		
	C324-C328	0 -0.057		

UCC
Cylindrical bore (with set screws)
d 90 ~ 140 mm



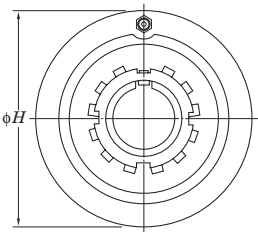
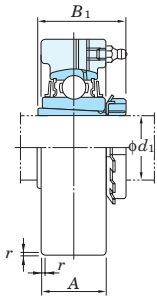
Shaft Dia.		Dimensions					Unit No.	Housing No.	Bearing No.	Basic Load Ratings		Factor	Mass
mm	inch	inch mm								C _r	C _{0r}		
d		H	A	r	B	S							
90	3 1/2	8.858	2 19/32	0.16	3.780	1.575	UCC318-56 UCC318	C318	UC318-56 UC318	143	107	13.3	13.1
		225	66	4	96	40							
95	—	9.449	2 53/64	0.16	4.055	1.614	UCC319	C319	UC319	153	119	13.3	15.8
		240	72	4	103	41							
100	3 15/16 4	10.236	2 61/64	0.16	4.252	1.654	UCC320 UCC320-63 UCC320-64	C320	UC320 UC320-63 UC320-64	173	141	13.2	19.6
		260	75	4	108	42							
105	—	10.236	2 61/64	0.16	4.409	1.732	UCC321	C321	UC321	184	153	13.2	27.0
		260	75	4	112	44							
110	—	11.811	3 5/32	0.2	4.606	1.811	UCC322	C322	UC322	205	180	13.2	29.2
		300	80	5	117	46							
120	—	12.598	3 35/64	0.2	4.961	2.008	UCC324	C324	UC324	207	185	13.5	35.9
		320	90	5	126	51							
130	—	13.386	3 15/16	0.24	5.315	2.126	UCC326	C326	UC326	229	214	13.6	43.0
		340	100	6	135	54							
140	—	14.173	3 15/16	0.24	5.709	2.323	UCC328	C328	UC328	253	246	13.6	52.9
		360	100	6	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.51.)
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), accessory 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 (ΔH_s), variations of tolerance of width (ΔA_s), and tolerance of circumferential runout of outside diameter (Y)

Housing No.			Unit: mm		
			ΔH_s	ΔA_s	Y
C204-C205			0 -0.030	±0.2	0.2
C206-C210	CX05-CX08	C305-C308	0 -0.035		
C211-C213	CX09-CX10 CX11-CX12	C309-C310	0	±0.3	0.3
		C311-C314	-0.040		
		C315-C318	0		
		C319	-0.046		
		C320-C322	0 -0.052		
		C324-C328	0 -0.057		0.4

UKC
Tapered bore (with adapter)
d₁ 20 ~ (50) mm



Shaft Dia. mm inch		Dimensions inch mm				Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor	Adapter ¹⁾ No.	Mass ¹⁾ kg
d ₁		H	A	r	B ₁ ¹⁾				C _r	C _{0r}	f ₀		
20	³ / ₄	3.150	⁵⁵ / ₆₄	0.06	1 ⁵ / ₃₂ (1 ³ / ₈)	UKC205	C205	UK205	14.0	7.85	13.9	HE305X(HE2305X) H305X(H2305X)	0.68(0.70)
	³ / ₄	80	22	1.5	29(35)	UKCX05	CX05	UKX05	19.5	11.3	13.9	HE2305X H2305X	0.99
	³ / ₄	3.543	¹¹ / ₁₆	0.06	1 ³ / ₈	UKC305	C305	UK305	21.2	10.9	12.6	HE2305X H2305X	1.6
	³ / ₄	90	27	1.5	35								
25	³ / ₄	3.543	¹¹ / ₁₆	0.08	1 ³ / ₈	UKC206	C206	UK206	19.5	11.3	13.9	H306X(H2306X) HE306X(HE2306X)	0.85(0.89)
	1	85	27	1.5	31(38)	UKCX06	CX06	UKX06	25.7	15.4	13.9	H2306X HE2306X	1.3
	1	3.937	¹³ / ₁₆	0.08	1 ¹ / ₂	UKC306	C306	UK306	26.7	15.0	13.3	H2306X HE2306X	1.8
	1	100	30	2	38								
30	1 ¹ / ₈	3.543	¹⁷ / ₆₄	0.08	1 ³ / ₈ (1 ¹¹ / ₁₆)	UKC207	C207	UK207	25.7	15.4	13.9	HS307X(HS2307X) H307X(H2307X)	0.97(1.0)
	1 ¹ / ₈	90	28	2	35(43)	UKCX07	CX07	UKX07	29.1	17.8	14.0	HS2307X H2307X	1.7
	1 ¹ / ₈	4.331	1 ¹¹ / ₃₂	0.08	1 ¹¹ / ₁₆	UKC307	C307	UK307	33.4	19.3	13.2	HS2307X H2307X	2.2
	1 ¹ / ₈	110	34	2	43								
35	1 ¹ / ₄	3.937	1 ³ / ₁₆	0.08	1 ¹³ / ₃₂ (1 ¹³ / ₁₆)	UKC208	C208	UK208	29.1	17.8	14.0	HE308X(HE2308X) HS308X(HS2308X)	1.3(1.4)
	1 ³ / ₈	100	30	2	36(46)	UKCX08	CX08	UKX08	34.1	21.3	14.0	H308X(H2308X) HE2308X	2.3
	1 ¹ / ₄	4.724	1 ¹ / ₂	0.08	1 ¹³ / ₁₆	UKC308	C308	UK308	40.7	24.0	13.2	HS2308X H2308X	2.2
	1 ³ / ₈	120	34	3	46								
40	1 ¹ / ₂	4.331	1 ⁷ / ₃₂	0.08	1 ¹⁷ / ₃₂ (1 ³¹ / ₃₂)	UKC209	C209	UK209	34.1	21.3	14.0	HE309X(H2309X) H309X(H2309X)	1.6(1.7)
	1 ¹ / ₂	110	31	2	39(50)	UKCX09	CX09	UKX09	35.1	23.3	14.4	HE2309X H2309X	2.3
	1 ¹ / ₂	4.724	1 ¹ / ₂	0.08	1 ³¹ / ₃₂	UKC309	C309	UK309	48.9	29.5	13.3	HE2309X H2309X	2.8
	1 ¹ / ₂	5.118	1 ¹ / ₂	0.12	1 ³¹ / ₃₂								
45	1 ³ / ₄	4.724	1 ¹⁹ / ₆₄	0.08	1 ²¹ / ₃₂ (2 ⁵ / ₃₂)	UKC210	C210	UK210	35.1	23.3	14.4	HE310X(HE2310X) H310X(H2310X)	2.0(2.1)
	1 ³ / ₄	120	33	2	42(55)	UKCX10	CX10	UKX10	43.4	29.4	14.4	HE2310X H2310X	2.8
	1 ³ / ₄	5.118	1 ³⁷ / ₆₄	0.1	2 ⁵ / ₃₂	UKC310	C310	UK310	62.0	38.3	13.2	HE2310X H2310X	3.2
	1 ³ / ₄	130	40	2.5	55								
50	1 ⁷ / ₈	5.512	1 ³⁷ / ₆₄	0.12	2 ⁵ / ₃₂								
	2	140	40	3	55								

Note 1) Numerals shown in parentheses indicate the dimensions, Part No. of applicable adapters (H2300X series), and the unit weight of UK200L3 series (triple seal type).

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)

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 + H306X, UK206 + H306X)

4. As for the triple seal type product (205 is the double seal type product), accessory 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.

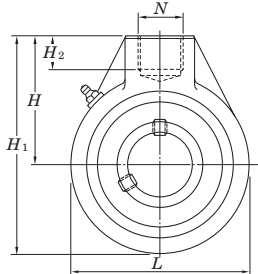
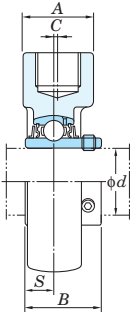
d₁ (50) ~ 125 mm

Shaft Dia. mm inch		Dimensions inch mm				Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor	Adapter ¹⁾ No.	Mass ¹⁾ kg
d ₁		H	A	r	B ₁ ¹⁾				C _r	C _{0r}	f ₀		
50	1 ⁷ / ₈	5.906	1 ²¹ / ₃₂	0.1	2 ⁵ / ₁₆	UKCX11	CX11	UKX11	52.4	36.2	14.4	HS2311X H2311X HE2311X	3.8
	2	150	42	2.5	59								
	1 ⁷ / ₈	5.906	1 ⁴⁷ / ₆₄	0.12	2 ⁵ / ₁₆	UKC311	C311	UK311	71.6	45.0	13.2	HS2311X H2311X HE2311X	4.1
	2	150	44	3	59								
55	2 ¹ / ₈	5.118	1 ¹ / ₂	0.1	1 ²⁷ / ₃₂ (2 ⁷ / ₁₆)	UKC212	C212	UK212	52.4	36.2	14.4	HS312X(HS2312X) H312X(H2313X)	2.5(2.9)
	2 ¹ / ₈	130	38	2.5	47(62)	UKCX12	CX12	UKX12	57.2	40.1	14.4	HS2312X H2312X	4.4
	2 ¹ / ₈	6.299	1 ⁴⁷ / ₆₄	0.1	2 ⁷ / ₁₆	UKC312	C312	UK312	81.9	52.2	13.2	HS2312X H2312X	4.7
	2 ¹ / ₈	160	44	2.5	62								
60	2 ¹ / ₄	5.512	1 ³⁷ / ₆₄	0.1	1 ³¹ / ₃₂ (2 ⁹ / ₁₆)	UKC213	C213	UK213	57.2	40.1	14.4	HE313X(HE2313X) H313X(H2313X) HS313X(HS2313X)	3.0(3.3)
	2 ³ / ₈	140	40	2.5	50(65)	UKCX13	CX13	UKX13	57.2	40.1	14.4	HE2313X H2313X HS2313X	5.8
	2 ¹ / ₄	6.693	1 ³¹ / ₃₂	0.12	2 ⁹ / ₁₆	UKC313	C313	UK313	92.7	59.9	13.2	HE2313X H2313X HS2313X	5.8
	2 ³ / ₈	170	50	3	65								
65	2 ¹ / ₂	7.480	2 ¹¹ / ₆₄	0.16	2 ⁷ / ₈	UKC315	C315	UK315	113	77.2	13.2	HE2315X H2315X	8.0
70	2 ³ / ₄	7.874	2 ²³ / ₆₄	0.16	3 ¹ / ₁₆	UKC316	C316	UK316	123	86.7	13.3	HE2316X H2316X	9.2
75	3	8.465	2 ³³ / ₆₄	0.16	3 ⁷ / ₃₂	UKC317	C317	UK317	133	96.8	13.3	H2317X HE2317X	11.6
80	—	8.858	2 ¹⁹ / ₃₂	0.16	3 ³ / ₈	UKC318	C318	UK318	143	107	13.3	H2318X	13.1
85	3 ¹ / ₄	9.449	2 ⁵³ / ₆₄	0.16	3 ¹⁷ / ₃₂	UKC319	C319	UK319	153	119	13.3	HE2319X H2319X	16.1
90	3 ¹ / ₂	10.236	2 ⁶¹ / ₆₄	0.16	3 ¹³ / ₁₆	UKC320	C320	UK320	173	141	13.2	HE2320X H2320X	19.2
100	4	11.811	3 ⁵ / ₃₂	0.2	4 ¹ / ₈	UKC322	C322	UK322	205	180	13.2	H2322X HE2322X	29.1
110	—	12.598	3 ³⁵ / ₆₄	0.2	4 ¹³ / ₃₂	UKC324	C324	UK324	207	185	13.5	H2324	36.2
115	4 ¹ / ₂	13.386	3 ¹⁵ / ₁₆	0.24	4 ³ / ₄	UKC326	C326	UK326	229	214	13.6	HE2326 H2326	42.8
125	—	14.173	3 ¹⁵ / ₁₆	0.24	5 ⁵ / ₃₂	UKC328	C328	UK328	253	246	13.6	H2328	52.9
		360	100	6	131								

Variations of tolerance of outside diameter (ΔH_8), variations of tolerance of width (ΔA_8), and tolerance of circumferential runout of outside diameter (Y)

Housing No.		ΔH_8	ΔA_8	Y
C205		0 -0.030		
C206-C210	CX05-CX08	0 -0.035	±0.2	0.2
C211-C213	CX09-CX10	0 -0.040		
	C309-C310	0		
	C311-C314	0 -0.046	±0.3	0.3
	C315-C318	0 -0.052		
	C319	0 -0.057		
	C320-C322	0 -0.057		
	C324-C328	0 -0.057		

UCHA
 Cylindrical bore (with set screws)
 d 12 ~ 75 mm

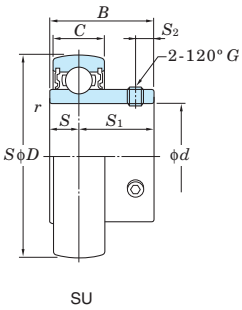
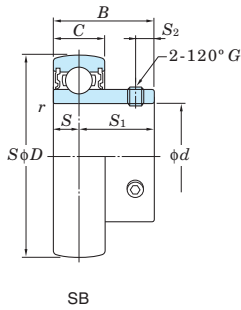
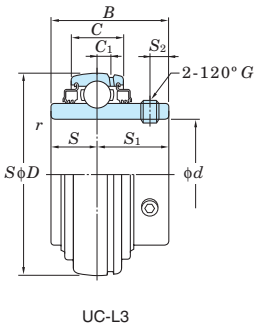
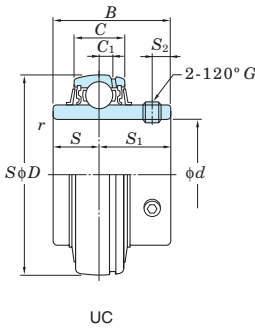


