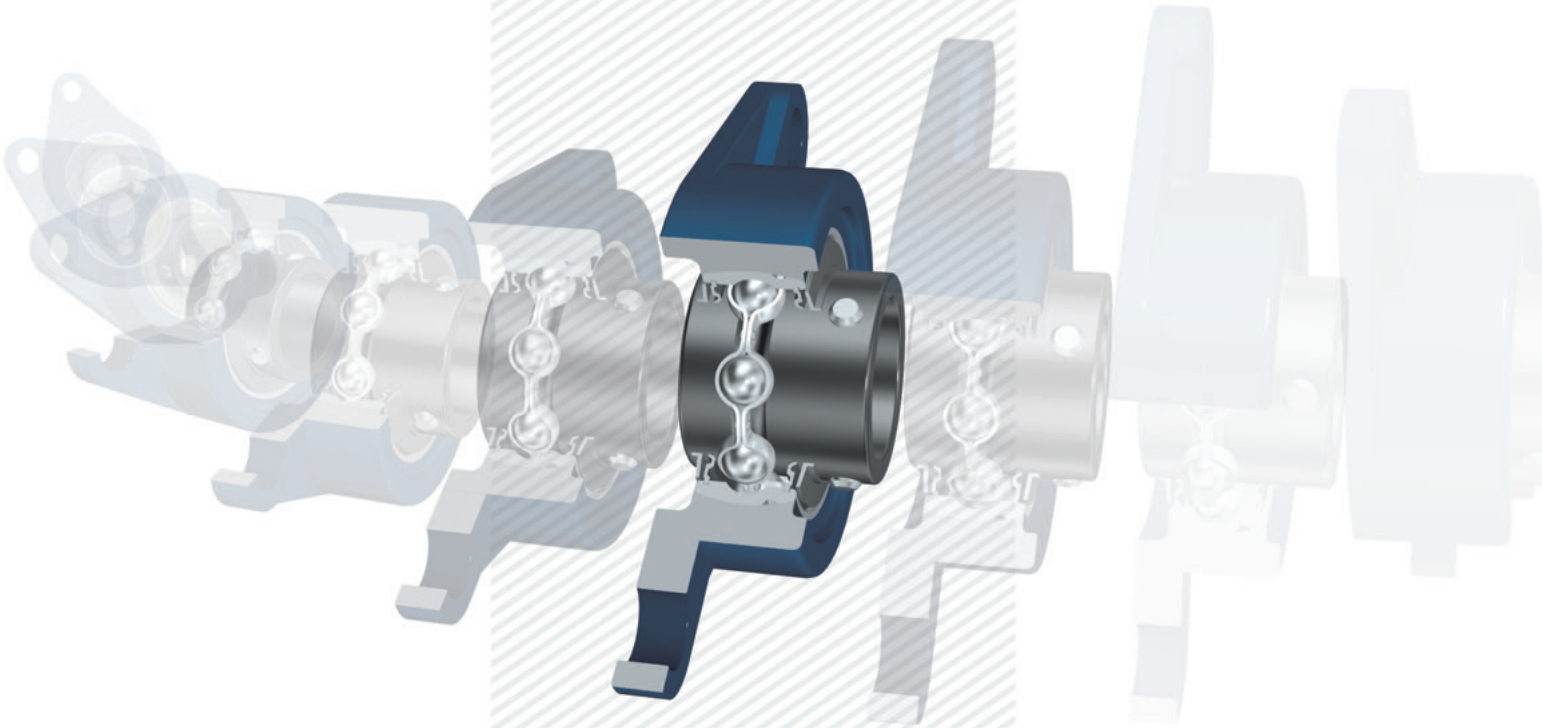
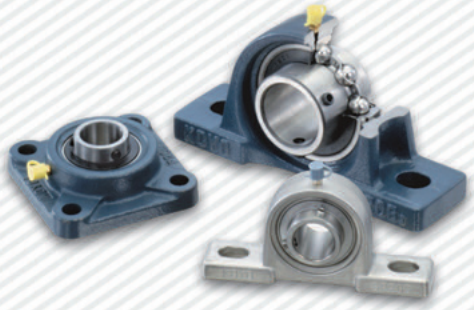
Koyo®

• General Bearings •

BALL BEARING UNITS





JTEKT

JTEKT CORPORATION

CAT. NO. B2007E

Ball Bearing Units (contents)

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Supplementary table

Koyo®

BALL BEARING UNITS

CAT. NO. B2007E

Value & Technology

Publication of New Koyo Ball Bearing Units Catalog

In recent years, needs in industrial world for machineries and equipment highly developed in all aspects have been increased more than ever. Therefore, high technology covering from superior technical advantages including longer service life and maintenance free to higher reliability even under extraordinary conditions such as high and low temperatures and rotation at a high speed is required for ball bearing units.

This catalog completely includes results of technical examinations and abundant research and development.

In the first half of this catalog, technical descriptions referring from the selection to the handling of Koyo Ball Bearing units are mentioned, while a lot of dimensional tables with types and dimensions are included in the last half. Varied technical information is provided at the last of this catalog. We trust this catalog will help you to select and use Koyo Ball Bearing units appropriately.

JTEKT keeps trying to get ideas from the market, step up persistent efforts of technical research and development, and provide the best technologies, quality, and services.
JTEKT is grateful for your patronage and look forward to continuing to serve you in the future.

★The contents of this catalog are subject to change without prior notice.
Every possible effort has been made to ensure that the data herein is correct; however, JTEKT cannot assume responsibility for any errors or omissions.

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1 Structure and features

Koyo Ball Bearing Units are highly precise bearing units comprising grease sealed deep groove ball bearings and housings in various forms. The ball bearing units allow easy handling and installation by followings: direct installation to machines and equipment with some bolts, self-aligning, and greasing.

1.1 Structure

Koyo Ball Bearing Unit comprises the ball bearing for unit with spherical outside surface and the housing with spherical bearing seat (**Fig. 1.1**).

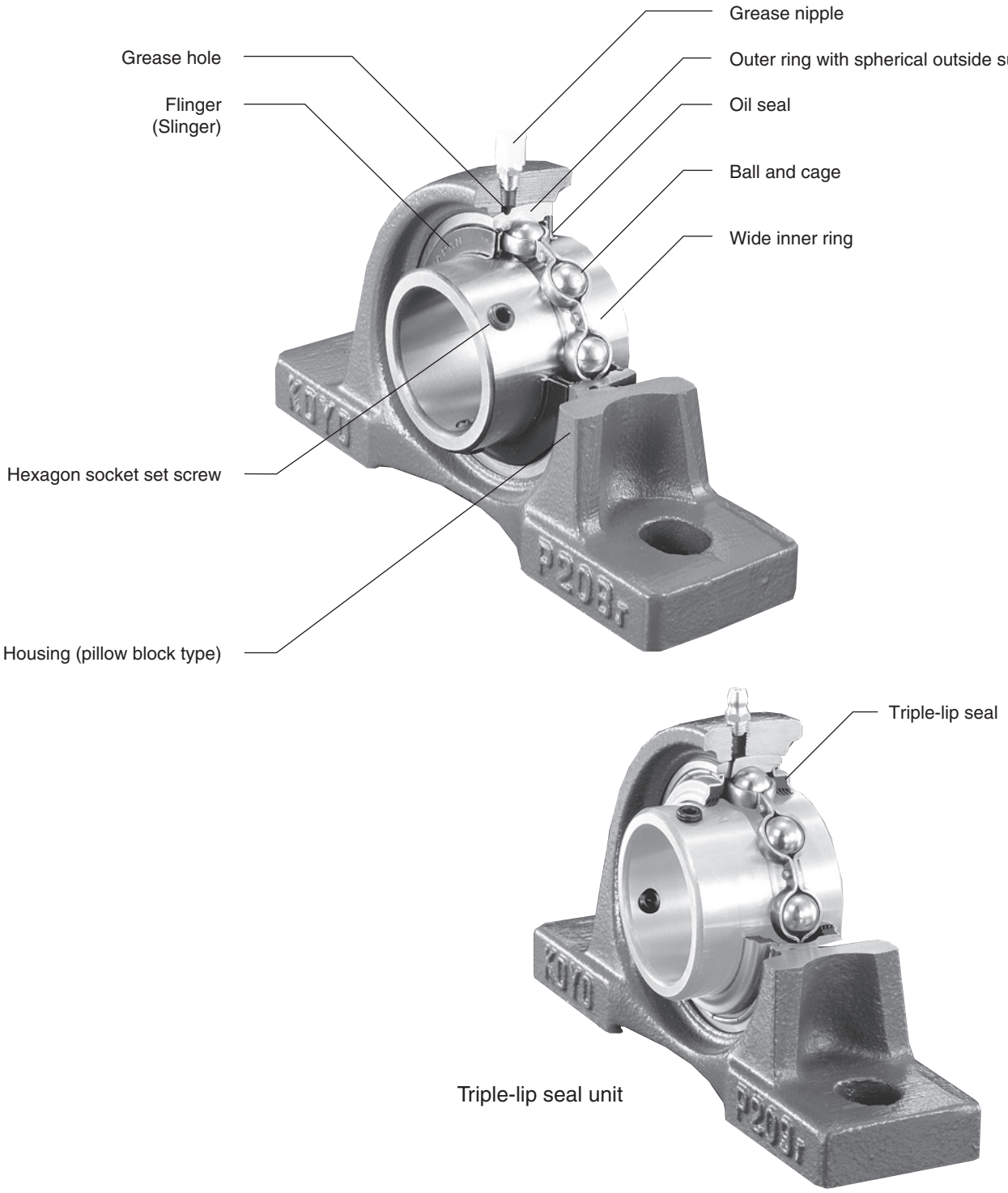


Fig. 1.1 Structure of ball bearing units (representative example)

1.2 Features

Koyo Ball Bearing Units, having many features, are available in various types. Select the bearing unit optimal for your purpose among the types with unique features.

1 Supreme load capacity and accuracy

Koyo Ball Bearings for bearing unit, featuring the internal structure identical to single row deep groove ball bearings, bear axial load in both directions, as well as great radial load. The tolerance is equal to that of an standard bearing. They feature high rotation accuracy and high speed rotation.

2 Rational self aligning mechanism and optimal fit

Koyo Ball Bearing Units have self aligning mechanism by the spherical outside surface bearing and the housing with and spherical bearing seat. Because of this mechanism, deviation of the shaft center caused by warp of the shaft flexion of axis (shaft) or offset is automatically adjusted to eliminate abnormal load onto the bearing, leading to guarantee of original service life of the bearing.

Since the spherical outside surface of the bearing is ground and the spherical bearing seat of the housing is machined by a boring machine with high 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 unit is 3°, while that of ball bearing unit with cover is 1°.

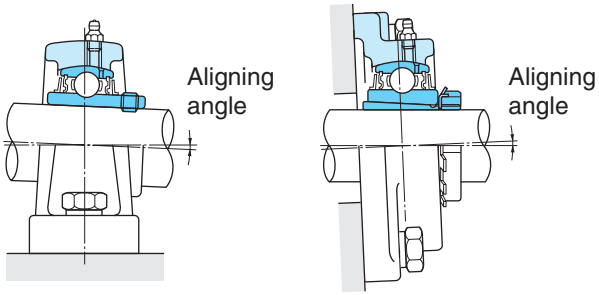


Fig. 1.2 Allowable aligning angle of ball bearing unit

3 Superior sealing performance

Koyo Ball Bearing Units can prevent leak of grease in the bearing to the outside, as well as ingress of dusts and water from the outside into the inside of the bearing by the synergetic effect of the oil seal installed to the outer ring of the bearing and the flinger (slinger) installed to the inner ring of the bearing.

The oil seal is made of synthetic rubber featuring supreme oil proof. Its lip contacts with the inner ring of the bearing with optimal tension (radial load of lip).

When using in environments with many dusts or high humidity, the triple-lip seal unit (supplementary code : L3) or the unit with cover (supplementary code : C, CD, FC, FD) is optimal.

The triple-lip seal unit or unit with cover strongly prevents ingress of water and dusts from the outside, and guarantees a longer service life of the bearing.

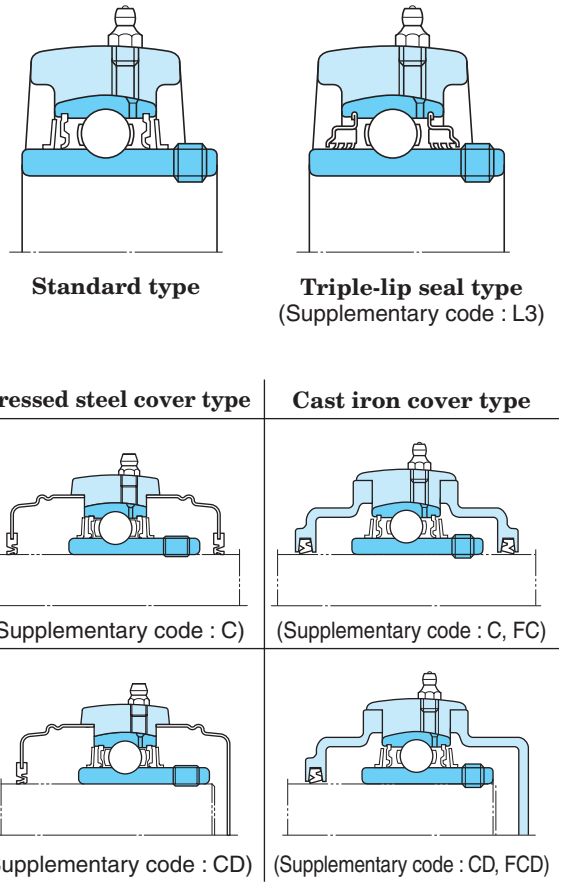


Fig. 1.3 Sealing mechanism of ball bearing unit

4 Simple greasing

Because of the grease nipple on the housing of Koyo Ball Bearing Unit, fresh grease can be easily supplied to the bearing being operated. If the bearing is used in severe environments that are exposed to many dusts or high humidity or that is high temperture, supply fresh grease at a regular interval. Then, the lubrication status of the bearing is kept to the best, and the service life of the bearing can be extended.

When greasing to the bearing unit with the centralized lubricating system, use the socket for lubricating installed to the grease nipple tapped hole on the housing.

5 Highly rigid and strong housing

Koyo Ball Bearing Unit housing is designed so that it is optimal for reduction of deformation due to centralization of stress and load. After the selection of good material, it is produced by highly advanced casting technique or press working technique.

Since any abnormal load onto the bearing is eliminated by the highly rigid and strong housing, the service life of the bearing can be extended. Baking finish on the surface of the housing keeps good surface status for a long time.

6 Simple installation and handling

Koyo Ball Bearing Units of many types can be installed to any of machine or equipment with some bolts, and can be used in the status as it is. Clearance fit is used for the inner ring of bearing and the shaft, as a rule.

Therefore, Koyo Ball Bearing Unit does not need any work such as filling of lubricant or installation of sealing unit required for standard bearings. As a result, the total of manpower can be drastically reduced.

As for the fixing method of bearing to shaft, three methods, (1) set screw mounted to the cylindrical bore wide inner ring, (2) adapter installed to the tapered bore inner ring, and (3) eccentric locking collar installed to the cylindrical bore wide inner ring are available.

Fixing of bearing to shaft can be executed easily and securely by adopting any of these method.

7 Various types

Koyo Ball Bearing Units are available in various types.

Reliability of machine or equipment used together with the units can be improved by selecting and using bearing units optimal for the purpose and operating conditions.

2 Types

2.1 Type list

Koyo Ball Bearing Units are available in various types.

Table 2.1 and **Table 2.2** show the types of Koyo Ball Bearing Units and ball bearing for unit.

Table 2.1 Koyo Ball Bearing Units types

Type		Bearing bore dia. Surface (fixing to shaft)	Type code	Shaft dia. (inch)	Shaft dia. (mm)	Dimension table
1 **Pillow block 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 15/16	12 – 75	P.78
			NAPK	1/2 – 2 15/16	12 – 75	P.80
		Tapered bore (with adapter)	**UKP**	3/4 – 4 1/2	20 – 125	P.82
	(2) Cast steel type	Cylindrical bore (with set screws)	**UCP-SC**	7/8 – 4	25 – 140	P.88
		Tapered bore (with adapter)	**UKP-SC**	3/4 – 4 1/2	20 – 125	P.92
	(3) Thick section type	Cylindrical bore (with set screws)	**UCIP**	1 1/2 – 4	40 – 140	P.96
		Tapered bore (with adapter)	**UKIP**	1 1/4 – 4 1/2	35 – 125	P.98
	(4) Tapped-base type	Cylindrical bore (with set screws)	**UCPA**	1/2 – 2	12 – 50	P.100
	(5) Higher centerheight type	Cylindrical bore (with set screws)	**UCPH**	1/2 – 2	12 – 50	P.102
	(6) Light duty type	Cylindrical bore (with set screws)	**BLP**	1/2 – 1 9/16	12 – 40	P.104
		Cylindrical bore (with eccentric locking collar)	**ALP**			
	(7) “Compact” series	Cylindrical bore (with set screws)	**UP**	N/A	10 – 30	P.106
	(8) Stainless-series	Cylindrical bore (with set screws)	**UCSP-H1S6**	N/A	20 – 50	P.108
			UCSPA-H1S6	N/A	20 – 40	P.110
			USP-S6	N/A	10 – 30	P.112
	(9) Pressed steel type	Cylindrical bore (with set screws)	**SBPP**	1/2 – 1 1/4	12 – 30	P.114
		Cylindrical bore (with eccentric locking collar)	**SAPP**			
2 **Square-flanged type**	(1) Standard	Cylindrical bore (with set screws)	**UCF**	1/2 – 4	12 – 140	P.116
			UCF-E	1/2 – 3 7/16	12 – 85	P.122
		Cylindrical bore (with eccentric locking collar)	**NANF**	1/2 – 2 7/16	12 – 60	P.126
		Tapered bore (with adapter)	**UKF**	3/4 – 4 1/2	20 – 125	P.128
	(2) With spigot joint	Cylindrical bore (with set screws)	**UCFS**	1 – 4	25 – 140	P.134
		Tapered bore (with adapter)	**UKFS**	3/4 – 4 1/2	20 – 125	P.136
	(3) Stainless-series	Cylindrical bore (with set screws)	**UCSF-H1S6**	N/A	20 – 50	P.138
3 **Oval flange type**	(1) Rhombic-flanged type	Cylindrical bore (with set screws)	**UCFL**	1/2 – 4	12 – 130	P.140
			UCFL-E	1/2 – 3 1/4	12 – 85	P.146
		Cylindrical bore (with eccentric locking collar)	**NANFL**	1/2 – 2 3/16	12 – 55	P.150
		Tapered bore (with adapter)	**UKFL**	3/4 – 4 1/2	20 – 115	P.152
	(2) Adjustable rhombic-flanged type	Cylindrical bore (with set screws)	**UCFA**	1/2 – 2 3/16	12 – 55	P.156
	(3) Three-bolt type	Cylindrical bore (with set screws)	**UCFB**	1/2 – 2	12 – 50	P.158
	(4) Light duty rhombic-flanged type	Cylindrical bore (with set screws)	**BLF**	1/2 – 1 7/16	12 – 35	P.160
		Cylindrical bore (with eccentric locking collar)	**ALF**			
	(5) “Compact” series rhombic-flanged type	Cylindrical bore (with set screws)	**UFL**	N/A	8 – 30	P.162
	(6) Stainless-series rhombic-flanged type	Cylindrical bore (with set screws)	**UCSFL-H1S6**	N/A	20 – 50	P.164
			USFL-S6	N/A	10 – 30	P.166
4 **Round-flanged type with spigot joint**		Cylindrical bore (with set screws)	**UCFC**	1/2 – 4	12 – 100	P.168
			UCFCX-E	1 – 4	25 – 100	P.172
		Tapered bore (with adapter)	**UKFC**	3/4 – 3 1/2	20 – 90	P.174
5 **Pressed steel flange type**	(1) Round-flanged type	Cylindrical bore (with set screws)	**SBPF**	1/2 – 1 7/16	12 – 35	P.178
		Cylindrical bore (with eccentric locking collar)	**SAPF**			
	(2) Rhombic-flanged type	Cylindrical bore (with set screws)	**SBPFL**	1/2 – 1 7/16	12 – 35	P.180
		Cylindrical bore (with eccentric locking collar)	**SAPFL**			

Table 2.1 Koyo Ball Bearing Units types (continued)

Type		Bearing bore dia. Surface (fixing to shaft)	Type code	Shaft dia. (inch)	Shaft dia. (mm)	Dimension table
6 Take-up type	(1) Standard	Cylindrical bore (with set screws)	**UCT**	1/2 – 4	12 – 140	P.182
			UCT-E	1/2 – 3 7/16	12 – 85	P.188
		Tapered bore (with adapter)	**UKT**	3/4 – 4 1/2	20 – 125	P.192
	(2) Stainless-series	Cylindrical bore (with set screws)	**UCST-H1S6**	N/A	20 – 50	P.198
	(3) Section steel frame type	Cylindrical bore (with set screws)	**UCTH**	1/2 – 2 1/2	12 – 65	P.200
	(4) Channel steel frame type	Cylindrical bore (with set screws)	**UCTL**	N/A	20 – 45	P.202
			UCTU	N/A	40 – 90	P.204
	(5) Pressed steel frame type	Cylindrical bore (with set screws)	**SBPTH**	N/A	12 – 25	P.208
			SBNPTH	N/A	12 – 25	P.210
7 Cartridge type		Cylindrical bore (with set screws)	**UCC**	1/2 – 4	12 – 140	P.212
		Tapered bore (with adapter)	**UKC**	3/4 – 4 1/2	20 – 125	P.216
8 Hanger type		Cylindrical bore (with set screws)	**UCHA**	1/2 – 3	12 – 75	P.218

Table 2.2 Types of ball bearing for Koyo Ball Bearing Unit

Type		Bearing bore dia. Surface (fixing to shaft)	Type code	Shaft dia. (inch)	Shaft dia. (mm)	Dimension table
Ball bearing for units	(1) Standard	Cylindrical bore (with set screws)	**UC**	1/2 – 4	12 – 140	P.220
	(2) Standard	Tapered bore(with adapter)	**UK**	3/4 – 4 1/2	20 – 125	P.228
	(3) Standard	Cylindrical bore (with eccentric locking collar)	**NA**	1/2 – 3	12 – 75	P.234
	(4) Light duty	Cylindrical bore (with set screws)	**SB**	1/2 – 1 1/2	12 – 40	P.220
	(5) Light duty	Cylindrical bore (with eccentric locking collar)	**SA**	1/2 – 1 9/16	12 – 40	P.234
			SA-F	1/2 – 2 3/16	12 – 55	
	(6) “Compact”	Cylindrical bore (with set screws)	**SU**	N/A	8 – 30	P.220
	(7) Stainless steel	Cylindrical bore (with set screws)	**UC-S6**	N/A	20 – 50	P.226
			SU-S6	N/A	10 – 30	
	(8) Cylindrical outside surface (with lubricating mechanism and snap ring)	Cylindrical bore (with set screws)	**ER**	1/2 – 2 7/16	12 – 60	P.238
	(9) Cylindrical outside surface	Cylindrical bore (with set screws)	**RB**	1/2 – 1 9/16	12 – 40	P.238
	(10) Adapter assembly		**H300X**	3/4 – 3	20 – 80	P.240
			H2300X	3/4 – 4 1/2	20 – 125	

2.2 Types and features

Koyo Ball Bearing Units are available in various types by combinations of bearings and housings.

Types and features of the Ball Bearing Units are shown below.

Remark) Descriptions of codes for unit with cover are shown in the table below. (common to all the types)

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

1 Pillow block type units

1 Pillow block type units

UCP

UKP

NAP

NAPK

Cylindrical bore (with set screws)…Bearing **UC2 (X, 3)** series are used.
UCP2 (X, 3) : Standard type, **L3** : Triple-lip seal type,
C, CD (FC, FCD) : Pressed steel cover type or cast iron cover type
UCP2 (3) SC : Cast steel housing, **L3** : Triple-lip seal type,
C, CD (FC, FCD) : Cast iron cover type

Cylindrical bore (with eccentric locking collar) …Bearing **NA2** series are used.
NAP2, NAPK2 : Standard type, **L3** : Triple-lip seal type

Tapered bore (with adapter)…Bearing **UK2 (X, 3)** series are used.
UKP2 (X, 3) : Standard type, **L3** : Triple-lip seal type,
C, CD (FC, FCD) : Pressed steel cover type or cast iron cover type
UKP2 (3) SC : Cast steel housing, **L3** : Triple-lip seal type,
C, CD (FC, FCD) : Cast iron cover type

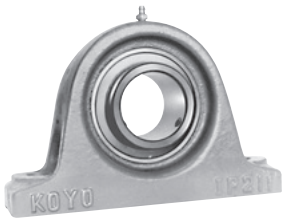
This is the most typical type ball bearing unit. The rib at the bottom of the housing mounting section allows the highly strong structure which withstands against loads applied from all the directions.

The bearing units (UCPsc, UKPsc) with cast steel housings are also available in series, and are used for purposes with severe load conditions.

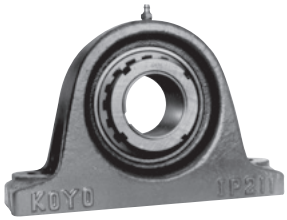
The housing can be installed to a machine with two bolts. As for the tapered bore (UKP) type, nominal number of adapter assembly which follows the nominal number of unit should be added.

Applications : Transmission devices, general industrial equipment

2 Thick section pillow block type units



UCIP



UKIP

Cylindrical bore (with set screws)…Bearing **UC2 (3)** series are used.
UCIP2 (3) : Standard type, **L3** : Triple-lip seal type,
C, CD (FC, FCD) : Pressed steel cover type or cast iron cover type

Tapered bore (with adapter)…Bearing **UK2 (3)** series are used.
UKIP2 (3) : Standard type, **L3** : Triple-lip seal type,
C, CD (FC, FCD) : Pressed steel cover type or cast iron cover type

This pillow block type unit is applicable for use with a great load. The thick and highly rigid housing is suitable to environment exposed to a great load, vibration, and impact. The mounting bolt holes are drilled, and the housing can be installed to the exact location with two bolts.

Applications : Crane, heavy object conveyor, quarrying plant, ships

3 Tapped-base pillow block type unit

UCPA

Cylindrical bore (with set screws)…Bearing **UC2** series are used.

UCPA2 : Standard type, **L3** : Triple-lip seal type

This pillow block type unit is designed so that the mounting space is reduced. It is installed to machines with the two tapped holes on the housing mounting bottom.

Applications : Roller conveyor, purpose with small mounting space

4 Higher centerheight pillow block type unit

UCPH

Cylindrical bore (with set screws)…Bearing **UC2** series are used.

UCPH2 : Standard type, **L3** : Triple-lip seal type

This unit, designed as the higher centerheight pillow block type unit, has high strength against impact load. It is suitable for the machine that the distance from the mounting bottom to the shaft center is long. The housing can be installed to machines with two bolts.

Applications : Printing machine, spinneret

5 Light duty pillow block type unit

BLP

ALP

Cylindrical bore (with set screws)…Bearing **SB2** series are used.

BLP2

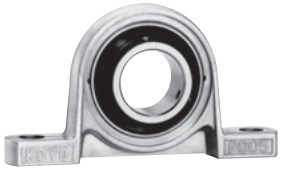
Cylindrical bore (with eccentric locking collar)
…Bearing **SA2** series are used.

ALP2

This pillow block type unit is designed for the aim of light-weight. The housing can be installed to machines with two bolts.

Applications : Machinery for general purposes aiming at lightweight

6 "Compact" series pillow block type unit



UP

Cylindrical bore (with set screws)…Bearing **SU0** series are used.

UP0

C, CD : Rubber coating cover type

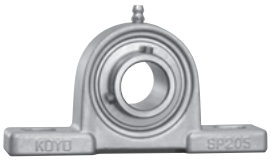
The small and lightweight pillow block type unit, comprising the ball bearing for unit for light load and the special lightweight alloy housing, needs not to be lubricated additionally.

The housing can be installed to machines with two bolts.

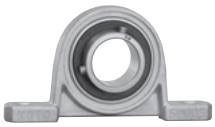
Applications : Machineries for light load

(1 Pillow block type units)

7 Stainless-series pillow block type units



UCSP-H1S6



USP-S6

UCSPA-H1S6

Cylindrical bore (with set screws)

Standard…Bearing **UC2-S6** series are used.

UCSP2-H1S6

C, CD : Pressed stainless steel cover type

Tapped base…Bearing **UC2-S6** series are used.

UCSPA-H1S6

C, CD : Pressed stainless steel cover type

Compact…Bearing **SU0-S6** series are used.

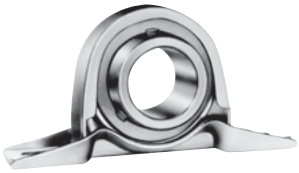
USP0-S6

C, CD : Pressed stainless steel cover type

This superior anticorrosion pillow block type unit comprises the bearing and housing made of stainless steel. The unit is thinner than standard UCP series units, leading to downsizing of machinery. The housing can be installed to machines with two bolts.

Applications : Food machinery, agricultural machinery

8 Pressed steel pillow block type unit



SBPP

SAPP

Cylindrical bore (with set screws)…Bearing **SB2** series are used.

SBPP2

Cylindrical bore (with eccentric locking collar)

…Bearing **SA2** series are used.

SAPP2

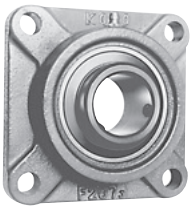
This lightweight pillow block type unit for light load comprises the ball bearing for lightweight unit and the pressed steel plate housing.

The housing can be installed to machines with two bolts.

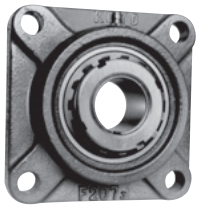
Applications : Light duty conveyor, environment exposed to light load and low speed rotation

2 Square-flanged type units

1 Square-flanged type units



UCF, UCF-E



UKF

NANF

Cylindrical bore (with set screws)…Bearing **UC2 (X, 3)** series are used.

UCF2 (X, 3) : Standard type, **L3** : Triple-lip seal type,

C, D (FC, FD) : Pressed steel cover type or cast iron cover type

UCF2 (X) -E : Standard type, **L3** : Triple-lip seal type

Cylindrical bore (with eccentric locking collar)

…Bearing **NA2** series are used.

NANF2 : Standard type, **L3** : Triple-lip seal type

Tapered bore (with adapter)…Bearing **UK2 (X, 3)** series are used.

UKF2 (X, 3) : Standard type, **L3** : Triple-lip seal type,

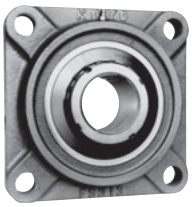
C, D (FC, FD) : Pressed steel cover type or cast iron cover type

This bearing unit comprises the ball bearing for unit and the housing with square flange. It is suitable to use on a vertical surface, such as the side of machinery.

The housing can be installed to machines with four bolts.

2 Square-flanged types with spigot joint

UCFS



UKFS

Cylindrical bore (with set screws)…Bearing **UC3** series are used.
UCFS3 : Standard type, **L3** : Triple-lip seal type,
C, D : Cast iron cover type

Tapered bore (with adapter)…Bearing **UK3** series are used.
UKFS3 : Standard type, **L3** : Triple-lip seal type,
C, D : Cast iron cover type

This bearing unit comprises the ball bearing for unit, square flange, and the housing with spigot joint on the mounting surface. The housing can be installed to a machine by fitting the spigot joint into the mounting hole of it, and using four bolts.
The housing can be installed to the exact location by fitting the spigot joint into the mounting hole.
Applications : Rotating drum, rotating roller, purposes excellent mounting accuracy is required

3 Stainless-series square-flanged type unit

Cylindrical bore (with set screws)…Bearing **UC2-S6** series are used.
UCSF2-H1S6
C, D : Pressed stainless steel cover type

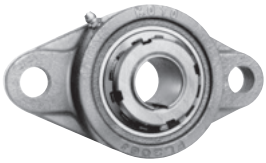
In this superior waterproof and anticorrosion square-flanged type unit, bearing and housing are made of stainless steel. The unit is thinner than standard UCF series units, leading to downsizing of machinery. The housing can be installed to machines with four bolts.
Applications : Food machinery, agricultural machinery

UCSF-H1S6

3 Oval flange type units

1 Rhombic-flanged type units

UCFL, UCFL-E



UKFL

Cylindrical bore (with set screws)…Bearing **UC2 (X, 3)** series are used.
UCFL2 (X, 3) : Standard type, **L3** : Triple-lip seal type,
C, D (FC, FD) : Pressed steel cover type or cast iron cover type
UCFL2 (X) -E : Standard type, **L3** : Triple-lip seal type,

Cylindrical bore (with eccentric locking collar)
…Bearing **NA2** series are used.
NANFL2 : Standard type, **L3** : Triple-lip seal type

Tapered bore (with adapter)…Bearing **UK2 (X, 3)** series are used.
UKFL2 (X, 3) : Standard type, **L3** : Triple-lip seal type,
C, D (FC, FD) : Pressed steel cover type or cast iron cover type

NANFL

This bearing unit comprises the ball bearing for unit and the housing with rhombic flange. It is suitable to use on a vertical surface, such as the side of machinery. Compared to the square-flanged type unit, it requires less mounting space, and the unit weight is also reduced.
Since the pitches of the center of two mounting bolt holes on the rhombic-flanged type housing are the same as those of the center of bolt holes located opposite each other on the square-flanged housing, they are compatible.
The housing can be installed to machines with two bolts.
Applications : Roller conveyor, environment the mounting dimensions are small

(3 Oval flange type units)

2 Adjustable rhombic-flanged type unit

UCFA

Cylindrical bore (with set screws)…Bearing **UC2** series are used.

UCFA2 : Standard type, **L3** : Triple-lip seal type

This rhombic-flanged type unit allows angle adjustment with a supporting point as the shaft center. Therefore, when the bearing unit is installed, fine adjustment of supporting location for the shaft center is enabled.

Since the pitches of the center of mounting bolt holes on the housing are the same as those of the square-flanged type unit and rhombic-flanged type unit, they are compatible.

The housing can be installed to machines with two bolts.

3 Three-bolt flange type unit

UCFB

Cylindrical bore (with set screws)…Bearing **UC2** series are used.

UCFB2 : Standard type, **L3** : Triple-lip seal type,

The housing of this unit has the one-side oval flange, and the unit is suitable to use on a vertical surface and in a limited space, such as the side of machinery.

The housing can be installed to machines with three bolts.

4 Light duty rhombic-flanged type units

BLF

ALF

Cylindrical bore (with set screws)…Bearing **SB2** series are used.

BLF2

Cylindrical bore (with eccentric locking collar)

…Bearing **SA2** series are used.

ALF2

This rhombic-flanged type unit is designed for the aim of lightweight. The housing can be installed to machines with two bolts.

5 “Compact” series rhombic-flanged type unit

UFL

Cylindrical bore (with set screws)…Bearing **SU0** series are used.

UFL0

C, D : Rubber coating cover type

The small and lightweight rhombic-flanged type unit, comprising the ball bearing for unit for light load and the special lightweight alloy housing, needs not to be lubricated additionally.

The housing can be installed to machines with two bolts.

Applications : Machineries for light load

6 Stainless-series rhombic-flanged type units

UCSFL-H1S6

USFL-S6

Cylindrical bore (with set screws)
Standard…Bearing **UC2X (2) -S6** series are used.
UCSFL2X (2) -H1S6
C, D : Pressed stainless steel cover type

Compact…Bearing **SU0-S6** series are used.
USFL0-S6
C, D : Rubber coating cover type

This superior anticorrosion rhombic-flanged type unit comprises the bearing and housing made of stainless steel. The unit is thinner than standard UCFL series units, leading to downsizing of machinery.
The housing can be installed to machines with two bolts.
Applications : Food machinery, agricultural machinery

4 Round-flanged types with spigot joint

Round-flanged types with spigot joint

UCFC, UCFC-E

UKFC

Cylindrical bore (with set screws)…Bearing **UC2 (X)** series are used.
UCFC2 (X) : Standard type, **L3** : Triple-lip seal type,
C, D (FC, FD) : Pressed steel cover or cast iron cover type
UCFCX-E : Standard type, **L3** : Triple-lip seal type

Tapered bore (with adapter)…Bearing **UK2 (X)** series are used.
UKFC2(X) : Standard type, **L3** : Triple-lip seal type,
C, D (FC, FD) : Pressed steel cover or cast iron cover type

This bearing unit comprises the ball bearing for unit, round flange, and the housing with spigot joint on the mounting surface. The housing can be installed to machines by fitting the spigot joint into the mounting hole of machinery, and using four bolts.
The housing can be installed to the exact location by fitting the spigot joint into the mounting hole.
Applications : Rotating drum, rotating roller, purposes excellent mounting accuracy is required.

5 Pressed steel flange type units

1 Pressed steel round-flanged type units

SBPF

SAPF

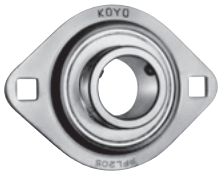
Cylindrical bore (with set screws)…Bearing **SB2** series are used.
SBPF2

Cylindrical bore (with eccentric locking collar)
…Bearing **SA2** series are used.
SAPF2

This lightweight round-flanged type unit for light load comprises the ball bearing for lightweight unit and the pressed steel plate housing.
The housing can be installed to machines with three bolts.
Applications : Light duty conveyor, environment exposed to light load and low speed rotation

(5 Pressed steel flange type units)

2 Pressed steel rhombic-flanged type units



SBPFL

SAPFL

Cylindrical bore (with set screws)…Bearing **SB2** series are used.

SBPFL2

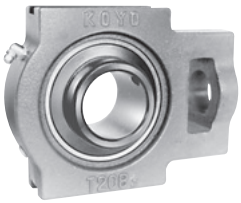
Cylindrical bore (with eccentric locking collar)
…Bearing **SA2** series are used.

SAPFL2

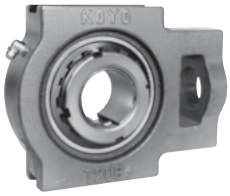
This lightweight rhombic-flanged type unit for light load comprises the ball bearing for lightweight unit and the pressed steel plate housing. Compared to the pressed steel round-flanged type unit, less mounting space is required.
The housing can be installed to machines with two bolts.
Applications : Light duty conveyor, environment exposed to light load and low speed rotation

6 Take-up type units

1 Take-up type units



UCT, UCT-E



UKT

Cylindrical bore (with set screws)…Bearing **UC2 (X, 3)** series are used.

UCT2 (X, 3) : Standard type, **L3** : Triple-lip seal type,
C, CD (FC, FCD) : Pressed steel cover or cast iron cover type

UCT2 (X) -E : Standard type, **L3** : Triple-lip seal type

Tapered bore (with adapter)…Bearing **UK2 (X, 3)** series are used.

UKT2(X, 3) : Standard type, **L3** : Triple-lip seal type,
C, CD (FC, FCD) : Pressed steel cover or cast iron cover type

The bearing unit comprises the ball bearing for unit and the housing with slide groove. This unit allows angle adjustment with a supporting point of the shaft center by moving the housing in radial direction along the slide groove.
Applications : Belt conveyor, use the supporting point of the shaft center must be adjusted

2 Stainless-series take-up type unit

UCST-H1S6

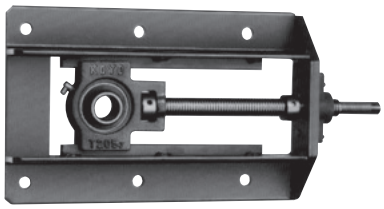
Cylindrical bore (with set screws)…bearing **UC2-S6** series are used.

UCT2-H1S6

C, CD : Pressed stainless steel cover type

This superior anticorrosion take-up type unit comprises the bearing and the housing made of stainless steel. The unit is thinner than standard UCT series units, leading to downsizing of machinery.
Applications : Conveyor of food machinery, agricultural machinery

3 Section steel frame take-up type unit



UCTH

Cylindrical bore (with set screws)…Bearing **UC2** series are used.

UCTH2 : Standard type, **L3** : Triple-lip seal type,

C, CD (FC, FCD) : Pressed steel or cast iron cover type

This unit comprises the take-up type unit, the section steel frame, adjuster bolt, and so on.

This unit allows adjustment of the supporting point of the shaft center by moving the housing in radial direction with the adjuster bolt on the unit.

The housing can be installed to machines with six bolts.

Applications : Belt conveyor, use the supporting point of the shaft center must be adjusted

4 Channel steel frame take-up type unit

UCTL

Cylindrical bore (with set screws)…Bearing **UC2 (3)** series are used.

UCTL2 : Standard type, **L3** : Triple-lip seal type,

C, CD (FC, FCD) : Pressed steel cover or cast iron cover type

UCTU2 (3) : Standard type, **L3** : Triple-lip seal type,

C, CD (FC, FCD) : Pressed steel cover or cast iron cover type

This unit comprises the take-up type unit, the channel steel frame, adjuster bolt, and so on. This unit allows adjustment of the supporting point of the shaft center by moving the housing in radial direction with the adjuster bolt in the frame.

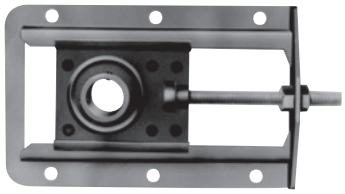
Since this unit is installed with the frame stood, the mounting space is reduced.

The TL lightweight type unit is made of light channel steel, and the TU highly rigid type unit is made of channel steel. The housing can be installed to machines with two or four bolts.

Tapered bore (with adapter) unit is also available (examples of nominal number : UKTL 207J-100, UKTU208J-500).

Applications : Belt conveyor, use the supporting point of the shaft center must be adjusted

5 Pressed steel frame take-up type unit



SBPTH

Cylindrical bore (with set screws)…Bearing **SB2** series are used.

SBPTH2

SBNPTH2

This unit comprises the pressed steel take-up type unit, the pressed steel frame, adjuster bolt, and so on. This unit allows adjustment of the supporting point of the shaft center by moving the housing in radial direction with the adjuster bolt in the frame.

Since the housing and the frame are made of pressed steel, the unit is compact and lightweight. The housing can be installed to machines with four or six bolts.

Applications : Small belt conveyor for lightload, use the supporting point of the shaft center must be adjusted

7 Other units

1 Cartridge type units

UCC

UKC

Cylindrical bore (with set screws)…Bearing **UC2 (X, 3)** series are used.

UCC2 (X, 3) : Standard type, **L3** : Triple-lip seal type

Tapered bore (with adapter)…Bearing **UK2 (X, 3)** series are used.

UKC2 (X, 3) : Standard type, **L3** : Triple-lip seal type

This unit comprises the ball bearing for unit and the housing with the cylindrical outside surface. The housing, having the grounded cylindrical outer surface, can be fit to the cylindrical bore of a machine.

The cartridge type unit, moving in axial direction, is used as the bearing for free side when a shaft is expanded or contracted.

The cylindrical outside surface and the automatic aligning mechanism allow handling similar to standard automatic aligning type bearing.

2 Hanger type unit

UCHA

Cylindrical bore (with set screws)…Bearing **UC2** series are used.

UCHA2 : Standard type, **L3** : Triple-lip seal type

The bearing unit comprises the ball bearing for unit and the housing with parallel thread for pipe on one side. The compact housing is installed to machinery with suspended with steel pipe.

Applications : Intermediate bearing of screw conveyor

8 Ball bearings for units

1 UC type bearing

UC

Cylindrical bore (with set screws)

UC2 (X, 3)…Standard type

UC2 (X, 3) L3…Triple-lip seal type

UC2-S6…Stainless steel series

This grease sealed type deep groove ball bearing incorporates the outer ring with the spherical outside surface and lubricating mechanism and wide inner ring with cylindrical bore set screw. Two types, standard type (oil seal and flinger are included) and triple-lip seal type (supplementary code : L3), are available, depending on the type of sealing device.

It can be fixed to shaft with two set screws on the inner ring. It is the most typical type in ball bearings for unit.

The UC2-S6 series are superior waterproof and anticorrosive ball bearings for unit. The bearing is made of stainless steel, and the series are used for stainless-series units.

As for the types and features of set screw for UC type bearing, see **"14 Handling"**.

2 UK type bearing

UK

Tapered bore (with adapter)

UK2 (X, 3)…Standard type

UK2 (3) L3…Triple-lip seal type

This grease sealed type deep groove ball bearing incorporates the outer ring with the spherical outside surface and lubricating mechanism and wide inner ring with tapered bore. Two types, standard type (oil seal and flinger are included) and triple-lip seal type (supplementary code : L3), are available, depending on the type of sealing device.

It can be fixed to shaft with the adapter. The UK type bearing (with adapter) is optimal for use of long shaft.

As for the UK type bearing, applicable adapter assembly number should be added to the bearing number.

3 NA type ball bearing

NA

Cylindrical bore (with eccentric locking collar)

NA2

This type is based on the UC type bearing having set screw, but equipped with the eccentric locking collar. The grease sealed type deep groove ball bearing incorporates the spherical outside surface outer ring with lubricating mechanism and the cylindrical bore, wide inner ring, and eccentric locking collar with eccentric section on one side. The sealing device is equipped with the oil seal and flinger.

When fixing the bearing to shaft, fit the eccentric recessed section of the eccentric locking collar to the eccentric section of the inner ring, turn the eccentric locking collar to fix it to shaft, and tighten the set screw of the eccentric locking collar to shaft.

4 SB type bearing

SB

Cylindrical bore (with set screws)

SB2

This is the lightweight UC type bearing. The non-lubricating type grease sealed deep groove ball bearing incorporates the spherical outside surface outer ring and the wide inner ring with cylindrical bore set screw. When fixing it to shaft, use the two set screws on the inner ring.

It is used for lightweight unit or pressed steel unit.

5 SA type bearing

SA SA-F

Cylindrical bore (with eccentric locking collar)

SA2, SA2-F

This type is based on the SB type bearing having set screw, but equipped with the eccentric locking collar. The non-lubricating type grease sealed type deep groove ball bearing incorporates the spherical outside surface outer ring and the cylindrical bore, wide inner ring, and eccentric locking collar with eccentric section on one side.

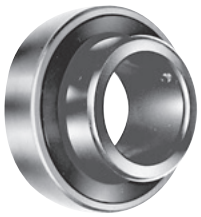
When fixing the bearing to shaft, fit the eccentric recessed section of the eccentric locking collar to the eccentric section of the inner ring, turn the eccentric locking collar to fix it to shaft, and tighten the set screw of the eccentric locking collar to shaft.

(SA-F type bearing has lubricating mechanism on outer ring.)

It is used for lightweight unit or pressed steel unit.

(8 Ball bearing for units)

6 SU type bearing (“compact” series)



SU

Cylindrical bore (with set screws)

SU0…Standard type

SU0-S6…Stainless steel

The bearing series intended for light load is suitable for downsizing and weight saving.

The non-lubricating type grease sealed deep groove ball bearing incorporates the spherical outside surface outer ring and the wide inner ring with cylindrical bore set screw. When fixing it to shaft, use the two set screws on the inner ring.

The SU0-S6 type bearing for unit, made of stainless steel, is superior in corrosion resistance, and used for stainless-series units.

7 ER type bearing

ER

Cylindrical bore (with set screws), cylindrical outside surface, lubricating mechanism, locating snap ring and snap ring groove

ER2

The grease sealed type deep groove ball bearing incorporates the spherical outside surface with lubricating mechanism and set screw, the wide inner ring with cylindrical bore set screw. When fixing it to shaft, use the two set screws on the inner ring.

It features lubricating mechanism, set screw (easy to locate bearing), clearance fit of inner ring and shaft (easy to install). Therefore, it can be used for various purposes in a similar way to standard bearings.

8 RB type bearing

RB

Cylindrical bore (with set screws), cylindrical outside surface

RB2

This bearing is based on the ER type bearing, but without the lubricating mechanism and locating snap ring and snap ring groove. The grease sealed deep groove ball bearing incorporates the spherical outside surface outer ring and the wide inner ring with cylindrical bore set screw. When fixing it to shaft, use the two set screws on the inner ring.

Since clearance fit may be used for installation of the inner ring to shaft (easy to install), it can be used for various purposes in a similar way to standard bearings.

2.3 Unit for special use

To meet with requests for varied and special purposes, JTEKT supplies ball bearing series for special use with various features, as well as standard types. If you use ball bearing units under special environment or conditions, select optimal type among ball bearing units for special use.

JTEKT produces bearing units in various forms and specifications, other than units for special use. Contact JTEKT, if you need them.

1 Triple-lip seal unit (supplementary code : L3)

Triple-lip seal has the structure in which the triple-lip oil seal is glued to the pressed steel shield plate with vulcanized adhesive. The triple-lip eliminates ingress of dusts and mud water into bearing to ensure long service life of the bearing even under severe environmental conditions.

Since the triple-lip seal is fit to the outer ring of the bearing, the triple-lip seal bearing unit can be handled in the same manner as the standard types. The triple-lip seal unit does not lead to uneven contact of the shaft with seal while the bearing is aligned unlike the unit with cover, and maintains stable sealing performance for a long time.

The triple-lip seal unit is the outstanding product that defects of conventional dust and water preventive unit are improved to realize energy-saving and low cost. The triple-lip seal is applicable to the UC type bearing and the UK type bearing.

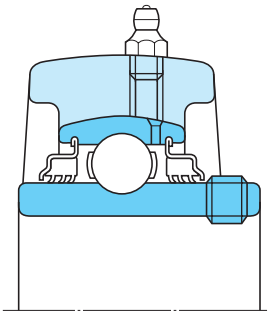


Fig. 2.1 Structure of triple-lip seal unit

2 Unit with cover (supplementary code : C, D, FC, FD)

The unit with cover is equipped with the standard type housing and the pressed steel cover or cast iron cover, and features the double sealing structure of bearing and housing. The unit ensures a long service life of bearing even under severe environmental conditions such as dusts and mud water.

The unit with cover is available in two types : open ends type C type, FC type, closed end type D type, and FD type (for pillow block type unit, CD type or FCD type).

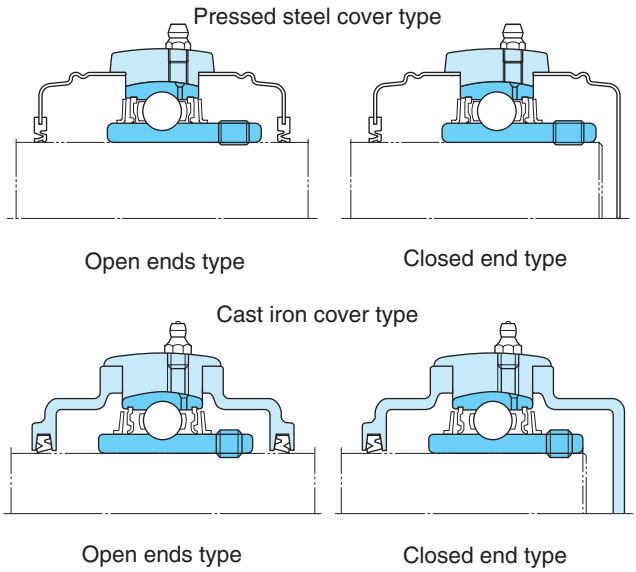


Fig. 2.2 Type and structure of unit with cover

3 Heat resistant unit (special code : D1K2) and Cold resistant unit (special code : D2K2)

The operating temperature range of a ball bearing unit depends on the performance of grease and oil seal (rubber) used for the bearing. The operating temperature range of Koyo Ball Bearing unit (standard type) ranges from –20 ºC to 100 ºC.

If you use bearing units in the higher or lower temperature range beyond the operating temperature range of standard type, select the heat resistant (special code : D1K2) or the cold resistant unit (special code : D2K2).

Specifications of the heat resistant unit and the cold resistant unit are shown in **Table 2.3**.

Table 2.3 Specifications of heat resistant unit and cold resistant unit

Category	Special code	Operating temperature range (ºC)	Grease	Oil seal rubber material	Bearing internal clearance	
					UC type	UK type
Standard	(no code)	–20 to 100	Albania No. 2, Gold No. 3 or equivalence (lithium soap)	Nitrile	CN	C3
Heat resistant	D1K2	–40 to 180	SH44M (lithium soap)	Silicone	C4	C5
Cold resistant	D2K2	–50 to 120	SH33M (lithium soap)	Silicone	CN	C3

4 High speed unit (special code : K3)

The high speed unit (special code : K3) is the product that has been developed for intention of high speed and less heat. For the high speed unit bearing, the non-contact type oil seal optimal for high speed rotation and low torque is used.

This unit is intended for the purposes high speed rotation, low torque, and less heat are required, such as textile machinery and printing machinery.

5 Unit for blower (special code : S5)

The ball bearing unit for blower must meet requests for high speed rotation, less heat, less vibration, and low noise.

To meet with these requests for performance, JTEKT supplies the series of unit for blower (special code : S5) that the non-contact type oil seal is used, as well as improves the machining accuracy.

This unit is intended for the purposes high speed rotation, less heat, less vibration, low noise are required, such as a blower.

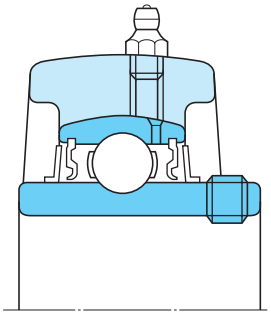


Fig. 2.3 Structure of bearing unit for blower

6 “Compact” series unit

For downsizing of machinery in facilities, the set screw method facilitating installation of the shaft is adopted for this unit.

The unit comprises the compact bearing and the special alloy housing.

Since the cover surface is coated with rubber, it contacts close with the housing well, and features superior dustproof and waterproof performance.

Operating temperature range : Standard temperature

7 Stainless-series unit (special code : S6)

The ball bearing units used for food machinery need waterproof performance.

For this purpose, JTEKT has released a series of Ball Bearing units of which bearings and housings are made of stainless steel in order to satisfy the required performance.

We can also provide bearing units packing grease applicable to use related to food certified by USDA (US Agriculture Department) H1.

Operating temperature range : From –20 ºC to +100 ºC

* If you use this unit for machines splashed with water or in the environment that the operating temperature exceeds 50 ºC, it is recommended you use UC-S6 to be able to be lubricated for SU-S6.

3 Selection of unit

3.1 Outline of selection

Koyo Ball Bearing Units are available in various types and series. Therefore, to select the bearing unit optimal for design of machinery, various factors including the structure of machinery, operating conditions, performance required for bearing unit, specifications relative to the unit, marketability, and economic efficiency, must be comprehensively taken into consideration. Service life of the bearing greatly depends on the quality of selection.

Procedures of selection of standard ball bearing units are shown in **Table 3.1**.

Table 3.1 Procedures of selection of standard ball bearing units

Procedures of selection	Items to be examined	Operating conditions to be considered	Reference
1 Selection of type	· Pillow block type · Flange type · Take-up type · Cartridge type · Hanger type	Structure of machinery, mounting space, mounting dimensions	2 Types (P.10)
2 Selection of shaft dia. and dia. series	· Bearing bore dia. : From 10 to 140 mm · Dia. series : 0, 2, X, 3	Rating life of bearings required, load applied to bearings, rotational speed	4 Life of bearing (P.28) 5 Bearing load (P.31) 6 Allowable rotational speed (P.38)
3 Selection against atmosphere	· L3 type · Cover type · Stainless steel series · For high speed use · For blower	Environment (dusts, mud water, high humidity, chemicals), rotational speed	2 Types (P.10) (P.23) 6 Allowable rotational speed (P.38)
4 Selection against temperature	· Heat resistant type · Cold resistant type · Measures against expansion and contraction of shaft · Grease supply	Bearing temperature	2 Types (P.10) (P.23) 7 Operating temperature and bearing specifications (P.39) 9 Design of shaft and base (P.45) 14 Handling (P.61)
5 Selection of installing to shaft	· Set screw · Adapter · Eccentric locking collar	Rotational speed, load conditions, handling	2 Types (P.10) 14 Handling (P.61)
6 Selection of shafts	· Dimensional tolerance · Adoption of shouldered shaft · Provision of set screw for shaft · Measures against expansion and contraction of shaft	Rotational speed, load conditions, bearing temperature	2 Types (P.10) (P.23) 6 Allowable rotational speed (P.38) 9 Design of shaft and base (P.45) 14 Handling (P.61)
7 Selection of strength of housings	· Cast iron · Cast steel · Pressed steel	Load conditions, load directions, presence of impact	8 Strength of housing (P.40)
8 Selection of lubrication	· 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 check	· Periodic inspection · Grease supply	Environment, importance of machine, bearing temperature, grease life	14 Handling (P.61)

3.2 Selection of type and specifications

Koyo Ball Bearing Units series are available in various types and specifications applicable to your purposes. Therefore, when selecting types and specifications of bearing unit, structure of machine, operating conditions, and environment must be fully taken into consideration for comprehensive examination.

Outline of selection of ball bearing unit types and specifications are shown in **Table 3.2**.

Table 3.2 (1) Outline of selection of ball bearing unit types and specifications

○ : Acceptable or Yes, × : Unacceptable or No

Category	Performance required		Bearing specifications			Applicable housing
	Operating conditions	Fixing to shaft	Sealing structure	Type code	Lubrication	
Bearing	Standard	Set screw Adapter	Oil seal and flinger	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
	Dustproof and waterproof	Set screw Adapter	Triple-lip seal	UC-L3 UK-L3	○	C, F, FA, FB, FC, FL, FS, HA, IP, P, PA, PH, T, TH, TL, TU
	Lightweight	Set screw	Oil seal	SB	×	LF, LP, PF, PFL, PP, PTH, NPTH
	"Compact"	Set screw		SU		FL0, P0
	Anticorrosion	Set screw	Oil seal and flinger	UC-S6	○	SFL-H1, SP-H1
	Anticorrosion and compact		Oil seal	SU-S6	×	SFL0, SP0
	Heat resistant Cold resistant For high speed For blower	Set screw Adapter	Oil seal and flinger	UC UK	○	C, F, FA, FB, FC, FL, FS, HA, IP, P, PA, PH, T

Table 3.2 (2) Outline of selection of ball bearing unit types and specifications

Category	Performance required		Housing specifications				Applicable bearing
	Type	Operating conditions	Type code	Material	Presence of cover	Lubrication	
Housing	Pillow block type	Standard	P	Cast iron	○	○	UC (-L3), UK (-L3)
		Cast steel (highly strong)	Psc	Cast steel			
		Thick section (highly strong)	IP	Cast iron			
		Tapped-base	PA	Cast iron	×	○	UC (-L3)
		Higher centerheight	PH			○	UC (-L3)
		Light duty	LP			×	SB
		"Compact"	P0	Special light alloy	○	×	SU
		Anticorrosion	SP-H1	Stainless steel		○	UC-S6
		Anticorrosion and compact	SP0	Stainless steel		×	SU-S6
		Pressed steel	PP	Pressed steel	×	×	SB
	Flange type	Square	F	Cast iron	○	○	UC (-L3), UK (-L3)
		With spigot joint (square)	FS				
		(round)	FC				
		Oval	FL	Cast iron	×	○	UC (-L3)
		Shaft alignment (adjustable oval)	FA				
		Cantilever (deformed)	FB				
		Light duty (oval)	LF	Cast iron	×	×	SB
		"Compact" (oval)	FL0	Special light alloy	○	×	SU
		Anticorrosion (oval)	SFL-H1	Stainless steel	○	○	UC-S6
		Anticorrosion and compact (oval)	SFL0	Stainless steel	○	×	SU-S6

Table 3.2 (2) Outline of selection of ball bearing unit types and specifications

Category	Performance required		Housing specifications				Applicable bearing
	Type	Operating conditions	Type code	Material	Presence of cover	Lubrication	
Housing	Flange type	Pressed steel (round) (oval)	PF PFL	Pressed steel	×	×	SB
	Take-up type	Standard	T	Cast iron	○	○	UC (-L3), UK (-L3)
		Section steel frame type	TH	Cast iron	○	○	UC (-L3)
		Channel steel frame type	TL TU	Cast iron	○	○	UC (-L3), UK (-L3)
		Pressed steel frame type	PTH NPTH	Pressed steel	×	×	SB
	Cartridge type	Standard	C	Cast iron	×	○	UC (-L3), UK (-L3)
	Hanger type	Standard	HA	Cast iron	×	○	UC (-L3)

3.3 Selection from a maintenance standpoint

Koyo Ball Bearing Units need not to be maintained or checked for standard purposes during operation, because of their structures. However, they must be periodically maintained or checked if they are used for important machines or under special environment.

Thus, it is important that intervals of periodic maintenance or check during operation are extended or ball bearing units optimal for purposes or operating conditions are selected in order to reduce the manpower required for maintenance and check.

For your purposes, various factors must be fully examined. In the environment exposed to vibration or impact, increase in safety factor of service life of the bearing, and strength of the housing must be fully examined. In the environment exposed to great axial load, use of shouldered shaft, in the environment exposed to dusts or mud water, use of the triple-lip seal type or covered type, in the environment exposed to high or low temperature, material of oil seal and grease brand must be fully taken into consideration.

4 Life of bearing

If a ball bearing unit is installed to a machine or device and operated, vibration or noise from the unit may be increased or seizure may occur, after a certain period has passed, even under appropriate conditions. The period of bearing operation until the unit cannot be used due to these causes is called the life of ball bearing unit.

Life of a ball bearing unit is caused by two reasons, fatigue of bearing material (fatigue service life) and degradation of grease leading to faulty lubrication, and inability of continuous use. Each of them can be found as the rating life of bearing and grease life.

The life of ball bearing unit depends on the shorter one, between the rating life of bearing and grease life. Since the lubricating system is adopted for the Koyo Ball Bearing Unit, the grease life can be extended to the rating life of bearing by appropriate lubrication. If the bearing unit is used without lubrication, the shorter period, the rating life of bearing or grease life, is the life of the bearing unit.

However, a ball bearing unit is actually installed to a machine or device and operated, the unit cannot be used due to causes other than the rating life of bearing or grease service life (wear, dent, crack, seizure, etc.). They can be prevented by full examination of the selection, handling, installation, and lubrication of the ball bearing unit.

4.1 Basic rating life and basic rating load

4.1.1 Basic rating life

While a bearing is rotated under load, the raceways surfaces of the inner and outer rings of bearing and the rolling surfaces of rolling element are exposed to load continuously. Thus, damages like scales appear on the raceway surfaces or rolling surfaces due to fatigue of material (flaking or peel-off). The total number of revolution until the damages appear is called as "(Fatigue) service life" of bearing. Fatigue service life of bearing may be greatly varied even if the bearings having the same structure, dimensions, materials, and machining methods, are operated under the same operating conditions.

To solve this problem, if a group of the same bearings are operated under the same conditions, the total number of revolution of 90% of the bearings without damage due to rotating fatigue (life of 90% reliability) is called as the **"Basic rating life of bearing"**.

4.1.2 Basic rating load

Basic rating load indicates the withstanding strength against rolling fatigue of a bearing, that is to say, loading capacity. It is the pure radial load of a certain level and direction (for radial bearing) or central axial load (for thrust bearing) that a million times of rotations can be obtained as the basic rating life if the inner ring of bearing is rotated while the outer ring is stopped (or the outer ring is rotated while the inner ring is stopped).

They are called as the **basic dynamic radial load rating** (C_r) for radial bearing or the **basic dynamic axial load rating** (C_a) for axial bearings.

In the ball bearing for ball bearing unit, it is indicated as the basic dynamic radial load rating (C_r), and the value is shown in the dimensional table.

4.2 Calculation of rating life

Relation between the basic rating life, basic dynamic load rating, and the dynamic equivalent load of the ball bearing for ball bearing unit can be indicated as the **Formula (4.1)**. If the ball bearing unit is used at a fixed rotational speed, it is convenient that the life is indicated as time, as shown in the **Formula (4.2)**.

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

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

Whereas,

L_{10} : Basic rating life	10^6 rotations
L_{10h} : Basic rating life	h
C_r : Basic dynamic load rating	N
P_r : Dynamic equivalent load (see **"5 Bearing load"**)	N
n : Rotational speed	min^{-1}

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

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

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

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

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

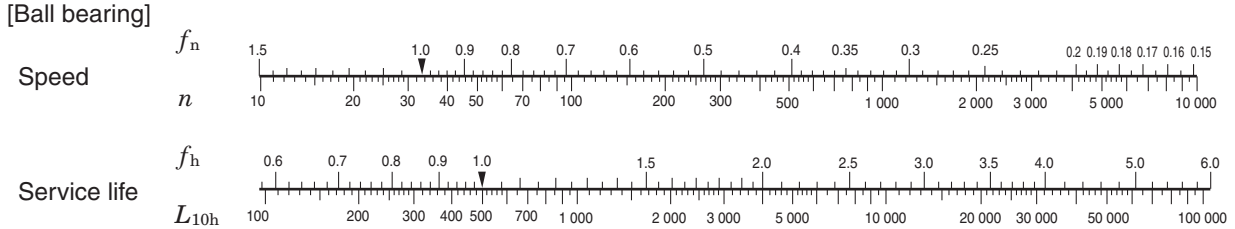


Fig. 4.1 Rotational speed (n) and its coefficients (f_n) , and service life coefficient (f_h) and basic rating life (L_{10h})

4.2.1 Correction of basic rating load for high temperature use

If a ball bearing unit is used at a high temperature, structure of bearing material is changed, leading to decreased hardness, and the basic dynamic load rating is reduced than that of the use at standard temperature. Once the structure of bearing material is changed, it will not be restored even if the temperature returns to standard level.

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

If the ball bearing unit has been used for a long period at 120 ºC or more, fluctuations in dimensions of the bearing may be increased. If you use it under such conditions, contact JTEKT.

Table 4.1 Temperature factor

Bearing temperature, ºC	125	150	175	200	250
Temperature factor	1	1	0.95	0.90	0.75

4.2.2 Corrected rating life

Although the basic rating life (L_{10}) shown in **Formula (4.1)** is the fatigue life of bearing with 90% reliability, service life with 90% or more reliability is required, depending on the purposes. The bearing life may be extended by adoption of special material. Furthermore, operating conditions including lubrication may give influence on the bearing life.

The corrected rating life, obtained by correcting the basic rating life taking these points into consideration, can be found by **Formula (4.6)**.

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

Whereas,

L_{na} : Corrected rating life — 10^6 rotations
Life that characteristics of bearing and operating conditions are taken into consideration with reliability 100–n% (the probability of failure occurrence is expressed by n)

L_{10} : Basic rating load — 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

Values of reliability factor a_1 required in order to find the corrected rating life of bearing with 90% or more reliability (failure occurrence probability : 10% or less) are shown in **Table 4.2**.

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

Bearing characterization relative to the life of bearing may depend on the bearing material (type of steel, quality), production procedure, and design. In such a case, correct the basic rating life of bearing by the bearing characterization factor a_2.

For Koyo Ball Bearing for ball bearing unit, high quality vacuum-degassed bearing steel is used as the standard material, and it causes a longer service life of bearing. In Koyo Ball Bearing for ball bearing unit, bearing characterization factor a_2 is 1 ($a_2 = 1$).

As for the bearing special material used for longer fatigue limit, bearing characterization factor a_2 larger than 1 ($a_2 > 1$) can be used.

(3) Operating condition factor a_3

If a bearing is operated under the operating conditions that may directly influence on the life of bearing (especially, appropriate or inappropriate lubrication), the basic rating life should be corrected with the operating condition factor a_3.

If lubrication is appropriate, the operating condition factor should be as follows : $a_3 = 1$. If it is excellently good, following condition should be applied : $a_3 > 1$.

If any of the operating conditions shown below is satisfied, following condition should be applied : $a_3 < 1$.

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

(2) Rotational speed is low ..... $d_m n$: 10 000 or less
[Remark] d_m (Pitch dia. of ball set) × n (Rotational speed)

(3) Foreign matters are mixed in lubricant

Even if the bearing characterization factor is as follows with using special material : $a_2 > 1$, the value satisfying the following condition cannot be adopted if lubricant is inappropriate : $a_2 \times a_3 > 1$. Therefore, if the operating condition factor is smaller than 1 ($a_3 < 1$), the following condition seems to be satisfied, in general : $a_2 \leqq 1$.

4.2.3 Recommended service life of bearing

Excessively long life of ball bearing unit does not lead to economic operation. Setup of the recommended service life of bearing unit depending on the type of machine the ball bearing unit is used together and operating conditions is required.

Recommended service life of ball bearing unit empirically adopted is shown in **Table 4.3**.

Table 4.3 Recommended service life of ball bearing unit (reference)

Operating conditions	Application	Recommended service life, h
Operated in short period or intermittently	Home electric appliances, electric tool, agricultural machinery, hoist, etc.	4 000 – 8 000
Discontinuously but for a long period	Factory motor, general gear, etc.	12 000 – 20 000
Always operated for 8 hours or longer a day or operated continuously for a long period	General machinery, blower, etc.	20 000 – 30 000
Operated continuously for 24 hours, no fault is allowed	Electric power plant facility, mine drainage facility, etc.	100 000 –200 000

4.3 Grease life

Grease life of a ball bearing for ball bearing unit is influenced by the level of load, rotational speed of bearing, and operating temperature.

Grease life of a ball bearing for unit used under appropriate operating conditions can be found by the formula shown below.

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

Whereas,

L	: Grease life	h
d_m	: Pitch dia. of ball set $d_m = \frac{(D+d)}{2}$ (D : Nominal bearing outer dia., d : Nominal bearing bore dia.)	mm
n	: Rotational speed of bearing	min^{-1}
P_r	: Dynamic equivalent radial load (see **"5 Bearing load"**)	N
C_r	: Basic dynamic radial load rating of bearing	N
T	: Operating temperature of bearing	°C

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

1) Operating temperature of bearing : T °C

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

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

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

2) Rotationl speed of bearing : $d_m n$

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

(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 JTEKT.

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

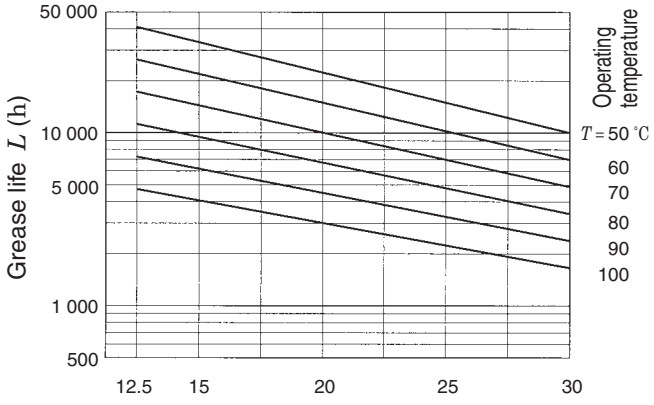
To be applied if the following condition is satisfied : $\frac{P_r}{C_r} \leqq 0.2$

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

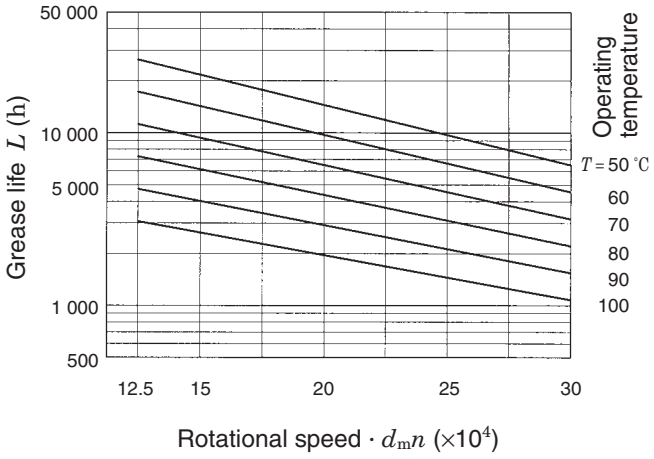
If $\frac{P_r}{C_r}$ is larger than 0.2 ($\frac{P_r}{C_r} > 0.2$), contact JTEKT.

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

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



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



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

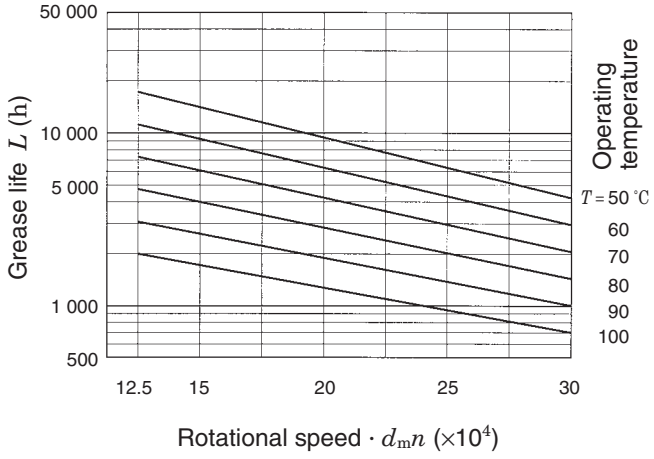


Fig. 4.2 Relation of grease life to bearing load, rotational speed, and operating temperature (reference)

5 Bearing load

As for the loads applied to a bearing, load caused by weight of object supported by the bearing, transmitting force of gears and belts, load generated in the machine operated are included. In many cases, these loads cannot be found out by simple calculation.

Because the loads are not fixed but fluctuated, and it is difficult to fix the level and direction of the fluctuations.

Therefore, in general, to find the loads applied to a bearing, the following steps are adopted : multiply the load to be able to be found theoretically by various factors obtained empirically.

5.1 Loads applied to bearing

5.1.1 Load factor

Even if radial load and axial load to be applied to a bearing can be found by standard dynamical calculation, loads actually applied to the bearing are greater than the calculated values because of vibration and impact generated while machine is being operated.

To find the loads actually applied to a bearing, multiply the theoretically found values by load factor.

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

Whereas,

F : Load actually applied to bearing N

F_c : Theoretically calculated load N

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

Table 5.1 Load factor f_w

Operating conditions	Applications	f_w
Virtually no vibration or impact	Electric machines and instruments	1 – 1.2
Standard operation (weak impact)	Agricultural machines and blower	1.2 – 2
Great vibration and impact	Constructive machines and grinder	2 – 3

5.1.2 Loads in case of belt or chain transmission

As for belt transmission, theoretical load applied to the pulley shaft can be found by effective transmission force of belt. Actually, the effective transmission force must be multiplied by load factor (f_w) obtained with taking vibration and impact generated while machine is being operated into consideration and belt factor (f_b) with taking belt tension into consideration.

As for chain transmission, factor equivalent to the belt factor for belt transmission must be multiplied.

$$F_b = \frac{2M}{D_p} \cdot f_w \cdot f_b$$
$$= \frac{19.1 \times 10^6 W}{D_p \cdot n} \cdot f_w \cdot f_b \quad \cdots\cdots (5.2)$$

Whereas,

F_b : Load actually applied to pulley shaft or sprocket shaft — N
M : Torque applied to pulley or sprocket — mN · m
W : Transmitted power — kW
D_p : Pitch circle dia. of pulley or sprocket — mm
n : Rotational 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 in case of gear transmission

As for gear transmission, load in tangential direction (K_t), load in radial direction (K_r), and axial load (K_a) are included as the theoretical loads applied to a gear. They can be dynamically found by transmission force and gear type.

The followings show the example of standard flat gear (as for flat gear, no axial load applied is expected.).

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

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

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

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

(3) Synthetic load applied to gear

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

Whereas,

K_t : Load applied to gear in tangential direction (tangential line force) — N
K_r : Load applied to gear in radial 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 : Rotational speed — min^{-1}
α : Pressure angle of gear — deg

Note that the actual gear load must be found by multiplying the theoretical load by load factor (f_w) obtained with taking vibration and impact generated while machine is being operated into consideration and gear factor (f_g) with taking accuracy and finish of gear into consideration.

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

Whereas,

F_g : Load actually applied to gear — N
K_g : Theoretically synthetic load applied to gear — N
f_w : Load factor (see **Table 5.1**)
f_g : Gear factor (see **Table 5.3**)

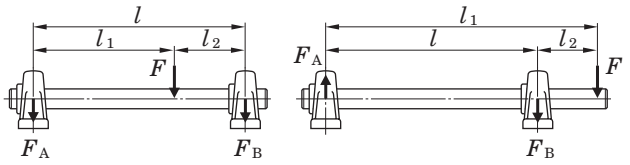
Table 5.3 Gear factor f_g

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

5.2 Distribution of load to bearing

To distribute the load applied to the shaft system into the bearing which supports the shaft, find the radial component force of each load, and calculate the vector sum in accordance with the direction of load. **Fig. 5.1** shows the example of distribution of radial load.

In many cases, a bearing bears radial load as well as axial load, leading to synthetic loads. In such a case, convert it into dynamic equivalent load, and consider it as the bearing load.



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

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

Fig. 5.1 Distribution of load to bearing

5.3 Dynamic equivalent load

In many cases, a bearing is exposed to the synthetic load of radial load and axial load, and it is used under various conditions, including fluctuated load thus, the load actually applied to the bearing cannot be directly compared to the basic dynamic load rating.

In such a case, find the load running the bearing center in a fixed level and direction that allows the same bearing life as the actual bearing load and rotational speed. Then, compare it 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 radial bearing (ball bearing for unit is included) that bears the synthetic load in a fixed level and direction can be found by the formula shown below.

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

Whereas,

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

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

$\frac{f_0 F_a}{C_{0r}}$	e	$F_a / F_r \leqq e$		$F_a / F_r > e$	
		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.

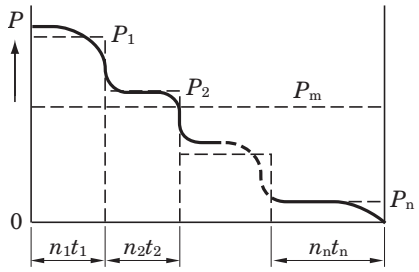
5.3.2 Mean dynamic equivalent load in case of fluctuated load

If level or direction of the load applied to a bearing is fluctuated, it is necessary to find the mean dynamic equivalent load to allow the same bearing life as that under actual fluctuated conditions.

Table 5.5 shows the method of finding the mean dynamic equivalent load under various fluctuated conditions.

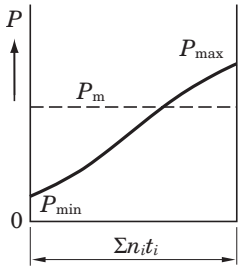
Table 5.5 Calculation of mean dynamic equivalent load in case of fluctuated load

(1) Staged fluctuation



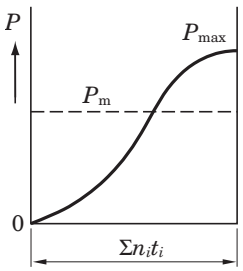
$$P_m = \sqrt[p]{\frac{P_1^{\,p}\, n_1 t_1 + P_2^{\,p}\, n_2 t_2 + \cdots\cdots + P_n^{\,p}\, n_n t_n}{n_1 t_1 + n_2 t_2 + \cdots\cdots + n_n t_n}} \quad \cdots\cdots (5.10)$$

(2) Stageless fluctuation



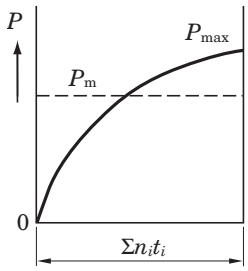
$$P_m = \frac{P_{min} + 2\,P_{max}}{3} \quad \cdots\cdots (5.11)$$

(3) Sine curve fluctuation



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

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



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

Whereas,

P_m : Mean dynamic equivalent load N

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

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

.
.
.

P_n : Dynamic equivalent load actuating for t_n hours at rotational 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 load or impact load even under extra low rotational speed, partial permanent deformation occurs to the contact surface of the raceway of bearing with the rolling element. The permanent deformation increases with the increase of load, and when it exceeds a fixed level, smooth rotation of the bearing is interfered.

Basic static load rating of a bearing is the static load to generate the calculated contact stress shown below at the center of contact surface of the raceway the maximum load is applied and the rolling element.

(1) Self-aligning ball bearing ..... 4 600 MPa
(2) Other ball bearings
(ball bearing for unit is included) ..... 4 200 MPa
(3) Roller bearing ..... 4 000 MPa

The total permanent deformation of bearing raceway and rolling element to be generated under these contact stresses are 0.000 1 times of the diameter of rolling element.

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

5.4.2 Static equivalent load

Static equivalent load is the virtual load converted into the level that allows the generation of the same contact stress at the contact face of the raceway of bearing and rolling element that are exposed to the maximum stress as the contact stress under the actual load conditions, when a bearing is stopped or rotated at extra low speed.

Static equivalent radial load (P_{or}) of the ball bearing for unit can be calculated by the formula below (use greater value).

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

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

Whereas,

P_{0r} : Static equivalent radial load N

F_r : Radial load N

F_a : Axial load N

5.4.3 Safety factor

The static equivalent load allowed by a bearing depends on the basic static load rating of the bearing, and the limitation of use of bearing by the permanent deformation (partial dent) of the bearing depends on the performance required for the bearing or operating conditions.

Therefore, in order to examine the safety of the basic static load rating of the bearing, safety factor is defined taking conventional experiences into consideration.

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

Whereas,

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

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

P_{0r} : Static equivalent radial load N

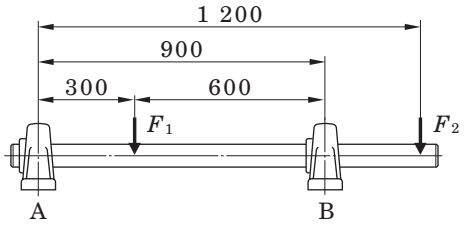
Table 5.6 Safety factor f_s (recommended)

Operating conditions		f_s (Min.)
Being rotated	High rotating accuracy is required	2
	Standard operating conditions	1
	Impact	1.5
Not always being rotated (sometimes oscillated)	Standard 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 **Formulas (5.7)** and **(5.8)**.

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

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

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

[Remark] Negative load is the upward load.

Radial load F_A applied to the bearing A :

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

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

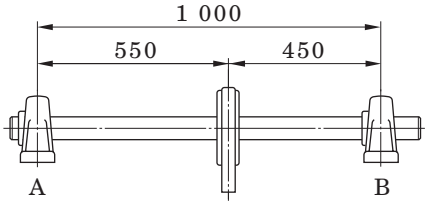
$$F_{1B} = \frac{300}{900} \times 1.5 = 0.5 \text{ (kN)}$$

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

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

Example 2 Calculating load by V-belt transmission

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



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

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

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

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

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

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

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

Example 3 Calculating dynamic equivalent radial load

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

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

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

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

Therefore, $X = 0.56$, $Y = 1.68$

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

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

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

Example 4 Calculating bearing life

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

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

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

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

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

$$\fallingdotseq 15\,800 \text{ (h)}$$

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

When the rotational speed n is 1 000 min^{-1} ($n = 1\,000$ min^{-1}), rotational 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 $L_{10h} \fallingdotseq 16\,000$ hours.

Example 5 Selecting ball bearing unit

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 service life : rotational speed of shaft n is 1 500 min^{-1} ($n = 1\,500$ min^{-1}), and radial load F_r is 5 kN ($F_r = 5$ kN). The radial load F_r includes the load factor and gear factor.

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

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

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

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

Example 6 Selecting pillow block type unit for low speed

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

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

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

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

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

$\fallingdotseq 20.2$ (kN)

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

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

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

Example 7 Calculating bearing life in case of use at high temperature

Find the bearing life if the heat resistant pillow block type unit (UCP215JD1K2) is operated under the following conditions : operating temperature is 175 °C, radial load F_r is 4 kN (F_r = 4 kN), and the rotational speed n is 800 min^{-1} (n = 800 min^{-1}). Note that the radial load F_r includes load factor and gear factor.

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

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

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

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

$\fallingdotseq 85\ 000$ (h)

(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 is extended excessively, install a bearing unit on the identical shaft on the fixed side (positioning of shaft), and install another bearing unit on the free side (see **"9 Design of shaft and base"**).

Example 8 Calculating grease life

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

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

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

$$= 6.10 - 4.40 \times 10^{-6} \times 12.5 \times 10^4 - 2.50 \left(\frac{1}{12.8} - 0.05\right) - (0.021 - 1.80 \times 10^{-8} \times 12.5 \times 10^4) \times 50$$

$$= 4.542$$

$L \fallingdotseq 34\ 800$ (h)

Example 9 Calculating life of bearing unit 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 bearing L_{10h} with using **Formula (4.2)**.

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

$\fallingdotseq 43\ 700$ (h)

(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 rotational speed

6.1 Allowable rotational speed

The rotational speed of a bearing is normally affected by friction heat generated in the bearing. If the heat exceeds a certain amount, seizure or other failures occur, thus causing rotation to be discontinued.

The allowable rotational speed is the highest speed at which a bearing can continuously operate without generating such critical heat.

Allowable rotational speed of a ball bearing unit depends on the dimensions of the bearing, type of oil seal, and fitting conditions of bearing inner ring and shaft.