Shaft Dia. mm inch		Dimensions inch mm									Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor <i>f</i> ₀	Mass kg
<i>d</i>		<i>H</i>	<i>A</i>	<i>L</i>	<i>H</i> ₁	<i>H</i> ₂	<i>N</i>	<i>C</i>	<i>B</i>	<i>S</i>				<i>C</i> _r	<i>C</i> _{0r}		
12	1/2										UCHA201 UCHA201-8 UCHA202 UCHA202-10 UCHA203 UCHA204-12 UCHA204	HA204	UC201 UC201-8 UC202 UC202-10 UC203 UC204-12 UC204	12.8	6.65	13.2	0.77
15	5/8	2 17/32	1 9/16	2 17/32	3 25/32	3/4	Rp 3/4	—	1.220	0.500							0.75
17	3/4	64	40	64	96	19		—	31	12.7							0.74
20																	0.72
25	7/8 15/16 1	2 17/32	1 9/16	3 1/16	4 1/16	3/4	Rp 3/4	—	1.343	0.563	UCHA205-14 UCHA205-15 UCHA205 UCHA205-16	HA205	UC205-14 UC205-15 UC205 UC205-16	14.0	7.85	13.9	0.87
		64	40	78	103	19		—	34.1	14.3							
30	1 1/8 1 3/16 1 1/4	2 17/32	1 9/16	3 1/16	4 1/16	3/4	Rp 3/4	—	1.500	0.626	UCHA206-18 UCHA206 UCHA206-19 UCHA206-20	HA206	UC206-18 UC206 UC206-19 UC206-20	19.5	11.3	13.9	0.83
		64	40	78	103	19		—	38.1	15.9							
35	1 1/4 1 5/16 1 3/8 1 7/16	2 3/4	1 9/16	3 5/8	4 9/16	3/4	Rp 3/4	—	1.689	0.689	UCHA207-20 UCHA207-21 UCHA207-22 UCHA207 UCHA207-23	HA207	UC207-20 UC207-21 UC207-22 UC207 UC207-23	25.7	15.4	13.9	1.2
		70	40	92	116	19		—	42.9	17.5							
40	1 1/2 1 9/16	2 7/8	1 9/16	3 25/32	4 3/4	3/4	Rp 3/4	5/64	1.937	0.748	UCHA208-24 UCHA208-25 UCHA208	HA208	UC208-24 UC208-25 UC208	29.1	17.8	14.0	1.3
		73	40	96	121	19			49.2	19							
45	1 5/8 1 11/16 1 3/4	3 7/32	1 7/8	4 1/4	5 11/32	13/16	Rp 1	13/64	1.937	0.748	UCHA209-26 UCHA209-27 UCHA209-28 UCHA209	HA209	UC209-26 UC209-27 UC209-28 UC209	34.1	21.3	14.0	1.7
		82	48	108	136	21			49.2	19							
50	1 7/8 1 15/16	3 9/32	1 7/8	4 21/32	5 19/32	13/16	Rp 1	13/64	2.031	0.748	UCHA210-30 UCHA210-31 UCHA210 UCHA210-32	HA210	UC210-30 UC210-31 UC210 UC210-32	35.1	23.3	14.4	2.1
		83	48	118	142	21			51.6	19							
55	2 2 1/8 2 3/16	3 7/16	2 3/8	4 31/32	5 29/32	31/32	Rp 1 1/4	9/32	2.189	0.874	UCHA211-32 UCHA211-34 UCHA211 UCHA211-35	HA211	UC211-32 UC211-34 UC211 UC211-35	43.4	29.4	14.4	2.8
		87	60	126	150	25			55.6	22.2							
60	2 1/4 2 3/8 2 7/16	4 1/32	2 3/8	5 19/32	6 13/16	1 3/32	Rp 1 1/4	23/64	2.563	1.000	UCHA212-36 UCHA212 UCHA212-38 UCHA212-39	HA212	UC212-36 UC212 UC212-38 UC212-39	52.4	36.2	14.4	3.9
		102	60	142	173	28			65.1	25.4							
65	2 1/2	4 19/32	2 3/4	6 17/32	7 7/8	1 1/4	Rp 1 1/2	3/8	2.563	1.000	UCHA213-40 UCHA213	HA213	UC213-40 UC213	57.2	40.1	14.4	5.8
		117	70	166	200	32			65.1	25.4							
70	2 3/4	4 19/32	2 3/4	6 17/32	7 7/8	1 1/4	Rp 1 1/2	3/8	2.937	1.189	UCHA214-44 UCHA214	HA214	UC214-44 UC214	62.2	44.1	14.5	5.9
		117	70	166	200	32			74.6	30.2							
75	2 15/16 3	4 19/32	2 3/4	6 17/32	7 7/8	1 1/4	Rp 1 1/2	3/8	3.063	1.311	UCHA215-47 UCHA215 UCHA215-48	HA215	UC215-47 UC215 UC215-48	67.4	48.3	14.5	5.6
		117	70	166	200	32			77.8	33.3							

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 10.5 in P.51.)
 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), accessory 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 + H305X, UK205 + H305X)

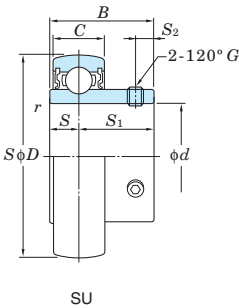
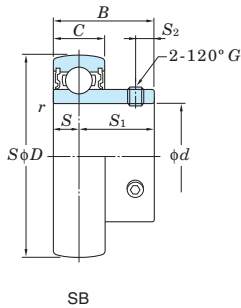
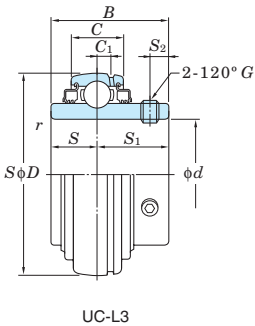
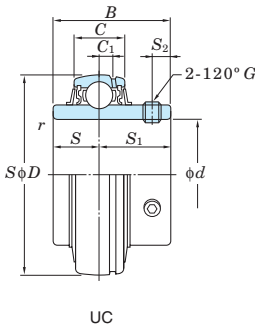
UC, SB, SU
Cylindrical bore (with set screws)
d 8 ~ (30) mm



Shaft Dia. mm inch		Dimensions								Basic Load Ratings kN		Factor	Bearing No.		Dimensions								Set Screw Brg. Bore G		Mass	
d		D		B		C		r (min.)		C _r	C _{0r}	f ₀	Standard	L3 Type	C ₁		S		S ₁		S ₂		mm	inch	kg	
mm	inch	mm	inch	mm	inch	mm	inch	mm	inch						mm	inch	mm	inch	mm	inch	mm	inch				mm
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	
		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	
		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	
		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	
15	—	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	
		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	
		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	
—	5/8	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	
		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	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	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	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	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	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	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	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	
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	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	0.689	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	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	—	5/16-28UNF	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	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	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	

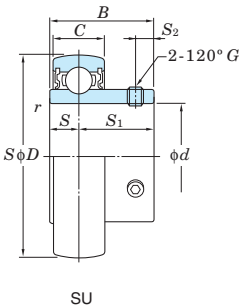
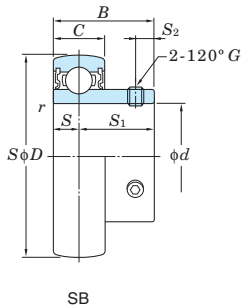
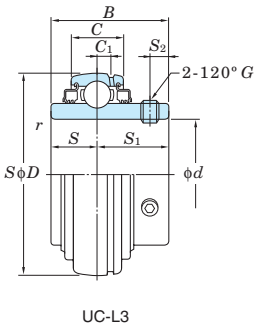
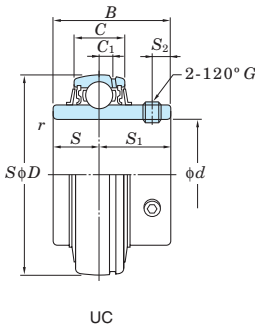
Remarks 1. SU type product is the clean series ball bearing for unit.
2. From UC201 to 205 are the double seal type products (L2).

UC, SB, SU
Cylindrical bore (with set screws)
d (30) ~ (60) mm



Shaft Dia. mm inch			Dimensions							Basic Load Ratings kN		Factor	Bearing No.			Dimensions								Set Screw Brg. Bore G		Mass	
d			D		B		C		r (min.)		C _r	C _{0r}	f ₀	Standard	L3 Type		C ₁		S		S ₁		S ₂		mm inch		kg
			mm	inch	mm	inch	mm	inch	mm	inch							mm	inch	mm	inch	mm	inch	mm	inch			
—	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	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	—	5/16-28UNF	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	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		
		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	
—	1 7/16	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	—	5/16-28UNF	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	—	5/16-28UNF	0.72		
		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	
—	1 1/2	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	—	5/16-28UNF	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		
		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	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
		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	
—	1 3/4	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	—	5/16-24UNF	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		
		45	—	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
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		
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		
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		
—	1 15/16	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		
		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		
—	2	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		
		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			
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			
55	—	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		
		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		
—	2 3/16	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		
		110	4.331	65.1	2.563	27	1.063	1.5	0.059																		

UC, SB, SU
Cylindrical bore (with set screws)
d (60) ~ 140 mm



Shaft Dia. mm inch		Dimensions							Basic Load Ratings kN		Factor	Bearing No.			Dimensions							Set Screw Brg. Bore G		Mass		
d		D		B		C		r (min.)		C _r	C _{0r}	f ₀	Standard	L3 Type		C ₁		S		S ₁		S ₂		mm	inch	kg
		mm	inch	mm	inch	mm	inch	mm	inch						mm	inch	mm	inch	mm	inch						
–	2 7/16	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
		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
–	2 1/2	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
		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
65	–	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
		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
–	2 3/4	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
		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
70	–	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
		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
–	2 15/16	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
		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
75	–	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
		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
–	3	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
		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
–	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	M12×1.5	–	2.79
		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	M12×1.5	–	3.87
–	3 1/4	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	M14×1.5	–	5.60
		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	M12×1.5	–	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	M12×1.5	–	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	M16×1.5	–	6.90
		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 7/16	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	M16×1.5	–	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	M12×1.5	–	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	M14×1.5	–	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	M16×1.5	–	7.87
		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	M16×1.5	–	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	M16×1.5	–	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	M18×1.5	–	11.2
		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
–	3 15/16	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	M18×1.5	–	11.2
		190	7.480	117.5	4.626	43	1.693	2.1	0.083	133	105	14.4	UCX20-64													

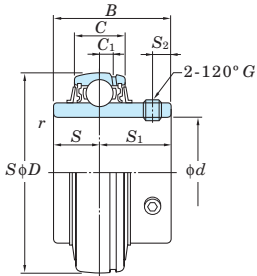
UC-S6, SU-S6 (Stainless steel series)
Cylindrical bore (with set screws)
d 10 ~ 60 mm



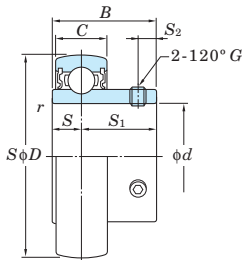
UC-S6



SU-S6



UC-S6

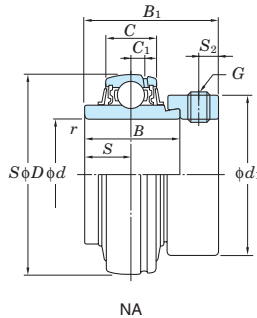
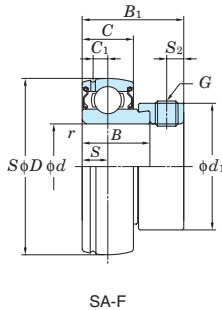
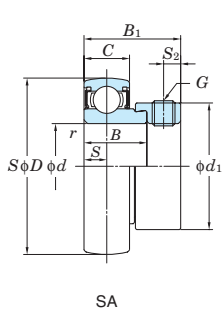


SU-S6

Shaft Dia. mm inch		Dimensions								Basic Load Ratings kN		Factor	Bearing No.		Dimensions								Set Screw Brg. Bore G	Mass
d		D		B		C		r (min.)		C _r	C _{0r}	f ₀	Standard		C ₁		S		S ₁		S ₂		mm	kg
mm	inch	mm	inch	mm	inch	mm	inch	mm	inch						mm	inch	mm	inch	mm	inch	mm	inch		
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	1/2	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
		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	5/8	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
		40	1.575	27.4	1.079	13	0.512	0.6	0.024	8.15	3.85	13.2	UC202-10S6		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
		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
		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
		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
		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
		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
		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
		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
		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
		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
		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
		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
		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
		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
		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 3/16	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
		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
		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

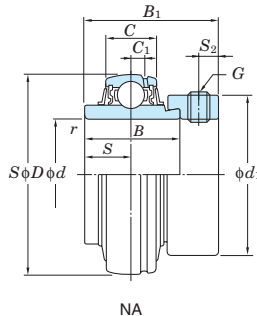
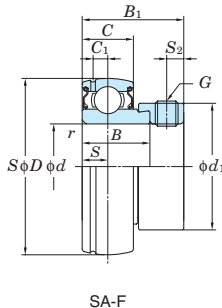
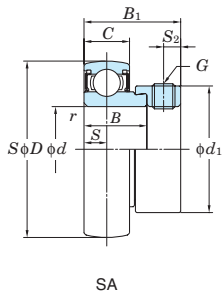
Remark S6 series product is the stainless steel series ball bearing for unit.

SA, SA-F, NA
Cylindrical bore
(with eccentric locking collar)
d 12 ~ (30) mm



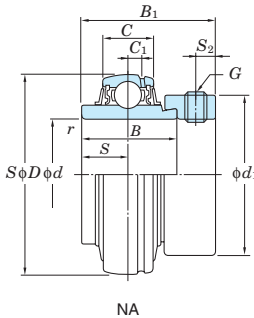
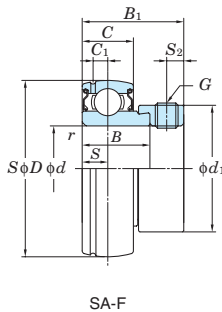
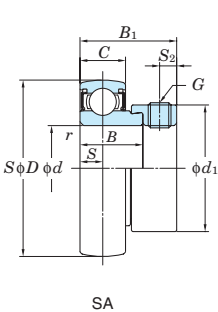
Shaft Dia mm inch		Dimensions										Basic Load Ratings kN		Factor	Bearing No.		Dimensions								Set Screw Brg.Bore		Mass
d		D		B		B ₁		C		r (min.)		C _r	C _{0r}	f ₀			C ₁		S		S ₂		d ₁				kg
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch						mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
12	—	40	1.575	19	0.784	28.5	1.122	12	0.472	0.6	0.024	9.55	4.80	13.2	SA201 SA201F NA201		—	—	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			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			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 SA201-8F NA201-8		—	—	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			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			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 SA202F NA202		—	—	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			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			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 NA202-10		—	—	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			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 SA203F NA203		—	—	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			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			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 SA204-12F NA204-12		—	—	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			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			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 SA204F NA204		—	—	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			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			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 NA205-14		—	—	7.5	0.295	4.8	0.189	38.1	1.311	—	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			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 SA205-15F NA205-15		—	—	7.5	0.295	4.8	0.189	38.1	1.311	—	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			3.7	0.146	7.5	0.295	4.8	0.189	38.1	1.311	—	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			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 SA205F NA205		—	—	7.5	0.295	4.8	0.189	38.1	1.311	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			3.7	0.146	7.5	0.295	4.8	0.189	38.1	1.311	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			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 SA205-16F NA205-16		—	—	7.5	0.295	4.8	0.189	38.1	1.311	—	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			3.7	0.146	7.5	0.295	4.8	0.189	38.1	1.311	—	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			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 SA206-18F NA206-18		—	—	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			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			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 SA206F NA206		—	—	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			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			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 SA206-19F NA206-19		—	—	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			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			5	0.197	18.3	0.720	6	0.236	44.5	1.752	—	5/16-24UNF	0.41
—	1 1/4	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
		62	2.441	22	0.866	33.9	1.335	16	0.630	1	0.039	19.5	11.3	13.9			—	—	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			4.7	0.185	9	0.354	6	0.236	44.5	1.752	—	5/16-24UNF	0.34
—	1 1/4	62	2.441	36.5	1.437	48.4	1.906	19	0.748	1	0.039	19.5	11.3	13.9	SA206-20 SA206-20F NA206-20		4.7	0.185	9	0.354	6	0.236	44.5	1.752	—	5/16-24UNF	0.34
		62	2.441	23.8	0.937	35.7	1.406	18	0.709	1	0.039	19.5	11.3	13.9			5	0.197	18.3	0.720	6	0.236	44.5	1.752	—	5/16-24UNF	0.38
		72	2.835	23	0.906	36.5	1.437	17	0.669	1.1	0.043																

SA, SA-F, NA
Cylindrical bore
(with eccentric locking collar)
d (30) ~ 60 mm



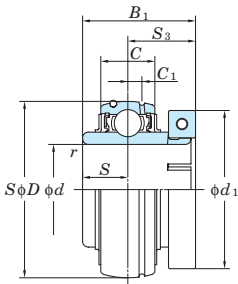
Shaft Dia mm inch		Dimensions									Basic Load Ratings kN		Factor	Bearing No.		Dimensions								Set Screw Brg.Bore		Mass
		D		B		B ₁		C		r (min.)						C ₁		S		S ₂		d ₁				
d		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	C _r	C _{0r}	f ₀		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	kg
—	1 3/8	72	2.835	23	0.906	36.5	1.437	17	0.669	1.1	0.043	25.7	15.4	13.9	SA207-22 SA207-22F NA207-22	—	—	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		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		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 SA207F NA207	—	—	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		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		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 SA207-23F NA207-23 NA307-23	—	—	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		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		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		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 SA208-24F NA208-24 NA308-24	—	—	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		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		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		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 SA208-25F NA208-25	—	—	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		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		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 SA208F NA208	—	—	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		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		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 NA209-26	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		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 NA209-27 SA309-27	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		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		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 NA209-28	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		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 NA209	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		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 NA210-30	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		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 NA210-31 NA310-31	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		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		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 NA210	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		6	0.236	24.6	0.969	6.8	0.268	69.9	2.752	M8×1	—	1.01
		90	3.543	49.2	1.937	62.7	2.469	24	0.945	1.1	0.043	35.1	23.3	14.4		6	0.236	24.6	0.969	6.8	0.268	69.9	2.752	—	5/16-24UNF	0.99
—	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	SA211-32F NA211-32	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		7	0.276	27.8	1.094	8	0.315	76.2	3.000	—	3/8-24UNF	1.58
		100	3.937	32.4	1.276	48.4	1.906	24	0.945	1.5	0.059	43.4	29.4	14.4		7	0.276	12	0.472	8	0.315	76.2	3.000	—	3/8-24UNF	1.2
—	2 1/8	100	3.937	55.5	2.185	71.4	2.811	25	0.984	1.5	0.059	43.4	29.4	14.4	SA211-34F NA211-34	7	0.276	27.8	1.094	8	0.315	76.2	3.000	—	3/8-24UNF	1.49
		100	3.937	32.4	1.276	48.4	1.906	24	0.945	1.5	0.059	43.4	29.4	14.4		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		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													

SA, SA-F, NA
Cylindrical bore
(with eccentric locking collar)
d 65 ~ 75 mm



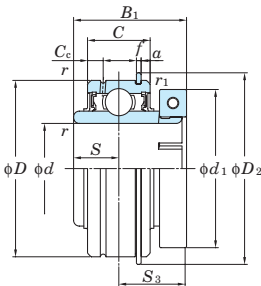
Shaft Dia		Dimensions										Basic Load Ratings		Factor	Bearing No.		Dimensions								Set Screw Brg.Bore		Mass
d		D		B		B_1		C		r (min.)						C_1	S		S_2		d_1						
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	C_r	C_{0r}	f_0		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	kg	
65	2 1/2	120	4.724	68.2	2.685	85.7	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	
75	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	
		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 inch		Dimensions								Basic Load Ratings kN		Factor	Bearing No.	Collar No.		Dimensions								Cap Screw	Mass
<i>d</i>		<i>D</i>		<i>B</i> ₁		<i>C</i>		<i>r</i>		<i>C</i> _r	<i>C</i> _{0r}	<i>f</i> ₀				<i>C</i> ₁		<i>S</i>		<i>S</i> ₃		<i>d</i> ₁		inch mm	kg
mm	inch	mm	inch	mm	inch	mm	inch	mm	inch							mm	inch	mm	inch	mm	inch	mm	inch		
20	³ / ₄	47	1.850	32.5	1.280	16	0.630	1	0.039	12.8	6.65	13.2	NC204-12 NC204	UCL204B UCL204B		4	0.157	12.7	0.500	19.8	0.780	44.5	1.752	No.8-32UNC M4×0.7	0.30
25	⁷ / ₈ ¹⁵ / ₁₆ 1	52	2.047	36.5	1.437	17	0.669	1	0.039	14.0	7.85	13.9	NC205-14 NC205-15 NC205 NC205-16	UCL205A UCL205A UCL205A UCL205A		5	0.197	14.3	0.563	22.2	0.874	49.2	1.937	No.8-32UNC No.8-32UNC M4×0.7 No.8-32UNC	0.40
30	1 ¹ / ₈ 1 ³ / ₁₆ 1 ¹ / ₄	62	2.441	39.7	1.563	19	0.748	1	0.039	19.5	11.3	13.9	NC206-18 NC206 NC206-19 NC206-20	UCL206A UCL206A UCL206A UCL206A		5	0.197	15.9	0.626	23.8	0.937	55.6	2.189	No.8-32UNC M4×0.7 No.8-32UNC No.8-32UNC	0.50
35	1 ¹ / ₄ 1 ³ / ₈ 1 ⁷ / ₁₆	72	2.835	44.5	1.752	20	0.787	1.1	0.043	25.7	15.4	13.9	NC207-20 NC207-22 NC207 NC207-23	UCL207A UCL207B UCL207B UCL207B		5.5	0.217	17.5	0.689	27	1.063	61.9	2.437	No.10-24UNC No.10-24UNC M5×0.8 No.10-24UNC	0.80
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 NC208	UCL208A UCL208A		6	0.236	19	0.748	31.8	1.252	68.3	2.689	No.10-24UNC M5×0.8	1.0
45	1 ⁵ / ₈ 1 ¹¹ / ₁₆ 1 ³ / ₄	85	3.346	50.8	2.000	22	0.866	1.1	0.043	34.1	21.3	14.0	NC209-26 NC209-27 NC209-28 NC209	UCL209A UCL209B UCL209B UCL209B		6	0.236	19	0.748	31.8	1.252	71.4	2.811	No.10-24UNC No.10-24UNC No.10-24UNC M5×0.8	1.1
50	1 ¹⁵ / ₁₆ 2	90	3.543	53.1	2.091	24	0.945	1.1	0.043	35.1	23.3	14.4	NC210-31 NC210 NC210-32	UCL210A UCL210A UCL210A		6	0.236	19	0.748	34.1	1.343	85.7	3.374	1/4-20UNC M6×1 1/4-20UNC	1.4
55	2 2 ³ / ₁₆	100	3.937	57.1	2.248	25	0.984	1.5	0.059	43.4	29.4	14.4	NC211-32 NC211 NC211-35	UCL211A UCL211B UCL211B		7	0.276	22.2	0.874	34.9	1.374	88.9	3.500	1/4-20UNC M6×1 1/4-20UNC	1.5
60	2 ¹ / ₄ 2 ⁷ / ₁₆	110	4.331	66.7	2.626	27	1.063	1.5	0.059	52.4	36.2	14.4	NC212-36 NC212 NC212-39	UCL212A UCL212B UCL212B		7.5	0.295	25.4	1.000	41.3	1.626	103.2	4.063	5/16-18UNC M8×1.25 5/16-18UNC	2.2
		110	4.331	66.7	2.626	27	1.063	1.5	0.059	52.4	36.2	14.4				7.5	0.295	25.4	1.000	41.3	1.626	104.8	4.126		2.2

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



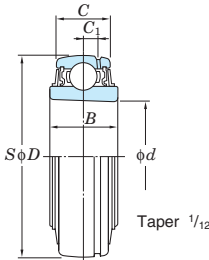
Shaft Dia. mm inch		Dimensions										Basic Load Ratings kN		Factor	Bearing No.	Collar No.		Dimensions										Cap Screw	Mass				
<i>d</i>		<i>D</i>		<i>B</i> ₁		<i>C</i>		<i>r</i>		<i>r</i> ₁ (min.)		<i>C</i> _r	<i>C</i> _{0r}	<i>f</i> ₀			<i>C</i> _c	<i>S</i>		<i>S</i> ₃		<i>a</i>		<i>f</i>		<i>d</i> ₁		<i>D</i> ₂	inch mm	kg			
mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch				mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch					
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 ERC204	UCL204B UCL204B		4	0.157	12.7	0.500	19.8	0.780	2.38	0.094	1.07	0.042	44.5	1.752	52.5	2.067	No.8-32UNC M4×0.7	0.36
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	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	
	ERC205-15														UCL205A																		
	ERC205														UCL205A																		
	¹⁵ / ₁₆														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	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														UCL206A																		
	ERC206-19														UCL206A																		
	1 ³ / ₁₆														ERC206-20	UCL206A														No.8-32UNC			
	1 ¹ / ₄																														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	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	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	UCL207B																	
	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 ERC208	UCL208A UCL208A	6	0.236	19	0.748	31.8	1.252	3.18	0.125	1.65	0.065	68.3	2.689	86.4	3.402	No.10-24UNC M5×0.8	1.2	
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	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	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	
															ERC209-28	UCL209B																	
	1 ³ / ₄														ERC209	UCL209B															No.10-24UNC 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	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														UCL210A																		
	ERC210-32														UCL210A																		
	2														ERC211-32	UCL211A	7.5	0.295	22.2	0.874	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	
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	UCL211B	7.5	0.295	22.2	0.874	24.9	1.375	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	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	
	2 ⁷ / ₁₆	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	UCL212B	7.5	0.295	25.4	1.000	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	
															ERC212-39	UCL212B																	

UK
Tapered bore (with adapter)
d₁ 20 ~ (50) mm

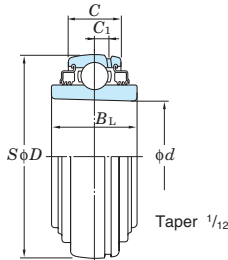


UK

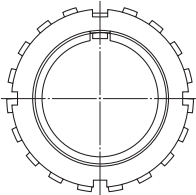
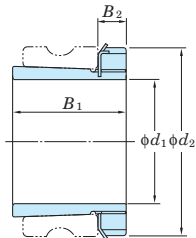
UK+H



UK



UK-L3



Adapter

Shaft Dia. mm inch		Dimensions inch mm						Basic Load Ratings kN		Factor	Bearing					H3 Series Adapter					H23 Series Adapter						
											No.		Mass kg			Adapter No.	Dimensions inch mm			Mass kg	Sleeve No.	Adapter No.	Dimensions inch mm			Mass kg	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								
20	3/4	0.984 25	2.047 52	0.827 21	0.945 24	0.669 17	0.197 5	14.0	7.85	13.9	UK205	UK205L2	0.16	0.18		HE305X H305X	1.142 29	0.315 8	1.496 38	0.075	AE305X A305X	HE2305X H2305X	1.378 35	0.315 8	1.496 38	0.095	AE2305X A2305X
	3/4	0.984 25	2.441 62	0.906 23	— —	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
	1	1.181 30	2.441 62	0.906 23	1.063 27	0.748 19	0.197 5	19.5	11.3	13.9	UK206	UK206L3	0.25	0.29		H306X HE306X	1.220 31	0.315 8	1.772 45	0.11	A306X AE306X	H2306X HE2306X	1.496 38	0.315 8	1.772 45	0.13	A2306X HE2306X
25	1	1.181 30	2.835 72	1.024 26	— —	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
	1 1/8	1.378 35	2.835 72	1.024 26	1.181 30	0.787 20	0.217 5.5	25.7	15.4	13.9	UK207	UK207L3	0.37	0.43		HS307X H307X	1.378 35	0.354 9	2.047 52	0.14	AS307X A307X	HS2307X H2307X	1.693 43	0.354 9	2.047 52	0.17	AS2307X A2307X
30	1 1/8	1.378 35	3.150 80	1.063 27	— —	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
	1 1/4 1 3/8	1.575 40	3.150 80	1.063 27	1.339 34	0.827 21	0.236 6	29.1	17.8	14.0	UK208	UK208L3	0.47	0.58		HE308X HS308X H308X	1.417 36	0.394 10	2.283 58	0.19	AE308X AS308X A308X	HE2308X HS2308X H2308X	1.811 46	0.394 10	2.283 58	0.22	AE2308X AS2308X A2308X
35	1 1/4 1 3/8	1.575 40	3.346 85	1.142 29	— —	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
	1 1/2	1.772 45	3.346 85	1.142 29	1.417 36	0.866 22	0.236 6	34.1	21.3	14.0	UK209	UK209L3	0.52	0.65		HE309X H309X	1.535 39	0.433 11	2.559 65	0.25	AE309X A309X	HE2309X H2309X	1.969 50	0.433 11	2.559 65	0.28	AE2309X A2309X
40	1 1/2	1.772 45	3.543 90	1.142 29	— —	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
	1 3/4	1.969 50	3.543 90	1.142 29	1.417 36	0.945 24	0.236 6	35.1	23.3	14.4	UK210	UK210L3	0.59	0.65		HE310X H310X	1.654 42	0.472 12	2.756 70	0.30	AE310X A310X	HE2310X H2310X	2.165 55	0.472 12	2.756 70	0.36	AE2310X A2310X
45	1 3/4	1.969 50	3.937 100	1.220 31	— —	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
	1 7/8	2.165 55	3.937 100	1.220 31	1.575 40	0.984 25	0.276 7	43.4	29.4	14.4	UK211	UK211L3	0.80	1.09		HS311X H311X HE311X	1.772 45	0.472 12	2.953 75	0.35	AS311X A311X AE311X	HS2311X H2311X HE2311X	2.323 59	0.4921 12.5	2.953 75	0.42	AS2311X A2311X AE2311X
50	1 7/8	2.165 55	4.331 110	1.299 33	— —	1.063 27	0.295 7.5	52.4	36.2	14.4	UKX11	—	1.15	—		— —	— —	— —	— —	— —	— —	HS2311X H2311X HE2311X	2.323 59	0.4921 12.5	2.953 75	0.42	AS2311X A2311X AE2311X