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

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

Unit : min^{-1}

Bore diameter No.	UC type bearing, UC-S6 type bearing, UK type bearing, NA type bearing, ER, RB type bearing										SA type bearing SB type bearing	SU type bearing SU-S6 type bearing
	Standard type, cold resistant type (D2K2)			Triple-lip sealed (L3)			Heat resistant type (D1K2)	Heat resistant type (K3), for blower (S5)				
	Diameter series			Diameter series			Diameter series	Diameter series				
	2	X	3	2	X	3	2, X, 3	2	X	3		
8												10 000
00	–			–			–	–			–	10 000
01	5 800			2 300			3 800	8 700			6 800	8 000
02	5 800			2 300			3 800	8 700			6 800	6 600
03	5 800			2 300			3 800	8 700			6 800	5 800
04	5 800	–	–	2 300	–		3 800	8 700	–	–	5 800	5 000
05	5 100	4 300	4 600	2 100	960		3 000	7 700	6 400	6 700	5 100	4 000
06	4 300	3 700	3 900	960	830	–	2 500	6 400	5 500	5 800	4 300	3 300
07	3 700	3 300	3 400	830	750	770	2 100	5 500	5 000	5 100	3 700	–
08	3 300	3 100	3 100	750	690	690	1 900	5 000	4 600	4 600	3 300	
09	3 100	2 800	2 700	690	640	620	1 700	4 600	4 300	4 100	3 100	
10	2 800	2 500	2 400	640	570	550	1 500	4 300	3 800	3 700	2 800	
11	2 500	2 300	2 300	570	520	510	1 400	3 800	3 500	3 400		
12	2 300	2 200	2 100	520	490	470	1 300	3 500	3 200	3 100		
13	2 200	2 100	1 900	490	460	440	1 200	3 200	3 100	2 900		
14	2 100	2 000	1 800	460	440	410	1 100	3 100	2 900	2 700		
15	2 000	1 800	1 700	440	410	380	1 000	2 900	2 700	2 600		
16	1 800	1 700	1 600	410	380	360	940	2 700	2 600	2 400		
17	1 700	1 600	1 500	380	360	340	880	2 600	2 400	2 300		
18	1 600	1 500	1 400	360	340	320	830	2 400	2 300	2 100		
19	–	–	1 400	–	–	310	790	–	–	2 000		
20		1 300	1 300		300	280	750		2 000	1 900		
21		–	1 200		–	–	710		–	1 800		
22			1 100			250	680			1 700		
24			1 100			240	630			1 600		
26			1 000			220	580			1 500		
28			910			200	540			1 400		

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

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

6.2 Correction of allowable rotational speed by fitting

For easier installation of a ball bearing unit to a shaft, clearance fit is used for a bearing inner ring and shaft, in general. Size of fitting clearance between the bearing inner ring and the shaft is related to the allowable rotational speed of the bearing unit. As the rotational speed is increased, the fitting clearance between the bearing inner ring and the shaft should be decreased.

Table 6.2 shows the fitting factors to correct the allowable rotational speed depending on the types of fitting of the bearing inner ring to the shaft.

As for the bearings with set screws, allowable rotational speed must be corrected by multiplying the allowable rotational speed (standard value) by fitting factor, depending on the tolerance class of the shaft used. For the bearings with adapter, shafts of h8 or h9 tolerance class are recommended, while shafts of h5 or j5 tolerance class are recommended for the bearings with eccentric locking collar.

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

Type of ball bearing unit	Fitting factor f_c					
	Shaft tolerance class					
	h5, j5	j6	h6	h7	h8	h9
With set screw						
Standard type	–	1.0	1.0	0.8	0.5	0.2
Triple-lip seal type (Supplementary code L3)	–	–	–	1.0	1.0	0.9
Heat resistant type (Special code D1K2)	–	–	–	1.0	1.0	0.7
Cold resistant type (Special code D2K2)	–	–	–	1.0	1.0	0.7
For high speed (Special code K3)	–	1.0	0.8	0.6	–	–
For blower (Special code S5)	1.0	–	0.8	0.6	–	–
With adapter	–	–	–	–	1.0	1.0
With eccentric locking collar	1.0	–	–	–	–	–

7 Operating temperature and bearing specifications

7.1 Operating temperature range

Operating temperature range of a ball bearing unit depends on the type of grease used for the bearing, oil seal rubber material, and the internal clearance of the bearing.

Koyo Ball Bearing Units are available in heat resistant unit (special code : D1K2) and cold resistant unit (special code : D2K2) series, as well as standard types, to allow selection optimal for the operating temperature (see **Table 2.3**).

Even though the bearing unit suitable for temperature is used, grease must be fed in accordance with the specified standards, since grease life greatly depends on temperature.

7.2 Operating temperature and internal clearance of bearing

If the temperature of transmission heat to the shaft is high or hot steam enters the hollow bore of the shaft, difference between the temperatures of the bearing inner and outer rings is increased and the internal clearance of the bearing is decreased, leading to breakage at early stages of the bearing sevice life.

Decrease in the internal clearance of the bearing depending on the difference in the temperatures of the bearing inner ring and the bearing outer ring can be found by **Formula (7.1)**.

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

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

Whereas,

S_{t1} : Decrease in the internal clearance of bearing depending on the difference in the temperatures of the bearing inner ring and the bearing outer ring mm

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

D_e : Raceway dia. of bearing outer ring mm

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

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

D : Nominal bearing outer dia. mm

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

If a ball bearing unit is used at a high temperature, abnormal axial load may be applied to the bearing due to axial extension of the shaft caused by high temperature, leading to breakage at early stages of the bearing service life. This fact must be taken into consideration, as well as the internal clearance of the bearing for use of the bearing at a high temperature.

The shaft of free side unit or the unit needs to be able to be moved axially, as the countermeasure against this problem.

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

8 Strength of housing

The housing for Koyo Ball Bearing Unit reliably withstands use under standard operating conditions, because of selection of good material and the highly tough design suitable to the load capacity of the bearing. However, if a great or impact loads occurs at a low rotational speed, strength of the bearing must be examined in advance, for the purpose safety is especially required.

Although the form of the housing is designed so that it is applicable to various purposes, destruction strength varies depending on the direction of load. Therefore, mounting direction of the bearing unit must be fully examined, as well as the strength of the housing.

At this time, setting of fixing device to support the housing is required depending on the direction or level of load.

Rigidity of the base and flatness of the mounting surface give influence on the strength of the housing. Note that the load applied to the ball bearing unit is recommended to be basically examined by the calculation result of bearing life even if the strength of the housing is satisfied.

8.1 Strength of cast iron housing

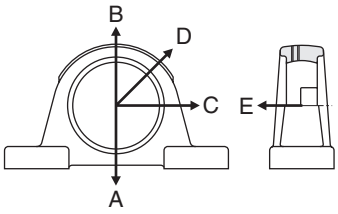
Though gray cast iron has many superior features as machine parts material, it is fragile against impact load. Therefore, prior to use of it, level, direction, and property of load applied to it must be fully examined.

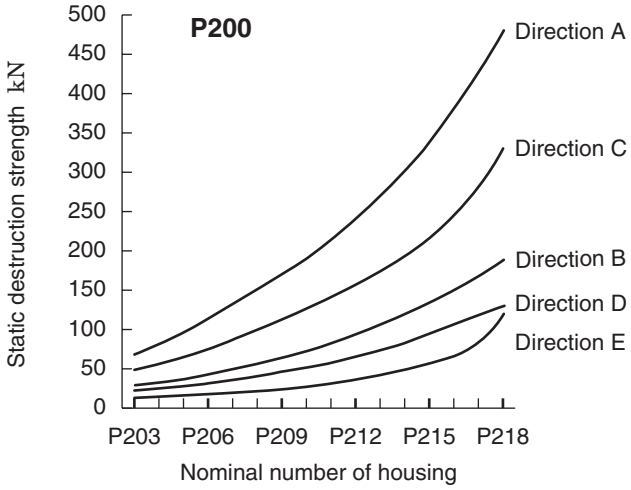
Allowable load of gray cast iron housing can be found by using static destruction strength of the housing, taking safety factor into consideration.

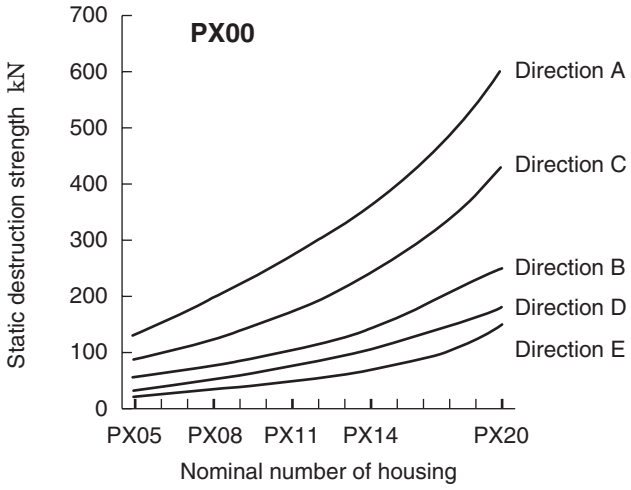
Table 8.1 shows the safety factor of gray cast iron products against load, and **Fig. 8.1** to **Fig. 8.8** show the outline values of static destruction strength of pillow block type, flanged type and take-up type housings.

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







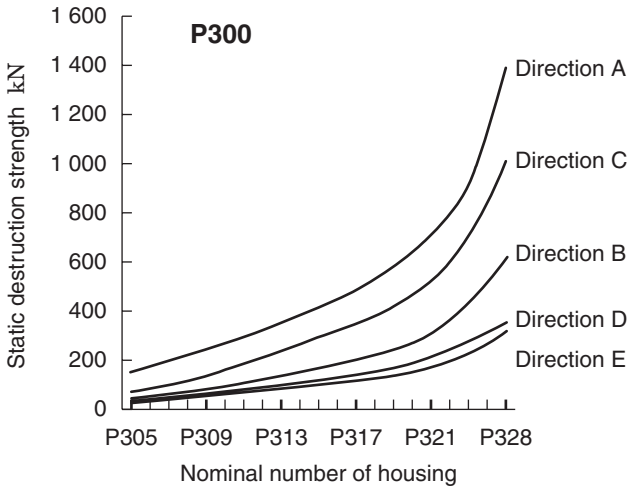
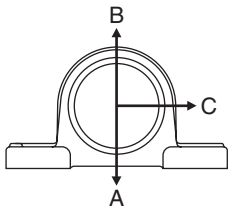
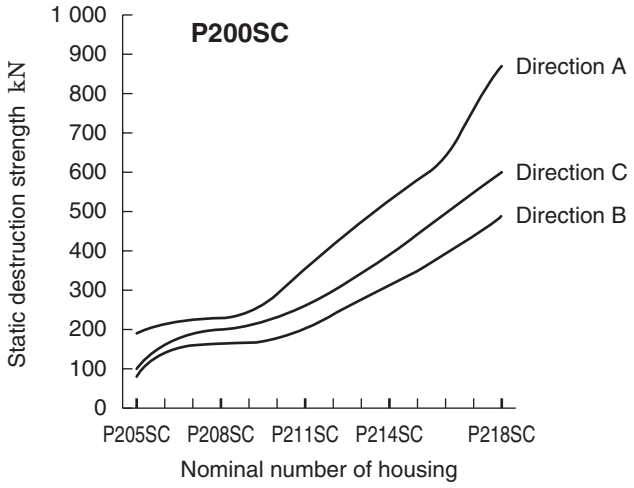


Fig. 8.1 Static destruction strength of pillow block type housing (P)





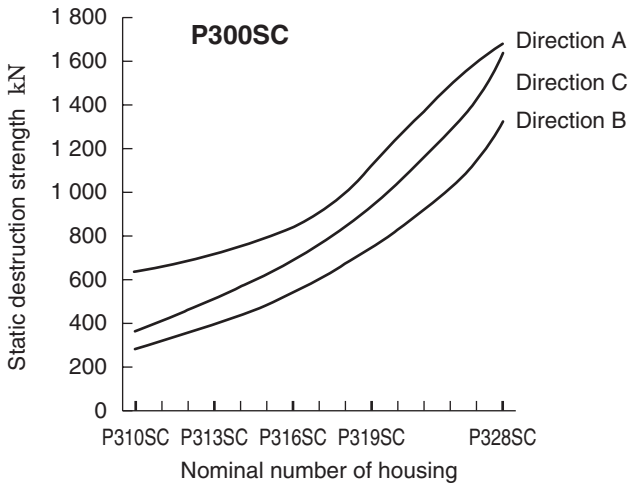
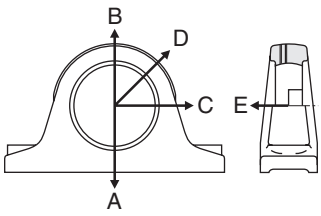
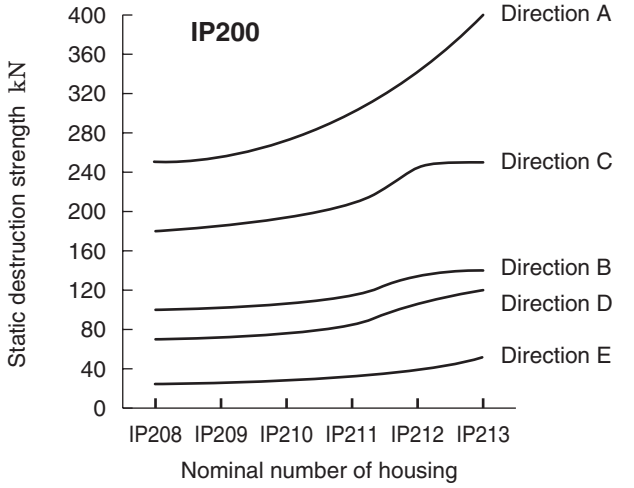


Fig. 8.2 Static destruction strength of cast steel pillow block type housing (Psc)





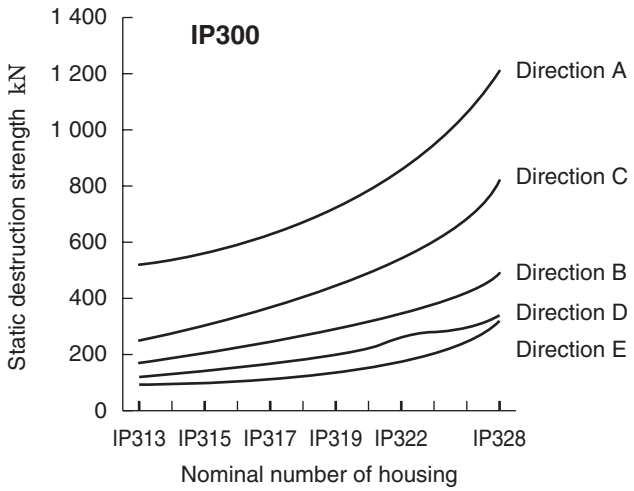
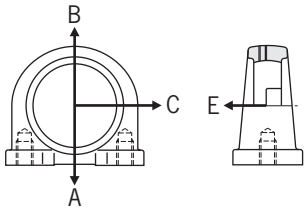


Fig. 8.3 Static destruction strength of thick section pillow block type housing (IP)



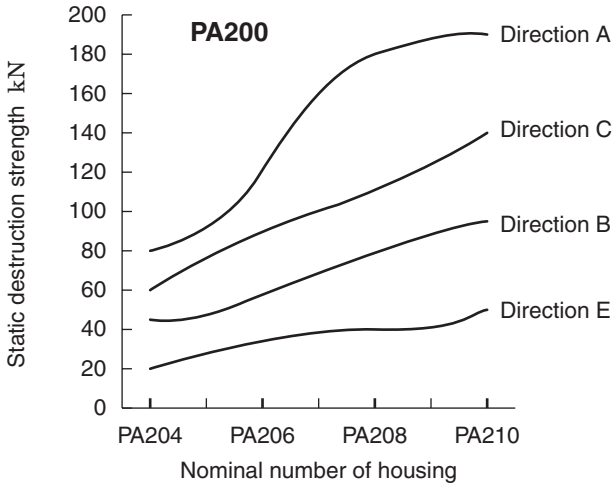
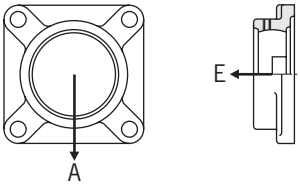
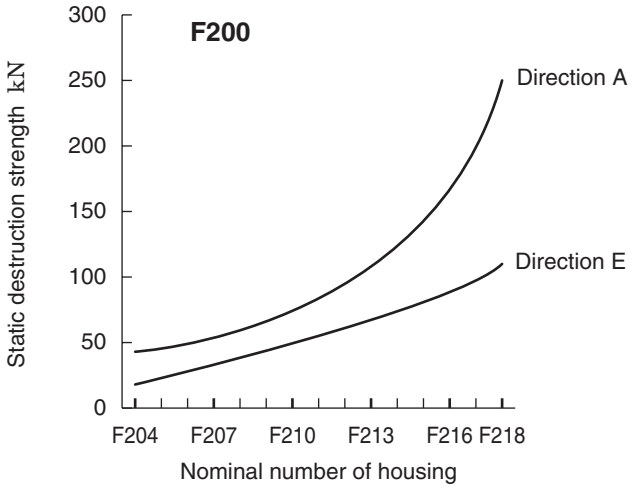
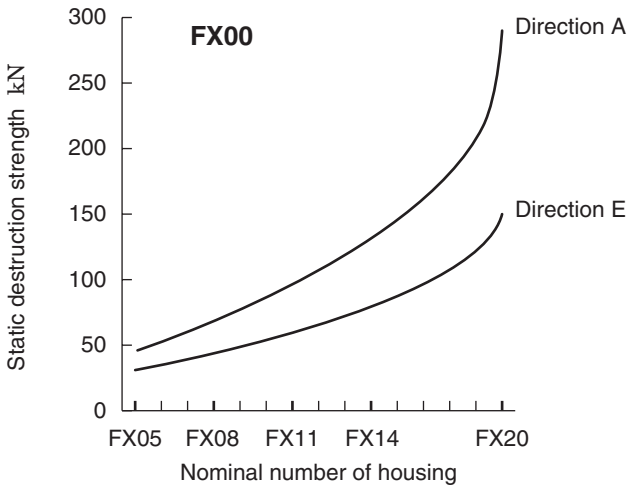
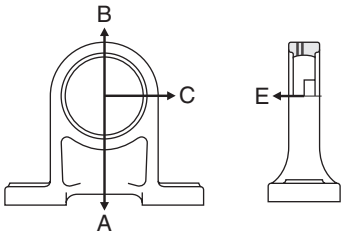


Fig. 8.4 Static destruction strength of tapped-base pillow block type housing (PA)









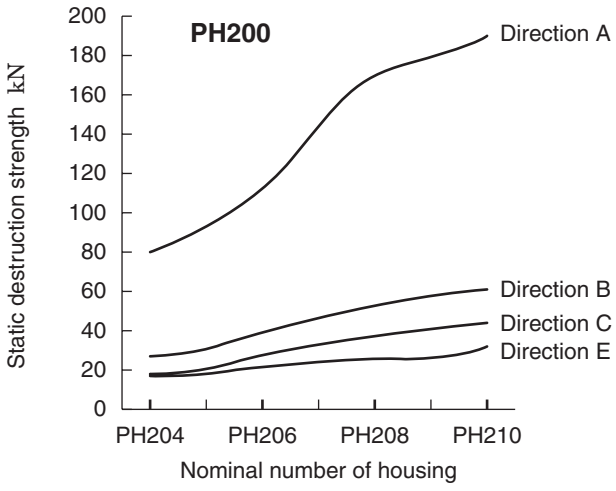


Fig. 8.5 Static destruction strength of higher centerheight pillow block type housing (PH)

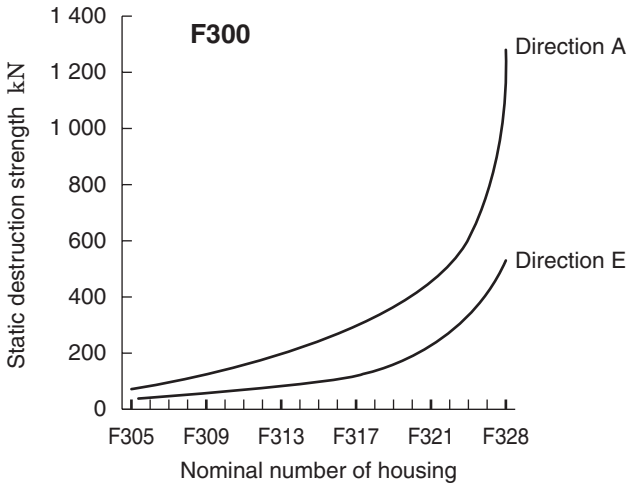
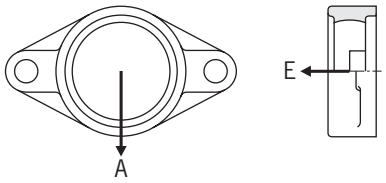
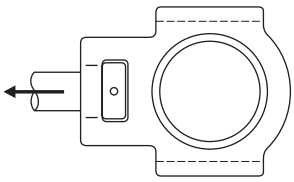
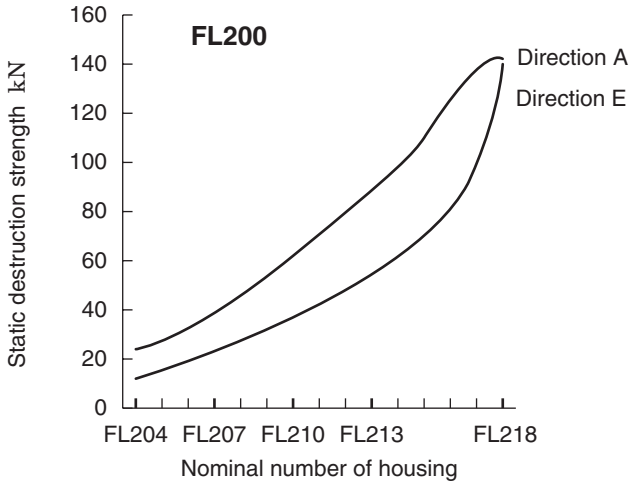


Fig. 8.6 Static destruction strength of square-flanged type housing (F)







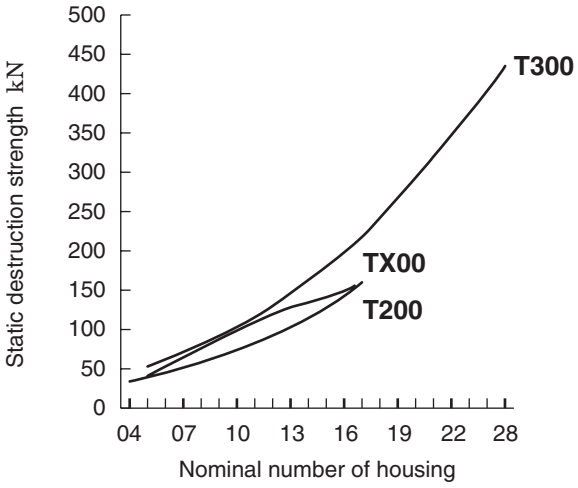
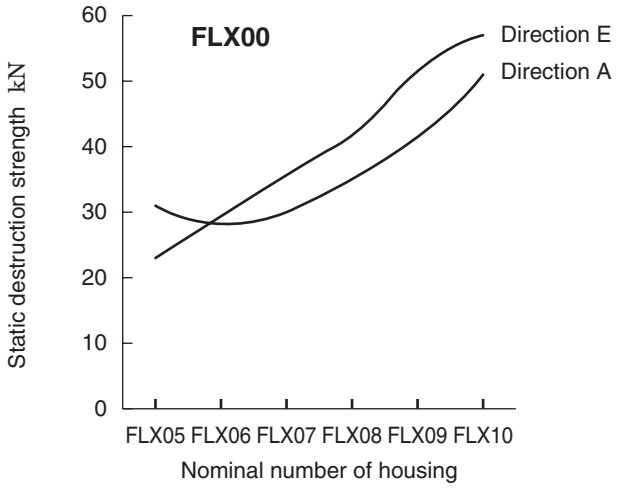


Fig. 8.8 Static destruction strength of take-up type housing (T)



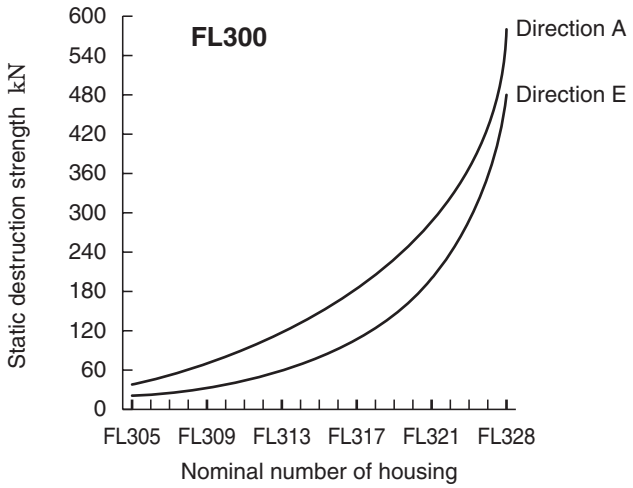


Fig. 8.7 Static destruction strength of rhombic-flanged type housing (FL)

8.2 Strength of cast steel housing

If highly strong housing for ball bearing unit is needed, select the cast steel housing with high destruction strength and superior resistance against impact.

JTEKT supplies the cast steel pillow block type housing (P200sc, P300sc) series.

To find the allowable load of a cast steel housing, use the static destruction strength of a housing, taking safety factor into consideration.

Table 8.2 shows the safety factors for the load of cast steel products, and **Fig. 8.2** shows the outline values of the static destruction strength of a cast steel pillow block type housing.

Table 8.2 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

8.3 Strength of steel housing

The precisely pressed steel housing is highly rigid, but great deformation occurs when load is applied until it is broken. Thus, allowable load of the pressed steel housing must be the value deformation of the housing caused by load does not influence on actual use.

Table 8.3 shows the allowable load of the pressed steel housing.

Table 8.3 Allowable load of pressed steel housing (recommended)

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

8.4 Strength of stainless steel housing

To find the allowable load of a stainless steel housing, use the static destruction strength of a housing, taking safety factor into consideration.

Table 8.4 shows the safety factors for stainless steel products. As for the basic values of the static destruction strength of SP200H1, SPA200H1, SF200H1,SFL200H1, ST200H1 type housings, apply P200 of **Fig. 8.1**, PA200 of **Fig. 8.4**, F200 of **Fig. 8.6**, FL200 of **Fig. 8.7** and T200 of **Fig. 8.8**. For the basic values of the static destruction strength of the SP000 and SFL000 type housings, see P000 of **Fig. 8.9** and FL000 of **Fig. 8.10** and multiply them by 1.5 respectively.

Table 8.4 Safety factor of stainless steel products

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

8.5 Strength of "compact" series housing

The "compact" series housing is made of zinc alloy die-cast, but great deformation occurs when load is applied until it is broken.

Table 8.5 shows safety factor for zinc alloy die-cast, and **Fig. 8.9** and **8.10** show the outline values of the static destruction strength of the zinc alloy die-cast housing.

Table 8.5 Safety factor of zinc alloy die-cast products

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

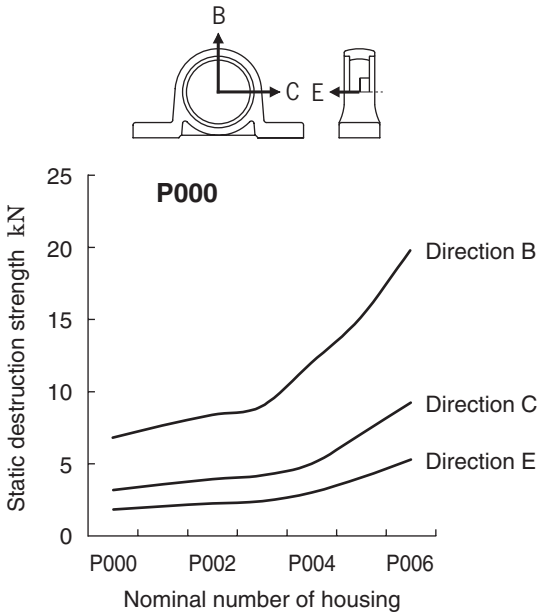


Fig. 8.9 Static destruction strength of "compact" housing (P)

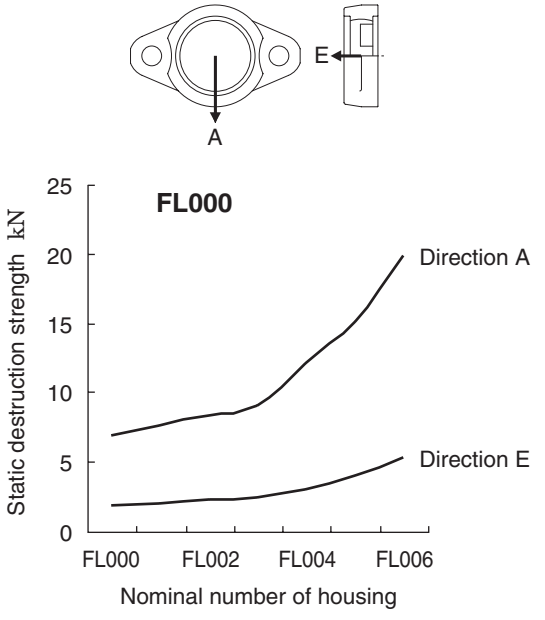


Fig. 8.10 Static destruction strength of "compact" housing (FL)

9 Design of shaft and base

9.1 Design of shaft

For intrinsic performance of a ball bearing unit and maintenance of it for a long time, selection of the shaft optimal for operating conditions is important. Use the shaft with enough rigidity but free from bend, scratch, or burr.

9.1.1 Tolerance of shaft

(1) Tolerance of shaft used for cylindrical bore bearing with set screws

For the cylindrical bore bearing with set screws, use the shaft of the tolerance class leading to relatively loose fitting to simplify the mounting procedures. The fitting clearance between the bearing inner ring and the shaft should be decreased as the rotational speed of the shaft is increased.

Table 9.1 shows the guideline for the tolerance class of the rotational speed of the cylindrical bore bearing with set screws and the shaft used.

If the cylindrical bore bearing with set screws is exposed to heavy load ($P_r / C_r > 0.12$), vibration, or impact, use shaft of the tolerance class leading to relatively tight fitting to prevent creep or fretting to be occurred to the fitting surface of the bearing inner ring and the shaft.

To use tight fitting of the cylindrical bore bearing with set screws, see **Table 9.2** showing the guideline for the tolerance class of the shaft used.

Table 9.3 shows the recommended deviation from circular and cylindrical forms of the shaft used.

Table 9.1 Tolerance of shaft used for cylindrical bore bearing with set screws (recommended) (clearance fitting or transition fitting)

Unit : μm

Shaft diameter (mm)		Tolerance of shaft							
		j6		h6		h7		h8	
over	up to	upper	lower	upper	lower	upper	lower	upper	lower
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 rotational speed dn 1)		Over 120 000		Over 100 000, up to 120 000		Over 60 000, up to 100 000		up to 60 000	

Note 1) $dn = d$ (bearing bore, mm) $\times n$ (rotational speed, min^{-1})

Table 9.2 Tolerance of shaft used for cylindrical bore bearing with set screws (recommended) (transition fitting or interference fitting)

Unit : μm

Shaft diameter (mm)		Tolerance of shaft					
		k6		k7		m6	
over	up to	upper	lower	upper	lower	upper	lower
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 Tolerance of shaft used for ball bearing units (recommended)

Unit : μm

Shaft diameter (mm)		Deviation from circular and cylindrical forms
over	up to	
6	10	6
10	18	8
18	30	9
30	50	11
50	80	13
80	120	15
120	180	18

(2) Tolerance of shaft used for bearing for blower (cylindrical bore with set screws)

In the bearing for blower (special code S5), smaller internal clearance of bearing (C2) and once-class-higher bearing tolerance reduce vibration and noise during high-speed rotation.

Therefore, use of the shaft in the tolerance class shown in **Table 9.4** as the bearing for blower (cylindrical bore with set screws) used is recommended.

Table 9.4 Tolerance of shaft used for bearing for blower (cylindrical bore with set screws) (recommended)

Unit : μm

Shaft diameter (mm)		Tolerance of shaft			
		h5		j5	
over	up to	upper	lower	upper	lower
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) Tolerance of shaft used for tapered bore bearing (with adapter)

Since the tapered bore bearing is fixed to a shaft with the adapter, the shaft in the tolerance class allowing relatively loose fitting should be selected, for easier mounting.

Table 9.5 shows the tolerance of shaft used for the tapered bore bearing (with adapter).

Table 9.5 Tolerance of shaft used for tapered bore bearing (with adapter) (recommended)

Unit : μm

Shaft diameter (mm)		Tolerance of shaft			
		h8		h9	
over	up to	upper	lower	upper	lower
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) Tolerance of shaft used for cylindrical bore bearing with eccentric locking collar

As for the cylindrical bore bearing with eccentric locking collar, if the fitting clearance between the bearing inner ring and the shaft is great, the shaft may be installed with being tilted because of its structure.

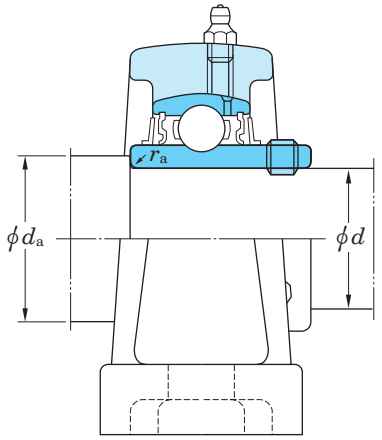
Therefore, for cylindrical bore bearing with eccentric locking collar, use of the shaft in the same tolerance class (h5 or j5) as that used with the bearing for blower (special code S5) is recommended (see **Table 9.4**).

9.1.2 Dimensions of shouldered shaft

When using the cylindrical bore bearing in the environment exposed to a great axial load, excessive vibration, or impact, adopt the shouldered shaft, and tighten the bearing inner ring with the nut.

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

Table 9.6 Shoulder diameter and fillet radius of shouldered shaft (recommended)



Unit : mm

Bore dia. No.	Nominal bearing bore dia. d	UC200, UCX00		UC300	
		Shoulder dia. d_a	Fillet radius r_a (max.)	Shoulder dia. d_a	Fillet 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	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

9.1.3 Countermeasures against heat

In general, two or more ball bearing units are used for a shaft. If installation distance for the ball bearings is small or expansion and contraction of the shaft due to temperature are a little, install each of the bearing unit to the fixed side.

However, if installation distance is great and the shaft is exposed to heat, the shaft to be installed should be positioned with a bearing unit to be on the fixed side, and another bearing unit should be installed with it to be on the free side.

Because, if the shaft is exposed to heat, it is expanded in the axial direction, leading to a great axial load to the bearing, and it causes premature breakage of the bearing. Therefore, expansion of the shaft is absorbed by the bearing unit on the free side.

Formula (9.1) shows the relation of temperature increase to expansion of the shaft.

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

Whereas,

Δ_ℓ : Expansion of shaft mm

α : Linear expansion coefficient of shaft

in the case of standard steel $11\sim12 \times 10^{-6}$

Δ_t : Temperature increase ℃

l : Installation distance of unit mm

Countermeasures against great expansion of shaft as a result of exposure to heat are shown below.

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

If the shaft is exposed to heat and expanded in axial direction, the bearing unit must be installed so that it or the shaft can freely move in axial direction.

If the rotational speed is relatively slow, provide the shaft with key groove, attach the full dog point set screw (special code G6) to the bearing, and use it as the free side unit. Fit the tip on the dog point of the set screw to the key groove on the shaft to guide the move of the shaft in axial direction.

Fig. 9.1 shows the structure example of bearing unit with key groove on shaft and full dog point set screw and use as free side unit. **Table 9.7** shows the dimensions of key groove for the full dog point set screw.

If a bearing unit is used as the free side bearing unit by adopting this method, h7 is recommended as the tolerance class of the shaft to be used.

If temperature of the shaft is higher than that in the bearing, the shaft in the tolerance class allowing a greater fitting clearance must be used.

If a bearing unit is used as the free side unit by adopting the above method, fretting corrosion may occur to the fitting surface between the bearing inner ring and the shaft. In order to prevent fretting corrosion, application of grease onto the bore surface of the bearing when the bearing unit is installed.

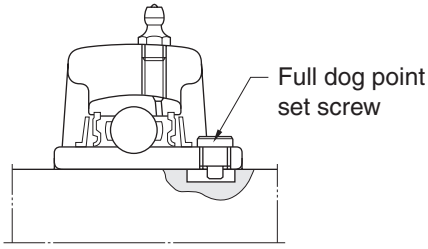


Fig. 9.1 Use on free side with full dog point set screw

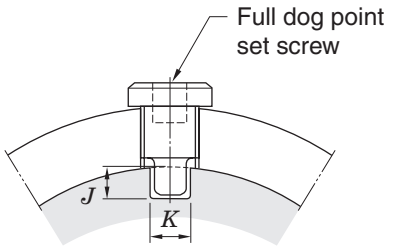


Table 9.7 Dimensions of key groove for full dog point set screw (use on free side)

Nominal size of set screw	Dimensions of key groove (mm)		Applicable nominal bearing number		
	J	K (Min.)	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~+0.2)

(2) Use of cartridge type unit on free side

In the environment the rotational speed is relatively high or the bearing unit is exposed to vibration, use of the cartridge type unit as the free side unit and move of the bearing unit between the mounting bore on a machine and the outside surface of the housing in axial direction are recommended.

Fig. 9.2 shows the example of structure of the cartridge type unit as the free side unit.

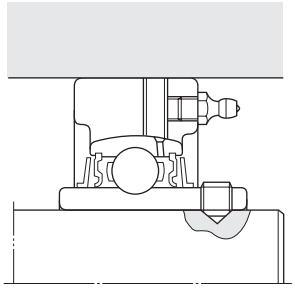


Fig. 9.2 Use of cartridge type unit on free side

If a ball bearing unit is exposed to heat, countermeasures against expansion of the shaft in axial direction as well as calculation of decrease in the internal clearance of the bearing to select the internal clearance of the bearing appropriately (see **"7 Operating temperature and bearing specifications"**).

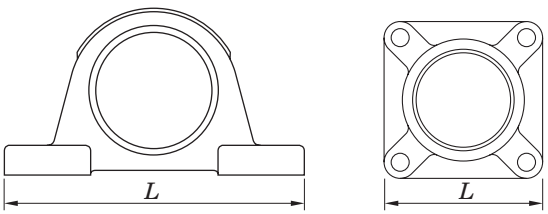
9.2 Design of base

9.2.1 Rigidity of base and flatness of mounting surface

If rigidity of the base that a ball bearing unit is to be installed is low or the flatness of the mounting surface is poor, vibration or abnormal noise may occur to the bearing unit during operation, leading to premature breakage or lower strength of the housing.

Therefore, the base that the ball bearing unit is to be installed must have enough rigidity, and the mounting surface must be finished with accuracy allowing elimination of deformation on the bearing or housing.

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



Max. : L / 1 000 mm

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

9.2.2 Mounting bore of cartridge type unit

The cartridge type unit is directly fit to the cylindrical bore of the base.

Under the standard operating conditions, select H7 as the tolerance class of cylindrical hole on the base that the cartridge type unit is to be installed. For such purposes that the shaft and the bearing inner ring are hot, select G7 as the tolerance class of cylindrical bore on the base.

In the environment the bearing unit is exposed to vibration or impact, selection of the tolerance class allowing smaller fitting clearance between the cylindrical bore of the base and the bearing unit is recommended.

Table 9.8 shows the tolerance of cylindrical bore of the base that the cartridge type unit is to be installed.

Table 9.8 Tolerance of cylindrical bore for mounting cartridge type unit (recommended)

Unit : μm

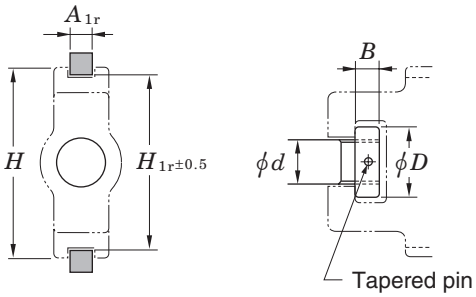
Nominal bore dia. of cylindrical bore (mm)		Tolerance of cylindrical bore			
		H7		G7	
over	up to	upper	lower	upper	lower
50	**80**	+30	0	+40	+10
80	**120**	+35	0	+47	+12
120	**180**	+40	0	+54	+14
180	**250**	+46	0	+61	+15
250	**315**	+52	0	+69	+17
315	**400**	+57	0	+75	+18

9.2.3 Dimensions relative to installation of take-up type unit

The take-up type unit is incorporated between the two guide rails on the base side, and enables adjustment of the support position with the shaft center by the adjuster bolt.

Table 9.9 shows the dimensions of the guide rail, adjuster bolt, and round nut to install the take-up type unit to the base.

Table 9.9 Dimensions relative to installation of take-up type unit (recommended)



Unit : mm

Nominal housing No.	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

Unit : mm

Nominal housing No.	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 Machining dimensions of holes for housing dowel pins

The pillow block type, square-flanged type, and rhombic-flanged type housing have the dowel pin seat. If accurate positioning of the housing is required, install it with the dowel pin.

As for the position of the pin for fixing the housing and pin diameter, see the **Appendix 5** at the end of this catalogue.

10 Unit number

Nominal number of Koyo Ball Bearing Unit conform to JIS B1557, and comprise the bearing unit type number (comprising bearing type code and housing type code), diameter series code, bore dia. number, supplementary code, and special code.

UC P 207 J L3

Nominal bearing number	UC207L3
Nominal housing number	P207J

UK P 209 J CD + H309X

Nominal bearing number	UK209+H309X
Nominal housing number	P209JE1
Nominal pressed steel cover number	(Through type) C-9x40 (Closed type) D-9

UC F 209 J L3 FD D1K2 G6 A1

Nominal bearing number	UC209L3D1K2G6
Nominal housing number	F209JA1E3
Nominal cast iron cover number	(Closed type) 209FD

- A1 — Housing special code (**Table 10.8**)
- D1K2 G6 — Bearing special code (**Table 10.7**)
- FD — Supplementaly code (**Table 10.6**)
- L3 — Fitting code (**Table 10.5**)
- J — Bore dia. No. (**Table 10.4**)
- 209 — Diameter series code (**Table 10.3**)
- F — Housing type code (**Table 10.2**)
- UC — Bearing type code (**Table 10.1**)

[Remark] The above number shows an example of nominal number structure. It may depend on the bearing unit type.

Table 10.1 Bearing type code

Bearing type code	Details
UC	Cylindrical bore, with set screws
UC-S6	Cylindrical bore, with set screws (stainless-series)
UK	Tapered bore (for adapter)
NA	Cylindrical bore, with eccentric locking collar
SB	Cylindrical bore, with set screws (light duty type)
SU	Cylindrical bore, with set screws (“compact” series)
SU-S6	Cylindrical bore, with set screws (stainless-series)
ER	Cylindrical bore, with set screws, cylindrical outer diameter, Lubricating mechanism
RB	Cylindrical bore, with set screws, cylindrical outer diameter

Table 10.2 Housing type code

Housing type code	Details
P	Pillow block type
P-SC	Cast steel pillow block type
IP	Thick section pillow block type
PA	Tapped-base pillow block type
PH	Higher centerheight pillow block type
LP	Light duty pillow block type
P	Pillow block type (“compact” series)
SP-H1	Pillow block type (stainless-series)
SPA-H1	Tapped-base pillow (stainless-series)

Table 10.2 Housing type code (continued)

Housing type code	Details
SP	Pillow block type (stainless-series)
PP	Cast steel pillow block type
F	Square-flanged type
FL	Rhombic-flanged type
FA	Adjustable rhombic-flanged type
FB	Three-bolt flange type
FC	Round-flanged type with spigot joint
FS	Square-flanged type
FL	Rhombic-flanged type (“compact” series)
SF-H1	Square-flanged type (stainless-series)
SFL-H1	Rhombic-flanged type (stainless-series)
SFL	Rhombic-flanged type (stainless-series)
PF	Pressed steel round-flanged type
PFL	Pressed steel rhombic-flanged type
T	Take-up type
ST-H1	Take-up type (stainless-series)
TH	Section steel frame take-up type
TL	Light channel steel frame take-up type
TU	Channel steel frame take-up type
PTH	Pressed steel frame take-up type
NPTH	Pressed steel frame take-up type
C	Cartridge type
HA	Hanger type

Table 10.3 Diameter series code

Diameter series code	Details
0	For light duty
2	For medium duty
X	For medium duty
3	For heavy duty

Table 10.4 Bore dia. number

Bore dia. No.	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 or more	(Bore dia. No.) × 5 = Nominal bearing bore dia. (mm)
01–8	– (bore dia. No.) /16 = nominal bearing bore dia. (inch) (in this case, 8/16 = 1/2 inch = 12.7 mm)

Table 10.5 Fitting code

Fitting code	Details
J	Tolerance class of spherical bore of the housing is J7 (not shown on the bearing that 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 Supplementary code

Supplementary 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 .....Pressed steel cover
X18–X20, 305–328 .....Cast iron cover

Table 10.7 Bearing special code

Item	Bearing special code	Details
Grease	None	Alvania No.2, Gold No.3, or equivalents
	D1	SH44M
	D2	SH33M
	D9	Demnum L-200
Set Screw	None	Double-point-contact
	G4	Pointed tip
	G6	With full dog point
	G7	With loose prevent nylon
Oil seal	None	Nitrile rubber
	K2	Silicone rubber
	K3	Non-contact type
Sealing Device	None	With oil seal and flinger (slinger) (UC, UK, NA, ER and RB types) With oil seal (SB, SA and SU types)
	P3	Without oil seal, flinger (slinger)
	P4	Without oil seal
Others	S5	For blower (oil seal : K3, inner clearance and bearing accuracy are specially controlled)
	S6	Stainless steel bearing

Table 10.8 Housing special code

Item	Housing special code	Details
Grease Nipple Thread Bore dia.	None	As shown in dimensional table
	A1	PT1/8 tube thread
	A2	PF1/8 tube thread
	A3	PT1/4 tube thread
	A4	PF1/4 tube thread
Grease Nipple Thread Bore Position	None	As shown in dimensional table
	B1	Right
	B2	Left
	B3	45°
	B5	30°
	B7	Both right and left
Machining	None	Standard type
	E1	Pressed steel
	E3	Cast iron cover mounting groove (diameter series 2, X, 3)
	E4	Non-lubricating type
Material	None	Gray iron casting (FC200) or cold-reduced carbon steel sheets and strips (SPCC) Compact type is made of zinc alloy die-cast (ZDC2) Small stainless series is made of stainless cast steel type (SCS13)
	H1	Stainless steel cast steel model (SCS13)
	H5	Rolled steel for general purpose (SS400)
	SC	Carbon steel cast steel model (SC450)
Grease Nipple	None	A type
	N1	B type (67.5°)
	N2	C type (90°)

11 Tolerances and internal clearance

Tolerances of a ball bearing unit is specified in JIS B 1558 (ball bearing for ball bearing unit) and JIS B 1559 (housing for ball bearing unit). JTEKT produces products conforming to these standards.

11.1 Tolerances of bearing

Table 11.1 to **Table 11.4** show the tolerance of a ball bearing for ball bearing unit.

Ball bearings for blower unit (special code S5) are produced with higher accuracy than standard types (see **Table 11.3**).

Table 11.5 shows the permissible values for chamfer dimensions of cylindrical bore bearing inner ring.

Table 11.2 Tolerances and permissible values of outer ring of ball bearing for ball bearing unit

Unit : μm

Nominal bearing outer dia. D (mm)		Mean outside diameter deviation Δ_{Dm}		Radial runout of assembled bearing outer ring K_{ea}
over	up to	upper	lower	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

[Remark] Values in Italics are prescribed in JTEKT standards.

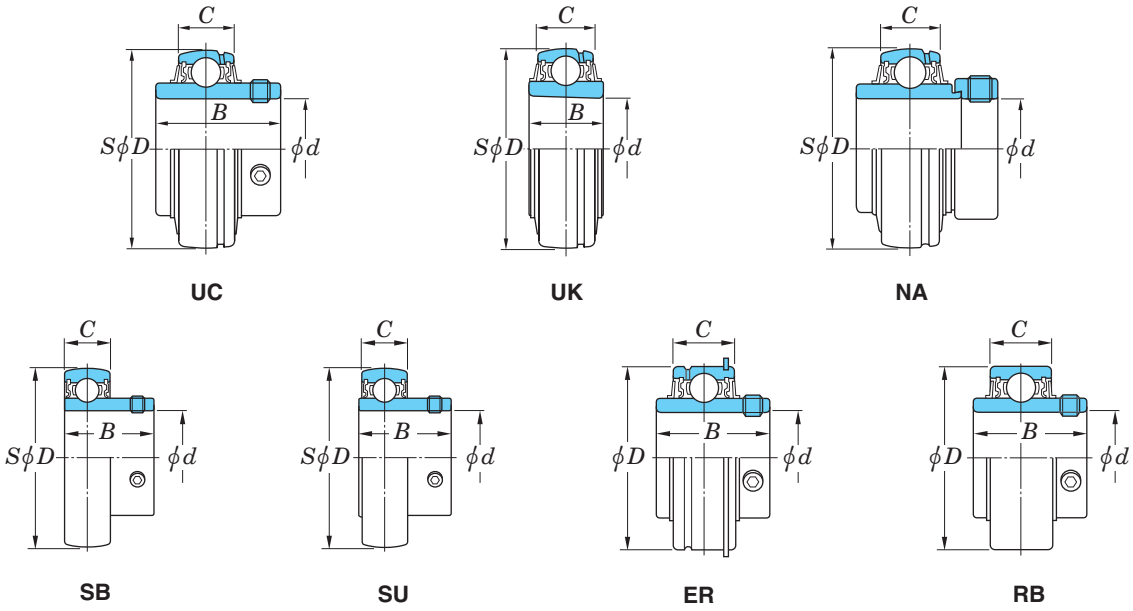


Table 11.1 Tolerances and permissible values of inner rings of ball bearings for ball bearing units

Unit : μm

Nominal bearing bore dia. d (mm)		Single plane mean bore diameter deviation Δ_{dmp}		Single plane bore diameter variation V_{dsp}	eccentricity deviation of eccentric surface of inner ring and eccentric locking collar Δ_{Hs}		Single inner (outer) ring width deviation Δ_{Bs} (Δ_{Cs})		Radial runout of assembled bearing inner ring K_{ia}
over	up to	upper	lower	max.	upper	lower	upper	lower	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

[Remark] Values in Italics are prescribed in JTEKT standards.

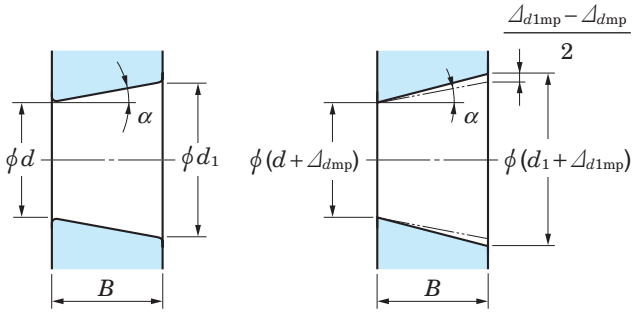
Table 11.3 Tolerances and permissible values of inner ring of ball bearing for blower unit (S5)

Unit : μm

Nominal bearing bore dia. d (mm)		Single plane mean bore diameter deviation Δ_{dmp}		Single plane bore diameter variation V_{dsp}	Radial runout of assembled bearing inner ring K_{ia}
over	up to	upper	lower	max.	max.
10[1)]	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

Note 1) 10 mm should be included in this category.

Table 11.4 Tolerances and permissible values for tapered bore of bearing



Theoretical tapered bore

Tapered bore with single plane mean bore diameter deviation

Unit : μm

Nominal bearing bore dia. d, mm		Δ_{dmp}		$\Delta_{d1mp}-\Delta_{dmp}$		V_{dsp}[1)]
over	up to	upper	lower	upper	lower	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 $d_1 = d + \frac{1}{12}B$

Δ_{dmp} : Single plane mean bore diameter deviation at theoretical small end of tapered bore

Δ_{d1mp} : Single plane mean bore diameter deviation at theoretical large end of tapered bore

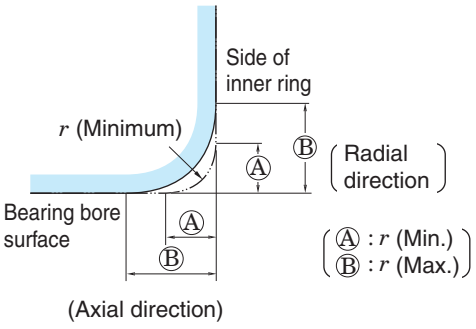
V_{dsp} : Single plane bore diameter variation (a tolerance for the diameter variation given by a maximum value applying in any radial plane of the bore)

B : Nominal inner ring width

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

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

Table 11.5 Permissible values for chamfer dimensions of inner ring of bearing with cylindrical bore



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] There shall be no specification for the accuracy of the shape of the chamfer surface, but its outline in the axial plane shall not be situated outside of the imaginary circle arc with a radius of $r_{\ min}$ or $r_{1\ min}$ which contacts the inner ring side face and bore, or the outer ring side face and outside surface.

11.2 Tolerances of housing

As the tolerance of the housing for a ball bearing unit, tolerance of the diameter of spherical bearing seat fit to the bearing, and tolerance and permissible value of dimensions relative to installation of the housing are specified.

Table 11.6 shows the tolerance of diameter of the spherical bearing seat of housing. Usually, select tolerance class J7 that allows transition fitting of the housing and the bearing.

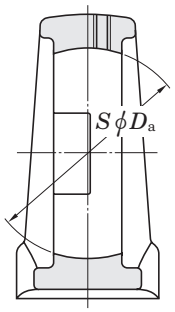
If priority should be given to operability in installation to a machine, select tolerance class H7 allowing clearance fitting. The unit conforming JIS of tolerance class H7 is equipped with the detent to the outer ring to prevent turning of the outer ring.

If rotating outer ring load occurs or the bearing is rotated while the shaft is stopped, select the tolerance K7 allowing interference fit.

Fig. 11.1 shows the representative example of dimensions relative to installation of the housing with tolerance and permissible value. Respective dimensional tables show the tolerance and permissible values of dimensions relative to installation of the housing.

Table 11.6 Tolerances of spherical bearing seat diameter of housing

Unit : μm

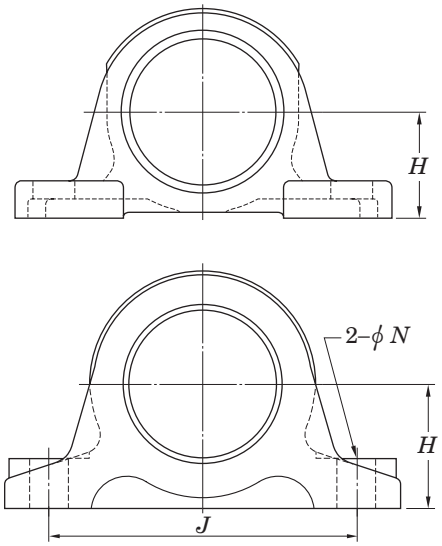


Nominal dia. of spherical bearing seat D_a (mm)		Tolerance class H7		Tolerance class J7		Tolerance class K7	
		Deviation of spherical bearing seat dia. Δ_{Dam}		Deviation of spherical bearing seat dia. Δ_{Dam}		Deviation of spherical bearing seat dia. Δ_{Dam}	
over	up to	upper	lower	upper	lower	upper	lower
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

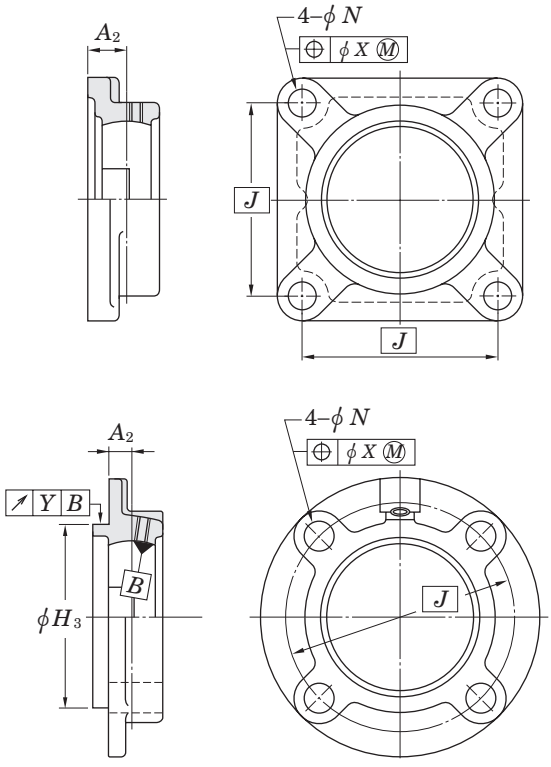
[Remark] JTEKT generally applies class J to housing designs.
Class H and class K can also be applied depeding on the application.

Fig. 11.1 Dimensions relative to installation of housing with tolerance and permissible value (representative example)

Pillow block type housing

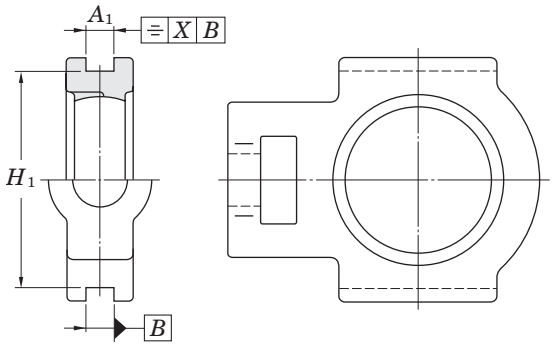


Flange type housing

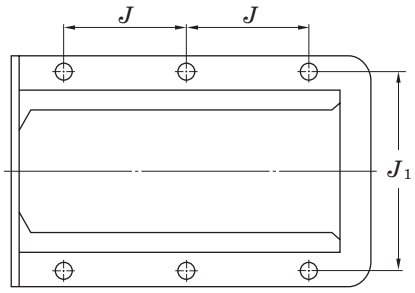


[Remark] Respective tolerances and permissible values for housing are shown in dimensional tables.

Take-up type housing



Frame for take-up type unit



Cartridge type housing

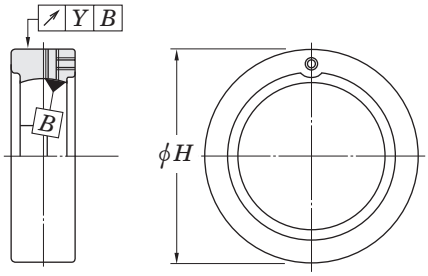


Table 11.7 shows standard tolerance of cut or cast portions not specified in this catalogue.

Table 11.7 Standard tolerance not specified respectively

Item	Standard No.	Class
Cutting	JIS B 0405	Medium
Casting of cast iron	JIS B 0403	Standard
Casting of cast steel	JIS B 0403	Standard

11.3 Bearing internal clearance

Ball bearing internal clearance for ball bearing unit is specified by the move at the time the inner ring or outer ring is moved in the radial direction (radial internal clearance). Value of internal clearance during operation (to be called operation clearance) gives a great influence on rolling fatigue life of the bearing, heat, noise, and vibration.

If the bearing inner ring is installed to the shaft with interference, the internal clearance of bearing must be fixed taking expansion of the bearing inner ring into consideration. If transmission heat to the shaft is high or hot steam runs through the hollow of the shaft, calculate the decrease of internal clearance, and appropriately select the internal clearance of bearing (see **"7 Operating temperature and bearing specifications"**).

Table 11.8 shows the internal clearance applicable to specifications of ball bearing for Koyo Ball Bearing Unit, and **Table 11.9** shows the standard values of bearing internal clearance.

Table 11.8 Internal clearance applicable to types of ball bearing for ball bearing unit

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

[Remark] For the bearings that the internal clearance in this table is applied, no clearance code is indicated.

Table 11.9 Standard values for internal clearance of ball bearing for ball bearing unit

Unit : μm

Nominal bearing bore dia. d (mm)		Internal clearance											
		C2		CN		GN		C3		C4		C5	
over	up to	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper
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 for ball bearing unit).
2. Increase in radial internal clearance generated by measured load conforms to the table below. Smaller correction of C2 clearance is applicable to the lower clearance, while larger correction is applicable to the upper clearance.

Unit : μm

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

12 Materials

12.1 Materials of bearing

Ball bearings for ball bearing unit are made of the following materials : bearing rings (outer and inner rings) and rolling elements (balls) are made of steel, and cages are made of pressed steel.

These bearing materials need the features shown below.

(1) Higher elastic limit is required, since high contact stress occurs partially.
(2) Higher rolling fatigue strength is required, since great contact load occurs repeatedly.
(3) Superior hardness
(4) Superior wear resistance
(5) Superior toughness against impact load
(6) Superior stability of dimensions

As the material of bearing rings (outer and inner rings) and rolling elements (balls) of the ball bearing for Koyo Ball Bearing Unit, high carbon chromium bearing steel specified in JIS is used.

For more reliability of bearing, vacuum degassing is executed against high carbon chromium bearing steel to reduce non-metallic inclusion and included oxygen. After the materials of bearing are made into the specified form, quench-and-temper is executed until its hardness is 60HRC.

Table 12.1 shows the chemical components of high carbon chromium bearing steel. As the material of bearing rings and rolling elements of the ball bearings for stainless-series unit (special code : S6), stainless steel with superior corrosion resistance is used. Cages are made of cold-reduced carbon steel sheets and strips specified in JIS.

Table 12.2 shows the chemical compositions of cold-reduced carbon steel sheets and strips specified in JIS.

12.2 Materials of housing

A housing for ball bearing unit is mainly made of gray iron casting products, carbon steel casting products, structural steel, cold-reduced carbon steel sheets and strips.

Gray iron casting is the most popular as the material of housing for ball bearing unit, featuring absorption of vibration, damping superior to other materials, easy and varied forming by casting, appropriate strength, and excellent heat property.

Table 12.3 shows the mechanical properties of gray iron casting.

If superior strength is required for the housing for ball bearing unit, select carbon steel casting products with higher rupture strength, carbon steel casting, or general structural rolled steel with higher strength against impact.

For the material of housings of the “compact” series unit, zinc alloy die-cast is used, and corrosion-resistant cast steel products are used for housings of the stainless series unit. Cold-reduced carbon steel sheets and strips are used as the material of housings for the pressed steel unit.

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

Spheroidal graphite iron casting (FCD450-10 of JIS G 5502) may be used, as well as these materials.

Table 12.1 Chemical compositions of high carbon chromium 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	0.08 or less

Table 12.2 Chemical compositions of cold-reduced carbon steel sheets and strips (SPCC) (JIS G 3141)

Code	Chemical components (%)						
	C	Si	Mn	P	S	Ni	Cr
SPCC	0.12 or less	–	0.50 or less	0.040 or less	0.045 or less	–	–

Table 12.3 Mechanical properties of gray iron casting (FC200) (JIS G 5501)

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

Table 12.4 Mechanical properties of carbon steel casting (SC450) (JIS G 5101)

Type code	Yielding point or bearing force N/mm^2	Tensile strength N/mm^2	Extension %	Construction %
SC450	225 or more	450 or more	19 or more	30 or more

Table 12.5 Mechanical properties of general structural rolled steel (SS400) (JIS G 3101)

Type code	Yielding point or bearing force N/mm²			Tensile strength MPa	Thickness of steel mm	Tensile test piece	Elongation %	Bendability		
	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 MPa	Elongation %	Impact MJ/m²	Hardness HB
ZDC2	285	10	1.4	82

Table 12.7 Mechanical properties of corrosion-resistant cast steel (SCS13) (JIS G 5121)

Type code	Bearing force MPa	Tensile strength MPa	Elongation %	Hardness HB
SCS13	185 or more	440 or more	30 or more	183 or more

Table 12.8 Mechanical properties of cold-reduced carbon steel sheets and strips (SPCC) (JIS G 3141)

Type code	Tensile strength MPa	Elongation %
SPCC	270 or more	34 or more

12.3 Materials of parts and accessories

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

Table 12.9 Materials of parts and accessories of ball bearing units

Designations	Materials	Code	Standard code
Oil seal (standard type)	Nitrile rubber	NBR	–
Oil seal (heat resistant, cold resistant)	Silicone rubber	VMQ	–
Flinger (slinger)	Cold-reduced carbon steel sheets and strips	SPCC	JIS G 3141
Stainless steel Flinger (slinger)	Cold rolled stainless steel plate and steel strip	SUS304-CP, SUS304-CS	JIS G 4305
Pressed steel cover	Cold-reduced carbon steel sheets and strips	SPCD	JIS G 3141
Pressed stainless steel cover	Cold rolled stainless steel plate and steel strip	SUS304-CP, SUS304-CS	JIS G 4305
Cast iron cover	Gray casting iron products	FC200	JIS G 5501
Hexagon socket set screw	Chrome molybdenum steel	SCM435	JIS G 4053
Stainless steel hexagon socket set screw	Stainless bar steel	SUS410	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-reduced carbon steel sheets and strips	SPCC	JIS G 3141
Eccentric locking collar	Mechanical structural carbon steel	S20C	JIS G 4051
Grease nipple	Free cutting carbon steels	SUM24L	JIS G 4804

13 Performance

13.1 Friction torque of bearing

Friction torque of a ball bearing for ball bearing unit is the synthesis of rolling friction between the rolling elements (balls) and the bearing rings (outer and inner rings), sliding friction between the rolling elements and the cages, agitating resistance of lubricants, and friction resistance of oil seal.

Greatness of friction torque is influenced by the type, dimensions, load, and rotational speed of bearing, and lubricating conditions.

For the ball bearing unit, oil seals with especially superior dustproof performance are adopted to improve sealing performance of the bearing. Thus, friction resistance of the oil seal greatly depends on the friction torque of the bearing.

Friction torque of the ball bearing for ball bearing unit can be found by the Formulas below.

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

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

Whereas,

M	: Friction torque of bearing	mN · m
M_p	: Friction torque of sections changed by load	mN · m
M_k	: Friction torque of sections changed by rotational speed	mN · m
μ	: Friction coefficient (0.001 5 to 0.002)	
P	: Load applied to bearing	N
d	: Nominal bearing bore dia.	mm

Note that the agitating resistance of lubricants and the friction resistance of oil seal are difficult to be calculated, since they are fluctuated by rotational speed.

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

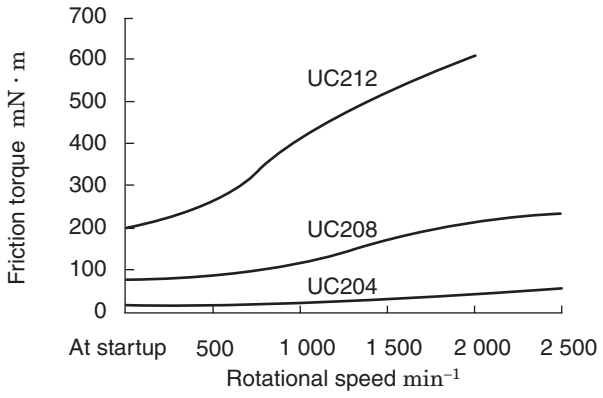


Fig. 13.1 Example of measurement result of ball bearing unit

13.2 Increase in temperature of bearing

Increase in temperature of the ball bearing for ball bearing unit is indicated as heat energy converted from the friction torque in the bearing during operation. Temperature of the bearing during operation increases in proportion to the greatness of friction torque and rotational speed (friction torque increases in proportion to the greatness of load).

Increase in temperature of the ball bearing for ball bearing unit depends on the heating value generated by friction in the bearing and that discharged outside from the surface of the bearing and housing. Therefore, increase in temperature of the ball bearing for ball bearing unit is influenced by the environmental conditions of the location that the ball bearing unit is installed (quality of heat radiation environment).

Temperature of the ball bearing unit is increased gradually after the startup of operation, and reaches the maximum level after one or two hours, if no abnormality occurs. Then, it is decreased a little, and enters the steady-state (see **Fig. 13.2**).

In this manner, if the operating conditions are not changed, bearing temperature is virtually constant, and therefore, measurement of temperature and assumption of the status of bearing are enabled.

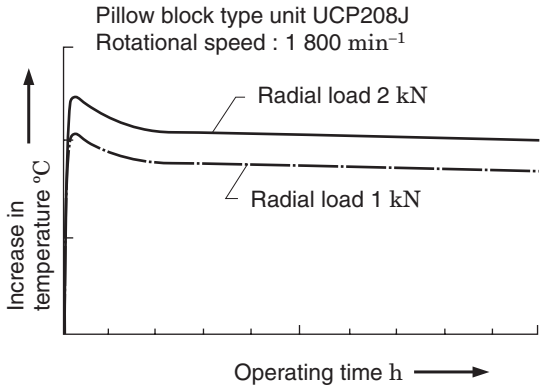


Fig. 13.2 Example of temperature measurement during operation of pillow block type unit

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

Increase in temperature of the triple-lip seal type (supplementary code L3) is greater than the standard type, and that of the non-contact seal type (special code K3, S5) is smaller than the standard type.

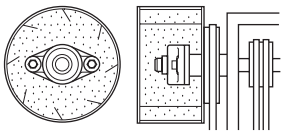
The bearing units for high speed and blower are equipped with the non-contact type oil seals for high speed use and reduction of heat, vibration, and noise.

13.3 Dustproof and waterproof performance

JTEKT executes various tests to check dustproof and waterproof performance of the ball bearing unit. Representative test results are shown below.

13.3.1 Dust sprinkle rotating test (dust preventive performance)

Use the drum type dust sprinkle rotating test machine for this test. Directly sprinkle dusts onto the ball bearing unit while it is being operated, and then, judge the dust preventive performance of the product.



Rotational speed : 640 min^{-1}
Load : Belt tension only
Dust : Alumina powder (1 000 meshes)
Lubrication : No grease is supplied during operation

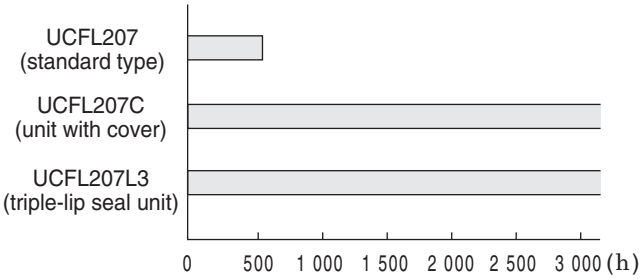


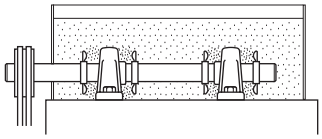
Fig. 13.3 Example of result of dust sprinkle rotating test (dust preventive performance)

In the case of the standard type, abnormal noise occurred about 500 hours after operation was started, and ingress of dusts was recognized.

On the other hand, no abnormality was found in the triple-lip seal type (supplementary code L3) and the covered type (supplementary code C) even after about 3 000 hours after operation was started, and superior dust proof performance was recognized.

13.3.2 Dust bury rotating test (dust preventive performance)

Bury the ball bearing unit into dusts, and run it with the impeller installed to the shaft while stirring dusts, and judge the dust preventive performance of the product. This test is executed under the severest conditions among the operating conditions of the ball bearing unit.



Rotational speed : 640 min^{-1}
Load : Belt tension only
Dust : GC powder (500 meshes)
Lubrication : No grease is supplied during operation

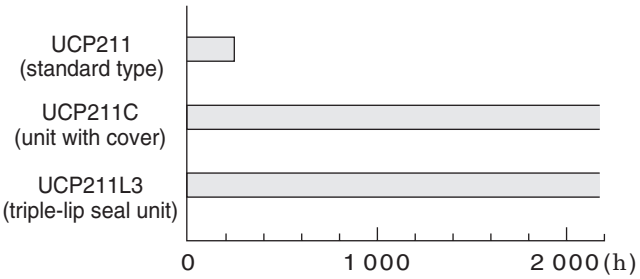


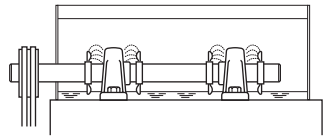
Fig. 13.4 Example of result of dust bury rotating test (dust preventive performance)

In the case of the standard type, abnormal noise occurred about 200 hours after operation was started, and ingress of dusts was recognized.

On the other hand, no abnormality was found in the triple-lip seal type (supplementary code L3) and the covered type (supplementary code C) even after about 2 000 hours after operation was started, and superior dust preventive performance was recognized.

13.3.3 Waterproof performance test

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



Rotational speed : 380 min^{-1}
Load : Belt tension only
Water : Tap water

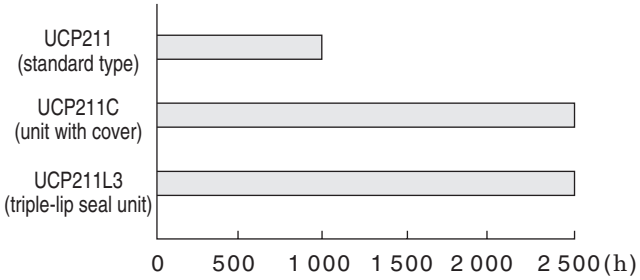


Fig. 13.5 Example result of waterproof performance test

In the case of the standard type, rust was found on the balls and raceway surface (outer and inner rings) about 1 000 hours after operation was started.

On the other hand, rust of equal level to the standard type was found in the triple-lip seal type (supplementary code L3) and the covered type (supplementary code C) after about 2 500 hours after operation was started.

14 Handling

The most significant feature of the ball bearing unit is simplicity of handling and installation. However, if handling or installation is wrong, premature breakage may occur to the ball bearing unit.

Therefore, handle and install it appropriately for genuine performance of the ball bearing unit.

14.1 Installation

14.1.1 Installation of unit with set screws

When installing the unit to the shaft with the set screws, it is enough to tighten the two set screws of the bearing inner ring with the specified torque.

However, if the environment is exposed to impact or vibration, the shaft is rotated in normal and reverse directions, or the machine is started and stopped frequently and repeatedly, grind the surface of the shaft where the set screw contacts with a file so that the flat seat (**Fig. 14.1**) or drilled seat (**Fig. 14.2**) is provided. It improves the tightening effect of the set screw substantially.

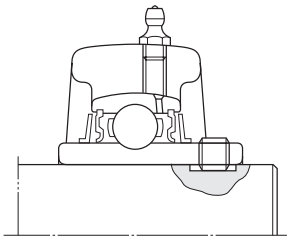


Fig. 14.1 Flat seat provided for shaft
(for improvement in set screw tightening effect)

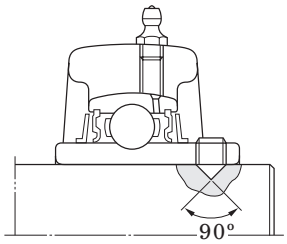


Fig. 14.2 Drilled seat provided for shaft
(for improvement in set screw tightening effect)

If the environment is exposed to a great axial load or excessive vibration, use the shouldered shaft, and tighten the bearing inner ring with the nut (**Fig. 14.3**).

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

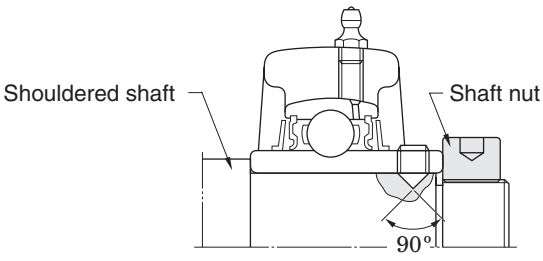


Fig. 14.3 Example of installation with using shouldered shaft and nut

The standard Koyo Ball Bearing Unit is equipped with the double point set screw featuring secure tightening to shaft. Other set screws are also available depending on your purposes and operating conditions (see **Table 14.1**).

Table 14.1 Set screw of ball bearing for unit

Designations (code)	Details
Double point (no indication)  Double point (**G7**) Locking finish	The cone portion at the center of the screw combined with the round point at the outer edge provide excellent shaft contact and greatly reduce fitting error. A nylon film is fused to the thread surface to prevent the screw from loosening during operation.
	Prevent looseness with elastic force of nylon film fused to the thread surface.
Pointed (**G4**) 	The cone point set screw 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.
Full dog point cap (**G6**) 	The full dog point set screw fits into the key groove in the shaft and allows for expansion and contraction of the shaft.

Procedures for installation of the ball bearing unit with set screw are shown below.

(1) Inspect the unit to ensure that the rigidity of the base, flatness of the mounting surface, variation of tolerance of the shaft meet the standards. Check for bend, flaw, or birr on the shaft.

(2) Make sure that the tip of the set screw does not exceed the bearing bore diameter surface.

(3) Fit the bearing unit to the shaft, and place it to the specified position. To fit it to the shaft with tight fitting, 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 air bath (100 °C or less).

Avoid hitting the side of the bearing inner ring with a hammer to press-fit the bearing to the shaft.

(4) Place the bearing unit to the specified position on the base, and fix it with bolts (**Fig. 14.4**).

Tighten the mounting bolt of the housing with the specified torque by a torque wrench. As for the tightening torque of the mounting bolt, see the **Appendix table 2** at the end of this catalogue.

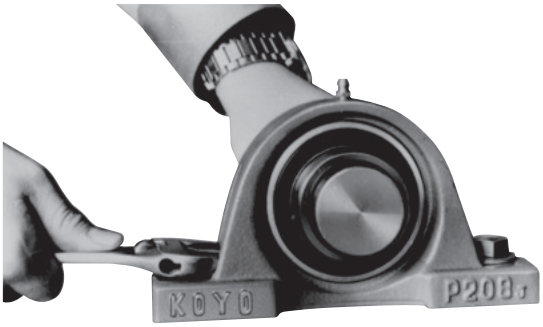


Fig. 14.4 Fixing ball bearing unit to base

(5) Tighten the set screws (two) of a bearing inner ring with the specified tightening torque evenly (**Fig. 14.5**).
As for the tightening torque of the set screw, see the **Appendix table 3** at the end of this catalogue.

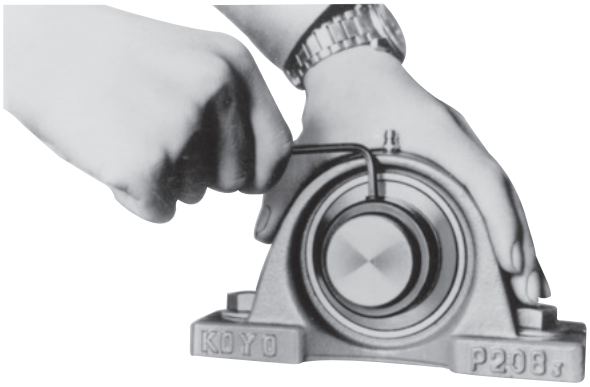


Fig. 14.5 Tightening of set screw

(6) Turn the shaft with your hands, and tighten the set screws (two) of another bearing inner ring with the specified torque.
(7) At last, turn the shaft with your hands, and check for abnormality in turning status of the bearing.

14.1.2 Installation of unit with adapter

To install the bearing with tapered bore to the shaft, set the adapter assembly (sleeve, locknut and washer) between the bearing bore diameter and the shaft. The bearing can be securely fixed even in the environment exposed to excessive vibration or impact.

If tightening of the locknut is loose, fitting to the shaft may be loosened during operation, and slippage occurs to the fitting surface, leading to wear on the shaft or parts. On the contrary, if tightening of the locknut is excessive, the bearing inner ring is expanded, and internal clearance of the bearing is too small, causing abnormal heat or premature breakage. Therefore, pay close attention to installation of the bearing with adapter.

Procedures for installation of the ball bearing unit with adapter assembly are shown below.

(1) Inspect the unit to ensure that the rigidity of the base, flatness of the installing surface, and variation of tolerance of the shaft meet the standards. Check for bend, flaw, or birr on the shaft.
(2) Fit the adapter sleeve to the shaft, and move the adapter sleeve to the installing position of the bearing unit.
If the fitting is too tight to insert the adapter sleeve, put a screwdriver into the cutout of the adapter sleeve, and expand the cutout for easier fitting.
(3) Fit the bearing unit to the shaft.
Then, place the cylindrical backing plate to the whole side of the bearing inner ring that the locknut is to be attached, and tap all around the large diameter side end face to fit the bore diameter surface of the bearing inner ring to the tapered surface of the adapter sleeve closely (**Fig. 14.6**).

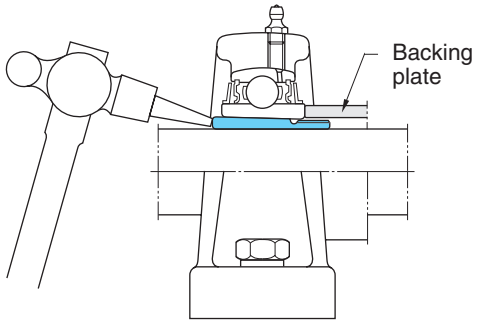


Fig. 14.6 Fitting adapter sleeve to bearing with tapered bore

(4) Fit the washer and locknut to the adapter sleeve, and tighten the locknut with your hands.
(5) Place the bearing unit to the specified position of the base, and fix it with the bolts.
Tighten the mounting bolt of the housing with the specified torque by a torque wrench.
As for the tightening torque of the set screw, see the **Appendix table 2** at the end of this catalogue.
(6) Tighten the locknut of the adapter.
When tightening the locknut, tighten it with a wrench for tightening, or place a jig onto the cutout of the locknut outer surface, and tap the jig with a hammer and turn the locknut by 1/4 to 1/3 turn (**Fig. 14.7**).
As for the tightening torque of the locknut, see the **Appendix table 4** at the end of this catalogue.

Fig. 14.7 Tightening locknut

(7A) For the pillow block type unit, loosen the mounting bolts on a housing, adjust the position of the bearing unit in the axial direction while turning the shaft by your hands, and then, tighten the mounting bolt on the housing with the specified torque again.
(7B) For the flange type unit, positions of the bearing and housing in the axial direction must be fit completely. Therefore, pay close attention and tighten the locknut to prevent any error of the position of bearing inner ring.
(8) Bend the outer tab on a washer that fits to the position of cutout on the outer surface of the locknut, and lock the locknut (**Fig. 14.8**).

Fig. 14.8 Bending outer tab of washer
(Locking locknut)

(9) At last, turn the shaft with your hands, and check for abnormality in the rotating status of the bearing.

14.1.3 Installing unit with eccentric locking collar

When installing the bearing to the shaft with the eccentric ring, fit the eccentric section of the end outside surface of the bearing inner ring to the eccentric recessed section provided on the eccentric locking collar, turn the eccentric locking collar, and tighten the set screw of the eccentric locking collar to fix the bearing 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**).

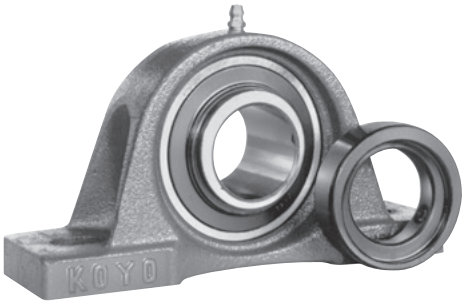


Fig. 14.9 Ball bearing unit with eccentric locking collar

Procedures for installation of the ball bearing unit with eccentric locking collar are shown below.
(1) Inspect the unit to ensure that the rigidity of the base, flatness of the mounting surface, and variation of tolerance of the shaft meet the standards. Check for bend, flaw, or birr on the shaft.
(2) Fit the bearing unit to the shaft, and place it on the specified position.
(3) Install the bearing unit to the specified position of the base, and fix it with the bolts.
Tighten the mounting bolts for the housing with the specified torque with a torque wrench.
For the tightening torque of the mounting bolt, see the **Appendix table 2** at the end of this catalogue.
(4) Fit the eccentric section of the bearing inner ring to the eccentric recessed section provided on the eccentric locking collar, turn the eccentric locking collar in the shaft turning direction, and tighten the set screw of the eccentric locking collar with the specified torque (**Fig. 14.10**).
For the tightening torque of the set screw, see the **Appendix table 3** at the end of this catalogue.

Fig. 14.10 Installing eccentric locking collar

(5) Turn the shaft with your hands. Then, fix the eccentric locking collar of another bearing unit to the bearing inner ring, and tighten the set screw of the eccentric locking collar with the specified torque.
(6) At last, turn the shaft with your hands, and check for abnormality in the rotating status of the bearing.

14.1.4 Installing unit with cover

Covers for ball bearing unit are available in two types, pressed steel 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 unit with cover 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. 14.11**).