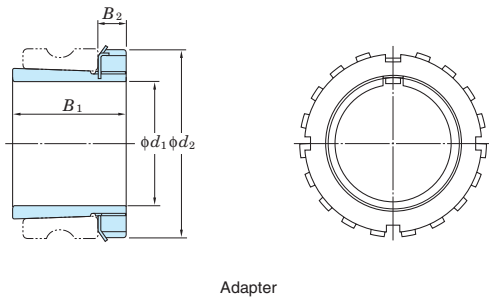
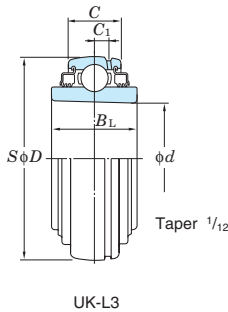
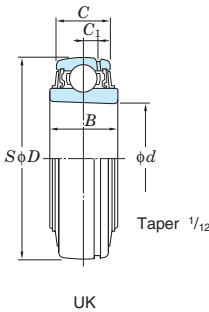
Remarks 1. In Part No. of unit with adapters, Part No. of applicable adapters follow the Part No. shown in the dimensional tables.
(Example of Part No. : UK206 + 306X, UK206L3 + H2306X)

2. Adapter series applicable to UK200 series
UK200..... H300X 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)
d₁ (50) ~ (90) mm



Shaft Dia. mm inch		Dimensions inch mm						Basic Load Ratings kN		Factor	Bearing					Adapter No.	H3 Series Adapter				Sleeve No.	H23 Series Adapter					Sleeve No.	
											No.		Mass kg				Adapter No.	Dimensions inch mm				Mass kg	Sleeve No.	Adapter No.	Dimensions inch mm			Mass kg
		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			
50	1 7/8	2.165	4.724	1.693	1.693	1.339	0.394			13.2	UK311	UK311L3	1.78	1.78		—	—	—	—	—		HS2311X	2.323	0.4921	2.953	0.42	AS2311X	
	2	55	120	43	43	34	10	71.6	45.0							—	—	—	—	—		H2311X	59	12.5	75		A2311X	
55	2 1/8	2.362	4.331	1.299	1.850	1.063	0.295		52.4	36.2	14.4	UK212	UK212L3	1.02	1.41		HS312X	1.850	0.512	3.150	0.43	AS312X	HS2312X	2.441	0.512	3.150	0.48	AS2312X
		60	110	33	47	27	7.5										H312X	47	13	80		A312X	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
60	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	
	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		HE313X	1.969	0.551	3.346	0.46	AE313X	HE2313X	2.559	0.551	3.346	0.56	AE2313X
		65	120	36	47	28	7.5										HS313X	50	14	85		A313X	HS2313X	65	14	85		A2313X
60	2 3/8															—	—	—	—	—	—	—						
	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					AS2313X	
60	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					AS2313X	
	2 3/8																—	—	—	—	—	—					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		HE315X	2.165	0.591	3.858	0.83	AE315X	HE2315X	2.874	0.591	3.858	1.05	AE2315X
		75	130	40	51	32	9										HS315X	55	15	98		A315X	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	
65	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	
	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		HE316X	2.323	0.669	4.134	1.05	AE316X	HE2316X	3.071	0.669	4.134	1.3	AE2316X
		80	140	42	55	33	9										HS316X	59	17	105		A316X	H2316X	78	17	105		A2316X
70	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		H317X	2.480	0.709	4.331	1.2	A317X	H2317X	3.228	0.709	4.331	1.45	A2317X
	3	85	150	44	57	35	10										HE317X	63	18	110		AE317X	HE2317X	82	18	110		AE2317X
		3.346	6.299	1.890	—	1.496	0.433		96.1	71.5	14.5	UKX17	—	3.25	—		—	—	—	—	—	HE2317X	3.228	0.709	4.331	1.45	A2317X	
	3	85	160	48	—	38	11										—	—	—	—	—	HE2317X	82	18	110		AE2317X	
75		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
		85	180	60	60	46	15										—	—	—	—	—	HE2317X	82	18	110		AE2317X	
	3	85	180	60	60	46	15										—	—	—	—	—	—						
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		H318X	2.559	0.709	4.724	1.4	A318X	H2318X	3.386	0.709	4.724	1.7	A2318X
		90	160	48	63	38	11										—	—	—	—	—	—						
	—	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										—	—	—	—	—	—						
80	—	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										—	—	—	—	—	—						
	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	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

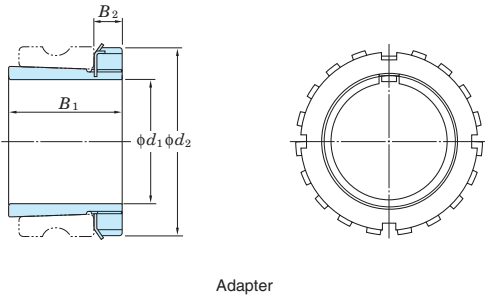
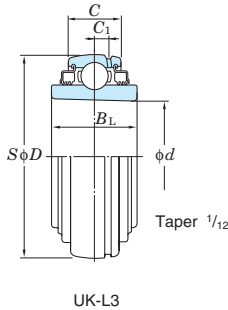
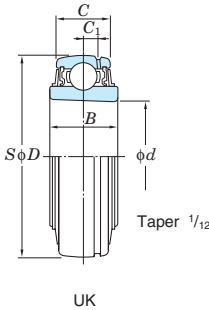
Remarks 1. In Part No. of unit with adapters, Part No. of applicable adapters follow the Part No. shown in the dimensional tables.
(Example of Part No. : UK206 + 306X, UK206L3 + H2306X)

2. Adapter series applicable to UK200 series
UK200..... H300X 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).

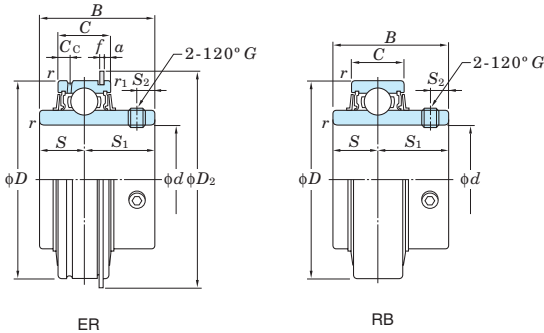
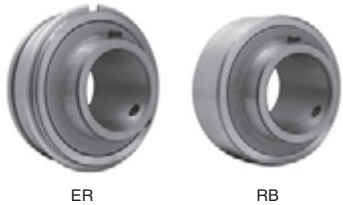
UK
Tapered bore (with adapter)
d₁ (90) ~ 125 mm



Shaft Dia. mm inch		Dimensions inch mm						Basic Load Ratings kN		Factor	Bearing					H3 Series Adapter					H23 Series Adapter					
											No.		Mass kg			Adapter No.	Dimensions			Mass	Sleeve No.	Adapter No.	Dimensions			Mass
		Standard	L3 Type	Standard	L3 Type	B ₁	B ₂	d ₂	kg	B ₁							B ₂	d ₂	kg							
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		B ₁	B ₂	d ₂	kg		
90	3 1/2	3.937 100	8.465 215	2.677 68	2.677 68	2.126 54	0.709 18	173	141	13.2	UK320	UK320L3	8.70	8.70	—	—	—	—	—	—	HE2320X H2320X	3.819 97	0.787 20	5.118 130	2.2	AE2320X A2320X
100	4	4.331 110	9.449 240	3.071 78	3.071 78	2.362 60	0.787 20	205	180	13.2	UK322	UK322L3	12.2	12.2	—	—	—	—	—	—	H2322X HE2322X	4.134 105	0.827 21	5.709 145	2.75	A2322X AE2322X
110	—	4.724 120	10.236 260	3.425 87	3.425 87	2.520 64	0.827 21	207	185	13.5	UK324	UK324L3	16.1	16.1	—	—	—	—	—	—	H2324	4.409 112	0.866 22	6.102 155	3.2	A2324
115	4 1/2	5.118 130	11.024 280	3.425 87	3.425 87	2.677 68	0.866 22	229	214	13.6	UK326	UK326L3	18.8	18.8	—	—	—	—	—	—	HE2326 H2326	4.764 121	0.906 23	6.496 165	4.6	AE2326 A2326
125	—	5.512 140	11.811 300	3.819 97	3.819 97	2.835 72	0.906 23	253	246	13.6	UK328	UK328L3	23.9	23.9	—	—	—	—	—	—	H2328	5.157 131	0.945 24	7.087 180	5.5	A2328

- 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 + 306X, UK206L3 + H2306X)
2. Adapter series applicable to UK200 series
UK200..... H300X 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).

ER, RB
Cylindrical bore (with set screws),
Cylindrical O. D.
d 12 ~ 60 mm



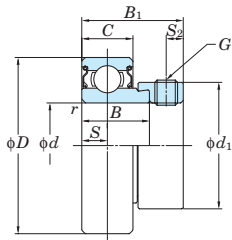
Shaft Dia. mm inch		Dimensions inch mm					Basic Load Ratings kN		Factor	Bearing No.		Dimensions inch mm							Set Screw Brg. Bore G		Mass kg	
d		D	B	C	r (min.)	r ₁ (min.)	C _r	C _{0r}	f ₀	(ER)	(RB)	S	S ₁	S ₂	C _c	a	f	D ₂	mm	inch	(ER)	(RB)
12	1/2	1.850	1.220	0.630	0.024	0.020	12.8	6.65	13.2	ER201	RB201								M6×0.75	—	0.27	0.27
15	5/8	47	31	16	0.6	0.5	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
17										ER202	RB202	12.7	18.3	5	4	2.38	1.07	52.5	M6×0.75	—	0.25	0.25
										ER202-10	RB202-10								—	1/4-28UNF	0.25	0.25
										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	12.8	6.65	13.2	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								—	1/4-28UNF	0.3	0.29
	15/16									ER205-15	RB205-15	0.563	0.780	0.217	0.197	0.094	0.042	2.272	—	1/4-28UNF	0.28	0.27
	1	52	34.1	19	1	0.5	14.0	7.85	13.9	ER205	RB205	14.3	19.8	5.5	5	2.38	1.07	57.7	M6×0.75	—	0.27	0.26
										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								—	1/4-28UNF	0.41	0.4
	1 3/16									ER206	RB206	0.626	0.874	0.236	0.217	0.125	0.065	2.657	M6×0.75	—	0.39	0.38
	1 1/4	62	38.1	22	1	0.5	19.5	11.3	13.9	ER206-19	RB206-19	15.9	22.2	6	5.5	3.18	1.65	67.5	—	1/4-28UNF	0.39	0.38
										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								—	5/16-24UNF	0.69	0.68
	1 5/16									ER207-21	RB207-21	0.689	1.000	0.256	0.217	0.125	0.065	3.087	—	5/16-24UNF	0.66	0.65
	1 3/8	72	42.9	24	1.1	0.5	25.7	15.4	13.9	ER207-22	RB207-22	17.5	25.4	6.5	5.5	3.18	1.65	78.4	—	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	29.1	17.8	14.0	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	—								—	5/16-24UNF	1.0	—
	1 11/16									ER209-27	—	0.748	1.189	0.315	0.236	0.125	0.065	3.598	—	5/16-24UNF	0.96	—
	1 3/4	85	49.2	28	1.1	0.5	34.1	21.3	14.0	ER209-28	—	19	30.2	8	6	3.18	1.65	91.4	—	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	—								—	3/8-24UNF	1.05	—
	1 15/16									ER210-31	—	0.748	1.283	0.354	0.295	0.125	0.095	3.791	—	3/8-24UNF	1.0	—
	2	90	51.6	28	1.1	0.5	35.1	23.3	14.4	ER210	—	19	32.6	9	7.5	3.18	2.41	96.3	M10×1.25	—	0.98	—
										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	—								—	3/8-24UNF	1.56	—
	2 1/8									ER211-34	—	0.874	1.315	0.354	0.295	0.125	0.095	4.185	—	3/8-24UNF	1.45	—
		100	55.6	30	1.5	0.5	43.4	29.4	14.4	ER211	—	22.2	33.4	9	7.5	3.18	2.41	106.3	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	—								—	3/8-24UNF	2.02	—
										ER212	—	1.000	1.563	0.413	0.295	0.125	0.095	4.583	M10×1.25	—	1.89	—
	2 3/8	110	65.1	32	1.5	0.5	52.4	36.2	14.4	ER212-38	—	25.4	39.7	10.5	7.5	3.18	2.41	116.4	—	3/8-24UNF	1.87	—
	2 7/16									ER212-39	—								—	3/8-24UNF	1.8	—

SAA-F, SBB-RK
Cylindrical bore
(with eccentric locking collar)
Cylindrical O. D.
d 12 ~ 55 mm

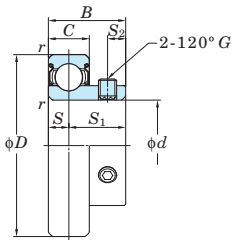


SAA-F

SBB-RK



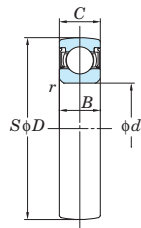
SAA-F



SBB-RK

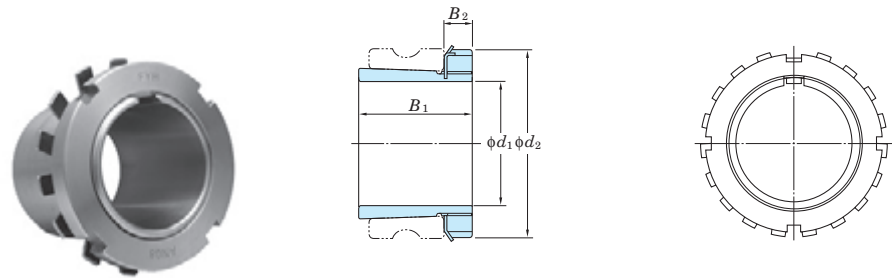
Shaft Dia. mm inch		Dimensions										Basic Load Ratings kN		Factor	Bearing No.		Dimensions								Set Screw Brg. Bore		Mass	
d		D		B		B ₁		C		r (min.)		C ₀	C _{0r}	f ₀			S		S ₁		S ₂		d ₁		mm	inch		
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch						mm	inch	mm	inch	mm	inch	mm	inch				
12	—	40	1.575	22	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
		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
		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
17	—	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	16	0.630	4.8	0.189	28.6	1.126	M6×0.75	—	0.13
		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	18	0.709	4.8	0.189	33.3	1.311	—	1/4-28UNF	0.19
		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
20	—	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	18	0.709	4.8	0.189	33.3	1.311	M6×0.75	—	0.19
		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
		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	19.5	0.768	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	19.5	0.768	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
		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	19.5	0.768	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
		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	22	0.866	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	22	0.866	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
		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	22	0.866	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
		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	22	0.866	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
		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	23.5	0.925	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
		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	23.5	0.925	6.8	0.268	55.6	2.189	—	5/16-24UNF	0.57
		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
35	—	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	23.5	0.925	6.8	0.268	55.6	2.189	M8×1	—	0.57
		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	23.5	0.925	6.8	0.268	55.6	2.189	—	5/16-24UNF	0.57
		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
		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	25	0.984	6.8	0.268	60.3				

SC
Cylindrical bore
d 17 ~ 40 mm



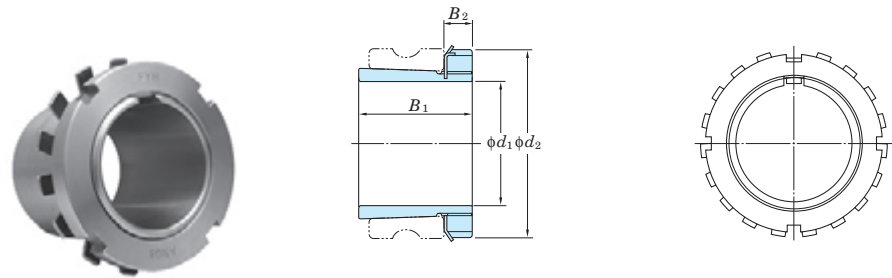
Shaft Dia. mm	Dimensions								Basic Load Ratings kN		Factor	Bearing No.	Mass	
	<i>D</i>		<i>B</i>		<i>C</i>		<i>r</i> (min.)		<i>C</i> ₀	<i>C</i> _{0r}				<i>f</i> ₀
	mm	inch	mm	inch	mm	inch	mm	inch						
<i>d</i>														
17	40	1.575	12	0.472	12	0.472	0.6	0.024	9.55	4.80	13.2	SC203	0.10	
20	47	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	

H300X, H2300X
d₁ 20 ~ 55 mm



mm	Shaft Dia. d ₁ inch				Dimensions inch mm			Adapter No.				Sleeve No.				Lock Nut No.	Washer No.	Mass kg			
	(H)	(HE)	(HS)	(HA)	B ₁	B ₂	d ₂	(H)	(HE)	(HS)	(HA)	(H)	(HE)	(HS)	(HA)			(H)	(HE)	(HS)	(HA)
20	—	—	—	—	1.142	0.315	1.496	H305X	—	—	—	A305X	—	—	—	AN05	AW05X	0.075	—	—	—
	3/4	—	—	—	29	8	38	—	HE305X	—	—	—	AE305X	—	—	AN05	AW05X	—	0.08	—	—
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	—	—	—	—	1.220	0.315	1.772	H306X	—	—	—	A306X	—	—	—	AN06	AW06X	0.11	—	—	—
	1	—	—	—	31	8	45	—	HE306X	—	—	—	AE306X	—	—	AN06	AW06X	—	0.105	—	—
	—	7/8	—	—	—	—	—	—	—	HS306X	—	—	—	AS306X	—	—	—	—	—	0.13	—
	—	—	15/16	—	—	—	—	—	—	—	HA306X	—	—	AA306X	—	—	—	—	—	—	0.12
25	—	—	—	—	1.496	0.315	1.772	H2306X	—	—	—	A2306X	—	—	—	AN06	AW06X	0.13	—	—	—
	1	—	—	—	38	8	45	—	HE2306X	—	—	—	AE2306X	—	—	AN06	AW06X	—	0.12	—	—
	—	7/8	—	—	—	—	—	—	—	HS2306X	—	—	—	AS2306X	—	—	—	—	—	0.16	—
	—	—	15/16	—	—	—	—	—	—	—	HA2306X	—	—	AA2306X	—	—	—	—	—	—	0.14
30	—	—	—	—	1.378	0.354	2.047	H307X	—	—	—	A307X	—	—	—	AN07	AW07X	0.14	—	—	—
	—	1 1/8	—	—	35	9	52	—	—	HS307X	—	—	—	AS307X	—	AN07	AW07X	—	—	0.15	—
30	—	—	—	1 3/16	1.693	0.354	2.047	H2307X	—	—	—	—	—	—	AA307X	—	—	—	—	—	0.14
	—	—	—	1 3/16	43	9	52	—	—	—	HA2307X	—	—	—	AA2307X	—	—	—	—	—	0.17
35	—	—	—	—	1.417	0.394	2.283	H308X	—	—	—	A308X	—	—	—	AN08	AW08X	0.19	—	—	—
	1 1/4	—	—	—	36	10	58	—	HE308X	—	—	—	AE308X	—	—	AN08	AW08X	—	0.23	—	—
35	—	—	—	—	1.811	0.394	2.283	H2308X	—	—	—	—	—	—	—	AN08	AW08X	0.22	—	—	—
	1 1/4	—	—	—	46	10	58	—	HE2308X	—	—	—	AE2308X	—	—	AN08	AW08X	—	0.28	—	—
40	—	—	—	—	1.535	0.433	2.559	H309X	—	—	—	A309X	—	—	—	AN09	AW09X	0.25	—	—	—
	1 1/2	—	—	—	39	11	65	—	HE309X	—	—	—	AE309X	—	—	AN09	AW09X	—	0.28	—	—
40	—	—	—	1 7/16	1.969	0.433	2.559	H2309X	—	—	—	—	—	—	—	AN09	AW09X	0.28	—	—	—
	1 1/2	—	—	—	50	11	65	—	HE2309X	—	—	—	AE2309X	—	—	AN09	AW09X	—	0.32	—	—
45	—	—	—	—	1.654	0.472	2.756	H310X	—	—	—	A310X	—	—	—	AN10	AW10X	0.30	—	—	—
	1 3/4	—	—	—	42	12	70	—	HE310X	—	—	—	AE310X	—	—	AN10	AW10X	—	0.31	—	—
	—	1 5/8	—	—	—	—	—	—	—	HS310X	—	—	—	AS310X	—	—	—	—	—	0.38	—
	—	—	1 11/16	—	—	—	—	—	—	—	HA310X	—	—	AA310X	—	—	—	—	—	—	0.35
45	—	—	—	—	2.165	0.472	2.756	H2310X	—	—	—	A2310X	—	—	—	AN10	AW10X	0.36	—	—	—
	1 3/4	—	—	—	55	12	70	—	HE2310X	—	—	—	AE2310X	—	—	AN10	AW10X	—	0.37	—	—
	—	1 5/8	—	—	—	—	—	—	—	HS2310X	—	—	—	AS2310X	—	—	—	—	—	0.46	—
	—	—	1 11/16	—	—	—	—	—	—	—	HA2310X	—	—	AA2310X	—	—	—	—	—	—	0.42
50	—	—	—	—	1.772	0.4921	2.953	H311X	—	—	—	A311X	—	—	—	AN11	AW11X	0.35	—	—	—
	2	—	—	—	45	12.5	75	—	HE311X	—	—	—	AE311X	—	—	AN11	AW11X	—	0.33	—	—
	—	1 7/8	—	—	—	—	—	—	—	HS311X	—	—	—	AS311X	—	AN11	AW11X	—	—	0.41	—
	—	—	1 15/16	—	—	—	—	—	—	—	HA311X	—	—	AA311X	—	—	—	—	—	—	0.37
50	—	—	—	—	2.323	0.4921	2.953	H2311X	—	—	—	A2311X	—	—	—	AN11	AW11X	0.42	—	—	—
	2	—	—	—	59	12.5	75	—	HE2311X	—	—	—	AE2311X	—	—	AN11	AW11X	—	0.40	—	—
	—	1 7/8	—	—	—	—	—	—	—	HS2311X	—	—	—	AS2311X	—	AN11	AW11X	—	—	0.50	—
	—	—	1 15/16	—	—	—	—	—	—	—	HA2311X	—	—	AA2311X	—	—	—	—	—	—	0.45
55	—	—	—	—	1.850	0.512	3.150	H312X	—	—	—	A312X	—	—	—	AN12	AW12X	0.43	—	—	—
	—	2 1/8	—	—	47	13	80	—	—	HS312X	—	—	—	AS312X	—	AN12	AW12X	—	—	0.40	—
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	—

H300X, H2300X
d₁ 60 ~ 125 mm



mm	Shaft Dia. d ₁ inch				Dimensions inch mm			Adapter No.					Sleeve No.				Lock Nut No.	Washer No.	Mass kg			
	(H)	(HE)	(HS)	(HA)	B ₁	B ₂	d ₂	(H)	(HE)	(HS)	(HA)		(H)	(HE)	(HS)	(HA)			(H)	(HE)	(HS)	(HA)
60	—	—	—	—	1.969 50	0.551 14	3.346 85	H313X	—	—	—		A313X	—	—	—	AN13	AW13X	0.46	—	—	—
	2 1/4	—	—	—				—	HE313X	—	—		—	AE313X	—	—	AN13	AW13X	—	0.56	—	—
	—	2 3/8	—	—				—	—	HS313X	—		—	—	AS313X	—	AN13	AW13X	—	—	0.45	—
	—	—	2 3/16	—				—	—	—	HA313X		—	—	—	AA313X	—	—	—	—	—	0.51
60	—	—	—	—	2.559 65	0.551 14	3.346 85	H2313X	—	—	—		A2313X	—	—	—	AN13	AW13X	0.56	—	—	—
	2 1/4	—	—	—				—	HE2313X	—	—		—	AE2313X	—	—	AN13	AW13X	—	0.69	—	—
	—	2 3/8	—	—				—	—	HS2313X	—		—	—	AS2313X	—	AN13	AW13X	—	—	0.55	—
	—	—	2 3/16	—				—	—	—	HA2313X		—	—	—	AA2313X	—	—	—	—	—	0.76
65	—	—	—	—	2.165 55	0.591 15	3.858 98	H315X	—	—	—		A315X	—	—	—	AN15	AW15X	0.83	—	—	—
	2 1/2	—	—	—				—	HE315X	—	—		—	AE315X	—	—	AN15	AW15X	—	0.89	—	—
	—	—	2 7/16	—				—	—	—	HA315X		—	—	—	AA315X	—	—	—	—	—	0.96
	—	2 5/8	—	—				—	—	HS315X	—		—	—	AS315X	—	—	—	—	—	0.71	—
65	—	—	—	—	2.874 73	0.591 15	3.858 98	H2315X	—	—	—		A2315X	—	—	—	AN15	AW15X	1.05	—	—	—
	2 1/2	—	—	—				—	HE2315X	—	—		—	AE2315X	—	—	AN15	AW15X	—	1.15	—	—
	—	—	2 7/16	—				—	—	—	HA2315X		—	—	—	AA2315X	—	—	—	—	—	1.15
	—	2 5/8	—	—				—	—	HS2315X	—		—	—	AS2315X	—	—	—	—	—	0.9	—
70	—	—	—	—	2.323 59	0.669 17	4.134 105	H316X	—	—	—		A316X	—	—	—	AN16	AW16X	1.05	—	—	—
	2 3/4	—	—	—				—	HE316X	—	—		—	AE316X	—	—	AN16	AW16X	—	1.05	—	—
	—	—	2 11/16	—				—	—	—	HA316X		—	—	—	AA316X	—	—	—	—	—	1.13
	—	—	—	—				—	—	—	—		—	—	—	—	—	—	—	—	—	1.41
70	—	—	—	—	3.071 78	0.669 17	4.134 105	H2316X	—	—	—		A2316X	—	—	—	AN16	AW16X	1.3	—	—	—
	2 3/4	—	—	—				—	HE2316X	—	—		—	AE2316X	—	—	AN16	AW16X	—	1.3	—	—
	—	—	2 11/16	—				—	—	—	HA2316X		—	—	—	AA2316X	—	—	—	—	—	1.41
	—	—	—	—				—	—	—	—		—	—	—	—	—	—	—	—	—	1.41
75	—	—	—	—	2.480 63	0.709 18	4.331 110	H317X	—	—	—		A317X	—	—	—	AN17	AW17X	1.2	—	—	—
	3	—	—	—				—	HE317X	—	—		—	AE317X	—	—	AN17	AW17X	—	1.1	—	—
	—	—	2 15/16	—				—	—	—	HA317X		—	—	—	AA317X	—	—	—	—	—	1.22
	—	—	—	—				—	—	—	—		—	—	—	—	—	—	—	—	—	1.22
75	—	—	—	—	3.228 82	0.709 18	4.331 110	H2317X	—	—	—		A2317X	—	—	—	AN17	AW17X	1.45	—	—	—
	3	—	—	—				—	HE2317X	—	—		—	AE2317X	—	—	AN17	AW17X	—	1.35	—	—
	—	—	2 15/16	—				—	—	—	HA2317X		—	—	—	HA2317X	—	—	—	—	—	1.48
	—	—	—	—				—	—	—	—		—	—	—	—	—	—	—	—	—	1.48
80	—	—	—	—	2.559 65	0.709 18	4.724 120	H318X	—	—	—		A318X	—	—	—	AN18	AW18X	1.4	—	—	—
	3 1/4	—	—	—				—	HE318X	—	—		—	AE318X	—	—	—	—	—	1.24	—	—
	—	—	3 3/16	—				—	—	—	HA318X		—	—	—	AA318X	—	—	—	—	—	1.34
	—	—	—	—				—	—	—	—		—	—	—	—	—	—	—	—	—	1.34
80	—	—	—	—	3.386 86	0.709 18	4.724 120	H2318X	—	—	—		A2318X	—	—	—	AN18	AW18X	1.7	—	—	—
	3 1/4	—	—	—				—	HE2318X	—	—		—	AE2318X	—	—	—	—	—	1.49	—	—
	—	—	3 3/16	—				—	—	—	HA2318X		—	—	—	AA2318X	—	—	—	—	—	1.62
	—	—	—	—				—	—	—	—		—	—	—	—	—	—	—	—	—	1.62
85	—	—	—	—	3.543 90	0.748 19	4.921 125	H2319X	—	—	—		A2319X	—	—	—	AN19	AW19X	1.95	—	—	—
	3 1/4	—	—	—				—	HE2319X	—	—		—	AE2319X	—	—	AN19	AW19X	—	2.15	—	—
	—	—	—	—				—	—	—	—		—	—	—	—	—	—	—	—	—	—
	—	—	—	—				—	—	—	—		—	—	—	—	—	—	—	—	—	—
90	—	—	—	—	3.819 97	0.787 20	5.118 130	H2320X	—	—	—		A2320X	—	—	—	AN20	AW20X	2.2	—	—	—
	3 1/2	—	—	—				—	HE2320X	—	—		—	AE2320X	—	—	AN20	AW20X	—	2.3	—	—
	—	—	3 7/16	—				—	—	—	HA2320X		—	—	—	AA2320X	—	—	—	—	—	2.47
	—	—	—	—				—	—	—	—		—	—	—	—	—	—	—	—	—	2.47
100	—	—	—	—	4.134 105	0.827 21	5.709 145	H2322X	—	—	—		A2322X	—	—	—	AN22	AW22X	2.75	—	—	—
	4	—	—	—				—	HE2322X	—	—		—	AE2322X	—	—	AN22	AW22X	—	2.55	—	—
	—	—	—	—				—	—	—	—		—	—	—	—	—	—	—	—	—	—
	—	—	—	—				—	—	—	—		—	—	—	—	—	—	—	—	—	—
110	—	—	—	—	4.409 112	0.866 22	6.102 155	H2324	—	—	—		A2324	—	—	—	AN24	AW24	3.2	—	—	—
	4 1/4	—	—	—				—	HE2324	—	—		—	AE2324	—	—	—	—	—	3.5	—	—
	—	—	4 3/16	—				—	—	—	HA2324		—	—	—	AA2324	—	—	—	—	—	3.79
	—	—	—	—				—	—	—	—		—	—	—	—	—	—	—	—	—	3.79
115	—	—	—	—	4.764 121	0.906 23	6.496 165	H2326	—	—	—		A2326	—	—	—	AN26	AW26	4.6	—	—	—
	4 1/2	—	—	—				—	HE2326	—	—		—	AE2326	—	—	AN26	AW26	—	4.7	—	—
	—	—	4 7/16	—				—	—	—	HA2326		—	—	—	AA2326	—	—	—	—	—	4.23
	—	—	—	—				—	—	—	—		—	—	—	—	—	—	—	—	—	4.23
125	—	—	—	—	5.157 131	0.945 24	7.087 180	H2328	—	—	—		A2328	—	—	—	AN28	AW28	5.5	—	—	—
	5	—	—	—				—	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