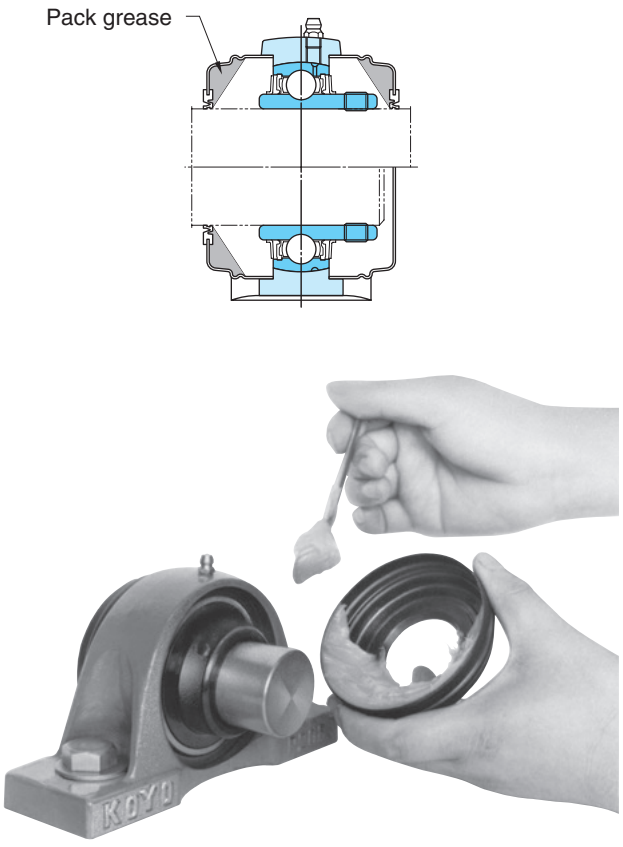


Fig. 14.11 Packing grease in internal space and seal lip of cover

(2) Put a cover through the shaft, and then, fit the bearing unit to the shaft.
(3) Fit the cover through the shaft to the cover groove on the housing, and fix it.
(4A) For the pressed steel cover, tap all around the cover evenly with a synthetic resin hammer to prevent deformation, and install it to the housing (**Fig. 14.12**).
To remove the pressed steel cover, put a screwdriver into the groove on the periphery of the cover, and slightly pry it.

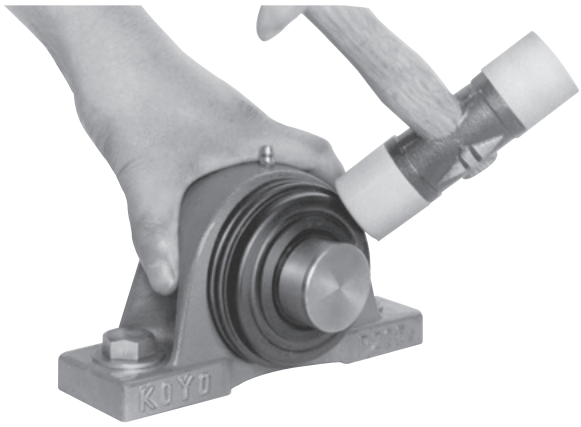


Fig. 14.12 Installing steel plate cover

(4B) When installing the cast iron cover, fit the cover to the cover groove of the housing, and fix it with the bolt.
For the tightening torque of the cast iron cover mounting bolt, see the **Appendix table 2** at the end of this catalogue.
(5) Install another cover to the housing in a similar manner.
(6) Check for abnormality of the installed cover.
(7) At last, turn the shaft with your hands, and check for abnormality in the rotating status of 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 is done appropriately.
The test run inspection should be executed by following the procedures below. Check for abnormality in the bearing unit.
(1) Turn the shaft with your hands, and make sure that the bearing is rotated smoothly.
If any jam, vibration, great rotation torque (heavy), or uneven rotation is found, the bearing is judged to be faulty.
(2) Execute power run with no load and at a low speed, and check for abnormal noise and vibration.
(3) Carry out power run under the specified 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 faults occurred during test run inspection and their causes

Faults	Causes
Excessively great torque, uneven rotating torque	(1) Faulty installation, leading to preload onto bearing in axial direction (2) Inappropriate handling or installation, leading to interference of oil seal with flinger (slinger) (3) Excessive tightening of locknut (adapter), leading to too small internal clearance of bearing
Abnormal noise, abnormal vibration	(1) Insufficient tightening of set screw of bearing inner ring or mounting bolt of housing (2) Excessively large internal clearance of bearing (3) Bend on shaft, deviation of shaft center of shouldered shaft (4) Faulty accuracy of shaft (5) Insufficient rigidity or faulty flatness of base
Abnormal temperature increase	(1) Excessively small internal clearance of bearing (2) Inappropriate installation, leading to preload onto bearing in axial direction (3) Great load applied (4) Allowable rotational speed is exceeded (5) Faulty flatness of base (6) Inappropriate handling or installation, leading to interference of oil seal with flinger (slinger)

14.3 Periodic inspection

Koyo Ball Bearing Units do not need to be inspected, as well as standard sealed bearings. However, for especially important purposes, periodic inspection must be executed with appropriate intervals for safe operation of the bearing unit.

Since a ball bearing unit cannot be disassembled for inspection of internal status, check the appearance and operating status as shown below, and ensure that the bearing unit is free from fault or not.

(1) Appearance
(2) Looseness of set screw of bearing inner ring or mounting bolt of housing
(3) Vibration, noise
(4) Temperature
(5) Grease supply interval, check of supplied amount

Table 14.3 shows the main faults found during the periodic inspection of ball bearing unit and their causes.

If any fault is found in the ball bearing unit during the periodic inspection, immediately provide countermeasures against them, and carry out them. If the unit is judged to be difficult to be used, replace the bearing unit. It is important to replace the bearing unit to prevent expanding damage to other parts.

Table 14.3 Main faults found during periodic inspection and their causes

Faults	Causes
Excessively great torque (heavy)	(1) Degraded grease (2) Interference of oil seal with flinger (slinger) due to excessive supply of grease (3) Deformation of flinger (slinger), leading to interference with oil seal (4) Abnormal load due to expansion of shaft
Abnormal noise, abnormal vibration	(1) Insufficient tightening of set screw of bearing inner ring or mounting bolt of housing (2) Wear on fitting surface of shaft and bearing inner ring due to creep or fretting (3) Ingress of foreign matters into bearing (4) Damage to raceway surface or rolling contact surface of rolling element by rolling fatigue (5) Dent on raceway surface or rolling contact surface of rolling element by excessive load (6) Excessive warp or bend of shaft
Abnormal temperature increase	(1) Degraded grease (2) Interference of oil seal with flinger (slinger) due to excessive supply of grease (3) Deformation of flinger (slinger), leading to interference with oil seal (4) Looseness of set screw or locknut (adapter) of bearing inner ring (5) Abnormal load due to expansion of shaft (6) Damage to raceway surface or rolling contact surface of rolling element by rolling fatigue

14.4 Supply of grease

In Koyo Ball Bearing Unit, grease of good quality is packed with high quality oil seal. Therefore, grease life is long under standard operating conditions, and use without lubrication is enabled.

If the operating temperature is high or the unit is used in the environment exposed to dusts or high humidity, grease may be degraded faster, leading to faulty lubrication in a short period.

Since Koyo Ball Bearing Units are lubricated type bearings, fresh grease must be periodically supplied to the bearings, if they are used for such purposes that premature degradation of grease is expected.

The ball bearing units can maintain normal lubricated status and longer service life by supplying fresh grease.

14.4.1 Grease life and supply intervals

Grease life of a packed grease ball bearing, like a ball bearing unit, can be found by **Formula (4. 7)** in page 30. It is recommended to supply grease with the intervals of 1/4 to 1/3 of grease life found by the calculation shown above to ball bearing units, taking peculiarity of lubricating method and safety of bearing unit into consideration.

If the bearing unit is used under severe environmental conditions, including much dust and high humidity, the greasing intervals must be further shortened, taking these influences into consideration.

If operating conditions of the ball bearing unit are not clear or the unit is operated under standard conditions, consider the greasing intervals shown in **Table 14.4** as the guideline.

14.4.2 Greasing amount

Initial greasing amount of Koyo Ball Bearing Unit is approximately 30 to 35% of the internal space capacity of the bearing. If amount of grease supplied in the bearing is excessive, agitating resistance of grease increases, leading to abnormal heat or grease leak. DO NOT exceed the initial greasing amount.

Table 14.5 shows the recommended values of greasing amount of Koyo Ball Bearing Unit.

If the unit is used at a low speed, supply grease of double amount of that shown in **Table 14.5** is recommended to increase dust preventive performance.

[Remarks] 1. For greasing amount of the UK type bearing, use this table, too.
2. For greasing amount of the triple-lip seal type, 1.5 times of the values shown in this table are recommended.
3. Values shown in this table are applicable to standard grease (specific gravity : 0.9 g/ml). If you use greases of other specific gravity, adopt values converted with the same volume.

Table 14.5 Greasing amount of ball bearing unit (recommended)

Bore dia. No.	Greasing amount, g		
	UC200	UCX00	UC300
01	1.8		
02	1.8		
03	1.8		
04	1.8	–	–
05	1.8	3.3	4.2
06	3.3	4.5	5.9
07	4.5	5.6	8.1
08	5.6	6.5	10.1
09	6.5	7.7	12.6
10	7.7	10.3	18.1
11	10.3	13.2	25
12	13.2	14.9	31
13	14.9	18.2	39
14	18.2	21	47
15	21	25	56
16	25	31	65
17	31	38	78
18	38	48	90
19	–	–	108
20		69	141
21		–	165
22			198
24			237
26			291
28			337

Table 14.4 Greasing intervals of ball bearing unit (recommended)

Operating temperature, ℃		Grease Intervals			Bearing used	Grease supplied
over	up to	Substantially clean	Much dust	Much dust and muddy water		
	50	(3 months)	(2 months)	(1 month)	(Low temperature	(Lithium)
		not necessary	1 year	4 months	D2K2)[1)]	Lithium
50	70	1 year	4 months	1 month	Standard bearing	
70	100	6 months	2 months	2 weeks		
100	120	2 months	2 weeks	5 days	High temperature	Lithium
120	150	2 weeks	5 days	2 days	D1K2	
150	180	1 week	2 days	1 day		

Note 1) Greasing intervals in parentheses are applicable to the cold resistant type (D2K2).

[Remark] Greasing intervals shown in this table are applicable to the unit to be operated for 8 to 10 hours a day. If operating hour is out of this range, find the greasing interval proportionally by this table.

14.4.3 Types of grease supplied

Though various types of greases used for ball bearing units are available, if dissimilar grease, especially grease of which soap base is different, is mixed, lubricating performance may be significantly degraded.

Therefore, the same grease to be supplied as the initially packed grease must be used, and avoid use of dissimilar grease.

It is recommended to supply the same grease to Koyo Ball Bearing Unit as the initially packed grease (see **Table 2.3**). If you have no choice but to use other greases, you have to use grease of the same type (thickener) as the initially packed grease, if not the worst.

14.4.4 Supplying grease

When supplying grease to a ball bearing unit, use the grease nipple and grease gun installed to the housing (**Fig. 14.13**).

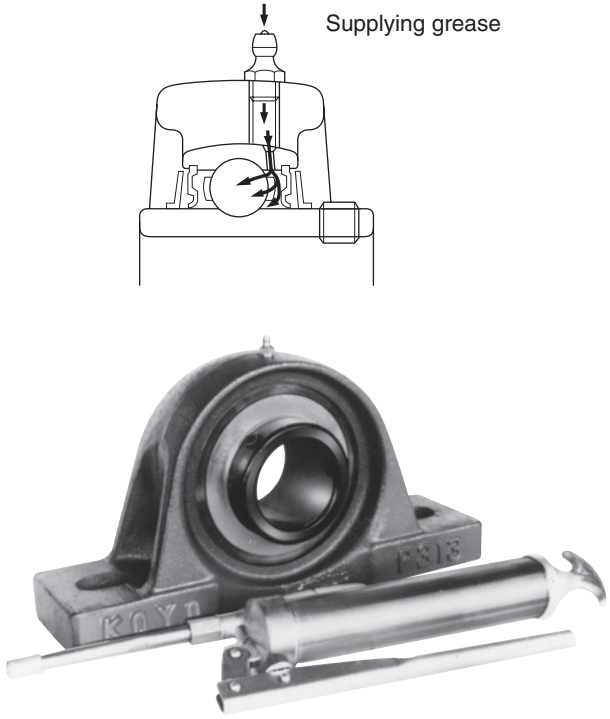


Fig. 14.13 Supplying grease to ball bearing unit

(1) Clean the grease nipple and area around it to prevent ingress of foreign matters.
(2) Clean the grease gun, and pack clean grease.
(3) Supply grease.

When supplying grease to the ball bearing unit, turning of the shaft with your hands or turning of the bearing unit at a low speed is recommended.

It allows appropriate discharge of old grease and even supply of fresh grease into the bearing.

If the grease supply with the grease nipple of the standard type (type A) is difficult because of the structure of the machine, grease nipples of the type B or type C are also available. Contact JTEKT.

Fig. 14.14 shows the types of grease nipples.

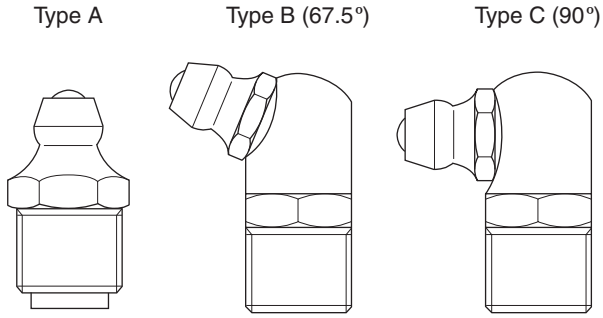


Fig. 14.14 Types of grease nipple for ball bearing unit

When supplying many ball bearing units with the centralized lubricating device, use soft grease with consistency from about 300 to 380, and provide piping appropriately so that grease of the specified amount is supplied.

Piping to the ball bearing unit should be provided with the tapped hole of the grease nipple of the housing. However, if size of the tapped hole on the housing differs from that of thread of the piping, use the reducing socket.

Fig. 14.15 shows the structure of the reducing socket for centralized lubricating.

When executing centralized lubricating, it is effective for the lubricating surface of the bearing to supply grease of the amount shown in **Table 14.5** by dividing into several times.

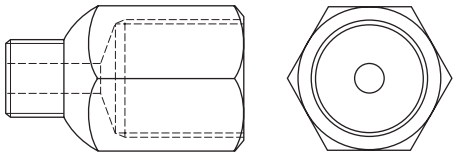


Fig. 14.15 Reducing socket for centralized lubricating

For details of grease nipples and reducing sockets, see **"16 Parts and accessory"**.

14.5 Replacing bearing

Since the bearings and the housings of Koyo ball bearing units are compatible, if a bearing is faulty, it can be replaced and used continuously.

Replacing procedures of the bearing of the ball bearing unit are shown below.

(1) Remove the bearing unit from the shaft and the base.
(2) Screw in the set screw so that the head of the set screw does not project out from the outside diameter surface of the inner ring of the bearing.
Head of the set screw may be hooked on the housing when the bearing is tilted.
(3) Turn the bearing by 90º with a handle of a hammer until the bearing is horizontal.
(4) Take out the bearing from the bearing groove of the housing.

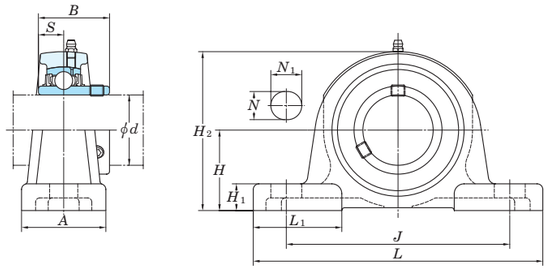
To fit a new bearing to the housing, reverse the removing procedures.

15 Specification tables of ball bearing units

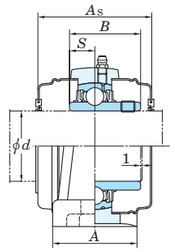
15 Specification tables of ball bearing units (contents)

Koyo

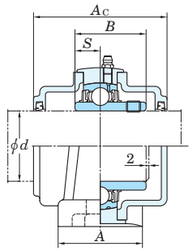
UCP
Cylindrical bore (with set screws)
d 12 ~ (45) mm



With Pressed Steel Covers



With Cast Iron Covers

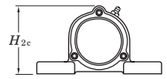


Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{H_S})

Unit : mm

Housing No.			Δ_{H_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 covers) are shown below.

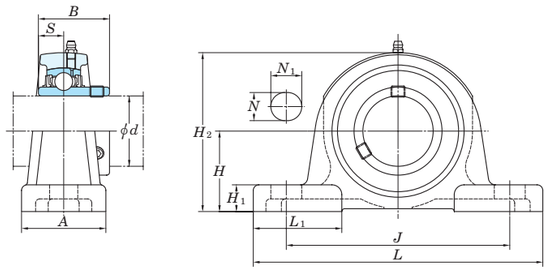


P204JE3 H_{2c} = 70 mm
P205JE3 H_{2c} = 77 mm

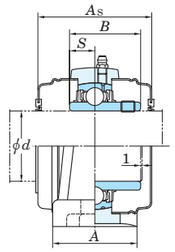
Shaft Dia. d (mm)	Shaft Dia. d (inch)	Dimensions H (inch)	Dimensions H (mm)	L	A	J	N	N_1	H_1	H_2	L_1	B	S	Bolt Size (inch)	Bolt Size (mm)	Standard Unit No.	Standard Housing No.	Standard Bearing No.	Mass (kg)	Basic Load Ratings kN C_r	Basic Load Ratings kN C_{0r}	Factor f_0	With Pressed Steel Covers Unit No. Open Ends Type	With Pressed Steel Covers Unit No. Closed End Type	Dimension mm	Dimension inch A_s	Mass (kg)	With Cast Iron Covers Unit No. Open Ends Type	With Cast Iron Covers Unit No. Closed End Type	Dimension mm	Dimension inch A_c	Mass (kg)
12	1/2	1 3/16	30.2	5	1 1/2	3 3/4	1/2	23/32	15/32	2 3/8	1 1/2	1.220	0.500	3/8	M10	UCP201	P203	UC201	0.63	12.8	6.65	13.2	UCP201C	UCP201CD	44	1 23/32	0.63	–	–	–	–	–
																UCP201-8		UC201-8	0.63				–	–	–	–	–	–	–	–	–	–
15	5/8															UCP202		UC202	0.61				UCP202C	UCP202CD	44	1 23/32	0.61	–	–	–	–	–
																UCP202-10		UC202-10	0.61				–	–	–	–	–	–	–	–	–	–
17																UCP203		UC203	0.60				UCP203C	UCP203CD	44	1 23/32	0.60	–	–	–	–	–
20	3/4	1 5/16	33.3	5	1 1/2	3 3/4	1/2	23/32	1/2	2 17/32	1 1/2	1.220	0.500	3/8	M10	UCP204-12	P204	UC204-12	0.66	12.8	6.65	13.2	–	–	–	–	–	–	–	–	–	–
																UCP204		UC204	0.66				UCP204C	UCP204CD	44	1 23/32	0.66	UCP204FC	UCP204FCD	62	2 7/16	0.96
25	7/8	1 7/16	36.5	5 1/2	1 1/2	4 1/8	1/2	23/32	1/2	2 25/32	1 11/16	1.343	0.563	3/8	M10	UCP205-14	P205	UC205-14	0.80	14.0	7.85	13.9	–	–	–	–	–	–	–	–	–	–
	15/16															UCP205-15		UC205-15	0.80				–	–	–	–	–	–	–	–	–	–
	1															UCP205		UC205	0.80				UCP205C	UCP205CD	48	1 7/8	0.80	UCP205FC	UCP205FCD	66	2 19/32	1.2
																UCP205-16		UC205-16	0.80				–	–	–	–	–	–	–	–	–	–
	1	1 3/4	44.4	6 1/4	2	4 11/16	21/32	31/32	5/8	3 3/8	1 27/32	1.500	0.626	1/2	M14	UCPX05	PX05	UCX05	1.5	19.5	11.3	13.9	UCPX05C	UCPX05CD	52	2 1/16	1.5	–	–	–	–	–
																UCPX05-16		UCX05-16	1.5				–	–	–	–	–	–	–	–	–	–
	1	1 49/64	45	6 7/8	1 3/4	5 3/16	21/32	25/32	5/8	3 11/32	2 5/32	1.496	0.591	1/2	M14	UCP305	P305	UC305	1.7	21.2	10.9	12.6	–	–	–	–	–	UCP305C	UCP305CD	76	3	2.3
																UCP305-16		UC305-16	1.7				–	–	–	–	–	–	–	–	–	–
30	1 1/8	1 11/16	42.9	6 1/2	1 7/8	4 3/4	21/32	13/16	19/32	3 5/16	2 3/32	1.500	0.626	1/2	M14	UCP206-18	P206	UC206-18	1.3	19.5	11.3	13.9	–	–	–	–	–	–	–	–	–	–
																UCP206		UC206	1.3				UCP206C	UCP206CD	52	2 1/16	1.3	UCP206FC	UCP206FCD	70	2 3/4	1.8
	1 3/16															UCP206-19		UC206-19	1.3				–	–	–	–	–	–	–	–	–	–
	1 1/4															UCP206-20		UC206-20	1.3				–	–	–	–	–	–	–	–	–	–
	1 3/16	1 7/8	47.6	6 7/8	2 1/4	5	21/32	31/32	21/32	3 21/32	2 5/32	1.689	0.689	1/2	M14	UCPX06	PX06	UCX06	2.1	25.7	15.4	13.9	UCPX06C	UCPX06CD	59	2 5/16	2.1	–	–	–	–	–
																UCPX06-19		UCX06-19	2.1				–	–	–	–	–	–	–	–	–	–
	1 1/4															UCPX06-20		UCX06-20	2.1				–	–	–	–	–	–	–	–	–	–
	–	1 31/32	50	7 3/32	1 31/32	5 1/2	21/32	25/32	21/32	3 3/4	2 3/32	1.693	0.669	1/2	M14	UCP306	P306	UC306	2.2	26.7	15.0	13.3	–	–	–	–	–	UCP306C	UCP306CD	82	3 7/32	2.8
35	1 1/4															UCP207-20	P207	UC207-20	1.6	25.7	15.4	13.9	–	–	–	–	–	–	–	–	–	–
	1 5/16															UCP207-21		UC207-21	1.6				–	–	–	–	–	–	–	–	–	–
	1 3/8	1 7/8	47.6	6 9/16	1 7/8	5	21/32	13/16	5/8	3 21/32	2	1.689	0.689	1/2	M14	UCP207-22		UC207-22	1.6				–	–	–	–	–	–	–	–	–	–
																UCP207		UC207	1.6				UCP207C	UCP207CD	59	2 5/16	1.6	UCP207FC	UCP207FCD	78	3 1/16	2.3
	1 7/16															UCP207-23		UC207-23	1.6				–	–	–	–	–	–	–	–	–	–
	1 3/8	2 1/8	54	8	2 1/4	5 11/16	21/32	1 3/16	3/4	4 1/8	2 17/32	1.937	0.748	1/2	M14	UCPX07-22	PX07	UCX07-22	2.7	29.1	17.8	14.0	–	–	–	–	–	–	–	–	–	–
																UCPX07		UCX07	2.7				UCPX07C	UCPX07CD	68	2 11/16	2.7	–	–	–	–	–
	1 7/16															UCPX07-23		UCX07-23	2.7				–	–	–	–	–	–	–	–	–	–
	–	2 13/64	56	8 9/32	2 7/32	6 5/16	21/32	31/32	3/4	4 7/32	2 9/16	1.890	0.748	1/2	M14	UCP307	P307	UC307	3.0	33.4	19.3	13.2	–	–	–	–	–	UCP307C	UCP307CD	88	3 15/32	3.8
40	1 1/2	1 15/16	49.2	7 1/4	2 1/8	5 13/32	21/32	13/16	21/32	3 27/32	2 1/4	1.937	0.748	1/2	M14	UCP208-24	P208	UC208-24	2.0	29.1	17.8	14.0	–	–	–	–	–	–	–	–	–	–
	1 9/16															UCP208-25		UC208-25	2.0				–	–	–	–	–	–	–	–	–	–
																UCP208		UC208	2.0				UCP208C	UCP208CD	68	2 11/16	2.0	UCP208FC	UCP208FCD	86	3 3/8	2.8
	1 1/2	2 5/16	58.7	8 3/4	2 5/8	6 1/8	25/32	1 1/4	13/16	4 1/2	2 25/32	1.937	0.748	5/8	M16	UCPX08-24	PX08	UCX08-24	3.5	34.1	21.3	14.0	–	–	–	–	–	–	–	–	–	–
																UCPX08		UCX08	3.5				UCPX08C	UCPX08CD	68	2 11/16	3.5	–	–	–	–	–
	1 1/2	2 23/64	60	8 21/32	2 3/8	6 11/16	21/32	1 1/16	3/4	4 21/32	2 9/16	2.047	0.748	1/2	M14	UCP308-24	P308	UC308-24	3.8	40.7	24.0	13.2	–	–	–	–	–	–	–	–	–	–
																UCP308		UC308	3.8				–	–	–	–	–	UCP308C	UCP308CD	96	3 25/32	4.8
45	1 5/8															UCP209-26	P209	UC209-26	2.2	34.1	21.3	14.0	–	–	–	–	–	–	–	–	–	–
	1 11/16	2 1/8	54	7 15/32	2 1/8	5 3/4	21/32	13/16	21/32	4 3/16	2 3/8	1.937	0.748	1/2	M14	UCP209-27		UC209-27	2.2				–	–	–	–	–	–	–	–	–	–
	1 3/4															UCP209-28		UC209-28	2.2				–	–	–	–	–	–	–	–	–	–
																UCP209		UC209	2.2				UCP209C	UCP209CD	68	2 11/16	2.2	UCP209FC	UCP209FCD	88	3 15/32	3.0
	1 3/4	2 5/16	58.7	8 3/4	2 5/8	6 1/8	25/32	1 5/16	13/16	4 9/16	2 25/32	2.031	0.748	5/8	M16	UCPX09-28	PX09	UCX09-28	3.7	35.1	23.3	14.4	–	–	–	–	–	–	–	–	–	–
																UCPX09		UCX09	3.7				UCPX09C	UCPX09CD	73	2 7/8	3.7	–	–	–	–	–

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF ..... 201~210, X05~X09, 305~308
A-PT1/8 ..... 211~218, X10~X20, 309~328
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

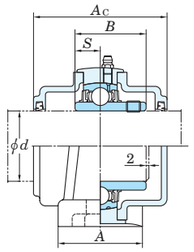
UCP
Cylindrical bore (with set screws)
d (45) ~ (75) mm



With Pressed Steel Covers



With Cast Iron Covers

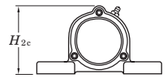


Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs})

Unit : mm

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

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



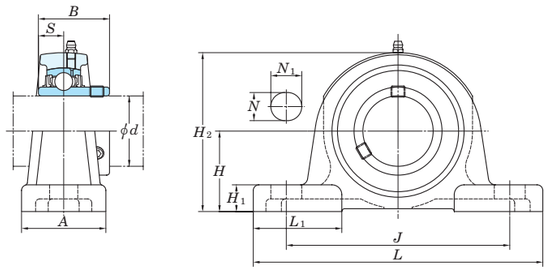
P204JE3 H_{2c} = 70 mm
P205JE3 H_{2c} = 77 mm

Shaft Dia. mm / inch d	Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	L_1	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Covers Unit No. Open Ends Type	Closed End Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Covers Unit No. Open Ends Type	Closed End Type	Dimension mm / inch A_c	Mass kg
45	2 41/64	9 21/32	2 5/8	7 15/32	25/32	1 3/16	13/16	5 3/16	2 15/16	2.244	0.866	5/8	UCP309-28	P309	UC309-28	4.9	48.9	29.5	13.3	–	–	– –	–	–	–	– –	–
	67	245	67	190	20	30	21	132	75	57	22	M16	UCP309		UC309	4.9				–	–	– –	–	UCP309C	UCP309CD	102 4 1/32	6.2
50	1 7/8												UCP210-30	P210	UC210-30	2.9	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
	1 15/16	8 1/8	2 3/8	6 1/4	25/32	7/8	3/4	4 7/16	2 15/32	2.031	0.748	5/8	UCP210-31		UC210-31	2.9				–	–	– –	–	–	–	– –	–
	57.2	206	60	159	20	22	19	113	63	51.6	19	M16	UCP210		UC210	2.9				UCP210C	UCP210CD	73 2 7/8	2.9	UCP210FC	UCP210FCD	97 3 13/16	3.9
	2												UCP210-32		UC210-32	2.9				–	–	– –	–	–	–	– –	–
	1 15/16												UCPX10-31	PX10	UCX10-31	4.6	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
	2 1/2	9 1/2	2 7/8	6 23/32	25/32	1 13/32	7/8	4 31/32	3	2.189	0.874	5/8	UCPX10		UCX10	4.6				UCPX10C	UCPX10CD	75 2 15/16	4.6	–	–	– –	–
	63.5	241	73	171	20	36	22	126	76	55.6	22.2	M16	UCPX10-32		UCX10-32	4.6				–	–	– –	–	–	–	– –	–
	–	2 61/64	10 13/16	2 15/16	8 11/32	25/32	1 3/8	15/16	5 13/16	3 15/32	2.402	0.866	5/8	UCP310	P310	UC310	6.6	62.0	38.3	13.2	–	–	– –	–	UCP310C	UCP310CD	110 4 11/32	8.2
	75	275	75	212	20	35	24	148	88	61	22	M16															
55	2												UCP211-32	P211	UC211-32	3.6	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
	2 1/8	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	UCP211-34		UC211-34	3.6				–	–	– –	–	–	–	– –	–
	63.5	219	60	171	20	22	19	125	70	55.6	22.2	M16	UCP211		UC211	3.6				UCP211C	UCP211CD	75 2 15/16	3.6	UCP211FC	UCP211FCD	99 3 29/32	4.8
	2 3/16												UCP211-35		UC211-35	3.6				–	–	– –	–	–	–	– –	–
	2 3/16	10 1/4	3 1/8	7 1/4	31/32	1 13/32	1 3/32	5 15/32	3 9/32	2.563	1.000	3/4	UCPX11	PX11	UCX11	6.5	52.4	36.2	14.4	UCPX11C	UCPX11CD	88 3 15/32	6.5	–	–	– –	–
	69.8	260	79	184	25	36	28	139	83	65.1	25.4	M20	UCPX11-35		UCX11-35	6.5				–	–	– –	–	–	–	– –	–
	2 1/4												UCPX11-36		UCX11-36	6.5				–	–	– –	–	–	–	– –	–
	2	12 7/32	3 5/32	9 9/32	25/32	1 1/2	1 1/16	6 7/32	3 17/32	2.598	0.984	5/8	UCP311-32	P311	UC311-32	7.9	71.6	45.0	13.2	–	–	– –	–	–	–	– –	–
	80	310	80	236	20	38	27	158	90	66	25	M16	UCP311		UC311	7.9				–	–	– –	–	UCP311C	UCP311CD	114 4 1/2	9.7
60	2 1/4												UCP212-36	P212	UC212-36	4.9	52.4	36.2	14.4	–	–	– –	–	–	–	– –	–
	2 3/4	9 1/2	2 3/4	7 1/4	25/32	31/32	7/8	5 7/16	3	2.563	1.000	5/8	UCP212		UC212	4.9				UCP212C	UCP212CD	88 3 15/32	4.9	UCP212FC	UCP212FCD	114 4 1/2	6.4
	69.8	241	70	184	20	25	22	138	76	65.1	25.4	M16	UCP212-38		UC212-38	4.9				–	–	– –	–	–	–	– –	–
	2 3/8												UCP212-39		UC212-39	4.9				–	–	– –	–	–	–	– –	–
	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	PX12	UCX12	7.7	57.2	40.1	14.4	UCPX12C	UCPX12CD	88 3 15/32	7.7	–	–	– –	–
	76.2	286	83	203	25	40	28	152	88	65.1	25.4	M20	UCPX12-39		UCX12-39	7.7				–	–	– –	–	–	–	– –	–
	–	3 11/32	13	3 11/32	9 27/32	31/32	1 1/2	1 5/32	6 9/16	4 1/16	2.795	1.024	3/4	UCP312	P312	UC312	9.5	81.9	52.2	13.2	–	–	– –	–	UCP312C	UCP312CD	124 4 7/8	11.8
	85	330	85	250	25	38	29	167	103	71	26	M20															
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	P213	UC213-40	5.9	57.2	40.1	14.4	–	–	– –	–	–	–	– –	–
		76.2	265	70	203	25	30	25	150	78	65.1	25.4	M20	UCP213		UC213	5.9				UCP213C	UCP213CD	88 3 15/32	5.9	UCP213FC	UCP213FCD	114 4 1/2	7.6
	2 1/2	3	11 1/4	3 1/4	8	31/32	1 9/16	1 3/32	6 3/32	3 15/32	2.937	1.189	3/4	UCPX13-40	PX13	UCX13-40	8.1	62.2	44.1	14.5	–	–	– –	–	–	–	– –	–
		76.2	286	83	203	25	40	28	155	88	74.6	30.2	M20	UCPX13		UCX13	8.1				UCPX13C	UCPX13CD	98 3 27/32	8.1	–	–	– –	–
	2 1/2	3 35/64	13 3/8	3 17/32	10 1/4	31/32	1 1/2	1 1/4	6 15/16	4 11/32	2.953	1.181	3/4	UCP313-40	P313	UC313-40	10.7	92.7	59.9	13.2	–	–	– –	–	–	–	– –	–
		90	340	90	260	25	38	32	176	110	75	30	M20	UCP313		UC313	10.7				–	–	– –	–	UCP313C	UCP313CD	122 4 13/16	12.8
70	2 3/4	3 1/8	10 15/32	2 27/32	8 9/32	31/32	1 3/16	1 3/32	6 5/32	3 1/16	2.937	1.189	3/4	UCP214-44	P214	UC214-44	6.8	62.2	44.1	14.5	–	–	– –	–	–	–	– –	–
		79.4	266	72	210	25	30	28	156	78	74.6	30.2	M20	UCP214		UC214	6.8				UCP214C	UCP214CD	98 3 27/32	6.8	UCP214FC	UCP214FCD	124 4 7/8	8.7
	2 3/4	3 1/2	13	3 1/2	9	1 1/16	1 31/32	1 1/4	6 23/32	3 27/32	3.063	1.331	7/8	UCPX14-44	PX14	UCX14-44	10.2	67.4	48.3	14.5	–	–	– –	–	–	–	– –	–
		88.9	330	89	229	27	50	32	171	98	77.8	33.3	M22	UCPX14		UCX14	10.2				UCPX14C	UCPX14CD	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	P314	UC314-44	12.4	104	68.2	13.2	–	–	– –	–	–	–	– –	–
		95	360	90	280	27	40	35	186	110	78	33	M22	UCP314		UC314	12.4				–	–	– –	–	UCP314C	UCP314CD	124 4 7/8	14.7
75	2 15/16												UCP215-47	P215	UC215-47	7.4	67.4	48.3	14.5	–	–	– –	–	–	–	– –	–
	3 1/4	10 13/16	2 29/32	8 17/32	31/32	1 3/16	1 3/32	6 3/8	3 5/32	3.063	1.311	3/4	UCP215		UC215	7.4				UCP215C	UCP215CD	98 3 27/32	7.4	UCP215FC	UCP215FCD	124 4 7/8	9.3
	82.6	275	74	217	25	30	28	162	80	77.8	33.3	M20	UCP215-48		UC215-48	7.4				–	–	– –	–	–	–	– –	–
	3																										
	2 15/16												UCPX15-47	PX15	UCX15-47	10.8	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
	3 1/2	13	3 1/2	9	1 1/16	1 31/32	1 1/4	6 7/8	3 29/32	3.252	1.311	7/8	UCPX15		UCX15	10.8				UCPX15C	UCPX15CD	108 4 1/4	10.8	–	–	– –	–
	88.9	330	89	229	27	50	32	175	99	82.6	33.3	M22	UCPX15-48		UCX15-48	10.8				–	–	– –	–	–	–	– –	–
	3																										

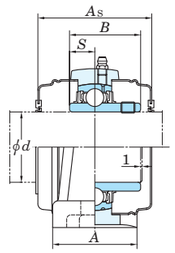
Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF ..... 201~210, X05~X09, 305~308
A-PT1/8 ..... 211~218, X10~X20, 309~328
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

Koyo

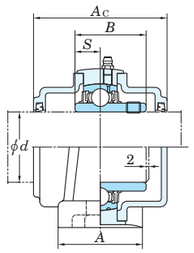
UCP
Cylindrical bore (with set screws)
d (75) ~ 140 mm



With Pressed Steel Covers



With Cast Iron Covers

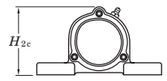


Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{H_S})

Unit : mm

Housing No.			Δ_{H_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 covers) are shown below.



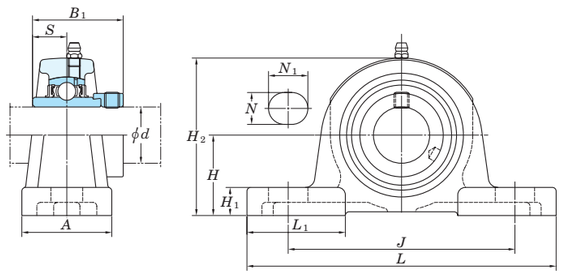
P204JE3 H_{2c} = 70 mm
P205JE3 H_{2c} = 77 mm

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

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF ..... 201~210, X05~X09, 305~308
A-PT1/8 ..... 211~218, X10~X20, 309~328
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

Koyo

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



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

Unit : mm

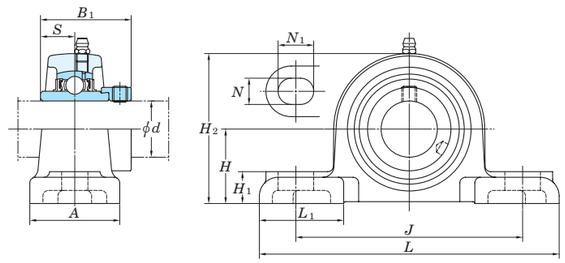
Housing No.	Δ_{Hs}
P203~P210	±0.15
P211~P215	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	L_1	B_1	S	Bolt Size inch / mm	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12														NAP201		NA201					0.71
	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	NAP201-8		NA201-8					
15		30.2	127	38	95	13	18	12	60	38	43.7	17.1	M10	NAP202	P203	NA202		12.8	6.65	13.2	0.69
	5/8													NAP202-10		NA202-10					
17														NAP203		NA203					0.66
20	3/4	1 5/16	5	1 1/2	3 3/4	1/2	23/32	1/2	2 17/32	1 1/2	1.720	0.673	3/8	NAP204-12	P204	NA204-12		12.8	6.65	13.2	0.73
		33.3	127	38	95	13	18	13	64	38	43.7	17.1	M10	NAP204		NA204					
	7/8													NAP205-14		NA205-14					
25	15/16	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	NAP205-15	P205	NA205-15		14.0	7.85	13.9	0.87
		36.5	140	38	105	13	18	13	71	43	44.4	17.5	M10	NAP205		NA205					
	1													NAP205-16		NA205-16					
	1 1/8													NAP206-18		NA206-18					
30		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	P206	NA206		19.5	11.3	13.9	1.4
	1 3/16	42.9	165	48	121	17	21	15	84	53	48.4	18.3	M14	NAP206-19		NA206-19					
	1 1/4													NAP206-20		NA206-20					
	1 1/4													NAP207-20		NA207-20					
	1 5/16													NAP207-21		NA207-21					
35	1 3/8	1 7/8	6 9/16	1 7/8	5	21/32	13/16	5/8	3 21/32	2	2.012	0.740	1/2	NAP207-22	P207	NA207-22		25.7	15.4	13.9	1.8
		47.6	167	48	127	17	21	16	93	51	51.1	18.8	M14	NAP207		NA207					
	1 7/16													NAP207-23		NA207-23					
	1 1/2													NAP208-24		NA208-24					
40	1 9/16	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	NAP208-25	P208	NA208-25		29.1	17.8	14.0	2.1
		49.2	184	54	137	17	21	17	98	57	56.3	21.4	M14	NAP208		NA208					
	1 5/8													NAP209-26		NA209-26					
45	1 11/16	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	NAP209-27	P209	NA209-27		34.1	21.3	14.0	2.4
	1 3/4	54	190	54	146	17	21	17	106	60	56.3	21.4	M14	NAP209-28		NA209-28					
														NAP209		NA209					
	1 7/8													NAP210-30		NA210-30					
50	1 15/16	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	NAP210-31	P210	NA210-31		35.1	23.3	14.4	3.1
		57.2	206	60	159	20	22	19	113	63	62.7	24.6	M16	NAP210		NA210					
	2													NAP210-32		NA210-32					
	2													NAP211-32		NA211-32					
55	2 1/8	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	NAP211-34	P211	NA211-34		43.4	29.4	14.4	3.9
		63.5	219	60	171	20	22	19	125	70	71.4	27.8	M16	NAP211		NA211					
	2 3/16													NAP211-35		NA211-35					
	2 1/4													NAP212-36		NA212-36					
60		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	P212	NA212		52.4	36.2	14.4	5.2
	2 3/8	69.8	241	70	184	20	25	22	138	76	77.8	31	M16	NAP212-38		NA212-38					
	2 7/16													NAP212-39		NA212-39					
65	2 1/2	3	10 7/16	2 3/4	8	31/32	1 3/16	31/32	5 29/32	3 1/16	3.374	1.343	3/4	NAP213-40	P213	NA213-40		57.2	40.1	14.4	6.5
		76.2	265	70	203	25	30	25	150	78	85.7	34.1	M20	NAP213		NA213					
70	2 3/4	3 1/8	10 15/32	2 27/32	8 9/32	31/32	1 3/16	1 3/32	6 5/32	3 1/16	3.374	1.343	3/4	NAP214-44	P214	NA214-44		62.2	44.1	14.5	7.7
		79.4	266	72	210	25	30	28	156	78	85.7	34.1	M20	NAP214		NA214					
75	2 15/16	3 1/4	10 13/16	2 29/32	8 17/32	31/32	1 3/16	1 3/32	6 3/8	3 5/32	3.626	1.469	3/4	NAP215-47	P215	NA215-47		67.4	48.3	14.5	7.9
		82.6	275	74	217	25	30	28	162	80	92.1	37.3	M20	NAP215		NA215					

Remarks 1. In Part No. of unit, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF ..... 201~210
A-PT1/8 ..... 211~215
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

Koyo

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



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

Unit : mm

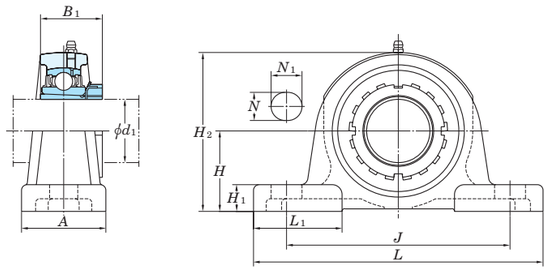
Housing No.	Δ_{Hs}
PK204~PK210	±0.15
PK211~PK215	±0.2

Shaft Dia mm	Shaft Dia inch	Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	L_1	B_1	S	Bolt Size inch	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12	1/2													NAPK201		NA201					
														NAPK201-8		NA201-8					
15														NAPK202		NA202					
	5/8	1 1/4	5 1/4	1 5/8	3 27/32	7/16	9/16	9/16	2 15/32	1 25/32	1.72	0.673	3/8	NAPK202-10	PK204	NA202-10		12.8	6.65	13.2	0.82
		31.8	133	41	98	11	14	14	63	45	43.7	17.1		NAPK203		NA203					
17														NAPK204-12		NA204-12					
	3/4													NAPK204		NA204					
20																					
	7/8													NAPK205-14		NA205-14					
	15/16	1 5/16	5 1/2	1 23/32	4 1/8	7/16	9/16	5/8	2 11/16	1 25/32	1.748	0.689	3/8	NAPK205-15	PK205	NA205-15		14.0	7.85	13.9	1
25		33.3	140	44	105	11	14	16	68	45	44.4	17.5		NAPK205		NA205					
	1													NAPK205-16		NA205-16					
	1 1/8													NAPK206-18		NA206-18					
		1 9/16	6 5/16	1 7/8	4 3/4	9/16	3/4	21/32	3 5/32	1 25/32	1.906	0.72	1/2	NAPK206	PK206	NA206		19.5	11.3	13.9	1.4
30	1 3/16	39.7	160	48	121	14	19	17	80	45	48.4	18.3		NAPK206-19		NA206-19					
	1 1/4													NAPK206-20		NA206-20					
	1 1/4													NAPK207-20		NA207-20					
	1 5/16													NAPK207-21		NA207-21					
35	1 3/8	1 13/16	6 9/16	1 7/8	5	9/16	3/4	3/4	3 5/8	1 25/32	2.012	0.74	1/2	NAPK207-22	PK207	NA207-22		25.7	15.4	13.9	2
		46	167	48	127	14	19	19	92	45	51.1	18.8		NAPK207		NA207					
	1 7/16													NAPK207-23		NA207-23					
	1 1/2													NAPK208-24		NA208-24					
40	1 9/16	1 15/16	7 1/8	2 1/8	5 1/2	9/16	3/4	3/4	3 15/16	1 31/32	2.217	0.843	1/2	NAPK208-25	PK208	NA208-25		29.1	17.8	14.0	2.5
		49.2	181	54	140	14	19	19	100	50	56.3	21.4		NAPK208		NA208					
	1 5/8													NAPK209-26		NA209-26					
	1 11/16	2 1/16	7 15/32	2 1/8	5 3/4	9/16	3/4	25/32	4 3/16	2 1/16	2.217	0.843	1/2	NAPK209-27	PK209	NA209-27		34.1	21.3	14.0	2.7
45	1 3/4	52.4	190	54	146	14	19	20	106	52	56.3	21.4		NAPK209-28		NA209-28					
														NAPK209		NA209					
	1 7/8													NAPK210-30		NA210-30					
	1 15/16	2 3/16	8	2 1/4	6 1/4	9/16	3/4	7/8	4 13/32	25/32	2.469	0.969	1/2	NAPK210-31	PK210	NA210-31		35.1	23.3	14.4	3.2
50		55.6	203	57	159	14	19	22	112	55	62.7	24.6		NAPK210		NA210					
	2													NAPK210-32		NA210-32					
	2													NAPK211-32		NA211-32					
	2 1/8	2 7/16	9 1/8	2 3/8	7 1/8	23/32	15/16	31/32	4 7/8	2 19/32	2.811	1.094	5/8	NAPK211-34	PK211	NA211-34		43.4	29.4	14.4	4.6
55		61.9	232	60	181	18	24	25	124	66	71.4	27.8		NAPK211		NA211					
	2 3/16													NAPK211-35		NA211-35					
	2 1/4													NAPK212-36		NA212-36					
		2 11/16	9 1/2	2 17/32	7 17/32	23/32	15/16	13/32	5 11/32	2 9/16	3.063	1.22	5/8	NAPK212	PK212	NA212		52.4	36.2	14.4	5.2
60	2 3/8	68.3	241	64	191	18	24	28	136	65	77.8	31		NAPK212-38		NA212-38					
	2 7/16													NAPK212-39		NA212-39					
75	2 15/16	3 5/16	11 31/32	3 7/32	9 1/2	7/8	1/4	1 1/2	6 1/2	3 7/16	3.626	1.469	3/4	NAPK215-47	PK215	NA215-47		67.4	48.3	14.5	9.6
		84.1	304	82	241	22	32	38	165	87	92.1	37.3		NAPK215		NA215					

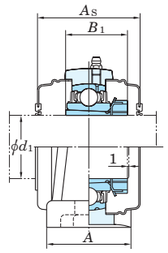
Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF ..... 201~210
A-PT1/8 ..... 211~215
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Representative examples of the forms of housing are indicated.

Koyo

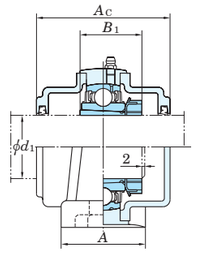
UKP
Tapered bore (with adapter)
d_1 20 ~ (50) mm



With Pressed Steel Covers



With Cast Iron Covers

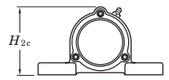


Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs})

Unit : mm

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

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



P205JE3 H_{2c} = 77 mm

Shaft Dia. mm / inch d_1	Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	L_1	B_1[1)]	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Adapter[1)] assembly No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Covers Unit No. Open Ends Type	Closed End Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Covers Unit No. Open Ends Type	Closed End Type	Dimension mm / inch A_c	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		HE305X(HE2305X)	0.84	14.0	7.85	13.9	–	–	–	–	–	–	–	–
		36.5	140	38	105	13	18	13	71	43	29(35)	M10					H305X(H2305X)	0.84				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		HE2305X	1.5	19.5	11.3	13.9	–	–	–	–	–	–	–	–
		44.4	159	51	119	17	25	16	86	47	35	M14					H2305X	1.5				UKPX05C	UKPX05CD	52	2 1/16	1.5	–	–	–	–	–
	3/4	1 49/64	6 7/8	1 3/4	5 3/16	21/32	25/32	5/8	3 11/32	2 5/32	1 3/8	1/2	UKP305	P305	UK305		HE2305X	1.7	21.2	10.9	12.6	–	–	–	–	–	–	–	–
		45	175	45	132	17	20	16	85	55	35	M14					H2305X	1.7				–	–	–	–	–	UKP305C	UKP305CD	76	3	2.3
25	1	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		H306X(H2306X)	1.4	19.5	11.3	13.9	UKP206C	UKP206CD	52	2 1/16	1.4	UKP206FC	UKP206FCD	70	2 3/4	1.9
		42.9	165	48	121	17	21	15	84	53	31(38)	M14					HE306X(HE2306X)	1.4				–	–	–	–	–	–	–	–	–	–
	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		H2306X	2.1	25.7	15.4	13.9	UKPX06C	UKPX06CD	59	2 5/16	2.1	–	–	–	–	–
		47.6	175	57	127	17	25	17	93	55	38	M14					HE2306X	2.1				–	–	–	–	–	–	–	–	–	–
	1	1 31/32	7 3/32	1 31/32	5 1/2	21/32	25/32	21/32	3 3/4	2 3/32	1 1/2	1/2	UKP306	P306	UK306		H2306X	2.3	26.7	15.0	13.3	–	–	–	–	–	UKP306C	UKP306CD	82	3 7/32	2.9
		50	180	50	140	17	20	17	95	53	38	M14					HE2306X	2.3				–	–	–	–	–	–	–	–	–	–
30	1 1/8	1 7/8	6 9/16	1 7/8	5	21/32	13/16	5/8	3 21/32	2	1 3/8(1 11/16)	1/2	UKP207	P207	UK207		HS307X(HS2307X)	1.7	25.7	15.4	13.9	–	–	–	–	–	–	–	–
		47.6	167	48	127	17	21	16	93	51	35(43)	M14					H307X(H2307X)	1.7				UKP207C	UKP207CD	59	2 5/16	1.7	UKP207FC	UKP207FCD	78	3 1/16	2.5
	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		HS2307X	2.7	29.1	17.8	14.0	–	–	–	–	–	–	–	–
		54	203	57	144	17	30	19	105	64	43	M14					H2307X	2.7				UKPX07C	UKPX07CD	68	2 11/16	2.7	–	–	–	–	–
	1 1/8	2 13/64	8 9/32	2 7/32	6 5/16	21/32	31/32	3/4	4 7/32	2 9/16	1 11/16	1/2	UKP307	P307	UK307		HS2307X	3.0	33.4	19.3	13.2	–	–	–	–	–	–	–	–
		56	210	56	160	17	25	19	107	65	43	M14					H2307X	3.0				–	–	–	–	–	UKP307C	UKP307CD	88	3 15/32	3.9
35	1 1/4 1 3/8	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		HE308X(HE2308X)	2.0	29.1	17.8	14.0	–	–	–	–	–	–	–	–
		49.2	184	54	137	17	21	17	98	57	36(46)	M14					HS308X(HS2308X)	2.0				–	–	–	–	–	–	–	–	–	–
																	H308X(H2308X)	2.0				UKP208C	UKP208CD	68	2 11/16	2.0	UKP208FC	UKP208FCD	86	3 3/8	2.9
	1 1/4 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		HE2308X	3.5	34.1	21.3	14.0	–	–	–	–	–	–	–	–
		58.7	222	67	156	20	32	21	114	71	46	M16					HS2308X	3.5				–	–	–	–	–	–	–	–	–	–
																	H2308X	3.5				UKPX08C	UKPX08CD	68	2 11/16	3.5	–	–	–	–	–
	1 1/4 1 3/8	2 23/64	8 21/32	2 3/8	6 11/16	21/32	1 1/16	3/4	4 21/32	2 9/16	1 13/16	1/2	UKP308	P308	UK308		HE2308X	3.8	40.7	24.0	13.2	–	–	–	–	–	–	–	–
		60	220	60	170	17	27	19	118	65	46	M14					HS2308X	3.8				–	–	–	–	–	–	–	–	–	–
																	H2308X	3.8				–	–	–	–	–	UKP308C	UKP308CD	96	3 25/32	5.2
40	1 1/2 1 5/8	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		HE309X(HE2309X)	2.3	34.1	21.3	14.0	–	–	–	–	–	–	–	–
		54	190	54	146	17	21	17	106	60	39(50)	M14					H309X(H2309X)	2.3				UKP209C	UKP209CD	68	2 11/16	2.3	UKP209FC	UKP209FCD	88	3 15/32	3.2
																	HS309X(HS2309X)	2.3				–	–	–	–	–	–	–	–	–	–
	1 1/2 1 5/8	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		HE2309X	3.7	35.1	23.3	14.4	–	–	–	–	–	–	–	–
		58.7	222	67	156	20	33	21	116	71	50	M16					H2309X	3.7				UKPX09C	UKPX09CD	73	2 7/8	3.7	–	–	–	–	–
																	HS2309X	3.7				–	–	–	–	–	–	–	–	–	–
	1 1/2 1 5/8	2 41/64	9 21/32	2 5/8	7 15/32	25/32	1 3/16	13/16	5 3/16	2 15/16	1 31/32	5/8	UKP309	P309	UK309		HE2309X	5.0	48.9	29.5	13.3	–	–	–	–	–	–	–	–
		67	245	67	190	20	30	21	132	75	50	M16					H2309X	5.0				–	–	–	–	–	UKP309C	UKP309CD	102	4 1/32	6.3
																	HS2309X	5.0				–	–	–	–	–	–	–	–	–	–
45	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		HE310X(HE2310X)	3.0	35.1	23.3	14.4	–	–	–	–	–	–	–	–
		57.2	206	60	159	20	22	19	113	63	42(55)	M16					H310X(H2310X)	3.0				UKP210C	UKP210CD	73	2 7/8	3.0	UKP210FC	UKP210FCD	97	3 13/16	4.1
	1 3/4	2 1/2	9 1/2	2 7/8	6 23/32	25/32	1 13/32	7/8	4 31/32	3	2 5/32	5/8	UKPX10	PX10	UKX10		HE2310X	4.6	43.4	29.4	14.4	–	–	–	–	–	–	–	–
		63.5	241	73	171	20	36	22	126	76	55	M16					H2310X	4.6				UKPX10C	UKPX10CD	75	2 15/16	4.6	–	–	–	–	–
	1 3/4	2 61/64	10 13/16	2 15/16	8 11/32	25/32	1 3/8	15/16	5 13/16	3 15/32	2 5/32	5/8	UKP310	P310	UK310		HE2310X	6.7	62.0	38.3	13.2	–	–	–	–	–	–	–	–
		75	275	75	212	20	35	24	148	88	55	M16					H2310X	6.7				–	–	–	–	–	UKP310C	UKP310CD	110	4 11/32	8.4
50	1 7/8 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	1 25/32(2 5/16)	5/8	UKP211	P211	UK211		HS311X(HS2311X)	3.7	43.4	29.4	14.4	–	–	–	–	–	–	–	–
		63.5	219	60	171	20	22	19	125	70	45(59)	M16					H311X(H2311X)	3.7				UKP211C	UKP211CD	75	2 15/16	3.7	UKP211FC	UKP211FCD	99	3 29/32	5.0
																	H311X(HE2311X)	3.7				–	–	–	–	–	–	–	–	–	–

Note 1) Codes shown in parentheses indicate the dimensions and Part No. of applicable adapter (H2300X series) for UK200L3 series (triple-lip 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 nipples are shown below.
A-1/4-28UNF.....205~210, X05~X09, 305~308
A-PT1/8.....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)

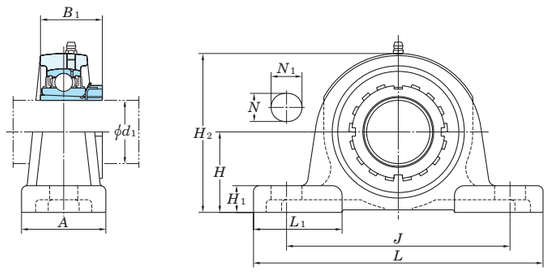
4. As for the triple-lip seal type product (205 is the double-lip seal type product), supplementary code L3 (or L2) follows the Part No. of unit or bearing.

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

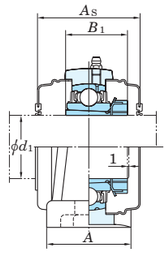
6. Representative examples of the forms of housing are indicated.

Koyo

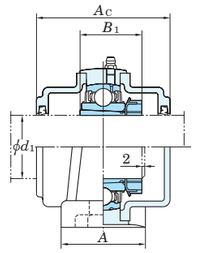
UKP
Tapered bore (with adapter)
d_1 (50) ~ 85 mm



With Pressed Steel Covers



With Cast Iron Covers

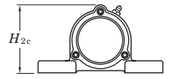


Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs})

Unit : mm

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

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



P205JE3 H_{2c} = 77 mm

Shaft Dia. mm / inch d_1	Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	L_1	B_1[1)]	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Adapter assembly No.[1)]	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Covers Unit No. Open Ends Type	Closed End Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Covers Unit No. Open Ends Type	Closed End Type	Dimension mm / inch A_c	Mass kg
50	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	HS2311X	6.2				–	–	– –	–	–	–	– –	–
	2	69.8	260	79	184	25	36	28	139	83	59	M20				H2311X	6.2	52.4	36.2	14.4	UKPX11C	UKPX11CD	88 3 15/32	6.2	–	–	– –	–
																HE2311X	6.2				–	–	– –	–	–	–	– –	–
	1 7/8	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 5/16	5/8	UKP311	P311	UK311	HS2311X	8.1				–	–	– –	–	–	–	– –	–
		80	310	80	236	20	38	27	158	90	59	M16				H2311X	8.1	71.6	45.0	13.2	–	–	– –	–	UKP311C	UKP311CD	114 4 1/2	10.0
	2															HE2311X	8.1				–	–	– –	–	–	–	– –	–
55	2 1/8	2 3/4	9 1/2	2 3/4	7 1/4	25/32	31/32	7/8	5 7/16	3	1 27/32(2 7/16)	5/8	UKP212	P212	UK212	HS312X(HS2312X)	4.8	52.4	36.2	14.4	–	–	– –	–	–	–	– –	–
		69.8	241	70	184	20	25	22	138	76	47(62)	M16				H312X(H2313X)	4.8				UKP212C	UKP212CD	88 3 15/32	4.8	UKP212FC	UKP212FCD	114 4 1/2	6.3
	2 1/8	3	11 1/4	3 1/4	8	31/32	1 9/16	1 3/32	5 31/32	3 15/32	2 7/16	3/4	UKPX12	PX12	UKX12	HS2312X	7.5	57.2	40.1	14.4	–	–	– –	–	–	–	– –	–
		76.2	286	83	203	25	40	28	152	88	62	M20				H2312X	7.5				UKPX12C	UKPX12CD	88 3 15/32	7.5	–	–	– –	–
	2 1/8	3 11/32	13	3 11/32	9 27/32	31/32	1 1/2	1 5/32	6 9/16	4 1/16	2 7/16	3/4	UKP312	P312	UK312	HS2312X	9.4	81.9	52.2	13.2	–	–	– –	–	–	–	– –	–
		85	330	85	250	25	38	29	167	103	62	M20				H2312X	9.4				–	–	– –	–	UKP312C	UKP312CD	124 4 7/8	11.8
	2 1/4	3	10 7/16	2 3/4	8	31/32	1 3/16	31/32	5 29/32	3 1/16	1 31/32(2 9/16)	3/4	UKP213	P213	UK213	HE313X(HE2313X)	5.8				–	–	– –	–	–	–	– –	–
		76.2	265	70	203	25	30	25	150	78	50(65)	M20				H313X(H2313X)	5.8	57.2	40.1	14.4	UKP213C	UKP213CD	88 3 15/32	5.8	UKP213FC	UKP213FCD	114 4 1/2	7.5
	2 3/8															HS313X(HS2313X)	5.8				–	–	– –	–	–	–	– –	–
60	2 1/4	3	11 1/4	3 1/4	8	31/32	1 9/16	1 3/32	6 3/32	3 15/32	2 9/16	3/4	UKPX13	PX13	UKX13	HE2313X	7.8				–	–	– –	–	–	–	– –	–
		76.2	286	83	203	25	40	28	155	88	65	M20				H2313X	7.8	62.2	44.1	14.5	UKPX13C	UKPX13CD	98 3 27/32	7.8	–	–	– –	–
	2 3/8															HS2313X	7.8				–	–	– –	–	–	–	– –	–
	2 1/4	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 9/16	3/4	UKP313	P313	UK313	HE2313X	10.8				–	–	– –	–	–	–	– –	–
		90	340	90	260	25	38	32	176	110	65	M20				H2313X	10.8	92.7	59.9	13.2	–	–	– –	–	UKP313C	UKP313CD	122 4 13/16	13.2
	2 3/8															HS2313X	10.8				–	–	– –	–	–	–	– –	–
65	2 1/2	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	2 5/32(2 7/8)	3/4	UKP215	P215	UK215	HE315X(HE2315X)	7.5	67.4	48.3	14.5	–	–	– –	–	–	–	– –	–
		82.6	275	74	217	25	30	28	162	80	55(73)	M20				H315X(H2315X)	7.5				UKP215C	UKP215CD	98 3 27/32	7.5	UKP215FC	UKP215FCD	124 4 7/8	9.5
	2 1/2	3 1/2	13	3 1/2	9	1 1/16	1 31/32	1 1/4	6 7/8	3 29/32	2 7/8	7/8	UKPX15	PX15	UKX15	HE2315X	10.5	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
		88.9	330	89	229	27	50	32	175	99	73	M22				H2315X	10.5				UKPX15C	UKPX15CD	108 4 1/4	10.5	–	–	– –	–
	2 1/2	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	2 7/8	7/8	UKP315	P315	UK315	HE2315X	14.9	113	77.2	13.2	–	–	– –	–	–	–	– –	–
		100	380	100	290	27	40	35	198	107	73	M22				H2315X	14.9				–	–	– –	–	UKP315C	UKP315CD	134 5 9/32	17.7
70	2 3/4	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	2 5/16(3 1/16)	3/4	UKP216	P216	UK216	HE316X(HE2316X)	9.2	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
		88.9	292	78	232	25	35	32	174	86	59(78)	M20				H316X(H2316X)	9.2				UKP216C	UKP216CD	108 4 1/4	9.2	UKP216FC	UKP216FCD	138 5 7/16	11.7
	2 3/4	4	15	4	11 1/8	1 1/16	2 9/32	1 11/32	7 11/16	4 9/16	3 1/16	7/8	UKPX16	PX16	UKX16	HE2316X	15.4	84.0	61.9	14.5	–	–	– –	–	–	–	– –	–
		101.6	381	102	283	27	58	34	195	116	78	M22				H2316X	15.4				UKPX16C	UKPX16CD	112 4 13/32	15.4	–	–	– –	–
	2 3/4	4 11/64	15 3/4	4 11/32	11 13/16	1 1/16	1 9/16	1 3/8	8 7/32	4 23/32	3 1/16	7/8	UKP316	P316	UK316	HE2316X	18.6	123	86.7	13.3	–	–	– –	–	–	–	– –	–
		106	400	110	300	27	40	35	209	120	78	M22				H2316X	18.6				–	–	– –	–	UKP316C	UKP316CD	138 5 7/16	21.7
75	3	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	2 15/32(3 7/32)	3/4	UKP217	P217	UK217	H317X(H2317X)	11.0	84.0	61.9	14.5	UKP217C	UKP217CD	112 4 13/32	11.0	UKP217FC	UKP217FCD	142 5 19/32	13.8
		95.2	310	83	247	25	40	32	185	90	63(82)	M20				HE317X(HE2317X)	11.0				–	–	– –	–	–	–	– –	–
	3	4	15	4	11 1/8	1 1/16	2 3/8	1 11/32	7 7/8	4 9/16	3 7/32	7/8	UKPX17	PX17	UKX17	H2317X	15.8	96.1	71.5	14.5	UKPX17C	UKPX17CD	122 4 13/16	15.8	–	–	– –	–
		101.6	381	102	283	27	60	34	200	116	82	M22				HE2317X	15.8				–	–	– –	–	–	–	– –	–
	3	4 13/32	16 17/32	4 11/32	12 19/32	1 5/16	1 25/32	1 9/16	8 21/32	4 23/32	3 7/32	1	UKP317	P317	UK317	H2317X	20.2	133	96.8	13.3	–	–	– –	–	UKP317C	UKP317CD	146 5 3/4	23.7
		112	420	110	320	33	45	40	220	120	82	M27				HE2317X	20.2				–	–	– –	–	–	–	– –	–
80	–	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	2 9/16(3 3/8)	7/8	UKP218	P218	UK218	H318X(H2318X)	13.8	96.1	71.5	14.5	UKP218C	UKP218CD	122 4 13/16	13.8	UKP218FC	UKP218FCD	152 6	18.8
		101.6	327	88	262	27	45	34	198	104	65(86)	M22																
	–	4	15	4 3/8	11 1/8	1 1/16	2 3/8	1 1/2	8 1/32	4 9/16	3 3/8	7/8	UKPX18	PX18	UKX18	H2318X	18.6	109	81.9	14.4	–	–	– –	–	UKPX18C	UKPX18CD	158 6 7/32	22.4
		101.6	381	111	283	27	60	38	204	116	86	M22																
	–	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 3/8	1	UKP318	P318	UK318	H2318X	22.8	143	107	13.3	–	–	– –	–	UKP318C	UKP318CD	150 5 29/32	27.0
		118	430	110	330	33	45	40	234	120	86	M27																
85	3 1/4	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	3 17/32	1 1/8	UKP319	P319	UK319	HE2319X	29.3	153	119	13.3	–	–	– –	–	–	–	– –	–
		125	470	120	360	36	50	46	248	125	90	M30				H2319X	29.3				–	–	– –	–	UKP319C	UKP319CD	162 6 3/8	34.0

Note 1) Codes shown in parentheses indicate the dimensions and Part No. of applicable adapter (H2300X series) for UK200L3 series (triple-lip 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 nipples are shown below.
A-1/4-28UNF.....205~210, X05~X09, 305~308
A-PT1/8.....211~218, X10~X20, 309~328

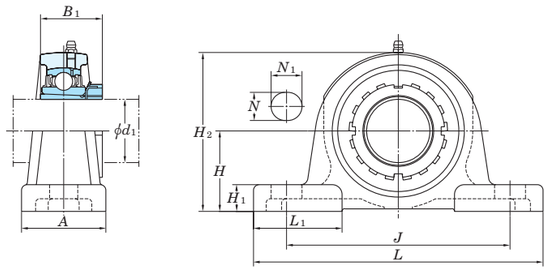
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables. (Example of Part No. : UKP206J + H306X, UK206 + H306X)

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

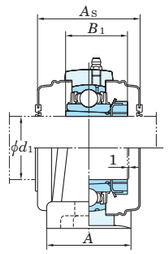
5. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter assemblies.

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

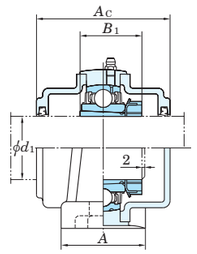
UKP
Tapered bore (with adapter)
d_1 90 ~ 125 mm



With Pressed Steel Covers



With Cast Iron Covers

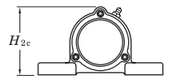


Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs})

Unit : mm

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

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



P205JE3 H_{2c} = 77 mm

Shaft Dia. mm / inch d_1		Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	L_1	B_1 [1)]	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Adapter [1)] assembly No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Covers Unit No. Open Ends Type	Closed End Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Covers Unit No. Open Ends Type	Closed End Type	Dimension mm / inch A_c	Mass kg
90	3 1/2	5	17	4 3/4	13 1/4	1 5/16	2 9/16	1 25/32	9 21/32	4 31/32	3 13/16	1	UKPX20	PX20	UKX20	HE2320X	29.3	133	105	14.4	–	–	– –	–	–	–	– –	–
		127	432	121	337	33	65	45	245	126	97	M27				H2320X	29.3				–	–	– –	–	UKPX20C	UKPX20CD	186 7 5/16	34.3
	3 1/2	5 33/64	19 9/32	4 23/32	14 31/32	1 13/32	1 31/32	1 13/16	10 3/4	5 1/2	3 13/16	1 1/8	UKP320	P320	UK320	HE2320X	34.8	173	141	13.2	–	–	– –	–	–	–	– –	–
		140	490	120	380	36	50	46	273	140	97	M30				H2320X	34.8				–	–	– –	–	UKP320C	UKP320CD	174 6 27/32	41.0
100	4	5 29/32	20 15/32	5 1/2	15 3/4	1 9/16	2 5/32	1 31/32	11 21/32	5 29/32	4 1/8	1 1/4	UKP322	P322	UK322	H2322X	43.9	205	180	13.2	–	–	– –	–	–	–	– –	–
		150	520	140	400	40	55	50	296	150	105	M33				HE2322X	43.9				–	–	– –	–	–	–	– –	–
110	–	6 19/64	22 7/16	5 1/2	17 23/32	1 9/16	2 5/32	1 31/32	12 7/16	6 5/16	4 13/32	1 1/4	UKP324	P324	UK324	H2324	55.7	207	185	13.5	–	–	– –	–	UKP324C	UKP324CD	196 7 23/32	66.0
		160	570	140	450	40	55	50	316	160	112	M33																
115	4 1/2	7 3/32	23 5/8	5 1/2	18 29/32	1 9/16	2 5/32	1 31/32	13 21/32	7 11/16	4 3/4	1 1/4	UKP326	P326	UK326	HE2326	71.9	229	214	13.6	–	–	– –	–	–	–	– –	–
		180	600	140	480	40	55	50	355	195	121	M33				H2326	71.9				–	–	– –	–	UKP326C	UKP326CD	214 8 7/16	85.2
125	–	7 7/8	24 13/32	5 1/2	19 11/16	1 9/16	2 5/32	2 3/8	15 15/32	7 9/32	5 5/32	1 1/4	UKP328	P328	UK328	H2328	92.5	253	246	13.6	–	–	– –	–	UKP328C	UKP328CD	222 8 3/4	109
		200	620	140	500	40	55	60	393	185	131	M33																

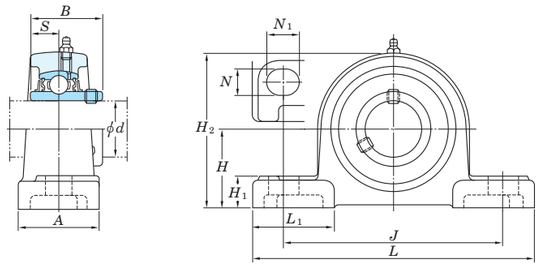
Note 1) Codes shown in parentheses indicate the dimensions and Part No. of applicable adapter (H2300X series) for UK200L3 series (triple-lip seal type).

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

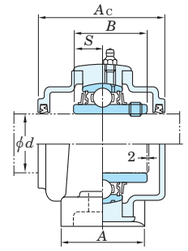
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF.....205~210, X05~X09, 305~308
A-PT1/8.....211~218, X10~X20, 309~328

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-lip seal type product (205 is the double-lip seal type product), supplementary 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 assemblies.
6. Representative examples of the forms of housing are indicated.

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



With Cast Iron Covers



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

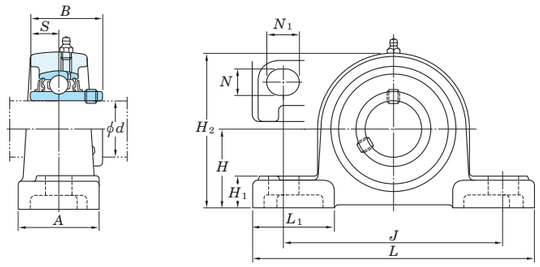
Unit : mm

Housing No.		Δ_{Hs}
P205SC~P210SC	P310SC	±0.15
P211SC~P218SC	P311SC~P318SC	±0.2
	P319SC~P328SC	±0.3

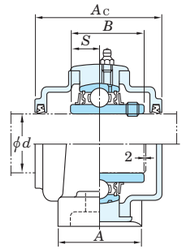
Shaft Dia.		Dimensions											Bolt Size	Standard			Mass	Basic Load Ratings		Factor	With Cast Iron Covers				
mm	inch	inch / mm											inch	Unit No.	Housing No.	Bearing No.		kN			Unit No.		Dimension mm	inch	Mass
d		H	L	A	J	N	N_1	H_1	H_2	L_1	B	S	mm				kg	C_r	C_{0r}	f_0	Open Ends Type	Closed End Type	A_c		kg
25	7/8													UCP205-14SC	P205SC	UC205-14	0.90	14.0	7.85	13.9	–	–	–	–	–
	15/16	1 7/16	5 1/2	1 1/2	4 1/8	1/2	23/32	5/8	2 25/32	1 11/16	1.343	0.563	3/8	UCP205-15SC		UC205-15	0.90				–	–	–	–	–
		36.5	140	38	105	13	18	16	71	43	34.1	14.3	M10	UCP205SC		UC205	0.90				–	–	–	–	–
	1													UCP205-16SC		UC205-16	0.90				–	–	–	–	–
30	1 1/8													UCP206-18SC	P206SC	UC206-18	1.5	19.5	11.3	13.9	–	–	–	–	–
		1 11/16	6 1/2	1 7/8	4 3/4	21/32	13/16	23/32	3 3/8	2 3/32	1.500	0.626	1/2	UCP206SC		UC206	1.5				UCP206SCFC	UCP206SCFCD	70	2 3/4	2.0
	1 3/16	42.9	165	48	121	17	21	18	86	53	38.1	15.9	M14	UCP206-19SC		UC206-19	1.5				–	–	–	–	–
	1 1/4													UCP206-20SC		UC206-20	1.5				–	–	–	–	–
35	1 1/4													UCP207-20SC	P207SC	UC207-20	1.9	25.7	15.4	13.9	–	–	–	–	–
	1 5/16	1 7/8	6 9/16	1 7/8	5	21/32	13/16	3/4	3 25/32	2	1.689	0.689	1/2	UCP207-21SC		UC207-21	1.9				–	–	–	–	–
	1 3/8	47.6	167	48	127	17	21	19	96	51	42.9	17.5	M14	UCP207-22SC		UC207-22	1.9				–	–	–	–	–
														UCP207SC		UC207	1.9				UCP207SCFC	UCP207SCFCD	78	3 1/16	2.6
	1 7/16													UCP207-23SC		UC207-23	1.9				–	–	–	–	–
40	1 1/2													UCP208-24SC	P208SC	UC208-24	2.3	29.1	17.8	14.0	–	–	–	–	–
	1 9/16	1 15/16	7 1/4	2 1/8	5 13/32	21/32	13/16	3/4	3 15/16	2 1/4	1.937	0.748	1/2	UCP208-25SC		UC208-25	2.3				–	–	–	–	–
		49.2	184	54	137	17	21	19	100	57	49.2	19	M14	UCP208SC		UC208	2.3				UCP208SCFC	UCP208SCFCD	86	3 3/8	3.1
45	1 5/8													UCP209-26SC	P209SC	UC209-26	2.5	34.1	21.3	14.0	–	–	–	–	–
	1 11/16	2 1/8	7 15/32	2 1/8	5 3/4	21/32	13/16	25/32	4 1/4	2 3/8	1.937	0.748	1/2	UCP209-27SC		UC209-27	2.5				–	–	–	–	–
	1 3/4	54	190	54	146	17	21	20	108	60	49.2	19	M14	UCP209-28SC		UC209-28	2.5				–	–	–	–	–
														UCP209SC		UC209	2.5				UCP209SCFC	UCP209SCFCD	88	3 15/32	3.3
50	1 7/8													UCP210-30SC	P210SC	UC210-30	3.2	35.1	23.3	14.4	–	–	–	–	–
	1 15/16	2 1/4	8 1/8	2 3/8	6 1/4	25/32	7/8	7/8	4 17/32	2 15/32	2.031	0.748	5/8	UCP210-31SC		UC210-31	3.2				–	–	–	–	–
		57.2	206	60	159	20	22	22	115	63	51.6	19	M16	UCP210SC		UC210	3.2				UCP210SCFC	UCP210SCFCD	97	3 13/16	4.2
	2													UCP210-32SC		UC210-32	3.2				–	–	–	–	–
	–	2 61/64	10 13/16	2 15/16	8 11/32	25/32	1 3/8	1 1/16	5 13/16	3 15/32	2.402	0.866	5/8	UCP310SC	P310SC	UC310	9.2	62.0	38.3	13.2	UCP310SCC	UCP310SCCD	110	4 11/32	10.8
		75	275	75	212	20	35	27	148	88	61	22	M16												
55	2													UCP211-32SC	P211SC	UC211-32	4.0	43.4	29.4	14.4	–	–	–	–	–
	2 1/8	2 1/2	8 5/8	2 3/8	6 23/32	25/32	7/8	15/16	5	2 3/4	2.189	0.874	5/8	UCP211-34SC		UC211-34	4.0				–	–	–	–	–
		63.5	219	60	171	20	22	24	127	70	55.6	22.2	M16	UCP211SC		UC211	4.0				UCP211SCFC	UCP211SCFCD	99	3 29/32	5.2
	2 3/16													UCP211-35SC		UC211-35	4.0				–	–	–	–	–
	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	2.598	0.984	5/8	UCP311-32SC	P311SC	UC311-32	10.9	71.6	45.0	13.2	–	–	–	–	–
		80	310	80	236	20	38	30	158	90	66	25	M16	UCP311SC		UC311	10.9				UCP311SCC	UCP311SCCD	114	4 1/2	12.7
60	2 1/4													UCP212-36SC	P212SC	UC212-36	5.2	52.4	36.2	14.4	–	–	–	–	–
		2 3/4	9 1/2	2 3/4	7 1/4	25/32	31/32	31/32	5 15/32	3	2.563	1.000	5/8	UCP212SC		UC212	5.2				UCP212SCFC	UCP212SCFCD	114	4 1/2	6.7
	2 3/8	69.8	241	70	184	20	25	25	139	76	65.1	25.4	M16	UCP212-38SC		UC212-38	5.2				–	–	–	–	–
	2 7/16													UCP212-39SC		UC212-39	5.2				–	–	–	–	–
	–	3 11/32	13	3 11/32	9 27/32	31/32	1 1/2	1 1/4	6 5/8	4 1/16	2.795	1.024	3/4	UCP312SC	P312SC	UC312	12.6	81.9	52.2	13.2	UCP312SCC	UCP312SCCD	124	4 7/8	14.9
		85	330	85	250	25	38	32	168	103	71	26	M20												
65	2 1/2	3	10 7/16	2 3/4	8	31/32	1 3/16	1 3/32	5 15/16	3 1/16	2.563	1.000	3/4	UCP213-40SC	P213SC	UC213-40	6.4	57.2	40.1	14.4	–	–	–	–	–
		76.2	265	70	203	25	30	28	151	78	65.1	25.4	M20	UCP213SC		UC213	6.4				UCP213SCFC	UCP213SCFCD	114	4 1/2	8.1
	2 1/2	3 35/64	13 3/8	3 17/32	10 1/4	31/32	1 1/2	1 3/8	7	4 11/32	2.953	1.181	3/4	UCP313-40SC	P313SC	UC313-40	14.2	92.7	59.9	13.2	–	–	–	–	–
		90	340	90	260	25	38	35	178	110	75	30	M20	UCP313SC		UC313	14.2				UCP313SCC	UCP313SCCD	122	4 13/16	16.3
70	2 3/4	3 1/8	10 15/32	2 27/32	8 9/32	31/32	1 3/16	1 3/32	6 3/16	3 1/16	2.937	1.189	3/4	UCP214-44SC	P214SC	UC214-44	7.1	62.2	44.1	14.5	–	–	–	–	–
		79.4	266	72	210	25	30	28	157	78	74.6	30.2	M20	UCP214SC		UC214	7.1				UCP214SCFC	UCP214SCFCD	124	4 7/8	9.0
	2 3/4	3 47/64	14 3/16	3 17/32	11 1/32	1 1/16	1 9/16	1 1/2	7 13/32	4 11/32	3.071	1.299	7/8	UCP314-44SC	P314SC	UC314-44	14.9	104	68.2	13.2	–	–	–	–	–
		95	360	90	280	27	40	38	188	110	78	33	M22	UCP314SC		UC314	14.9				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 nipples are shown below.
A-1/4-28UNF ..... 205~210
A-PT1/8 ..... 211~218, 310~328
3. As for the triple-lip seal type product (205 is the double-lip seal type product), supplementary 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, 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 Covers



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

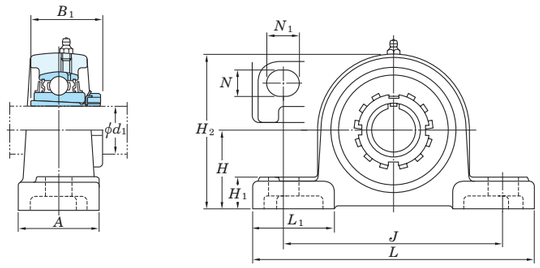
Unit : mm

Housing No.		Δ_{Hs}
P205SC~P210SC	P310SC	±0.15
P211SC~P218SC	P311SC~P318SC	±0.2
	P319SC~P328SC	±0.3

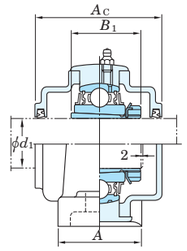
Shaft Dia. d mm	Shaft Dia. d inch	Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	L_1	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Cast Iron Covers Unit No. Open Ends Type	Closed End Type	Dimension mm / inch A_c	Mass kg
75	2 15/16	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	3.063	1.311	3/4	UCP215-47SC	P215SC	UC215-47	7.7				–	–	– –	–
		82.6	275	74	217	25	30	29	164	80	77.8	33.3	M20	UCP215SC		UC215	7.7	67.4	48.3	14.5	UCP215SCFC	UCP215SCFCD	124 4 7/8	9.6
	3													UCP215-48SC		UC215-48	7.7				–	–	– –	–
	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				–	–	– –	–
		100	380	100	290	27	40	38	200	107	82	32	M22	UCP315SC		UC315	20.7	113	77.2	13.2	UCP315SCC	UCP315SCCD	134 5 9/32	23.2
	3													UCP315-48SC		UC315-48	20.7				–	–	– –	–
80	3 1/8	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	3.252	1.311	3/4	UCP216-50SC	P216SC	UC216-50	9.3				–	–	– –	–
		88.9	292	78	232	25	35	31	176	86	82.6	33.3	M20	UCP216SC		UC216	9.3	72.7	53.0	14.6	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	123	86.7	13.3	UCP316SCC	UCP316SCCD	138 5 7/16	27.1
		106	400	110	300	27	40	38	211	120	86	34	M22											
85	3 1/4	3 3/4	12 7/32	3 9/32	9 23/32	31/32	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				–	–	– –	–
		95.2	310	83	247	25	40	33	188	90	85.7	34.1	M20	UCP217SC		UC217	11.7	84.0	61.9	14.5	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	133	96.8	13.3	UCP317SCC	UCP317SCCD	146 5 3/4	31.7
		112	420	110	320	33	45	45	222	120	96	40	M27											
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				–	–	– –	–
		101.6	327	88	262	27	45	35	200	104	96	39.7	M22	UCP218SC		UC218	13.5	96.1	71.5	14.5	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				–	–	– –	–
		118	430	110	330	33	45	45	234	120	96	40	M27	UCP318SC		UC318	30.9	143	107	13.3	UCP318SCC	UCP318SCCD	150 5 29/32	34.7
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				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	173	141	13.2	–	–	– –	–
														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											
120	–	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	207	185	13.5	UCP324SCC	UCP324SCCD	196 7 23/32	78.5
		160	570	140	450	40	55	57	316	160	126	51	M33											
130	–	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	229	214	13.6	UCP326SCC	UCP326SCCD	214 8 7/16	97.7
		180	600	140	480	40	55	57	355	195	135	54	M33											
140	–	7 7/8	24 13/32	5 1/2	19 11/16	1 9/16	2 5/32	2 3/4	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 nipples are shown below.
A-1/4-28UNF ..... 205~210
A-PT1/8 ..... 211~218, 310~328
3. As for the triple-lip seal type product (205 is the double-lip seal type product), supplementary 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, see the dimensional tables of ball bearing for unit.

UKP-SC
Tapered bore (with adapter), cast steel housing
d_1 20 ~ 75 mm



With Cast Iron Covers



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

Unit : mm

Housing No.		Δ_{Hs}
P205SC~P210SC	P310SC	±0.15
P211SC~P218SC	P311SC~P318SC	±0.2
	P319SC~P328SC	±0.3

Shaft Dia. mm / inch d_1	Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	L_1	B_1 [1]	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Adapter [1] assembly No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Cast Iron Covers Unit No. Open Ends Type	Closed End Type	Dimension mm / inch A_c	Mass kg
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 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
	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 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	29.1	17.8	14.0	–	–	–	–	–
	1 3/8	49.2	184	54	137	17	21	19	100	57	36(46)	M14					HS308X(HS2308X)	2.4				–	–	–	–	–
																	H308X(H2308X)	2.4				UKP208SCFC	UKP208SCFCD	86	3 3/8	3.2
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
	1 5/8																HS309X(HS2309X)	2.7				–	–	–	–	–
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 61/64	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 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	43.4	29.4	14.4	–	–	–	–	–
		63.5	219	60	171	20	22	24	127	70	45(59)	M16					H311X(H2311X)	4.2				UKP211SCFC	UKP211SCFCD	99	3 29/32	5.4
	2																HE311X(HE2311X)	4.2				–	–	–	–	–
	1 7/8	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
	2																HE2311X	11.2				–	–	–	–	–
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(H2313X)	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	12.5				UKP312SCC	UKP312SCCD	124	4 7/8	14.9
60	2 1/4	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 3/8																HS313X(HS2313X)	6.3				–	–	–	–	–
	2 1/4	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
	2 3/8																HS2313X	14.3				–	–	–	–	–
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 3/4	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
	3	95.2	310	83	247	25	40	33	188	90	63(82)	M20					HE317X(HE2317X)	12.0				–	–	–	–	–
		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
	3	112	420	110	320	33	45	45	222	120	82	M27					HE2317X	28.3				–	–	–	–	–

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

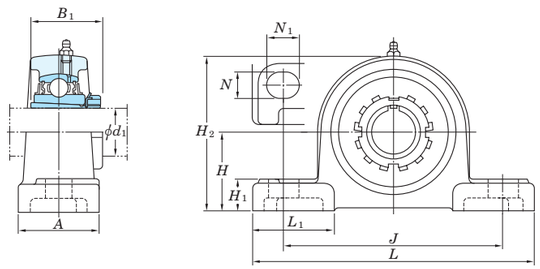
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF.....205~210
A-PT1/8.....211~218, 310~328

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)

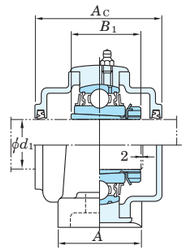
4. As for the triple-lip seal type product (205 is the double-lip seal type product), supplementary code L3 (or L2) follows the Part No. of unit or bearing.
(Example of Part No. : UKP206JSCL3 + H2306X, UK206L3 + H2306X)

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

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



With Cast Iron Covers



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

Unit : mm

Housing No.		Δ_{Hs}
P205SC~P210SC	P310SC	±0.15
P211SC~P218SC	P311SC~P318SC	±0.2
	P319SC~P328SC	±0.3

Shaft Dia. mm d_1	Shaft Dia. inch d_1	Dimensions inch / mm H	L	A	J	N	N_1	H_1	H_2	L_1	B_1 1)	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.		Adapter 1) assembly No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Cast Iron Covers Unit No. Open Ends Type	Closed End Type	Dimension mm inch A_c	Mass kg
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													
	–	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 3/8	1	UKP318SC	P318SC	UK318		H2318X	31.0	143	107	13.3	UKP318SCC	UKP318SCCD	150 5 29/32	35.2
		118	430	110	330	33	45	45	234	120	86	M27													
85	3 1/4	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	3 17/32	1 1/8	UKP319SC	P319SC	UK319		HE2319X	38.2	153	119	13.3	–	–	– –	–
		125	470	120	360	36	50	51	248	125	90	M30					H2319X	38.2				UKP319SCC	UKP319SCCD	162 6 3/8	42.9
90	3 1/2	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	3 13/16	1 1/8	UKP320SC	P320SC	UK320		HE2320X	44.9	173	141	13.2	–	–	– –	–
		140	490	120	380	36	50	51	273	140	97	M30					H2320X	44.9				UKP320SCC	UKP320SCCD	174 6 27/32	51.1
100	4	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 1/8	1 1/4	UKP322SC	P322SC	UK322		H2322X	53.0	205	180	13.2	UKP322SCC	UKP322SCCD	188 7 13/32	59.9
		150	520	140	400	40	55	57	296	150	105	M33					HE2322X	53.0				–	–	– –	–
110	–	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 13/32	1 1/4	UKP324SC	P324SC	UK324		H2324	69.3	207	185	13.5	UKP324SCC	UKP324SCCD	196 7 23/32	79.6
		160	570	140	450	40	55	57	316	160	112	M33													
115	4 1/2	7 3/32	23 5/8	5 1/2	18 29/32	1 9/16	2 5/32	2 1/4	13 21/32	7 11/16	4 3/4	1 1/4	UKP326SC	P326SC	UK326		HE2326	85.4	229	214	13.6	–	–	– –	–
		180	600	140	480	40	55	57	355	195	121	M33					H2326	85.4				UKP326SCC	UKP326SCCD	214 8 7/16	98.7
125	–	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 5/32	1 1/4	UKP328SC	P328SC	UK328		H2328	114	253	246	13.6	UKP328SCC	UKP328SCCD	222 8 3/4	131
		200	620	140	500	40	55	70	393	185	131	M33													

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

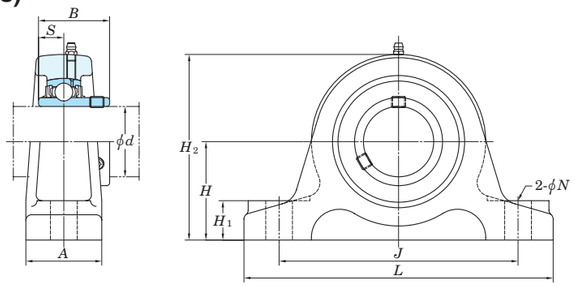
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF.....205~210
A-PT1/8.....211~218, 310~328

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)

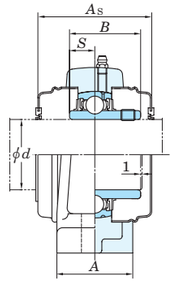
4. As for the triple-lip seal type product (205 is the double-lip seal type product), supplementary code L3 (or L2) follows the Part No. of unit or bearing.
(Example of Part No. : UKP206JSCL3 + H2306X, UK206L3 + H2306X)

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

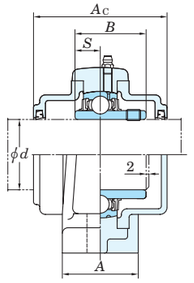
UCIP
Cylindrical bore (with set screws)
d 40 ~ 140 mm



With Pressed Steel Covers



With Cast Iron Covers



Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs}) and variations of tolerance of distance between centers of bolt holes (Δ_{Js})

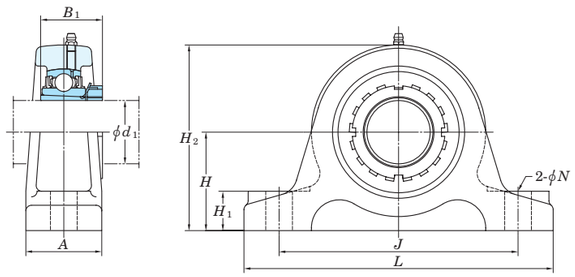
Unit : mm

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

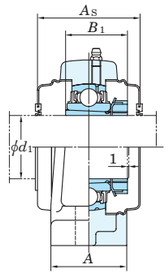
Shaft Dia. mm / inch d		Dimensions inch / mm H	L	A	J	N	H_1	H_2	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Covers Unit No. Open Ends Type	Closed End Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Covers Unit No. Open Ends Type	Closed End Type	Dimension mm / inch A_c	Mass kg
40	1 1/2	2 23/64	7 7/8	2 3/8	5 29/32	3/4	31/32	4 17/32	1.937	0.748	5/8	UCIP208-24	IP208	UC208-24	3.4				–	–	– –	–	–	–	– –	–
	1 9/16	60	200	60	150	19	25	115	49.2	19	M16	UCIP208-25		UC208-25	3.4	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
												UCIP208		UC208	3.4				UCIP208C	UCIP208CD	68 2 11/16	3.4	UCIP208FC	UCIP208FCD	86 3 3/8	4.2
45	1 5/8	2 3/4	8 9/32	2 3/8	6 19/64	3/4	31/32	5 1/32	1.937	0.748	5/8	UCIP209-26	IP209	UC209-26	3.9				–	–	– –	–	–	–	– –	–
	1 11/16											UCIP209-27		UC209-27	3.9	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
	1 3/4	70	210	60	160	19	25	128	49.2	19	M16	UCIP209-28		UC209-28	3.9				–	–	– –	–	–	–	– –	–
												UCIP209		UC209	3.9				UCIP209C	UCIP209CD	68 2 11/16	3.9	UCIP209FC	UCIP209FCD	88 3 15/32	4.7
50	1 7/8	2 3/4	8 21/32	2 3/8	6 11/16	3/4	1 3/32	5 3/16	2.031	0.748	5/8	UCIP210-30	IP210	UC210-30	4.8				–	–	– –	–	–	–	– –	–
	1 15/16											UCIP210-31		UC210-31	4.8	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
		70	220	60	170	19	28	132	51.6	19	M16	UCIP210		UC210	4.8				UCIP210C	UCIP210CD	73 2 7/8	4.8	UCIP210FC	UCIP210FCD	97 3 13/16	5.8
	2											UCIP210-32		UC210-32	4.8				–	–	– –	–	–	–	– –	–
55	2											UCIP211-32	IP211	UC211-32	5.3				–	–	– –	–	–	–	– –	–
	2 1/8	3 5/32	9 1/16	2 3/8	7 3/32	3/4	1 3/32	5 13/16	2.189	0.874	5/8	UCIP211-34		UC211-34	5.3	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
		80	230	60	180	19	28	148	55.6	22.2	M16	UCIP211		UC211	5.3				UCIP211C	UCIP211CD	75 2 15/16	5.3	UCIP211FC	UCIP211FCD	99 3 29/32	6.3
	2 3/16											UCIP211-35		UC211-35	5.3				–	–	– –	–	–	–	– –	–
60	2 1/4											UCIP212-36	IP212	UC212-36	7.2				–	–	– –	–	–	–	– –	–
		3 5/32	10 1/4	2 3/4	7 7/8	7/8	1 3/16	6 3/32	2.563	1.000	3/4	UCIP212		UC212	7.2	52.4	36.2	14.4	UCIP212C	UCIP212CD	88 3 15/32	7.2	UCIP212FC	UCIP212FCD	114 4 1/2	8.7
	2 3/8	80	260	70	200	22	30	155	65.1	25.4	M20	UCIP212-38		UC212-38	7.2				–	–	– –	–	–	–	– –	–
	2 7/16											UCIP212-39		UC212-39	7.2				–	–	– –	–	–	–	– –	–
65	2 1/2	3 35/64	11 1/32	2 3/4	8 21/32	7/8	1 3/16	6 25/32	2.563	1.000	3/4	UCIP213-40	IP213	UC213-40	8.8	57.2	40.1	14.4	–	–	– –	–	–	–	– –	–
		90	280	70	220	22	30	172	65.1	25.4	M20	UCIP213		UC213	8.8				UCIP213C	UCIP213CD	88 3 15/32	8.8	UCIP213FC	UCIP213FCD	114 4 1/2	10.5
	2 1/2	4 21/64	12 7/32	2 3/4	9 27/32	7/8	1 3/16	8 3/16	2.953	1.181	3/4	UCIP313-40	IP313	UC313-40	13.4	92.7	59.9	13.2	–	–	– –	–	–	–	– –	–
		110	310	70	250	22	30	208	75	30	M20	UCIP313		UC313	13.4				–	–	– –	–	UCIP313C	UCIP313CD	122 4 13/16	15.5
70	2 3/4	4 21/64	13	2 15/16	10 5/8	31/32	1 3/8	8 15/32	3.071	1.299	7/8	UCIP314-44	IP314	UC314-44	15.3	104	68.2	13.2	–	–	– –	–	–	–	– –	–
		110	330	75	270	25	35	215	78	33	M22	UCIP314		UC314	15.3				–	–	– –	–	UCIP314C	UCIP314CD	124 4 7/8	17.6
75	2 15/16											UCIP315-47	IP315	UC315-47	17.6				–	–	– –	–	–	–	– –	–
		4 23/32	13 3/8	2 15/16	11 1/32	31/32	1 3/8	9 1/16	3.228	1.260	7/8	UCIP315		UC315	17.6	113	77.2	13.2	–	–	– –	–	UCIP315C	UCIP315CD	134 5 9/32	20.1
	3	120	340	75	280	25	35	230	82	32	M22	UCIP315-48		UC315-48	17.6				–	–	– –	–	–	–	– –	–
80	–	4 23/32	13 25/32	3 11/32	11 27/64	31/32	1 9/16	9 1/4	3.386	1.339	7/8	UCIP316	IP316	UC316	20.3	123	86.7	13.3	–	–	– –	–	UCIP316C	UCIP316CD	138 5 7/16	23.2
		120	350	85	290	25	40	235	86	34	M22															
85	–	5 1/8	14 9/16	3 11/32	12 13/64	31/32	1 9/16	10 1/32	3.780	1.575	7/8	UCIP317	IP317	UC317	25.9	133	96.8	13.3	–	–	– –	–	UCIP317C	UCIP317CD	146 5 3/4	29.2
		130	370	85	310	25	40	255	96	40	M22															
90	3 1/2	5 1/8	15 3/4	3 11/32	13	1 5/32	1 25/32	10 1/4	3.780	1.575	1	UCIP318-56	IP318	UC318-56	28.6	143	107	13.3	–	–	– –	–	–	–	– –	–
		130	400	85	330	29	45	260	96	40	M27	UCIP318		UC318	28.6				–	–	– –	–	UCIP318C	UCIP318CD	150 5 29/32	32.4
95	–	5 29/32	16 5/32	3 11/32	13 25/64	1 5/32	1 25/32	11 7/32	4.055	1.614	1	UCIP319	IP319	UC319	31.7	153	119	13.3	–	–	– –	–	UCIP319C	UCIP319CD	162 6 3/8	36.0
		150	410	85	340	29	45	285	103	41	M27															
100	3 15/16	5 29/32	16 15/16	3 11/32	14 11/64	1 5/32	1 25/32	11 5/8	4.252	1.654	1	UCIP320	IP320	UC320	36.9	173	141	13.2	–	–	– –	–	UCIP320C	UCIP320CD	174 6 27/32	42.5
	4	150	430	85	360	29	45	295	108	42	M27	UCIP320-63		UC320-63	36.9				–	–	– –	–	–	–	– –	–
												UCIP320-64		UC320-64	36.9				–	–	– –	–	–	–	– –	–
110	–	6 11/16	19 9/32	3 15/16	16 9/64	1 1/4	1 31/32	13 3/16	4.606	1.811	1 1/8	UCIP322	IP322	UC322	52.4	205	180	13.2	–	–	– –	–	UCIP322C	UCIP322CD	188 7 13/32	59.2
		170	490	100	410	32	50	335	117	46	M30															
120	–	6 11/16	20 3/32	3 15/16	16 59/64	1 1/4	1 31/32	13 19/32	4.961	2.008	1 1/8	UCIP324	IP324	UC324	58.7	207	185	13.5	–	–	– –	–	UCIP324C	UCIP324CD	196 7 23/32	68.2
		170	510	100	430	32	50	345	126	51	M30															
130	–	7 7/8	21 21/32	4 11/32	18 1/2	1 1/4	1 31/32	15 11/32	5.315	2.126	1 1/8	UCIP326	IP326	UC326	76.2	229	214	13.6	–	–	– –	–	UCIP326C	UCIP326CD	214 8 7/16	88.3
		200	550	110	470	32	50	390	135	54	M30															
140	–	7 7/8	23 7/32	4 11/32	19 11/16	1 3/8	2 5/32	15 3/4	5.709	2.323	1 1/4	UCIP328	IP328	UC328	87.0	253	246	13.6	–	–	– –	–	UCIP328C	UCIP328CD	222 8 3/4	102
		200	590	110	500	35	55	400	145	59	M33															

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF ..... 208~210
A-PT1/8 ..... 211~213, 313~328
3. As for the triple-lip seal type product, supplementary 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.

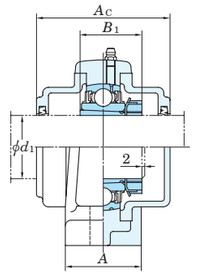
UKIP
Tapered bore (with adapter)
d_1 35 ~ 125 mm



With Pressed Steel Covers



With Cast Iron Covers



Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs}) and variations of tolerance of distance between centers of bolt holes (Δ_{Js})

Unit : mm

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

Shaft Dia. d_1 mm	Shaft Dia. d_1 inch	Dimensions mm: H	L	A	J	N	H_1	H_2	B_1 1)	Bolt Size inch	Bolt Size mm	Standard: Unit No.	Housing No.	Bearing No.	Adapter 1) assembly No.	Mass kg	Basic Load Ratings kN: C_r	C_{0r}	Factor f_0	With Pressed Steel Covers: Unit No. Open Ends Type	Closed End Type	Dimension mm: A_s	Dimension inch: A_s	Mass kg	With Cast Iron Covers: Unit No. Open Ends Type	Closed End Type	Dimension mm: A_c	Dimension inch: A_c	Mass kg
35	1 1/4	2 23/64	7 7/8	2 3/8	5 29/32	3/4	31/32	4 17/32	1 13/32(1 13/16)	5/8	M16	UKIP208	IP208	UK208	HE308X(HE2308X)	3.5	29.1	17.8	14.0	–	–	–	–	–	–	–	–	–	–
	1 3/8	60	200	60	150	19	25	115	36(46)						HS308X(HS2308X)	3.5				–	–	–	–	–	–	–	–	–	–
															H308X(H2308X)	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	31/32	5 1/32	1 17/32(1 31/32)	5/8	M16	UKIP209	IP209	UK209	HE309X(HE2309X)	4.0	34.1	21.3	14.0	–	–	–	–	–	–	–	–	–	–
		70	210	60	160	19	25	128	39(50)						H309X(H2309X)	4.0				UKIP209C	UKIP209CD	68	2 11/16	4.0	UKIP209FC	UKIP209FCD	88	3 15/32	4.9
	1 5/8														HS309X(HS2309X)	4.0				–	–	–	–	–	–	–	–	–	–
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	M16	UKIP210	IP210	UK210	HE310X(HE2310X)	4.8	35.1	23.3	14.4	–	–	–	–	–	–	–	–	–	–
		70	220	60	170	19	28	132	42(55)						H310X(H2310X)	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	M16	UKIP211	IP211	UK211	HS311X(HS2311X)	5.3	43.4	29.4	14.4	–	–	–	–	–	–	–	–	–	–
		80	230	60	180	19	28	148	45(59)						H311X(H2311X)	5.3				UKIP211C	UKIP211CD	75	2 15/16	5.3	UKIP211FC	UKIP211FCD	99	3 29/32	5.9
	2														HE311X(HE2311X)	5.3				–	–	–	–	–	–	–	–	–	–
55	2 1/8	3 5/32	10 1/4	2 3/4	7 7/8	7/8	1 3/16	6 3/32	1 27/32(2 7/16)	3/4	M20	UKIP212	IP212	UK212	HS312X(HS2312X)	7.1	52.4	36.2	14.4	–	–	–	–	–	–	–	–	–	–
		80	260	70	200	22	30	155	47(62)						H312X(H2313X)	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	M20	UKIP213	IP213	UK213	HE313X(HE2313X)	8.7	57.2	40.1	14.4	–	–	–	–	–	–	–	–	–	–
		90	280	70	220	22	30	172	50(65)						H313X(H2313X)	8.7				UKIP213C	UKIP213CD	88	3 15/32	8.7	UKIP213FC	UKIP213FCD	114	4 1/2	10.4
	2 3/8														HS313X(HS2313X)	8.7				–	–	–	–	–	–	–	–	–	–
	2 1/4	4 21/64	12 7/32	2 3/4	9 27/32	7/8	1 3/16	8 3/16	2 9/16	3/4		UKIP313	IP313	UK313	HE2313X	13.5	92.7	59.9	13.2	–	–	–	–	–	–	–	–	–	–
		110	310	70	250	22	30	208	65		M20				H2313X	13.5				–	–	–	–	–	UKIP313C	UKIP313CD	122	4 13/16	15.7
	2 3/8														HS2313X	13.5				–	–	–	–	–	–	–	–	–	–
65	2 1/2	4 23/32	13 3/8	2 15/16	11 1/32	31/32	1 3/8	9 1/16	2 7/8	7/8		UKIP315	IP315	UK315	HE2315X	17.7	113	77.2	13.2	–	–	–	–	–	–	–	–	–	–
		120	340	75	280	25	35	230	73		M22				H2315X	17.7				–	–	–	–	–	UKIP315C	UKIP315CD	134	5 9/32	20.5
70	2 3/4	4 23/32	13 25/32	3 11/32	11 27/64	31/32	1 9/16	9 1/4	3 1/16	7/8		UKIP316	IP316	UK316	HE2316X	20.4	123	86.7	13.3	–	–	–	–	–	–	–	–	–	–
		120	350	85	290	25	40	235	78		M22				H2316X	20.4				–	–	–	–	–	UKIP316C	UKIP316CD	138	5 7/16	23.5
75		5 1/8	14 9/16	3 11/32	12 13/64	31/32	1 9/16	10 1/32	3 7/32	7/8		UKIP317	IP317	UK317	H2317X	25.7	133	96.8	13.3	–	–	–	–	–	–	–	–	–	–
	3	130	370	85	310	25	40	255	82		M22				HE2317X	25.7				–	–	–	–	–	UKIP317C	UKIP317CD	146	5 3/4	29.2
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														UKIP318C	UKIP318CD	150	5 29/32	32.9
85	3 1/4	5 29/32	16 5/32	3 11/32	13 25/64	1 5/32	1 25/32	11 7/32	3 17/32	1		UKIP319	IP319	UK319	HE2319X	32.0	153	119	13.3	–	–	–	–	–	–	–	–	–	–
		150	410	85	340	29	45	285	90		M27				H2319X	32.0				–	–	–	–	–	UKIP319C	UKIP319CD	162	6 3/8	36.7
90	3 1/2	5 29/32	16 15/16	3 11/32	14 11/64	1 5/32	1 25/32	11 5/8	3 13/16	1		UKIP320	IP320	UK320	HE2320X	36.6	173	141	13.2	–	–	–	–	–	–	–	–	–	–
		150	430	85	360	29	45	295	97		M27				H2320X	36.6				–	–	–	–	–	UKIP320C	UKIP320CD	174	6 27/32	42.8
100		6 11/16	19 9/32	3 15/16	16 9/64	1 1/4	1 31/32	13 3/16	4 1/8	1 1/8		UKIP322	IP322	UK322	H2322X	52.2	205	180	13.2	–	–	–	–	–	–	–	–	–	–
	4	170	490	100	410	32	50	335	105		M30				H2322X	52.2				–	–	–	–	–	UKIP322C	UKIP322CD	188	7 13/32	59.1
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														UKIP324C	UKIP324CD	196	7 23/32	69.3
115	4 1/2	7 7/8	21 21/32	4 11/32	18 1/2	1 1/4	1 31/32	15 11/32	4 3/4	1 1/8		UKIP326	IP326	UK326	HE2326	76.0	229	214	13.6	–	–	–	–	–	–	–	–	–	–
		200	550	110	470	32	50	390	121		M30				H2326	76.0				–	–	–	–	–	UKIP326C	UKIP326CD	214	8 7/16	89.3
125	–	7 7/8	23 7/32	4 11/32	19 11/16	1 3/8	2 5/32	15 3/4	4 5/32	1 1/4		UKIP328	IP328	UK328	H2328	87.0	253	246	13.6	–	–	–	–	–	–	–	–	–	–
		200	590	110	500	35	55	400	131		M33														UKIP328C	UKIP328CD	222	8 3/4	104

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

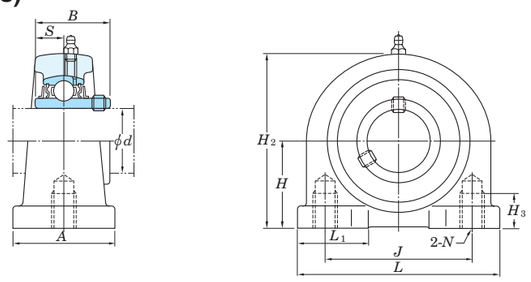
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF.....208~210
A-PT1/8.....211~213, 313~328

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-lip seal type product, supplementary 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 assemblies.

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



Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs}) and variations of tolerance of distance between centers of bolt holes (Δ_{Js})

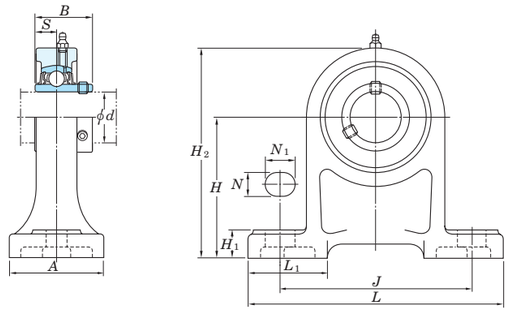
Unit : mm

Housing No.	Δ_{Hs}	Δ_{Js}
PA204~PA210	±0.15	±0.5

Shaft Dia. mm	Shaft Dia. 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												**UCPA201**		UC201					0.64
	1/2											**UCPA201-8**		UC201-8					
15												**UCPA202**		UC202					0.62
	5/8	1 3/16	3	1 9/16	2 3/64		2 3/8	1/2	1 1/16	1.220	0.500	**UCPA202-10**	PA204	UC202-10		12.8	6.65	13.2	
		30.2	76	40	52	M10×1.5	60	13	27	31	12.7								
17												**UCPA203**		UC203					0.61
	3/4											**UCPA204-12**		UC204-12					
20												**UCPA204**		UC204					0.59
	7/8											**UCPA205-14**		UC205-14					
	15/16	1 7/16	3 5/16	1 25/32	2 13/64		2 25/32	1/2	1 3/16	1.343	0.563	**UCPA205-15**		UC205-15					
25		36.5	84	45	56	M10×1.5	71	13	30	34.1	14.3	**UCPA205**	PA205	UC205		14.0	7.85	13.9	0.83
	1											**UCPA205-16**		UC205-16					
	1 1/8											**UCPA206-18**		UC206-18					
		1 11/16	3 11/16	1 31/32	2 19/32		3 5/16	23/32	1 13/32	1.500	0.626	**UCPA206**		UC206					
30	1 3/16	42.9	94	50	66	M14×2	84	18	36	38.1	15.9	**UCPA206-19**	PA206	UC206-19		19.5	11.3	13.9	1.2
	1 1/4											**UCPA206-20**		UC206-20					
	1 1/4											**UCPA207-20**		UC207-20					
	1 5/16											**UCPA207-21**		UC207-21					
35	1 3/8	1 7/8	3 11/32	2 5/32	3 5/32		3 21/32	25/32	1 5/8	1.689	0.689	**UCPA207-22**	PA207	UC207-22		25.7	15.4	13.9	1.7
		47.6	110	55	80	M14×2	93	20	41	42.9	17.5	**UCPA207**		UC207					
	1 7/16											**UCPA207-23**		UC207-23					
	1 1/2											**UCPA208-24**		UC208-24					
40	1 9/16	1 15/16	4 9/16	2 9/32	3 5/16		3 15/16	25/32	1 5/8	1.937	0.748	**UCPA208-25**	PA208	UC208-25		29.1	17.8	14.0	2.0
		49.2	116	58	84	M14×2	100	20	41	49.2	19	**UCPA208**		UC208					
	1 5/8											**UCPA209-26**		UC209-26					
	1 11/16	2 9/64	4 23/32	2 3/8	3 35/64		4 3/16	31/32	1 21/32	1.937	0.748	**UCPA209-27**		UC209-27					
45	1 3/4	54.2	120	60	90	M14×2	106	25	42	49.2	19	**UCPA209-28**	PA209	UC209-28		34.1	21.3	14.0	2.2
												UCPA209		UC209					
	1 7/8											**UCPA210-30**		UC210-30					
	1 15/16	2 1/4	5 1/8	2 17/32	3 45/64		4 7/16	31/32	1 27/32	2.031	0.748	**UCPA210-31**		UC210-31					
50		57.2	130	64	94	M16×2	113	25	47	51.6	19	**UCPA210**	PA210	UC210		35.1	23.3	14.4	2.8
	2											**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 nipple is A-1/4-28UNF.
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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)

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



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

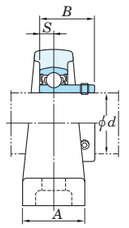
Unit : mm

Housing No.	Δ_{Hs}
PH204~PH210	±0.15

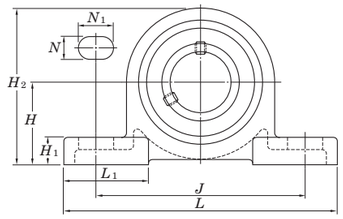
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm: H	L	A	J	N	N1	H1	H2	L1	B	S	Bolt Size inch / mm	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN: Cr	C0r	Factor f0	Mass kg
12	1/2													UCPH201		UC201					0.96
														UCPH201-8		UC201-8					
15														UCPH202		UC202					0.94
	5/8	2 3/4	5	1 9/16	3 3/4	1/2	3/4	19/32	3 21/32	1 13/16	1.220	0.500	3/8	UCPH202-10	PH204	UC202-10		12.8	6.65	13.2	
		70	127	40	95	13	19	15	101	46	31	12.7	M10								
17														UCPH203		UC203					0.93
	3/4													UCPH204-12		UC204-12					
20														UCPH204		UC204					0.91
	7/8													UCPH205-14		UC205-14					
	15/16	3 5/32	5 1/2	1 31/32	4 1/8	1/2	3/4	5/8	3 1/2	1 15/16	1.343	0.563	3/8	UCPH205-15	PH205	UC205-15		14.0	7.85	13.9	1.2
25		80	140	50	105	13	19	16	114	49	34.1	14.3	M10	UCPH205		UC205					
	1													UCPH205-16		UC205-16					
	1 1/8													UCPH206-18		UC206-18					
		3 35/64	6 1/2	1 31/32	4 3/4	21/32	13/16	23/32	5 1/8	1 7/32	1.500	0.626	1/2	UCPH206	PH206	UC206		19.5	11.3	13.9	1.6
30	1 3/16	90	165	50	121	17	21	18	130	56	38.1	15.9	M14	UCPH206-19		UC206-19					
	1 1/4													UCPH206-20		UC206-20					
	1 1/4													UCPH207-20		UC207-20					
	1 5/16													UCPH207-21		UC207-21					
35	1 3/8	3 47/64	6 9/16	2 3/8	5	21/32	13/16	23/32	5 1/2	1 1/8	1.689	0.689	1/2	UCPH207-22	PH207	UC207-22		25.7	15.4	13.9	2.0
		95	167	60	127	17	21	18	140	54	42.9	17.5	M14	UCPH207		UC207					
	1 7/16													UCPH207-23		UC207-23					
	1 1/2													UCPH208-24		UC208-24					
40	1 9/16	3 15/16	7 1/4	2 3/4	5 13/32	21/32	13/16	25/32	5 29/32	2 1/4	1.937	0.748	1/2	UCPH208-25	PH208	UC208-25		29.1	17.8	14.0	2.7
		100	184	70	137	17	21	20	150	57	49.2	19	M14	UCPH208		UC208					
	1 5/8													UCPH209-26		UC209-26					
45	1 11/16	4 9/64	7 15/32	2 3/4	5 3/4	21/32	13/16	25/32	6 7/32	2 9/32	1.937	0.748	1/2	UCPH209-27	PH209	UC209-27		34.1	21.3	14.0	3.0
	1 3/4	105	190	70	146	17	21	20	158	58	49.2	19	M14	UCPH209-28		UC209-28					
														UCPH209		UC209					
	1 7/8													UCPH210-30		UC210-30					
50	1 15/16	4 21/64	8 1/8	2 3/4	6 1/4	25/32	7/8	7/8	6 1/2	2 9/16	2.031	0.748	5/8	UCPH210-31	PH210	UC210-31		35.1	23.3	14.4	3.5
		110	206	70	159	20	22	22	165	65	51.6	19	M16	UCPH210		UC210					
	2													UCPH210-32		UC210-32					

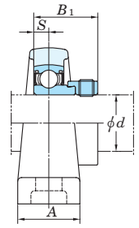
Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See **Table 10.5** in P.51.)
2. Part No. of the applicable grease nipple is A-1/4-28UNF.
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary code L3 (or L2) follows 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 screws)
ALP
Cylindrical bore
(with eccentric locking collar)
d 12 ~ 40 mm



BLP





ALP

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

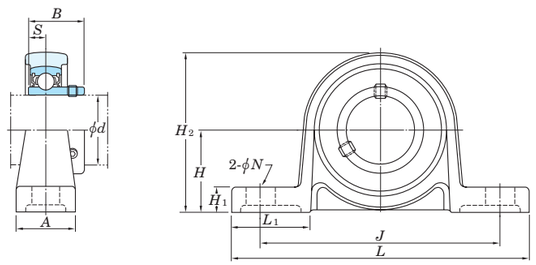
Unit : mm

Housing No.	Δ_{Hs}
LP203~LP208	±0.15

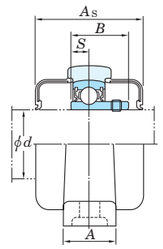
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm: H	L	A	J	N	N_1	H_1	H_2	L_1	S	BLP B	ALP B_1	Bolt Size inch / mm	Unit No.	Bearing No.	Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN: C_r	C_{0r}	Factor f_0	Mass kg: BLP	ALP
12	1/2	1 3/16	4 1/2	31/32	3 7/16	7/16	5/8	15/32	2 1/4	1 3/8	0.236	0.866	1.122	3/8	**BLP201**	SB201	**ALP201**	SA201						
															BLP201-8	SB201-8	**ALP201-8**	SA201-8						
15		30.2	114	25	87	11	16	12	57	35	6	22	28.5	M10	**BLP202**	SB202	**ALP202**	SA202	LP203	9.55	4.80	13.2	0.36	0.39
	5/8														**BLP202-10**	SB202-10	**ALP202-10**	SA202-10						
17															**BLP203**	SB203	**ALP203**	SA203						
20	3/4	1 5/16	4 29/32	1 1/16	3 13/16	7/16	5/8	1/2	2 9/16	1 1/2	0.276	0.984	1.161	3/8	**BLP204-12**	SB204-12	**ALP204-12**	SA204-12	LP204	12.8	6.65	13.2	0.51	0.51
		33.3	125	27	97	11	16	13	65	38	7	25	29.5	M10	**BLP204**	SB204	**ALP204**	SA204						
	7/8														**BLP205-14**	SB205-14	**ALP205-14**	SA205-14						
25	15/16	1 7/16	5 1/8	1 5/32	3 15/16	7/16	5/8	1/2	2 25/32	1 17/32	0.295	1.063	1.201	3/8	**BLP205-15**	SB205-15	**ALP205-15**	SA205-15	LP205	14.0	7.85	13.9	0.57	0.61
		36.5	130	29	100	11	16	13	71	39	7.5	27	30.5	M10	**BLP205**	SB205	**ALP205**	SA205						
	1														**BLP205-16**	SB205-16	**ALP205-16**	SA205-16						
	1 1/8														**BLP206-18**	SB206-18	**ALP206-18**	SA206-18						
30		1 11/16	6 5/32	1 5/16	4 23/32	9/16	13/16	9/16	3 9/32	1 27/32	0.315	1.181	1.335	1/2	**BLP206**	SB206	**ALP206**	SA206	LP206	19.5	11.3	13.9	0.69	0.72
	1 3/16	42.9	156	33	120	14	21	14	83	47	8	30	33.9	M12	**BLP206-19**	SB206-19	**ALP206-19**	SA206-19						
	1 1/4														**BLP206-20**	SB206-20	**ALP206-20**	SA206-20						
	1 1/4														**BLP207-20**	SB207-20	**ALP207-20**	SA207-20						
	1 5/16																**ALP207-21**	SA207-21						
35		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										
	1 3/8	47.6	165	35	127	14	21	16	93	50	8.5	32	36.5	M12	**BLP207-22**	SB207-22	**ALP207-22**	SA207-22	LP207	25.7	15.4	13.9	0.94	1.0
															BLP207	SB207	**ALP207**	SA207						
	1 7/16														**BLP207-23**	SB207-23	**ALP207-23**	SA207-23						
	1 1/2														**BLP208-24**	SB208-24	**ALP208-24**	SA208-24						
40		2	7 1/4	1 15/32	5 1/2	9/16	7/8	23/32	4 1/32	2 5/32	0.354	1.339	1.595	1/2			**ALP208-25**	SA208-25	LP208	29.1	17.8	14.0	1.8	1.9
	1 9/16	50.8	184	37	140	14	22	18	102	55	9	34	40.5	M12	**BLP208**	SB208	**ALP208**	SA208						

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

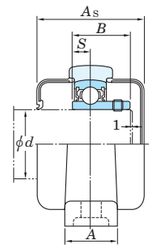
UP
Cylindrical bore (with set screws)
d 10 ~ 30 mm



Open Ends Type



Closed End Type



Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs}) and variations of tolerance of distance between centers of bolt holes (Δ_{Js})

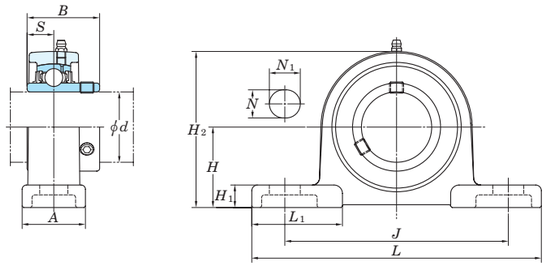
Unit : mm

Housing No.	Δ_{Hs}	Δ_{Js}
P000~P006	±0.15	±0.3

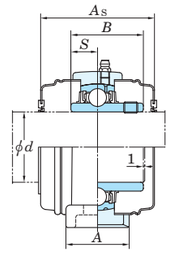
Shaft Dia. mm	Dimensions inch / mm										Bolt Size	Standard				Mass	Basic Load Ratings kN		Factor	With Rubber Coated Covers				Mass
											inch / mm	Unit No.	Housing No.	Bearing No.						Unit No.		Dimension inch / mm		
d	H	L	A	J	N	H_1	H_2	L_1	B	S						kg	C_r	C_{0r}	f_0	Open Ends Type	Closed End Type	A_s		kg
10	45/64 18	2 5/8 67	5/8 16	2 3/32 53	9/32 7	1/4 6	1 3/8 35	23/32 18	0.591 15	0.197 5	1/4 M6	**UP000**	P000	SU000		0.070	4.55	1.95	12.3	UP000C	UP000CD	29	1 5/32	0.070
12	3/4 19	2 25/32 71	5/8 16	2 13/64 56	9/32 7	1/4 6	1 1/2 38	3/4 19	0.591 15	0.197 5	1/4 M6	**UP001**	P001	SU001		0.090	5.10	2.40	13.2	UP001C	UP001CD	29	1 5/32	0.090
15	55/64 22	3 5/32 80	5/8 16	2 31/64 63	9/32 7	9/32 7	1 11/16 43	13/16 21	0.650 16.5	0.217 5.5	1/4 M6	**UP002**	P002	SU002		0.11	5.60	2.85	13.9	UP002C	UP002CD	31	1 7/32	0.11
17	15/16 24	3 11/32 85	23/32 18	2 41/64 67	9/32 7	9/32 7	1 27/32 47	13/16 21	0.689 17.5	0.236 6	1/4 M6	**UP003**	P003	SU003		0.15	6.00	3.25	14.4	UP003C	UP003CD	33	1 5/16	0.15
20	1 7/64 28	3 15/16 100	25/32 20	3 5/32 80	13/32 10	11/32 9	2 5/32 55	31/32 25	0.827 21	0.276 7	5/16 M8	**UP004**	P004	SU004		0.23	9.40	5.05	13.9	UP004C	UP004CD	38	1 1/2	0.23
25	1 17/64 32	4 13/32 112	25/32 20	3 35/64 90	13/32 10	13/32 10	2 7/16 62	1 3/32 28	0.866 22	0.276 7	5/16 M8	**UP005**	P005	SU005		0.28	10.1	5.85	14.5	UP005C	UP005CD	40	1 9/16	0.28
30	1 27/64 36	5 3/16 132	1 1/32 26	4 11/64 106	1/2 13	7/16 11	2 3/4 70	1 11/32 34	0.965 24.5	0.295 7.5	3/8 M10	**UP006**	P006	SU006		0.42	13.2	8.25	14.7	UP006C	UP006CD	44	1 23/32	0.42

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See **Table 10.5** in P.51.)
2. Housing is made from special light alloy.
3. 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 20 ~ 50 mm



With Pressed Stainless Steel Covers



Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs}) and variations of tolerance of distance between centers of bolt holes (Δ_{Js})

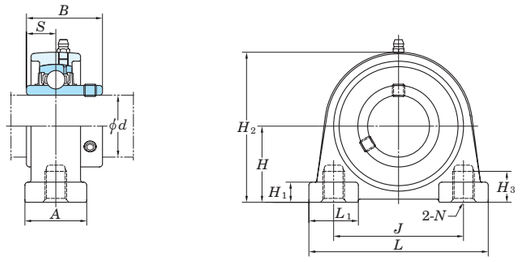
Unit : mm

Housing No.	Δ_{Hs}	Δ_{Js}
SP204H1~SP210H1	±0.15	±0.3

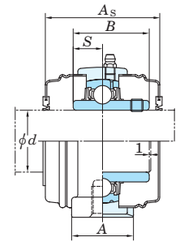
Shaft Dia.	Dimensions											Bolt Size	Standard				Mass	Basic Load Ratings		Factor	With Pressed Stainless Steel Covers			
	inch / mm											inch / mm	Unit No.	Housing No.	Bearing No.			kN			Unit No.		Dimension inch / mm	Mass
d	H	L	A	J	N	N_1	H_1	H_2	L_1	B	S						kg	C_r	C_{0r}	f_0	Open Ends Type	Closed End Type	A_s	kg
20	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	UCSP204H1S6	SP204H1	UC204S6		0.54	10.9	5.35	13.2	UCSP204H1CS6	UCSP204H1CDS6	45 1 25/32	0.54
	33.3	127	30	95	13	18	11	63	42	31	12.7	M10												
25	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	UCSP205H1S6	SP205H1	UC205S6		0.70	11.9	6.3	13.9	UCSP205H1CS6	UCSP205H1CDS6	49 1 15/16	0.70
	36.5	140	30	105	13	19	12	69	46	34.1	14.3	M10												
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	UCSP206H1S6	SP206H1	UC206S6		1.0	16.5	9.05	13.9	UCSP206H1CS6	UCSP206H1CDS6	53 2 3/32	1.0
	42.9	165	36	121	17	21	13	81	54	38.1	15.9	M14												
35	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	UCSP207H1S6	SP207H1	UC207S6		1.4	21.8	12.3	13.9	UCSP207H1CS6	UCSP207H1CDS6	60 2 3/8	1.4
	47.6	167	38	127	17	21	14	91	51	42.9	17.5	M14												
40	1 15/16	7 1/4	1 9/16	5 13/32	21/32	13/16	9/16	3 13/16	2 3/8	1.937	0.748	1/2	UCSP208H1S6	SP208H1	UC208S6		1.7	24.8	14.3	14.0	UCSP208H1CS6	UCSP208H1CDS6	69 2 23/32	1.7
	49.2	184	40	137	17	21	14	97	60	49.2	19	M14												
45	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	UCSP209H1S6	SP209H1	UC209S6		1.8	27.8	16.2	14.0	UCSP209H1CS6	UCSP209H1CDS6	69 2 23/32	1.8
	54	190	40	146	17	21	15	104	61	49.2	19	M14												
50	2 1/4	8 1/8	1 25/32	6 1/4	25/32	7/8	5/8	4 3/8	2 9/16	2.031	0.748	5/8	UCSP210H1S6	SP210H1	UC210S6		2.3	29.8	18.6	14.4	UCSP210H1CS6	UCSP210H1CDS6	74 2 29/32	2.3
	57.2	206	45	159	20	22	16	111	65	51.6	19	M16												

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 nipple is A-1/4-28UNFN12.
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 20 ~ 40 mm



With Pressed Stainless Steel Covers



Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs}) and variations of tolerance of distance between centers of bolt holes (Δ_{Js})

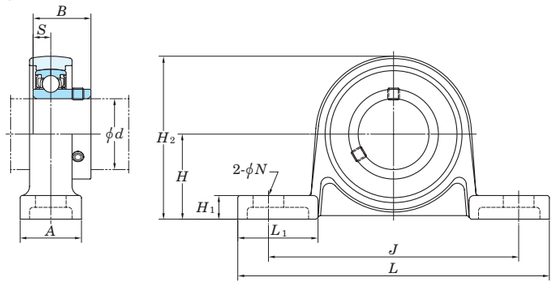
Unit : mm

Housing No.	Δ_{Hs}	Δ_{Js}
SPA204H1~SPA208H1	±0.15	±0.5

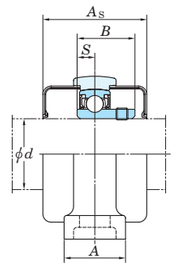
Shaft Dia. mm	Dimensions inch / mm											Standard				Mass	Basic Load Ratings kN		Factor	With Pressed Stainless Steel Covers				
												Unit No.	Housing No.	Bearing No.						Unit No.		Dimension mm inch		Mass
d	H	L	A	J	N	H_1	H_2	H_3	L_1	B	S					kg	C_r	C_{0r}	f_0	Open Ends Type	Closed End Type	A_s		kg
20	1 3/16	3	1 3/16	2 3/64		13/32	2 3/8	1/2	7/8	1.220	0.500	UCSPA204H1S6	SPA204H1	UC204S6		0.46	10.9	5.35	13.2	UCSPA204H1CS6	UCSPA204H1CDS6	45	1 25/32	0.46
	30.2	76	30	52	M10×1.5	10	60	13	22	31	12.7													
25	1 7/16	3 5/16	1 3/16	2 13/64		15/32	2 23/32	1/2	15/16	1.343	0.563	UCSPA205H1S6	SPA205H1	UC205S6		0.63	11.9	6.3	13.9	UCSPA205H1CS6	UCSPA205H1CDS6	49	1 15/16	0.63
	36.5	84	30	56	M10×1.5	12	69	13	24	34.1	14.3													
30	1 11/16	3 11/16	1 13/32	2 19/32		15/32	3 3/16	23/32	1 3/32	1.500	0.626	UCSPA206H1S6	SPA206H1	UC206S6		0.91	16.5	9.05	13.9	UCSPA206H1CS6	UCSPA206H1CDS6	53	2 3/32	0.91
	42.9	94	36	66	M14×2	12	81	18	28	38.1	15.9													
35	1 7/8	3 11/32	1 1/2	3 5/32		1/2	3 19/32	25/32	1 3/16	1.689	0.689	UCSPA207H1S6	SPA207H1	UC207S6		1.3	21.8	12.3	13.9	UCSPA207H1CS6	UCSPA207H1CDS6	60	2 3/8	1.3
	47.6	110	38	80	M14×2	13	91	20	30	42.9	17.5													
40	1 15/16	4 9/16	1 9/16	3 5/16		1/2	3 13/16	25/32	1 1/4	1.937	0.748	UCSPA208H1S6	SPA208H1	UC208S6		1.5	24.8	14.3	14.0	UCSPA208H1CS6	UCSPA208H1CDS6	69	2 23/32	1.5
	49.2	116	40	84	M14×2	13	97	20	32	49.2	19													

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 nipple is A-1/4-28UNFN12.
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

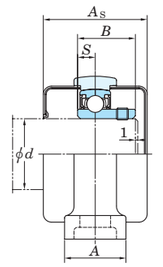
USP-S6
Cylindrical bore (with set screws)
d 10 ~ 30 mm



Open Ends Type



Closed End Type



Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs}) and variations of tolerance of distance between centers of bolt holes (Δ_{Js})

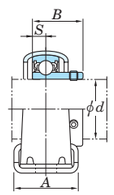
Unit : mm

Housing No.	Δ_{Hs}	Δ_{Js}
SP000~SP006	±0.15	±0.3

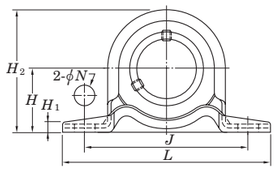
Shaft Dia. mm	Dimensions inch / mm										Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.		Mass	Basic Load Ratings kN		Factor	With Rubber Coated Covers Unit No.		Dimension mm / inch		Mass
d	H	L	A	J	N	H_1	H_2	L_1	B	S						kg	C_r	C_{0r}	f_0	Open Ends Type	Closed End Type	A_s		kg
10	45/64 18	2 5/8 67	5/8 16	2 3/32 53	9/32 7	3/16 5	1 3/8 35	23/32 18	0.591 15	0.197 5	1/4 M6	**USP000S6**	SP000	SU000S6		0.076	4.55	3.9	1.55	USP000CS6	USP000CDS6	29	1 5/32	0.076
12	3/4 19	2 25/32 71	5/8 16	2 7/32 56	9/32 7	3/16 5	1 15/32 37	23/32 18.5	0.591 15	0.197 5	1/4 M6	**USP001S6**	SP001	SU001S6		0.08	5.10	4.3	1.9	USP001CS6	USP001CDS6	29	1 5/32	0.08
15	55/64 22	3 5/32 80	5/8 16	2 15/32 63	9/32 7	1/4 6	1 11/16 42.5	13/16 20.5	0.650 16.5	0.217 5.5	1/4 M6	**USP002S6**	SP002	SU002S6		0.11	5.60	4.7	2.25	USP002CS6	USP002CDS6	31	1 7/32	0.11
17	15/16 24	3 11/32 85	23/32 18	2 5/8 67	9/32 7	1/4 6	1 13/16 46	13/16 21	0.689 17.5	0.236 6	1/4 M6	**USP003S6**	SP003	SU003S6		0.14	6.00	5.1	2.6	USP003CS6	USP003CDS6	33	1 5/16	0.14
20	1 7/64 28	3 15/16 100	25/32 20	3 5/32 80	13/32 10	5/16 8	2 5/32 54.5	31/32 25	0.827 21	0.276 7	5/16 M8	**USP004S6**	SP004	SU004S6		0.23	9.40	7.9	4	USP004CS6	USP004CDS6	38	1 1/2	0.23
25	1 17/64 32	4 13/32 112	25/32 20	3 17/32 90	13/32 10	11/32 9	2 13/32 61	1 3/32 27.5	0.866 22	0.276 7	5/16 M8	**USP005S6**	SP005	SU005S6		0.28	10.1	8.5	4.65	USP005CS6	USP005CDS6	40	1 9/16	0.28
30	1 27/64 36	5 3/16 132	1 1/32 26	4 3/16 106	1/2 13	13/32 10	2 23/32 69	1 11/32 34	0.965 24.5	0.295 7.5	3/8 M10	**USP006S6**	SP006	SU006S6		0.43	13.2	11.2	6.6	USP006CS6	USP006CDS6	44	1 23/32	0.43

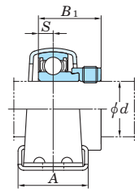
Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See **Table 10.5** in P.51.)
2. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

SBPP
Cylindrical bore
(with set screws)
SAPP
Cylindrical bore
(with eccentric locking collar)
d 12 ~ 30 mm



SBPP





SAPP

Variations of tolerance of distance between centers of bolt holes (Δ_{Js}) and variations of tolerance of bolt hole diameter (Δ_{Ns})

Unit : mm

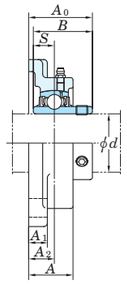
Housing No.	Δ_{Js}	Δ_{Ns}
PP203~PP206	±0.4	±0.5

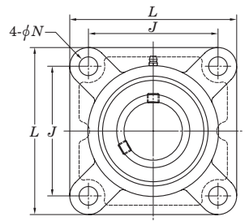
Shaft Dia mm	Shaft Dia inch	Dimensions inch / mm										Bolt Size inch / mm	Unit No.	Bearing No.		Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN		Factor	Mass kg	
d		H	L	A	J	N	H_1	H_2	S	SBPP B	SAPP B_1								C_r	C_{0r}	f_0	SBPP	SAPP
12													**SBPP201**	SB201		**SAPP201**	SA201						
	1/2	7/8	3 3/8	31/32	2 43/64	3/8	1/8	1 23/32	0.236	0.866	1.122	5/16	**SBPP201-8**	SB201-8		**SAPP201-8**	SA201-8						
15		22.2	86	25	68	9.5	3.2	43.8	6	22	28.5	M8	**SBPP202**	SB202		**SAPP202**	SA202	PP203	9.55	4.80	13.2	0.16	0.19
	5/8												**SBPP202-10**	SB202-10		**SAPP202-10**	SA202-10						
17													**SBPP203**	SB203		**SAPP203**	SA203						
20	3/4	1	3 27/32	1 1/4	2 63/64	3/8	1/8	2	0.276	0.984	1.161	5/16	**SBPP204-12**	SB204-12		**SAPP204-12**	SA204-12	PP204	12.8	6.65	13.2	0.23	0.23
		25.4	98	32	76	9.5	3.2	50.5	7	25	29.5	M8	**SBPP204**	SB204		**SAPP204**	SA204						
	7/8												**SBPP205-14**	SB205-14		**SAPP205-14**	SA205-14						
25	15/16	1 1/8	4 1/4	1 1/4	3 25/64	29/64	5/32	27/32	0.295	1.063	1.201	3/8	**SBPP205-15**	SB205-15		**SAPP205-15**	SA205-15	PP205	14.0	7.85	13.9	0.28	0.32
		28.6	108	32	86	11.5	4	56.6	7.5	27	30.5	M10	**SBPP205**	SB205		**SAPP205**	SA205						
	1												**SBPP205-16**	SB205-16		**SAPP205-16**	SA205-16						
	1 1/8												**SBPP206-18**	SB206-18		**SAPP206-18**	SA206-18						
30		15/16	4 19/32	1 1/2	3 3/4	29/64	5/32	2 5/8	0.315	1.181	1.335	3/8	**SBPP206**	SB206		**SAPP206**	SA206	PP206	19.5	11.3	13.9	0.47	0.50
	13/16	33.3	117	38	95	11.5	4	66.3	8	30	33.9	M10	**SBPP206-19**	SB206-19		**SAPP206-19**	SA206-19						
	1 1/4												**SBPP206-20**	SB206-20		**SAPP206-20**	SA206-20						

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

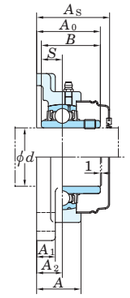
Koyo

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

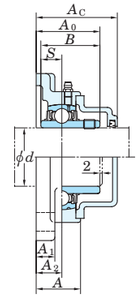




With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit : mm

Housing No.			Δ_{A2s}	X
F204~F210	FX05~FX10	F305~F310	±0.5	0.7
F211~F218	FX11~FX20	F311~F328	±0.8	1

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

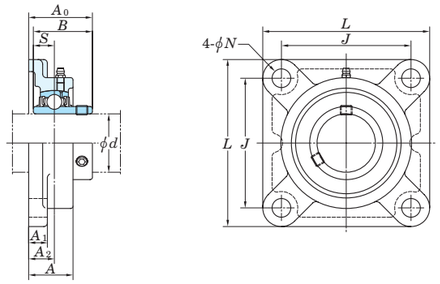
Unit : mm

Housing No.			Δ_{Ns}
F204~F218	FX05~FX18	F305~F315	±0.2
	FX20	F316~F328	±0.3

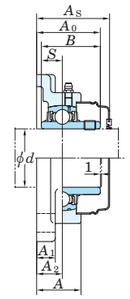
Shaft Dia. mm / inch d	Dimensions inch / mm L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.		Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_c	Mass kg
12											UCF201		UC201		0.64				UCF201C	UCF201D	37 1 15/32	0.64	–	–	– –	–
	1/2										UCF201-8		UC201-8		0.64				–	–	– –	–	–	–	– –	–
15											UCF202		UC202		0.62				UCF202C	UCF202D	37 1 15/32	0.62	–	–	– –	–
	5/8	3 3/8	1	2 33/64	15/32	7/16	19/32	1 5/16	1.220	0.500	UCF202-10	F204	UC202-10		0.62	12.8	6.65	13.2	–	–	– –	–	–	–	– –	–
17		86	25.5	64	12	11	15	33.3	31	12.7	UCF203		UC203		0.61				UCF203C	UCF203D	37 1 15/32	0.61	–	–	– –	–
	3/4										UCF204-12		UC204-12		0.61				–	–	– –	–	–	–	– –	–
20											UCF204		UC204		0.59				UCF204C	UCF204D	37 1 15/32	0.59	UCF204FC	UCF204FD	46 1 13/16	0.74
	7/8										UCF205-14		UC205-14		0.83				–	–	– –	–	–	–	– –	–
	15/16	3 3/4	1 1/16	2 3/4	15/32	1/2	5/8	1 13/32	1.343	0.563	UCF205-15	F205	UC205-15		0.83	14.0	7.85	13.9	–	–	– –	–	–	–	– –	–
		95	27	70	12	13	16	35.8	34.1	14.3	UCF205		UC205		0.83				UCF205C	UCF205D	40 1 9/16	0.83	UCF205FC	UCF205FD	49 1 15/16	1.0
25	1										UCF205-16		UC205-16		0.83				–	–	– –	–	–	–	– –	–
		4 1/4	1 3/16	3 17/64	15/32	1/2	45/64	1 19/32	1.500	0.626	UCFX05	FX05	UCX05		1.2	19.5	11.3	13.9	UCFX05C	UCFX05D	44 1 23/32	1.2	–	–	– –	–
	1	108	30	83	12	13	18	40.2	38.1	15.9	UCFX05-16		UCX05-16		1.2				–	–	– –	–	–	–	– –	–
		4 11/32	1 5/32	3 5/32	5/8	1/2	5/8	1 17/32	1.496	0.591	UCF305	F305	UC305		1.3	21.2	10.9	12.6	–	–	– –	–	UCF305C	UCF305D	54 2 1/8	1.6
	1	110	29	80	16	13	16	39	38	15	UCF305-16		UC305-16		1.3				–	–	– –	–	–	–	– –	–
	1 1/8										UCF206-18		UC206-18		1.1				–	–	– –	–	–	–	– –	–
		4 1/4	1 7/32	3 17/64	15/32	1/2	45/64	1 19/32	1.500	0.626	UCF206	F206	UC206		1.1	19.5	11.3	13.9	UCF206C	UCF206D	44 1 23/32	1.1	UCF206FC	UCF206FD	53 2 3/32	1.4
	1 3/16	108	31	83	12	13	18	40.2	38.1	15.9	UCF206-19		UC206-19		1.1				–	–	– –	–	–	–	– –	–
30	1 1/4										UCF206-20		UC206-20		1.1				–	–	– –	–	–	–	– –	–
		4 19/32	1 11/32	3 5/8	5/8	9/16	3/4	1 3/4	1.689	0.689	UCFX06	FX06	UCX06		1.6	25.7	15.4	13.9	UCFX06C	UCFX06D	49 1 15/16	1.6	–	–	– –	–
	1 3/16	117	34	92	16	14	19	44.4	42.9	17.5	UCFX06-19		UCX06-19		1.6				–	–	– –	–	–	–	– –	–
	1 1/4										UCFX06-20		UCX06-20		1.6				–	–	– –	–	–	–	– –	–
	–	4 29/32	1 1/4	3 47/64	5/8	19/32	45/64	1 23/32	1.693	0.669	UCF306	F306	UC306		1.9	26.7	15.0	13.3	–	–	– –	–	UCF306C	UCF306D	59 2 5/16	2.2
		125	32	95	16	15	18	44	43	17																
	1 1/4										UCF207-20		UC207-20		1.5				–	–	– –	–	–	–	– –	–
	1 5/16	4 19/32	1 11/32	3 5/8	35/64	19/32	3/4	1 3/4	1.689	0.689	UCF207-21		UC207-21		1.5				–	–	– –	–	–	–	– –	–
	1 3/8										UCF207-22	F207	UC207-22		1.5	25.7	15.4	13.9	–	–	– –	–	–	–	– –	–
		117	34	92	14	15	19	44.4	42.9	17.5	UCF207		UC207		1.5				UCF207C	UCF207D	49 1 15/16	1.5	UCF207FC	UCF207FD	58 2 9/32	1.9
35	1 7/16										UCF207-23		UC207-23		1.5				–	–	– –	–	–	–	– –	–
	1 3/8										UCFX07-22		UCX07-22		2.0				–	–	– –	–	–	–	– –	–
		5 1/8	1 1/2	4 1/64	5/8	9/16	53/64	2 1/32	1.937	0.748	UCFX07	FX07	UCX07		2.0	29.1	17.8	14.0	UCFX07C	UCFX07D	55 2 5/32	2.0	–	–	– –	–
	1 7/16	130	38	102	16	14	21	51.2	49.2	19	UCFX07-23		UCX07-23		2.0				–	–	– –	–	–	–	– –	–
	–	5 5/16	1 13/32	3 15/16	3/4	5/8	25/32	1 15/16	1.890	0.748	UCF307	F307	UC307		2.3	33.4	19.3	13.2	–	–	– –	–	UCF307C	UCF307D	64 2 17/32	2.7
		135	36	100	19	16	20	49	48	19																
	1 1/2										UCF208-24		UC208-24		1.9				–	–	– –	–	–	–	– –	–
	1 9/16	5 1/8	1 13/32	4 1/64	5/8	19/32	53/64	2 1/32	1.937	0.748	UCF208-25	F208	UC208-25		1.9	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
		130	36	102	16	15	21	51.2	49.2	19	UCF208		UC208		1.9				UCF208C	UCF208D	55 2 5/32	1.9	UCF208FC	UCF208FD	64 2 17/32	2.3
40	1 1/2										UCFX08-24		UCX08-24		2.4				–	–	– –	–	–	–	– –	–
		5 13/32	1 9/16	4 9/64	3/4	9/16	55/64	2 1/16	1.937	0.748	UCFX08	FX08	UCX08		2.4	34.1	21.3	14.0	UCFX08C	UCFX08D	56 2 7/32	2.4	–	–	– –	–
	1 1/2	5 29/32	1 9/16	4 13/32	3/4	21/32	29/32	2 7/32	2.047	0.748	UCF308-24	F308	UC308-24		3.1	40.7	24.0	13.2	–	–	– –	–	–	–	– –	–
		150	40	112	19	17	23	56	52	19	UCF308		UC308		3.1				–	–	– –	–	UCF308C	UCF308D	71 2 25/32	3.6
	1 5/8										UCF209-26		UC209-26		2.2				–	–	– –	–	–	–	– –	–
	1 11/16	5 13/32	1 1/2	4 9/64	5/8	5/8	55/64	2 1/16	1.937	0.748	UCF209-27	F209	UC209-27		2.2	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
	1 3/4	137	38	105	16	16	22	52.2	49.2	19	UCF209-28		UC209-28		2.2				–	–	– –	–	–	–	– –	–
45											UCF209		UC209		2.2				UCF209C	UCF209D	56 2 7/32	2.2	UCF209FC	UCF209FD	66 2 19/32	2.6
	1 3/4	5 5/8	1 9/16	4 3/8	3/4	9/16	29/32	2 3/16	2.031	0.748	UCFX09-28	FX09	UCX09-28		2.7	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
		143	40	111	19	14	23	55.6	51.6	19	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 nipples are shown below.
A-1/4-28UNF ..... 201~210, X05~X09, 305~308
A-PT1/8 ..... 211~218, X10~X20, 309~328
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

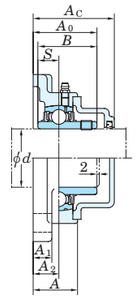
UCF
Cylindrical bore (with set screws)
d (45) ~ (75) mm



With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit : mm

Housing No.			Δ_{A2s}	X
F204~F210	FX05~FX10	F305~F310	±0.5	0.7
F211~F218	FX11~FX20	F311~F328	±0.8	1

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

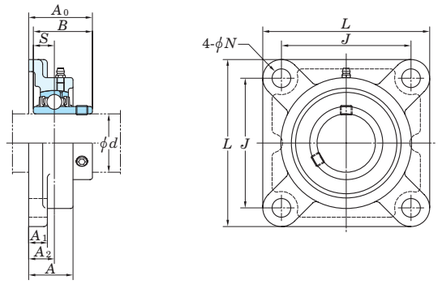
Unit : mm

Housing No.			Δ_{Ns}
F204~F218	FX05~FX18	F305~F315	±0.2
	FX20	F316~F328	±0.3

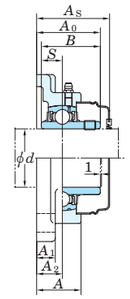
Shaft Dia. mm / inch d	Dimensions inch / mm L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.		Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_c	Mass kg
45	1 3/4	6 5/16	1 23/32	4 59/64	3/4	23/32	63/64	2 3/8	2.244	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	F210	UC210-30		2.5	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
	1 15/16	5 5/8	1 9/16	4 3/8	5/8	5/8	55/64	2 5/32	2.031	0.748	1/2	UCF210-31		UC210-31		2.5				–	–	– –	–	–	–	– –	–
		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											UCFX10-31	FX10	UCX10-31		3.7	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
		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		UCX10		3.7				UCFX10C	UCFX10D	64 2 17/32	3.7	–	–	– –	–
	2	162	44	130	19	20	26	59.4	55.6	22.2	M16	UCFX10-32		UCX10-32		3.7				–	–	– –	–	–	–	– –	–
	–	6 7/8	1 7/8	5 13/64	29/32	3/4	1 7/64	2 5/8	2.402	0.866	3/4	UCF310	F310	UC310		5.1	62.0	38.3	13.2	–	–	– –	–	UCF310C	UCF310D	83 3 9/32	5.9
		175	48	132	23	19	28	67	61	22	M20																
55	2											UCF211-32	F211	UC211-32		3.4	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
	2 1/8	6 3/8	1 11/16	5 1/8	3/4	23/32	63/64	2 5/16	2.189	0.874	5/8	UCF211-34		UC211-34		3.4				–	–	– –	–	–	–	– –	–
		162	43	130	19	18	25	58.4	55.6	22.2	M16	UCF211		UC211		3.4				UCF211C	UCF211D	63 2 15/32	3.4	UCF211FC	UCF211FD	74.5 2 15/16	4.0
	2 3/16											UCF211-35		UC211-35		3.4				–	–	– –	–	–	–	– –	–
		6 7/8	1 15/16	5 5/8	3/4	25/32	1 9/64	2 23/32	2.563	1.000	5/8	UCFX11	FX11	UCX11		4.9	52.4	36.2	14.4	UCFX11C	UCFX11D	73 2 7/8	4.9	–	–	– –	–
	2 3/16											UCFX11-35		UCX11-35		4.9				–	–	– –	–	–	–	– –	–
	2 1/4	175	49	143	19	20	29	68.7	65.1	25.4	M16	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	F311	UC311-32		5.6	71.6	45.0	13.2	–	–	– –	–	–	–	– –	–
		185	52	140	23	20	30	71	66	25	M20	UCF311		UC311		5.6				–	–	– –	–	UCF311C	UCF311D	87 3 7/16	6.5
60	2 1/4											UCF212-36	F212	UC212-36		4.2	52.4	36.2	14.4	–	–	– –	–	–	–	– –	–
		6 7/8	1 7/8	5 5/8	3/4	23/32	1 9/64	2 23/32	2.563	1.000	5/8	UCF212		UC212		4.2				UCF212C	UCF212D	73 2 7/8	4.2	UCF212FC	UCF212FD	86 3 3/8	5.0
	2 3/8	175	48	143	19	18	29	68.7	65.1	25.4	M16	UCF212-38		UC212-38		4.2				–	–	– –	–	–	–	– –	–
	2 7/16											UCF212-39		UC212-39		4.2				–	–	– –	–	–	–	– –	–
		7 3/8	2 5/16	5 55/64	3/4	13/16	1 11/32	2 29/32	2.563	1.000	5/8	UCFX12	FX12	UCX12		5.7	57.2	40.1	14.4	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		UCX12-39		5.7				–	–	– –	–	–	–	– –	–
	–	7 11/16	2 7/32	5 29/32	29/32	7/8	1 19/64	3 1/16	2.795	1.024	3/4	UCF312	F312	UC312		6.9	81.9	52.2	13.2	–	–	– –	–	UCF312C	UCF312D	95 3 3/4	8.1
		195	56	150	23	22	33	78	71	26	M20																
65	2 1/2	7 3/8	1 31/32	5 55/64	3/4	7/8	1 3/16	2 3/4	2.563	1.000	5/8	UCF213-40	F213	UC213-40		5.2	57.2	40.1	14.4	–	–	– –	–	–	–	– –	–
		187	50	149	19	22	30	69.7	65.1	25.4	M16	UCF213		UC213		5.2				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	FX13	UCX13-40		6.3	62.2	44.1	14.5	–	–	– –	–	–	–	– –	–
		187	59	149	19	21	34	78.4	74.6	30.2	M16	UCFX13		UCX13		6.3				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	F313	UC313-40		7.8	92.7	59.9	13.2	–	–	– –	–	–	–	– –	–
		208	58	166	23	22	33	78	75	30	M20	UCF313		UC313		7.8				–	–	– –	–	UCF313C	UCF313D	94 3 11/16	8.9
70	2 3/4	7 19/32	2 1/8	5 63/64	3/4	7/8	1 7/32	2 31/32	2.937	1.189	5/8	UCF214-44	F214	UC214-44		5.9	62.2	44.1	14.5	–	–	– –	–	–	–	– –	–
		193	54	152	19	22	31	75.4	74.6	30.2	M16	UCF214		UC214		5.9				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	FX14	UCX14-44		7.0	67.4	48.3	14.5	–	–	– –	–	–	–	– –	–
		197	60	152	23	22	37	81.5	77.8	33.3	M20	UCFX14		UCX14		7.0				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	F314	UC314-44		10.1	104	68.2	13.2	–	–	– –	–	–	–	– –	–
		226	61	178	25	25	36	81	78	33	M22	UCF314		UC314		10.1				–	–	– –	–	UCF314C	UCF314D	98 3 27/32	11.2
75	2 15/16											UCF215-47	F215	UC215-47		6.4	67.4	48.3	14.5	–	–	– –	–	–	–	– –	–
		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		UC215		6.4				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				–	–	– –	–	–	–	– –	–
	2 15/16											UCFX15-47	FX15	UCX15-47		8.4	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
		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				UCFX15C	UCFX15D	94 3 11/16	8.4	–	–	– –	–
	3	197	68	152	23	24	40	89.3	82.6	33.3	M20	UCFX15-48		UCX15-48		8.4				–	–	– –	–	–	–	– –	–

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF ..... 201~210, X05~X09, 305~308
A-PT1/8 ..... 211~218, X10~X20, 309~328
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

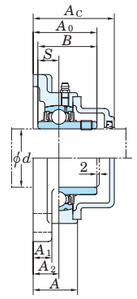
UCF
Cylindrical bore (with set screws)
d (75) ~ 140 mm



With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit : mm

Housing No.			Δ_{A2s}	X
F204~F210	FX05~FX10	F305~F310	±0.5	0.7
F211~F218	FX11~FX20	F311~F328	±0.8	1

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

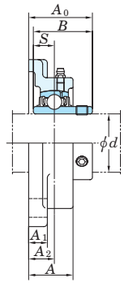
Unit : mm

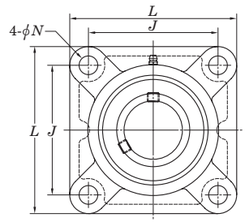
Housing No.			Δ_{Ns}
F204~F218	FX05~FX18	F305~F315	±0.2
	FX20	F316~F328	±0.3

Shaft Dia. mm / inch d	Dimensions inch / mm L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_c	Mass kg
75	2 15/16	9 9/32	2 19/32	7 1/4	63/64	31/32	1 17/32	3 1/2	3.228	1.260	7/8	UCF315-47		UC315-47	11.6										
		236	66	184	25	25	39	89	82	32	M22	UCF315	F315	UC315	11.6	113	77.2	13.2	–	–	–	–	UCF315C	UCF315D	106	4 3/16	12.9
	3											UCF315-48		UC315-48	11.6											
80	3 1/8	8 3/16	2 9/32	6 1/2	29/32	7/8	1 11/32	3 9/32	3.252	1.311	3/4	UCF216-50		UC216-50	7.3										
		208	58	165	23	22	34	83.3	82.6	33.3	M20	UCF216	F216	UC216	7.3	72.7	53.0	14.6	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	FX16	UCX16	9.4	84.0	61.9	14.5	UCFX16C	UCFX16D	96	3 25/32	9.4	–	–	–	–	–
		214	70	171	23	24	40	91.6	85.7	34.1	M20																
	–	9 27/32	2 11/16	7 23/32	1 7/32	1 1/16	1 1/2	3 17/32	3.386	1.339	1	UCF316	F316	UC316	12.8	123	86.7	13.3	–	–	–	–	UCF316C	UCF316D	107	4 7/32	14.2
		250	68	196	31	27	38	90	86	34	M27																
85	3 1/4	8 21/32	2 15/32	6 57/64	29/32	15/16	1 13/32	3 7/16	3.374	1.343	3/4	UCF217-52		UC217-52	8.9										
		220	63	175	23	24	36	87.6	85.7	34.1	M20	UCF217	F217	UC217	8.9	84.0	61.9	14.5	UCF217C	UCF217D	92	3 5/8	8.9	UCF217FC	UCF217FD	107	4 7/32	10.3
		8 7/16	2 3/4	6 47/64	29/32	15/16	1 9/16	3 25/32	3.780	1.563	3/4	UCFX17		UCX17	10.8				UCFX17C	UCFX17D	101	3 31/32	10.8	–	–	–	–	–
	3 7/16	214	70	171	23	24	40	96.3	96	39.7	M20	UCFX17-55	FX17	UCX17-55	10.8	96.1	71.5	14.5	–	–	–	–	–	–	–	–	–	–
	–	10 1/4	2 29/32	8 1/32	1 7/32	1 1/16	1 47/64	3 15/16	3.780	1.575	1	UCF317	F317	UC317	15.3	133	96.8	13.3	–	–	–	–	UCF317C	UCF317D	117	4 19/32	16.9
		260	74	204	31	27	44	100	96	40	M27																
90	3 1/2	9 1/4	2 11/16	7 23/64	29/32	31/32	1 9/16	3 25/32	3.780	1.563	3/4	UCF218-56		UC218-56	11.4										
		235	68	187	23	25	40	96.3	96	39.7	M20	UCF218	F218	UC218	11.4	96.1	71.5	14.5	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	FX18	UCX18	11.9	109	81.9	14.4	–	–	–	–	UCFX18C	UCFX18C	124	4 7/8	13.6
		214	76	171	23	24	45	106.1	104	42.9	M20																
	3 1/2	11 1/32	3	8 1/2	1 3/8	1 3/16	1 47/64	3 15/16	3.780	1.575	1 1/8	UCF318-56		UC318-56	18.9				–	–	–	–	–	–	–	–	–	–
		280	76	216	35	30	44	100	96	40	M30	UCF318	F318	UC318	18.9	143	107	13.3	–	–	–	–	UCF318C	UCF318D	119	4 11/16	20.8
95	–	11 13/32	3 11/16	8 31/32	1 3/8	1 3/16	2 21/64	4 3/4	4.055	1.614	1 1/8	UCF319	F319	UC319	21.6	153	119	13.3	–	–	–	–	UCF319C	UCF319D	140	5 1/2	23.8
		290	94	228	35	30	59	121	103	41	M30																
100		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		UCX20	19.4				–	–	–	–	UCFX20C	UCFX20D	152	5 31/32	21.6
	3 15/16	268	97	211	31	28	59	127.3	117.5	49.2	M27	UCFX20-63	FX20	UCX20-63	19.4	133	105	14.4	–	–	–	–	–	–	–	–	–	–
	4											UCFX20-64		UCX20-64	19.4				–	–	–	–	–	–	–	–	–	–
		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		UC320	25.8				–	–	–	–	UCF320C	UCF320D	146	5 3/4	28.6
	3 15/16	310	94	242	38	32	59	125	108	42	M33	UCF320-63	F320	UC320-63	25.8	173	141	13.2	–	–	–	–	–	–	–	–	–	–
	4											UCF320-64		UC320-64	25.8				–	–	–	–	–	–	–	–	–	–
105	–	12 7/32	3 11/16	9 17/32	1 1/2	1 1/4	2 21/64	5	4.409	1.732	1 1/4	UCF321	F321	UC321	30.2	184	153	13.2	–	–	–	–	UCF321C	UCF321D	148	5 13/16	33.2
		310	94	242	38	32	59	127	112	44	M33																
110	–	13 3/8	3 25/32	10 15/32	1 39/64	1 3/8	2 23/64	5 5/32	4.606	1.811	1 3/8	UCF322	F322	UC322	35.3	205	180	13.2	–	–	–	–	UCF322C	UCF322D	154	6 1/16	41.7
		340	96	266	41	35	60	131	117	46	M36																
120	–	14 9/16	4 11/32	11 27/64	1 39/64	1 9/16	2 9/16	5 1/2	4.961	2.008	1 3/8	UCF324	F324	UC324	47.3	207	185	13.5	–	–	–	–	UCF324C	UCF324D	163	6 13/32	52.1
		370	110	290	41	40	65	140	126	51	M36																
130	–	16 5/32	4 17/32	12 19/32	1 39/64	1 25/32	2 9/16	5 3/4	5.315	2.126	1 3/8	UCF326	F326	UC326	65.5	229	214	13.6	–	–	–	–	UCF326C	UCF326D	172	6 25/32	71.6
		410	115	320	41	45	65	146	135	54	M36																
140	–	17 23/32	4 29/32	13 25/32	1 39/64	2 5/32	2 61/64	6 11/32	5.709	2.323	1 3/8	UCF328	F328	UC328	93.4	253	246	13.6	–	–	–	–	UCF328C	UCF328D	186	7 5/16	101
		450	125	350	41	55	75	161	145	59	M36																

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF ..... 201~210, X05~X09, 305~308
A-PT1/8 ..... 211~218, X10~X20, 309~328
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

UCF-E
Cylindrical bore (with set screws)
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)

Unit : mm

Housing No.		Δ_{A2s}	X
F204E~F210E	FX05E~FX10E	±0.5	0.7
F211E~F217E	FX11E~FX17E	±0.8	1

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

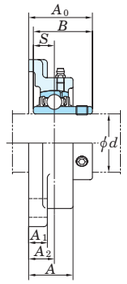
Unit : mm

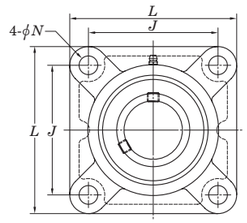
Housing No.		Δ_{Ns}
F204E~F217E	FX05E~FX17E	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12	1/2											UCF201E		UC201					0.64
												UCF201-8E		UC201-8					
15												UCF202E		UC202					0.62
	5/8	3 3/8	1	2 33/64	7/16	7/16	19/32	1 5/16	1.220	0.500	3/8	UCF202-10E	F204E	UC202-10		12.8	6.65	13.2	
		86	25.5	64	11	11	15	33.3	31	12.7									
17												UCF203E		UC203					0.61
	3/4											UCF204-12E		UC204-12					
20												UCF204E		UC204					0.59
	7/8											UCF205-14E		UC205-14					
	15/16	3 3/4	1 1/16	2 3/4	29/64	1/2	5/8	1 13/32	1.343	0.563	3/8	UCF205-15E	F205E	UC205-15		14.0	7.85	13.9	0.83
		95	27	70	11.5	13	16	35.8	34.1	14.3									
25	1											UCF205E		UC205					
												UCF205-16E		UC205-16					
	1	4 1/4	1 3/16	3 17/64	29/64	1/2	45/64	1 19/32	1.500	0.626	3/8	UCFX05E	FX05E	UCX05		19.5	11.3	13.9	1.2
		108	30	83	11.5	13	18	40.2	38.1	15.9		UCFX05-16E		UCX05-16					
	1 1/8											UCF206-18E		UC206-18					
		4 1/4	1 7/32	3 17/64	33/64	1/2	45/64	1 19/32	1.500	0.626	7/16	UCF206E	F206E	UC206		19.5	11.3	13.9	1.1
	1 3/16	108	31	83	13	13	18	40.2	38.1	15.9		UCF206-19E		UC206-19					
30	1 1/4											UCF206-20E		UC206-20					
		4 19/32	1 11/32	3 5/8	33/64	9/16	3/4	1 3/4	1.689	0.689	7/16	UCFX06E	FX06E	UCX06		25.7	15.4	13.9	1.6
	1 3/16	117	34	92	13	14	19	44.4	42.9	17.5		UCFX06-19E		UCX06-19					
	1 1/4											UCFX06-20E		UCX06-20					
	1 1/4											UCF207-20E		UC207-20					
	1 5/16											UCF207-21E		UC207-21					
	1 3/8	4 19/32	1 11/32	3 5/8	33/64	19/32	3/4	1 3/4	1.689	0.689	7/16	UCF207-22E	F207E	UC207-22		25.7	15.4	13.9	1.5
		117	34	92	13	15	19	44.4	42.9	17.5									
35												UCF207E		UC207					
	1 7/16											UCF207-23E		UC207-23					
	1 3/8											UCFX07-22E		UCX07-22					
		5 1/8	1 1/2	4 1/64	33/64	9/16	53/64	2 1/32	1.937	0.748	7/16	UCFX07E	FX07E	UCX07		29.1	17.8	14.0	2.0
	1 7/16	130	38	102	13	14	21	51.2	49.2	19		UCFX07-23E		UCX07-23					
	1 1/2											UCF208-24E		UC208-24					
	1 9/16	5 1/8	1 13/32	4 1/64	35/64	19/32	53/64	2 1/32	1.937	0.748	1/2	UCF208-25E	F208E	UC208-25		29.1	17.8	14.0	1.9
40		130	36	102	14	15	21	51.2	49.2	19									
												UCF208E		UC208					
	1 1/2	5 13/32	1 9/16	4 9/64	19/32	9/16	55/64	2 1/16	1.937	0.748	1/2	UCFX08-24E	FX08E	UCX08-24		34.1	21.3	14.0	2.4
		137	40	105	15	14	22	52.2	49.2	19		UCFX08E		UCX08					
45	1 3/4	5 5/8	1 9/16	4 3/8	19/32	9/16	29/32	2 3/16	2.031	0.748	1/2	UCFX09-28E	FX09E	UCX09-28		35.1	23.3	14.4	2.7
		143	40	111	15	14	23	55.6	51.6	19		UCFX09E		UCX09					
	1 15/16											UCFX10-31E		UCX10-31					
50		6 3/8	1 23/32	5 1/8	21/32	25/32	1 1/32	2 11/32	2.189	0.874	9/16	UCFX10E	FX10E	UCX10		43.4	29.4	14.4	3.7
	2	162	44	130	16.5	20	26	59.4	55.6	22.2		UCFX10-32E		UCX10-32					
	2											UCF211-32E		UC211-32					
	2 1/8	6 3/8	1 11/16	5 1/8	43/64	23/32	63/64	2 5/16	2.189	0.874	5/8	UCF211-34E	F211E	UC211-34		43.4	29.4	14.4	3.4
		162	43	130	17	18	25	58.4	55.6	22.2									
55	2 3/16											UCF211E		UC211					
												UCF211-35E		UC211-35					
	2 3/16	6 7/8	1 15/16	5 5/8	21/32	25/32	1 9/64	2 23/32	2.563	1.000	9/16	UCFX11E	FX11E	UCX11		52.4	36.2	14.4	4.9
	2 1/4	175	49	143	16.5	20	29	68.7	65.1	25.4		UCFX11-35E		UCX11-35					
												UCFX11-36E		UCX11-36					

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 nipples are shown below.
A-1/4-28UNF ..... 201~208, X05~X09
A-PT1/8 ..... 211~217, X10~X17
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