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

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.

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).

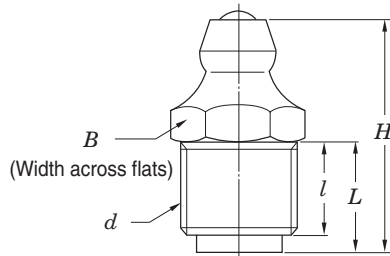
²⁾ Items in parentheses are applicable to the round flange cartridge type bearing (FC), and can be mounted to housings with three hexagon socket head cap screws (use four to mount other items).

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.

16.3 Nominal code and dimensions of grease fittings and reducing socket

Table 16.5 Nominal code and dimensions of grease fitting

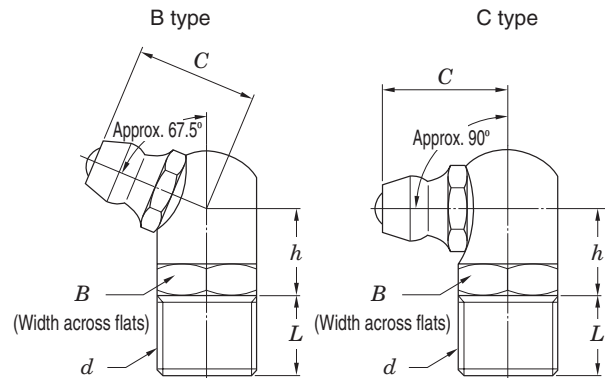
(1) Nominal code and dimensions of A type grease fitting



Unit: mm

Nominal grease fitting code	Nominal screw code d	B	H	L	l
A-1/4-28UNF type	1/4-28UNF	7	13.5	5.4	4
A-R1/8 type	R1/8	10	20	9.5	8

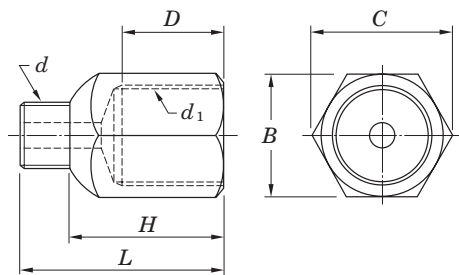
(2) Nominal code and dimensions of B and C type grease fittings



Unit: mm

Nominal grease fitting code	Nominal screw code d	B	C	h	L
B-1/4-28UNF type	1/4-28UNF	8	9.5	6.5	5
C-1/4-28UNF type	1/4-28UNF	8	9.5	6.5	5
B-R1/8 type	R1/8	10	12.5	8.5	8
C-R1/8 type	R1/8	10	12.5	8.5	8

Table 16.6 Nominal code and dimensions of reducing socket code



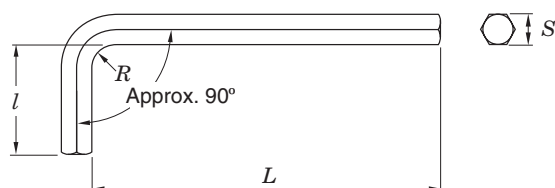
Unit: mm

Nominal code of reducing socket	Nominal male thread code d	Nominal female thread code d_1	B	C	D	H	L
1/4-28UNF-Rc1/8	1/4-28UNF	Rc1/8	12	13.8	10	15	20
1/4-28UNF-Rp1/8	1/4-28UNF	Rp1/8	12	13.8	10	15	20
1/4-28UNF-Rc1/4	1/4-28UNF	Rc1/4	17	19.6	11	17	22
1/4-28UNF-Rp1/4	1/4-28UNF	Rp1/4	17	19.6	11	17	22
PT1/8-Rc1/4	R1/8	Rc1/4	17	19.6	11	19	26
PT1/8-Rp1/4	R1/8	Rp1/4	17	19.6	11	19	26

16.4 Nominal code and dimensions of Allen key wrench

Table 16.7 Nominal code and dimensions of Allen key wrench

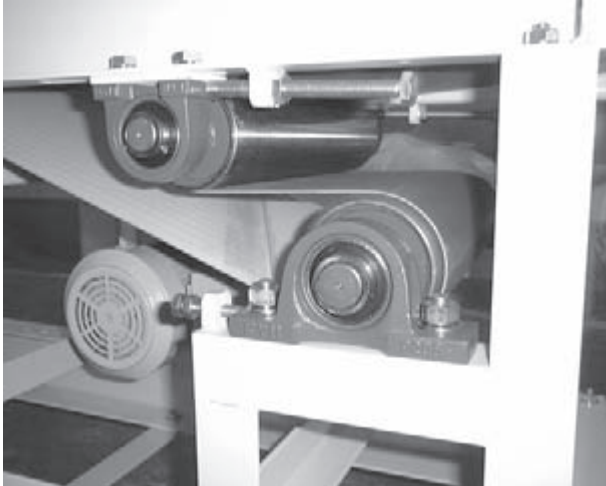
Unit: mm



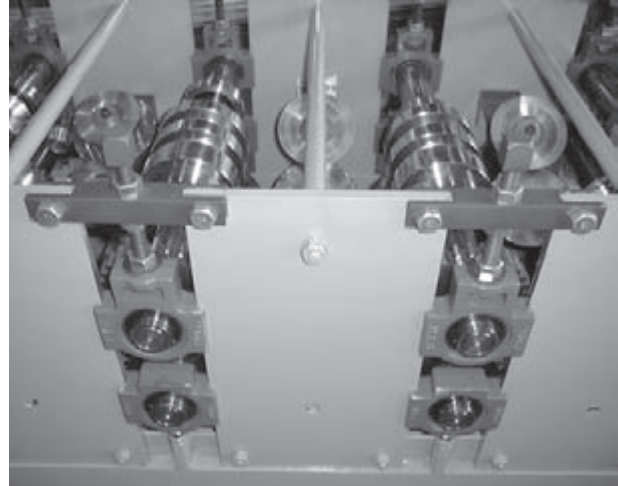
Nominal code of Allen key wrench	S	L (Approx.)	l (Approx.)	R (Approx.)	Applicable set screw
2.5	2.5	56	18	2.5	M5
3	3	63	20	3	M6
4	4	70	25	4	M8
5	5	80	28	5	M10
6	6	90	32	6	M12, M14
8	8	100	36	8	M16, M18
10	10	112	40	10	M20

17 Example of use

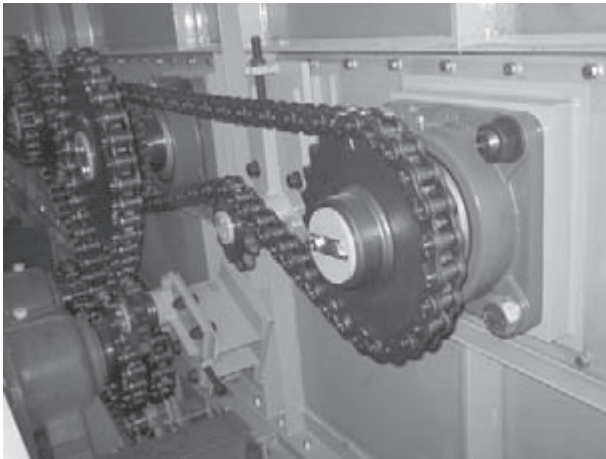
Carrier line



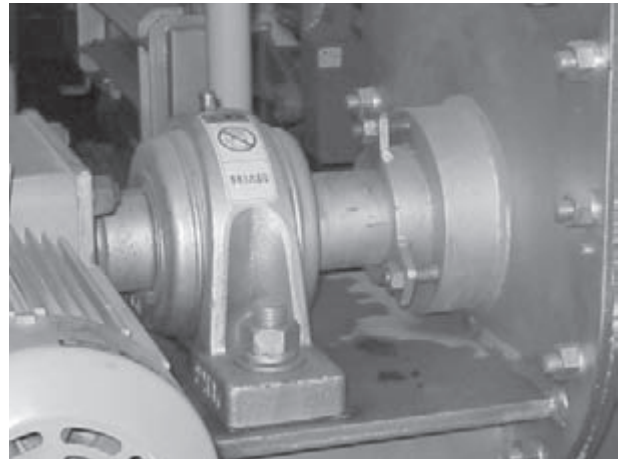
Corrugated plate molding machine



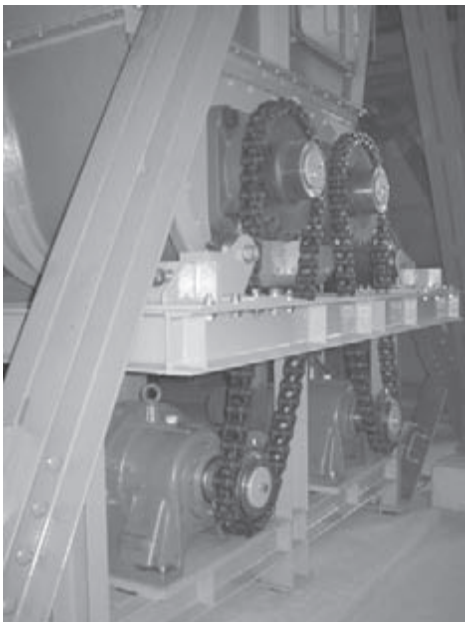
Compost treatment tank



Ash removal conveyor in garbage incineration plant



Discharge feeder



Example of use

FYH ball bearing units are used in various locations depending on applications and specifications.

- Conveyors in pickup and delivery center
- Wood working machine
- Blower
- Textile machine
- Agricultural machine
- Construction machine
- Packing machine
- Heat treatment equipment
- Wastewater treatment facility

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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	UCP200	UCPX00	UCP300			UKP200	UKPX200	UKP300	
	P200sc, P300sc	UCP200sc		UCP300sc			UKP200sc		UKP300sc	
	P200H4, PX00H4, P300H4	UCP200H4	UCPX00H4	UCP300H4			UKP200H4	UKPX200H4	UKP300H4	
	IP200, IP300	UCIP200		UCIP300			UKIP200		UKIP300	
	IP200H4, IP300H4	UCIP200H4		UCIP300H4			UKIP200H4		UKIP300H4	
	PA200	UCPA200					UKPA200			
	PA200H4	UCPA200H4					UKPA200H4			
	PAN200	UCPAN200								
	PH200	UCPH200					UKPH200			
	PH200H4	UCPH200H4					UKPH200H4			
	LP200									
	SP200H1					UCSP200H1S6				
	SPA200H1					UCSPA200H1S6				
	P000, SP000									
Square four-bolt flange type 	F200, FX00, F300 F200E, FX00E NF200	UCF200 UCF200E	UCFX00 UCFX00E	UCF300			UKF200	UKFX00	UKF300	
	F200H4, FX00H4, F300H4	UCF200H4	UCFX00H4	UCF300H4			UKF200H4	UKFX00H4	UKF300H4	
	FS300			UCFS300					UKFS300	
	FS300H4			UCFS300H4					UKFS300H4	
	SF200H1				UCSF200H1S6					
	SF200EH1				UCSF200EH1S6					
	VF200				UCVF200S6					
	VF200E					UCVF200ES7				
	FL200, FLX00, FL300 FL200E	UCFL200 UCFL200E	UCFLX00	UCFL300			UKFL200	UKFLX00	UKFL300	
	FL200H4, FLX00H4, FL300H4	UCFL200H4	UCFLX00H4	UCFL300H4			UKFL200H4	UKFLX00H4	UKFL300H4	
	LF200									
	FL000, SFL200									
	SFL200H1				UCSFL200H1S6					
	SFL200EH1				UCSFL200EH1S6					
VFL200				UCVFL200S6						
VFL200E					UCVFL200ES7					
TFD200										
FA200	UCFA200						UKFA200			
FB200	UCFB200						UKFB200			
PFL200										
Round flange cartridge type 	FC200, FCX00	UCFC200	UCFCX00				UKFC200	UKFCX00	UKFC300	
	FC200H4, FCX00H4	UCFC200H4	UCFCX00H4				UKFC200H4	UKFCX00H4	UKFC300H4	
	FCX00E		UCFCX00E							
	FCF200	UCFCF200								
Stamped steel plate flange type 	PF200									
Take-up type 	T200, TX00, T300 T200E, TX00E	UCT200 UCT200E	UCTX00 UCTX00E	UCT300			UKT200	UKTX00	UKT300	
	T200H4, TX00H4, T300H4	UCT200H4	UCTX00H4	UCT300H4			UKT200H4	UKTX00H4	UKT300H4	
	ST200H1				UCST200H1S6					
	VT200				UCVT200S6					
	VT200E					UCVT200ES7				
	T200+H	UCTH200								
	TL200	UCTL200					(UKTL200)			
	TU200, TU300	UCTU200		UCTU300			(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 P200sc, P300sc P200H4, PX00H4, P300H4	Pillow type 
									IP200, IP300 IP200H4, IP300H4	
	NCPA200								PA200 PA200H4 PAN200	
	NCPAN200								PH200	
	NCPH200								PH200H4	
				BLP200	ALP200				LP200	
		UP000	SUP000S6						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 
				BLF205	ALF200				LF200	
		UFL000	SUFL000S6						FL000, SFL200 SFL200H1 SFL200EH1 VFL200 VFL200E	
						SATFD200FP9			TFD200	
	NCFA200								FA200	
	NCFB200								FB200	
				SBPFL200	SAPFL200				PFL200	
	NCFC200						NAFC200		FC200, FCX00 FC200H4, FCX00H4 FCX00E FCF200	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	
				SBPTH200 SBNPTH200					TL200 TU200, TU300 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				

Remark 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) 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	—

(3) NU concentric cap screw tightening torque

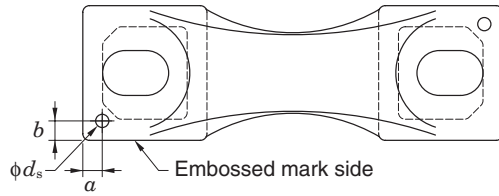
Nominal size of screws	Tightening torques, N · m
M4	7.4– 8.2
M5	10.2–11.2
M6	17.6–19.4
M8	41.6–46
No.8-32UNC	7.4– 8.2
No.10-24UNC	10.2–11.2
1/4-20UNC	17.6–19.4
5/16-18UNC	41.6–46

Appendix table 4 Tightening torques of adapter lock nuts (reference)

Bore code	Tightening torques, N · m								
	UK200			UKX00			UK300		
	Standard load		Heavy load (Max. × 1.5)	Standard load		Heavy load (Max. × 1.5)	Standard load		Heavy load (Max. × 1.5)
	min.	Max.		min.	Max.		min.	Max.	
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

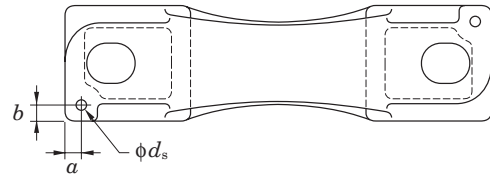
(1) Machining dimensions of holes of pillow type housing (P) dowel pins (recommended)



Unit: mm

Nominal code	a	b	d _s (reference)	Pin seat thickness
P203	6	6	4	12
P204	6	6	4	13
P205	6	6	4	13
P206	6	6	4	15
P207	8	8	5	16
P208	8	8	5	17
P209	8	8	5	17
P210	10	10	5	19
P211	10	10	6	19
P212	10	10	6	22
P213	10	10	6	25
P214	12	12	8	28
P215	12	12	8	28
P216	12	12	8	32
P217	12	12	8	32
P218	15	15	8	34
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

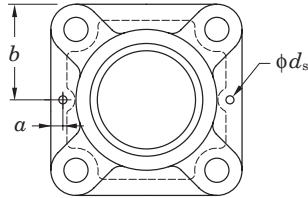
(2) Machining dimensions of holes of cast steel pillow type housing (PSC) dowel pins (recommended)



Unit: mm

Nominal code	a	b	d _s (reference)	Pin seat thickness
P205SC	7.5	6	4	16
P206SC	8.5	6	4	18
P207SC	10	6	5	19
P208SC	12	7	5	19
P209SC	10.5	8	5	20
P210SC	10	8	5	22
P211SC	12	8	6	24
P212SC	15	10	6	25
P213SC	12.5	10	6	28
P214SC	10	10	8	28
P215SC	11.5	10	8	29
P216SC	10	11	8	31
P217SC	12.5	11	8	33
P218SC	12.5	11	8	35
P310SC	14	7	6	27
P311SC	18	10	8	30
P312SC	18	10	8	32
P313SC	18	10	8	35
P314SC	17	10	10	38
P315SC	25	13	10	38
P316SC	30	13	10	38
P317SC	27	15	10	45
P318SC	27	15	10	45
P319SC	30	17	10	51
P320SC	30	18	13	51
P322SC	33	20	13	57
P324SC	33	20	13	57
P326SC	33	20	13	57
P328SC	33	20	13	70

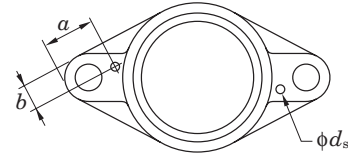
(3) Machining dimensions of holes of square flange type housing (F) dowel pins (recommended)



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

(4) 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
FL328	103	45	13	60

Appendix table 6 Ceraball selection chart

Bearing units



Bearings



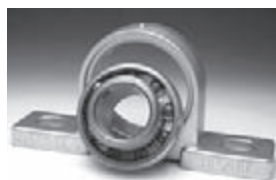
Y1 type

Y2 type

Y3 type

Operating Environment		Type	Bearing Suffix Code	Specifications				
				Inner/Outer Ring	Ball	Retainer	Lubricant Type	
High Temp	Max Operating Temperature 180 °C (356 °F)	Y1	D9K6Y1	High-carbon chromium bearing steel	FYH-SN Silicon nitride ceramic	Stainless steel or Steel Corrugated retainer	Grease fluorochemical	
	Max Operating Temperature 230 °C (446 °F)	Y2	D9K6S6Y2	Martensitic stainless steel	FYH-SN Silicon nitride ceramic	Stainless steel Corrugated retainer	Grease fluorochemical	
	Max Operating Temperature 260 °C (500 °F)	Y2	D9P4S6Y2					
	Max Operating Temperature 450 °C (842 °F)	Y3	S6Y3	Martensitic stainless steel	FYH-SN Silicon nitride ceramic	Self-lubricating material		
High Speed	Ambient Atmospheric Conditions	Y1	D7(LS)S5Y1	High-carbon chromium bearing steel	FYH-SN Silicon nitride ceramic	Stainless steel or Steel Corrugated retainer	Grease for High speed	
	High Temp 260 °C (500 °F)	Y2	D9K3.6S6C3Y2	Martensitic stainless steel	FYH-SN Silicon nitride ceramic	Stainless steel Corrugated retainer	Grease fluorochemical	
Vacuum	Normal to High-temp Conditions Max 200 °C (392 °F)	Y2	D9K6S6Y2	Martensitic stainless steel	FYH-SN Silicon nitride ceramic	Stainless steel Corrugated retainer	Grease fluorochemical	
	High-temp Max 400 °C (752 °F)	Y3	S6Y3	Martensitic stainless steel	FYH-SN Silicon nitride ceramic	Self-lubricating material		
Corrosion Resistance	Acid / alkali liquid or vapor atmosphere	Y7	Y7	Precipitation hardening Stainless steel	FYH-SN Silicon nitride ceramic	Fluororesin or Stain- less steel Corrugated retainer	—	
	Water, pure water, high humidity	Y8	Y8	PEEK plastic	FYH-SN Silicon nitride ceramic	Fluororesin	—	
Clean	Normal temp - Mid temp	Y2	D9K6S6Y2	Martensitic stainless steel	FYH-SN Silicon nitride ceramic	Stainless steel Corrugated retainer	Grease fluorochemical	
	High temp	Y3	S6Y3	Martensitic stainless steel	FYH-SN Silicon nitride ceramic	Self-lubricating material		

* If your application is not specified above or if you require different specifications, please use the attached form to detail your application and additional requests.



Y7 type



Y8 type

Part Number for Ordering

Bearing Units	Unit No. UCP206	+	Bearing Suffix Code D9K6S6Y2
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Deep Groove Ball Bearings	Bearing No. 6206ZZ	+	Bearing Suffix Code D9S6Y2
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				Feature	Example Application
Seal	Slinger	Housing			
Fluoroelastomer	Austenitic Stainless steel or Steel	Cast iron		Standard bearings operating in excessively high/low-temperature conditions, or in environments where liquids or gases are present, require a great deal of maintenance and monitoring, and they are often subject to sudden failure. Ceraball bearings incorporating fluorinated grease (operating range: -60 to 260 °C (-76 to 500 °F)) allow for extended lubrication intervals and longer life.	Heat-resistant blower Spray granulating machine Press & rewinding light torque
Fluoroelastomer	Austenitic Stainless steel	Cast iron (heat-resistant paint) or Stainless steel		When liquids or gases are present in higher concentrations, standard bearings operating in temperatures above 180 °C (356 °F) can deteriorate from surface oxidation rather quickly. The Ceraball series can be incorporated into stainless steel bearings to prevent rapid corrosion. If the operating temperature exceeds 230 °C (446 °F) then seals are omitted and only slingers (Z-seal) are utilized.	Food equipment Wash-down Heat treatment furnace With a low reactor Drying Furnace Glass Production Line
—					
—	Austenitic Stainless steel	Cast iron (heat-resistant paint) or Stainless steel		Standard bearings utilizing grease as a lubricant cannot function well above 260 °C (500 °F). FYH has developed a solid self-lubricating lubricant which can operate in temperatures over 450 °C (842 °F) particularly at lower RPM's > dn 5,000.	
Nitrile	Austenitic Stainless steel or Steel	Cast iron		High speed applications produce a great deal of centrifugal force which is further increased by standard steel balls. The specific gravity of the Ceraball is 3.2 which is less than half of a steel ball's specific gravity of 7.8. With about 40% of the load, the effects of centrifugal force are reduced and the life of the Ceraball bearing is greatly extended.	Heat-resistant blower
Fluoroelastomer	Austenitic Stainless steel	Cast iron (heat-resistant paint) or Stainless steel			
Fluoroelastomer	Austenitic Stainless steel	Cast iron (heat-resistant paint) or Stainless steel		When operating in a vacuum, base oils often evaporate from the grease and deterioration of the lubricant occurs. Because high-quality fluorinated grease is used, which is enclosed by fluorine seals within the ball path, this problem is eliminated. The Ceraball provides stable performance to 10^{-5} Pa under normal atmospheric temperatures.	Vacuum Equipment
—	Austenitic Stainless steel	Cast iron (heat-resistant paint) or Stainless steel		The self-lubricating solid lubrication system functions very well at a wide range of temperatures, and it is well-suited to vacuum-based machinery.	Sputtering system
—	—	Stainless steel		For particularly strong solid, liquid, or vapor based acids and bases, FYH has adopted a separation hardened stainless steel for the inner and outer rings as well as the Y7 ceramic series that incorporates a special corrosion resistant ceramic ball originally developed by FYH.	Film / chemical production
—	—	—		Where severe corrosion, metal abrasion, and rust are concerns, polyetheretherketone (PEEK) plastic inner and outer rings are employed as well as the Y8 ceramic series that incorporates a special corrosion resistant ceramic ball. It is usually used in the condition of a very light load.	Silicon wafer production Ultrapure water
Fluoroelastomer	Austenitic Stainless steel	Cast iron (heat-resistant paint) or Stainless steel		Special contaminate-free environments require clean-operating components. Because it needs less grease, the Ceraball can meet these requirements and, through a wide range of temperatures, it releases much less debris than conventional bearings. High-temperature applications requiring solid graphite lubricant may discharge only a small amount of graphite.	IC manufacturing-related equipment Food Equipment
—	Austenitic Stainless steel	Cast iron (heat-resistant paint) or Stainless steel			

Dimensional data subject to change without notice. Please confirm all dimensions and specifications before ordering.

Appendix table 7 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 (Reference)

												Classification of shaft (mm)		Δ_{dmp}^* of bearing (class 0)
												Over	Incl.	
	k 5	k 6	k 7	m 5	m 6	m 7	n 5	n 6	p 6	r 6	r 7			
	+ 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 8 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		(Reference)
													Classification of basic size (mm)		Δ _{Dmp} * of bearing (class 0)
	K 5	K 6	K 7	M 5	M 6	M 7	N 5	N 6	N 7	P 6	P 7	R 7	Over	Incl.	
	+ 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
												− 50 − 90	140	160	− 18 (Over 150)
												− 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 9 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.