UCF-E
Cylindrical bore (with set screws)
d 60 ~ 85 mm





Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm L	A	J	N	A1	A2	A0	B	S	Bolt Size inch	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN Cr	Basic Load Ratings kN C0r	Factor f0	Mass kg
60	2 1/4	6 7/8	1 7/8	5 5/8	43/64	23/32	1 9/64	2 23/32	2.563	1.000	5/8	UCF212-36E UCF212E UCF212-38E UCF212-39E	F212E	UC212-36 UC212 UC212-38 UC212-39		52.4	36.2	14.4	4.2
	2 3/8 2 7/16	175	48	143	17	18	29	68.7	65.1	25.4									
	2 7/16	7 3/8 187	2 5/16 59	5 55/64 149	21/32 16.5	13/16 21	1 11/32 34	2 29/32 73.7	2.563 65.1	1.000 25.4	9/16	UCFX12E UCFX12-39E	FX12E	UCX12 UCX12-39		57.2	40.1	14.4	5.7
65	2 1/2	7 3/8 187	1 31/32 50	5 55/64 149	43/64 17	7/8 22	1 3/16 30	2 3/4 69.7	2.563 65.1	1.000 25.4	5/8	UCF213-40E UCF213E	F213E	UC213-40 UC213		57.2	40.1	14.4	5.2
	2 1/2	7 3/8 187	1 31/32 59	5 55/64 149	21/32 16.5	13/16 21	1 11/32 34	3 3/32 78.4	2.937 74.6	1.189 30.2	9/16	UCFX13-40E UCFX13E	FX13E	UCX13-40 UCX13		62.2	44.1	14.5	6.3
70	2 3/4	7 3/4 197	2 3/8 60	5 63/64 152	25/32 20	7/8 22	1 29/64 37	3 7/32 81.5	3.063 77.8	1.331 33.3	11/16	UCFX14-44E UCFX14E	FX14E	UCX14-44 UCX14		67.4	48.3	14.5	7.0
75	2 15/16 3	7 3/4 197	2 11/16 68	5 63/64 152	25/32 20	15/16 24	1 9/16 40	3 17/32 89.3	3.252 82.6	1.311 33.3	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 3/16 208	2 9/32 58	6 1/2 165	3/4 19	7/8 22	1 11/32 34	3 9/32 83.3	3.252 82.6	1.311 33.3	11/16	UCF216-50E UCF216E	F216E	UC216-50 UC216		72.7	53.0	14.6	7.3
	–	8 7/16 214	2 3/4 70	6 47/64 171	25/32 20	15/16 24	1 9/16 40	3 19/32 91.6	3.374 85.7	1.343 34.1	11/16	UCFX16E	FX16E	UCX16		84.0	61.9	14.5	9.4
85	3 1/4	8 21/32 220	2 15/32 63	6 57/64 175	3/4 19	15/16 24	1 13/32 36	3 7/16 87.6	3.374 85.7	1.343 34.1	11/16	UCF217-52E UCF217E	F217E	UC217-52 UC217		84.0	61.9	14.5	8.9
	3 7/16	8 7/16 214	2 3/4 70	6 47/64 171	25/32 20	15/16 24	1 9/16 40	3 25/32 96.3	3.780 96	1.563 39.7	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 nipples are shown below.
A-1/4-28UNF ..... 201~208, X05~X09
A-PT1/8 ..... 211~217, X10~X17

Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit : mm

Housing No.		Δ_{A2s}	X
F204E~F210E	FX05E~FX10E	±0.5	0.7
F211E~F217E	FX11E~FX17E	±0.8	1

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

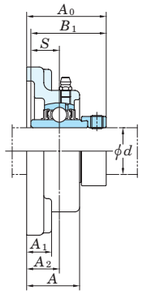
Unit : mm

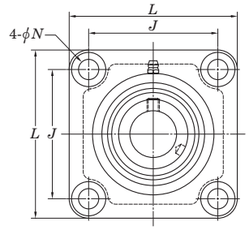
Housing No.		Δ_{Ns}
F204E~F217E	FX05E~FX17E	±0.2

3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

Koyo

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





Shaft Dia mm	Shaft Dia inch	Dimensions inch / mm L	A	J	N	A1	A2	A0	B1	S	Bolt Size inch	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN Cr	Basic Load Ratings kN C0r	Factor f0	Mass kg
12	1/2											NANF201		NA201					
												NANF201-8		NA201-8					
15												NANF202		NA202					
	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	NANF202-10	NF204	NA202-10		12.8	6.65	13.2	0.73
		86	29.5	64	11	15	19	45.6	43.7	17.1		NANF203		NA203					
17												NANF204-12		NA204-12					
	3/4											NANF204		NA204					
20																			
	7/8											NANF205-14		NA205-14					
	15/16	3 3/4	1 7/32	2 3/4	29/64	19/32	25/32	1 27/32	1.748	0.689	3/8	NANF205-15	NF205	NA205-15		14.0	7.85	13.9	0.95
25		95	31	70	11.5	15	20	46.9	44.4	17.5		NANF205		NA205					
	1											NANF205-16		NA205-16					
	1 1/8											NANF206-18		NA206-18					
30		4 1/4	1 11/32	3 17/64	33/64	5/8	53/64	2	1.906	0.720	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					
	1 1/4											NANF207-20		NA207-20					
	1 5/16											NANF207-21		NA207-21					
35	1 3/8	4 19/32	1 7/16	3 5/8	33/64	21/32	27/32	2 1/8	2.012	0.740	7/16	NANF207-22	NF207	NA207-22		25.7	15.4	13.9	1.8
		117	36.5	92	13	17	21.5	53.8	51.1	18.8		NANF207		NA207					
	1 7/16											NANF207-23		NA207-23					
	1 1/2											NANF208-24		NA208-24					
40	1 9/16	5 1/8	1 17/32	4 1/64	35/64	21/32	15/16	2 5/16	2.217	0.843	1/2	NANF208-25	NF208	NA208-25		29.1	17.8	14.0	2.2
		130	39	102	14	17	24	58.9	56.3	21.4		NANF208		NA208					
	1 5/8											NANF209-26		NA209-26					
45	1 11/16	5 13/32	1 9/16	4 9/64	5/8	23/32	15/16	2 5/16	2.217	0.843	9/16	NANF209-27	NF209	NA209-27		34.1	21.3	14.0	2.6
	1 3/4	137	40	105	16	18	24	58.9	56.3	21.4		NANF209-28		NA209-28					
												NANF209		NA209					
	1 7/8											NANF210-30		NA210-30					
50	1 15/16	5 5/8	1 27/32	4 3/8	5/8	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
		143	46.5	111	16	20	28.5	66.6	62.7	24.6		NANF210		NA210					
	2											NANF210-32		NA210-32					
	2											NANF211-32		NA211-32					
55	2 1/8	6 3/8	1 31/32	5 1/8	43/64	13/16	1 17/64	2 31/32	2.811	1.094	5/8	NANF211-34	NF211	NA211-34		43.4	29.4	14.4	4.1
		162	50	130	17	21	32	75.6	71.4	27.8		NANF211		NA211					
	2 3/16											NANF211-35		NA211-35					
	2 1/4											NANF212-36		NA212-36					
60		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 nipples are shown below.
A-1/4-28UNF ..... 201~210
A-PT1/8 ..... 211~212

Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit : mm

Housing No.	Δ_{A2s}	X
NF204~NF210	±0.5	0.7
NF211~NF212	±0.8	1

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

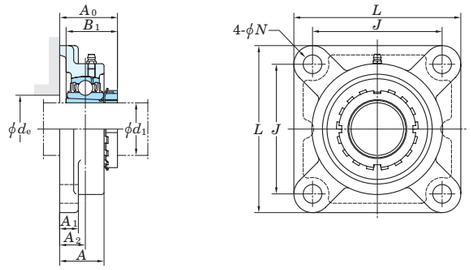
Unit : mm

Housing No.	Δ_{Ns}
NF204~NF212	±0.2

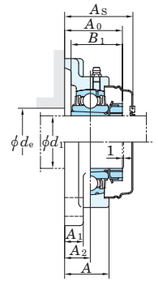
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

Koyo

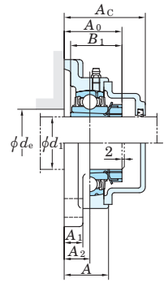
UKF
Tapered bore (with adapter)
d_1 20 ~ (50) mm



With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit : mm

Housing No.			Δ_{A2s}	X
F205~F210	FX05~FX10	F305~F310	±0.5	0.7
F211~F218	FX11~FX20	F311~F328	±0.8	1

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

Unit : mm

Housing No.			Δ_{Ns}
F205~F218	FX05~FX18	F305~F315	±0.2
	FX20	F316~F328	±0.3

Shaft Dia. mm / inch d_1	Dimensions inch / mm L	A	J	N	A_1	A_2	A_0 1)	B_1 1)	d_e (min.)	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Adapter 1) assembly No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_c	Mass kg
20	3/4	3 3/4	1 1/16	2 3/4	15/32	1/2	5/8	1 11/32(1 13/32)	1 5/32(1 3/8)	1 3/16	3/8	UKF205	F205	UK205		HE305X(HE2305X)	0.87	14.0	7.85	13.9	–	–	– –	–	–	–	–	–
		95	27	70	12	13	16	34.5(36)	29(35)	30	M10					H305X(H2305X)	0.87				UKF205C	UKF205D	40 1 9/16	0.87	UKF205FC	UKF205FD	49 1 15/16	1.1
	3/4	4 1/4	1 3/16	3 17/64	15/32	1/2	45/64	1 15/32	1 3/8	1 3/16	3/8	UKFX05	FX05	UKX05		HE2305X	1.2	19.5	11.3	13.9	–	–	– –	–	–	–	–	–
		108	30	83	12	13	18	37.5	35	30	M10					H2305X	1.2				UKFX05C	UKFX05D	44 1 23/32	1.2	–	–	– –	–
	3/4	4 11/32	1 5/32	3 5/32	5/8	1/2	5/8	1 15/32	1 3/8	–	1/2	UKF305	F305	UK305		HE2305X	1.4	21.2	10.9	12.6	–	–	– –	–	–	–	–	–
		110	29	80	16	13	16	37.5	35	–	M14					H2305X	1.4				–	–	– –	–	UKF305C	UKF305D	54 2 1/8	1.7
25	1	4 1/4	1 7/32	3 17/64	15/32	1/2	45/64	1 15/32(1 9/16)	1 7/32(1 1/2)	1 13/32	3/8	UKF206	F206	UK206		H306X(H2306X)	1.3	19.5	11.3	13.9	UKF206C	UKF206D	44 1 23/32	1.3	UKF206FC	UKF206FD	53 2 3/32	1.6
		108	31	83	12	13	18	37.5(39.5)	31(38)	36	M10					H306X(H2306X)	1.3				–	–	– –	–	–	–	– –	–
	1	4 19/32	1 11/32	3 5/8	5/8	9/16	3/4	1 9/16	1 1/2	1 13/32	1/2	UKFX06	FX06	UKX06		H2306X	1.6	25.7	15.4	13.9	UKFX06C	UKFX06D	49 1 15/16	1.6	–	–	– –	–
		117	34	92	16	14	19	40	38	36	M14					HE2306X	1.6				–	–	– –	–	–	–	– –	–
	1	4 29/32	1 1/4	3 47/64	5/8	19/32	45/64	1 5/8	1 1/2	–	1/2	UKF306	F306	UK306		H2306X	1.9	26.7	15.0	13.3	–	–	– –	–	UKF306C	UKF306D	59 2 5/16	2.2
		125	32	95	16	15	18	41	38	–	M14					HE2306X	1.9				–	–	– –	–	–	–	– –	–
30	1 1/8	4 19/32	1 11/32	3 5/8	35/64	19/32	3/4	1 5/8(1 11/16)	1 3/8(1 11/16)	1 5/8	7/16	UKF207	F207	UK207		HS307X(HS2307X)	1.6	25.7	15.4	13.9	–	–	– –	–	–	–	– –	–
		117	34	92	14	15	19	41(43)	35(43)	41	M12					H307X(H2307X)	1.6				UKF207C	UKF207D	49 1 15/16	1.6	UKF207FC	UKF207FD	58 2 9/32	2.0
	1 1/8	5 1/8	1 1/2	4 1/64	5/8	9/16	53/64	1 23/32	1 11/16	1 5/8	1/2	UKFX07	FX07	UKX07		HS2307X	2.0	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
		130	38	102	16	14	21	43.5	43	41	M14					H2307X	2.0				UKFX07C	UKFX07D	55 2 5/32	2.0	–	–	– –	–
	1 1/8	5 5/16	1 13/32	3 15/16	3/4	5/8	25/32	1 25/32	1 11/16	–	5/8	UKF307	F307	UK307		HS2307X	2.3	33.4	19.3	13.2	–	–	– –	–	–	–	– –	–
		135	36	100	19	16	20	45.5	43	–	M16					H2307X	2.3				–	–	– –	–	UKF307C	UKF307D	64 2 17/32	2.8
35	1 1/4 1 3/8	5 1/8	1 13/32	4 1/64	5/8	19/32	53/64	1 3/4(1 7/8)	1 13/32(1 13/16)	1 13/16 46 –	1/2	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	– – 2.3
		130	36	102	16	15	21	44.5(48)	36(46)		M14																	
	1 1/4 1 3/8	5 13/32	1 9/16	4 9/64	3/4	9/16	55/64	1 27/32	1 13/16	1 13/16	5/8	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	– – –	– – –	– – –	– – –
		137	40	105	19	14	22	46.5	46	46	M16																	
	1 1/4 1 3/8	5 29/32	1 9/16	4 13/32	3/4	21/32	29/32	2	1 13/16	–	5/8	UKF308	F308	UK308		HE2308X HS2308X H2308X	3.1 3.1 3.1	40.7	24.0	13.2	– – –	– – –	– – –	– – –	– – UKF308C	– – UKF308D	– – 71 2 25/32	– – 3.6
		150	40	112	19	17	23	50.5	46	–	M16																	
40	1 1/2 1 5/8	5 13/32	1 1/2	4 9/64	5/8	5/8	55/64	1 7/8(2)	1 17/32(1 31/32)	2 1/16	1/2	UKF209	F209	UK209		HE309X(HE2309X) H309X(H2309X) HS309X(HS2309X)	2.3 2.3 2.3	34.1	21.3	14.0	– UKF209C –	– UKF209D –	– 56 2 7/32 –	– 2.3 –	– UKF209FC –	– UKF209FD –	– 66 2 19/32 –	– 2.8 –
		137	38	105	16	16	22	47.5(51)	39(50)	52	M14																	
	1 1/2 1 5/8	5 5/8	1 9/16	4 3/8	3/4	9/16	29/32	1 29/32	1 31/32	2 1/16	5/8	UKFX09	FX09	UKX09		HE2309X H2309X HS2309X	2.7 2.7 2.7	35.1	23.3	14.4	– UKFX09C –	– UKFX09D –	– 60 2 3/8 –	– 2.7 –	– – –	– – –	– – –	– – –
		143	40	111	19	14	23	48.5	50	52	M16																	
	1 1/2 1 5/8	6 5/16	1 23/32	4 59/64	3/4	23/32	63/64	2 5/32	1 31/32	–	5/8	UKF309	F309	UK309		HE2309X H2309X HS2309X	4.1 4.1 4.1	48.9	29.5	13.3	– – –	– – –	– – –	– – –	– UKF309C –	– UKF309D –	– 76 3 –	– 4.7 –
		160	44	125	19	18	25	55	50	–	M16																	
45	1 3/4	5 5/8	1 9/16	4 3/8	5/8	5/8	55/64	1 29/32(2 1/16)	1 21/32(2 5/32)	2 9/32	1/2	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	– – 3.1
		143	40	111	16	16	22	48.5(52)	42(55)	58	M14																	
	1 3/4	6 3/8	1 23/32	5 1/8	3/4	25/32	1 1/32	2 3/32	2 5/32	2 9/32	5/8	UKFX10	FX10	UKX10		HE2310X H2310X	3.6 3.6	43.4	29.4	14.4	– UKFX10C	– UKFX10D	– – 64 2 17/32	– 3.6	– –	– –	– –	– –
		162	44	130	19	20	26	53.5	55	58	M16																	
	1 3/4	6 7/8	1 7/8	5 13/64	29/32	3/4	1 7/64	2 3/8	2 5/32	–	3/4	UKF310	F310	UK310		HE2310X H2310X	5.1 5.1	62.0	38.3	13.2	– –	– –	– –	– –	– UKF310C	– UKF310D	– 83	– 3 9/32	5.9
		175	48	132	23	19	28	60	55	–	M20																	
50	1 7/8 2	6 3/8	1 11/16	5 1/8	3/4	23/32	63/64	2 1/16(2 1/4)	1 25/32(2 5/16)	2 17/32	5/8	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 –	– 4.1 –
		162	43	130	19	18	25	52.5(57)	45(59)	64	M16																	

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

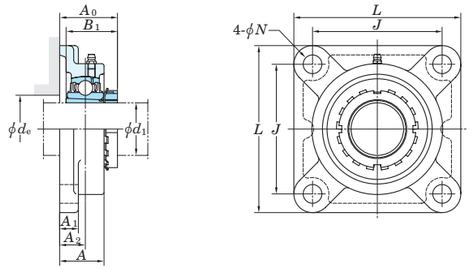
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF.....205~210, X05~X09, 305~308
A-PT1/8.....211~218, X10~X20, 309~328

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)

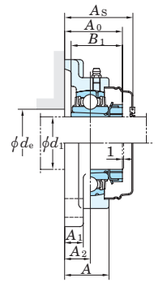
4. As for the triple-lip seal type product (205 is the double-lip seal type product), supplementary code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UKF206JL3 + H2306X, UK206L3 + H2306X)

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

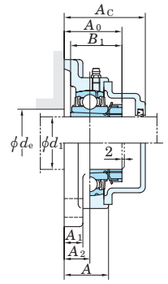
UKF
Tapered bore (with adapter)
d_1 (50) ~ 85 mm



With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit : mm

Housing No.			Δ_{A2s}	X
F205~F210	FX05~FX10	F305~F310	±0.5	0.7
F211~F218	FX11~FX20	F311~F328	±0.8	1

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

Unit : mm

Housing No.			Δ_{Ns}
F205~F218	FX05~FX18	F305~F315	±0.2
	FX20	F316~F328	±0.3

Shaft Dia. mm / inch d_1	Dimensions inch / mm L	A	J	N	A_1	A_2	A_0 1)	B_1 1)	d_e (min.)	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Adapter 1) assembly No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_c	Mass kg
50	1 7/8	6 7/8	1 15/16	5 5/8	3/4	25/32	1 9/64	2 1/4	2 5/16	2 17/32	5/8	UKFX11	FX11	UKX11	HS2311X	4.6				–	–	– –	–	–	–	– –	–
		175	49	143	19	20	29	57.5	59	64	M16				H2311X	4.6	52.4	36.2	14.4	UKFX11C	UKFX11D	73 2 7/8	4.6	–	–	– –	–
	2														HE2311X	4.6				–	–	– –	–	–	–	– –	–
	1 7/8	7 9/32	2 1/16	5 33/64	29/32	25/32	1 3/16	2 1/2	2 5/16	–	3/4	UKF311	F311	UK311	HS2311X	5.9				–	–	– –	–	–	–	– –	–
		185	52	140	23	20	30	63.5	59	–	M20				H2311X	5.9	71.6	45.0	13.2	–	–	– –	–	UKF311C	UKF311D	87 3 7/16	6.8
	2														HE2311X	5.9				–	–	– –	–	–	–	– –	–
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	UKF212	F212	UK212	HS312X(HS2312X)	4.1	52.4	36.2	14.4	–	–	– –	–	–	–	– –	–
		175	48	143	19	18	29	58.5(65.5)	47(62)	69	M16				H312X(H2313X)	4.1				UKF212C	UKF212D	73 2 7/8	4.1	UKF212FC	UKF212FD	86 3 3/8	4.9
	2 1/8	7 3/8	2 5/16	5 55/64	3/4	13/16	1 11/32	2 9/16	2 7/16	2 23/32	5/8	UKFX12	FX12	UKX12	HS2312X	5.5	57.2	40.1	14.4	–	–	– –	–	–	–	– –	–
		187	59	149	19	21	34	65	62	69	M16				H2312X	5.5				UKFX12C	UKFX12D	78 3 1/16	5.5	–	–	– –	–
	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	6.8	81.9	52.2	13.2	–	–	– –	–	–	–	– –	–
		195	56	150	23	22	33	69.5	62	–	M20				H2312X	6.8				–	–	– –	–	UKF312C	UKF312D	95 3 3/4	8.0
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)	5.1				–	–	– –	–	–	–	– –	–
		187	50	149	19	22	30	62(67.5)	50(65)	74	M16				H313X(H2313X)	5.1	57.2	40.1	14.4	UKF213C	UKF213D	74 2 29/32	5.1	UKF213FC	UKF213FD	87 3 7/16	6.0
	2 3/8														HS313X(HS2313X)	5.1				–	–	– –	–	–	–	– –	–
	2 1/4	7 3/8	2 5/16	5 55/64	3/4	13/16	1 11/32	2 11/16	2 9/16	2 29/32	5/8	UKFX13	FX13	UKX13	HE2313X	6.0				–	–	– –	–	–	–	– –	–
		187	59	149	19	21	34	68	65	74	M16				H2313X	6.0	62.2	44.1	14.5	UKFX13C	UKFX13D	83 3 9/32	6.0	–	–	– –	–
	2 3/8														HS2313X	6.0				–	–	– –	–	–	–	– –	–
	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	7.9				–	–	– –	–	–	–	– –	–
		208	58	166	23	22	33	71.5	65	–	M20				H2313X	7.9	92.7	59.9	13.2	–	–	– –	–	UKF313C	UKF313D	94 3 11/16	9.0
	2 3/8														HS2313X	7.9				–	–	– –	–	–	–	– –	–
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)	6.5	67.4	48.3	14.5	–	–	– –	–	–	–	– –	–
		200	56	159	19	22	34	69(74.5)	55(73)	85	M16				H315X(H2315X)	6.5				UKF215C	UKF215D	83 3 9/32	6.5	UKF215FC	UKF215FD	96 3 25/32	7.5
	2 1/2	7 3/4	2 11/16	5 63/64	29/32	15/16	1 9/16	3	2 7/8	3 11/32	3/4	UKFX15	FX15	UKX15	HE2315X	8.1	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
		197	68	152	23	24	40	76	73	85	M20				H2315X	8.1				UKFX15C	UKFX15D	94 3 11/16	8.1	–	–	– –	–
	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	11.7	113	77.2	13.2	–	–	– –	–	–	–	– –	–
		236	66	184	25	25	39	81.5	73	–	M22				H2315X	11.7				–	–	– –	–	UKF315C	UKF315D	106 4 3/16	13.1
70	2 3/4	8 3/16	2 3/32	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)	7.6	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
		208	58	165	23	22	34	72(78.5)	59(78)	90	M20				H316X(H2316X)	7.6				UKF216C	UKF216D	88 3 15/32	7.6	UKF216FC	UKF216FD	103 4 1/16	8.9
	2 3/4	8 7/16	2 3/4	6 47/64	29/32	15/16	1 9/16	3 1/8	3 1/16	3 17/32	3/4	UKFX16	FX16	UKX16	HE2316X	9.5	84.0	61.9	14.5	–	–	– –	–	–	–	– –	–
		214	70	171	23	24	40	79	78	90	M20				H2316X	9.5				UKFX16C	UKFX16D	96 3 25/32	9.5	–	–	– –	–
	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	12.9	123	86.7	13.3	–	–	– –	–	–	–	– –	–
		250	68	196	31	27	38	82.5	78	–	M27				H2316X	12.9				–	–	– –	–	UKF316C	UKF316D	107 4 7/32	14.5
75		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)	9.0	84.0	61.9	14.5	UKF217C	UKF217D	92 3 5/8	9.0	UKF217FC	UKF217FD	107 4 7/32	10.4
	3	220	63	175	23	24	36	76(82.5)	63(82)	96	M20				HE317X(HE2317X)	9.0				–	–	– –	–	–	–	– –	–
		8 7/16	2 3/4	6 47/64	29/32	15/16	1 9/16	3 7/32	3 7/32	3 25/32	3/4	UKFX17	FX17	UKX17	H2317X	10.4	96.1	71.5	14.5	UKFX17C	UKFX17D	101 3 31/32	10.4	–	–	– –	–
	3	214	70	171	23	24	40	82	82	96	M20				HE2317X	10.4				–	–	– –	–	–	–	– –	–
		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	15.2	133	96.8	13.3	–	–	– –	–	UKF317C	UKF317D	117 4 19/32	17.0
	3	260	74	204	31	27	44	92	82	–	M27				HE2317X	15.2				–	–	– –	–	–	–	– –	–
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	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																
	–	8 7/16	3	6 47/64	29/32	15/16	1 49/64	3 15/32	3 3/8	4 1/32	3/4	UKFX18	FX18	UKX18	H2318X	11.4	109	81.9	14.4	–	–	– –	–	UKFX18C	UKFX18D	124 4 7/8	13.3
		214	76	171	23	24	45	88	86	102	M20																
	–	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	–	–	– –	–	UKF318C	UKF318D	119 4 11/16	21.1
		280	76	216	35	30	44	92	86	–	M30																
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	21.9	153	119	13.3	–	–	– –	–	–	–	– –	–
		290	94	228	35	30	59	111	90	–	M30				H2319X	21.9				–	–	– –	–	UKF319C	UKF319D	140 5 1/2	24.3

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

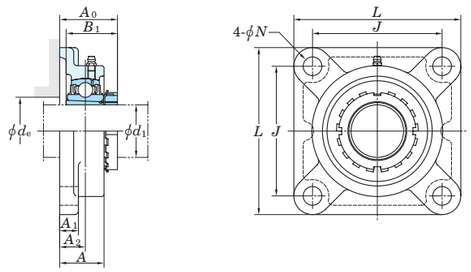
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF.....205~210, X05~X09, 305~308
A-PT1/8.....211~218, X10~X20, 309~328

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)

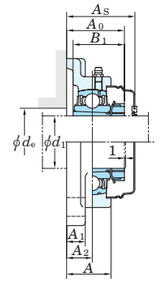
4. As for the triple-lip seal type product (205 is the double-lip seal type product), supplementary code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UKF206JL3 + H2306X, UK206L3 + H2306X)

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

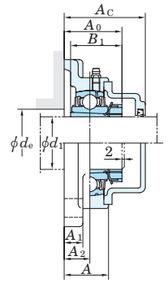
UKF
Tapered bore (with adapter)
d_1 90 ~ 125 mm



With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit : mm

Housing No.			Δ_{A2s}	X
F205~F210	FX05~FX10	F305~F310	±0.5	0.7
F211~F218	FX11~FX20	F311~F328	±0.8	1

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

Unit : mm

Housing No.			Δ_{Ns}
F205~F218	FX05~FX18	F305~F315	±0.2
	FX20	F316~F328	±0.3

Shaft Dia. mm / inch d_1		Dimensions inch / mm L	A	J	N	A_1	A_2	A_0 1)	B_1 1)	d_e (min.)	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Adapter 1) assembly No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_c	Mass kg
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	18.4	133	105	14.4	–	–	– –	–	–	–	– –	–
		268	97	211	31	28	59	106	97	112	M27				H2320X	18.4				–	–	– –	–	UKFX20C	UKFX20D	152 5 31/32	20.9
	3 1/2	12 7/32	3 11/16	9 17/32	1 1/2	1 1/4	2 21/64	4 7/16	3 13/16	–	1 1/4	UKF320	F320	UK320	HE2320X	25.4	173	141	13.2	–	–	– –	–	–	–	– –	–
		310	94	242	38	32	59	113	97	–	M33				H2320X	25.4				–	–	– –	–	UKF320C	UKF320D	146 5 3/4	28.5
100	4	13 3/8	3 25/32	10 15/32	1 39/64	1 3/8	2 23/64	4 23/32	4 1/8	–	1 3/8	UKF322	F322	UK322	H2322X	35.2	205	180	13.2	–	–	– –	–	–	–	– –	–
		340	96	266	41	35	60	120	105	–	M36				H2322X	35.2				–	–	– –	–	UKF322C	UKF322D	154 6 1/16	38.7
110	–	14 9/16	4 11/32	11 27/64	1 39/64	1 9/16	2 9/16	5 1/8	4 13/32	–	1 3/8	UKF324	F324	UK324	H2324	47.6	207	185	13.5	–	–	– –	–	–	–	– –	–
		370	110	290	41	40	65	130.5	112	–	M36													UKF324C	UKF324D	163 6 13/32	52.7
115	4 1/2	16 5/32	4 17/32	12 19/32	1 39/64	1 25/32	2 9/16	5 3/16	4 3/4	–	1 3/8	UKF326	F326	UK326	HE2326	65.3	229	214	13.6	–	–	– –	–	–	–	– –	–
		410	115	320	41	45	65	131.5	121	–	M36				H2326	65.3				–	–	– –	–	UKF326C	UKF326D	172 6 25/32	71.9
125	–	17 23/32	4 29/32	13 25/32	1 39/64	2 5/32	2 61/64	5 13/16	5 5/32	–	1 3/8	UKF328	F328	UK328	H2328	93.4	253	246	13.6	–	–	– –	–	UKF328C	UKF328D	186 7 5/16	102
		450	125	350	41	55	75	147.5	131	–	M36																

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

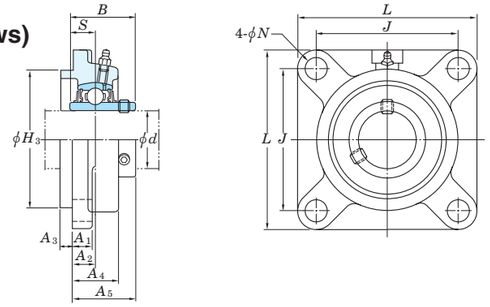
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF.....205~210, X05~X09, 305~308
A-PT1/8.....211~218, X10~X20, 309~328

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)

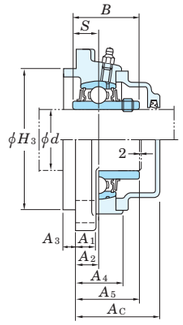
4. As for the triple-lip seal type product (205 is the double-lip seal type product), supplementary code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UKF206JL3 + H2306X, UK206L3 + H2306X)

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

UCFS
Cylindrical bore (with set screws)
d 25 ~ 140 mm



With Cast Iron Cover



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				
FS311~FS313	0 −0.063	±0.8	1	0.3 ~FS318
FS314~FS319	0 −0.072			FS319~
FS320~FS322	0 −0.081			0.4
FS324~FS328	0 −0.089			

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

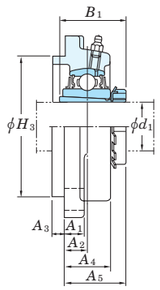
Unit : mm

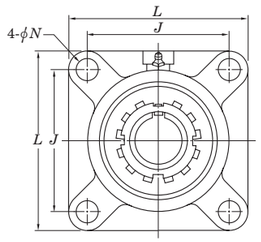
Housing No.	Δ_{Ns}
FS305~315	±0.2
FS316~328	±0.3

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm											Bolt Size inch	Bolt Size mm	Standard Unit No.	Standard Housing No.	Standard Bearing No.		Mass	Basic Load Ratings kN		Factor	With Cast Iron Cover Unit No.		With Cast Iron Cover Dimension		With Cast Iron Cover Mass
d		L	H_3	J	N	A_1	A_2	A_3	A_4	A_5	B	S							kg	C_r	C_{0r}	f_0	Open End Type	Closed End Type	mm	inch A_c	kg
25		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			1.4	21.2	10.9	12.6	UCFS305C	UCFS305D	47	1 27/32	1.7
	1	110	80	80	16	13	9	7	22	32	38	15	M14	**UCFS305-16**		UC305-16			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			3.4	40.7	24.0	13.2	–	–	–	–	–
		150	115	112	19	17	13	10	30	46	52	19	M16	**UCFS308**		UC308			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			4.4	48.9	29.5	13.3	–	–	–	–	–
		160	125	125	19	18	14	11	33	49	57	22	M16	**UCFS309**		UC309			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	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			6.1	71.6	45.0	13.2	–	–	–	–	–
		185	150	140	23	20	17	13	39	58	66	25	M20	**UCFS311**		UC311			6.1				UCFS311C	UCFS311D	74	2 29/32	7.0
60	–	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			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														
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			8.8	92.7	59.9	13.2	–	–	–	–	–
		208	175	166	23	22	15	18	40	60	75	30	M20	**UCFS313**		UC313			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			11.2	104	68.2	13.2	–	–	–	–	–
		226	185	178	25	25	18	18	43	63	78	33	M22	**UCFS314**		UC314			11.2				UCFS314C	UCFS314D	80	3 5/32	12.3
75	2 15/16	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			13.7	113	77.2	13.2	–	–	–	–	–
	3	236	200	184	25	25	21	18	48	71	82	32	M22	**UCFS315**		UC315			13.7				UCFS315C	UCFS315D	88	3 15/32	15.0
														UCFS315-48		UC315-48			13.7				–	–	–	–	–
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			21.3	143	107	13.3	–	–	–	–	–
		280	240	216	35	30	24	20	56	80	96	40	M30	**UCFS318**		UC318			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	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			29.5	173	141	13.2	UCFS320C	UCFS320D	126	4 31/32	32.3
	4	310	260	242	38	32	39	20	74	105	108	42	M33	**UCFS320-63**		UC320-63			29.5				–	–	–	–	–
														UCFS320-64		UC320-64			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														

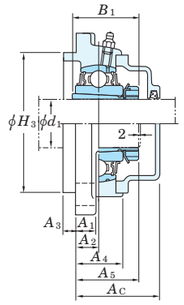
Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF ..... 305~308
A-PT1/8 ..... 309~328
3. As for the triple-lip seal type product, supplementary code L3 follows 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.

UKFS
Tapered bore (with adapter)
d_1 20 ~ 125 mm





With Cast Iron Cover



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				
FS311~FS313	0 −0.063	±0.8	1	0.3 ~FS318 FS319~ 0.4
FS315~FS319	0 −0.072			
FS320~FS322	0 −0.081			
FS324~FS328	0 −0.089			

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

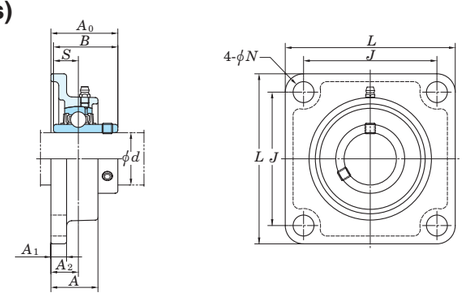
Unit : mm

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

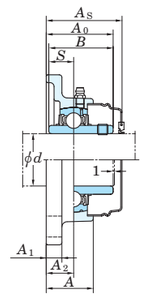
Shaft Dia. mm / inch d_1		Dimensions inch / mm L	H_3	J	N	A_1	A_2	A_3	A_4	A_5	B_1	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Adapter assembly No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Cast Iron Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_c		Mass kg
20	3/4	4 11/32	3.1496	3 5/32	5/8	1/2	23/64	9/32	7/8	1 3/16	1 3/8	1/2	UKFS305	FS305	UK305	HE2305X	1.4	21.2	10.9	12.6	–	–	–	–	–
		110	80	80	16	13	9	7	22	30.5	35	M14				H2305X	1.4				UKFS305C	UKFS305D	47	1 27/32	1.7
25	1	4 29/32	3.5433	3 47/64	5/8	19/32	25/64	5/16	15/16	1 5/16	1 1/2	1/2	UKFS306	FS306	UK306	H2306X	1.9	26.7	15.0	13.3	UKFS306C	UKFS306D	51	2	2.2
		125	90	95	16	15	10	8	24	33	38	M14				HE2306X	1.9				–	–	–	–	–
30	1 1/8	5 5/16	3.9370	3 15/16	3/4	5/8	7/16	23/64	1 1/16	1 7/16	1 11/16	5/8	UKFS307	FS307	UK307	HS2307X	2.4	33.4	19.3	13.2	–	–	–	–	–
		135	100	100	19	16	11	9	27	36.5	43	M16				H2307X	2.4				UKFS307C	UKFS307D	55	2 5/32	2.9
35	1 1/4	5 29/32	4.5276	4 13/32	3/4	21/32	33/64	25/64	1 3/16	1 19/32	1 13/16	5/8	UKFS308	FS308	UK308	HE2308X	3.4	40.7	24.0	13.2	–	–	–	–	–
	1 3/8															HS2308X	3.4				–	–	–	–	–
		150	115	112	19	17	13	10	30	40.5	46	M16				H2308X	3.4				UKFS308C	UKFS308D	61	2 13/32	3.9
40	1 1/2	6 5/16	4.9213	4 59/64	3/4	23/32	35/64	7/16	1 5/16	1 23/32	1 31/32	5/8	UKFS309	FS309	UK309	HE2309X	4.4	48.9	29.5	13.3	–	–	–	–	–
																H2309X	4.4				UKFS309C	UKFS309D	65	2 9/16	5.0
	1 5/8	160	125	125	19	18	14	11	33	44	50	M16				HS2309X	4.4				–	–	–	–	–
45	1 3/4	6 7/8	5.5118	5 13/64	29/32	3/4	5/8	15/32	1 13/32	1 7/8	2 5/32	3/4	UKFS310	FS310	UK310	HE2310X	5.3	62.0	38.3	13.2	–	–	–	–	–
		175	140	132	23	19	16	12	36	48	55	M20				H2310X	5.3				UKFS310C	UKFS310D	71	2 25/32	6.1
50	1 7/8	7 9/32	5.9055	5 33/64	29/32	25/32	43/64	33/64	1 17/32	2	2 5/16	3/4	UKFS311	FS311	UK311	HS2311X	6.3	71.6	45.0	13.2	–	–	–	–	–
																H2311X	6.3				UKFS311C	UKFS311D	74	2 29/32	7.2
	2	185	150	140	23	20	17	13	39	50.5	59	M20				HE2311X	6.3				–	–	–	–	–
55	2 1/8	7 11/16	6.2992	5 29/32	29/32	7/8	3/4	35/64	1 21/32	2 3/16	2 7/16	3/4	UKFS312	FS312	UK312	HS2312X	7.3	81.9	52.2	13.2	–	–	–	–	–
		195	160	150	23	22	19	14	42	55.5	62	M20				H2312X	7.3				UKFS312C	UKFS312D	81	3 3/16	8.5
60	2 1/4	8 3/16	6.8898	6 17/32	29/32	7/8	19/32	45/64	1 9/16	2 3/32	2 9/16	3/4	UKFS313	FS313	UK313	HE2313X	8.9	92.7	59.9	13.2	–	–	–	–	–
																H2313X	8.9				UKFS313C	UKFS313D	76	3	10.0
	2 3/8	208	175	166	23	22	15	18	40	53.5	65	M20				HS2313X	8.9				–	–	–	–	–
65	2 1/2	9 9/32	7.8740	7 1/4	63/64	31/32	53/64	45/64	1 7/8	2 1/2	2 7/8	7/8	UKFS315	FS315	UK315	HE2315X	13.4	113	77.2	13.2	–	–	–	–	–
		236	200	184	25	25	21	18	48	63.5	73	M22				H2315X	13.4				UKFS315C	UKFS315D	88	3 15/32	14.8
70	2 3/4	9 27/32	8.2677	7 23/32	1 7/32	1 1/16	45/64	25/32	1 7/8	2 15/32	3 1/16	1	UKFS316	FS316	UK316	HE2316X	15.1	123	86.7	13.3	–	–	–	–	–
		250	210	196	31	27	18	20	48	62.5	78	M27				H2316X	15.1				UKFS316C	UKFS316D	87	3 7/16	16.7
75	3	10 1/4	8.6614	8 1/32	1 7/32	1 1/16	15/16	25/32	2 1/8	2 27/32	3 7/32	1	UKFS317	FS317	UK317	H2317X	17.1	133	96.8	13.3	UKFS317C	UKFS317D	97	3 13/16	18.9
		260	220	204	31	27	24	20	54	72	82	M27				HE2317X	17.1				–	–	–	–	–
80	–	11 1/32	9.4488	8 1/2	1 3/8	1 3/16	15/16	25/32	2 7/32	2 27/32	3 3/8	1 1/8	UKFS318	FS318	UK318	H2318X	21.4	143	107	13.3	UKFS318C	UKFS318D	99	3 29/32	23.5
		280	240	216	35	30	24	20	56	72	86	M30													
85	3 1/4	11 13/32	9.8425	8 31/32	1 3/8	1 3/16	1 17/32	25/32	2 29/32	2 19/32	3 17/32	1 1/8	UKFS319	FS319	UK319	HE2319X	24.8	153	119	13.3	–	–	–	–	–
		290	250	228	35	30	39	20	74	91	90	M30				H2319X	24.8				UKFS319C	UKFS319D	120	4 23/32	26.2
90	3 1/2	12 7/32	10.2362	9 17/32	1 1/2	1 1/4	1 17/32	25/32	2 29/32	2 21/32	3 13/16	1 1/4	UKFS320	FS320	UK320	HE2320X	29.1	173	141	13.2	–	–	–	–	–
		310	260	242	38	32	39	20	74	93	97	M33				H2320X	29.1				UKFS320C	UKFS320D	126	4 31/32	32.2
100	4	13 3/8	11.8110	10 15/32	1 39/64	1 3/8	1 3/8	63/64	2 25/32	2 3/4	4 1/8	1 3/8	UKFS322	FS322	UK322	H2322X	38.6	205	180	13.2	UKFS322C	UKFS322D	129	5 3/32	42.1
		340	300	266	41	35	35	25	71	95	105	M36				HE2322X	38.6				–	–	–	–	–
110	–	14 9/16	12.9921	11 27/64	1 39/64	1 9/16	1 3/8	1 3/16	3 5/32	3 21/32	4 13/32	1 3/8	UKFS324	FS324	UK324	H2324	50.9	207	185	13.5	UKFS324C	UKFS324D	133	5 1/4	56.0
		370	330	290	41	40	35	30	80	100.5	112	M36													
115	4 1/2	16 5/32	14.1732	12 19/32	1 39/64	1 25/32	1 3/8	1 3/16	3 11/32	4	4 3/4	1 3/8	UKFS326	FS326	UK326	HE2326	67.5	229	214	13.6	–	–	–	–	–
		410	360	320	41	45	35	30	85	101.5	121	M36				H2326	67.5				UKFS326C	UKFS326D	142	5 29/32	74.1
125	–	17 23/32	15.7480	13 25/32	1 39/64	2 5/32	1 49/64	1 3/16	3 3/4	4 5/8	5 5/32	1 3/8	UKFS328	FS328	UK328	H2328	94.0	253	246	13.6	UKFS328C	UKFS328D	156	6 5/32	102
		450	400	350	41	55	45	30	95	117.5	131	M36													

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF ..... 305~308
A-PT1/8 ..... 309~328
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables. (Example of Part No. : UKFS307J + H2307X, UK307 + H2307X)
4. As for the triple-lip seal type product, supplementary code L3 follows the Part No. of unit or bearing. (Example of Part No. : UKFS307JL3 + H2307X, UK307L3 + H2307X)
5. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter assemblies.

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



With Pressed Stainless Steel Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit : mm

Housing No.	Δ_{A2s}	X
SF204 H1~210 H1	±0.5	0.7

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

Unit : mm

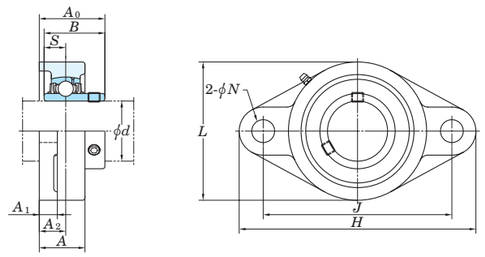
Housing No.	Δ_{Ns}
SF204 H1~210 H1	±0.2

Shaft Dia. mm	Dimensions inch / mm									Bolt Size inch	Standard Unit No.	Housing No.	Bearing No.	Mass		Basic Load Ratings kN		Factor	With Pressed Stainless Steel Cover Unit No. Open End Type	Closed End Type	Dimension mm	inch	Mass
d	L	A	J	N	A_1	A_2	A_0	B	S	mm				kg		C_r	C_{0r}	f_0			A_s		kg
20	3 3/8	1 1/32	2 33/64	15/32	13/32	19/32	1 5/16	1.220	0.500	3/8	UCSF204H1S6	SF204H1	UC204S6	0.5		10.9	5.35	13.2	UCSF204H1CS6	UCSF204H1DS6	38	1 1/2	0.5
	86	26	64	12	10	15	33.3	31	12.7	M10													
25	3 3/4	1 3/32	2 3/4	15/32	13/32	5/8	1 13/32	1.343	0.563	3/8	UCSF205H1S6	SF205H1	UC205S6	0.85		11.9	6.3	13.9	UCSF205H1CS6	UCSF205H1DS6	40	1 9/16	0.85
	95	27.5	70	12	10	16	35.8	34.1	14.3	M10													
30	4 1/4	1 7/32	3 17/64	15/32	13/32	45/64	1 19/32	1.500	0.626	3/8	UCSF206H1S6	SF206H1	UC206S6	1.1		16.5	9.05	13.9	UCSF206H1CS6	UCSF206H1DS6	45	1 25/32	1.1
	108	31	83	12	10	18	40.2	38.1	15.9	M10													
35	4 19/32	1 11/32	3 5/8	35/64	7/16	3/4	1 3/4	1.689	0.689	7/16	UCSF207H1S6	SF207H1	UC207S6	1.5		21.8	12.3	13.9	UCSF207H1CS6	UCSF207H1DS6	49	1 15/16	1.5
	117	34	92	14	11	19	44.4	42.9	17.5	M12													
40	5 1/8	1 13/32	4 1/64	5/8	15/32	53/64	2 1/32	1.937	0.748	1/2	UCSF208H1S6	SF208H1	UC208S6	1.7		24.8	14.3	14.0	UCSF208H1CS6	UCSF208H1DS6	56	2 7/32	1.7
	130	36	102	16	12	21	51.2	49.2	19	M14													
45	5 13/32	1 1/2	4 9/64	5/8	1/2	55/64	2 1/16	1.937	0.748	1/2	UCSF209H1S6	SF209H1	UC209S6	1.9		27.8	16.2	14.0	UCSF209H1CS6	UCSF209H1DS6	57	2 1/4	1.9
	137	38	105	16	13	22	52.2	49.2	19	M14													
50	5 5/8	1 9/16	4 3/8	5/8	1/2	55/64	2 5/32	2.031	0.748	1/2	UCSF210H1S6	SF210H1	UC210S6	2.4		29.8	18.6	14.4	UCSF210H1CS6	UCSF210H1DS6	59	2 5/16	2.4
	143	40	111	16	13	22	54.6	51.6	19	M14													

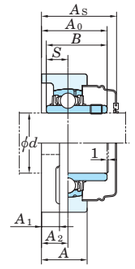
Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See **Table 10.5** in P.51.)
2. Part No. of the applicable grease nipple is A-1/4-28UNFN12.
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

Koyo

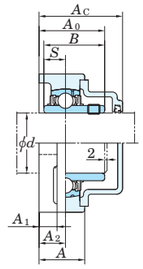
UCFL
Cylindrical bore (with set screws)
d 12 ~ (45) mm



With Pressed Steel Cover



With Cast Iron Cover



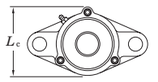
Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X) Unit : mm

Housing No.			Δ_{A2s}	X
FL204~FL210	FLX05~FLX10	FL305~FL310	±0.5	0.7
FL211~FL218		FL311~FL326	±0.8	1

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

Housing No.			Δ_{Ns}
FL204~FL218	FLX05~FLX10	FL305~FL311	±0.2
		FL312~FL326	±0.3

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

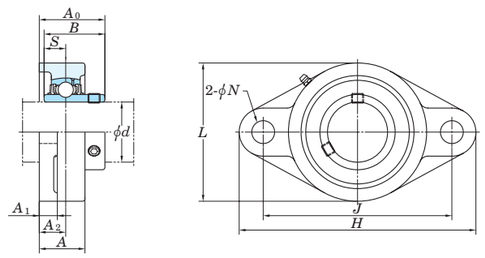


FL204JE3 L_c = 65 mm
FL205JE3 L_c = 73 mm

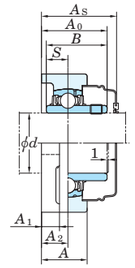
Shaft Dia. d (mm)	Shaft Dia. d (inch)	Dimensions (mm) H	L	A	J	N	A1	A2	A0	B	S	Bolt Size (inch)	Bolt Size (mm)	Standard Unit No.	Standard Housing No.	Standard Bearing No.		Mass kg	Basic Load Ratings kN Cr	Basic Load Ratings kN C0r	Factor f0	With Pressed Steel Cover Unit No. Open End Type	With Pressed Steel Cover Unit No. Closed End Type	With Pressed Steel Cover Dimension As (mm)	With Pressed Steel Cover Dimension As (inch)	With Pressed Steel Cover Mass kg	With Cast Iron Cover Unit No. Open End Type	With Cast Iron Cover Unit No. Closed End Type	With Cast Iron Cover Dimension Ac (mm)	With Cast Iron Cover Dimension Ac (inch)	With Cast Iron Cover Mass kg
12	1/2											3/8	M10	UCFL201	FL204	UC201		0.50	12.8	6.65	13.2	–	–	37	1 15/32	0.50	–	–	–	–	–
														UCFL201-8		UC201-8		0.50				–	–	–	–	–	–	–	–	–	–
15														UCFL202		UC202		0.48				UCFL202C	UCFL202D	37	1 15/32	0.48	–	–	–	–	–
	5/8	4 7/16	2 3/8	1	3 35/64	15/32	7/16	19/32	1 5/16	1.220	0.500			UCFL202-10		UC202-10		0.48				–	–	–	–	–	–	–	–	–	–
		113	60	25.5	90	12	11	15	33.3	31	12.7			UCFL203		UC203		0.47				UCFL203C	UCFL203D	37	1 15/32	0.47	–	–	–	–	–
17														UCFL204-12		UC204-12		0.47				–	–	–	–	–	–	–	–	–	–
	3/4													UCFL204		UC204		0.45				UCFL204C	UCFL204D	37	1 15/32	0.45	UCFL204FC	UCFL204FD	46	1 13/16	0.6
20														UCFL205-14		UC205-14		0.64				–	–	–	–	–	–	–	–	–	–
	7/8													UCFL205-15		UC205-15		0.64				–	–	–	–	–	–	–	–	–	–
	15/16	5 1/8	2 11/16	1 1/16	3 57/64	5/8	1/2	5/8	1 13/32	1.343	0.563	1/2		UCFL205	FL205	UC205		0.64	14.0	7.85	13.9	UCFL205C	UCFL205D	40	1 9/16	0.64	UCFL205FC	UCFL205FD	49	1 15/16	0.83
		130	68	27	99	16	13	16	35.8	34.1	14.3	M14		UCFL205-16		UC205-16		0.64				–	–	–	–	–	–	–	–	–	–
	1													UCFLX05	FLX05	UCX05		1.1	19.5	11.3	13.9	UCFLX05C	UCFLX05D	44	1 23/32	1.1	–	–	–	–	–
25		5 9/16	3 9/32	1 3/16	4 39/64	15/32	1/2	45/64	1 19/32	1.500	0.626	3/8		UCFLX05-16		UCX05-16		1.1				–	–	–	–	–	–	–	–	–	–
	1	141	83	30	117	12	13	18	40.2	38.1	15.9	M10		UCFL305	FL305	UC305		1.1	21.2	10.9	12.6	–	–	–	–	–	UCFL305C	UCFL305D	54	2 1/8	1.4
		5 29/32	3 5/32	1 5/32	4 29/64	3/4	1/2	5/8	1 17/32	1.496	0.591	5/8		UCFL305-16		UC305-16		1.1				–	–	–	–	–	–	–	–	–	–
	1	150	80	29	113	19	13	16	39	38	15	M16		UCFL206-18	FL206	UC206-18		0.93	19.5	11.3	13.9	–	–	–	–	–	–	–	–	–	–
	1 1/8													UCFL206		UC206		0.93				UCFL206C	UCFL206D	44	1 23/32	0.93	UCFL206FC	UCFL206FD	53	2 3/32	1.2
		5 13/16	3 5/32	1 7/32	4 39/64	5/8	1/2	45/64	1 19/32	1.500	0.626	1/2		UCFL206-19		UC206-19		0.93				–	–	–	–	–	–	–	–	–	–
	1 3/16	148	80	31	117	16	13	18	40.2	38.1	15.9	M14		UCFL206-20		UC206-20		0.93				–	–	–	–	–	–	–	–	–	–
	1 1/4													UCFLX06	FLX06	UCX06		1.5	25.7	15.4	13.9	UCFLX06C	UCFLX06D	49	1 15/16	1.5	–	–	–	–	–
30		6 5/32	3 3/4	1 11/32	5 1/8	5/8	9/16	3/4	1 3/4	1.689	0.689	1/2		UCFLX06-19		UCX06-19		1.5				–	–	–	–	–	–	–	–	–	–
	1 3/16	156	95	34	130	16	14	19	44.4	42.9	17.5	M14		UCFLX06-20		UCX06-20		1.5				–	–	–	–	–	–	–	–	–	–
	1 1/4													UCFL306	FL306	UC306		1.5	26.7	15.0	13.3	–	–	–	–	–	UCFL306C	UCFL306D	59	2 5/16	1.8
	–	7 3/32	3 17/32	1 1/4	5 9/32	29/32	19/32	45/64	1 23/32	1.693	0.669	3/4																			
		180	90	32	134	23	15	18	44	43	17	M20		UCFL207-20	FL207	UC207-20		1.2	25.7	15.4	13.9	–	–	–	–	–	–	–	–	–	–
	1 1/4													UCFL207-21		UC207-21		1.2				–	–	–	–	–	–	–	–	–	–
	1 5/16	6 11/32	3 17/32	1 11/32	5 1/8	5/8	9/16	3/4	1 3/4	1.689	0.689	1/2		UCFL207-22		UC207-22		1.2				–	–	–	–	–	–	–	–	–	–
	1 3/8	161	90	34	130	16	14	19	44.4	42.9	17.5	M14		UCFL207		UC207		1.2				UCFL207C	UCFL207D	49	1 15/16	1.2	UCFL207FC	UCFL207FD	58	2 9/32	1.6
35	1 7/16													UCFL207-23		UC207-23		1.2				–	–	–	–	–	–	–	–	–	–
	1 3/8													UCFLX07-22	FLX07	UCX07-22		1.9	29.1	17.8	14.0	–	–	–	–	–	–	–	–	–	–
		6 23/32	4 1/8	1 1/2	5 43/64	5/8	9/16	53/64	2 1/32	1.937	0.748	1/2		UCFLX07		UCX07		1.9				UCFLX07C	UCFLX07D	55	2 5/32	1.9	–	–	–	–	–
	1 7/16	171	105	38	144	16	14	21	51.2	49.2	19	M14		UCFLX07-23		UCX07-23		1.9				–	–	–	–	–	–	–	–	–	–
	–	7 9/32	3 15/16	1 13/32	5 35/64	29/32	5/8	25/32	1 15/16	1.890	0.748	3/4		UCFL307	FL307	UC307		1.8	33.4	19.3	13.2	–	–	–	–	–	UCFL307C	UCFL307D	64	2 17/32	2.2
		185	100	36	141	23	16	20	49	48	19	M20																			
	1 1/2													UCFL208-24	FL208	UC208-24		1.6	29.1	17.8	14.0	–	–	–	–	–	–	–	–	–	–
	1 9/16	6 7/8	3 15/16	1 13/32	5 43/64	5/8	9/16	53/64	2 1/32	1.937	0.748	1/2		UCFL208-25		UC208-25		1.6				–	–	–	–	–	–	–	–	–	–
		175	100	36	144	16	14	21	51.2	49.2	19	M14		UCFL208		UC208		1.6				UCFL208C	UCFL208D	55	2 5/32	1.6	UCFL208FC	UCFL208FD	64	2 17/32	2.0
40	1 1/2													UCFLX08-24	FLX08	UCX08-24		2.1	34.1	21.3	14.0	–	–	–	–	–	–	–	–	–	–
		7 1/16	4 3/8	1 9/16	5 53/64	5/8	9/16	55/64	2 1/16	1.937	0.748	1/2		UCFLX08		UCX08		2.1				UCFLX08C	UCFLX08D	56	2 7/32	2.1	–	–	–	–	–
	1 1/2	179	111	40	148	16	14	22	52.2	49.2	19	M14		UCFL308-24	FL308	UC308-24		2.5	40.7	24.0	13.2	–	–	–	–	–	–	–	–	–	–
		7 7/8	4 13/32	1 9/16	6 7/32	29/32	21/32	29/32	2 7/32	2.047	0.748	3/4		UCFL308		UC308		2.5				–	–	–	–	–	UCFL308C	UCFL308D	71	2 25/32	3.0
	1 5/8	200	112	40	158	23	17	23	56	52	19	M20		UCFL209-26	FL209	UC209-26		1.9	34.1	21.3	14.0	–	–	–	–	–	–	–	–	–	–
	1 11/16													UCFL209-27		UC209-27		1.9				–	–	–	–	–	–	–	–	–	–
	1 3/4	7 13/32	4 1/4	1 1/2	5 53/64	3/4	19/32	55/64	2 1/16	1.937	0.748	5/8		UCFL209-28		UC209-28		1.9				–	–	–	–	–	–	–	–	–	–
45		188	108	38	148	19	15	22	52.2	49.2	19	M16		UCFL209		UC209		1.9				UCFL209C	UCFL209D	56	2 7/32	1.9	UCFL209FC	UCFL209FD	66	2 19/32	2.3
	1 3/4	7 7/16	4 9/16	1 9/16	6 3/16	5/8	9/16	29/32	2 3/16	2.031	0.748	1/2		UCFLX09-28	FLX09	UCX09-28		2.4	35.1	23.3	14.4	–	–	–	–	–	–	–	–	–	–
		189	116	40	157	16	14	23	55.6	51.6	19	M14		UCFLX09		UCX09		2.4				UCFLX09C	UCFLX09D	60	2 3/8	2.4	–	–	–	–	–

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF ..... 201~210, X05~X09, 305~308
A-PT1/8 ..... 211~218, X10, 309~326
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

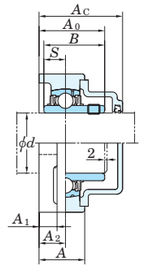
UCFL
Cylindrical bore (with set screws)
d (45) ~ (90) mm



With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit : mm

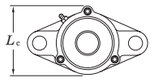
Housing No.			Δ_{A2s}	X
FL204~FL210	FLX05~FLX10	FL305~FL310	±0.5	0.7
FL211~FL218		FL311~FL326	±0.8	1

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

Unit : mm

Housing No.			Δ_{Ns}
FL204~FL218	FLX05~FLX10	FL305~FL311	±0.2
		FL312~FL326	±0.3

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

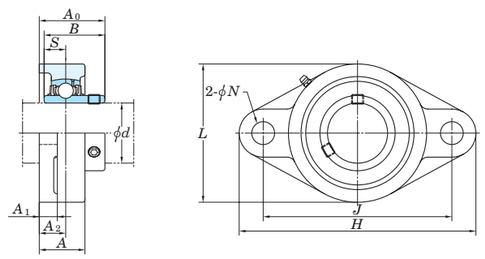


FL204JE3 L_c = 65 mm
FL205JE3 L_c = 73 mm

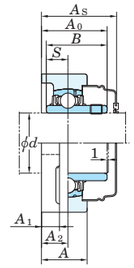
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm										Bolt Size inch	Standard Unit No.	Standard Housing No.	Standard Bearing No.		Mass	Basic Load Ratings kN		Factor	With Pressed Steel Cover Unit No.		With Pressed Steel Cover Dimension		With Pressed Steel Cover Mass	With Cast Iron Cover Unit No.		With Cast Iron Cover Dimension		With Cast Iron Cover Mass
																					Open End Type	Closed End Type	mm	inch		Open End Type	Closed End Type	mm	inch	
d		H	L	A	J	N	A_1	A_2	A_0	B	S	mm					kg	C_r	C_{0r}	f_0			A_s		kg			A_c		kg
45	1 3/4	9 1/16	4 29/32	1 23/32	6 31/32	63/64	23/32	63/64	2 3/8	2.244	0.866	7/8	UCFL309-28	FL309	UC309-28		3.5	48.9	29.5	13.3	–	–	–	–	–	–	–	–	–	–
		230	125	44	177	25	18	25	60	57	22	M22	UCFL309		UC309		3.5				–	–	–	–	–	UCFL309C	UCFL309D	76	3	4.1
50	1 7/8												UCFL210-30	FL210	UC210-30		2.2	35.1	23.3	14.4	–	–	–	–	–	–	–	–	–	–
	1 15/16	7 3/4	4 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		UC210-31		2.2				–	–	–	–	–	–	–	–	–	–
		197	115	40	157	19	15	22	54.6	51.6	19	M16	UCFL210		UC210		2.2				UCFL210C	UCFL210D	59	2 5/16	2.2	UCFL210FC	UCFL210FD	70.5	2 25/32	2.7
	2												UCFL210-32		UC210-32		2.2				–	–	–	–	–	–	–	–	–	–
	1 15/16												UCFLX10-31	FLX10	UCX10-31		3.8	43.4	29.4	14.4	–	–	–	–	–	–	–	–	–	–
		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		UCX10		3.8				UCFLX10C	UCFLX10D	64	2 17/32	3.8	–	–	–	–	–
	2	216	133	44	184	19	20	26	59.4	55.6	22.2	M16	UCFLX10-32		UCX10-32		3.8				–	–	–	–	–	–	–	–	–	–
	–	9 7/16	5 1/2	1 7/8	7 23/64	63/64	3/4	1 7/64	2 5/8	2.402	0.866	7/8	UCFL310	FL310	UC310		4.4	62.0	38.3	13.2	–	–	–	–	–	UCFL310C	UCFL310D	83	3 9/32	5.2
		240	140	48	187	25	19	28	67	61	22	M22																		
55	2												UCFL211-32	FL211	UC211-32		3.3	43.4	29.4	14.4	–	–	–	–	–	–	–	–	–	–
	2 1/8	8 13/16	5 1/8	1 11/16	7 1/4	3/4	23/32	63/64	2 5/16	2.189	0.874	5/8	UCFL211-34		UC211-34		3.3				–	–	–	–	–	–	–	–	–	–
		224	130	43	184	19	18	25	58.4	55.6	22.2	M16	UCFL211		UC211		3.3				UCFL211C	UCFL211D	63	2 15/32	3.3	UCFL211FC	UCFL211FD	74.5	2 15/16	3.9
	2 3/16												UCFL211-35		UC211-35		3.3				–	–	–	–	–	–	–	–	–	–
	2	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	FL311	UC311-32		5.3	71.6	45.0	13.2	–	–	–	–	–	–	–	–	–	–
		250	150	52	198	25	20	30	71	66	25	M22	UCFL311		UC311		5.3				–	–	–	–	–	UCFL311C	UCFL311D	87	3 7/16	6.2
60	2 1/4												UCFL212-36	FL212	UC212-36		4.2	52.4	36.2	14.4	–	–	–	–	–	–	–	–	–	–
		9 27/32	5 1/2	1 7/8	7 61/64	29/32	23/32	1 9/64	2 23/32	2.563	1.000	3/4	UCFL212		UC212		4.2				UCFL212C	UCFL212D	73	2 7/8	4.2	UCFL212FC	UCFL212FD	86	3 3/8	5.0
	2 3/8	250	140	48	202	23	18	29	68.7	65.1	25.4	M20	UCFL212-38		UC212-38		4.2				–	–	–	–	–	–	–	–	–	–
	2 7/16												UCFL212-39		UC212-39		4.2				–	–	–	–	–	–	–	–	–	–
	–	10 5/8	6 5/16	2 7/32	8 11/32	1 7/32	7/8	1 19/64	3 1/16	2.795	1.024	1	UCFL312	FL312	UC312		6.5	81.9	52.2	13.2	–	–	–	–	–	UCFL312C	UCFL312D	95	3 3/4	7.7
		270	160	56	212	31	22	33	78	71	26	M27																		
65	2 1/2	10 5/32	6 3/32	1 31/32	8 17/64	29/32	25/32	1 3/16	2 3/4	2.563	1.000	3/4	UCFL213-40	FL213	UC213-40		5.1	57.2	40.1	14.4	–	–	–	–	–	–	–	–	–	–
		258	155	50	210	23	20	30	69.7	65.1	25.4	M20	UCFL213		UC213		5.1				UCFL213C	UCFL213D	74	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	FL313	UC313-40		8.5	92.7	59.9	13.2	–	–	–	–	–	–	–	–	–	–
		295	175	58	240	31	25	33	78	75	30	M27	UCFL313		UC313		8.5				–	–	–	–	–	UCFL313C	UCFL313D	94	3 11/16	9.6
70	2 3/4	10 7/16	6 5/16	2 1/8	8 1/2	29/32	25/32	1 7/32	2 31/32	2.937	1.189	3/4	UCFL214-44	FL214	UC214-44		5.7	62.2	44.1	14.5	–	–	–	–	–	–	–	–	–	–
		265	160	54	216	23	20	31	75.4	74.6	30.2	M20	UCFL214		UC214		5.7				UCFL214C	UCFL214D	80	3 5/32	5.7	UCFL214FC	UCFL214FD	93	3 21/32	6.6
	2 3/4	12 13/32	7 9/32	2 13/32	9 27/32	1 3/8	1 3/32	1 27/64	3 3/16	3.071	1.299	1 1/8	UCFL314-44	FL314	UC314-44		9.7	104	68.2	13.2	–	–	–	–	–	–	–	–	–	–
		315	185	61	250	35	28	36	81	78	33	M30	UCFL314		UC314		9.7				–	–	–	–	–	UCFL314C	UCFL314D	98	3 27/32	10.8
75	2 15/16	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	UCFL215-47	FL215	UC215-47		6.4	67.4	48.3	14.5	–	–	–	–	–	–	–	–	–	–
		275	165	56	225	23	20	34	78.5	77.8	33.3	M20	UCFL215		UC215		6.4				UCFL215C	UCFL215D	83	3 9/32	6.4	UCFL215FC	UCFL215FD	96	3 25/32	7.4
	3												UCFL215-48		UC215-48		6.4				–	–	–	–	–	–	–	–	–	–
	2 15/16												UCFL315-47	FL315	UC315-47		11.3	113	77.2	13.2	–	–	–	–	–	–	–	–	–	–
		12 19/32	7 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		UC315		11.3				–	–	–	–	–	UCFL315C	UCFL315D	106	4 3/16	12.6
	3	320	195	66	260	35	30	39	89	82	32	M30	UCFL315-48		UC315-48		11.3				–	–	–	–	–	–	–	–	–	–
80	3 1/8	11 13/32	7 3/32	2 9/32	9 11/64	63/64	25/32	1 11/32	3 9/32	3.252	1.311	7/8	UCFL216-50	FL216	UC216-50		7.8	72.7	53.0	14.6	–	–	–	–	–	–	–	–	–	–
		290	180	58	233	25	20	34	83.3	82.6	33.3	M22	UCFL216		UC216		7.8				UCFL216C	UCFL216D	88	3 15/32	7.8	UCFL216FC	UCFL216FD	103	4 1/16	9.0
	–	13 31/32	8 9/32	2 11/16	11 7/32	1 1/2	1 1/4	1 1/2	3 17/32	3.386	1.339	1 1/4	UCFL316	FL316	UC316		14.4	123	86.7	13.3	–	–	–	–	–	UCFL316C	UCFL316D	107	4 7/32	15.8
		355	210	68	285	38	32	38	90	86	34	M33																		
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	FL217	UC217-52		9.8	84.0	61.9	14.5	–	–	–	–	–	–	–	–	–	–
		305	190	63	248	25	22	36	87.6	85.7	34.1	M22	UCFL217		UC217		9.8				UCFL217C	UCFL217D	92	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	–	–	–	–	–	UCFL317C	UCFL317D	117	4 19/32	17.6
		370	220	74	300	38	32	44	100	96	40	M33																		
90	3 1/2	12 19/32	8 1/16	2 11/16	10 7/16	63/64	29/32	1 37/64	3 25/32	3.780	1.563	7/8	UCFL218-56	FL218	UC218-56		12.3	96.1	71.5	14.5	–	–	–	–	–	–	–	–	–	–
		320	205	68	265	25	23	40	96.3	96	39.7	M22	UCFL218		UC218		12.3				UCFL218C	UCFL218D	101	3 31/32	12.3	UCFL218FC	UCFL218FD	116	4 9/16	13.8

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF ..... 201~210, X05~X09, 305~308
A-PT1/8 ..... 211~218, X10, 309~326
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

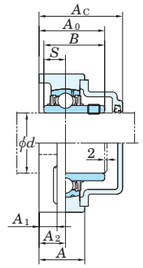
UCFL
Cylindrical bore (with set screws)
d (90) ~ 130 mm



With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit : mm

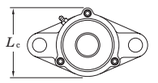
Housing No.			Δ_{A2s}	X
FL204~FL210	FLX05~FLX10	FL305~FL310	±0.5	0.7
FL211~FL218		FL311~FL326	±0.8	1

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

Unit : mm

Housing No.			Δ_{Ns}
FL204~FL218	FLX05~FLX10	FL305~FL311	±0.2
		FL312~FL326	±0.3

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

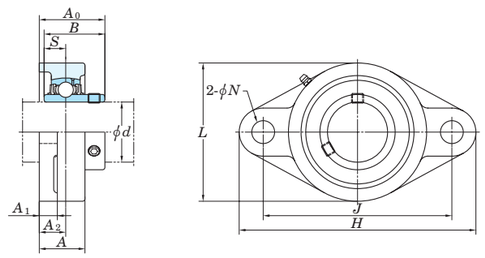


FL204JE3 L_c = 65 mm
FL205JE3 L_c = 73 mm

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm										Bolt Size inch	Bolt Size mm	Standard Unit No.	Standard Housing No.	Standard Bearing No.		Mass	Basic Load Ratings kN		Factor	With Pressed Steel Cover Unit No.		With Pressed Steel Cover Dimension		With Pressed Steel Cover Mass	With Cast Iron Cover Unit No.		With Cast Iron Cover Dimension		With Cast Iron Cover Mass
																						Open End Type	Closed End Type	mm	inch		Open End Type	Closed End Type	mm	inch	
d		H	L	A	J	N	A_1	A_2	A_0	B	S							kg	C_r	C_{0r}	f_0			A_s		kg			A_c		kg
90	3 1/2	15 5/32	9 1/4	3	12 13/32	1 1/2	1 13/32	1 47/64	3 15/16	3.780	1.575	1 1/4		UCFL318-56	FL318	UC318-56		19.0	143	107	13.3	–	–	–	–	–	–	–	–	–	–
		385	235	76	315	38	36	44	100	96	40	M33		UCFL318		UC318		19.0				–	–	–	–	–	UCFL318C	UCFL318D	119	4 11/16	20.9
95	–	15 15/16	9 27/32	3 11/16	13	1 39/64	1 9/16	2 21/64	4 3/4	4.055	1.614	1 3/8		UCFL319	FL319	UC319		24.6	153	119	13.3	–	–	–	–	–	UCFL319C	UCFL319D	140	5 1/2	26.8
		405	250	94	330	41	40	59	121	103	41	M36																			
100	3 15/16	17 5/16	10 5/8	3 11/16	14 11/64	1 47/64	1 9/16	2 21/64	4 29/32	4.252	1.654	1 1/2		UCFL320	FL320	UC320		29.4	173	141	13.2	–	–	–	–	–	UCFL320C	UCFL320D	146	5 3/4	32.2
	4	440	270	94	360	44	40	59	125	108	42	M39		UCFL320-63		UC320-63		29.4				–	–	–	–	–	–	–	–	–	–
														UCFL320-64		UC320-64		29.4				–	–	–	–	–	–	–	–	–	–
110	–	18 1/2	11 13/16	3 25/32	15 23/64	1 47/64	1 21/32	2 23/64	5 5/32	4.606	1.811	1 1/2		UCFL322	FL322	UC322		36.2	205	180	13.2	–	–	–	–	–	UCFL322C	UCFL322D	154	6 1/16	39.6
		470	300	96	390	44	42	60	131	117	46	M39																			
120	–	20 15/32	13	4 11/32	16 59/64	1 27/32	1 7/8	2 9/16	5 1/2	4.961	2.008	1 5/8		UCFL324	FL324	UC324		51.6	207	185	13.5	–	–	–	–	–	UCFL324C	UCFL324D	163	6 13/32	56.4
		520	330	110	430	47	48	65	140	126	51	M42																			
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	–	–	–	–	–	UCFL326C	UCFL326D	172	6 25/32	67.7
		550	360	115	460	47	50	65	146	135	54	M42																			

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 nipples are shown below.
A-1/4-28UNF ..... 201~210, X05~X09, 305~308
A-PT1/8 ..... 211~218, X10, 309~326
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

UCFL-E
Cylindrical bore (with set screws)
d 12 ~ 75 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
FL203E~FL210E	±0.5	0.7
FL211E~FL217E	±0.8	1

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

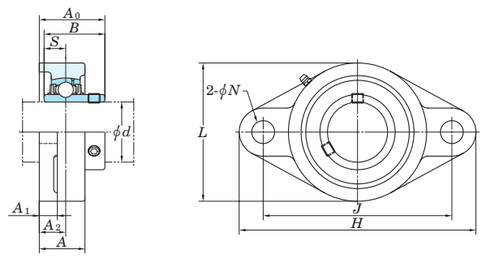
Unit : mm

Housing No.	Δ_{Ns}
FL203E~FL217E	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12	1/2	3 7/32	2 7/32	1	3	25/64	7/16	19/32	1 5/16	1.220	0.500	5/16	UCFL201E	FL203E	UC201		12.8	6.65	13.2	0.42
		98	56	25.5	76.2	10	11	15	33.3	31	12.7		UCFL201-8E		UC201-8					
15	5/8												UCFL202E		UC202					0.4
													UCFL202-10E		UC202-10					
17													UCFL203E		UC203					0.39
20	3/4	4 7/16	2 3/8	1	3 17/32	25/64	7/16	19/32	1 5/16	1.220	0.500	5/16	UCFL204-12E	FL204E	UC204-12		12.8	6.65	13.2	0.48
		113	60	25.5	89.7	10	11	15	33.3	31	12.7		UCFL204E		UC204					
	7/8												UCFL205-14E		UC205-14					
25	15/16	5 1/8	2 11/16	1 1/16	3 57/64	15/32	1/2	5/8	1 13/32	1.343	0.563	3/8	UCFL205-15E	FL205E	UC205-15		14.0	7.85	13.9	0.64
		130	68	27	98.8	12	13	16	35.8	34.1	14.3		UCFL205E		UC205					
	1												UCFL205-16E		UC205-16					
	1 1/8												UCFL206-18E		UC206-18					
30		5 13/16	3 5/32	1 7/32	4 19/32	15/32	1/2	45/64	1 19/32	1.500	0.626	3/8	UCFL206E	FL206E	UC206		19.5	11.3	13.9	0.93
	1 3/16	148	80	31	116.7	12	13	18	40.2	38.1	15.9		UCFL206-19E		UC206-19					
	1 1/4												UCFL206-20E		UC206-20					
	1 1/4												UCFL207-20E		UC207-20					
	1 5/16												UCFL207-21E		UC207-21					
35	1 3/8	6 11/32	3 17/32	1 11/32	5 1/8	33/64	9/16	3/4	1 3/4	1.689	0.689	7/16	UCFL207-22E	FL207E	UC207-22		3	15.4	13.9	1.2
		161	90	34	130.2	13	14	19	44.4	42.9	17.5		UCFL207E		UC207					
	1 7/16												UCFL207-23E		UC207-23					
	1 1/2												UCFL208-24E		UC208-24					
40	1 9/16	6 7/8	3 15/16	1 13/32	5 21/32	33/64	9/16	53/64	2 1/32	1.937	0.748	7/16	UCFL208-25E	FL208E	UC208-25		29.1	17.8	14.0	1.6
		175	100	36	143.7	13	14	21	51.2	49.2	19		UCFL208E		UC208					
	1 5/8												UCFL209-26E		UC209-26					
45	1 11/16	7 13/32	4 1/4	1 1/2	5 27/32	19/32	19/32	55/64	2 1/16	1.937	0.748	1/2	UCFL209-27E	FL209E	UC209-27		34.1	21.3	14.0	1.9
	1 3/4	188	108	38	148.4	15	15	22	52.2	49.2	19		UCFL209-28E		UC209-28					
	1 7/8												UCFL209E		UC209					
													UCFL210-30E		UC210-30					
50	1 15/16	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	UCFL210-31E	FL210E	UC210-31		35.1	23.3	14.4	2.2
		197	115	40	157	15	15	22	54.6	51.6	19		UCFL210E		UC210					
	2												UCFL210-32E		UC210-32					
	2												UCFL211-32E		UC211-32					
55	2 1/8	8 13/16	5 1/8	1 11/16	7 1/4	21/32	23/32	63/64	2 5/16	2.189	0.874	9/16	UCFL211-34E	FL211E	UC211-34		43.4	29.4	14.4	3.3
		224	130	43	184	16.5	18	25	58.4	55.6	22.2		UCFL211E		UC211					
	2 3/16												UCFL211-35E		UC211-35					
	2 1/4												UCFL212-36E		UC212-36					
60		9 27/32	5 1/2	1 7/8	7 61/64	21/32	23/32	1 9/64	2 23/32	2.563	1.000	9/16	UCFL212E	FL212E	UC212		52.4	36.2	14.4	4.2
	2 3/8	250	140	48	202	16.5	18	29	68.7	65.1	25.4		UCFL212-38E		UC212-38					
	2 7/16												UCFL212-39E		UC212-39					
65	2 1/2	10 5/32	6 3/32	1 31/32	8 17/64	21/32	25/32	1 3/16	2 3/4	2.563	1.000	9/16	UCFL213-40E	FL213E	UC213-40		57.2	40.1	14.4	5.2
		258	155	50	210	16.5	20	30	69.7	65.1	25.4		UCFL213E		UC213					
70	2 3/4	10 7/16	6 5/16	2 1/8	8 1/2	21/32	25/32	1 7/32	2 31/32	2.937	1.189	9/16	UCFL214-44E	FL214E	UC214-44		62.2	44.1	14.5	5.7
		265	160	54	216	16.5	20	31	75.4	74.6	30.2		UCFL214E		UC214					
	2 15/16												UCFL215-47E		UC215-47					
75		10 13/16	6 1/2	2 7/32	8 55/64	3/4	25/32	1 11/32	3 3/32	3.063	1.311	11/16	UCFL215E	FL215E	UC215		67.4	48.3	14.5	6.4
	3	275	165	56	225	19	20	34	78.5	77.8	33.3		UCFL215-48E		UC215-48					

Remarks 1. In Part No. of unit, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF ..... 201~210
A-PT1/8 ..... 211~217
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

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



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Unit : mm

Housing No.	Δ_{A2s}	X
FL203E~FL210E	±0.5	0.7
FL211E~FL217E	±0.8	1

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

Unit : mm

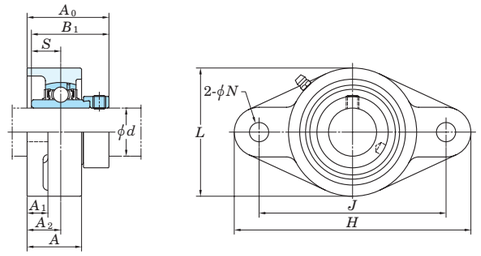
Housing No.	Δ_{Ns}
FL203E~FL217E	±0.2

Shaft Dia. mm	Shaft Dia. 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	S						C_r	C_{0r}	f_0	kg
80	3 1/8	11 13/32	7 3/32	2 9/32	9 11/64	3/4	25/32	1 11/32	3 9/32	3.252	1.311	11/16	**UCFL216-50E**	FL216E	UC216-50		72.7	53.0	14.6	7.8
		290	180	58	233	19	20	34	83.3	82.6	33.3		**UCFL216E**		UC216					
85	3 1/4	12	7 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**	FL217E	UC217-52		84.0	61.9	14.5	9.8
		305	190	63	248	19	22	36	87.6	85.7	34.1		**UCFL217E**		UC217					

Remarks 1. In Part No. of unit, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF ..... 201~210
A-PT1/8 ..... 211~217
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

Koyo

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)

Unit : mm

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

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

Unit : mm

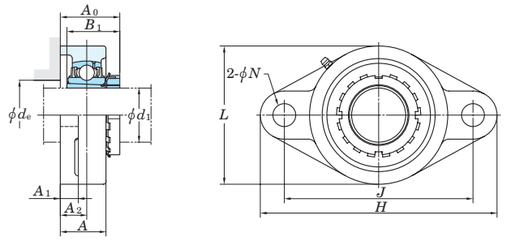
Housing No.	Δ_{Ns}
NFL204~NFL211	±0.2

Shaft Dia mm	Shaft Dia inch	Dimensions inch / mm H	L	A	J	N	A_1	A_2	A_0	B_1	S	Bolt Size inch	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12	1/2												NANFL201		NA201					
													NANFL201-8		NA201-8					
15													NANFL202		NA202					
	5/8	4 7/16	2 3/8	1 5/32	3 17/32	25/64	7/16	3/4	1 25/32	1.720	0.673	5/16	NANFL202-10	NFL204	NA202-10		12.8	6.65	13.2	0.59
		113	60	29.5	89.7	10	11	19	45.6	43.7	17.1									
17													NANFL203		NA203					
	3/4												NANFL204-12		NA204-12					
20													NANFL204		NA204					
25	7/8												NANFL205-14		NA205-14					
	15/16	5 1/8	2 11/16	1 7/32	3 57/64	15/32	1/2	25/32	1 27/32	1.748	0.689	3/8	NANFL205-15	NFL205	NA205-15		14.0	7.85	13.9	0.9
		130	68	31	98.8	12	13	20	46.9	44.4	17.5		NANFL205		NA205					
	1												NANFL205-16		NA205-16					
30	1 1/8												NANFL206-18		NA206-18					
		5 13/16	3 5/32	1 11/32	4 19/32	15/32	1/2	53/64	2	1.906	0.720	3/8	NANFL206	NFL206	NA206		19.5	11.3	13.9	1.1
	1 3/16	148	80	34	116.7	12	13	21	51.1	48.4	18.3		NANFL206-19		NA206-19					
	1 1/4												NANFL206-20		NA206-20					
35	1 1/4												NANFL207-20		NA207-20					
	1 5/16												NANFL207-21		NA207-21					
	1 3/8	6 11/32	3 17/32	1 7/16	5 1/8	33/64	9/16	27/32	2 1/8	2.012	0.740	7/16	NANFL207-22	NFL207	NA207-22		3	15.4	13.9	1.6
		161	90	36.5	130.2	13	14	21.5	53.8	51.1	18.8		NANFL207		NA207					
	1 7/16												NANFL207-23		NA207-23					
40	1 1/2												NANFL208-24		NA208-24					
	1 9/16	6 7/8	3 15/16	1 17/32	5 21/32	33/64	9/16	15/16	2 5/16	2.217	0.843	7/16	NANFL208-25	NFL208	NA208-25		29.1	17.8	14.0	2
		175	100	39	143.7	13	14	24	58.9	56.3	21.4		NANFL208		NA208					
45	1 5/8												NANFL209-26		NA209-26					
	1 11/16	7 13/32	4 1/4	1 9/16	5 27/32	19/32	9/16	15/16	2 5/16	2.217	0.843	1/2	NANFL209-27	NFL209	NA209-27		34.1	21.3	14.0	2.3
	1 3/4	188	108	40	148.4	15	14	24	58.9	56.3	21.4		NANFL209-28		NA209-28					
													NANFL209		NA209					
50	1 7/8												NANFL210-30		NA210-30					
	1 15/16	7 3/4	4 17/32	1 27/32	6 3/16	19/32	9/16	1 1/8	2 5/8	2.469	0.969	1/2	NANFL210-31	NFL210	NA210-31		35.1	23.3	14.4	2.7
		197	115	46.5	157	15	14	28.5	66.6	62.7	24.6		NANFL210		NA210					
	2												NANFL210-32		NA210-32					
55	2												NANFL211-32		NA211-32					
	2 1/8	8 13/16	5 1/8	1 31/32	7 1/4	21/32	25/32	1 17/64	2 31/32	2.811	1.094	9/16	NANFL211-34	NFL211	NA211-34		43.4	29.4	14.4	4.1
		224	130	50	184	16.5	20	32	75.6	71.4	27.8		NANFL211		NA211					
	2 3/16												NANFL211-35		NA211-35					

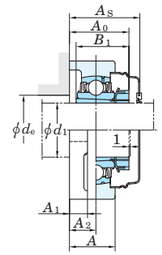
Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF ..... 201~210
A-PT1/8 211
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

Koyo

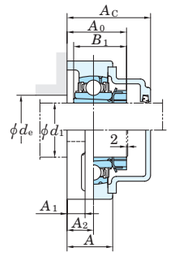
UKFL
Tapered bore (with adapter)
d_1 20 ~ (50) mm



With Pressed Steel Cover



With Cast Iron Cover



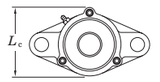
Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X) Unit : mm

Housing No.			Δ_{A2s}	X
FL205~FL210	FLX05~FLX10	FL305~FL310	±0.5	0.7
FL211~FL218		FL311~FL326	±0.8	1