Appendix table 10 SI unit conversion charts

Force

N	dyn	kgf
1	1×10^5	$1.019\,72 \times 10^{-1}$
1×10^{-5}	1	$1.019\,72 \times 10^{-6}$
9.806 65	$9.806\,65 \times 10^5$	1

Moment of force (torque)

N · m	mN · m	$\mu\text{N} \cdot \text{m}$	kgf · m	kgf · cm	gf · cm
1	1×10^3	1×10^6	$1.019\,72 \times 10^{-1}$	$1.019\,72 \times 10$	$1.019\,72 \times 10^4$
1×10^{-3}	1	1×10^3	$1.019\,72 \times 10^{-4}$	$1.019\,72 \times 10^{-2}$	$1.019\,72 \times 10$
1×10^{-6}	1×10^{-3}	1	$1.019\,72 \times 10^{-7}$	$1.019\,72 \times 10^{-5}$	$1.019\,72 \times 10^{-2}$
9.806 65	$9.806\,65 \times 10^3$	$9.806\,65 \times 10^6$	1	1×10^2	1×10^5
$9.806\,65 \times 10^{-2}$	$9.806\,65 \times 10$	$9.806\,65 \times 10^4$	1×10^{-2}	1	1×10^3
$9.806\,65 \times 10^{-5}$	$9.806\,65 \times 10^{-2}$	$9.806\,65 \times 10$	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}	$1.019\,72 \times 10^{-7}$	$1.019\,72 \times 10^{-5}$
1×10^6	1	$1.019\,72 \times 10^{-1}$	$1.019\,72 \times 10$
$9.806\,65 \times 10^6$	9.806 65	1	1×10^2
$9.806\,65 \times 10^4$	$9.806\,65 \times 10^{-2}$	1×10^{-2}	1

Remark 1 Pa = 1 N/m², 1 MPa = 1 N/mm²

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}	$1.019\,72 \times 10^{-5}$	$9.869\,23 \times 10^{-6}$	$1.019\,72 \times 10^{-1}$	$7.500\,62 \times 10^{-3}$
1×10^3	1	1×10^{-3}	1×10^{-2}	$1.019\,72 \times 10^{-2}$	$9.869\,23 \times 10^{-3}$	$1.019\,72 \times 10^2$	7.500 62
1×10^6	1×10^3	1	1×10	$1.019\,72 \times 10$	9.869 23	$1.019\,72 \times 10^5$	$7.500\,62 \times 10^3$
1×10^5	1×10^2	1×10^{-1}	1	1.019 72	$9.869\,23 \times 10^{-1}$	$1.019\,72 \times 10^4$	$7.500\,62 \times 10^2$
$9.806\,65 \times 10^4$	$9.806\,65 \times 10$	$9.806\,65 \times 10^{-2}$	$9.806\,65 \times 10^{-1}$	1	$9.678\,41 \times 10^{-1}$	1×10^4	$7.355\,59 \times 10^2$
$1.013\,25 \times 10^5$	$1.013\,25 \times 10^2$	$1.013\,25 \times 10^{-1}$	1.013 25	1.033 23	1	$1.033\,23 \times 10^4$	$7.600\,00 \times 10^2$
9.806 65	$9.806\,65 \times 10^{-3}$	$9.806\,65 \times 10^{-6}$	$9.806\,65 \times 10^{-5}$	1×10^{-4}	$9.678\,41 \times 10^{-5}$	1	$7.355\,59 \times 10^{-2}$
$1.333\,22 \times 10^2$	$1.333\,22 \times 10^{-1}$	$1.333\,22 \times 10^{-4}$	$1.333\,22 \times 10^{-3}$	$1.359\,51 \times 10^{-3}$	$1.315\,79 \times 10^{-3}$	$1.359\,51 \times 10$	1

Remark 1 Pa = 1 N/m²

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 mm²/s, 1 St = 1 cm²/s

Appendix table 11 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 12 Hardness conversion chart

Rockwell C scale 1,471.0 N (150 kgf)	Vickers	Brinell		Rockwell		Shore
		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 13 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 mm²/s = 1 cSt (centistokes)

Appendix table 14 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 °C	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.

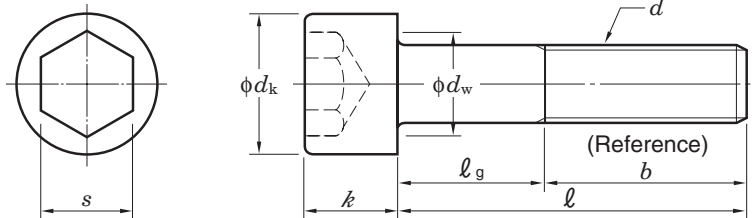
2. Bending allowable stress K_b and torsion allowable stress K_d of cast iron are applicable when the cross section is round and safety factor is within a range from 5 to 6.

Appendix table 15 (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)		Allowance of length
Over	Incl.	
–	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
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

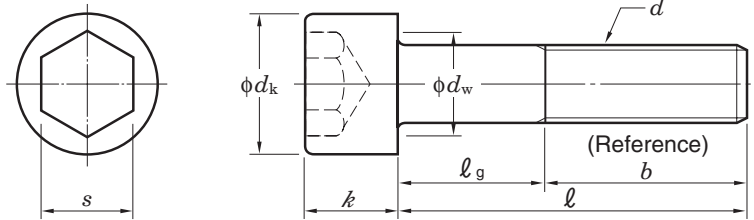
Nominal length ℓ	M 1.6	Body length ℓ_g (max.)															
2.5		M 2															
3			M 2.5														
4				M 3													
5					M 4												
6						M 5											
8							M 6										
10								M 8									
12									M 10								
16										M 12							
20		M 2															
25			M 2.5	M 3													
30					M 4	M 5											
35							M 6										
40								M 8									
45									M 10								
50										M 12							
55											M 14	M 16					
60													M 18				
65														M 20			
70															M 22		
80																M 24	
90																	
100																	
110																	
120																	
130																	
140																	
150																	
160																	
180																	
200																	

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.

Appendix table 15 (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)		Allowance of length
Over	Incl.	
–	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)
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	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.

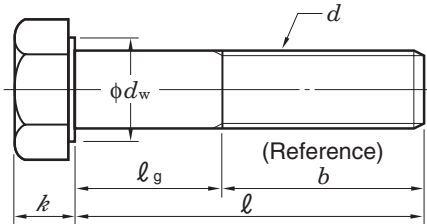
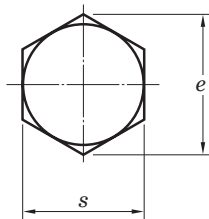
4. Roundness or chamfers on the bearing surface should be provided between the diameter of the head (d_k) and the diameter of bearing surface (d_w), and the surface should be free from burrs.

Appendix table 16 (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)		Allowance of length
Over	Incl.	
–	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	Coarse screw thread pitch	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
	Fine thread	–	–	–	–	–	–	–	–	M 8 x 1	M 10 x 1	M 12 x 1.5	–	M 16 x 1.5	–	M 20 x 1.5	–	M 24 x 2
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	Body length ℓ_g (max.)																	
12	3	M 2	M 2.5															
16	7	6	5	M 3	(M 3.5)													
20		10	9	8	7	M 4	M 5											
25			14	13	12	11	9	M 6										
30				18	17	16	14	12										
35					22	21	19	17	M 8									
40						26	24	22	18	M 10								
45							29	27	23	19	M 12							
50							34	32	28	24	20							
55								37	33	29	25	(M 14)						
60								42	38	34	30	26	M 16					
65									43	39	35	31	27	(M 18)				
70									48	44	40	36	32	28	M 20			
80									58	54	50	46	42	38	34	(M 22)	M 24	
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.

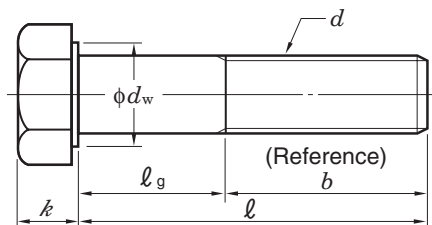
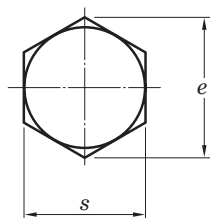
3. Body length ℓ_g (maximum) should be found by the following formula : ℓ_g (maximum) = Nominal length (ℓ) – Thread length (b)

Appendix table 16 (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)		Allowance of length
Over	Incl.	
–	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
	Fine thread	M 16 $\times 1.5$	–	M 20 $\times 1.5$	–	M 24 $\times 2$	–	M 30 $\times 2$	–	M 36 $\times 3$	–	M 42 $\times 3$	–	M 48 $\times 3$	–	M 56 $\times 4$	–	M 64 $\times 4$
		–	(M 18 $\times 1.5$)	(M 20 $\times 2$)	(M 22 $\times 1.5$)	–	(M 27 $\times 2$)	–	(M 33 $\times 2$)	–	(M 39 $\times 3$)	–	(M 45 $\times 3$)	–	(M 52 $\times 4$)	–	(M 60 $\times 4$)	–
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	Body length ℓ_g (max.)																	
65	(M 18)																	
70	M 20																	
80	(M 22) M 24																	
90	(M 27)																	
100	40 M 30																	
110	50 44																	
120	60 54 (M 33)																	
130	64 58 52 M 36																	
140	74 68 62 56 (M 39)																	
150	84 78 72 66 60 M 42																	
160	116	112	108	104	100	94	88	82	76	70	64	(M 45)	M 48					
180		132	128	124	120	114	108	102	96	90	84	78	72	(M 52)				
200			148	144	140	134	128	122	116	110	104	98	92	84	M 56			
220				151	147	141	135	129	123	117	111	105	99	91	83	(M 60)		
240					167	161	155	149	143	137	131	125	119	111	103	95	M 64	
260						181	175	169	163	157	151	145	139	131	123	115	107	
280							195	189	183	177	171	165	159	151	143	135	127	
300							215	209	203	197	191	185	179	171	163	155	147	
320								229	223	217	211	205	199	191	183	175	167	
340									243	237	231	225	219	211	203	195	187	
360									263	257	251	245	239	231	223	215	207	
380										277	271	265	259	251	243	235	227	
400											291	285	279	271	263	255	247	
420											311	305	299	291	283	275	267	
440												325	319	311	303	295	287	
460													339	331	323	315	307	
480														359	351	343	335	327
500															371	363	355	347

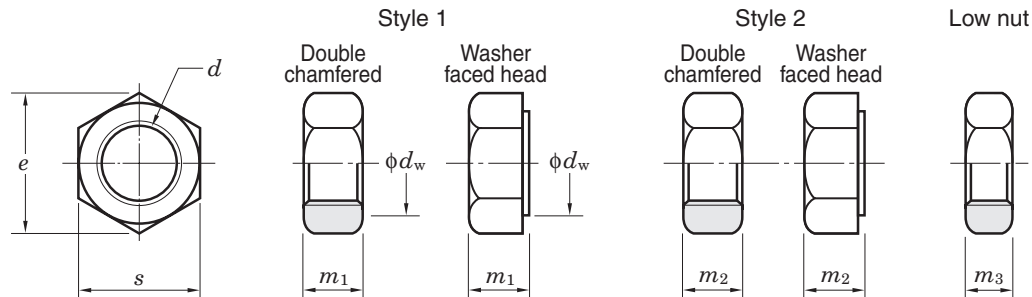
As for the bolts with nominal length within this area, standards of continuous thread stud hexagon head bolt (parts class A or B) should be observed.

- 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 17 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	Coarse screw thread pitch	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
	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	Coarse screw thread pitch	(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
	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 18 Comparison table of Part No. by manufacturers (cylindrical bore type)

18.1 Pillow type bearing 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
Cast steel type	UCP2SC UCP3SC	UCPK2·· UCPK3··	
Thick type	UCIP2·· UCIP3··	UCIP2·· UCIP3··	UCIP2·· UCIP3··
Tapped-base type	UCPA2··	UCPA2··	UCUP2··D1
High centerheight type	UCPH2··	UCPH2··	UCHP2··D1
Lightweight type	BLP2·· ALP2··	BLLP··	ASPB2·· AELPB2··
Lightweight (die-cast) type	UP0··	UP0··	
Corrosion resistant type	UCSP2··H1S6 UCSPA2··H1S6 USP0··S6	MUCP2·· MUCPA2	
Steel plate type	SBPP2·· SAPP2··	BPP··	ASPP2·· AELPP2··

18.2 Flange type bearing units

	FYH · JTEKT	ASAHI	NTN
With pressed steel cover	UCF2··C UCF2··D UCFC2··C UCFC2··D UCFL2··C UCFL2··D	UCF2··C UCF2··E UCFC2··C UCFC2··E UCFL2··C UCFL2··E	S-UCF2··D1 SM-UCF2··D1 S-UCFC2··D1 SM-UCFC2··D1 S-UCFL2··D1 SM-UCFL2··D1
With cast iron cover	UCF2··FC UCF2··FD UCF3··C UCF3··D UCFC2··FC UCFC2··FD UCFS3··C UCFS3··D UCFL2··FC UCFL2··FD UCFL3··C UCFL3··D	CUCF2··C CUCF2··CE CUCF3··C CUCF3··CE CUCFC2··C CUCFC2··CE CUCFS3··C CUCFS3··CE CUCFL2··C CUCFL2··CE CUCFL3··C CUCFL3··CE	C-UCF2··D1 CM-UCF2··D1 C-UCF3··D1 CM-UCF3··D1 C-UCFC2··D1 CM-UCFC2··D1 C-UCFS3··D1 CM-UCFS3··D1 C-UCFL2··D1 CM-UCFL2··D1 C-UCFL3··D1 CM-UCFL3··D1
Adjustable type	UCFA2·· UCFB2··	UCFA2·· UCFK2··	UCFA2··D1 UCFH2··D1
Lightweight type	BLF2·· ALF2··	BLFL··	ASFB2·· AELFB2··
Lightweight (die-cast) type	UFL0··	UFL0··	
Corrosion resistant type	UCSF2··H1S6 UCSFL2··H1S6	MUCF2 MUCFL2··	
Stamped steel plate type	SBPF2·· SAPF2·· SBPFL2·· SAPFL2··	BPF·· BPFL··	ASPF2·· AELPF2·· ASPFL2·· AELPFL2··

18.3 Take-up type bearing 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 type	UCST2··H1S6	MUCT2	
Take-up type with frame	UCTH2···· UCTL2···· UCTU2···· UCTU3····	UCT2···WB UCTL2···+WL·· UCTU2···+WU·· UCTU3···+WU··	UCT2···D1 UCL2··D1 UCM2··D1 UCM3··D1
Take-up type with steel plate frame	SBPTH2···· SBNPTH2····	BTAW201,X	ASPT2····

18.4 Other bearing units

	FYH · JTEKT	ASAHI	NTN
Hanger type	UCHA2··	UCECH2··	UCHB2··D1

18.5 Bearing

	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.

18.6 Special specification items

	FYH · JTEKT	ASAHI	NTN
Grease (heat resistant) (cold resistant) (heat resistant)	D1K2 D2K2 D9K2	HR5 CR2A HR23	HT2 CT1
Non-contact	K3		U
Ductile cast iron	H4		N1
Lubricated type			D1
Non-lubricated type	E4	GOO	



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