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

Housing No.			Δ_{Ns}
FL205~FL218	FLX05~FLX10	FL305~FL311	±0.2
		FL312~FL326	±0.3

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



FL205JE3 L_c = 73 mm

Shaft Dia. mm / inch d_1	Dimensions inch / mm H	L	A	J	N	A_1	A_2	A_0[1]	B_1[1]	d_e (min.)	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Adapter[1] assembly No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_c	Mass kg
20	3/4	5 1/8	2 11/16	1 1/16	3 57/64	5/8	1/2	5/8	1 11/32(1 13/32)	1 5/32(1 3/8)	1 3/16	1/2	**UKFL205**	FL205	UK205		HE305X(HE2305X)	0.68	14.0	7.85	13.9	–	–	– –	–	–	–	–
		130	68	27	99	16	13	16	34.5(36)	29(35)	30	M14					H305X(H2305X)	0.68				UKFL205C	UKFL205D	40 1 9/16	0.68	UKFL205FC	UKFL205FD	49 1 15/16	0.89
	3/4	5 9/16	3 9/32	1 3/16	4 39/64	15/32	1/2	45/64	1 15/32	1 3/8	1 3/16	3/8	**UKFLX05**	FLX05	UKX05		HE2305X	1.0	19.5	11.3	13.9	–	–	– –	–	–	–	–
		141	83	30	117	12	13	18	37.5	35	30	M10					H2305X	1.0				UKFLX05C	UKFLX05D	44 1 23/32	1.0	–	–	– –	–
	3/4	5 29/32	3 5/32	1 5/32	4 29/64	3/4	1/2	5/8	1 15/32	1 3/8	–	5/8	**UKFL305**	FL305	UK305		HE2305X	1.1	21.2	10.9	12.6	–	–	– –	–	–	–	–
		150	80	29	113	19	13	16	37.5	35	–	M16					H2305X	1.1				–	–	– –	–	UKFL305C	UKFL305D	54 2 1/8	1.4
25	1	5 13/16	3 5/32	1 7/32	4 39/64	5/8	1/2	45/64	1 15/32(1 9/16)	1 7/32(1 1/2)	1 13/32	3/8	**UKFL206**	FL206	UK206		H306X(H2306X)	0.97	19.5	11.3	13.9	UKFL206C	UKFL206D	44 1 23/32	0.97	UKFL206FC	UKFL206FD	53 2 3/32	1.2
		148	80	31	117	16	13	18	37.5(39.5)	31(38)	36	M14					H306X(HE2306X)	0.97				–	–	– –	–	–	–	– –	–
	1	6 5/32	3 3/4	1 11/32	5 1/8	5/8	9/16	3/4	1 9/16	1 1/2	1 13/32	3/8	**UKFLX06**	FLX06	UKX06		H2306X	1.5	25.7	15.4	13.9	UKFLX06C	UKFLX06D	49 1 15/16	1.5	–	–	– –	–
		156	95	34	130	16	14	19	40	38	36	M14					HE2306X	1.5				–	–	– –	–	–	–	– –	–
	1	7 3/32	3 17/32	1 1/4	5 9/32	29/32	19/32	45/64	1 5/8	1 1/2	–	3/4	**UKFL306**	FL306	UK306		H2306X	1.5	26.7	15.0	13.3	–	–	– –	–	UKFL306C	UKFL306D	59 2 5/16	1.8
		180	90	32	134	23	15	18	41	38	–	M20					HE2306X	1.5				–	–	– –	–	–	–	– –	–
30	1 1/8	6 11/32	3 17/32	1 11/32	5 1/8	5/8	9/16	3/4	1 5/8(1 11/16)	1 3/8(1 11/16)	1 5/8	3/8	**UKFL207**	FL207	UK207		HS307X(HS2307X)	1.3	25.7	15.4	13.9	–	–	– –	–	–	–	– –	–
		161	90	34	130	16	14	19	41(43)	35(43)	41	M14					H307X(H2307X)	1.3				UKFL207C	UKFL207D	49 1 15/16	1.3	UKFL207FC	UKFL207FD	58 2 9/32	1.7
	1 1/8	6 23/32	4 1/8	1 1/2	5 43/64	5/8	9/16	53/64	1 23/32	1 11/16	1 5/8	3/8	**UKFLX07**	FLX07	UKX07		HS2307X	1.8	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
		171	105	38	144	16	14	21	43.5	43	41	M14					H2307X	1.8				UKFLX07C	UKFLX07D	55 2 5/32	1.8	–	–	– –	–
	1 1/8	7 9/32	3 15/16	1 13/32	5 35/64	29/32	5/8	25/32	1 25/32	1 11/16	–	3/4	**UKFL307**	FL307	UK307		HS2307X	1.9	33.4	19.3	13.2	–	–	– –	–	–	–	– –	–
		185	100	36	141	23	16	20	45.5	43	–	M20					H2307X	1.9				–	–	– –	–	UKFL307C	UKFL307D	64 2 17/32	2.4
35	1 1/4 1 3/8	6 7/8	3 15/16	1 13/32	5 43/64	5/8	9/16	53/64	1 3/4(1 7/8)	1 13/32(1 13/16)	1 13/16	3/8	**UKFL208**	FL208	UK208		HE308X(HE2308X)	1.6	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
		175	100	36	144	16	14	21	44.5(48)	36(46)	46	M14					HS308X(HS2308X)	1.6				–	–	– –	–	–	–	– –	–
																	H308X(H2308X)	1.6				UKFL208C	UKFL208D	55 2 5/32	1.6	UKFL208FC	UKFL208FD	64 2 17/32	2.0
	1 1/4 1 3/8	7 1/16	4 3/8	1 9/16	5 53/64	5/8	9/16	55/64	1 27/32	1 13/16	1 13/16	3/8	**UKFLX08**	FLX08	UKX08		HE2308X	2.1	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
		179	111	40	148	16	14	22	46.5	46	46	M14					HS2308X	2.1				–	–	– –	–	–	–	– –	–
																	H2308X	2.1				UKFLX08C	UKFLX08D	56 2 7/32	2.1	–	–	– –	–
	1 1/4 1 3/8	7 7/8	4 13/32	1 9/16	6 7/32	29/32	21/32	29/32	2	1 13/16	–	3/4	**UKFL308**	FL308	UK308		HE2308X	2.5	40.7	24.0	13.2	–	–	– –	–	–	–	– –	–
		200	112	40	158	23	17	23	50.5	46	–	M20					HS2308X	2.5				–	–	– –	–	–	–	– –	–
																	H2308X	2.5				–	–	– –	–	UKFL308C	UKFL308D	71 2 25/32	3.0
40	1 1/2 1 5/8	7 13/32	4 1/4	1 1/2	5 53/64	3/4	19/32	55/64	1 7/8(2)	1 17/32(1 31/32)	2 1/16	5/8	**UKFL209**	FL209	UK209		HE309X(HE2309X)	2.0	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
		188	108	38	148	19	15	22	47.5(51)	39(50)	52	M16					H309X(H2309X)	2.0				UKFL209C	UKFL209D	56 2 7/32	2.0	UKFL209FC	UKFL209FD	66 2 19/32	2.5
																	HS309X(HS2309X)	2.0				–	–	– –	–	–	–	– –	–
	1 1/2 1 5/8	7 7/16	4 9/16	1 9/16	6 3/16	5/8	9/16	29/32	1 29/32	1 31/32	2 1/16	3/8	**UKFLX09**	FLX09	UKX09		HE2309X	2.5	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
		189	116	40	157	16	14	23	48.5	50	52	M14					H2309X	2.5				UKFLX09C	UKFLX09D	60 2 3/8	2.5	–	–	– –	–
																	HS2309X	2.5				–	–	– –	–	–	–	– –	–
	1 1/2 1 5/8	9 1/16	4 29/32	1 23/32	6 31/32	63/64	23/32	63/64	2 5/32	1 31/32	–	7/8	**UKFL309**	FL309	UK309		HE2309X	3.6	48.9	29.5	13.3	–	–	– –	–	–	–	– –	–
		230	125	44	177	25	18	25	55	50	–	M22					H2309X	3.6				–	–	– –	–	UKFL309C	UKFL309D	76 3	4.2
																	HS2309X	3.6				–	–	– –	–	–	–	– –	–
45	1 3/4	7 3/4	4 17/32	1 9/16	6 3/16	3/4	19/32	55/64	1 29/32(2 1/16)	1 21/32(2 5/32)	2 9/32	5/8	**UKFL210**	FL210	UK210		HE310X(HE2310X)	2.3	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
		197	115	40	157	19	15	22	48.5(52)	42(55)	58	M16					H310X(H2310X)	2.3				UKFL210C	UKFL210D	59 2 5/16	2.3	UKFL210FC	UKFL210FD	70.5 2 25/32	2.8
	1 3/4	8 1/2	5 1/4	1 23/32	7 1/4	3/4	25/32	1 1/32	1 3/32	2 5/32	2 9/32	5/8	**UKFLX10**	FLX10	UKX10		HE2310X	3.7	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
		216	133	44	184	19	20	26	53.5	55	58	M16					H2310X	3.7				UKFLX10C	UKFLX10D	64 2 17/32	3.7	–	–	– –	–
	1 3/4	9 7/16	5 1/2	1 7/8	7 23/64	63/64	3/4	1 7/64	2 3/8	2 5/32	–	7/8	**UKFL310**	FL310	UK310		HE2310X	4.4	62.0	38.3	13.2	–	–	– –	–	–	–	– –	–
		240	140	48	187	25	19	28	60	55	–	M22					H2310X	4.4				–	–	– –	–	UKFL310C	UKFL310D	83 3 9/32	5.2
50	1 7/8 2	8 13/16	5 1/8	1 11/16	7 1/4	3/4	23/32	63/64	2 1/16(2 1/4)	1 25/32(2 5/16)	2 17/32	5/8	**UKFL211**	FL211	UK211		HS311X(HS2311X)	3.3	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
		224	130	43	184	19	18	25	52.5(57)	45(59)	64	M16					H311X(H2311X)	3.3				UKFL211C	UKFL211D	63 2 15/32	3.3	UKFL211FC	UKFL211FD	74.5 2 15/16	3.9
																	HE311X(HE2311X)	3.3				–	–	– –	–	–	–	– –	–

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

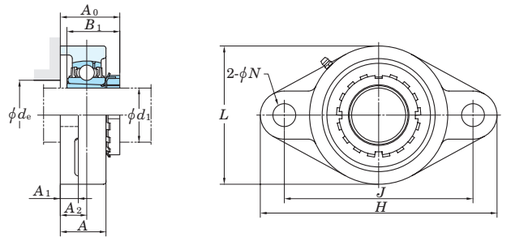
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF.....205~210, X05~X09, 305~308
A-PT1/8.....211~218, X10, 309~326

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)

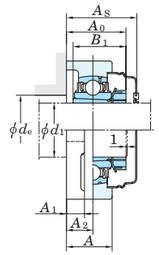
4. As for the triple-lip seal type product (205 is the double-lip seal type product), supplementary code L3 (or L2) follows the Part No. of unit or bearing. (Example of Part No. : UKFL206JL3 + H2306X, UK206L3 + H2306X)

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

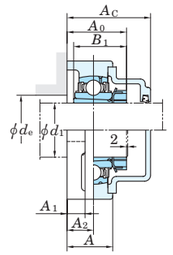
UKFL
Tapered bore (with adapter)
d_1 (50) ~ 115 mm



With Pressed Steel Cover



With Cast Iron Cover



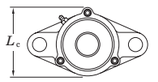
Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X) Unit : mm

Housing No.			Δ_{A2s}	X
FL205~FL210	FLX05~FLX10	FL305~FL310	±0.5	0.7
FL211~FL218		FL311~FL326	±0.8	1

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

Housing No.			Δ_{Ns}
FL205~FL218	FLX05~FLX10	FL305~FL311	±0.2
		FL312~FL326	±0.3

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



FL205JE3 L_c = 73 mm

Shaft Dia. mm / inch d_1	Dimensions inch / mm H	L	A	J	N	A_1	A_2	A_0 1)	B_1 1)	d_e (min.)	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Adapter 1) assembly No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_c	Mass kg
50	1 7/8	9 27/32	5 29/32	2 1/16	7 51/64	63/64	25/32	1 3/16	2 1/2	2 5/16	–	7/8	UKFL311	FL311	UK311		HS2311X	5.6				–	–	–	–	–	–	–	–	–	–
		250	150	52	198	25	20	30	63.5	59	–	M22					H2311X	5.6	71.6	45.0	13.2	–	–	–	–	–	–	–	–	–	–
	2																HE2311X	5.6				–	–	–	–	–	–	–	–	–	–
55	2 1/8	9 27/32	5 1/2	1 7/8	7 61/64	29/32	23/32	1 9/64	2 5/16(2 19/32)	1 27/32(2 7/16)	2 23/32	3/4	UKFL212	FL212	UK212		HS312X(HS2312X)	4.1				–	–	–	–	–	–	–	–	–	–
		250	140	48	202	23	18	29	58.5(65.5)	47(62)	69	M20					H312X(H2313X)	4.1	52.4	36.2	14.4	UKFL212C	UKFL212D	73 2 7/8	4.1	UKFL212FC	UKFL212FD	86 3 3/8	4.9
	2 1/8	10 5/8	6 5/16	2 7/32	8 11/32	1 7/32	7/8	1 19/64	2 3/4	2 7/16	–	1	UKFL312	FL312	UK312		HS2312X	6.9				–	–	–	–	–	–	–	–	–	–
		270	160	56	212	31	22	33	69.5	62	–	M27					H2312X	6.9	81.9	52.2	13.2	–	–	–	–	UKFL312C	UKFL312D	95 3 3/8	8.1
60	2 1/4	10 5/32	6 3/32	1 31/32	8 17/64	29/32	25/32	1 3/16	2 7/16(2 21/32)	1 31/32(2 9/16)	2 29/32	3/4	UKFL213	FL213	UK213		HE313X(HE2313X)	5.0				–	–	–	–	–	–	–	–	–	–
		258	155	50	210	23	20	30	62(67.5)	50(65)	74	M20					H313X(H2313X)	5.0	57.2	40.1	14.4	UKFL213C	UKFL213D	74 2 29/32	5.0	UKFL213FC	UKFL213FD	87 3 7/16	5.9
	2 3/8																HS313X(HS2313X)	5.0				–	–	–	–	–	–	–	–	–	–
	2 1/4	11 5/8	6 7/8	2 9/32	9 29/64	1 7/32	31/32	1 19/64	2 13/16	2 9/16	–	1	UKFL313	FL313	UK313		HE2313X	8.6				–	–	–	–	–	–	–	–	–	–
		295	175	58	240	31	25	33	71.5	65	–	M27					H2313X	8.6	92.7	59.9	13.2	–	–	–	–	UKFL313C	UKFL313D	94 3 11/16	9.7
	2 3/8																HS2313X	8.6				–	–	–	–	–	–	–	–	–	–
65	2 1/2	10 13/16	6 1/2	2 7/32	8 55/64	29/32	25/32	1 11/32	2 23/32(2 15/16)	2 5/32(2 7/8)	3 11/32	3/4	UKFL215	FL215	UK215		HE315X(HE2315X)	6.6				–	–	–	–	–	–	–	–	–	–
		275	165	56	225	23	20	34	69(74.5)	55(73)	85	M20					H315X(H2315X)	6.6	67.4	48.3	14.5	UKFL215C	UKFL215D	83 3 9/32	6.6	UKFL215FC	UKFL215FD	96 3 25/32	7.6
	2 1/2	12 19/32	7 11/16	2 19/32	10 15/64	1 3/8	1 3/16	1 17/32	2 7/32	2 7/8	–	1 1/8	UKFL315	FL315	UK315		HE2315X	11.4				–	–	–	–	–	–	–	–	–	–
		320	195	66	260	35	30	39	81.5	73	–	M30					H2315X	11.4	113	77.2	13.2	–	–	–	–	UKFL315C	UKFL315D	106 4 3/16	12.8
70	2 3/4	11 13/32	7 3/32	2 9/32	9 11/64	63/64	25/32	1 11/32	2 27/32(3 3/32)	2 5/16(3 1/16)	3 17/32	7/8	UKFL216	FL216	UK216		HE316X(HE2316X)	8.1				–	–	–	–	–	–	–	–	–	–
		290	180	58	233	25	20	34	72(78.5)	59(78)	90	M22					H316X(H2316X)	8.1	72.7	53.0	14.6	UKFL216C	UKFL216D	88 3 15/32	8.1	UKFL216FC	UKFL216FD	103 4 1/16	9.4
	2 3/4	13 31/32	8 9/32	2 11/16	11 7/32	1 1/2	1 1/4	1 1/2	3 1/4	3 1/16	–	1 1/4	UKFL316	FL316	UK316		HE2316X	13.9				–	–	–	–	–	–	–	–	–	–
		355	210	68	285	38	32	38	82.5	78	–	M33					H2316X	13.9	123	86.7	13.3	–	–	–	–	UKFL316C	UKFL316D	107 4 7/32	15.5
75	3	12	7 15/32	2 15/32	9 49/64	63/64	7/8	1 27/64	3(3 1/4)	2 15/32(3 7/32)	3 25/32	7/8	UKFL217	FL217	UK217		H317X(H2317X)	9.9				UKFL217C	UKFL217D	92 3 5/8	9.9	UKFL217FC	UKFL217FD	107 4 7/32	11.3
		305	190	63	248	25	22	36	76(82.5)	63(82)	96	M22					HE317X(HE2317X)	9.9	84.0	61.9	14.5	–	–	–	–	–	–	–	–
	3	14 9/16	8 21/32	2 29/32	11 13/16	1 1/2	1 1/4	1 47/64	3 5/8	3 7/32	–	1 1/4	UKFL317	FL317	UK317		H2317X	15.8				–	–	–	–	UKFL317C	UKFL317D	117 4 19/32	17.6
		370	220	74	300	38	32	44	92	82	–	M33					HE2317X	15.8	133	96.8	13.3	–	–	–	–	–	–	–	–
80	–	12 19/32	8 1/16	2 11/16	10 7/16	63/64	29/32	1 37/64	3 7/32(3 17/32)	2 9/16(3 3/8)	4 1/32	7/8	UKFL218	FL218	UK218		H318X(H2318X)	12.2	96.1	71.5	14.5	UKFL218C	UKFL218D	101 3 31/32	12.2	UKFL218FC	UKFL218FD	116 4 9/16	13.8
	–	15 5/32	9 1/4	3	12 13/32	1 1/2	1 13/32	1 47/64	3 5/8	3 3/8	–	1 1/4	UKFL318	FL318	UK318		H2318X	19.1	143	107	13.3	–	–	–	–	UKFL318C	UKFL318D	119 4 11/16	21.2
		385	235	76	315	38	36	44	92	86	–	M33																	
85	3 1/4	15 15/16	9 27/32	3 11/16	13	1 39/64	1 9/16	2 21/64	4 3/8	3 17/32	–	1 3/8	UKFL319	FL319	UK319		HE2319X	24.9				–	–	–	–	–	–	–	–	–	–
		405	250	94	330	41	40	59	111	90	–	M36					H2319X	24.9	153	119	13.3	–	–	–	–	UKFL319C	UKFL319D	140 5 1/2	27.3
90	3 1/2	17 5/16	10 5/8	3 11/16	14 11/64	1 47/64	1 9/16	2 21/64	4 7/16	3 13/16	–	1 1/2	UKFL320	FL320	UK320		HE2320X	29.0				–	–	–	–	–	–	–	–	–	–
		440	270	94	360	44	40	59	113	97	–	M39					H2320X	29.0	173	141	13.2	–	–	–	–	UKFL320C	UKFL320D	146 5 3/4	32.1
100	4	18 1/2	11 13/16	3 25/32	15 23/64	1 47/64	1 21/32	2 23/64	4 23/32	4 1/8	–	1 1/2	UKFL322	FL322	UK322		H2322X	36.1				–	–	–	–	–	–	–	–	–	–
		470	300	96	390	44	42	60	120	105	–	M39					HE2322X	36.1	205	180	13.2	–	–	–	–	–	–	–	–
110	–	20 15/32	13	4 11/32	16 59/64	1 27/32	1 7/8	2 9/16	5 1/8	4 13/32	–	1 5/8	UKFL324	FL324	UK324		H2324	51.9	207	185	13.5	–	–	–	–	UKFL324C	UKFL324D	163 6 13/32	57.0
		520	330	110	430	47	48	65	130.5	112	–	M42																	
115	4 1/2	21 21/32	14 3/16	4 17/32	18 7/64	1 27/32	1 31/32	2 9/16	5 3/16	4 3/4	–	1 5/8	UKFL326	FL326	UK326		HE2326	61.4				–	–	–	–	–	–	–	–	–	–
		550	360	115	460	47	50	65	131.5	121	–	M42					H2326	61.4	229	214	13.6	–	–	–	–	UKFL326C	UKFL326D	172 6 25/32	68.0

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

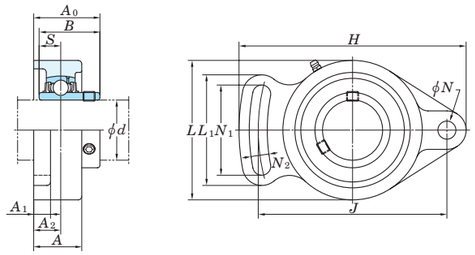
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF.....205~210, X05~X09, 305~308
A-PT1/8.....211~218, X10, 309~326

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-lip seal type product (205 is the double-lip seal type product), supplementary 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 assemblies.

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



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s})

Unit : mm

Housing No.	Δ_{A2s}
FA204~FA210	±0.5
FA211	±0.8

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

Unit : mm

Housing No.	Δ_{Ns}
FA204~FA211	±0.2

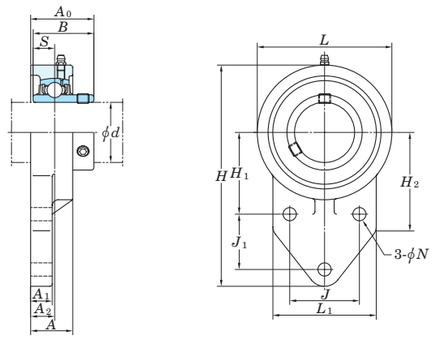
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm: H	L	A	J	N	N_1	N_2	L_1	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN: C_r	C_{0r}	Factor f_0	Mass kg
12	1/2															UCFA201		UC201					0.47
																UCFA201-8		UC201-8					
15																UCFA202		UC202					0.45
	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	UCFA202-10	FA204	UC202-10		12.8	6.65	13.2	
		98	59	24	78	10	40	10	50	11	13.8	32.1	31	12.7	M8								
17																UCFA203		UC203					0.44
	3/4															UCFA204-12		UC204-12					
20																UCFA204		UC204					0.42
	7/8															UCFA205-14		UC205-14					
	15/16	4 7/8	2 3/4	1 1/16	3 55/64	7/16	1 15/16	7/16	2 17/32	1/2	5/8	1 13/32	1.343	0.563	3/8	UCFA205-15	FA205	UC205-15		14.0	7.85	13.9	
25		124	70	27	98	11	49	11	64	13	16	35.8	34.1	14.3	M10	UCFA205		UC205					0.68
	1															UCFA205-16		UC205-16					
	1 1/8															UCFA206-18		UC206-18					
		5 9/16	3 9/32	1 3/16	4 39/64	7/16	2 7/32	15/32	2 11/16	1/2	45/64	1 9/16	1.500	0.626	3/8	UCFA206	FA206	UC206		19.5	11.3	13.9	
30	1 3/16	141	83	30	117	11	56	12	68	13	17.8	40	38.1	15.9	M10	UCFA206-19		UC206-19					1.0
	1 1/4															UCFA206-20		UC206-20					
	1 1/4															UCFA207-20		UC207-20					
	1 5/16															UCFA207-21		UC207-21					
35	1 3/8	6 3/32	3 25/32	1 11/32	5 1/8	33/64	2 15/32	1/2	2 15/16	9/16	47/64	1 23/32	1.689	0.689	7/16	UCFA207-22	FA207	UC207-22		25.7	15.4	13.9	1.5
		155	96	34	130	13	63	13	75	14	18.6	44	42.9	17.5	M12	UCFA207		UC207					
	1 7/16															UCFA207-23		UC207-23					
	1 1/2															UCFA208-24		UC208-24					
40	1 9/16	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	FA208	UC208-25		29.1	17.8	14	1.9
		171	105	38	144	13	70	13	84	14	20.8	51	49.2	19	M12	UCFA208		UC208					
	1 5/8															UCFA209-26		UC209-26					
45	1 11/16	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	FA209	UC209-27		34.1	21.3	14	1.7
	1 3/4	179	111	40	148	15	72	15	88	14	21.8	52	49.2	19	M14	UCFA209-28		UC209-28					
																UCFA209		UC209					
	1 7/8															UCFA210-30		UC210-30					
50	1 15/16	7 7/16	4 9/16	1 9/16	6 3/16	19/32	2 15/16	19/32	3 5/8	9/16	57/64	2 5/32	2.031	0.748	1/2	UCFA210-31	FA210	UC210-31		35.1	23.3	14.4	2.0
	2	189	116	40	157	15	75	15	92	14	22.5	55.1	51.6	19	M14	UCFA210		UC210					
																UCFA210-32		UC210-32					
	2															UCFA211-32		UC211-32					
55	2 1/8	8 1/2	5 1/4	1 23/32	7 1/4	5/8	3 3/8	5/8	4 1/32	25/32	1 1/64	2 5/16	2.189	0.874	1/2	UCFA211-34	FA211	UC211-34		43.4	29.4	14.4	3.6
		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 nipples are shown below.
A-1/4-28UNF.....201~210
A-PT1/8.....211

3. As for triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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 (Δ_{A2s}), variations of tolerance of distance between centers of bolt holes (Δ_{Js}, Δ_{J1s}), variations of tolerance of distance between both grooves (Δ_{H1s})

Unit : mm

Housing No.	Δ_{A2s}	Δ_{Js}	Δ_{J1s}	Δ_{H1s}
FB204~FB210	±0.5			

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

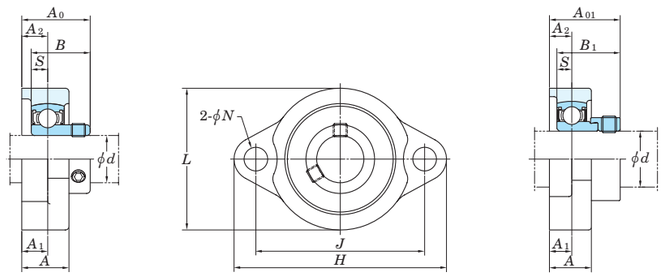
Unit : mm

Housing No.	Δ_{Ns}
FB204~FB210	±0.2

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	L	A	J	J_1	N	H_1	H_2	L_1	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Unit No.	Housing No.		Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12	1/2																UCFB201			UC201				0.64
																	UCFB201-8			UC201-8				
15																	UCFB202			UC202				0.62
	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	5/16	UCFB202-10	FB204		UC202-10	12.8	6.65	13.2	
		110	62	24	32	27	9.5	42	52	52	13	13.5	31.8	31	12.7	M8								
17																	UCFB203			UC203				0.61
	3/4																UCFB204-12			UC204-12				
20																	UCFB204			UC204				0.59
	7/8																UCFB205-14			UC205-14				
	15/16	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	5/16	UCFB205-15			UC205-15				
25		116	68	26	34	27	9.5	45	52	56	13	15	34.8	34.1	14.3	M8	UCFB205	FB205		UC205	14.0	7.85	13.9	0.68
	1																UCFB205-16			UC205-16				
	1 1/8																UCFB206-18			UC206-18				
		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	5/16	UCFB206			UC206				
30	1 3/16	130	78	29	40	29	9.5	50	55	65	13	17	39.2	38.1	15.9	M8	UCFB206-19	FB206		UC206-19	19.5	11.3	13.9	0.92
	1 1/4																UCFB206-20			UC206-20				
	1 1/4																UCFB207-20			UC207-20				
	1 5/16																UCFB207-21			UC207-21				
35	1 3/8	5 21/32	3 17/32	1 5/16	1 13/16	1 17/64	3/8	2 11/64	2 7/16	2 3/4	19/32	3/4	1 3/4	1.689	0.689	5/16	UCFB207-22	FB207		UC207-22	25.7	15.4	13.9	1.3
		144	90	33	46	32	9.5	55	62	70	15	19	44.4	42.9	17.5	M8	UCFB207			UC207				
	1 7/16																UCFB207-23			UC207-23				
	1 1/2																UCFB208-24			UC208-24				
40	1 9/16	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	3/8	UCFB208-25	FB208		UC208-25	29.1	17.8	14.0	1.8
		164	100	34	50	41	11	60	72	78	16	20	50.2	49.2	19	M10	UCFB208			UC208				
	1 5/8																UCFB209-26			UC209-26				
45	1 11/16	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	3/8	UCFB209-27	FB209		UC209-27	34.1	21.3	14.0	2.0
	1 3/4	174	106	34	54	43	11	65	76	80	18	20	50.2	49.2	19	M10	UCFB209-28			UC209-28				
																	UCFB209			UC209				
	1 7/8																UCFB210-30			UC210-30				
50	1 15/16	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	3/8	UCFB210-31	FB210		UC210-31	35.1	23.3	14.4	2.3
		184	112	35	58	46	11	68	82	86	18	20	52.6	51.6	19	M10	UCFB210			UC210				
	2																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 nipple is A-1/4-28UNF.
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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 screws)
ALF
Cylindrical bore
(with eccentric locking collar)
d 12 ~ 35 mm



BLF ALF

Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and variations of tolerance of distance between centers of bolt holes (Δ_{Js})

Unit : mm

Housing No.	Δ_{A2s}	Δ_{Js}
LF203~LF207	±0.5	±0.7

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

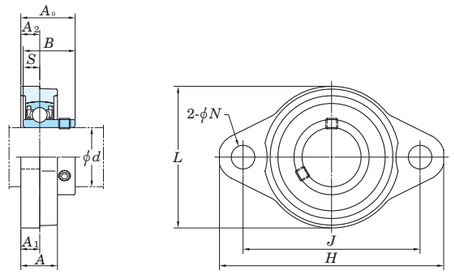
Unit : mm

Housing No.	Δ_{Ns}
LF203~LF207	±0.2

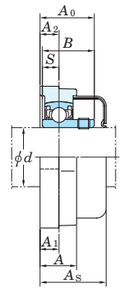
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm								BLF		ALF		Bolt Size inch / mm	Unit No.	Bearing No.		Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN		Factor	Mass kg	
d		H	L	A	J	N	A_1	A_2	S	A_0	B	A_{01}	B_1								C_r	C_{0r}	f_0	BLF	ALF
12	1/2	3 3/16	2 1/16	23/32	2 1/2	5/16	3/8	3/8	0.236	1	0.866	1 1/4	1.122	1/4	**BLF201**	SB201		**ALF201**	SA201						
		81	52	18	63.5	8	9.5	9.5	6	25.5	22	32	28.5	M6	**BLF201-8**	SB201-8		**ALF201-8**	SA201-8						
15															**BLF202**	SB202		**ALF202**	SA202	LF203	9.55	4.80	13.2	0.25	0.28
	5/8														**BLF202-10**	SB202-10		**ALF202-10**	SA202-10						
17															**BLF203**	SB203		**ALF203**	SA203						
20	3/4	3 17/32	2 3/8	25/32	2 13/16	25/64	7/16	7/16	0.276	1 5/32	0.984	1 5/16	1.161	5/16	**BLF204-12**	SB204-12		**ALF204-12**	SA204-12	LF204	12.8	6.65	13.2	0.33	0.33
		90	60	20	71.5	10	11	11	7	29	25	33.5	29.5	M8	**BLF204**	SB204		**ALF204**	SA204						
	7/8														**BLF205-14**	SB205-14		**ALF205-14**	SA205-14						
25	15/16	3 3/4	2 17/32	25/32	2 63/64	25/64	7/16	7/16	0.295	1 3/16	1.063	1 11/32	1.201	5/16	**BLF205-15**	SB205-15		**ALF205-15**	SA205-15	LF205	14.0	7.85	13.9	0.38	0.42
		95	64	20	76	10	11	11	7.5	30.5	27	34	30.5	M8	**BLF205**	SB205		**ALF205**	SA205						
	1														**BLF205-16**	SB205-16		**ALF205-16**	SA205-16						
	1 1/8														**BLF206-18**	SB206-18		**ALF206-18**	SA206-18						
30		4 7/16	3	7/8	3 9/16	15/32	15/32	15/32	0.315	1 11/32	1.181	1 1/2	1.335	3/8	**BLF206**	SB206		**ALF206**	SA206	LF206	19.5	11.3	13.9	0.57	0.60
	1 3/16	113	76	22.5	90.5	12	12	12	8	34	30	37.9	33.9	M10	**BLF206-19**	SB206-19		**ALF206-19**	SA206-19						
	1 1/4														**BLF206-20**	SB206-20		**ALF206-20**	SA206-20						
	1 1/4														**BLF207-20**	SB207-20		**ALF207-20**	SA207-20						
	1 5/16																	**ALF207-21**	SA207-21						
35	1 3/8	4 13/16	3 1/2	15/16	3 15/16	15/32	1/2	33/64	0.335	1 7/16	1.260	1 5/8	1.437	3/8	**BLF207-22**	SB207-22		**ALF207-22**	SA207-22	LF207	25.7	15.4	13.9	0.77	0.85
		122	89	24	100	12	13	13	8.5	36.5	32	41	36.5	M10	**BLF207**	SB207		**ALF207**	SA207						
	1 7/16														**BLF207-23**	SB207-23		**ALF207-23**	SA207-23						

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

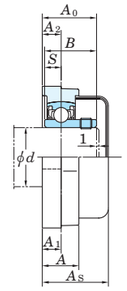
UFL
Cylindrical bore (with set screws)
d 8 ~ 30 mm



Open End Type



Closed End type



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and variations of tolerance of distance between centers of bolt holes (Δ_{Js})

Unit : mm

Housing No.	Δ_{A2s}	Δ_{Js}
FL08	±0.5	±0.3
FL000~FL006		

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

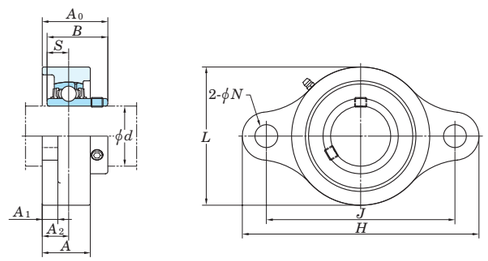
Unit : mm

Housing No.	Δ_{Ns}
FL08	±0.2
FL000~FL006	

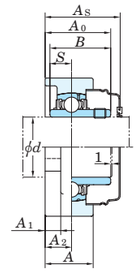
Shaft Dia. mm	Dimensions inch / mm										Bolt Size	Standard				Mass	Basic Load Ratings kN		Factor	With Rubber Coated Cover				Mass
											inch	Unit No.	Housing No.	Bearing No.						Unit No.		Dimension mm inch		
d	H	L	A	J	N	A_1	A_2	A_0	B	S	mm					kg	C_r	C_{0r}	f_0	Open End Type	Closed End Type	A_s		kg
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	0.050
	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	0.065
	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	0.085
	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. Housing is made from special light alloy.
3. 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 20 ~ 50 mm



With Pressed Stainless Steel Covers



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and variations of tolerance of distance between centers of bolt holes (Δ_{Js})

Unit : mm

Housing No.	Δ_{A2s}	Δ_{Js}
SFL204H1~SFL210H1	±0.5	0.3

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

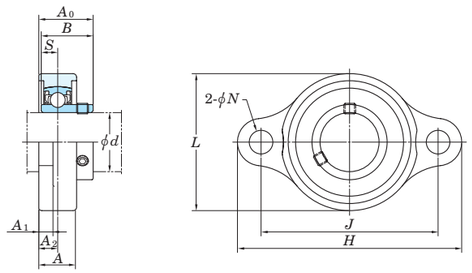
Unit : mm

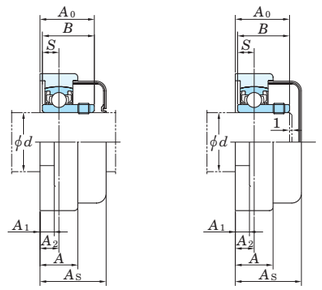
Housing No.	Δ_{Ns}
SFL204H1~SFL210H1	±0.2

Shaft Dia. mm	Dimensions inch / mm										Bolt Size	Standard					Basic Load Ratings kN		Factor	With Pressed Stainless Steel Covers				
											inch	Unit No.	Housing No.	Bearing No.		Mass				Unit No.		Dimension mm inch		Mass
d	H	L	A	J	N	A_1	A_2	A_0	B	S	mm					kg	C_r	C_{0r}	f_0	Open End Type	Closed End Type	A_s		kg
20	4 7/16	2 3/8	1 1/32	3 35/64	15/32	13/32	19/32	1 5/16	1.220	0.500	3/8	UCSFL204H1S6	SFL204H1	UC204S6		0.43	10.9	5.35	13.2	UCSFL204H1CS6	UCSFL204H1DS6	38	1 1/2	0.43
	113	60	26	90	12	10	15	33.3	31	12.7	M10													
25	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	UCSFL205H1S6	SFL205H1	UC205S6		0.60	11.9	6.30	13.9	UCSFL205H1CS6	UCSFL205H1DS6	40	1 9/16	0.60
	130	68	27.5	99	16	10	16	35.8	34.1	14.3	M14													
30	5 13/16	3 5/32	1 7/32	4 39/64	5/8	13/32	45/64	1 19/32	1.500	0.626	1/2	UCSFL206H1S6	SFL206H1	UC206S6		0.86	16.5	9.05	13.9	UCSFL206H1CS6	UCSFL206H1DS6	45	1 15/32	0.86
	148	80	31	117	16	10	18	40.2	38.1	15.9	M14													
35	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	UCSFL207H1S6	SFL207H1	UC207S6		1.1	21.8	12.3	13.9	UCSFL207H1CS6	UCSFL207H1DS6	49	1 15/16	1.1
	161	85	34	130	16	11	19	44.4	42.9	17.5	M14													
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		1.5	24.8	14.3	14.0	UCSFL208H1CS6	UCSFL208H1DS6	56	2 7/32	1.5
	175	94	36	144	16	12	21	51.2	49.2	19	M14													
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	UCSFL209H1S6	SFL209H1	UC209S6		1.8	27.8	16.2	14.0	UCSFL209H1CS6	UCSFL209H1DS6	57	1 1/4	1.8
	188	100	38	148	19	13	22	52.2	49.2	19	M16													
50	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	SFL210H1	UC210S6		2.1	29.8	18.6	14.4	UCSFL210H1CS6	UCSFL210H1DS6	59	2 5/16	2.1
	197	106	40	157	19	13	22	54.6	51.6	19	M16													

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 nipple 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





Shaft Dia. mm d	Dimensions inch / mm H	L	A	J	N	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Rubber Coated Cover Unit No. Open End Type	Closed End Type	Dimension inch / mm A_s	Mass kg
10	2 3/8 60	1 11/32 34	15/32 12	1 49/64 45	9/32 7	3/16 5	15/64 6	5/8 16	0.591 15	0.197 5	1/4 M6	USFL000S6	SFL000	SU000S6	0.076	3.9	1.55	12.3	USFL000CS6	USFL000DS6	20.5 13/16	0.076
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	0.080
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.

Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and variations of tolerance of distance between centers of bolt holes (Δ_{Js})

Unit : mm

Housing No.	Δ_{A2s}	Δ_{Js}
SFL000~SFL006	±0.5	±0.3

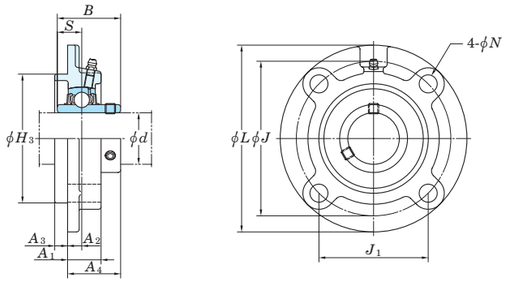
Variations of tolerance of bolt hole diameter (Δ_{Ns})

Unit : mm

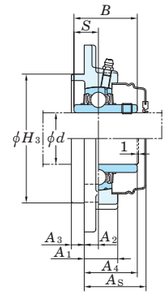
Housing No.	Δ_{Ns}
SFL000~SFL006	±0.2

Koyo

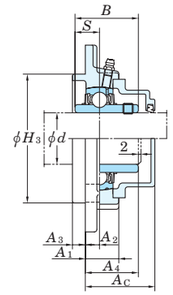
UCFC
Cylindrical bore (with set screws)
d 12 ~ 50 mm



With Pressed Steel Cover



With Cast Iron Cover



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
FC204~FC206	FCX05	0 −0.046	±0.5	0.7	0.2
FC207~FC210	FCX06~FCX10	0 −0.054			
FC211~FC217	FCX11~FCX15	0 −0.063	±0.8	1	0.3
FC218	FCX16~FCX18	0 −0.072			
	FCX20				0.4

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

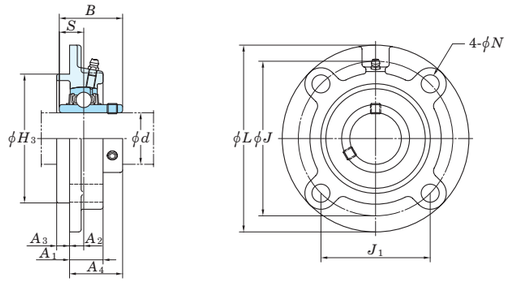
Unit : mm

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

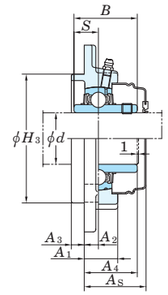
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm											Bolt Size inch	Bolt Size mm	Standard Unit No.	Standard Housing No.	Standard Bearing No.	Mass	Basic Load Ratings kN		Factor	With Pressed Steel Cover Unit No.		With Pressed Steel Cover Dimension		With Pressed Steel Cover Mass	With Cast Iron Cover Unit No.		With Cast Iron Cover Dimension		With Cast Iron Cover Mass
d		L	H_3	J	J_1	N	A_1	A_2	A_3	A_4	B	S						kg	C_r	C_{0r}	f_0	Open End Type	Closed End Type	mm	inch A_s	kg	Open End Type	Closed End Type	mm	inch A_c	kg
12	1/2												3/8	M10	UCFC201	FC204	UC201	0.78	12.8	6.65	13.2	UCFC201C	UCFC201D	32	1 1/4	0.78	–	–	–	–	–
															UCFC201-8		UC201-8	0.78				–	–	–	–	–	–	–	–	–	–
15															UCFC202		UC202	0.76				UCFC202C	UCFC202D	32	1 1/4	0.76	–	–	–	–	–
	5/8	3 15/16	2.4409	3 5/64	2 11/64	15/32	13/16	25/64	13/64	1 1/8	1.220	0.500			UCFC202-10		UC202-10	0.76				–	–	–	–	–	–	–	–	–	–
		100	62	78	55.1	12	20.5	10	5	28.3	31	12.7			UCFC203		UC203	0.75				UCFC203C	UCFC203D	32	1 1/4	0.75	–	–	–	–	–
17															UCFC204-12		UC204-12	0.75				–	–	–	–	–	–	–	–	–	–
	3/4														UCFC204		UC204	0.73				UCFC204C	UCFC204D	32	1 1/4	0.73	UCFC204FC	UCFC204FD	38.5	1 17/32	0.84
	7/8														UCFC205-14		UC205-14	0.95				–	–	–	–	–	–	–	–	–	–
	15/16	4 17/32	2.7559	3 35/64	2 1/2	15/32	13/16	25/64	15/64	1 3/16	1.343	0.563	3/8		UCFC205-15	FC205	UC205-15	0.95	14.0	7.85	13.9	–	–	–	–	–	–	–	–	–	–
		115	70	90	63.6	12	21	10	6	29.8	34.1	14.3	M10		UCFC205		UC205	0.95				UCFC205C	UCFC205D	34	1 11/32	0.95	UCFC205FC	UCFC205FD	42	1 21/32	1.1
25	1														UCFC205-16		UC205-16	0.95				–	–	–	–	–	–	–	–	–	–
		4 3/8	2.9921	3 5/8	2 9/16	3/8	15/16	25/64	15/64	1 9/32	1.500	0.626	5/16		UCFCX05	FCX05	UCX05	1.2	19.5	11.3	13.9	UCFCX05C	UCFCX05D	36	1 13/32	1.2	–	–	–	–	–
	1	111	76	92	65	9.5	24	10	6	32.2	38.1	15.9	M8		UCFCX05-16		UCX05-16	1.2				–	–	–	–	–	–	–	–	–	–
	1 1/8														UCFC206-18		UC206-18	1.3				–	–	–	–	–	–	–	–	–	–
		4 29/32	3.1496	3 15/16	2 25/32	15/32	29/32	25/64	5/16	1 9/32	1.500	0.626	3/8		UCFC206	FC206	UC206	1.3	19.5	11.3	13.9	UCFC206C	UCFC206D	36	1 13/32	1.3	UCFC206FC	UCFC206FD	45	1 25/32	1.6
	1 3/16	125	80	100	70.7	12	23	10	8	32.2	38.1	15.9	M10		UCFC206-19		UC206-19	1.3				–	–	–	–	–	–	–	–	–	–
30	1 1/4														UCFC206-20		UC206-20	1.3				–	–	–	–	–	–	–	–	–	–
		5	3.3465	4 9/64	2 59/64	15/32	7/8	5/16	3/8	1 5/16	1.689	0.689	3/8		UCFCX06	FCX06	UCX06	1.5	25.7	15.4	13.9	UCFCX06C	UCFCX06D	38	1 1/2	1.5	–	–	–	–	–
	1 3/16	127	85	105	74.2	12	22.5	8	9.5	33.4	42.9	17.5	M10		UCFCX06-19		UCX06-19	1.5				–	–	–	–	–	–	–	–	–	–
	1 1/4														UCFCX06-20		UCX06-20	1.5				–	–	–	–	–	–	–	–	–	–
	1 1/4														UCFC207-20		UC207-20	1.7				–	–	–	–	–	–	–	–	–	–
	1 5/16														UCFC207-21		UC207-21	1.7				–	–	–	–	–	–	–	–	–	–
		5 5/16	3.5433	4 21/64	3 1/16	35/64	1 1/32	7/16	5/16	1 7/16	1.689	0.689	7/16		UCFC207-22	FC207	UC207-22	1.7	25.7	15.4	13.9	–	–	–	–	–	–	–	–	–	–
	1 3/8	135	90	110	77.8	14	26	11	8	36.4	42.9	17.5	M12		UCFC207		UC207	1.7				UCFC207C	UCFC207D	41	1 5/8	1.7	UCFC207FC	UCFC207FD	50	1 31/32	2.1
35	1 7/16														UCFC207-23		UC207-23	1.7				–	–	–	–	–	–	–	–	–	–
	1 3/8														UCFCX07-22		UCX07-22	1.9				–	–	–	–	–	–	–	–	–	–
		5 1/4	3.6220	4 3/8	3 3/32	15/32	1 1/32	23/64	7/16	1 17/32	1.937	0.748	3/8		UCFCX07	FCX07	UCX07	1.9	29.1	17.8	14.0	UCFCX07C	UCFCX07D	43	1 11/16	1.9	–	–	–	–	–
	1 7/16	133	92	111	78.5	12	26	9	11	39.2	49.2	19	M10		UCFCX07-23		UCX07-23	1.9				–	–	–	–	–	–	–	–	–	–
	1 1/2														UCFC208-24		UC208-24	2.0				–	–	–	–	–	–	–	–	–	–
	1 9/16	5 23/32	3.9370	4 23/32	3 11/32	35/64	1 1/32	7/16	25/64	1 5/8	1.937	0.748	7/16		UCFC208-25	FC208	UC208-25	2.0	29.1	17.8	14.0	–	–	–	–	–	–	–	–	–	–
40		145	100	120	84.8	14	26	11	10	41.2	49.2	19	M12		UCFC208		UC208	2.0				UCFC208C	UCFC208D	45	1 25/32	2.0	UCFC208FC	UCFC208FD	54	2 1/8	2.4
	1 1/2	5 1/4	3.6220	4 3/8	3 3/32	15/32	1 1/32	23/64	7/16	1 17/32	1.937	0.748	3/8		UCFCX08-24	FCX08	UCX08-24	2.0	34.1	21.3	14.0	–	–	–	–	–	–	–	–	–	–
		133	92	111	78.5	12	26	9	11	39.2	49.2	19	M10		UCFCX08		UCX08	2.0				UCFCX08C	UCFCX08D	43	1 11/16	2.0	–	–	–	–	–
	1 5/8														UCFC209-26		UC209-26	2.6				–	–	–	–	–	–	–	–	–	–
	1 11/16	6 5/16	4.1339	5 13/64	3 43/64	5/8	1 1/32	25/64	15/32	1 19/32	1.937	0.748	1/2		UCFC209-27	FC209	UC209-27	2.6	34.1	21.3	14.0	–	–	–	–	–	–	–	–	–	–
	1 3/4	160	105	132	93.3	16	26	10	12	40.2	49.2	19	M14		UCFC209-28		UC209-28	2.6				–	–	–	–	–	–	–	–	–	–
45															UCFC209		UC209	2.6				UCFC209C	UCFC209D	44	1 23/32	2.6	UCFC209FC	UCFC209FD	54	2 1/8	3.0
	1 3/4	6 3/32	4.2520	5 1/8	3 5/8	35/64	31/32	5/16	15/32	1 19/32	2.031	0.748	7/16		UCFCX09-28	FCX09	UCX09-28	2.6	35.1	23.3	14.4	–	–	–	–	–	–	–	–	–	–
		155	108	130	91.9	14	25	8	12	40.6	51.6	19	M12		UCFCX09		UCX09	2.6				UCFCX09C	UCFCX09D	45	1 25/32	2.6	–	–	–	–	–
	1 7/8														UCFC210-30		UC210-30	2.9				–	–	–	–	–	–	–	–	–	–
	1 15/16	6 1/2	4.3307	5 7/16	3 27/32	5/8	1 3/32	25/64	15/32	1 11/16	2.031	0.748	1/2		UCFC210-31	FC210	UC210-31	2.9	35.1	23.3	14.4	–	–	–	–	–	–	–	–	–	–
		165	110	138	97.6	16	28	10	12	42.6	51.6	19	M14		UCFC210		UC210	2.9				UCFC210C	UCFC210D	47	1 27/32	2.9	UCFC210FC	UCFC210FD	58.5	2 5/16	3.4
50	2														UCFC210-32		UC210-32	2.9				–	–	–	–	–	–	–	–	–	–
	1 15/16	6 3/8	4.6457	5 23/64	3 25/32	35/64	31/32	9/32	5/8	1 19/32	2.189	0.874	7/16		UCFCX10-31	FCX10	UCX10-31	3.2	43.4	29.4	14.4	–	–	–	–	–	–	–	–	–	–
		162	118	136	96.2	14	25	7	16	40.4	55.6	22.2	M12		UCFCX10		UCX10	3.2				UCFCX10C	UCFCX10D	45	1 25/32	3.2	–	–	–	–	–
	2														UCFCX10-32		UCX10-32	3.2				–	–	–	–	–	–	–	–	–	–

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF ..... 201~210, X05~X09
A-PT1/8 ..... 211~218, X10~X20
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

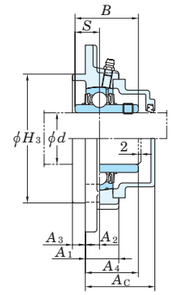
UCFC
Cylindrical bore (with set screws)
d 55 ~ 100 mm



With Pressed Steel Cover



With Cast Iron Cover



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
FC204~FC206	FCX05	0 −0.046	±0.5	0.7	0.2
FC207~FC210	FCX06~FCX10	0 −0.054			
FC211~FC217	FCX11~FCX15	0 −0.063	±0.8	1	0.3
FC218	FCX16~FCX18	0 −0.072			
	FCX20				0.4

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

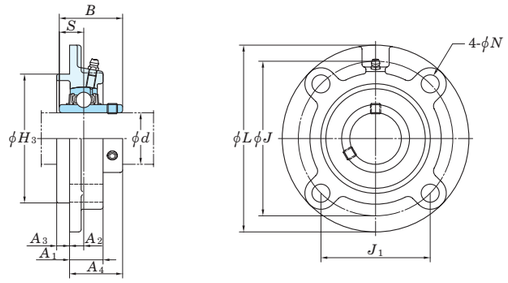
Unit : mm

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

Shaft Dia. mm / inch d	Dimensions inch / mm L	H_3	J	J_1	N	A_1	A_2	A_3	A_4	B	S	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_c	Mass kg
55	2												UCFC211-32	FC211	UC211-32	4.2	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
	2 1/8	7 9/32	4.9213	5 29/32	4 11/64	3/4	1 7/32	33/64	15/32	1 13/16	2.189	0.874	UCFC211-34		UC211-34	4.2				–	–	– –	–	–	–	– –	–
		185	125	150	106.1	19	31	13	12	46.4	55.6	22.2	UCFC211		UC211	4.2				UCFC211C	UCFC211D	51 2	4.2	UCFC211FC	UCFC211FD	62.5 2 15/32	4.8
	2 3/16												UCFC211-35		UC211-35	4.2				–	–	– –	–	–	–	– –	–
		7 3/32	5	5 63/64	4 15/64	5/8	1 1/32	5/32	55/64	1 23/32	2.563	1.000	UCFCX11	FCX11	UCX11	4.3	52.4	36.2	14.4	UCFCX11C	UCFCX11D	46 1 13/16	4.3	–	–	– –	–
	2 3/16	180	127	152	107.5	16	26	4	22	43.7	65.1	25.4	UCFCX11-35		UCX11-35	4.3				–	–	– –	–	–	–	– –	–
	2 1/4											1/2 M14	UCFCX11-36		UCX11-36	4.3				–	–	– –	–	–	–	– –	–
60	2 1/4												UCFC212-36	FC212	UC212-36	5.0	52.4	36.2	14.4	–	–	– –	–	–	–	– –	–
		7 11/16	5.3150	6 19/64	4 29/64	3/4	1 13/32	43/64	15/32	2 7/32	2.563	1.000	UCFC212		UC212	5.0				UCFC212C	UCFC212D	61 2 13/32	5.0	UCFC212FC	UCFC212FD	74 2 29/32	5.8
	2 3/8	195	135	160	113.1	19	36	17	12	56.7	65.1	25.4	UCFC212-38		UC212-38	5.0				–	–	– –	–	–	–	– –	–
	2 7/16											5/8 M16	UCFC212-39		UC212-39	5.0				–	–	– –	–	–	–	– –	–
		7 5/8	5.5118	6 1/2	4 19/32	5/8	1 5/16	7/16	25/32	2	2.563	1.000	UCFCX12	FCX12	UCX12	5.3	57.2	40.1	14.4	UCFCX12C	UCFCX12D	55 2 5/32	5.3	–	–	– –	–
	2 7/16	194	140	165	116.7	16	33	11	20	50.7	65.1	25.4	UCFCX12-39		UCX12-39	5.3				–	–	– –	–	–	–	– –	–
65	2 1/2	8 1/16	5.7087	6 11/16	4 47/64	3/4	1 13/32	5/8	35/64	2 3/16	2.563	1.000	UCFC213-40	FC213	UC213-40	5.6	57.2	40.1	14.4	–	–	– –	–	–	–	– –	–
		205	145	170	120.2	19	36	16	14	55.7	65.1	25.4	UCFC213		UC213	5.6				UCFC213C	UCFC213D	60 2 3/8	5.6	UCFC213FC	UCFC213FD	73 2 7/8	6.4
	2 1/2	7 5/8	5.5118	6 1/2	4 19/32	5/8	1 5/16	7/16	25/32	2 3/16	2.937	1.189	UCFCX13-40	FCX13	UCX13-40	5.7	62.2	44.1	14.5	–	–	– –	–	–	–	– –	–
		194	140	165	116.7	16	33	11	20	55.4	74.6	30.2	UCFCX13		UCX13	5.7				UCFCX13C	UCFCX13D	60 2 3/8	5.7	–	–	– –	–
70	2 3/4	8 15/32	5.9055	6 31/32	4 59/64	3/4	1 9/16	43/64	35/64	2 13/32	2.937	1.189	UCFC214-44	FC214	UC214-44	6.8	62.2	44.1	14.5	–	–	– –	–	–	–	– –	–
		215	150	177	125.1	19	40	17	14	61.4	74.6	30.2	UCFC214		UC214	6.8				UCFC214C	UCFC214D	66 2 19/32	6.8	UCFC214FC	UCFC214FD	79 3 1/8	7.7
	2 3/4	8 3/4	6.4567	7 31/64	5 9/32	3/4	1 13/32	35/64	25/32	2 5/16	3.063	1.331	UCFCX14-44	FCX14	UCX14-44	7.3	67.4	48.3	14.5	–	–	– –	–	–	–	– –	–
		222	164	190	134.3	19	36	14	20	58.5	77.8	33.3	UCFCX14		UCX14	7.3				UCFCX14C	UCFCX14D	63 2 15/32	7.3	–	–	– –	–
75	2 15/16	8 21/32	6.2992	7 1/4	5 1/8	3/4	1 9/16	45/64	5/8	2 15/32	3.063	1.331	UCFC215-47	FC215	UC215-47	7.2	67.4	48.3	14.5	–	–	– –	–	–	–	– –	–
		220	160	184	130.1	19	40	18	16	62.5	77.8	33.3	UCFC215		UC215	7.2				UCFC215C	UCFC215D	67 2 5/8	7.2	UCFC215FC	UCFC215FD	80 3 5/32	8.2
	3											5/8 M16	UCFC215-48		UC215-48	7.2				–	–	– –	–	–	–	– –	–
	2 15/16												UCFCX15-47	FCX15	UCX15-47	8.0	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
		8 3/4	6.4567	7 31/64	5 9/32	3/4	1 3/8	15/32	55/64	2 13/32	3.252	1.311	UCFCX15		UCX15	8.0				UCFCX15C	UCFCX15D	66 2 19/32	8.0	–	–	– –	–
	3	222	164	190	134.3	19	35	12	22	61.3	82.6	33.3	UCFCX15-48		UCX15-48	8.0				–	–	– –	–	–	–	– –	–
80	3 1/8	9 7/16	6.6929	7 7/8	5 9/16	29/32	1 31/32	45/64	5/8	2 21/32	3.252	1.311	UCFC216-50	FC216	UC216-50	8.7	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
		240	170	200	141.4	23	42	18	16	67.3	82.6	33.3	UCFC216		UC216	8.7				UCFC216C	UCFC216D	72 2 27/32	8.7	UCFC216FC	UCFC216FD	87 3 7/16	9.9
	–	10 1/4	7.3228	8 5/8	6 3/32	29/32	1 13/32	25/64	63/64	2 7/16	3.374	1.343	UCFCX16	FCX16	UCX16	11.3	84.0	61.9	14.5	UCFCX16C	UCFCX16D	66 2 19/32	11.3	–	–	– –	–
		260	186	219	154.8	23	36	10	25	61.6	85.7	34.1															
85	3 1/4	9 27/32	7.0866	8 3/16	5 51/64	29/32	1 25/32	45/64	45/64	2 3/4	3.374	1.343	UCFC217-52	FC217	UC217-52	10.3	84.0	61.9	14.5	–	–	– –	–	–	–	– –	–
		250	180	208	147.1	23	45	18	18	69.6	85.7	34.1	UCFC217		UC217	10.3				UCFC217C	UCFC217D	74 2 29/32	10.3	UCFC217FC	UCFC217FD	89 3 1/2	11.7
		10 1/4	7.3228	8 5/8	6 3/32	29/32	1 13/32	25/64	63/64	2 5/8	3.780	1.563	UCFCX17	FCX17	UCX17	12.9	96.1	71.5	14.5	UCFCX17C	UCFCX17D	71 2 25/32	12.9	–	–	– –	–
	3 7/16	260	186	219	154.8	23	36	10	25	66.3	96	39.7	UCFCX17-55		UCX17-55	12.9				–	–	– –	–	–	–	– –	–
90	3 1/2	10 7/16	7.4803	8 21/32	6 1/8	29/32	1 31/32	55/64	45/64	3 3/32	3.780	1.563	UCFC218-56	FC218	UC218-56	13.3	96.1	71.5	14.5	–	–	– –	–	–	–	– –	–
		265	190	220	155.5	23	50	22	18	78.3	96	39.7	UCFC218		UC218	13.3				UCFC218C	UCFC218D	83 3 9/32	13.3	UCFC218FC	UCFC218FD	98 3 27/32	14.8
	–	10 1/4	7.3228	8 5/8	6 3/32	29/32	1 11/16	15/32	1 7/64	2 7/8	4.094	1.689	UCFCX18	FCX18	UCX18	13.5	109	81.9	14.4	–	–	– –	–	UCFCX18C	UCFCX18C	92 3 5/8	15.4
		260	186	219	154.8	23	43	12	28	73.1	104	42.9															
100	3 15/16	10 7/8	8.1102	9 3/8	6 5/8	29/32	2 19/32	55/64	1 7/64	3 9/16	4.626	1.937	UCFCX20	FCX20	UCX20	18.2	133	105	14.4	–	–	– –	–	UCFCX20C	UCFCX20D	116 4 9/16	20.7
	4	276	206	238	168.3	23	66	22	28	90.3	117.5	49.2	UCFCX20-63		UCX20-63	18.2				–	–	– –	–	–	–	– –	–
												3/4 M20	UCFCX20-64		UCX20-64	18.2				–	–	– –	–	–	–	– –	–

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 nipples are shown below.
A-1/4-28UNF ..... 201~210, X05~X09
A-PT1/8 ..... 211~218, X10~X20
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

UCFCX-E
Cylindrical bore (with set screws)
d 25 ~ 100 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
FCX05E	0 −0.046	±0.5	0.7	0.2
FCX06E~FCX10E	0 −0.054			
FCX12E~FCX15E	0 −0.063	±0.8	1	0.3
FCX16E~FCX18E	0 −0.072			
FCX20E				0.4

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

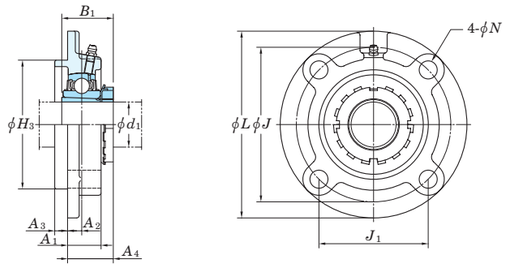
Unit : mm

Housing No.	Δ_{Ns}
FCX05E~FCX20E	±0.2

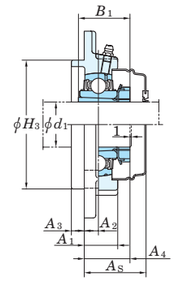
Shaft Dia. mm / inch d	Dimensions inch / mm L	H_3	J	J_1	N	A_1	A_2	A_3	A_4	B	S	Bolt Size inch / mm	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
25	4 3/8	3.000	3 5/8	2 9/16	3/8	15/16	25/64	15/64	1 9/32	1.500	0.626	5/16	**UCFCX05E**	FCX05E	UCX05		19.5	11.3	13.9	1.2
1	111	76.2	92	65	9.5	24	10	6	32.2	38.1	15.9	M8	**UCFCX05-16E**		UCX05-16					
30	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**	FCX06E	UCX06		25.7	15.4	13.9	1.5
1 3/16	127	85.725	105	74.2	12	22.5	8	9.5	33.4	42.9	17.5	M10	**UCFCX06-19E**		UCX06-19					
1 1/4													**UCFCX06-20E**		UCX06-20					
35	1 3/8												**UCFCX07-22E**		UCX07-22					
	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**	FCX07E	UCX07		29.1	17.8	14.0	1.9
1 7/16	133	92.075	111	78.5	12	26	9	11	39.2	49.2	19	M10	**UCFCX07-23E**		UCX07-23					
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	**UCFCX08-24E**	FCX08E	UCX08-24		34.1	21.3	14.0	2.0
	133	92.075	111	78.5	12	26	9	11	39.2	49.2	19	M10	**UCFCX08E**		UCX08					
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	**UCFCX09-28E**	FCX09E	UCX09-28		35.1	23.3	14.4	2.6
	155	107.95	130	91.9	14	25	8	12	40.6	51.6	19	M12	**UCFCX09E**		UCX09					
50	1 15/16	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	**UCFCX10-31E**	FCX10E	UCX10-31		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	**UCFCX10E**		UCX10					
2													**UCFCX10-32E**		UCX10-32					
60	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**	FCX12E	UCX12		57.2	40.1	14.4	5.3
2 7/16	194	139.7	165	116.7	16	33	11	20	50.7	65.1	25.4	M14	**UCFCX12-39E**		UCX12-39					
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	**UCFCX13-40E**	FCX13E	UCX13-40		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	**UCFCX13E**		UCX13					
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	**UCFCX14-44E**	FCX14E	UCX14-44		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	**UCFCX14E**		UCX14					
75	2 15/16												**UCFCX15-47E**		UCX15-47					
	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**	FCX15E	UCX15		72.7	53.0	14.6	8.0
3	222	161.925	190	134.3	19	35	12	22	61.3	82.6	33.3	M16	**UCFCX15-48E**		UCX15-48					
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
	260	187.325	219	154.8	23	36	10	25	61.6	85.7	34.1	M20								
85		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**	FCX17E	UCX17		96.1	71.5	14.5	12.9
3 7/16	260	187.325	219	154.8	23	36	10	25	66.3	96	39.7	M20	**UCFCX17-55E**		UCX17-55					
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	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**	FCX20E	UCX20		133	105	14.4	18.2
3 15/16	276	206.375	238	168.3	23	66	22	28	90.3	117.5	49.2	M20	**UCFCX20-63E**		UCX20-63					
4													**UCFCX20-64E**		UCX20-64					

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 nipples are shown below.
A-1/4-28UNF ..... X05~X09
A-PT1/8 ..... X10~X20
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

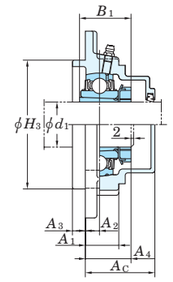
UKFC
Tapered bore (with adapter)
d_1 20 ~ (65) mm



With Pressed Steel Cover



With Cast Iron Cover



Variations of tolerance of spigot joint outside diameter (Δ_{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
FC205~FC206	FCX05	0 −0.046	±0.5	0.7	0.2
FC207~FC210	FCX06~FCX10	0 −0.054			
FC211~FC217	FCX11~FCX15	0 −0.063	±0.8	1	0.3
FC218	FCX16~FCX18	0 −0.072			
	FCX20				0.4

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

Unit : mm

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

Shaft Dia. d_1 mm	Shaft Dia. d_1 inch	Dimensions mm L	H_3	J	J_1	N	A_1	A_2	A_3	A_4 1)	B_1 1)	Bolt Size mm	Bolt Size inch	Standard Unit No.	Housing No.	Bearing No.	Adapter 1) assembly No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open End Type	Closed End Type	Dimension A_s mm	inch	Mass kg	With Cast Iron Cover Unit No. Open End Type	Closed End Type	Dimension A_c mm	inch	Mass kg
20	3/4	4 17/32	2.7559	3 35/64	2 1/2	15/32	13/16	25/64	15/64	1 1/8(1 3/16)	1 5/32(1 3/8)	3/8		UKFC205	FC205	UK205		0.99	14.0	7.85	13.9	–	–	–	–	–	–	–	–	–	–
		115	70	90	63.6	12	21	10	6	28.5(30)	29(35)	M10					H305X(H2305X)	0.99				UKFC205C	UKFC205D	34	1 11/32	0.99	UKFC205FC	UKFC205FD	42	1 21/32	1.2
	3/4	4 3/8	2.9921	3 5/8	2 9/16	3/8	15/16	25/64	15/64	1 5/32	1 3/8	5/16		UKFCX05	FCX05	UKX05	HE2305X	1.2	19.5	11.3	13.9	–	–	–	–	–	–	–	–	–	–
		111	76	92	65	9.5	24	10	6	29.5	35	M8					H2305X	1.2				UKFCX05C	UKFCX05D	36	1 13/32	1.2	–	–	–	–	–
25	1	4 29/32	3.1496	3 15/16	2 25/32	15/32	29/32	25/64	5/16	1 5/32(1 1/4)	1 7/32(1 1/2)	3/8		UKFC206	FC206	UK206	H306X(H2306X)	1.3	19.5	11.3	13.9	–	–	–	–	–	–	–	–	–	–
		125	80	100	70.7	12	23	10	8	29.5(31.5)	31(38)	M10					HE306X(HE2306X)	1.3				UKFC206C	UKFC206D	36	1 13/32	1.3	UKFC206FC	UKFC206FD	45	1 25/32	1.6
	1	5	3.3465	4 9/64	2 59/64	15/32	7/8	5/16	3/8	1 5/32	1 1/2	3/8		UKFCX06	FCX06	UKX06	H2306X	1.5	25.7	15.4	13.9	–	–	–	–	–	–	–	–	–	–
		127	85	105	74.2	12	22.5	8	9.5	29	38	M10					HE2306X	1.5				UKFCX06C	UKFCX06D	38	1 1/2	1.5	–	–	–	–	–
30	1 1/8	5 5/16	3.5433	4 21/64	3 1/16	35/64	1 1/32	7/16	5/16	1 5/16(1 3/8)	1 3/8(1 11/16)	7/16		UKFC207	FC207	UK207	HS307X(HS2307X)	1.7	25.7	15.4	13.9	–	–	–	–	–	–	–	–	–	–
		135	90	110	77.8	14	26	11	8	33(35)	35(43)	M12					H307X(H2307X)	1.7				UKFC207C	UKFC207D	41	1 5/8	1.7	UKFC207FC	UKFC207FD	50	1 31/32	2.1
	1 1/8	5 1/4	3.6220	4 3/8	3 3/32	15/32	1 1/32	23/64	7/16	1 1/4	1 11/16	3/8		UKFCX07	FCX07	UKX07	HS2307X	1.9	29.1	17.8	14.0	–	–	–	–	–	–	–	–	–	–
		133	92	111	78.5	12	26	9	11	31.5	43	M10					H2307X	1.9				UKFCX07C	UKFCX07D	43	1 11/16	1.9	–	–	–	–	–
35	1 1/4 1 3/8	5 23/32	3.9370	4 23/32	3 11/32	35/64	1 1/32	7/16	25/64	1 11/32(1 1/2)	1 13/32(1 13/16)	7/16		UKFC208	FC208	UK208	HE308X(HE2308X)	2.0	29.1	17.8	14.0	–	–	–	–	–	–	–	–	–	–
		145	100	120	84.8	14	26	11	10	34.5(38)	36(46)	M12					HS308X(HS2308X)	2.0				–	–	–	–	–	–	–	–	–	–
																	H308X(H2308X)	2.0				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	3.6220	4 3/8	3 3/32	15/32	1 1/32	23/64	7/16	1 5/16	1 13/16	3/8		UKFCX08	FCX08	UKX08	HE2308X	1.9	34.1	21.3	14.0	–	–	–	–	–	–	–	–	–	–
		133	92	111	78.5	12	26	9	11	33.5	46	M10					HS2308X	1.9				–	–	–	–	–	–	–	–	–	–
																	H2308X	1.9				UKFCX08C	UKFCX08D	43	1 11/16	1.9	–	–	–	–	–
40	1 1/2 1 5/8	6 5/16	4.1339	5 13/64	3 43/64	5/8	1 1/32	25/64	15/32	1 13/32(1 17/32)	1 17/32(1 31/32)	1/2		UKFC209	FC209	UK209	HE309X(HE2309X)	2.7	34.1	21.3	14.0	–	–	–	–	–	–	–	–	–	–
		160	105	132	93.3	16	26	10	12	35.5(39)	39(50)	M14					H309X(H2309X)	2.7				UKFC209C	UKFC209D	44	1 23/32	2.7	UKFC209FC	UKFC209FD	54	2 1/8	3.2
																	HS309X(HS2309X)	2.7				–	–	–	–	–	–	–	–	–	–
	1 1/2 1 5/8	6 3/32	4.2520	5 1/8	3 5/8	35/64	31/32	5/16	15/32	1 5/16	1 31/32	7/16		UKFCX09	FCX09	UKX09	HE2309X	2.6	35.1	23.3	14.4	–	–	–	–	–	–	–	–	–	–
		155	108	130	91.9	14	25	8	12	33.5	50	M12					H2309X	2.6				UKFCX09C	UKFCX09D	45	1 25/32	2.6	–	–	–	–	–
																	HS2309X	2.6				–	–	–	–	–	–	–	–	–	–
45	1 3/4	6 1/2	4.3307	5 7/16	3 27/32	5/8	1 3/32	25/64	15/32	1 7/16(1 9/16)	1 21/32(2 5/32)	1/2		UKFC210	FC210	UK210	HE310X(HE2310X)	3.0	35.1	23.3	14.4	–	–	–	–	–	–	–	–	–	–
		165	110	138	97.6	16	28	10	12	36.5(40)	42(55)	M14					H310X(H2310X)	3.0				UKFC210C	UKFC210D	47	1 27/32	3.0	UKFC210FC	UKFC210FD	58.5	2 5/16	3.5
	1 3/4	6 3/8	4.6457	5 23/64	3 25/32	35/64	31/32	9/32	5/8	1 11/32	2 5/32	7/16		UKFCX10	FCX10	UKX10	HE2310X	3.1	43.4	29.4	14.4	–	–	–	–	–	–	–	–	–	–
		162	118	136	96.2	14	25	7	16	34.5	55	M12					H2310X	3.1				UKFCX10C	UKFCX10D	45	1 25/32	3.1	–	–	–	–	–
50	1 7/8 2	7 9/32	4.9213	5 29/32	4 11/64	3/4	1 7/32	33/64	15/32	1 19/32(1 25/32)	1 25/32(2 5/16)	5/8		UKFC211	FC211	UK211	HS311X(HS2311X)	4.3	43.4	29.4	14.4	–	–	–	–	–	–	–	–	–	–
		185	125	150	106.1	19	31	13	12	40.5(45)	45(59)	M16					H311X(H2311X)	4.3				UKFC211C	UKFC211D	51	2	4.3	UKFC211FC	UKFC211FD	62.5	2 15/32	4.9
																	HE311X(HE2311X)	4.3				–	–	–	–	–	–	–	–	–	–
	1 7/8 2	7 3/32	5	5 63/64	4 15/64	5/8	1 1/32	5/32	55/64	1 9/32	2 5/16	1/2		UKFCX11	FCX11	UKX11	HS2311X	4.0	52.4	36.2	14.4	–	–	–	–	–	–	–	–	–	–
		180	127	152	107.5	16	26	4	22	32.5	59	M14					H2311X	4.0				UKFCX11C	UKFCX11D	48	1 7/8	4.0	–	–	–	–	–
																	HE2311X	4.0				–	–	–	–	–	–	–	–	–	–
55	2 1/8	7 11/16	5.3150	6 19/64	4 29/64	3/4	1 13/32	43/64	15/32	1 27/32(2 3/32)	1 27/32(2 7/16)	5/8		UKFC212	FC212	UK212	HS312X(HS2312X)	4.9	52.4	36.2	14.4	–	–	–	–	–	–	–	–	–	–
		195	135	160	113.1	19	36	17	12	46.5(53.5)	47(62)	M16					H312X(H2313X)	4.9				UKFC212C	UKFC212D	61	2 13/32	4.9	UKFC212FC	UKFC212FD	74	2 29/32	5.7
	2 1/8	7 5/8	5.5118	6 1/2	4 19/32	5/8	1 5/16	7/16	25/32	1 21/32	2 7/16	1/2		UKFCX12	FCX12	UKX12	HS2312X	5.1	57.2	40.1	14.4	–	–	–	–	–	–	–	–	–	–
		194	140	165	116.7	16	33	11	20	42	62	M14					H2312X	5.1				UKFCX12C	UKFCX12D	55	2 5/32	5.1	–	–	–	–	–
60	2 1/4 2 3/8	8 1/16	5.7087	6 11/16	4 47/64	3/4	1 13/32	5/8	35/64	1 7/8(2 3/32)	1 31/32(2 9/16)	5/8		UKFC213	FC213	UK213	HE313X(HE2313X)	5.5	57.2	40.1	14.4	–	–	–	–	–	–	–	–	–	–
		205	145	170	120.2	19	36	16	14	48(53.5)	50(65)	M16					H313X(H2313X)	5.5				UKFC213C	UKFC213D	60	2 3/8	5.5	UKFC213FC	UKFC213FD	73	2 7/8	6.4
																	HS313X(HS2313X)	5.5				–	–	–	–	–	–	–	–	–	–
	2 1/4 2 3/8	7 5/8	5.5118	6 1/2	4 19/32	5/8	1 5/16	7/16	25/32	1 25/32	2 9/16	1/2		UKFCX13	FCX13	UKX13	HE2313X	5.3	62.2	44.1	14.5	–	–	–	–	–	–	–	–	–	–
		194	140	165	116.7	16	33	11	20	45	65	M14					H2313X	5.3				UKFCX13C	UKFCX13D	60	2 3/8	5.3	–	–	–	–	–
																	HS2313X	5.3				–	–	–	–	–	–	–	–	–	–
65	2 1/2	8 21/32	6.2992	7 1/4	5 1/8	3/4	1 9/16	45/64	5/8	2 3/32(2 5/16)	2 5/32(2 7/8)	5/8		UKFC215	FC215	UK215	HE315X(HE2315X)	7.4	67.4	48.3	14.5	–	–	–	–	–	–	–	–	–	–
		220	160	184	130.1	19	40	18	16	53(58.5)	55(73)	M16					H315X(H2315X)	7.4				UKFC215C	UKFC215D	67	2 5/8	7.4	UKFC215FC	UKFC215FD	80	3 5/32	8.4

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

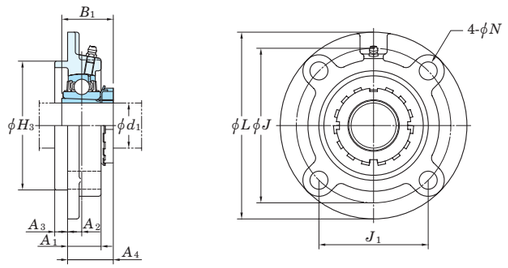
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF.....205~210, X05~X09
A-PT1/8.....211~218, X10~X20

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)

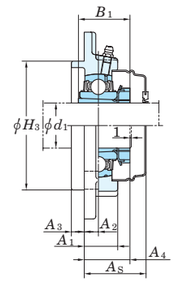
4. As for the triple-lip seal type product (205 is the double-lip seal type product), supplementary code L3 (or L2) follows the Part No. of unit or bearing. (Example of Part No. : UKFC206JL3 + H2306X, UK206L3 + H2306X)

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

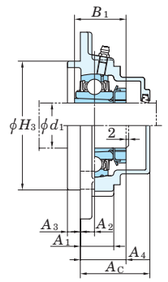
UKFC
Tapered bore (with adapter)
d_1 (65) ~ 90 mm



With Pressed Steel Cover



With Cast Iron Cover



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
FC205~FC206	FCX05	0 −0.046	±0.5	0.7	0.2
FC207~FC210	FCX06~FCX10	0 −0.054			
FC211~FC217	FCX11~FCX15	0 −0.063	±0.8	1	0.3
FC218	FCX16~FCX18	0 −0.072			
	FCX20				0.4

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

Unit : mm

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

Shaft Dia. mm / inch d_1		Dimensions inch / mm L	H_3	J	J_1	N	A_1	A_2	A_3	A_4 1)	B_1 1)	Bolt Size inch / mm	Standard Unit No.	Housing No.	Bearing No.	Adapter 1) assembly No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_s	Mass kg	With Cast Iron Cover Unit No. Open End Type	Closed End Type	Dimension mm / inch A_c	Mass kg
65	2 1/2	8 3/4	6.4567	7 31/64	5 9/32	3/4	1 3/8	15/32	55/64	1 7/8	2 7/8	5/8	UKFCX15	FCX15	UKX15	HE2315X	7.7	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
		222	164	190	134.3	19	35	12	22	48	73	M16				H2315X	7.7				UKFCX15C	UKFCX15D	66 2 19/32	7.7	–	–	– –	–
70	2 3/4	9 7/16	6.6929	7 7/8	5 9/16	29/32	1 31/32	45/64	5/8	2 7/32(2 15/32)	2 5/16(3 1/16)	3/4	UKFC216	FC216	UK216	HE316X(HE2316X)	9.0	72.7	53.0	14.6	–	–	– –	–	–	–	– –	–
		240	170	200	141.4	23	42	18	16	56(62.5)	59(78)	M20				H316X(H2316X)	9.0				UKFC216C	UKFC216D	72 2 27/32	9.0	UKFC216FC	UKFC216FD	87 3 7/16	10.3
	2 3/4	10 1/4	7.3228	8 5/8	6 3/32	29/32	1 13/32	25/64	63/64	1 15/16	3 1/16	3/4	UKFCX16	FCX16	UKX16	HE2316X	11.4	84.0	61.9	14.5	–	–	– –	–	–	–	– –	–
		260	186	219	154.8	23	36	10	25	49	78	M20				H2316X	11.4				UKFCX16C	UKFCX16D	66 2 19/32	11.4	–	–	– –	–
75	3	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)	3/4	UKFC217	FC217	UK217	H317X(H2317X)	10.4	84.0	61.9	14.5	UKFC217C	UKFC217D	74 2 29/32	10.4	UKFC217FC	UKFC217FD	89 3 1/2	11.8
		250	180	208	147.1	23	45	18	18	58(64.5)	63(82)	M20				H317X(HE2317X)	10.4				–	–	– –	–	–	–	– –	–
	3	10 1/4	7.3228	8 5/8	6 3/32	29/32	1 13/32	25/64	63/64	2 1/16	3 7/32	3/4	UKFCX17	FCX17	UKX17	H2317X	12.6	96.1	71.5	14.5	UKFCX17C	UKFCX17D	71 2 25/32	12.6	–	–	– –	–
		260	186	219	154.8	23	36	10	25	52	82	M20				HE2317X	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)	3/4	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	3/4	UKFCX18	FCX18	UKX18	H2318X	13.0	109	81.9	14.4	–	–	– –	–	UKFCX18C	UKFCX18D	92 3 5/8	15.1
		260	186	219	154.8	23	43	12	28	55	86	M20																
90	3 1/2	10 7/8	8.1102	9 3/8	6 5/8	29/32	2 19/32	55/64	1 7/64	2 23/32	3 13/16	3/4	UKFCX20	FCX20	UKX20	HE2320X	17.1	133	105	14.4	–	–	– –	–	–	–	– –	–
		276	206	238	168.3	23	66	22	28	69	97	M20				H2320X	17.1				–	–	– –	–	UKFCX20C	UKFCX20D	116 4 9/16	19.9

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

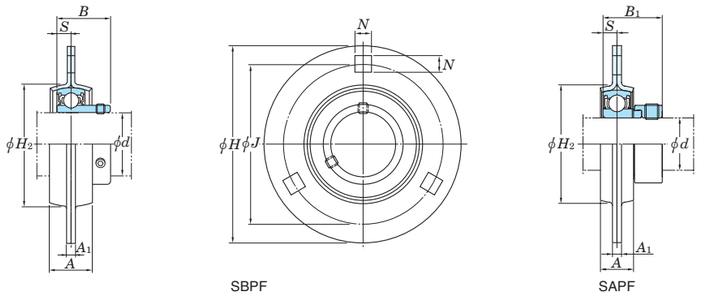
Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)

2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF.....205~210, X05~X09
A-PT1/8.....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-lip seal type product (205 is the double-lip seal type product), supplementary 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 assemblies.

Koyo

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



SBPF SAPF

Variations of tolerance of distance between centers of bolt holes (Δ_{Js})

Unit : mm

Housing No.	Δ_{Js}
PF203~PF207	±0.4

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

Unit : mm

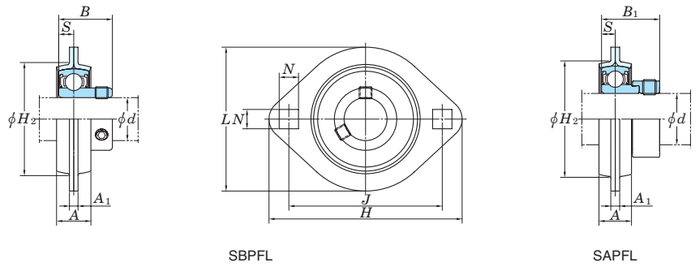
Housing No.	Δ_{Ns}
PF203~PF207	±0.25

Shaft Dia mm	Shaft Dia inch	Dimensions inch / mm H	A	A_1	J	N	H_2	S	SBPF B	SAPF B_1	Bolt Size inch / mm	Unit No.	Bearing No.	Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg SBPF	SAPF
12	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**	SB201	**SAPF201**	SA201						
		81	14	4	63.5	7.1	49	6	22	28.5	M6	**SBPF201-8**	SB201-8	**SAPF201-8**	SA201-8						
15	5/8											**SBPF202**	SB202	**SAPF202**	SA202	PF203	9.55	4.80	13.2	0.27	0.3
												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						
	7/8											**SBPF205-14**	SB205-14	**SAPF205-14**	SA205-14						
25	15/16	3 3/4	23/32	5/32	2 63/64	23/64	2 3/8	0.295	1.063	1.201	5/16	**SBPF205-15**	SB205-15	**SAPF205-15**	SA205-15	PF205	14.0	7.85	13.9	0.38	0.42
		95	18	4	76	9	60	7.5	27	30.5	M8	**SBPF205**	SB205	**SAPF205**	SA205						
	1											**SBPF205-16**	SB205-16	**SAPF205-16**	SA205-16						
	1 1/8											**SBPF206-18**	SB206-18	**SAPF206-18**	SA206-18						
30		4 7/16	3/4	13/64	3 9/16	7/16	2 25/32	0.315	1.181	1.335	3/8	**SBPF206**	SB206	**SAPF206**	SA206	PF206	19.5	11.3	13.9	0.62	0.65
	13/16	113	19	5.2	90.5	11	71	8	30	33.9	M10	**SBPF206-19**	SB206-19	**SAPF206-19**	SA206-19						
	1 1/4											**SBPF206-20**	SB206-20	**SAPF206-20**	SA206-20						
	1 1/4											**SBPF207-20**	SB207-20	**SAPF207-20**	SA207-20						
	15/16													**SAPF207-21**	SA207-21						
35	1 3/8	4 13/16	7/8	13/64	3 15/16	7/16	3 3/16	0.335	1.260	1.437	3/8	**SBPF207-22**	SB207-22	**SAPF207-22**	SA207-22	PF207	25.7	15.4	13.9	0.82	0.9
		122	22	5.2	100	11	81	8.5	32	36.5	M10	**SBPF207**	SB207	**SAPF207**	SA207						
	1 7/16											**SBPF207-23**	SB207-23	**SAPF207-23**	SA207-23						

Note 1) H_2 is the minimum size of the mounting hole.

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

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



SBPFL　　SAPFL

Variations of tolerance of distance between centers of bolt holes (Δ_{Js})

Unit : mm

Housing No.	Δ_{Js}
PFL203~PFL207	±0.4

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

Unit : mm

Housing No.	Δ_{Ns}
PFL203~PFL207	±0.25

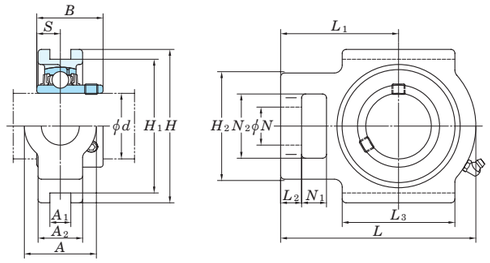
Shaft Dia mm	Shaft Dia inch	Dimensions inch / mm										Bolt Size inch / mm	Unit No.	Bearing No.		Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN		Factor	Mass kg	
d		H	L	A	A_1	J	N	H_2	S	SBPFL B	SAPFL B_1								C_r	C_{0r}	f_0	SBPFL	SAPFL
12	1/2	3 3/16	2 5/16	9/16	5/32	2 1/2	9/32	1 15/16	0.236	0.866	1.122	1/4	SBPFL201	SB201		SAPFL201	SA201						
15		81	59	14	4	63.5	7.1	49	6	22	28.5	M6	SBPFL201-8	SB201-8		SAPFL201-8	SA201-8						
	5/8												SBPFL202	SB202		SAPFL202	SA202	PFL203	9.55	4.80	13.2	0.19	0.22
17													SBPFL202-10	SB202-10		SAPFL202-10	SA202-10						
													SBPFL203	SB203		SAPFL203	SA203						
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	SB204-12		SAPFL204-12	SA204-12	PFL204	12.8	6.65	13.2	0.24	0.24
		90	67	16	4	71.5	9	55	7	25	29.5	M8	SBPFL204	SB204		SAPFL204	SA204						
	7/8												SBPFL205-14	SB205-14		SAPFL205-14	SA205-14						
25	15/16	3 3/4	2 25/32	23/32	5/32	2 63/64	23/64	2 3/8	0.295	1.063	1.201	5/16	SBPFL205-15	SB205-15		SAPFL205-15	SA205-15	PFL205	14.0	7.85	13.9	0.28	0.32
		95	71	18	4	76	9	60	7.5	27	30.5	M8	SBPFL205	SB205		SAPFL205	SA205						
	1												SBPFL205-16	SB205-16		SAPFL205-16	SA205-16						
	1 1/8												SBPFL206-18	SB206-18		SAPFL206-18	SA206-18						
30		4 7/16	3 5/16	3/4	13/64	3 9/16	7/16	2 25/32	0.315	1.181	1.335	3/8	SBPFL206	SB206		SAPFL206	SA206	PFL206	19.5	11.3	13.9	0.38	0.41
	13/16	113	84	19	5.2	90.5	11	71	8	30	33.9	M10	SBPFL206-19	SB206-19		SAPFL206-19	SA206-19						
	1 1/4												SBPFL206-20	SB206-20		SAPFL206-20	SA206-20						
	1 1/4												SBPFL207-20	SB207-20		SAPFL207-20	SA207-20						
	15/16															SAPFL207-21	SA207-21						
35	1 3/8	4 13/16	3 11/16	7/8	13/64	3 15/16	7/16	3 3/16	0.335	1.260	1.437	3/8	SBPFL207-22	SB207-22		SAPFL207-22	SA207-22	PFL207	25.7	15.4	13.9	0.66	0.74
		122	94	22	5.2	100	11	81	8.5	32	36.5	M10	SBPFL207	SB207		SAPFL207	SA207						
	1 7/16												SBPFL207-23	SB207-23		SAPFL207-23	SA207-23						

Note 1) H_2 is the minimum size of the mounting hole.

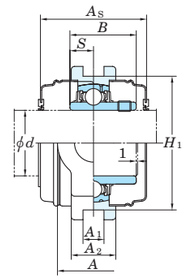
Remark　For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

Koyo

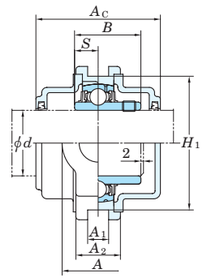
UCT
Cylindrical bore (with set screws)
d 12 ~ (45) mm



With Pressed Steel Covers



With Cast Iron Covers



Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

Unit : mm

Housing No.			Δ_{A1s}	Δ_{H1s}	X
T204~T210	TX05~TX10	T305~T310	+0.2 0	0 −0.5	0.5
T211~T217	TX11~TX17	T311~T318			0.6
		T319~T322	+0.3 0	0 −0.8	0.7
		T324~T328			0.8

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

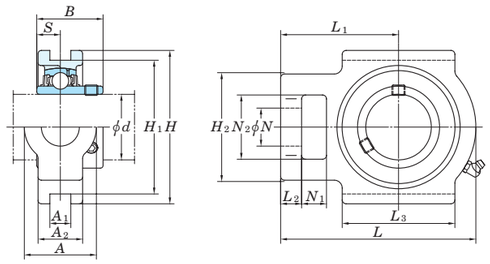
T204JE3 L_c = 97 mm
T205JE3 L_c = 102 mm

Shaft Dia. mm	Shaft Dia. inch	Dimensions mm: 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
12																	
	1/2																
15																	
	5/8	15.875	32	12	21	89	76	51	94	61	10	51	19	16	32	31	12.7
17																	
	3/4																
20																	
	7/8																
	15/16	23.812	37	12	24	89	76	51	97	62	10	51	19	16	32	34.1	14.3
25	1																
	1	25.400	37	12	28	102	89	56	113	70	10	57	22	16	37	38.1	15.9
	1	26.988	36	12	26	89	80	62	122	76	12	65	26	16	36	38	15
30	1 1/8																
		28.575	37	12	28	102	89	56	113	70	10	57	22	16	37	38.1	15.9
	1 3/16																
	1 1/4																
	1 3/16	30.162	37	12	30	102	89	64	129	78	13	64	22	16	37	42.9	17.5
	1 1/4																
	–	31.750	41	16	28	100	90	70	137	85	14	74	28	18	41	43	17
35	1 1/4																
	1 5/16																
	1 3/8	34.925	37	12	30	102	89	64	129	78	13	64	22	16	37	42.9	17.5
	1 7/16																
	1 3/8																
		34.925	49	16	36	114	102	83	144	88	15	83	29	19	49	49.2	19
	1 7/16																
	–	36.512	45	16	32	111	100	75	150	94	15	80	30	20	45	48	19
40	1 1/2																
	1 9/16	39.688	49	16	33	114	102	83	144	88	16	83	29	19	49	49.2	19
	1 1/2	38.100	49	16	36	117	102	83	144	87	15	83	29	19	49	49.2	19
	1 1/2	38.100	50	18	34	124	112	83	162	100	17	89	32	22	50	52	19
45	1 5/8																
	1 11/16	42.862	49	16	35	117	102	83	144	87	16	83	29	19	49	49.2	19
	1 3/4																
	1 3/4	44.450	49	16	38	117	102	83	149	90	16	86	29	19	49	51.6	19

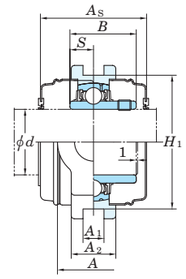
Standard Unit No.	Housing No.	Bearing No.	Mass kg	Basic Load Ratings kN C_r	Basic Load Ratings kN C_{0r}	Factor f_0	With Pressed Steel Covers Unit No. Open Ends Type	With Pressed Steel Covers Unit No. Closed End Type	Dimension mm inch A_s	Mass kg	With Cast Iron Covers Unit No. Open Ends Type	With Cast Iron Covers Unit No. Closed End Type	Dimension mm inch A_c	Mass kg
UCT201	T204	UC201	0.81	12.8	6.65	13.2	UCT201C	UCT201CD	44 1 23/32	0.81	–	–	– –	–
UCT201-8		UC201-8	0.81				–	–	– –	–	–	–	– –	–
UCT202		UC202	0.79				UCT202C	UCT202CD	44 1 23/32	0.79	–	–	– –	–
UCT202-10		UC202-10	0.79				–	–	– –	–	–	–	– –	–
UCT203		UC203	0.78				UCT203C	UCT203CD	44 1 23/32	0.78	–	–	– –	–
UCT204-12		UC204-12	0.78				–	–	– –	–	–	–	– –	–
UCT204		UC204	0.76				UCT204C	UCT204CD	44 1 23/32	0.76	UCT204FC	UCT204FCD	62 2 7/16	1.1
UCT205-14	T205	UC205-14	0.84	14.0	7.85	13.9	–	–	– –	–	–	–	– –	–
UCT205-15		UC205-15	0.84				–	–	– –	–	–	–	– –	–
UCT205		UC205	0.84				UCT205C	UCT205CD	48 1 7/8	0.84	UCT205FC	UCT205FCD	66 2 19/32	1.2
UCT205-16		UC205-16	0.84				–	–	– –	–	–	–	– –	–
UCTX05	TX05	UCX05	1.4	19.5	11.3	13.9	UCTX05C	UCTX05CD	52 2 1/16	1.4	–	–	– –	–
UCTX05-16		UCX05-16	1.4				–	–	– –	–	–	–	– –	–
UCT305	T305	UC305	1.4	21.2	10.9	12.6	–	–	– –	–	UCT305C	UCT305CD	76 3	2.0
UCT305-16		UC305-16	1.4				–	–	– –	–	–	–	– –	–
UCT206-18	T206	UC206-18	1.3	19.5	11.3	13.9	–	–	– –	–	–	–	– –	–
UCT206		UC206	1.3				UCT206C	UCT206CD	52 2 1/16	1.3	UCT206FC	UCT206FCD	70 2 3/4	1.8
UCT206-19		UC206-19	1.3				–	–	– –	–	–	–	– –	–
UCT206-20		UC206-20	1.3				–	–	– –	–	–	–	– –	–
UCTX06	TX06	UCX06	1.7	25.7	15.4	13.9	UCTX06C	UCTX06CD	59 2 5/16	1.7	–	–	– –	–
UCTX06-19		UCX06-19	1.7				–	–	– –	–	–	–	– –	–
UCTX06-20		UCX06-20	1.7				–	–	– –	–	–	–	– –	–
UCT306	T306	UC306	1.8	26.7	15.0	13.3	–	–	– –	–	UCT306C	UCT306CD	82 3 7/32	2.4
UCT207-20	T207	UC207-20	1.6	25.7	15.4	13.9	–	–	– –	–	–	–	– –	–
UCT207-21		UC207-21	1.6				–	–	– –	–	–	–	– –	–
UCT207-22		UC207-22	1.6				–	–	– –	–	–	–	– –	–
UCT207		UC207	1.6				UCT207C	UCT207CD	59 2 5/16	1.6	UCT207FC	UCT207FCD	78 3 1/16	2.3
UCT207-23		UC207-23	1.6				–	–	– –	–	–	–	– –	–
UCTX07-22	TX07	UCX07-22	2.7	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
UCTX07		UCX07	2.7				UCTX07C	UCTX07CD	68 2 11/16	2.7	–	–	– –	–
UCTX07-23		UCX07-23	2.7				–	–	– –	–	–	–	– –	–
UCT307	T307	UC307	2.3	33.4	19.3	13.2	–	–	– –	–	UCT307C	UCT307CD	88 3 15/32	3.1
UCT208-24	T208	UC208-24	2.5	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
UCT208-25		UC208-25	2.5				–	–	– –	–	–	–	– –	–
UCT208		UC208	2.5				UCT208C	UCT208CD	68 2 11/16	2.5	UCT208FC	UCT208FCD	86 3 3/8	3.3
UCTX08-24	TX08	UCX08-24	2.6	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
UCTX08		UCX08	2.6				UCTX08C	UCTX08CD	68 2 11/16	2.6	–	–	– –	–
UCT308-24	T308	UC308-24	3.0	40.7	24.0	13.2	–	–	– –	–	–	–	– –	–
UCT308		UC308	3.0				–	–	– –	–	UCT308C	UCT308CD	96 3 25/32	4.0
UCT209-26	T209	UC209-26	2.4	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
UCT209-27		UC209-27	2.4				–	–	– –	–	–	–	– –	–
UCT209-28		UC209-28	2.4				–	–	– –	–	–	–	– –	–
UCT209		UC209	2.4				UCT209C	UCT209CD	68 2 11/16	2.4	UCT209FC	UCT209FCD	88 3 15/32	3.2
UCTX09-28	TX09	UCX09-28	2.9	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
UCTX09		UCX09	2.9				UCTX09C	UCTX09CD	73 2 7/8	2.9	–	–	– –	–

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
B-1/4-28UNF ..... 201~210, X05~X09, 305~308
B-PT1/8 ..... 211~217, X10~X17, 309~328
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

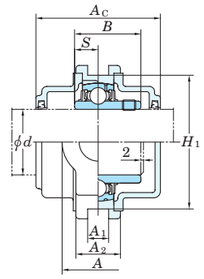
UCT
Cylindrical bore (with set screws)
d (45) ~ (75) mm



With Pressed Steel Covers



With Cast Iron Covers



Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

Unit : mm

Housing No.			Δ_{A1s}	Δ_{H1s}	X
T204~T210	TX05~TX10	T305~T310	+0.2 0	0 −0.5	0.5
T211~T217	TX11~TX17	T311~T318			0.6
		T319~T322	+0.3 0	0 −0.8	0.7
		T324~T328			0.8

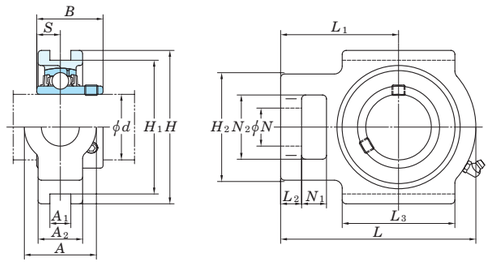
Form and dimensions of L_c of T204JE3 and T205JE3 (housing with cast iron covers) are shown below.

T204JE3 L_c = 97 mm
T205JE3 L_c = 102 mm

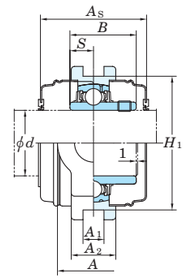
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm															Standard Unit No.	Standard Housing No.	Bearing No.	Mass	Basic Load Ratings kN		Factor	With Pressed Steel Covers Unit No. Open Ends Type	With Pressed Steel Covers Unit No. Closed End Type	With Pressed Steel Covers Dimension mm inch	Mass	With Cast Iron Covers Unit No. Open Ends Type	With Cast Iron Covers Unit No. Closed End Type	With Cast Iron Covers Dimension mm inch	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				kg	C_r	C_{0r}	f_0			A_s	kg			A_c	kg
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	T309	UC309-28	4.1	48.9	29.5	13.3	–	–	– –	–	–	–	– –	–
		55	18	38	138	125	90	178	110	18	97	34	24	55	57	22	UCT309		UC309	4.1				–	–	– –	–	UCT309C	UCT309CD	102 4 1/32	5.4
50	1 7/8																UCT210-30		UC210-30	2.6				–	–	– –	–	–	–	– –	–
	1 15/16	1 15/16	5/8	1 15/32	4 19/32	4 1/64	3 9/32	5 7/8	3 17/32	5/8	3 3/8	1 5/32	3/4	1 15/16	2.031	0.748	UCT210-31	T210	UC210-31	2.6	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
		49	16	37	117	102	83	149	90	16	86	29	19	49	51.6	19	UCT210		UC210	2.6				UCT210C	UCT210CD	73 2 7/8	2.6	UCT210FC	UCT210FCD	97 3 13/16	3.6
	2																UCT210-32		UC210-32	2.6				–	–	– –	–	–	–	– –	–
	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	UCT310-31		UCX10-31	4.4				–	–	– –	–	–	–	– –	–
		64	22	42	146	130	102	171	106	19	95	35	25	64	55.6	22.2	UCTX10	TX10	UCX10	4.4	43.4	29.4	14.4	UCTX10C	UCTX10CD	75 2 15/16	4.4	–	–	– –	–
	2																UCTX10-32		UCX10-32	4.4				–	–	– –	–	–	–	– –	–
	–	2 13/32	25/32	1 9/16	5 15/16	5 33/64	3 27/32	7 17/32	4 19/32	25/32	4 3/16	1 15/32	1 1/16	2 13/32	2.402	0.866	UCT310	T310	UC310	4.9	62.0	38.3	13.2	–	–	– –	–	UCT310C	UCT310CD	110 4 11/32	6.5
55	2																UCT211-32		UC211-32	4.0				–	–	– –	–	–	–	– –	–
	2 1/8	2 17/32	55/64	1 1/2	5 3/4	5 1/8	4 1/32	6 23/32	4 3/16	3/4	3 3/4	1 3/8	31/32	2 17/32	2.189	0.874	UCT211-34		UC211-34	4.0				–	–	– –	–	–	–	– –	–
		64	22	38	146	130	102	171	106	19	95	35	25	64	55.6	22.2	UCT211	T211	UC211	4.0	43.4	29.4	14.4	UCT211C	UCT211CD	75 2 15/16	4.0	UCT211FC	UCT211FCD	99 3 29/32	5.2
	2 3/16																UCT211-35		UC211-35	4.0				–	–	– –	–	–	–	– –	–
		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		UCX11	5.3				UCTX11C	UCTX11CD	88 3 15/32	5.3	–	–	– –	–
	2 3/16	64	22	44	146	130	102	194	119	19	102	35	32	64	65.1	25.4	UCTX11-35	TX11	UCX11-35	5.3	52.4	36.2	14.4	–	–	– –	–	–	–	– –	–
	2 1/4																UCTX11-36		UCX11-36	5.3				–	–	– –	–	–	–	– –	–
	2	2 19/32	55/64	1 23/32	6 13/32	5 29/32	4 1/8	8 5/32	5	13/16	4 17/32	1 17/32	1 5/32	2 19/32	2.598	0.984	UCT311-32	T311	UC311-32	6.1	71.6	45.0	13.2	–	–	– –	–	–	–	– –	–
		66	22	44	163	150	105	207	127	21	115	39	29	66	66	25	UCT311		UC311	6.1				–	–	– –	–	UCT311C	UCT311CD	114 4 1/2	7.9
60	2 1/4																UCT212-36		UC212-36	4.9				–	–	– –	–	–	–	– –	–
		2 17/32	55/64	1 21/32	5 3/4	5 1/8	4 1/32	7 5/8	4 11/16	3/4	4 1/32	1 3/8	1 1/4	2 17/32	2.563	1.000	UCT212	T212	UC212	4.9	52.4	36.2	14.4	UCT212C	UCT212CD	88 3 15/32	4.9	UCT212FC	UCT212FCD	114 4 1/2	6.4
	2 3/8	64	22	42	146	130	102	194	119	19	102	35	32	64	65.1	25.4	UCT212-38		UC212-38	4.9				–	–	– –	–	–	–	– –	–
	2 7/16																UCT212-39		UC212-39	4.9				–	–	– –	–	–	–	– –	–
		2 3/4	1 1/32	1 7/8	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2.563	1.000	UCTX12		UCX12	7.4				UCTX12C	UCTX12CD	88 3 15/32	7.4	–	–	– –	–
	2 7/16	70	26	48	167	151	111	224	137	21	121	41	32	70	65.1	25.4	UCTX12-39	TX12	UCX12-39	7.4	57.2	40.1	14.4	–	–	– –	–	–	–	– –	–
	–	2 25/32	55/64	1 13/16	7	6 19/64	4 7/16	8 21/32	5 5/16	29/32	4 27/32	1 5/8	1 7/32	2 25/32	2.795	1.024	UCT312	T312	UC312	7.6	81.9	52.2	13.2	–	–	– –	–	UCT312C	UCT312CD	124 4 7/8	9.9
65	2 1/2	2 3/4	1 1/32	1 23/32	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2.563	1.000	UCT213-40	T213	UC213-40	6.9	57.2	40.1	14.4	–	–	– –	–	–	–	– –	–
		70	26	44	167	151	111	224	137	21	121	41	32	70	65.1	25.4	UCT213		UC213	6.9				UCT213C	UCT213CD	88 3 15/32	6.9	UCT213FC	UCT213FCD	114 4 1/2	8.6
	2 1/2	2 3/4	1 1/32	1 7/8	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2.937	1.189	UCTX13-40	TX13	UCX13-40	7.6	62.2	44.1	14.5	–	–	– –	–	–	–	– –	–
		70	26	48	167	151	111	224	137	21	121	41	32	70	74.6	30.2	UCTX13		UCX13	7.6				UCTX13C	UCTX13CD	98 3 27/32	7.6	–	–	– –	–
	2 1/2	3 5/32	1 1/32	1 31/32	7 15/32	6 11/16	4 9/16	9 3/8	5 3/4	31/32	5 9/32	1 11/16	1 1/4	2 3/4	2.953	1.181	UCT313-40	T313	UC313-40	9.3	92.7	59.9	13.2	–	–	– –	–	–	–	– –	–
		80	26	50	190	170	116	238	146	25	134	43	32	70	75	30	UCT313		UC313	9.3				–	–	– –	–	UCT313C	UCT313CD	122 4 13/16	11.4
70	2 3/4	2 3/4	1 1/32	1 13/16	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2.937	1.189	UCT214-44	T214	UC214-44	7.0	62.2	44.1	14.5	–	–	– –	–	–	–	– –	–
		70	26	46	167	151	111	224	137	21	121	41	32	70	74.6	30.2	UCT214		UC214	7.0				UCT214C	UCT214CD	98 3 27/32	7.0	UCT214FC	UCT214FCD	124 4 7/8	8.9
	2 3/4	2 3/4	1 1/32	1 7/8	6 9/16	5 15/16	4 3/8	9 1/8	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.063	1.331	UCTX14-44	TX14	UCX14-44	7.9	67.4	48.3	14.5	–	–	– –	–	–	–	– –	–
		70	26	48	167	151	111	232	140	21	121	41	32	70	77.8	33.3	UCTX14		UCX14	7.9				UCTX14C	UCTX14CD	98 3 27/32	7.9	–	–	– –	–
	2 3/4	3 17/32	1 1/32	2 1/16	7 15/16	7 3/32	5 1/8	9 29/32	6 3/32	31/32	5 1/2	1 13/16	1 13/32	3 11/32	3.071	1.299	UCT314-44	T314	UC314-44	11.1	104	68.2	13.2	–	–	– –	–	–	–	– –	–
		90	26	52	202	180	130	252	155	25	140	46	36	85	78	33	UCT314		UC314	11.1				–	–	– –	–	UCT314C	UCT314CD	124 4 7/8	13.4
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		UC215-47	7.3				–	–	– –	–	–	–	– –	–
		70	26	48	167	151	111	232	140	21	121	41	32	70	77.8	33.3	UCT215	T215	UC215	7.3	67.4	48.3	14.5	UCT215C	UCT215CD	98 3 27/32	7.3	UCT215FC	UCT215FCD	124 4 7/8	9.2
	3																UCT215-48		UC215-48	7.3				–	–	– –	–	–	–	– –	–
	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		UCX15-47	8.7				–	–	– –	–	–	–	– –	–
		70	28	48	184	165	111	235	140	21	121	41	32	70	82.6	33.3	UCTX15	TX15	UCX15	8.7	72.7	53.0	14.6	UCTX15C	UCTX15CD	108 4 1/4	8.7	–	–	– –	–
	3																UCTX15-48		UCX15-48	8.7				–	–	– –	–	–	–	– –	–

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
B-1/4-28UNF ..... 201~210, X05~X09, 305~308
B-PT1/8 ..... 211~217, X10~X17, 309~328
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

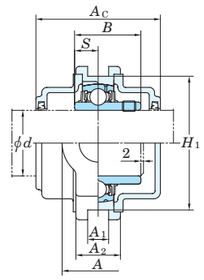
UCT
Cylindrical bore (with set screws)
d (75) ~ 140 mm



With Pressed Steel Covers



With Cast Iron Covers



Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

Unit : mm

Housing No.			Δ_{A1s}	Δ_{H1s}	X
T204~T210	TX05~TX10	T305~T310	+0.2 0	0 −0.5	0.5
T211~T217	TX11~TX17	T311~T318			0.6
		T319~T322	+0.3 0	0 −0.8	0.7
		T324~T328			0.8

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

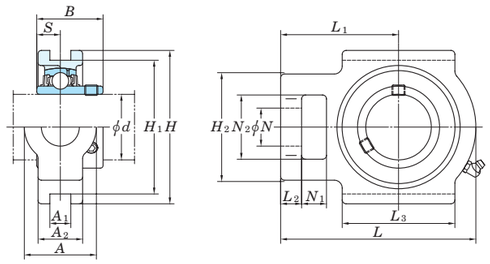
T204JE3 L_c = 97 mm
T205JE3 L_c = 102 mm

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm															Standard Unit No.	Standard Housing No.		Bearing No.	Mass	Basic Load Ratings kN		Factor	With Pressed Steel Covers Unit No. Open Ends Type	With Pressed Steel Covers Unit No. Closed End Type	With Pressed Steel Covers Dimension mm / inch		Mass	With Cast Iron Covers Unit No. Open Ends Type	With Cast Iron Covers Unit No. Closed End Type	With Cast Iron Covers Dimension mm / inch		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			A_s					A_c		
75	2 15/16	3 17/32	1 1/32	2 5/32	8 1/2	7 9/16	5 3/16	10 5/16	6 5/16	31/32	5 29/32	1 13/16	1 13/32	3 11/32	3.228	1.260	UCT315-47			UC315-47	13.0				–	–	–	–	–	–	–	–	–	
		90	26	55	216	192	132	262	160	25	150	46	36	85	82	32	UCT315	T315		UC315	13.0	113	77.2	13.2	–	–	–	–	–	UCT315C	UCT315CD	134	5 9/32	15.5
	3																UCT315-48			UC315-48	13.0				–	–	–	–	–	–	–	–	–	
80	3 1/8	2 3/4	1 1/32	2	7 1/4	6 1/2	4 3/8	9 1/4	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.252	1.311	UCT216-50	T216		UC216-50	8.2	72.7	53.0	14.6	–	–	–	–	–	–	–	–	–	
		70	26	51	184	165	111	235	140	21	121	41	32	70	82.6	33.3	UCT216			UC216	8.2				UCT216C	UCT216CD	108	4 1/4	8.2	UCT216FC	UCT216FCD	138	5 7/16	10.6
	–	2 7/8	1 7/64	2 1/8	7 25/32	6 13/16	4 7/8	10 1/4	6 3/8	1 3/32	6 3/16	1 7/8	1 1/2	2 7/8	3.374	1.343	UCTX16	TX16		UCX16	11.7	84.0	61.9	14.5	UCTX16C	UCTX16CD	112	4 13/32	11.7	–	–	–	–	–
		73	28	54	198	173	124	260	162	28	157	48	38	73	85.7	34.1																		
	–	4 1/32	1 3/16	2 3/8	9 1/16	8 1/32	5 29/32	11 3/32	6 27/32	1 3/32	6 5/16	2 3/32	1 21/32	3 27/32	3.386	1.339	UCT316	T316		UC316	16.2	123	86.7	13.3	–	–	–	–	–	UCT316C	UCT316CD	138	5 7/16	19.1
		102	30	60	230	204	150	282	174	28	160	53	42	98	86	34																		
85	3 1/4	2 7/8	1 3/16	2 1/8	7 25/32	6 13/16	4 7/8	10 1/4	6 3/8	1 5/32	6 3/16	1 7/8	1 1/2	2 7/8	3.374	1.343	UCT217-52	T217		UC217-52	11.0	84.0	61.9	14.5	–	–	–	–	–	–	–	–	–	
		73	30	54	198	173	124	260	162	29	157	48	38	73	85.7	34.1	UCT217			UC217	11.0				UCT217C	UCT217CD	112	4 13/32	11.0	UCT217FC	UCT217FCD	142	5 19/32	13.7
		2 7/8	1 7/64	2 1/8	7 25/32	6 13/16	4 7/8	10 1/4	6 3/8	1 3/32	6 3/16	1 7/8	1 1/2	2 7/8	3.780	1.563	UCTX17	TX17		UCX17	11.7	96.1	71.5	14.5	UCTX17C	UCTX17CD	122	4 13/16	11.7	–	–	–	–	–
	3 7/16	73	28	54	198	173	124	260	162	28	157	48	38	73	96	39.7	UCTX17-55			UCX17-55	11.7				–	–	–	–	–	–	–	–	–	
	–	4 1/32	1 17/64	2 17/32	9 7/16	8 27/64	5 31/32	11 23/32	7 7/32	1 3/16	6 11/16	2 3/32	1 21/32	3 27/32	3.780	1.575	UCT317	T317		UC317	19.0	133	96.8	13.3	–	–	–	–	–	UCT317C	UCT317CD	146	5 3/4	22.3
		102	32	64	240	214	152	298	183	30	170	53	42	98	96	40																		
90	3 1/2	4 11/32	1 17/64	2 19/32	10 1/32	8 31/32	6 5/16	12 9/32	7 9/16	1 3/16	6 7/8	2 1/4	1 13/16	4 3/16	3.780	1.575	UCT318-56	T318		UC318-56	21.6	143	107	13.3	–	–	–	–	–	–	–	–	–	
		110	32	66	255	228	160	312	192	30	175	57	46	106	96	40	UCT318			UC318	21.6				–	–	–	–	–	UCT318C	UCT318CD	150	5 29/32	25.4
95	–	4 11/32	1 3/8	2 27/32	10 5/8	9 29/64	6 1/2	12 11/16	7 3/4	1 7/32	7 3/32	2 1/4	1 13/16	4 3/16	4.055	1.614	UCT319	T319		UC319	24.9	153	119	13.3	–	–	–	–	–	UCT319C	UCT319CD	162	6 3/8	29.2
		110	35	72	270	240	165	322	197	31	180	57	46	106	103	41																		
100	3 15/16	4 23/32	1 3/8	2 15/16	11 13/32	10 15/64	6 7/8	13 19/32	8 9/32	1 1/4	7 7/8	2 5/16	1 7/8	4 17/32	4.252	1.654	UCT320	T320		UC320	30.7				–	–	–	–	–	UCT320C	UCT320CD	174	6 27/32	36.3
		120	35	75	290	260	175	345	210	32	200	59	48	115	108	42	UCT320-63			UC320-63	30.7	173	141	13.2	–	–	–	–	–	–	–	–	–	
	4																UCT320-64			UC320-64	30.7				–	–	–	–	–	–	–	–	–	
105	–	4 23/32	1 3/8	2 15/16	11 13/32	10 15/64	6 7/8	13 19/32	8 9/32	1 1/4	7 7/8	2 5/16	1 7/8	4 17/32	4.409	1.732	UCT321	T321		UC321	36.7	184	153	13.2	–	–	–	–	–	UCT321C	UCT321CD	178	7	42.7
		120	35	75	290	260	175	345	210	32	200	59	48	115	112	44																		
110	–	5 1/8	1 1/2	3 5/32	12 19/32	11 7/32	7 9/32	15 5/32	9 1/4	1 1/2	8 15/32	2 9/16	2 1/16	4 29/32	4.606	1.811	UCT322	T322		UC322	39.7	205	180	13.2	–	–	–	–	–	UCT322C	UCT322CD	188	7 13/32	46.5
		130	38	80	320	285	185	385	235	38	215	65	52	125	117	46																		
120	–	5 1/2	1 49/64	3 17/32	13 31/32	12 9/32	8 9/32	17	10 1/2	1 21/32	9 1/16	2 3/4	2 3/8	5 1/2	4.961	2.008	UCT324	T324		UC324	54.4	207	185	13.5	–	–	–	–	–	UCT324C	UCT324CD	196	7 23/32	63.9
		140	45	90	355	320	210	432	267	42	230	70	60	140	126	51																		
130	–	5 29/32	1 31/32	3 15/16	15 5/32	13 25/32	8 21/32	18 5/16	11 7/32	1 25/32	9 7/16	2 15/16	2 9/16	5 29/32	5.315	2.126	UCT326	T326		UC326	69.3	229	214	13.6	–	–	–	–	–	UCT326C	UCT326CD	214	8 7/16	81.4
		150	50	100	385	350	220	465	285	45	240	75	65	150	135	54																		
140	–	6 3/32	1 31/32	3 15/16	16 11/32	14 61/64	9 1/16	20 9/32	12 13/32	1 31/32	10 1/32	3 5/32	2 3/4	6 5/16	5.709	2.323	UCT328	T328		UC328	85.1	253	246	13.6	–	–	–	–	–	UCT328C	UCT328CD	222	8 3/4	101
		155	50	100	415	380	230	515	315	50	255	80	70	160	145	59																		

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
B-1/4-28UNF ..... 201~210, X05~X09, 305~308
B-PT1/8 ..... 211~217, X10~X17, 309~328
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

Koyo

UCT-E
Cylindrical bore (with set screws)
d 12 ~ 50 mm



Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

Unit : mm

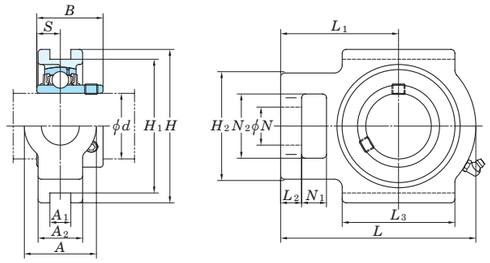
Housing No.		Δ_{A1s}	Δ_{H1s}	X
T204E~T210E	TX05E~TX10E	+0.2 0	0 −0.5	0.5
T211E~T217E	TX11E~TX17E	+0.3 0	0 −0.8	0.6

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm 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.	Bearing No.	Basic Load Ratings kN C_r	Basic Load Ratings kN C_{0r}	Factor f_0	Mass kg
12	1/2																	UCT201E		T204E	UC201	12.8	6.65	13.2	0.81
																		UCT201-8E			UC201-8				
15																		UCT202E			UC202				0.79
	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	1.220	0.500		UCT202-10E			UC202-10				
		32	13.5	21	89	76.2	51	94	61	10	51	19	16	32	31	12.7									
17																		UCT203E			UC203				0.78
	3/4																	UCT204-12E			UC204-12				
20																		UCT204E			UC204				0.76
	7/8																	UCT205-14E			UC205-14				
	15/16	1 1/4	17/32	15/16	3 1/2	3	2	3 13/16	2 7/16	13/32	2	3/4	5/8	1 1/4	1.343	0.563		UCT205-15E			UC205-15				
25		32	13.5	24	89	76.2	51	97	62	10	51	19	16	32	34.1	14.3		UCT205E		T205E	UC205	14.0	7.85	13.9	0.84
	1																	UCT205-16E			UC205-16				
	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	1.500	0.626		UCTX05E		TX05E	UCX05	19.5	11.3	13.9	1.4
		37	13.5	28	102	88.9	56	113	70	10	57	22	16	37	38.1	15.9		UCTX05-16E			UCX05-16				
	1 1/8																	UCT206-18E			UC206-18				
		1 15/32	17/32	1 3/32	4 1/32	3 1/2	2 7/32	4 7/16	2 3/4	13/32	2 1/4	7/8	5/8	1 15/32	1.500	0.626		UCT206E		T206E	UC206	19.5	11.3	13.9	1.3
	1 3/16	37	13.5	28	102	88.9	56	113	70	10	57	22	16	37	38.1	15.9		UCT206-19E			UC206-19				
30	1 1/4																	UCT206-20E			UC206-20				
		1 15/32	17/32	1 3/16	4 1/32	3 1/2	2 17/32	5 3/32	3 1/16	1/2	2 17/32	7/8	5/8	1 15/32	1.689	0.689		UCTX06E		TX06E	UCX06	25.7	15.4	13.9	1.7
	1 3/16	37	13.5	30	102	88.9	64	129	78	13	64	22	16	37	42.9	17.5		UCTX06-19E			UCX06-19				
	1 1/4																	UCTX06-20E			UCX06-20				
	1 1/4																	UCT207-20E			UC207-20				
	1 5/16																	UCT207-21E			UC207-21				
	1 3/8	1 15/32	17/32	1 3/16	4 1/32	3 1/2	2 17/32	5 3/32	3 1/16	1/2	2 17/32	7/8	5/8	1 15/32	1.689	0.689		UCT207-22E		T207E	UC207-22	25.7	15.4	13.9	1.6
35		37	13.5	30	102	88.9	64	129	78	13	64	22	16	37	42.9	17.5		UCT207E			UC207				
	1 7/16																	UCT207-23E			UC207-23				
	1 3/8																	UCTX07-22E			UCX07-22				
		1 15/16	11/16	1 13/32	4 1/2	4	3 9/32	5 21/32	3 15/32	19/32	3 9/32	1 5/32	3/4	1 15/16	1.937	0.748		UCTX07E		TX07E	UCX07	29.1	17.8	14.0	2.7
	1 7/16	49	17.5	36	114	101.6	83	144	88	15	83	29	19	49	49.2	19		UCTX07-23E			UCX07-23				
	1 1/2																	UCT208-24E			UC208-24				
	1 9/16	1 15/16	11/16	1 5/16	4 1/2	4	3 9/32	5 21/32	3 15/32	19/32	3 9/32	1 5/32	3/4	1 15/16	1.937	0.748		UCT208-25E		T208E	UC208-25	29.1	17.8	14.0	2.5
40		49	17.5	33	114	101.6	83	144	88	16	83	29	19	49	49.2	19		UCT208E			UC208				
	1 1/2	1 15/16	11/16	1 13/32	4 19/32	4	3 9/32	5 21/32	3 7/16	19/32	3 9/32	1 5/32	3/4	1 15/16	1.937	0.748		UCTX08-24E		TX08E	UCX08-24	34.1	21.3	14.0	2.6
		49	17.5	36	117	101.6	83	144	87	15	83	29	19	49	49.2	19		UCTX08E			UCX08				
	1 5/8																	UCT209-26E			UC209-26				
	1 11/16	1 15/16	11/16	1 3/8	4 19/32	4	3 9/32	5 21/32	3 7/16	5/8	3 9/32	1 5/32	3/4	1 15/16	1.937	0.748		UCT209-27E		T209E	UC209-27	34.1	21.3	14.0	2.4
45	1 3/4	49	17.5	35	117	101.6	83	144	87	16	83	29	19	49	49.2	19		UCT209-28E			UC209-28				
																		UCT209E			UC209				
	1 3/4	1 15/16	11/16	1 1/2	4 19/32	4	3 9/32	5 7/8	3 17/32	5/8	3 3/8	1 5/32	3/4	1 15/16	2.031	0.748		UCTX09-28E		TX09E	UCX09-28	35.1	23.3	14.4	2.9
		49	17.5	38	117	101.6	83	149	90	16	86	29	19	49	51.6	19		UCTX09E			UCX09				
	1 7/8																	UCT210-30E			UC210-30				
	1 15/16	1 15/16	11/16	1 15/32	4 19/32	4	3 9/32	5 7/8	3 17/32	5/8	3 3/8	1 5/32	3/4	1 15/16	2.031	0.748		UCT210-31E		T210E	UC210-31	35.1	23.3	14.4	2.6
50	2	49	17.5	37	117	101.6	83	149	90	16	86	29	19	49	51.6	19		UCT210E			UC210				
																		UCT210-32E			UC210-32				
	1 15/16	2 17/32	1 1/16	1 21/32	5 3/4	5 1/8	4 1/64	6 23/32	4 3/16	3/4	3 3/4	1 3/8	31/32	2 17/32	2.189	0.874		UCTX10-31E		TX10E	UCX10-31	43.4	29.4	14.4	4.4
	2	64	27	42	146	130.17	102	171	106	19	95	35	25	64	55.6	22.2		UCTX10E			UCX10				
																		UCTX10-32E			UCX10-32				

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
B-1/4-28UNF ..... 201~210, X05~X09, 305~308
B-PT1/8 ..... 211~217, X10~X17, 309~328
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

Koyo

UCT-E
Cylindrical bore (with set screws)
d 55 ~ 85 mm



Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

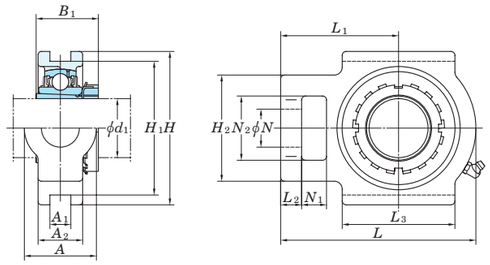
Unit : mm

Housing No.		Δ_{A1s}	Δ_{H1s}	X
T204E~T210E	TX05E~TX10E	+0.2 0	0 −0.5	0.5
T211E~T217E	TX11E~TX17E	+0.3 0	0 −0.8	0.6

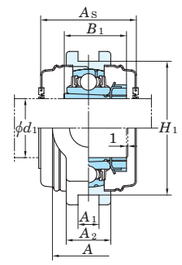
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm A	A_1	A_2	H	H_1	H_2	L	L_1	L_2	L_3	N	N_1	N_2	B	S	Unit No.		Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
55	2																UCT211-32E		T211E	UC211-32	43.4	29.4	14.4	4.0
	2 1/8	2 17/32	1 1/16	1 1/2	5 3/4	5 1/8	4 1/64	6 23/32	4 3/16	3/4	3 3/4	1 3/8	31/32	2 17/32	2.189	0.874	UCT211-34E			UC211-34				
		64	27	38	146	130.17	102	171	106	19	95	35	25	64	55.6	22.2	UCT211E			UC211				
	2 3/16																UCT211-35E			UC211-35				
	2 3/16	2 17/32	1 1/16	1 23/32	5 3/4	5 1/8	4 1/64	7 5/8	4 11/16	3/4	4 1/32	1 3/8	1 1/4	2 17/32	2.563	1.000	UCTX11E		TX11E	UCX11	52.4	36.2	14.4	5.3
		64	27	44	146	130.17	102	194	119	19	102	35	32	64	65.1	25.4	UCTX11-35E			UCX11-35				
	2 1/4																UCTX11-36E			UCX11-36				
60	2 1/4																UCT212-36E		T212E	UC212-36	52.4	36.2	14.4	4.9
		2 17/32	1 1/16	1 21/32	5 3/4	5 1/8	4 1/64	7 5/8	4 11/16	3/4	4 1/32	1 3/8	1 1/4	2 17/32	2.563	1.000	UCT212E			UC212				
	2 3/8	64	27	42	146	130.17	102	194	119	19	102	35	32	64	65.1	25.4	UCT212-38E			UC212-38				
	2 7/16																UCT212-39E			UC212-39				
	2 7/16	2 3/4	1 1/16	1 7/8	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2.563	1.000	UCTX12E		TX12E	UCX12	57.2	40.1	14.4	7.4
		70	27	48	167	150.8	111	224	137	21	121	41	32	70	65.1	25.4	UCTX12-39E			UCX12-39				
65	2 1/2	2 3/4	1 1/16	1 23/32	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2.563	1.000	UCT213-40E		T213E	UC213-40	57.2	40.1	14.4	6.9
		70	27	44	167	150.8	111	224	137	21	121	41	32	70	65.1	25.4	UCT213E			UC213				
	2 1/2	2 3/4	1 1/16	1 7/8	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2.937	1.189	UCTX13-40E		TX13E	UCX13-40	62.2	44.1	14.5	7.6
		70	27	48	167	150.8	111	224	137	21	121	41	32	70	74.6	30.2	UCTX13E			UCX13				
70	2 3/4	2 3/4	1 1/16	1 13/16	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2.937	1.189	UCT214-44E		T214E	UC214-44	62.2	44.1	14.5	7.0
		70	27	46	167	150.8	111	224	137	21	121	41	32	70	74.6	30.2	UCT214E			UC214				
	2 3/4	2 3/4	1 1/16	1 7/8	6 9/16	5 15/16	4 3/8	9 1/8	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.063	1.331	UCTX14-44E		TX14E	UCX14-44	67.4	48.3	14.5	7.9
		70	27	48	167	150.8	111	232	140	21	121	41	32	70	77.8	33.3	UCTX14E			UCX14				
75	2 15/16																UCT215-47E		T215E	UC215-47	67.4	48.3	14.5	7.3
		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			UC215				
	3	70	27	48	167	150.8	111	232	140	21	121	41	32	70	77.8	33.3	UCT215-48E			UC215-48				
	2 15/16																UCTX15-47E		TX15E	UCX15-47	72.7	53.0	14.6	8.7
		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			UCX15				
	3	70	27	48	184	165	111	235	140	21	121	41	32	70	82.6	33.3	UCTX15-48E			UCX15-48				
80	3 1/8	2 3/4	1 1/16	2	7 1/4	6 1/2	4 3/8	9 1/4	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.252	1.311	UCT216-50E		T216E	UC216-50	72.7	53.0	14.6	8.2
		70	27	51	184	165	111	235	140	21	121	41	32	70	82.6	33.3	UCT216E			UC216				
	–	3 1/2	1 13/16	2 11/16	7 25/32	6 13/16	4 7/8	10 1/4	6 3/8	1 3/32	6 3/16	1 7/8	1 1/2	2 7/8	3.374	1.343	UCTX16E		TX16E	UCX16	84.0	61.9	14.5	12.4
		89	46	68	198	173	124	260	162	28	157	48	38	73	85.7	34.1								
85	3 1/4	3 1/2	1 13/16	2 11/16	7 25/32	6 13/16	4 7/8	10 1/4	6 3/8	1 5/32	6 3/16	1 7/8	1 1/2	2 7/8	3.374	1.343	UCT217-52E		T217E	UC217-52	84.0	61.9	14.5	12.1
		89	46	68	198	173	124	260	162	29	157	48	38	73	85.7	34.1	UCT217E			UC217				
	3 7/16	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
		89	46	68	198	173	124	260	162	28	157	48	38	73	96	39.7	UCTX17-55E			UCX17-55				

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
B-1/4-28UNF ..... 201~210, X05~X09, 305~308
B-PT1/8 ..... 211~217, X10~X17, 309~328
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

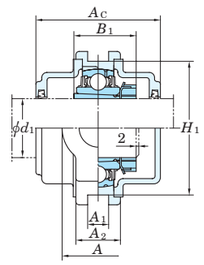
UKT
Tapered bore (with adapter)
d_1 20 ~ (50) mm



With Pressed Steel Covers



With Cast Iron Covers

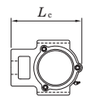


Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

Unit : mm

Housing No.			Δ_{A1s}	Δ_{H1s}	X
T205~T210	TX05~TX10	T305~T310	+0.2 0	0 −0.5	0.5
T211~T217	TX11~TX17	T311~T318	+0.3 0	0 −0.8	0.6
		T319~T322			0.7
		T324~T328			0.8

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



T205JE3 L_c = 102 mm

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm d_1	A	A_1	A_2	H	H_1	H_2	L	L_1	L_2	L_3	N	N_1	N_2	B_1 1)	Standard Unit No.	Housing No.	Bearing No.	Adapter 1) assembly No.	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Covers Unit No. Open Ends Type	Closed End Type	Dimension mm inch A_s	Mass kg	With Cast Iron Covers Unit No. Open Ends Type	Closed End Type	Dimension mm inch A_c	Mass kg
20	3/4		1 1/4	15/32	15/16	3 1/2	2 63/64	2	3 13/16	2 7/16	13/32	2	3/4	5/8	1 1/4	1 5/32(1 3/8)	UKT205	T205	UK205		HE305X(HE2305X)	0.88	14.0	7.85	13.9	–	–	– –	–	–	–	– –	–
			32	12	24	89	76	51	97	62	10	51	19	16	32	29(35)					H305X(H2305X)	0.88				UKT205C	UKT205CD	48 1 7/8	0.88	UKT205FC	UKT205FCD	66 2 19/32	1.3
	3/4		1 15/32	15/32	1 3/32	4 1/32	3 1/2	2 7/32	4 7/16	2 3/4	13/32	2 1/4	7/8	5/8	1 15/32	1 3/8	UKTX05	TX05	UKX05		HE2305X	1.3	19.5	11.3	13.9	–	–	– –	–	–	–	– –	–
			37	12	28	102	89	56	113	70	10	57	22	16	37	35					H2305X	1.3				UKTX05C	UKTX05CD	52 2 1/16	1.3	–	–	– –	–
	3/4		1 13/32	15/32	1 1/32	3 1/2	3 5/32	2 7/16	4 13/16	3	15/32	2 9/16	1 1/32	5/8	1 13/32	1 3/8	UKT305	T305	UK305		HE2305X	1.5	21.2	10.9	12.6	–	–	– –	–	–	–	– –	–
			36	12	26	89	80	62	122	76	12	65	26	16	36	35					H2305X	1.5				–	–	– –	–	UKT305C	UKT305CD	76 3	2.1
			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 7/32(1 1/2)	UKT206	T206	UK206		H306X(H2306X)	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		37	12	28	102	89	56	113	70	10	57	22	16	37	31(38)					HE306X(HE2306X)	1.3				–	–	– –	–	–	–	– –	–
25			1 15/32	15/32	1 3/16	4 1/32	3 1/2	2 17/32	5 3/32	3 1/16	1/2	2 17/32	7/8	5/8	1 15/32	1 1/2	UKTX06	TX06	UKX06		H2306X	1.7	25.7	15.4	13.9	UKTX06C	UKTX06CD	59 2 5/16	1.7	–	–	– –	–
	1		37	12	30	102	89	64	129	78	13	64	22	16	37	38					HE2306X	1.7				–	–	– –	–	–	–	– –	–
			1 5/8	5/8	1 3/32	3 15/16	3 35/64	2 3/4	5 13/32	3 11/32	9/16	2 29/32	1 3/32	23/32	1 5/8	1 1/2	UKT306	T306	UK306		H2306X	1.9	26.7	15.0	13.3	–	–	– –	–	UKT306C	UKT306CD	82 3 7/32	2.5
	1		41	16	28	100	90	70	137	85	14	74	28	18	41	38					HE2306X	1.9				–	–	– –	–	–	–	– –	–
	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 3/8(1 11/16)	UKT207	T207	UK207		HS307X(HS2307X)	1.7	25.7	15.4	13.9	–	–	– –	–	–	–	– –	–
			37	12	30	102	89	64	129	78	13	64	22	16	37	35(43)					H307X(H2307X)	1.7				UKT207C	UKT207CD	59 2 5/16	1.7	UKT207FC	UKT207FCD	78 3 1/16	2.5
30	1 1/8		1 15/16	5/8	1 13/32	4 1/2	4 1/64	3 9/32	5 21/32	3 15/32	19/32	3 9/32	1 5/32	3/4	1 15/16	1 11/16	UKTX07	TX07	UKX07		HS2307X	2.6	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
			49	16	36	114	102	83	144	88	15	83	29	19	49	43					H2307X	2.6				UKTX07C	UKTX07CD	68 2 11/16	2.6	–	–	– –	–
	1 1/8		1 25/32	5/8	1 1/4	4 3/8	3 15/16	2 15/16	5 29/32	3 11/16	19/32	3 5/32	1 3/16	25/32	1 25/32	1 11/16	UKT307	T307	UK307		HS2307X	2.4	33.4	19.3	13.2	–	–	– –	–	–	–	– –	–
			45	16	32	111	100	75	150	94	15	80	30	20	45	43					H2307X	2.4				–	–	– –	–	UKT307C	UKT307CD	88 3 15/32	3.3
35	1 1/4																				HE308X(HE2308X)	2.5				–	–	– –	–	–	–	– –	–
	1 3/8		1 15/16	5/8	1 5/16	4 1/2	4 1/64	3 9/32	5 21/32	3 15/32	5/8	3 9/32	1 5/32	3/4	1 15/16	1 13/32(1 13/16)	UKT208	T208	UK208		HS308X(HS2308X)	2.5	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
			49	16	33	114	102	83	144	88	16	83	29	19	49	36(46)					H308X(H2308X)	2.5				UKT208C	UKT208CD	68 2 11/16	2.5	UKT208FC	UKT208FCD	86 3 3/8	3.4
	1 1/4																				HE2308X	2.6				–	–	– –	–	–	–	– –	–
	1 3/8		1 15/16	5/8	1 13/32	4 19/32	4 1/64	3 9/32	5 21/32	3 7/16	19/32	3 9/32	1 5/32	3/4	1 15/16	1 13/16	UKTX08	TX08	UKX08		HS2308X	2.6	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
			49	16	36	117	102	83	144	87	15	83	29	19	49	46					H2308X	2.6				UKTX08C	UKTX08CD	68 2 11/16	2.6	–	–	– –	–
	1 1/4																				HE2308X	3.0				–	–	– –	–	–	–	– –	–
	1 3/8		1 31/32	45/64	1 11/32	4 7/8	4 13/32	3 9/32	6 3/8	3 15/16	21/32	3 1/2	1 1/4	7/8	1 31/32	1 13/16	UKT308	T308	UK308		HS2308X	3.0	40.7	24.0	13.2	–	–	– –	–	–	–	– –	–
			50	18	34	124	112	83	162	100	17	89	32	22	50	46					H2308X	3.0				–	–	– –	–	UKT308C	UKT308CD	96 3 25/32	4.0
40	1 1/2																				HE309X(HE2309X)	2.5				–	–	– –	–	–	–	– –	–
			1 15/16	5/8	1 3/8	4 19/32	4 1/64	3 9/32	5 21/32	3 7/16	5/8	3 9/32	1 5/32	3/4	1 15/16	1 17/32(1 31/32)	UKT209	T209	UK209		H309X(H2309X)	2.5	34.1	21.3	14.0	UKT209C	UKT209CD	68 2 11/16	2.5	UKT209FC	UKT209FCD	88 3 15/32	3.4
	1 5/8		49	16	35	117	102	83	144	87	16	83	29	19	49	39(50)					HS309X(HS2309X)	2.5				–	–	– –	–	–	–	– –	–
	1 1/2																				HE2309X	2.9				–	–	– –	–	–	–	– –	–
			1 15/16	5/8	1 1/2	4 19/32	4 1/64	3 9/32	5 7/8	3 17/32	5/8	3 3/8	1 5/32	3/4	1 15/16	1 31/32	UKTX09	TX09	UKX09		H2309X	2.9	35.1	23.3	14.4	UKTX09C	UKTX09CD	73 2 7/8	2.9	–	–	– –	–
	1 5/8		49	16	38	117	102	83	149	90	16	86	29	19	49	50					HS2309X	2.9				–	–	– –	–	–	–	– –	–
	1 1/2																				HE2309X	4.2				–	–	– –	–	–	–	– –	–
			2 5/32	45/64	1 1/2	5 7/16	4 59/64	3 17/32	7	4 11/32	23/32	3 13/16	1 11/32	15/16	2 5/32	1 31/32	UKT309	T309	UK309		H2309X	4.2	48.9	29.5	13.3	–	–	– –	–	UKT309C	UKT309CD	102 4 1/32	5.5
	1 5/8		55	18	38	138	125	90	178	110	18	97	34	24	55	50					HS2309X	4.2				–	–	– –	–	–	–	– –	–
45	1 3/4																				HE310X(HE2310X)	2.7				–	–	– –	–	–	–	– –	–
			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	1 21/32(2 5/32)	UKT210	T210	UK210		H310X(H2310X)	2.7	35.1	23.3	14.4	UKT210C	UKT210CD	73 2 7/8	2.7	UKT210FC	UKT210FCD	97 3 13/16	3.8
	1 3/4		49	16	37	117	102	83	149	90	16	86	29	19	49	42(55)					HE2310X	4.4				–	–	– –	–	–	–	– –	–
			2 17/32	55/64	1 21/32	5 3/4	5 1/8	4 1/32	6 23/32	4 3/16	3/4	3 3/4	1 3/8	31/32	2 17/32	2 5/32	UKTX10	TX10	UKX10		H2310X	4.4	43.4	29.4	14.4	UKTX10C	UKTX10CD	75 2 15/16	4.4	–	–	– –	–
	1 3/4		2 13/32	25/32	1 9/16	5 15/16	5 33/64	3 27/32	7 17/32	4 19/32	25/32	4 3/16	1 15/32	1 1/16	2 13/32	2 5/32	UKT310	T310	UK310		HE2310X	5.0	62.0	38.3	13.2	–	–	– –	–	–	–	– –	–
			61	20	40	151	140	98	191	117	20	106	37	27	61	55					H2310X	5.0				–	–	– –	–	UKT310C	UKT310CD	110 4 11/32	6.7
50	1 7/8																				HS311X(HS2311X)	4.1				–	–	– –	–	–	–	– –	–
			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	1 25/32(2 5/16)	UKT211	T211	UK211		H311X(H2311X)	4.1	43.4	29.4	14.4	UKT211C	UKT211CD	75 2 15/16	4.1	UKT211FC	UKT211FCD	99 3 29/32	5.4
	2		64	22	38	146	130	102	171	106	19	95	35	25	64	45(59)					HE311X(HE2311X)	4.1				–	–	– –	–	–	–	– –	–

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

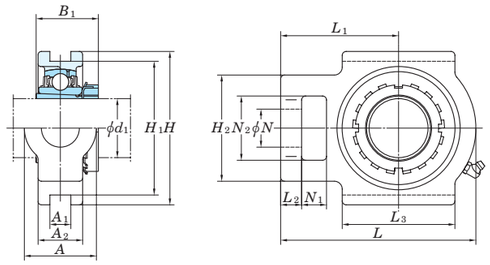
2. Part No. of applicable grease nipples are shown below.
B-1/4-28UNF.....205~210, X05~X09, 305~308
B-PT1/8.....211~217, X10~X17, 309~328

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)

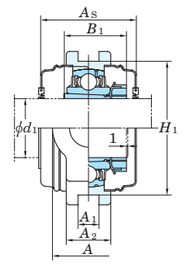
4. As for the triple-lip seal type product (205 is the double-lip seal type product), supplementary code L3 (or L2) follows the Part No. of unit or bearing. (Example of Part No. : UKT206JL3 + H2306X, UK206L3 + H2306X)

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

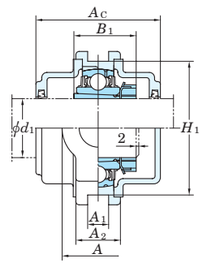
UKT
Tapered bore (with adapter)
d_1 (50) ~ 100 mm



With Pressed Steel Covers



With Cast Iron Covers

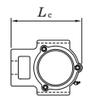


Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

Unit : mm

Housing No.			Δ_{A1s}	Δ_{H1s}	X
T205~T210	TX05~TX10	T305~T310	+0.2 0	0 −0.5	0.5
T211~T217	TX11~TX17	T311~T318	+0.3 0	0 −0.8	0.6
		T319~T322			0.7
		T324~T328			0.8

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



T205JE3 L_c = 102 mm

Shaft Dia. mm	Shaft Dia. inch	d_1	Dimensions inch / mm: A	A_1	A_2	H	H_1	H_2	L	L_1	L_2	L_3	N	N_1	N_2	B_1 1)	Standard Unit No.	Housing No.	Bearing No.	Adapter assembly No. 1)	Mass kg	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	With Pressed Steel Covers Unit No. Open Ends Type	Closed End Type	Dimension mm inch A_s	Mass kg	With Cast Iron Covers Unit No. Open Ends Type	Closed End Type	Dimension mm inch A_c	Mass kg
50	1 7/8		2 17/32	55/64	1 23/32	5 3/4	5 1/8	4 1/32	7 5/8	4 11/16	3/4	4 1/32	1 3/8	1 1/4	2 17/32	2 5/16				HS2311X	5.1				–	–	– –	–	–	–	– –	–
			64	22	44	146	130	102	194	119	19	102	35	32	64	59	UKTX11	TX11	UKX11	H2311X	5.1	52.4	36.2	14.4	UKTX11C	UKTX11CD	88 3 15/32	5.1	–	–	– –	–
	2																			HE2311X	5.1				–	–	– –	–	–	–	– –	–
	1 7/8		2 19/32	55/64	1 23/32	6 13/32	5 29/32	4 1/8	8 5/32	5	13/16	4 17/32	1 17/32	1 5/32	2 19/32	2 5/16				HS2311X	6.4				–	–	– –	–	–	–	– –	–
			66	22	44	163	150	105	207	127	21	115	39	29	66	59	UKT311	T311	UK311	H2311X	6.4	71.6	45.0	13.2	–	–	– –	–	UKT311C	UKT311CD	114 4 1/2	8.3
	2																			HE2311X	6.4				–	–	– –	–	–	–	– –	–
55	2 1/8		2 17/32	55/64	1 21/32	5 3/4	5 1/8	4 1/32	7 5/8	4 11/16	3/4	4 1/32	1 3/8	1 1/4	2 17/32	1 27/32(2 7/16)				HS312X(HS2312X)	4.8				–	–	– –	–	–	–	– –	–
			64	22	42	146	130	102	194	119	19	102	35	32	64	47(62)	UKT212	T212	UK212	H312X(H2313X)	4.8	52.4	36.2	14.4	UKT212C	UKT212CD	88 3 15/32	4.8	UKT212FC	UKT212FCD	114 4 1/2	6.3
	2 1/8		2 3/4	1 1/32	1 7/8	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2 7/16				HS2312X	7.3				–	–	– –	–	–	–	– –	–
			70	26	48	167	151	111	224	137	21	121	41	32	70	62	UKTX12	TX12	UKX12	H2312X	7.3	57.2	40.1	14.4	UKTX12C	UKTX12CD	88 3 15/32	7.3	–	–	– –	–
	2 1/8		2 25/32	55/64	1 13/16	7	6 19/64	4 7/16	8 21/32	5 5/16	29/32	4 27/32	1 5/8	1 7/32	2 25/32	2 7/16				HS2312X	7.5				–	–	– –	–	–	–	– –	–
			71	22	46	178	160	113	220	135	23	123	41	31	71	62	UKT312	T312	UK312	H2312X	7.5	81.9	52.2	13.2	–	–	– –	–	UKT312C	UKT312CD	124 4 7/8	9.9
60	2 1/4		2 3/4	1 1/32	1 23/32	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	1 31/32(2 9/16)				HE313X(HE2313X)	6.8				–	–	– –	–	–	–	– –	–
			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	1 31/32(2 9/16)				H313X(H2313X)	6.8	57.2	40.1	14.4	UKT213C	UKT213CD	88 3 15/32	6.8	UKT213FC	UKT213FCD	114 4 1/2	8.5
	2 3/8		70	26	44	167	151	111	224	137	21	121	41	32	70	50(65)	UKT213	T213	UK213	HS313X(HS2313X)	6.8				–	–	– –	–	–	–	– –	–
	2 1/4																			HE2313X	7.2				–	–	– –	–	–	–	– –	–
			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 9/16				H2313X	7.2	62.2	44.1	14.5	UKTX13C	UKTX13CD	98 3 27/32	7.2	–	–	– –	–
	2 3/8		70	26	48	167	151	111	224	137	21	121	41	32	70	65	UKTX13	TX13	UKX13	HS2313X	7.2				–	–	– –	–	–	–	– –	–
	2 1/4																			HE2313X	9.4				–	–	– –	–	–	–	– –	–
			3 5/32	1 1/32	1 31/32	7 15/32	6 11/16	4 9/16	9 3/8	5 3/4	31/32	5 9/32	1 11/16	1 1/4	2 3/4	2 9/16				H2313X	9.4	92.7	59.9	13.2	–	–	– –	–	UKT313C	UKT313CD	122 4 13/16	11.6
	2 3/8		80	26	50	190	170	116	238	146	25	134	43	32	70	65	UKT313	T313	UK313	HS2313X	9.4				–	–	– –	–	–	–	– –	–
65	2 1/2		2 3/4	1 1/32	1 13/16	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2 5/32(2 7/8)				HE315X(HE2315X)	7.4				–	–	– –	–	–	–	– –	–
			70	26	48	167	151	111	232	140	21	121	41	32	70	55(73)	UKT215	T215	UK215	H315X(H2315X)	7.4	67.4	48.3	14.5	UKT215C	UKT215CD	98 3 27/32	7.4	UKT215FC	UKT215FCD	124 4 7/8	9.4
	2 1/2		2 3/4	1 7/64	1 7/8	7 1/4	6 1/2	4 3/8	9 1/4	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2 7/8				HE2315X	8.4				–	–	– –	–	–	–	– –	–
			70	28	48	184	165	111	235	140	21	121	41	32	70	73	UKTX15	TX15	UKX15	H2315X	8.4	72.7	53.0	14.6	UKTX15C	UKTX15CD	108 4 1/4	8.4	–	–	– –	–
	2 1/2		3 17/32	1 1/32	2 5/32	8 1/2	7 9/16	5 3/16	10 5/16	6 5/16	31/32	5 29/32	1 13/16	1 13/32	3 11/32	2 7/8				HE2315X	13.1				–	–	– –	–	–	–	– –	–
			90	26	55	216	192	132	262	160	25	150	46	36	85	73	UKT315	T315	UK315	H2315X	13.1	113	77.2	13.2	–	–	– –	–	UKT315C	UKT315CD	134 5 9/32	15.9
70	2 3/4		2 3/4	1 1/32	2	7 1/4	6 1/2	4 3/8	9 1/4	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2 5/16(3 1/16)				HE316X(HE2316X)	8.5				–	–	– –	–	–	–	– –	–
			70	26	51	184	165	111	235	140	21	121	41	32	70	59(78)	UKT216	T216	UK216	H316X(H2316X)	8.5	72.7	53.0	14.6	UKT216C	UKT216CD	108 4 1/4	8.5	UKT216FC	UKT216FCD	138 5 7/16	11.0
	2 3/4		2 7/8	1 7/64	2 1/8	7 25/32	6 13/16	4 7/8	10 1/4	6 3/8	1 3/32	6 3/16	1 7/8	1 1/2	2 7/8	3 1/16				HE2316X	11.8				–	–	– –	–	–	–	– –	–
			73	28	54	198	173	124	260	162	28	157	48	38	73	78	UKTX16	TX16	UKX16	H2316X	11.8	84.0	61.9	14.5	UKTX16C	UKTX16CD	112 4 13/32	11.8	–	–	– –	–
	2 3/4		4 1/32	1 3/16	2 3/8	9 1/16	8 1/32	5 29/32	11 3/32	6 27/32	1 3/32	6 5/16	2 3/32	1 21/32	3 27/32	3 1/16				HE2316X	16.3				–	–	– –	–	–	–	– –	–
			102	30	60	230	204	150	282	174	28	160	53	42	98	78	UKT316	T316	UK316	H2316X	16.3	123	86.7	13.3	–	–	– –	–	UKT316C	UKT316CD	138 5 7/16	19.4
			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	2 15/32(3 7/32)				H317X(H2317X)	11.2				UKT217C	UKT217CD	112 4 13/32	11.2	UKT217FC	UKT217FCD	142 5 19/32	14.0
	3																			HE317X(HE2317X)	11.2	84.0	61.9	14.5	–	–	– –	–	–	–	– –	–
75			2 7/8	1 7/64	2 1/8	7 25/32	6 13/16	4 7/8	10 1/4	6 3/8	1 3/32	6 3/16	1 7/8	1 1/2	2 7/8	3 7/32				H2317X	11.4				UKTX17C	UKTX17CD	122 4 13/16	11.4	–	–	– –	–
	3		73	28	54	198	173	124	260	162	28	157	48	38	73	82	UKTX17	TX17	UKX17	HE2317X	11.4	96.1	71.5	14.5	–	–	– –	–	–	–	– –	–
			4 1/32	1 17/64	2 17/32	9 7/16	8 27/64	5 31/32	11 23/32	7 7/32	1 3/16	6 11/16	2 3/32	1 21/32	3 27/32	3 7/32				H2317X	18.9				–	–	– –	–	UKT317C	UKT317CD	146 5 3/4	22.4
	3		102	32	64	240	214	152	298	183	30	170	53	42	98	82	UKT317	T317	UK317	HE2317X	18.9	133	96.8	13.3	–	–	– –	–	–	–	– –	–
80	–		4 11/32	1 17/64	2 19/32	10 1/32	8 31/32	6 5/16	12 9/32	7 9/16	1 3/16	6 7/8	2 1/4	1 13/16	4 3/16	3 3/8				H2318X	21.7	143	107	13.3	–	–	– –	–	UKT318C	UKT318CD	150 5 29/32	25.9
			110	32	66	255	228	160	312	192	30	175	57	46	106	86	UKT318	T318	UK318													
85	3 1/4		4 11/32	1 3/8	2 27/32	10 5/8	9 29/64	6 1/2	12 11/16	7 3/4	1 7/32	7 3/32	2 1/4	1 13/16	4 3/16	3 17/32				HE2319X	25.2				–	–	– –	–	–	–	– –	–
			110	35	72	270	240	165	322	197	31	180	57	46	106	90	UKT319	T319	UK319	H2319X	25.2	153	119	13.3	–	–	– –	–	UKT319C	UKT319CD	162 6 3/8	29.9
90	3 1/2		4 23/32	1 3/8	2 15/16	11 13/32	10 15/64	6 7/8	13 19/32	8 9/32	1 1/4	7 7/8	2 5/16	1 7/8	4 17/32	3 13/16				H2320X	30.4				–	–	– –	–	–	–	– –	–
			120	35	75	290	260	175	345	210	32	200	59	48	115	97	UKT320	T320	UK320	H2320X	30.4	173	141	13.2	–	–	– –	–	UKT320C	UKT320CD	174 6 27/32	36.6
100	4		5 1/8	1 1/2	3 5/32	12 19/32	11 7/32	7 9/32	15 5/32	9 1/4	1 1/2	8 15/32	2 9/16	2 1/16	4 29/32	4 1/8				H2322X	39.5				–	–	– –	–	UKT322C	UKT322CD	188 7 13/32	46.4
			130	38	80	320	285	185	385	235	38	215	65	52	125	105	UKT322	T322	UK322	H2322X	39.5	205	180	13.2	–	–	– –	–	–	–	– –	–

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

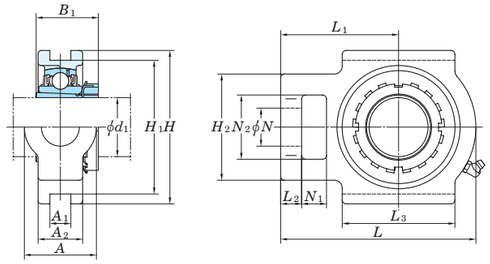
2. Part No. of applicable grease nipples are shown below.
B-1/4-28UNF.....205~210, X05~X09, 305~308
B-PT1/8.....211~217, X10~X17, 309~328

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)

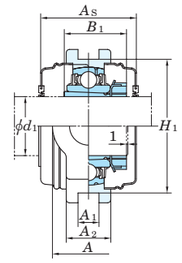
4. As for the triple-lip seal type product (205 is the double-lip seal type product), supplementary code L3 (or L2) follows the Part No. of unit or bearing. (Example of Part No. : UKT206JL3 + H2306X, UK206L3 + H2306X)

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

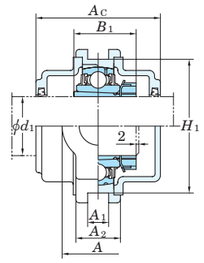
UKT
Tapered bore (with adapter)
d_1 110 ~ 125 mm



With Pressed Steel Covers



With Cast Iron Covers

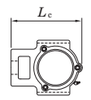


Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

Unit : mm

Housing No.			Δ_{A1s}	Δ_{H1s}	X
T205~T210	TX05~TX10	T305~T310	+0.2 0	0 −0.5	0.5
T211~T217	TX11~TX17	T311~T318	+0.3 0	0 −0.8	0.6
		T319~T322			0.7
		T324~T328			0.8

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



T205JE3 L_c = 102 mm

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm														Standard				Adapter [1] assembly No.	Mass	Basic Load Ratings kN		Factor	With Pressed Steel Covers				With Cast Iron Covers			
																Unit No.	Housing No.	Bearing No.						Unit No.		Dimension mm inch	Mass	Unit No.		Dimension mm inch	Mass
																								Open Ends Type	Closed End Type			Open Ends Type	Closed End Type		
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			A_s				A_c	
110	–	5 1/2	1 49/64	3 17/32	13 31/32	12 9/32	8 9/32	17	10 1/2	1 21/32	9 1/16	2 3/4	2 3/8	5 1/2	4 13/32	UKT324	T324	UK324		H2324	54.7	207	185	13.5	–	–	– –	–	UKT324C	UKT324CD	196 7 23/32	65.0
		140	45	90	355	320	210	432	267	42	230	70	60	140	112																
115	4 1/2	5 29/32	1 31/32	3 15/16	15 5/32	13 25/32	8 21/32	18 5/16	11 7/32	1 25/32	9 7/16	2 15/16	2 9/16	5 29/32	4 3/4	UKT326	T326	UK326		HE2326	69.1	229	214	13.6	–	–	– –	–	–	–	– –	–
		150	50	100	385	350	220	465	285	45	240	75	65	150	121					H2326	69.1				–	–	– –	–	UKT326C	UKT326CD	214 8 7/16	82.4
125	–	6 3/32	1 31/32	3 15/16	16 11/32	14 61/64	9 1/16	20 9/32	12 13/32	1 31/32	10 1/32	3 5/32	2 3/4	6 5/16	5 5/32	UKT328	T328	UK328		H2328	85.1	253	246	13.6	–	–	– –	–	UKT328C	UKT328CD	222 8 3/4	102
		155	50	100	415	380	230	515	315	50	255	80	70	160	131																

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

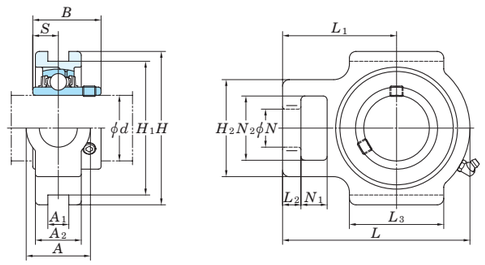
2. Part No. of applicable grease nipples are shown below.
B-1/4-28UNF.....205~210, X05~X09, 305~308
B-PT1/8.....211~217, X10~X17, 309~328

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)

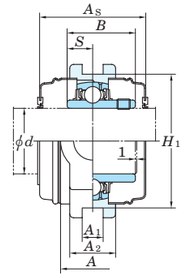
4. As for the triple-lip seal type product (205 is the double-lip seal type product), supplementary code L3 (or L2) follows the Part No. of unit or bearing. (Example of Part No. : UKT206JL3 + H2306X, UK206L3 + H2306X)

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

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



With Pressed Stainless Steel Covers



Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

Unit : mm

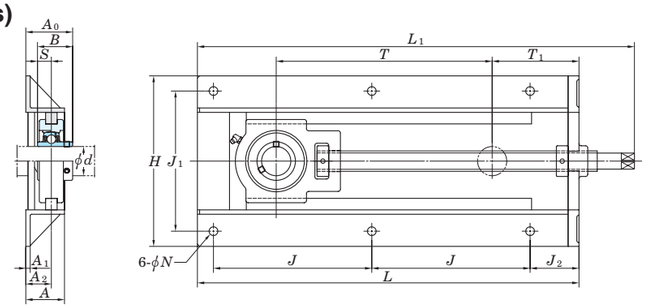
Housing No.	Δ_{A1s}	Δ_{H1s}	X
ST204H1~ST210H1	+0.2 0	0 −0.5	0.5

Shaft Dia.	Dimensions															Standard Unit No.	Housing No.	Bearing No.	Mass	Basic Load Ratings kN		Factor	With Pressed Stainless Steel Covers				
	inch mm																						Unit No.		Dimension		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				kg	C_r	C_{0r}	f_0	Open Ends Type	Closed End Type	mm	inch A_s	kg
20	1 1/4	15/32	29/32	3 1/2	2 63/64	1 13/16	3 1/2	2 5/16	11/32	1 23/32	3/4	23/32	1 1/4	1.220	0.500	UCST204H1S6	ST204H1	UC204S6	0.73	10.9	5.35	13.2	UCST204H1CS6	UCST204H1CDS6	45	1 25/32	0.73
	32	12	23	89	76	46	89	59	9	44	19	18	32	31	12.7												
25	1 1/4	15/32	31/32	3 1/2	2 63/64	1 13/16	3 21/32	2 3/8	11/32	1 23/32	3/4	23/32	1 1/4	1.343	0.563	UCST205H1S6	ST205H1	UC205S6	0.79	11.9	6.3	13.9	UCST205H1CS6	UCST205H1CDS6	49	1 15/16	0.79
	32	12	25	89	76	46	93	60	9	44	19	18	32	34.1	14.3												
30	1 15/32	15/32	1 1/16	4 1/32	3 1/2	2 1/16	4 3/16	2 5/8	11/32	1 31/32	7/8	23/32	1 15/32	1.500	0.626	UCST206H1S6	ST206H1	UC206S6	1.1	16.5	9.05	13.9	UCST206H1CS6	UCST206H1CDS6	53	2 3/32	1.1
	37	12	27	102	89	52	106	67	9	50	22	18	37	38.1	15.9												
35	1 15/32	15/32	1 7/32	4 1/32	3 1/2	2 7/32	4 11/16	2 15/16	7/16	2 7/32	7/8	23/32	1 15/32	1.689	0.689	UCST207H1S6	ST207H1	UC207S6	1.5	21.8	12.3	13.9	UCST207H1CS6	UCST207H1CDS6	60	2 3/8	1.5
	37	12	31	102	89	56	119	75	11	56	22	18	37	42.9	17.5												
40	1 15/16	5/8	1 1/4	4 1/2	4 1/64	2 29/32	5 5/16	3 11/32	9/16	2 17/32	1 5/32	25/32	1 15/16	1.937	0.748	UCST208H1S6	ST208H1	UC208S6	2	24.8	14.3	14.0	UCST208H1CS6	UCST208H1CDS6	69	2 23/32	2
	49	16	32	114	102	74	135	85	14	64	29	20	49	49.2	19												
45	1 15/16	5/8	1 11/32	4 19/32	4 1/64	2 29/32	5 13/32	3 11/32	9/16	2 19/32	1 5/32	25/32	1 15/16	1.937	0.748	UCST209H1S6	ST209H1	UC209S6	2.1	27.8	16.2	14.0	UCST209H1CS6	UCST209H1CDS6	69	2 23/32	2.1
	49	16	34	117	102	74	137	85	14	66	29	20	49	49.2	19												
50	1 15/16	5/8	1 3/8	4 19/32	4 1/64	2 29/32	5 5/8	3 7/16	9/16	2 27/32	1 5/32	25/32	1 15/16	2.031	0.748	UCST210H1S6	ST210H1	UC210S6	2.3	29.8	18.6	14.4	UCST210H1CS6	UCST210H1CDS6	74	2 29/32	2.3
	49	16	35	117	102	74	143	87	14	72	29	20	49	51.6	19												

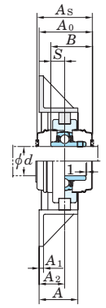
Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See **Table 10.5** in P.51.)
2. Part No. of the applicable grease nipple is A-1/4-28UNFN12.
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

Koyo

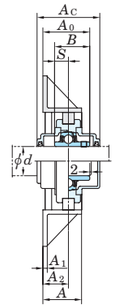
UCTH
Cylindrical bore (with set screws)
d 12 ~ 65 mm



With Pressed Steel Covers



With Cast Iron Covers



Variations of tolerance of distance between centers of bolt holes (Δ_{Js}, Δ_{J1s})

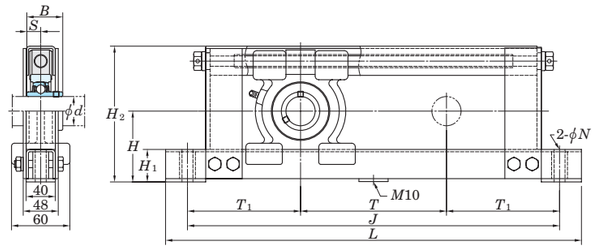
Unit : mm

Nominal unit code	Δ_{Js}	Δ_{J1s}
UCTH201~UCTH213	±0.5	±0.5

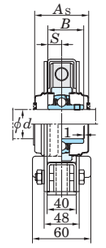
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm: H	L	L_1	A	J	J_1	J_2	N	T	T_1	A_1	A_2	A_0	B	S	Bolt Size inch / mm	Standard Unit No.	Bearing No.	Mass kg	Basic Load Ratings kN: C_r	C_{0r}	Factor f_0	With Pressed Steel Covers: Unit No. Open Ends Type	Closed End Type	Dimension mm / inch: A_s	Mass kg	With Cast Iron Covers: Unit No. Open Ends Type	Closed End Type	Dimension mm / inch: A_c	Mass kg
12	1/2																	UCTH201-150	UC201	6.7													
																		UCTH201-8-150	UC201-8	6.7				–	–	– –	–	–	–	– –	–
15																	3/8	UCTH202-150	UC202	6.7				UCTH202C-150	UCTH202CD-150	44 1 23/32	6.7	–	–	– –	–
	5/8	7 7/8	12 17/32	14 13/16	1 31/32	4 39/64	6 1/16	2 9/16	15/32	5 1/32	3 15/32	1/4	1 7/64	1 13/16	1.220	0.500		UCTH202-10-150	UC202-10	6.7	12.8	6.65	13.2	–	–	– –	–	–	–	– –	–
		200	318	376	50	117	154	65	12	153	88	6	28	46.3	31	12.7	M10														
17																		UCTH203-150	UC203	6.7				UCTH203C-150	UCTH203CD-150	44 1 23/32	6.7	–	–	– –	–
	3/4																	UCTH204-12-150	UC204-12	6.7				–	–	– –	–	–	–	– –	–
20																		UCTH204-150	UC204	6.7				UCTH204C-150	UCTH204CD-150	44 1 23/32	6.7	UCTH204FC-150	UCTH204FCD-150	62 2 7/16	7.0
	7/8																	UCTH205-14-150	UC205-14	6.7				–	–	– –	–	–	–	– –	–
	15/16	7 7/8	12 17/32	14 27/32	1 31/32	4 39/64	6 1/16	2 9/16	15/32	5 31/32	3 15/32	1/4	1 7/64	1 7/8	1.343	0.563	3/8	UCTH205-15-150	UC205-15	6.7	14.0	7.85	13.9	–	–	– –	–	–	–	– –	–
25		200	318	377	50	117	154	65	12	152	88	6	28	47.8	34.1	14.3	M10	UCTH205-150	UC205	6.7				UCTH205C-150	UCTH205CD-150	48 1 7/8	6.7	UCTH205FC-150	UCTH205FCD-150	66 2 19/32	7.1
	1																	UCTH205-16-150	UC205-16	6.7				–	–	– –	–	–	–	– –	–
	1 1/8																	UCTH206-18-150	UC206-18	8.0				–	–	– –	–	–	–	– –	–
		8 3/8	13 7/32	16 1/32	1 31/32	4 31/32	6 17/32	2 9/16	15/32	5 5/8	3 15/16	1/4	1 17/64	2 1/8	1.500	0.626	3/8	UCTH206-150	UC206	8.0	19.5	11.3	13.9	UCTH206C-150	UCTH206CD-150	52 2 1/16	8.0	UCTH206FC-150	UCTH206FCD-150	70 2 3/4	8.5
30	1 3/16	213	336	407	50	126	166	65	12	143	100	6	32	54.2	38.1	15.9	M10	UCTH206-19-150	UC206-19	8.0				–	–	– –	–	–	–	– –	–
	1 1/4																	UCTH206-20-150	UC206-20	8.0				–	–	– –	–	–	–	– –	–
	1 1/4																	UCTH207-20-230	UC207-20	10.5				–	–	– –	–	–	–	– –	–
	1 5/16																	UCTH207-21-230	UC207-21	10.5				–	–	– –	–	–	–	– –	–
		8 3/8	16 15/16	19 11/16	1 31/32	6 13/16	6 17/32	2 9/16	15/32	8 5/8	4 7/32	1/4	1 17/64	2 1/4	1.689	0.689	3/8	UCTH207-22-230	UC207-22	10.5	3	15.4	13.9	–	–	– –	–	–	–	– –	–
35	1 3/8	213	430	500	50	173	166	65	12	219	107	6	32	57.4	42.9	17.5	M10	UCTH207-230	UC207	10.5				UCTH207C-230	UCTH207CD-230	59 2 5/16	10.5	UCTH207FC-230	UCTH207FCD-230	78 3 1/16	11.2
	1 7/16																	UCTH207-23-230	UC207-23	10.5				–	–	– –	–	–	–	– –	–
	1 1/2																	UCTH208-24-300	UC208-24	12.5				–	–	– –	–	–	–	– –	–
	1 9/16	9 7/32	20 19/32	23 19/32	1 31/32	8 35/64	7 9/16	2 5/8	15/32	11 21/32	4 11/16	1/4	1 3/8	2 9/16	1.937	0.748	3/8	UCTH208-25-300	UC208-25	12.5	29.1	17.8	14.0	–	–	– –	–	–	–	– –	–
40		234	523	599	50	217	192	67	12	296	119	6	35	65.2	49.2	19	M10	UCTH208-300	UC208	12.5				UCTH208C-300	UCTH208CD-300	68 2 11/16	12.5	UCTH208FC-300	UCTH208FCD-300	86 3 3/8	13.3
	1 5/8																	UCTH209-26-300	UC209-26	12.4				–	–	– –	–	–	–	– –	–
	1 11/16	9 7/32	20 19/32	23 17/32	1 31/32	8 35/64	7 9/16	2 5/8	15/32	11 11/16	4 21/32	1/4	1 3/8	2 9/16	1.937	0.748	3/8	UCTH209-27-300	UC209-27	12.4	34.1	21.3	14.0	–	–	– –	–	–	–	– –	–
45	1 3/4	234	523	598	50	217	192	67	12	297	118	6	35	65.2	49.2	19	M10	UCTH209-28-300	UC209-28	12.4				–	–	– –	–	–	–	– –	–
																		UCTH209-300	UC209	12.4				UCTH209C-300	UCTH209CD-300	68 2 11/16	12.4	UCTH209FC-300	UCTH209FCD-300	88 3 15/32	13.2
	1 7/8																	UCTH210-30-300	UC210-30	12.6				–	–	– –	–	–	–	– –	–
	1 15/16	9 7/32	20 3/4	23 3/4	1 31/32	8 5/8	7 9/16	2 5/8	19/32	11 21/32	4 3/4	1/4	1 3/8	2 21/32	2.031	0.748	7/16	UCTH210-31-300	UC210-31	12.6	35.1	23.3	14.4	–	–	– –	–	–	–	– –	–
50		234	527	603	50	219	192	67	15	296	121	6	35	67.6	51.6	19	M12	UCTH210-300	UC210	12.6				UCTH210C-300	UCTH210CD-300	73 2 7/8	12.6	UCTH210FC-300	UCTH210FCD-300	97 3 13/16	13.6
	2																	UCTH210-32-300	UC210-32	12.6				–	–	– –	–	–	–	– –	–
	2																	UCTH211-32-300	UC211-32	20.1				–	–	– –	–	–	–	– –	–
	2 1/8	11 31/32	21 15/32	24 3/4	2 9/16	9 1/16	9 7/16	2 15/32	19/32	11 15/32	5 9/16	1/4	1 1/2	2 13/16	2.189	0.874	7/16	UCTH211-34-300	UC211-34	20.1	43.4	29.4	14.4	–	–	– –	–	–	–	– –	–
55		304	545	629	65	230	240	63	15	291	141	6	38	71.4	55.6	22.2	M12	UCTH211-300	UC211	20.1				UCTH211C-300	UCTH211CD-300	75 2 15/16	20.1	UCTH211FC-300	UCTH211FCD-300	99 3 29/32	21.3
	2 3/16																	UCTH211-35-300	UC211-35	20.1				–	–	– –	–	–	–	– –	–
	2 1/4																	UCTH212-36-300	UC212-36	21.4				–	–	– –	–	–	–	– –	–
		11 31/32	22 15/32	25 5/8	2 9/16	9 9/16	9 7/16	2 15/32	19/32	11 11/32	6 1/16	1/4	1 1/2	3 1/16	2.563	1.000	7/16	UCTH212-300	UC212	21.4	52.4	36.2	14.4	UCTH212C-300	UCTH212CD-300	88 3 15/32	21.4	UCTH212FC-300	UCTH212FCD-300	114 4 1/2	21.9
60	2 3/8	304	571	651	65	243	240	63	15	288	154	6	38	77.7	65.1	25.4	M12	UCTH212-38-300	UC212-38	21.4				–	–	– –	–	–	–	– –	–
	2 7/16																	UCTH212-39-300	UC212-39	21.4				–	–	– –	–	–	–	– –	–
	2 1/2																	UCTH213-40-300	UC213-40	25.5				–	–	– –	–	–	–	– –	–
65		13 1/16	23 31/32	28 1/16	2 9/16	10 15/64	10 15/64	2 5/8	19/32	11 13/16	7	1/4	1 11/16	3 1/4	2.563	1.000	7/16	UCTH213-300	UC213	25.5	57.2	40.1	14.4	UCTH213C-300	UCTH213CD-300	88 3 15/32	25.5	UCTH213FC-300	UCTH213FCD-300	114 4 1/2	27.2
		332	609	713	65	260	260	67	15	300	178	6	43	82.7	65.1	25.4	M12														

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 nipples are shown below.
B-1/4-28UNF ..... 201~210
B-PT1/8 ..... 211~213
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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 JTEKT.
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)

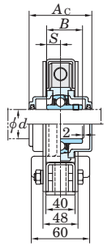
UCTL
Cylindrical bore (with set screws)
d 20 ~ 45 mm



With Pressed Steel Covers



With Cast Iron Covers



Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs}) and variations of tolerance of distance between centers of bolt holes (Δ_{Js})

Unit : mm

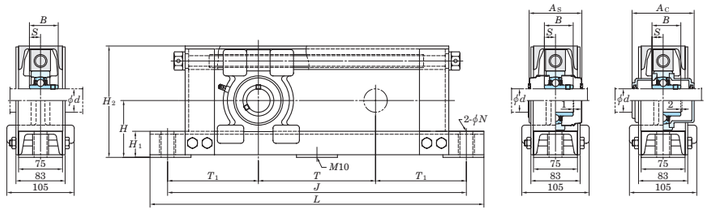
Nominal unit code	Δ_{Hs}	Δ_{Js}
UCTL204~207	±2	±0.5
UCTL208, 209		±0.8

Shaft Dia. mm	Dimensions mm										Bolt Size mm	Standard Unit No.	Standard Bearing No.	Standard Mass kg	Basic Load Ratings kN		Factor	With Pressed Steel Covers Unit No.		With Pressed Steel Covers Dimension mm	With Pressed Steel Covers Mass	With Cast Iron Covers Unit No.		With Cast Iron Covers Dimension mm	With Cast Iron Covers Mass
																		Open Ends Type	Closed End Type			Open Ends Type	Closed End Type		
d	H	H_1	H_2	L	J	N	T	T_1	B	S				kg	C_r	C_{0r}	f_0			A_s	kg			A_c	kg
20	77	44	146	430	370	15	100	135	31	12.7	M12	**UCTL204-100**	UC204	6.0	12.8	6.65	13.2	UCTL204C-100	UCTL204CD-100	44	6.0	UCTL204FC-100	UCTL204FCD-100	62	6.5
	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	UCTL204FC-200	UCTL204FCD-200	62	7.5
	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	UCTL204FC-300	UCTL204FCD-300	62	8.0
	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	UCTL204FC-400	UCTL204FCD-400	62	8.5
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	UCTL205FC-100	UCTL205FCD-100	66	7.5
	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	UCTL205FC-200	UCTL205FCD-200	66	8.0
	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	UCTL205FC-300	UCTL205FCD-300	66	8.5
	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	UCTL205FC-400	UCTL205FCD-400	66	9.5
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 nipples is C-1/4-28UNF.
3. As for the triple-lip seal type product (204 and 205 are the double-lip seal type products), supplementary 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 JTEKT.
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 JTEKT.
8. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

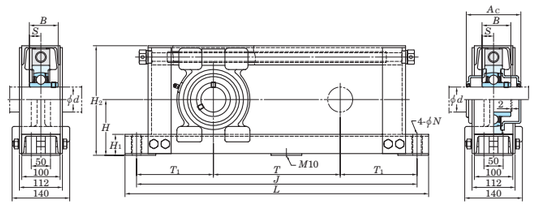
UCTU
Cylindrical bore (with set screws)
d 40 ~ 80 mm

With Pressed Steel Covers With Cast Iron Covers



UCTU200

With Cast Iron Covers



UCTU300

Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs}) and variations of tolerance of distance between centers of bolt holes (Δ_{Js})

Unit : mm

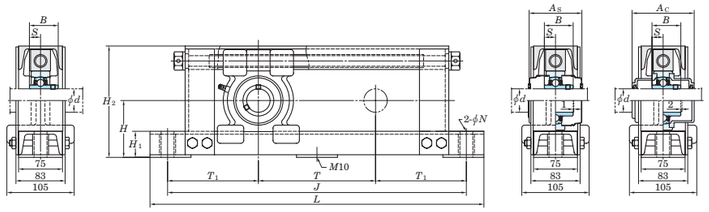
Nominal unit code	Δ_{Hs}	Δ_{Js}
UCTU208~212 UCTU313~315	±2	±0.8
UCTU316~318		±1.2

Shaft Dia. mm	Dimensions mm										Bolt Size mm	Standard Unit No.	Standard Bearing No.	Mass		Basic Load Ratings kN		Factor	With Pressed Steel Covers Unit No. Open Ends Type	With Pressed Steel Covers Unit No. Closed End Type	With Pressed Steel Covers Dimension mm	With Pressed Steel Covers Mass	With Cast Iron Covers Unit No. Open Ends Type	With Cast Iron Covers Unit No. Closed End Type	With Cast Iron Covers Dimension mm	With Cast Iron Covers Mass
d	H	H_1	H_2	L	J	N	T	T_1	B	S				kg		C_r	C_{0r}	f_0			A_s	kg			A_c	kg
	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
40	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
	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
45	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
	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
50	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
	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
55	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
	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
60	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
	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
65	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
	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
70	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
	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
75	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
	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
80	160	55	315	1 200	1 140	22	700	220	86	34	M18	**UCTU316-700**	UC316	62		123	86.7	13.3	–	–	–	–	UCTU316C-700	UCTU316CD-700	138	65
	160	55	315	1 300	1 240	22	800	220	86	34	M18	**UCTU316-800**	UC316	64		123	86.7	13.3	–	–	–	–	UCTU316C-800	UCTU316CD-800	138	67
	160	55	315	1 400	1 340	22	900	220	86	34	M18	**UCTU316-900**	UC316	67		123	86.7	13.3	–	–	–	–	UCTU316C-900	UCTU316CD-900	138	70

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
C-1/4-28UNF..... 208~210
C-PT1/8..... 211, 212, 313~318
3. As for the triple-lip seal type product, supplementary 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 JTEKT.
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 JTEKT.
8. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

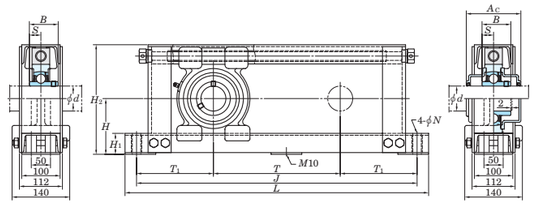
UCTU
Cylindrical bore (with set screws)
d 85 ~ 90 mm

With Pressed Steel Covers With Cast Iron Covers



UCTU200

With Cast Iron Covers



UCTU300

Variations of tolerance of distance from mounting bottom to center of spherical bore (Δ_{Hs}) and variations of tolerance of distance between centers of bolt holes (Δ_{Js})

Unit : mm

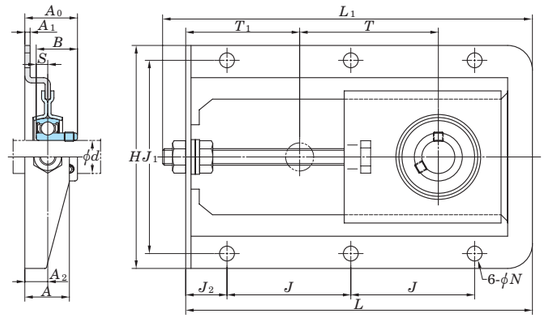
Nominal unit code	Δ_{Hs}	Δ_{Js}
UCTU208~212 UCTU313~315	±2	±0.8
UCTU316~318		±1.2

Shaft Dia. mm	Dimensions mm										Bolt Size mm	Standard Unit No.	Standard Bearing No.	Standard Mass	Basic Load Ratings kN		Factor	With Pressed Steel Covers Unit No. Open Ends Type	With Pressed Steel Covers Unit No. Closed End Type	With Pressed Steel Covers Dimension mm	With Pressed Steel Covers Mass	With Cast Iron Covers Unit No. Open Ends Type	With Cast Iron Covers Unit No. Closed End Type	With Cast Iron Covers Dimension mm	With Cast Iron Covers Mass
d	H	H_1	H_2	L	J	N	T	T_1	B	S				kg	C_r	C_{0r}	f_0			A_s	kg			A_c	kg
85	165	55	325	1 020	960	22	500	230	96	40	M18	**UCTU317-500**	UC317	62	133	96.8	13.3	–	–	–	–	UCTU317C-500	UCTU317CD-500	146	65
	165	55	325	1 120	1 060	22	600	230	96	40	M18	**UCTU317-600**	UC317	64	133	96.8	13.3	–	–	–	–	UCTU317C-600	UCTU317CD-600	146	67
	165	55	325	1 220	1 160	22	700	230	96	40	M18	**UCTU317-700**	UC317	67	133	96.8	13.3	–	–	–	–	UCTU317C-700	UCTU317CD-700	146	70
	165	55	325	1 320	1 260	22	800	230	96	40	M18	**UCTU317-800**	UC317	69	133	96.8	13.3	–	–	–	–	UCTU317C-800	UCTU317CD-800	146	72
	165	55	325	1 420	1 360	22	900	230	96	40	M18	**UCTU317-900**	UC317	71	133	96.8	13.3	–	–	–	–	UCTU317C-900	UCTU317CD-900	146	74
90	170	55	335	1 050	990	22	500	245	96	40	M18	**UCTU318-500**	UC318	65	143	107	13.3	–	–	–	–	UCTU318C-500	UCTU318CD-500	150	68
	170	55	335	1 150	1 090	22	600	245	96	40	M18	**UCTU318-500**	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 nipples are shown below.
C-1/4-28UNF..... 208~210
C-PT1/8..... 211, 212, 313~318
3. As for the triple-lip seal type product, supplementary 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 JTEKT.
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 JTEKT.
8. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

Koyo

SBPTH
Cylindrical bore (with set screws)
d 12 ~ 25 mm



Variations of tolerance of distance between centers of bolt holes (Δ_{Js}, Δ_{J1s})

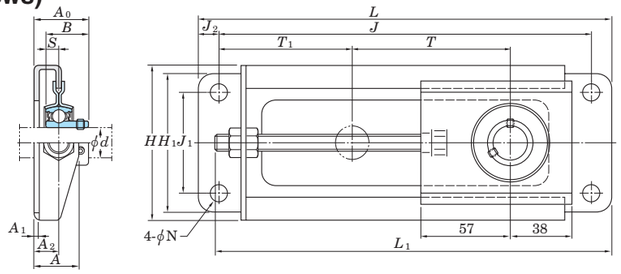
Unit : mm

Nominal unit code	Δ_{Js}	Δ_{J1s}
SBPTH201~SBPTH205	±0.7	±0.7

Shaft Dia. mm	Dimensions inch / mm															Bolt Size inch	Unit No.		Bearing No.	Basic Load Ratings kN		Factor	Mass
d	H	L	L_1	A	J	J_1	J_2	N	T	T_1	A_1	A_2	A_0	B	S	mm				C_r	C_{0r}	f_0	kg
12	5 5/16	8 9/32	8 21/32	1 1/16	2 61/64	4 39/64	31/32	11/32	3 15/32	2 23/32	1/8	35/64	1 3/16	0.866	0.236	5/16	SBPTH201-90		SB201	9.55	4.80	13.2	0.91
	135	210	220	27	75	117	25	9	88	69	3.2	13.9	29.9	22	6	M8							
15	5 5/16	8 9/32	8 21/32	1 1/16	2 61/64	4 39/64	31/32	11/32	3 15/32	2 23/32	1/8	35/64	1 3/16	0.866	0.236	5/16	SBPTH202-90		SB202	9.55	4.80	13.2	0.91
	135	210	220	27	75	117	25	9	88	69	3.2	13.9	29.9	22	6	M8							
17	5 5/16	8 9/32	8 21/32	1 1/16	2 61/64	4 39/64	31/32	11/32	3 15/32	2 23/32	1/8	35/64	1 3/16	0.866	0.236	5/16	SBPTH203-90		SB203	9.55	4.80	13.2	0.91
	135	210	220	27	75	117	25	9	88	69	3.2	13.9	29.9	22	6	M8							
20	5 5/16	8 9/32	8 21/32	1 1/16	2 61/64	4 39/64	31/32	11/32	3 15/32	2 23/32	1/8	35/64	1 1/4	0.984	0.276	5/16	SBPTH204-90		SB204	12.8	6.65	13.2	0.91
	135	210	220	27	75	117	25	9	88	69	3.2	13.9	31.9	25	7	M8							
25	5 5/16	8 9/32	8 21/32	1 1/16	2 61/64	4 39/64	31/32	11/32	3 15/32	2 23/32	1/8	35/64	1 5/16	1.063	0.295	5/16	SBPTH205-90		SB205	14.0	7.85	13.9	0.91
	135	210	220	27	75	117	25	9	88	69	3.2	13.9	33.4	27	7.5	M8							

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

SBNPTH
Cylindrical bore (with set screws)
d 12 ~ 25 mm



Variations of tolerance of distance between centers of bolt holes (Δ_{Js}, Δ_{J1s})

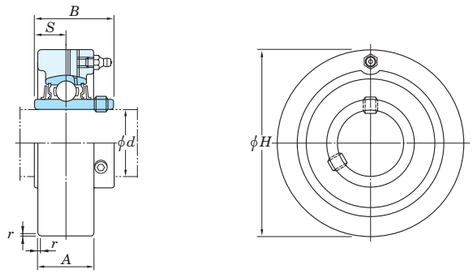
Unit : mm

Nominal unit code	Δ_{Js}	Δ_{J1s}
SBNPTH201~SBNPTH205	±0.7	±0.7

Shaft Dia. mm	Dimensions inch / mm																Bolt Size inch / mm	Unit No.		Bearing No.	Basic Load Ratings kN		Factor	Mass
d	H	H_1	L	L_1	A	J	J_1	J_2	N	T	T_1	A_1	A_2	A_0	B	S					C_r	C_{0r}	f_0	kg
12	3 15/16	3 17/32	10 1/4	9 11/16	1 1/16	9 1/4	2 9/16	1/2	7/16	3 15/16	3 9/32	1/8	19/32	1 7/32	0.866	0.236	5/16	SBNPTH201-100		SB201	9.55	4.80	13.2	0.93
	100	90	260	246	27	235	65	12.5	11	100	83.5	3.2	15	31	22	6	M8							
15	3 15/16	3 17/32	10 1/4	9 11/16	1 1/16	9 1/4	2 9/16	1/2	7/16	3 15/16	3 9/32	1/8	19/32	1 7/32	0.866	0.236	5/16	SBNPTH202-100		SB202	9.55	4.80	13.2	0.93
	100	90	260	246	27	235	65	12.5	11	100	83.5	3.2	15	31	22	6	M8							
17	3 15/16	3 17/32	10 1/4	9 11/16	1 1/16	9 1/4	2 9/16	1/2	7/16	3 15/16	3 9/32	1/8	19/32	1 7/32	0.866	0.236	5/16	SBNPTH203-100		SB203	9.55	4.80	13.2	0.93
	100	90	260	246	27	235	65	12.5	11	100	83.5	3.2	15	31	22	6	M8							
20	3 15/16	3 17/32	10 1/4	9 11/16	1 1/16	9 1/4	2 9/16	1/2	7/16	3 15/16	3 9/32	1/8	19/32	1 5/16	0.984	0.276	5/16	SBNPTH204-100		SB204	12.8	6.65	13.2	0.93
	100	90	260	246	27	235	65	12.5	11	100	83.5	3.2	15	33	25	7	M8							
25	3 15/16	3 17/32	10 1/4	9 11/16	1 1/16	9 1/4	2 9/16	1/2	7/16	3 15/16	3 9/32	1/8	19/32	1 11/32	1.063	0.295	5/16	SBNPTH205-100		SB205	14.0	7.85	13.9	0.93
	100	90	260	246	27	235	65	12.5	11	100	83.5	3.2	15	34.5	27	7.5	M8							

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

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



d (45) ~ 90 mm

Variations of tolerance of outside diameter (Δ_{Hs}), variations of tolerance of width (Δ_{As}), and tolerance of circumferential runout of outside diameter (Y)

Unit : mm

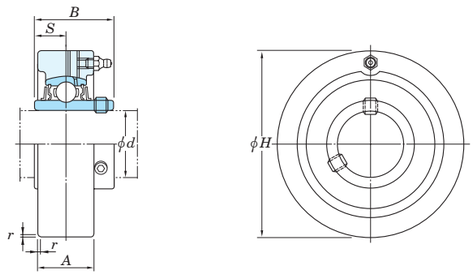
Housing No.			Δ_{Hs}	Δ_{As}	Y
C204~C205			0 −0.030	±0.2	0.2
C206~C210	CX05~CX08	C305~C308	0 −0.035		
	CX09~CX10	C309~C310	0 −0.040		
C211~C213	CX11~CX12	C311~C314		±0.3	0.3
		C315~C318	0 −0.046		
		C319			0.4
		C320~C322	0 −0.052		
		C324~C328	0 −0.057		

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch/mm H	A	r	B	S	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
12	1/2						UCC201		UC201				0.52
							UCC201-8		UC201-8				
15							UCC202		UC202				0.50
	5/8	2.835	25/32	0.06	1.220	0.500	UCC202-10	C204	UC202-10	12.8	6.65	13.2	
		72	20	1.5	31	12.7							
17							UCC203		UC203				0.49
	3/4						UCC204-12		UC204-12				0.47
20							UCC204		UC204				
	7/8						UCC205-14		UC205-14				
	15/16	3.150	55/64	0.06	1.343	0.563	UCC205-15	C205	UC205-15	14.0	7.85	13.9	0.64
		80	22	1.5	34.1	14.3	UCC205		UC205				
25	1						UCC205-16		UC205-16				
	1	3.543	11/16	0.06	1.500	0.626	UCCX05	CX05	UCX05	19.5	11.3	13.9	1.0
		90	27	1.5	38.1	15.9	UCCX05-16		UCX05-16				
	1	3.543	11/32	0.08	1.496	0.591	UCC305	C305	UC305	21.2	10.9	12.6	1.5
		90	26	2	38	15	UCC305-16		UC305-16				
	1 1/8						UCC206-18		UC206-18				
		3.346	11/16	0.06	1.500	0.626	UCC206	C206	UC206	19.5	11.3	13.9	0.81
	1 3/16	85	27	1.5	38.1	15.9	UCC206-19		UC206-19				
	1 1/4						UCC206-20		UC206-20				
30							UCCX06		UCX06				
	1 3/16	3.937	13/16	0.08	1.689	0.689	UCCX06-19	CX06	UCX06-19	25.7	15.4	13.9	1.3
	1 1/4	100	30	2	42.9	17.5	UCCX06-20		UCX06-20				
	–	3.937	17/64	0.08	1.693	0.669	UCC306	C306	UC306	26.7	15.0	13.3	1.7
		100	28	2	43	17							
	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
		90	28	2	42.9	17.5	UCC207		UC207				
35	1 7/16						UCC207-23		UC207-23				
	1 3/8						UCCX07-22		UCX07-22				
		4.331	1 11/32	0.08	1.937	0.748	UCCX07	CX07	UCX07	29.1	17.8	14.0	1.7
	1 7/16	110	34	2	49.2	19	UCCX07-23		UCX07-23				
	–	4.331	1 17/64	0.12	1.890	0.748	UCC307	C307	UC307	33.4	19.3	13.2	2.2
		110	32	3	48	19							
	1 1/2						UCC208-24		UC208-24				
	1 9/16	3.937	1 3/16	0.08	1.937	0.748	UCC208-25	C208	UC208-25	29.1	17.8	14.0	1.2
		100	30	2	49.2	19	UCC208		UC208				
40	1 1/2	4.724	1 1/2	0.08	1.937	0.748	UCCX08-24	CX08	UCX08-24	34.1	21.3	14.0	2.3
		120	38	2	49.2	19	UCCX08		UCX08				
	1 1/2	4.724	1 11/32	0.12	2.047	0.748	UCC308-24	C308	UC308-24	40.7	24.0	13.2	2.2
		120	34	3	52	19	UCC308		UC308				
	1 5/8						UCC209-26		UC209-26				
	1 11/16	4.331	1 7/32	0.08	1.937	0.748	UCC209-27	C209	UC209-27	34.1	21.3	14.0	1.5
45	1 3/4	110	31	2	49.2	19	UCC209-28		UC209-28				
							UCC209		UC209				

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch/mm H	A	r	B	S	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Mass kg
45	1 3/4	4.724	1 1/2	0.08	2.031	0.748	UCCX09-28	CX09	UCX09-28	35.1	23.3	14.4	2.3
		120	38	2	51.6	19	UCCX09		UCX09				
	1 3/4	5.118	1 1/2	0.12	2.244	0.866	UCC309-28	C309	UC309-28	48.9	29.5	13.3	2.8
		130	38	3	57	22	UCC309		UC309				
50	1 7/8						UCC210-30		UC210-30				
	1 15/16	4.724	1 19/64	0.08	2.031	0.748	UCC210-31	C210	UC210-31	35.1	23.3	14.4	2.0
		120	33	2	51.6	19	UCC210		UC210				
	2						UCC210-32		UC210-32				
	1 15/16	5.118	1 37/64	0.1	2.189	0.874	UCCX10-31	CX10	UCX10-31	43.4	29.4	14.4	2.8
		130	40	2.5	55.6	22.2	UCCX10		UCX10				
	2						UCCX10-32		UCX10-32				
	–	5.512	1 37/64	0.12	2.402	0.866	UCC310	C310	UC310	62.0	38.3	13.2	3.2
		140	40	3	61	22							
55	2						UCC211-32		UC211-32				
	2 1/8	4.921	1 3/8	0.1	2.189	0.874	UCC211-34	C211	UC211-34	43.4	29.4	14.4	2.2
		125	35	2.5	55.6	22.2	UCC211		UC211				
	2 3/16						UCC211-35		UC211-35				
	2 3/16	5.906	1 21/32	0.1	2.563	1.000	UCCX11	CX11	UCX11	52.4	36.2	14.4	4.0
		150	42	2.5	65.1	25.4	UCCX11-35		UCX11-35				
	2 1/4						UCCX11-36		UCX11-36				
	2	5.906	1 47/64	0.12	2.598	0.984	UCC311-32	C311	UC311-32	71.6	45.0	13.2	3.9
		150	44	3	66	25	UCC311		UC311				
60	2 1/4						UCC212-36		UC212-36				
	2 3/8	5.118	1 1/2	0.1	2.563	1.000	UCC212	C212	UC212	52.4	36.2	14.4	2.6
		130	38	2.5	65.1	25.4	UCC212-38		UC212-38				
	2 7/16						UCC212-39		UC212-39				
	2 7/16	6.299	1 47/64	0.1	2.563	1.000	UCCX12	CX12	UCX12	57.2	40.1	14.4	4.6
		160	44	2.5	65.1	25.4	UCCX12-39		UCX12-39				
	–	6.299	1 13/16	0.12	2.795	1.024	UCC312	C312	UC312	81.9	52.2	13.2	4.8
		160	46	3	71	26							
65	2 1/2	5.512	1 37/64	0.1	2.563	1.000	UCC213-40	C213	UC213-40	57.2	40.1	14.4	3.0
		140	40	2.5	65.1	25.4	UCC213		UC213				
	2 1/2	6.693	1 31/32	0.12	2.953	1.181	UCC313-40	C313	UC313-40	92.7	59.9	13.2	5.7
		170	50	3	75	30	UCC313-40		UC313				
70	2 3/4	7.087	2 3/64	0.12	3.071	1.299	UCC314-44	C314	UC314-44	104	68.2	13.2	6.7
		180	52	3	78	33	UCC314		UC314				
75	2 15/16	7.480	2 11/64	0.16	3.228	1.260	UCC315-47	C315	UC315-47	113	77.2	13.2	7.8
		190	55	4	82	32	UCC315		UC315				
	3						UCC315-48		UC315-48				
80	–	7.874	2 23/64	0.16	3.386	1.339	UCC316	C316	UC316	123	86.7	13.3	9.2
		200	60	4	86	34							
85	–	8.465	2 33/64	0.16	3.780	1.575	UCC317	C317	UC317	133	96.8	13.3	11.7
		215	64	4	96	40							
90	3 1/2	8.858	2 19/32	0.16	3.780	1.575	UCC318-56	C318	UC318-56	143	107	13.3	13.1
		225	66	4	96	40	UCC318		UC318				

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 nipples are shown below.
A-1/4-28UNF ..... 201~213, X05~X12, 305~308
A-PT1/8 ..... 309~328
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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.

UCC
Cylindrical bore (with set screws)
d 95 ~ 140 mm



Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm					Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Factor	Mass
d		H	A	r	B	S				C_r	C_{0r}	f_0	kg
95	–	9.449 240	2 53/64 72	0.16 4	4.055 103	1.614 41	**UCC319**	C319	UC319	153	119	13.3	15.8
100	3 15/16 4	10.236 260	2 61/64 75	0.16 4	4.252 108	1.654 42	**UCC320** **UCC320-63** **UCC320-64**	C320	UC320 UC320-63 UC320-64	173	141	13.2	19.6
105	–	10.236 260	2 61/64 75	0.16 4	4.409 112	1.732 44	**UCC321**	C321	UC321	184	153	13.2	27.0
110	–	11.811 300	3 5/32 80	0.2 5	4.606 117	1.811 46	**UCC322**	C322	UC322	205	180	13.2	29.2
120	–	12.598 320	3 35/64 90	0.2 5	4.961 126	2.008 51	**UCC324**	C324	UC324	207	185	13.5	35.9
130	–	13.386 340	3 15/16 100	0.24 6	5.315 135	2.126 54	**UCC326**	C326	UC326	229	214	13.6	43.0
140	–	14.173 360	3 15/16 100	0.24 6	5.709 145	2.323 59	**UCC328**	C328	UC328	253	246	13.6	52.9

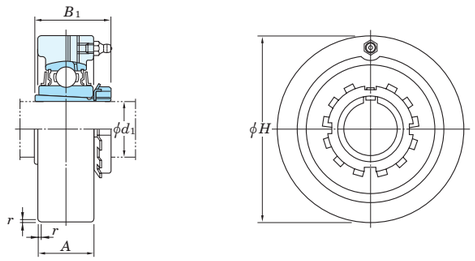
Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF ..... 201~213, X05~X12, 305~308
A-PT1/8 ..... 309~328
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UCC206JL3, UC206L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

Variations of tolerance of outside diameter (Δ_{Hs}), variations of tolerance of width (Δ_{As}), and tolerance of circumferential runout of outside diameter (Y)

Unit : mm

Housing No.			Δ_{Hs}	Δ_{As}	Y
C204~C205			0 −0.030	±0.2	0.2
C206~C210	CX05~CX08	C305~C308	0 −0.035		
	CX09~CX10	C309~C310	0 −0.040		
C211~C213	CX11~CX12	C311~C314		±0.3	0.3
		C315~C318	0 −0.046		
		C319			0.4
		C320~C322	0 −0.052		
		C324~C328	0 −0.057		

UKC
Tapered bore (with adapter)
d_1 20 ~ 45 mm



Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	A	r	B_1 1)	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Adapter 1) assembly No.	Mass 1) kg
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)
		80	22	1.5	29(35)								
	3/4	3.543	11/16	0.06	1 3/8	UKCX05	CX05	UKX05	19.5	11.3	13.9	HE2305X H2305X	0.99
		90	27	1.5	35								
	3/4	3.543	11/32	0.08	1 3/8	UKC305	C305	UK305	21.2	10.9	12.6	HE2305X H2305X	1.6
		90	26	2	35								
25		3.346	11/16	0.06	1 7/32(1 1/2)	UKC206	C206	UK206	19.5	11.3	13.9	H306X(H2306X) HE306X(HE2306X)	0.85(0.89)
	1	85	27	1.5	31(38)								
		3.937	13/16	0.08	1 1/2	UKCX06	CX06	UKX06	25.7	15.4	13.9	H2306X HE2306X	1.3
	1	100	30	2	38								
		3.937	13/16	0.08	1 1/2	UKC306	C306	UK306	26.7	15.0	13.3	H2306X HE2306X	1.8
	1	100	28	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)
		90	28	2	35(43)								
	1 1/8	4.331	1 11/32	0.08	1 11/16	UKCX07	CX07	UKX07	29.1	17.8	14.0	HS2307X H2307X	1.7
		110	34	2	43								
	1 1/8	4.331	1 17/64	0.12	1 11/16	UKC307	C307	UK307	33.4	19.3	13.2	HS2307X H2307X	2.2
		110	32	3	43								
35	1 1/4 1 3/8	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) H308X(H2308X)	1.3(1.4)
		100	30	2	36(46)								
	1 1/4 1 3/8	4.724	1 1/2	0.08	1 13/16	UKCX08	CX08	UKX08	34.1	21.3	14.0	HE2308X HS2308X H2308X	2.3
		120	38	2	46								
	1 1/4 1 3/8	4.724	1 11/32	0.12	1 13/16	UKC308	C308	UK308	40.7	24.0	13.2	HE2308X HS2308X H2308X	2.2
		120	34	3	46								
40	1 1/2 1 5/8	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) HS309X(H2309X)	1.6(1.7)
		110	31	2	39(50)								
	1 1/2 1 5/8	4.724	1 1/2	0.08	1 31/32	UKCX09	CX09	UKX09	35.1	23.3	14.4	HE2309X H2309X HS2309X	2.3
		120	38	2	50								
	1 1/2 1 5/8	5.118	1 1/2	0.12	1 31/32	UKC309	C309	UK309	48.9	29.5	13.3	HE2309X H2309X HS2309X	2.8
		130	38	3	50								
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)
		120	33	2	42(55)								
	1 3/4	5.118	1 37/64	0.1	2 5/32	UKCX10	CX10	UKX10	43.4	29.4	14.4	HE2310X H2310X	2.8
		130	40	2.5	55								
	1 3/4	5.512	1 37/64	0.12	2 5/32	UKC310	C310	UK310	62.0	38.3	13.2	HE2310X H2310X	3.2
		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-lip 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 nipples are shown below.
A-1/4-28UNF ..... 205~213, X05~X12, 305~308
A-PT1/8 ..... 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-lip seal type product (205 is the double-lip seal type product), supplementary 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 assemblies.

d_1 50 ~ 125 mm

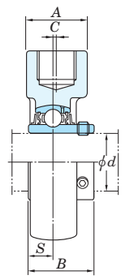
Variations of tolerance of outside diameter (Δ_{Hs}), variations of tolerance of width (Δ_{As}), and tolerance of circumferential runout of outside diameter (Y)

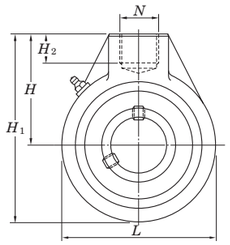
Unit : mm

Housing No.			Δ_{Hs}	Δ_{As}	Y
C205			0 −0.030	±0.2	0.2
C206~C210	CX05~CX08	C305~C308	0 −0.035		
	CX09~CX10	C309~C310	0 −0.040		
C211~C213	CX11~CX12	C311~C314			0.3
		C315~C318	0 −0.046	±0.3	
		C319			0.4
		C320~C322	0 −0.052		
		C324~C328	0 −0.057		

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	A	r	B_1 1)	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Adapter 1) assembly No.	Mass 1) kg
50	1 7/8	4.921	1 3/8	0.1	1 25/32(2 5/16)	UKC211	C211	UK211	43.4	29.4	14.4	HS311X(HS2311X) H311X(H2311X) HE311X(HE2311X)	2.3(2.6)
	2	125	35	2.5	45(59)								
	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)
		130	38	2.5	47(62)								
	2 1/8	6.299	1 47/64	0.1	2 7/16	UKCX12	CX12	UKX12	57.2	40.1	14.4	HS2312X H2312X	4.4
		160	44	2.5	62								
	2 1/8	6.299	1 13/16	0.12	2 7/16	UKC312	C312	UK312	81.9	52.2	13.2	HS2312X H2312X	4.7
		160	46	3	62								
60	2 1/4 2 3/8	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)
		140	40	2.5	50(65)								
	2 1/4 2 3/8	6.693	1 31/32	0.12	2 9/16	UKC313	C313	UK313	92.7	59.9	13.2	HE2313X H2313X HS2313X	5.8
		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
		190	55	4	73								
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
		200	60	4	78								
75	3	8.465	2 33/64	0.16	3 7/32	UKC317	C317	UK317	133	96.8	13.3	H2317X HE2317X	11.6
		215	64	4	82								
80	–	8.858	2 19/32	0.16	3 3/8	UKC318	C318	UK318	143	107	13.3	H2318X	13.1
		225	66	4	86								
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
		240	72	4	90								
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
		260	75	4	97								
100	4	11.811	3 5/32	0.2	4 1/8	UKC322	C322	UK322	205	180	13.2	H2322X HE2322X	29.1
		300	80	5	105								
110	–	12.598	3 35/64	0.2	4 13/32	UKC324	C324	UK324	207	185	13.5	H2324	36.2
		320	90	5	112								
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
		340	100	6	121								
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								

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

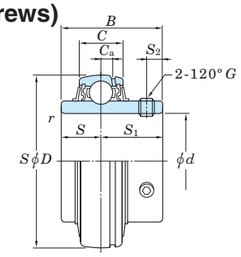




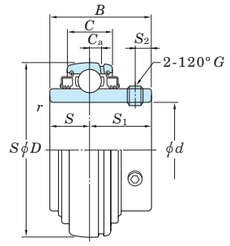
Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm H	A	L	H1	H2	N	C	B	S	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN Cr	Basic Load Ratings kN C0r	Factor f0	Mass kg
12	1/2										UCHA201		UC201					0.77
											UCHA201-8		UC201-8					
15											UCHA202		UC202					0.75
	5/8	2 17/32	1 9/16	2 17/32	3 25/32	3/4		–	1.220	0.500	UCHA202-10	HA204	UC202-10		12.8	6.65	13.2	
		64	40	64	96	19	PF 3/4	–	31	12.7								
17											UCHA203		UC203					0.74
	3/4										UCHA204-12		UC204-12					0.72
20											UCHA204		UC204					
	7/8										UCHA205-14		UC205-14					
	15/16										UCHA205-15		UC205-15					
25		2 17/32	1 9/16	3 1/16	4 1/16	3/4		–	1.343	0.563	UCHA205	HA205	UC205		14.0	7.85	13.9	0.87
		64	40	78	103	19	PF 3/4	–	34.1	14.3								
	1										UCHA205-16		UC205-16					
	1 1/8										UCHA206-18		UC206-18					
											UCHA206		UC206					
30		2 17/32	1 9/16	3 1/16	4 1/16	3/4		–	1.500	0.626	UCHA206-19	HA206	UC206-19		19.5	11.3	13.9	0.83
	1 3/16	64	40	78	103	19	PF 3/4	–	38.1	15.9								
	1 1/4										UCHA206-20		UC206-20					
	1 1/4										UCHA207-20		UC207-20					
	1 5/16										UCHA207-21		UC207-21					
35		2 3/4	1 9/16	3 5/8	4 9/16	3/4		–	1.689	0.689	UCHA207-22	HA207	UC207-22		25.7	15.4	13.9	1.2
	1 3/8	70	40	92	116	19	PF 3/4	–	42.9	17.5								
											UCHA207		UC207					
	1 7/16										UCHA207-23		UC207-23					
	1 1/2										UCHA208-24		UC208-24					
40	1 9/16	2 7/8	1 9/16	3 25/32	4 3/4	3/4		5/64	1.937	0.748	UCHA208-25	HA208	UC208-25		29.1	17.8	14.0	1.3
		73	40	96	121	19	PF 3/4	2	49.2	19	UCHA208		UC208					
	1 5/8										UCHA209-26		UC209-26					
	1 11/16										UCHA209-27		UC209-27					
45		3 7/32	1 7/8	4 1/4	5 11/32	13/16		13/64	1.937	0.748	UCHA209-28	HA209	UC209-28		34.1	21.3	14.0	1.7
	1 3/4	82	48	108	136	21	PF 1	5	49.2	19								
											UCHA209		UC209					
	1 7/8										UCHA210-30		UC210-30					
50	1 15/16										UCHA210-31		UC210-31					
		3 9/32	1 7/8	4 21/32	5 19/32	13/16		13/64	2.031	0.748	UCHA210	HA210	UC210		35.1	23.3	14.4	2.1
		83	48	118	142	21	PF 1	5	51.6	19	UCHA210-32		UC210-32					
	2										UCHA211-32		UC211-32					
	2 1/8										UCHA211-34		UC211-34					
55		3 7/16	2 3/8	4 31/32	5 29/32	31/32		9/32	2.189	0.874	UCHA211	HA211	UC211		43.4	29.4	14.4	2.8
	2 3/16	87	60	126	150	25	PF 1 1/4	7	55.6	22.2								
	2 1/4										UCHA211-35		UC211-35					
											UCHA212-36		UC212-36					
		4 1/32	2 3/8	5 19/32	6 13/16	1 3/32		23/64	2.563	1.000	UCHA212	HA212	UC212		52.4	36.2	14.4	3.9
60	2 3/8	102	60	142	173	28	PF 1 1/4	9	65.1	25.4	UCHA212-38		UC212-38					
	2 7/16										UCHA212-39		UC212-39					
65	2 1/2	4 19/32	2 3/4	6 17/32	7 7/8	1 1/4		3/8	2.563	1.000	UCHA213-40	HA213	UC213-40		57.2	40.1	14.4	5.8
		117	70	166	200	32	PF 1 1/2	9.5	65.1	25.4	UCHA213		UC213					
70	2 3/4	4 19/32	2 3/4	6 17/32	7 7/8	1 1/4		3/8	2.937	1.189	UCHA214-44	HA214	UC214-44		62.2	44.1	14.5	5.9
		117	70	166	200	32	PF 1 1/2	9.5	74.6	30.2	UCHA214		UC214					
	2 15/16										UCHA215-47		UC215-47					
75		4 19/32	2 3/4	6 17/32	7 7/8	1 1/4		3/8	3.063	1.311	UCHA215	HA215	UC215		67.4	48.3	14.5	5.6
	3	117	70	166	200	32	PF 1 1/2	9.5	77.8	33.3	UCHA215-48		UC215-48					

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 10.5** in P.51.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF ..... 201~210
A-PT1/8 ..... 211~215
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary 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, see the dimensional tables of ball bearing for unit.
5. Tapered bore (with adapter) type products are also available. (Example of Part No. : UKHA205J + H305X, UK205 + H305X)

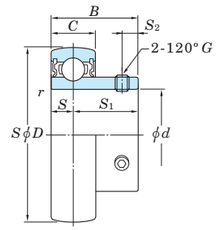
UC, SB, SU
Cylindrical bore (with set screws)
d 8 ~ (30) mm



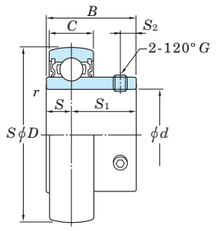
UC



UC-L3



SB

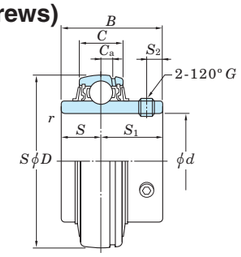


SU

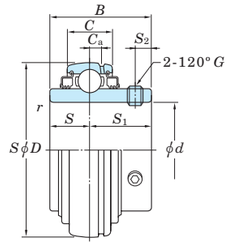
Shaft Dia. mm	Shaft Dia. inch	Dimensions								Basic Load Ratings kN		Factor	Bearing No.		Dimensions								Set Screw Brg. Bore G		Mass
d		D		B		C		r (min.)		C_r	C_{0r}	f_0	Standard	L3 Type	C_a		S		S_1		S_2		mm	inch	kg
		mm	inch	mm	inch	mm	inch	mm	inch						mm	inch	mm	inch	mm	inch	mm	inch			
8	–	22	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
		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
12	–	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
–	5/8	40	1.575	22	0.866	12	0.472	0.6	0.024	9.55	4.80	13.2	**SB202-10**	–	–	–	6	0.236	16	0.630	4	0.157	–	No.10-32UNF	0.10
		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
		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
17	–	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
		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
20	–	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
		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
25	–	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
		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
–	1	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
		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
30	–	62	2.441	38.1	1.500	19	0.748	1	0.039	19.5	11.3	13.9	**UC206**	**UC206L3**	5	0.197	15.9	0.626	22.2	0.874	6	0.236	M6×0.75	–	0.32
		72	2.835	42.9	1.689	20	0.787	1	0.039	25.7	15.4	13.9	**UCX06**	**UCX06L3**	5.5	0.217	17.5	0.689	25.4	1.000	6.5	0.256	M8×1	–	0.58
		72	2.835	43	1.693	24	0.945	1.1	0.043	26.7	15.0	13.3	**UC306**	–	6.5	0.256	17	0.669	26	1.024	6	0.236	M6×0.75	–	0.56
–	1 3/16	62	2.441	30	1.181	16	0.630	1	0.039	19.5	11.3	13.9	**SB206-19**	–	–	–	8	0.315	22	0.866	6	0.236	–	1/4-28UNF	0.27
		62	2.441	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 “compact” series ball bearing for unit.
2. From UC201 to 205 are the double-lip seal type products (L2).

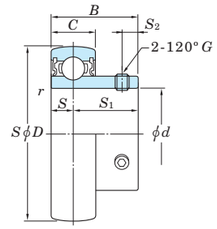
UC, SB, SU
Cylindrical bore (with set screws)
d (30) ~ (60) mm



UC



UC-L3



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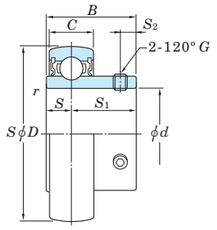
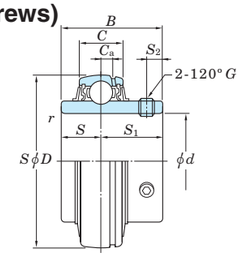


SU

Shaft Dia. mm	Shaft Dia. 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_a		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
–	1 7/16	72	2.835	32	1.260	17	0.669	1.1	0.043	25.7	15.4	13.9	SB207-23	–	–	–	8.5	0.335	23.5	0.925	6	0.236	–	1/4-28UNF	0.42
		72	2.835	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
–	1 1/2	80	3.150	34	1.339	18	0.709	1.1	0.043	29.1	17.8	14.0	SB208-24	–	–	–	9	0.354	25	0.984	8	0.315	–	5/16-24UNF	0.60
		80	3.150	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
40	–	80	3.150	34	1.339	18	0.709	1.1	0.043	29.1	17.8	14.0	SB208	–	–	–	9	0.354	25	0.984	8	0.315	M8×1	–	0.60
		80	3.150	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
–	1 3/4	85	3.346	49.2	1.937	22	0.866	1.1	0.043	34.1	21.3	14.0	UC209-28	UC209-28L3	6	0.236	19	0.748	30.2	1.189	8	0.315	–	5/16-24UNF	0.70
		90	3.543	51.6	2.031	24	0.945	1.1	0.043	35.1	23.3	14.4	UCX09-28	UCX09-28L3	6	0.236	19	0.748	32.6	1.283	9	0.354	–	3/8-24UNF	0.97
		100	3.937	57	2.244	30	1.181	1.5	0.059	48.9	29.5	13.3	UC309-28	UC309-28L3	8.5	0.335	22	0.866	35	1.378	10	0.394	M10×1.25	–	1.35
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
–	1 7/8	90	3.543	51.6	2.031	24	0.945	1.1	0.043	35.1	23.3	14.4	UC210-30	UC210-30L3	6	0.236	19	0.748	32.6	1.283	9	0.354	–	3/8-24UNF	0.87
–	1 15/16	90	3.543	51.6	2.031	24	0.945	1.1	0.043	35.1	23.3	14.4	UC210-31	UC210-31L3	6	0.236	19	0.748	32.6	1.283	9	0.354	–	3/8-24UNF	0.82
		100	3.937	55.6	2.189	25	0.984	1.1	0.043	43.4	29.4	14.4	UCX10-31	UCX10-31L3	7	0.276	22.2	0.874	33.4	1.315	9	0.354	–	3/8-24UNF	1.32
50	–	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
		110	4.331	61	2.402	32	1.260	2	0.079	62.0	38.3	13.2	UC310	UC310L3	9	0.354	22	0.866	39	1.535	12	0.472	M12×1.5	–	1.69
–	2	90	3.543	51.6	2.031	24	0.945	1.1	0.043	35.1	23.3	14.4	UC210-32	UC210-32L3	6	0.236	19	0.748	32.6	1.283	9	0.354	–	3/8-24UNF	0.78
		100	3.937	55.6	2.189	25	0.984	1.1	0.043	43.4	29.4	14.4	UCX10-32	UCX10-32L3	7	0.276	22.2	0.874	33.4	1.315	9	0.354	–	3/8-24UNF	1.26
–	2	100	3.937	55.6	2.189	25	0.984	1.5	0.059	43.4	29.4	14.4	UC211-32	UC211-32L3	7	0.276	22.2	0.874	33.4	1.315	9	0.354	–	3/8-24UNF	1.26
		120	4.724	66	2.598	34	1.339	2	0.079	71.6	45.0	13.2	UC311-32	UC311-32L3	10	0.394	25	0.984	41	1.614	12	0.472	M12×1.5	–	2.08
–	2 1/8	100	3.937	55.6	2.189	25	0.984	1.5	0.059	43.4	29.4	14.4	UC211-34	UC211-34L3	7	0.276	22.2	0.874	33.4	1.315	9	0.354	–	3/8-24UNF	1.15
55	–	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
		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
–	2 3/16	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 1/4	110	4.331	65.1	2.563	27	1.063	1.5	0.059	52.4	36.2	14.4	UCX11-36	UCX11-36L3	7.5	0.295	25.4	1.000	39.7	1.563	10.5	0.413	–	3/8-24UNF	1.7
–	2 1/4	110	4.331	65.1	2.563	27	1.063	1.5	0.059	52.4	36.2	14.4	UC212-36	UC212-36L3	7.5	0.295	25.4	1.000	39.7	1.563	10.5	0.413	–	3/8-24UNF	1.67
60	–	110	4.331	65.1	2.563	27	1.063	1.5	0.059	52.4	36.2	14.4	UC212	UC212L3	7.5	0.295	25.4	1.000	39.7	1.563	10.5	0.413	M10×1.25	–	1.54
		120	4.724	65.1	2.563	28	1.102	1.5	0.059	57.2	40.1	14.4	UCX12	UCX12L3	7.5	0.295	25.4	1.000	39.7	1.563	12	0.472	M12×1.5	–	2.05
		130	5.118	71	2.795	36	1.417	2.1	0.083	81.9	52.2	13.2	UC312	UC312L3	11.5	0.453	26	1.024	45	1.772	12	0.472	M12×1.5	–	2.60
–	2 3/8	110	4.331	65.1	2.563	27	1.063	1.5	0.059	52.4	36.2	14.4	UC212-38	UC212-38L3	7.5	0.295	25.4	1.000	39.7	1.563	10.5	0.413	–	3/8-24UNF	1.52

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

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



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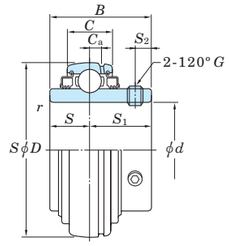
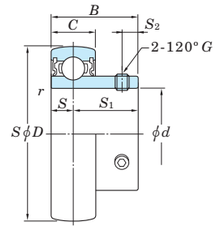
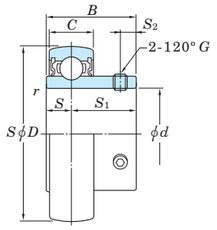


UC-L3



SB

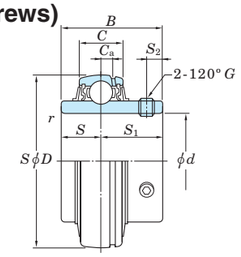


SU

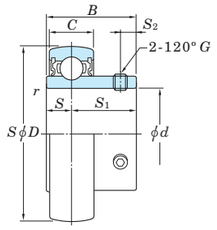
Shaft Dia. mm	Shaft Dia. inch	Dimensions								Basic Load Ratings kN		Factor	Bearing No.		Dimensions								Set Screw Brg. Bore G		Mass
d		D		B		C		r (min.)		C_r	C_{0r}	f_0	Standard	L3 Type	C_a		S		S_1		S_2		mm	inch	kg
		mm	inch	mm	inch	mm	inch	mm	inch						mm	inch	mm	inch	mm	inch	mm	inch			
–	2 7/16	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
		120	4.724	65.1	2.563	28	1.102	1.5	0.059	57.2	40.1	14.4	UC213-40	UC213-40L3	7.5	0.295	25.4	1.000	39.7	1.563	12	0.472	–	1/2-20UNF	1.94
–	2 1/2	125	4.921	74.6	2.937	30	1.181	1.5	0.059	62.2	44.1	14.5	UCX13-40	UCX13-40L3	9	0.354	30.2	1.189	44.4	1.748	12	0.472	–	1/2-20UNF	2.61
		140	5.512	75	2.953	38	1.496	2.1	0.083	92.7	59.9	13.2	UC313-40	UC313-40L3	12	0.472	30	1.181	45	1.772	12	0.472	M12×1.5	–	3.24
		120	4.724	65.1	2.563	28	1.102	1.5	0.059	57.2	40.1	14.4	UC213	UC213L3	7.5	0.295	25.4	1.000	39.7	1.563	12	0.472	M12×1.5	–	1.86
65	–	125	4.921	74.6	2.937	30	1.181	1.5	0.059	62.2	44.1	14.5	UCX13	UCX13L3	9	0.354	30.2	1.189	44.4	1.748	12	0.472	M12×1.5	–	2.52
		140	5.512	75	2.953	38	1.496	2.1	0.083	92.7	59.9	13.2	UC313	UC313L3	12	0.472	30	1.181	45	1.772	12	0.472	M12×1.5	–	3.16
		125	4.921	74.6	2.937	30	1.181	1.5	0.059	62.2	44.1	14.5	UC214-44	UC214-44L3	9	0.354	30.2	1.189	44.4	1.748	12	0.472	–	1/2-20UNF	2.06
–	2 3/4	130	5.118	77.8	3.063	32	1.260	1.5	0.059	67.4	48.3	14.5	UCX14-44	UCX14-44L3	9	0.354	33.3	1.311	44.5	1.752	12	0.472	–	1/2-20UNF	2.75
		150	5.906	78	3.071	40	1.575	2.1	0.083	104	68.2	13.2	UC314-44	UC314-44L3	12.5	0.492	33	1.299	45	1.772	12	0.472	M12×1.5	–	3.91
		125	4.921	74.6	2.937	30	1.181	1.5	0.059	62.2	44.1	14.5	UC214	UC214L3	9	0.354	30.2	1.189	44.4	1.748	12	0.472	M12×1.5	–	2.05
70	–	130	5.118	77.8	3.063	32	1.260	1.5	0.059	67.4	48.3	14.5	UCX14	UCX14L3	9	0.354	33.3	1.311	44.5	1.752	12	0.472	M12×1.5	–	2.74
		150	5.906	78	3.071	40	1.575	2.1	0.083	104	68.2	13.2	UC314	UC314L3	12.5	0.492	33	1.299	45	1.772	12	0.472	M12×1.5	–	3.90
		130	5.118	77.8	3.063	32	1.260	1.5	0.059	67.4	48.3	14.5	UC215-47	UC215-47L3	9	0.354	33.3	1.311	44.5	1.752	12	0.472	–	1/2-20UNF	2.23
–	2 15/16	140	5.512	82.6	3.252	33	1.299	1.5	0.059	72.7	53.0	14.6	UCX15-47	UCX15-47L3	9	0.354	33.3	1.311	49.3	1.941	14	0.551	–	1/2-20UNF	3.43
		160	6.299	82	3.228	42	1.654	2.1	0.083	113	77.2	13.2	UC315-47	UC315-47L3	14.5	0.571	32	1.260	50	1.969	14	0.551	M14×1.5	–	4.72
		130	5.118	77.8	3.063	32	1.260	1.5	0.059	67.4	48.3	14.5	UC215	UC215L3	9	0.354	33.3	1.311	44.5	1.752	12	0.472	M12×1.5	–	2.21
75	–	140	5.512	82.6	3.252	33	1.299	1.5	0.059	72.7	53.0	14.6	UCX15	UCX15L3	9	0.354	33.3	1.311	49.3	1.941	14	0.551	M12×1.5	–	3.41
		160	6.299	82	3.228	42	1.654	2.1	0.083	113	77.2	13.2	UC315	UC315L3	14.5	0.571	32	1.260	50	1.969	14	0.551	M14×1.5	–	4.70
		130	5.118	77.8	3.063	32	1.260	1.5	0.059	67.4	48.3	14.5	UC215-48	UC215-48L3	9	0.354	33.3	1.311	44.5	1.752	12	0.472	–	1/2-20UNF	2.12
–	3	140	5.512	82.6	3.252	33	1.299	1.5	0.059	72.7	53.0	14.6	UCX15-48	UCX15-48L3	9	0.354	33.3	1.311	49.3	1.941	14	0.551	–	1/2-20UNF	3.32
		160	6.299	82	3.228	42	1.654	2.1	0.083	113	77.2	13.2	UC315-48	UC315-48L3	14.5	0.571	32	1.260	50	1.969	14	0.551	M14×1.5	–	4.61
–	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
80	–	150	5.906	85.7	3.374	35	1.378	2	0.079	84.0	61.9	14.5	UCX16	UCX16L3	10	0.394	34.1	1.343	51.6	2.031	14	0.551	M12×1.5	–	3.87
		170	6.693	86	3.386	44	1.732	2.1	0.083	123	86.7	13.3	UC316	UC316L3	15	0.591	34	1.339	52	2.047	14	0.551	M14×1.5	–	5.60
–	3 1/4	150	5.906	85.7	3.374	35	1.378	2	0.079	84.0	61.9	14.5	UC217-52	UC217-52L3	10	0.394	34.1	1.343	51.6	2.031	14	0.551	–	1/2-20UNF	3.66
		150	5.906	85.7	3.374	35	1.378	2	0.079	84.0	61.9	14.5	UC217	UC217L3	10	0.394	34.1	1.343	51.6	2.031	14	0.551	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
–	3 7/16	160	6.299	96	3.780	38	1.496	2	0.079	96.1	71.5	14.5	UCX17-55	UCX17-55L3	11	0.433	39.7	1.563	56.3	2.217	15	0.591	–	1/2-20UNF	4.80
–	3 1/2	160	6.299	96	3.780	38	1.496	2	0.079	96.1	71.5	14.5	UC218-56	UC218-56L3	11	0.433	39.7	1.563	56.3	2.217	15	0.591	–	1/2-20UNF	4.46
		190	7.480	96	3.780	48	1.890	3	0.118	143	107	13.3	UC318-56	UC318-56L3	15.5	0.610	40	1.575	56	2.205	16	0.630	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
95	–	200	7.874	103	4.055	50	1.969	3	0.118	153	119	13.3	UC319	UC319L3	16.5	0.650	41	1.614	62	2.441	18	0.709	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
–	3 15/16	190	7.480	117.5	4.626	43	1.693	2.1	0.083	133	105	14.4	UCX20-63	–	13	0.512	49.2	1.937	68.3	2.689	18	0.709	–	5/8-18UNF	8.56
		215	8.465	108	4.252	54	2.126	3	0.118	173	141	13.2	UC320-63	UC320-63L3	18	0.709	42	1.654	66	2.598	20	0.787	M18×1.5	–	11.2
–	4	190	7.480	117.5	4.626	43	1.693	2.1	0.083	133	105	14.4	UCX20-64	–	13	0.512	49.2	1.937	68.3	2.689	18	0.709	–	5/8-18UNF	8.33
		215	8.465	108	4.252	54	2.126	3	0.118	173	141	13.2	UC320-64	UC320-64L3	18	0.709	42	1.654	66	2.598	20	0.787	M18×1.5	–	11.0
105		225	8.858	112	4.409	56	2.205	3	0.118	184	153	13.2	UC321	–	19	0.748	44	1.732	68	2.677	20	0.787	M18×1.5	–	12.7
110		240	9.449	117	4.606	60	2.362	3	0.118	205	180	13.2	UC322	UC322L3	20	0.787	46	1.811	71	2.795	20	0.787	M18×1.5	–	15.1
120	–	260	10.236	126	4.961	64	2.520	3	0.118	207	185	13.5	UC324	UC324L3	21	0.827	51	2.008	75	2.953	20	0.787	M18×1.5	–	19.0
130		280	11.024	135	5.315	68	2.677	4	0.157	229	214	13.6	UC326	UC326L3	22	0.866	54	2.126	81	3.189	20	0.787	M20×1.5	–	23.6
140		300	11.811	145	5.709	72	2.835	4	0.157	253	246	13.6	UC328	UC328L3	23	0.906	59	2.323	86	3.386	20	0.787	M20×1.5	–	29.4

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

UC-S6, SU-S6 (Stainless-series)
Cylindrical bore (with set screws)
d 10 ~ 50 mm



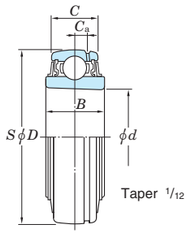
UC-S6



SU-S6

Shaft Dia. mm	Dimensions								Basic Load Ratings kN		Factor	Bearing No.		Dimensions								Set Screw Dia.	Mass
d	D		B		C		r (min.)		C_r	C_{0r}	f_0			C_a		S		S_1		S_2		G	
	mm	inch	mm	inch	mm	inch	mm	inch						mm	inch	mm	inch	mm	inch	mm	inch		kg
10	26	1.024	15	0.591	8	0.315	0.3	0.012	3.9	1.55	12.3	**SU000S6**		–	–	5	0.197	10	0.394	3	0.118	M3×0.35	0.024
12	28	1.102	15	0.591	8	0.315	0.3	0.012	4.3	1.9	13.2	**SU001S6**		–	–	5	0.197	10	0.394	3	0.118	M3×0.35	0.026
15	32	1.260	16.5	0.650	9	0.354	0.3	0.012	4.7	2.25	13.9	**SU002S6**		–	–	5.5	0.217	11	0.433	3.3	0.130	M4×0.5	0.038
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
20	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	0.158	12.7	0.500	18.3	0.720	5	0.197	M6×0.75	0.16
25	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
30	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
35	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
40	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	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	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	8	0.315	M8×1	0.80

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



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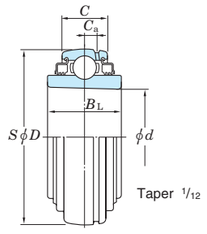
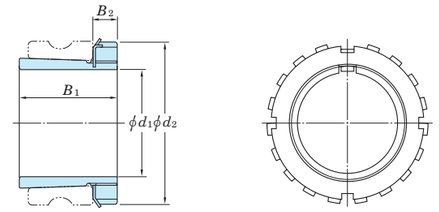


UK-L3



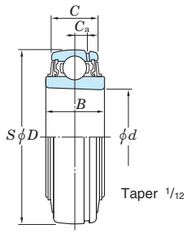
Adapter assembly

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch/mm d_1	d	D	B	B_L	C	C_a	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Bearing No. Standard	Bearing No. L3 Type	Mass kg Standard	Mass kg L3 Type	H3 Series Adapter: Adapter assembly No.	B_1	B_2	d_2	Mass kg	Sleeve No.	H23 Series Adapter: Adapter assembly No.	B_1	B_2	d_2	Mass kg	Sleeve No.
20	3/4	0.984	2.047	0.827	0.945	0.669	0.197	14.0	7.85	13.9	UK205	UK205L2	0.16	0.18	HE305X H305X	1.142	0.315	1.496	0.075	AE305X A305X	HE2305X H2305X	1.378	0.315	1.496	0.095	AE2305X A2305X
		25	52	21	24	17	5									29	8	38				35	8	38		
	3/4	0.984	2.441	0.906	–	0.748	0.197	19.5	11.3	13.9	UKX05	–	0.27	–	–	–	–	–	–	–	HE2305X H2305X	1.378	0.315	1.496	0.095	AE2305X A2305X
		25	62	23	–	19	5									–	–	–				35	8	38		
	3/4	0.984	2.441	1.063	–	0.866	0.236	21.2	10.9	12.6	UK305	–	0.40	–	–	–	–	–	–	–	HE2305X H2305X	1.378	0.315	1.496	0.095	AE2305X A2305X
		25	62	27	–	22	6									–	–	–				35	8	38		
25	1	1.181	2.441	0.906	1.063	0.748	0.197	19.5	11.3	13.9	UK206	UK206L3	0.25	0.29	H306X HE306X	1.220	0.315	1.772	0.11	A306X AE306X	H2306X HE2306X	1.496	0.315	1.772	0.13	A2306X HE2306X
		30	62	23	27	19	5									31	8	45				38	8	45		
	1	1.181	2.835	1.024	–	0.787	0.217	25.7	15.4	13.9	UKX06	–	0.43	–	–	–	–	–	–	–	H2306X HE2306X	1.496	0.315	1.772	0.13	A2306X HE2306X
		30	72	26	–	20	5.5									–	–	–				38	8	45		
	1	1.181	2.835	1.181	–	0.945	0.256	26.7	15.0	13.3	UK306	–	0.47	–	–	–	–	–	–	–	H2306X HE2306X	1.496	0.315	1.772	0.13	A2306X HE2306X
		30	72	30	–	24	6.5									–	–	–				38	8	45		
30	1 1/8	1.378	2.835	1.024	1.181	0.787	0.217	25.7	15.4	13.9	UK207	UK207L3	0.37	0.43	HS307X H307X	1.378	0.354	2.047	0.14	AS307X A307X	HS2307X H2307X	1.693	0.354	2.047	0.17	AS2307X A2307X
		35	72	26	30	20	5.5									35	9	52				43	9	52		
	1 1/8	1.378	3.150	1.063	–	0.827	0.236	29.1	17.8	14.0	UKX07	–	0.53	–	–	–	–	–	–	–	HS2307X H2307X	1.693	0.354	2.047	0.17	AS2307X A2307X
		35	80	27	–	21	6									–	–	–				43	9	52		
	1 1/8	1.378	3.150	1.299	1.299	1.024	0.295	33.4	19.3	13.2	UK307	UK307L3	0.60	0.60	–	–	–	–	–	–	HS2307X H2307X	1.693	0.354	2.047	0.17	AS2307X A2307X
		35	80	33	33	26	7.5									–	–	–				43	9	52		
35	1 1/4 1 3/8	1.575	3.150	1.063	1.339	0.827	0.236	29.1	17.8	14.0	UK208	UK208L3	0.47	0.58	HE308X HS308X H308X	1.417	0.394	2.283	0.19	AE308X AS308X A308X	HE2308X HS2308X H2308X	1.811	0.394	2.283	0.22	AE2308X AS2308X A2308X
		40	80	27	34	21	6									36	10	58				46	10	58		
	1 1/4 1 3/8	1.575	3.346	1.142	–	0.866	0.236	34.1	21.3	14.0	UKX08	–	0.58	–	–	–	–	–	–	–	HE2308X HS2308X H2308X	1.811	0.394	2.283	0.22	AE2308X AS2308X A2308X
		40	85	29	–	22	6									–	–	–				46	10	58		
	1 1/4 1 3/8	1.575	3.543	1.378	1.378	1.102	0.315	40.7	24.0	13.2	UK308	UK308L3	0.80	0.80	–	–	–	–	–	–	HE2308X HS2308X H2308X	1.811	0.394	2.283	0.22	AE2308X AS2308X A2308X
		40	90	35	35	28	8									–	–	–				46	10	58		
40	1 1/2 1 5/8	1.772	3.346	1.142	1.417	0.866	0.236	34.1	21.3	14.0	UK209	UK209L3	0.52	0.65	HE309X H309X HS309X	1.535	0.433	2.559	0.25	AE309X A309X AS309X	HE2309X H2309X HS2309X	1.969	0.433	2.559	0.28	AE2309X A2309X AS2309X
		45	85	29	36	22	6									39	11	65				50	11	65		
	1 1/2 1 5/8	1.772	3.543	1.142	–	0.945	0.236	35.1	23.3	14.4	UKX09	–	0.67	–	–	–	–	–	–	–	HE2309X H2309X HS2309X	1.969	0.433	2.559	0.28	AE2309X A2309X AS2309X
		45	90	29	–	24	6									–	–	–				50	11	65		
	1 1/2 1 5/8	1.772	3.937	1.496	1.496	1.181	0.335	48.9	29.5	13.3	UK309	UK309L3	1.08	1.08	–	–	–	–	–	–	HE2309X H2309X HS2309X	1.969	0.433	2.559	0.28	AE2309X A2309X AS2309X
		45	100	38	38	30	8.5									–	–	–				50	11	65		
45	1 3/4	1.969	3.543	1.142	1.417	0.945	0.236	35.1	23.3	14.4	UK210	UK210L3	0.59	0.65	HE310X H310X	1.654	0.472	2.756	0.30	AE310X A310X	HE2310X H2310X	2.165	0.472	2.756	0.36	AE2310X A2310X
		50	90	29	36	24	6									42	12	70				55	12	70		
	1 3/4	1.969	3.937	1.220	–	0.984	0.276	43.4	29.4	14.4	UKX10	–	0.89	–	–	–	–	–	–	–	HE2310X H2310X	2.165	0.472	2.756	0.36	AE2310X A2310X
		50	100	31	–	25	7									–	–	–				55	12	70		
	1 3/4	1.969	4.331	1.575	1.575	1.260	0.354	62.0	38.3	13.2	UK310	UK310L3	1.38	1.38	–	–	–	–	–	–	HE2310X H2310X	2.165	0.472	2.756	0.36	AE2310X A2310X
		50	110	40	40	32	9									–	–	–				55	12	70		
50	1 7/8 2	2.165	3.937	1.220	1.575	0.984	0.276	43.4	29.4	14.4	UK211	UK211L3	0.80	1.09	HS311X H311X HE311X	1.772	0.472	2.953	0.35	AS311X A311X AE311X	HS2311X H2311X HE2311X	2.323	0.472	2.953	0.42	AS2311X A2311X AE2311X
		55	100	31	40	25	7									45	12	75				59	12	75		

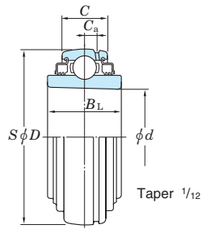
Remarks 1. In Part No. of unit with adapters, Part No. of applicable adapters follow the Part No. shown in the dimensional tables.
(Example of Part No. : UK206 + H306X, UK206L3 + H2306X)

2. Adapter series applicable to UK200 series
UK200..... H300X series
UK200L3 (or L2) ..... H2300X series
3. UK205 is the double-lip seal type product (L2).
4. Inch bore diameter series adapters are also available (see the dimensional tables of adapter assemblies).

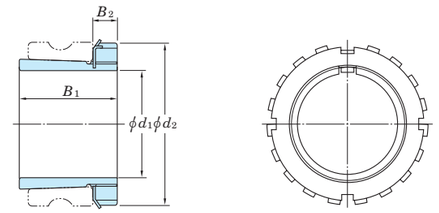
UK
Tapered bore (with adapter)
d_1 (50) ~ 85 mm



UK



UK-L3



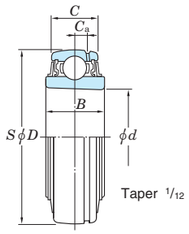
Adapter assembly

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm d	D	B	B_L	C	C_a	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Bearing No. Standard	Bearing No. L3 Type	Mass kg Standard	Mass kg L3 Type	H3 Series Adapter: Adapter assembly No.	Dimensions inch / mm B_1	B_2	d_2	Mass kg	Sleeve No.	H23 Series Adapter: Adapter assembly No.	Dimensions inch / mm B_1	B_2	d_2	Mass kg	Sleeve No.
d_1																										
50	1 7/8	2.165	4.331	1.299	–	1.063	0.295	52.4	36.2	14.4	**UKX11**	–	1.15	–	–	–	–	–	–	–	HS2311X H2311X HE2311X	2.323	0.472	2.953	0.42	AS2311X A2311X AE2311X
	2	55	110	33	–	27	7.5									–	–	–				59	12	75		
	1 7/8	2.165	4.724	1.693	1.693	1.339	0.394	71.6	45.0	13.2	**UK311**	**UK311L3**	1.78	1.78	–	–	–	–	–	–	HS2311X H2311X HE2311X	2.323	0.472	2.953	0.42	AS2311X A2311X AE2311X
	2	55	120	43	43	34	10									–	–	–				59	12	75		
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 H312X	1.850	0.512	3.150	0.43	AS312X A312X	HS2312X H2312X	2.441	0.512	3.150	0.48	AS2312X A2312X
		60	110	33	47	27	7.5									47	13	80				62	13	80		
	2 1/8	2.362	4.724	1.417	–	1.102	0.295	57.2	40.1	14.4	**UKX12**	–	1.45	–	–	–	–	–	–	–	HS2312X H2312X	2.441	0.512	3.150	0.48	AS2312X A2312X
		60	120	36	–	28	7.5									–	–	–				62	13	80		
	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 H2312X	2.441	0.512	3.150	0.48	AS2312X A2312X
		60	130	47	47	36	11.5									–	–	–				62	13	80		
	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 H313X HS313X	1.969	0.551	3.346	0.46	AE313X A313X AS313X	HE2313X H2313X HS2313X	2.559	0.551	3.346	0.56	AE2313X A2313X AS2313X
	2 3/8	65	120	36	47	28	7.5									50	14	85				65	14	85		
60	2 1/4	2.559	4.921	1.575	–	1.181	0.354	62.2	44.1	14.5	**UKX13**	–	1.62	–	–	–	–	–	–	–	HE2313X H2313X HS2313X	2.559	0.551	3.346	0.56	AE2313X A2313X AS2313X
	2 3/8	65	125	40	–	30	9									–	–	–				65	14	85		
	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 H2313X HS2313X	2.559	0.551	3.346	0.56	AE2313X A2313X AS2313X
	2 3/8	65	140	49	49	38	12									–	–	–				65	14	85		
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 H315X	2.165	0.591	3.858	0.83	AE315X A315X	HE2315X H2315X	2.874	0.591	3.858	1.05	AE2315X A2315X
		75	130	40	51	32	9									55	15	98				73	15	98		
	2 1/2	2.953	5.512	1.654	–	1.299	0.354	72.7	53.0	14.6	**UKX15**	–	2.10	–	–	–	–	–	–	–	HE2315X H2315X	2.874	0.591	3.858	1.05	AE2315X A2315X
		75	140	42	–	33	9									–	–	–				73	15	98		
	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 H2315X	2.874	0.591	3.858	1.05	AE2315X A2315X
		75	160	55	55	42	14.5									–	–	–				73	15	98		
70	2 3/4	3.150	5.512	1.654	2.165	1.299	0.354	72.7	53.0	14.6	**UK216**	**UK216L3**	1.96	2.56	HE316X H316X	2.323	0.669	4.134	1.05	AE316X A316X	HE2316X H2316X	3.071	0.669	4.134	1.3	AE2316X A2316X
		80	140	42	55	33	9									59	17	105				78	17	105		
	2 3/4	3.150	5.906	1.732	–	1.378	0.394	84.0	61.9	14.5	**UKX16**	–	2.64	–	–	–	–	–	–	–	HE2316X H2316X	3.071	0.669	4.134	1.3	AE2316X A2316X
		80	150	44	–	35	10									–	–	–				78	17	105		
	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 H2316X	3.071	0.669	4.134	1.3	AE2316X A2316X
		80	170	55	55	44	15									–	–	–				78	17	105		
75	3	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 HE317X	2.480	0.709	4.331	1.2	A317X AE317X	H2317X HE2317X	3.228	0.709	4.331	1.45	A2317X AE2317X
		85	150	44	57	35	10									63	18	110				82	18	110		
	3	3.346	6.299	1.890	–	1.496	0.433	96.1	71.5	14.5	**UKX17**	–	3.25	–	–	–	–	–	–	–	H2317X HE2317X	3.228	0.709	4.331	1.45	A2317X AE2317X
		85	160	48	–	38	11									–	–	–				82	18	110		
	3	3.346	7.087	2.362	2.362	1.811	0.591	133	96.8	13.3	**UK317**	**UK317L3**	5.30	5.30	–	–	–	–	–	–	H2317X HE2317X	3.228	0.709	4.331	1.45	A2317X AE2317X
		85	180	60	60	46	15									–	–	–				82	18	110		
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									65	18	120				86	18	120		
	–	3.543	6.693	1.969	–	1.575	0.453	109	81.9	14.4	**UKX18**	–	3.80	–	–	–	–	–	–	–	H2318X	3.386	0.709	4.724	1.7	A2318X
		90	170	50	–	40	11.5									–	–	–				86	18	120		
	–	3.543	7.480	2.362	2.362	1.890	0.610	143	107	13.3	**UK318**	**UK318L3**	6.20	6.20	–	–	–	–	–	–	H2318X	3.386	0.709	4.724	1.7	A2318X
		90	190	60	60	48	15.5									–	–	–				86	18	120		
85	3 1/4	3.740	7.874	2.598	2.598	1.969	0.650	153	119	13.3	**UK319**	**UK319L3**	7.31	7.31	–	–	–	–	–	–	H2319X	3.543	0.748	4.921	1.95	A2319X
		95	200	66	66	50	16.5									–	–	–				90	19	125		

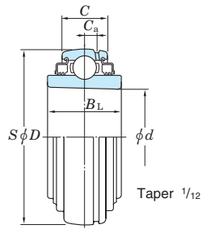
Remarks 1. In Part No. of unit with adapters, Part No. of applicable adapters follow the Part No. shown in the dimensional tables.
(Example of Part No. : UK206 + H306X, UK206L3 + H2306X)

2. Adapter series applicable to UK200 series
UK200..... H300X series
UK200L3 (or L2) ..... H2300X series
3. UK205 is the double-lip seal type product (L2).
4. Inch bore diameter series adapters are also available (see the dimensional tables of adapter assemblies).

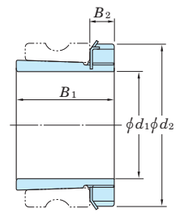
UK
Tapered bore (with adapter)
d_1 90 ~ 125 mm

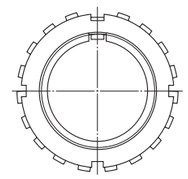


UK



UK-L3





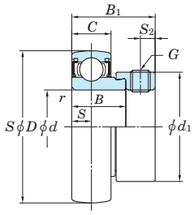
Adapter assembly

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch/mm						Basic Load Ratings kN		Factor	Bearing No.		Bearing Mass kg		H3 Series Adapter							H23 Series Adapter						
															Adapter assembly No.	Dimensions inch/mm B_1	B_2	d_2	Mass kg	Sleeve No.	Adapter assembly No.	Dimensions inch/mm B_1	B_2	d_2	Mass kg	Sleeve No.
d_1		d	D	B	B_L	C	C_a	C_r	C_{0r}	f_0	Standard	L3 Type	Standard	L3 Type													
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
	3 1/2	3.937	8.465	2.677	2.677	2.126	0.709	173	141	13.2	UK320	UK320L3	8.70	8.70	–	–	–	–	–	–	HE2320X	3.819	0.787	5.118	2.2	AE2320X
		100	215	68	68	54	18									–	–	–			H2320X	97	20	130		A2320X
100		4.331	9.449	3.071	3.071	2.362	0.787	205	180	13.2	UK322	UK322L3	12.2	12.2	–	–	–	–	–	–	H2322X	4.134	0.827	5.709	2.75	A2322X
	4	110	240	78	78	60	20									–	–	–			HE2322X	105	21	145		AE2322X
110	–	4.724	10.236	3.425	3.425	2.520	0.827	207	185	13.5	UK324	UK324L3	16.1	16.1	–	–	–	–	–	–	H2324	4.409	0.866	6.102	3.2	A2324
		120	260	87	87	64	21									–	–	–				112	22	155		
115	4 1/2	5.118	11.024	3.425	3.425	2.677	0.866	229	214	13.6	UK326	UK326L3	18.8	18.8	–	–	–	–	–	–	HE2326	4.764	0.906	6.496	4.6	AE2326
		130	280	87	87	68	22									–	–	–			H2326	121	23	165		A2326
125	–	5.512	11.811	3.819	3.819	2.835	0.906	253	246	13.6	UK328	UK328L3	23.9	23.9	–	–	–	–	–	–	H2328	5.157	0.945	7.087	5.5	A2328
		140	300	97	97	72	23									–	–	–				131	24	180		

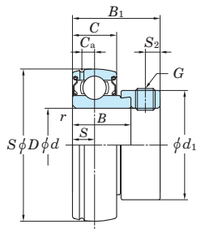
Remarks 1. In Part No. of unit with adapters, Part No. of applicable adapters follow the Part No. shown in the dimensional tables.
(Example of Part No. : UK206 + H306X, UK206L3 + H2306X)

2. Adapter series applicable to UK200 series
UK200..... H300X series
UK200L3 (or L2) ..... H2300X series
3. UK205 is the double-lip seal type product (L2).
4. Inch bore diameter series adapters are also available (see the dimensional tables of adapter assemblies).

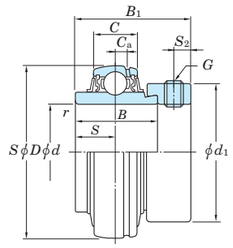
SA, SA-F, NA
Cylindrical bore
(with eccentric locking collar)
d 12 ~ (30) mm



SA



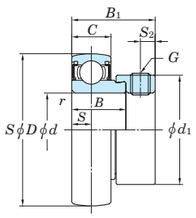
SAF



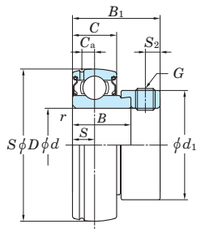
NA

Shaft Dia d mm	Shaft Dia d inch	Dimensions D mm	D inch	B mm	B inch	B_1 mm	B_1 inch	C mm	C inch	r (min.) mm	r (min.) inch	Basic Load Ratings kN C_r	Basic Load Ratings kN C_{0r}	Factor f_0	Bearing No.	Dimensions C_a mm	C_a inch	S mm	S inch	S_2 mm	S_2 inch	d_1 mm	d_1 inch	Set Screw Brg.Bore mm	Set Screw Brg.Bore inch	Mass kg
12	–	40	1.575	19	0.784	28.5	1.122	12	0.472	0.6	0.024	9.55	4.80	13.2	**SA201**	–	–	6	0.236	4.8	0.189	28.6	1.126	M6×0.75	–	0.13
		40	1.575	19.1	0.752	28.6	1.126	13	0.512	0.6	0.024	9.55	4.80	13.2	**SA201F**	3.4	0.134	6.5	0.256	4.8	0.189	28.6	1.126	M6×0.75	–	0.13
		47	1.850	34.2	1.346	43.7	1.720	16	0.630	1	0.039	12.8	6.65	13.2	**NA201**	4	0.157	17.1	0.673	4.8	0.189	33.3	1.311	M6×0.75	–	0.29
–	1/2	40	1.575	19	0.784	28.5	1.122	12	0.472	0.6	0.024	9.55	4.80	13.2	**SA201-8**	–	–	6	0.236	4.8	0.189	28.6	1.126	–	1/4-28UNF	0.13
		40	1.575	19.1	0.752	28.6	1.126	13	0.512	0.6	0.024	9.55	4.80	13.2	**SA201-8F**	3.4	0.134	6.5	0.256	4.8	0.189	28.6	1.126	–	1/4-28UNF	0.13
		47	1.850	34.2	1.346	43.7	1.720	16	0.630	1	0.039	12.8	6.65	13.2	**NA201-8**	4	0.157	17.1	0.673	4.8	0.189	33.3	1.311	–	1/4-28UNF	0.29
15	–	40	1.575	19	0.784	28.5	1.122	12	0.472	0.6	0.024	9.55	4.80	13.2	**SA202**	–	–	6	0.236	4.8	0.189	28.6	1.126	M6×0.75	–	0.13
		40	1.575	19.1	0.752	28.6	1.126	13	0.512	0.6	0.024	9.55	4.80	13.2	**SA202F**	3.4	0.134	6.5	0.256	4.8	0.189	28.6	1.126	M6×0.75	–	0.13
		47	1.850	34.2	1.346	43.7	1.720	16	0.630	1	0.039	12.8	6.65	13.2	**NA202**	4	0.157	17.1	0.673	4.8	0.189	33.3	1.311	M6×0.75	–	0.27
–	5/8	40	1.575	19	0.784	28.5	1.122	12	0.472	0.6	0.024	9.55	4.80	13.2	**SA202-10**	–	–	6	0.236	4.8	0.189	28.6	1.126	–	1/4-28UNF	0.13
		47	1.850	34.2	1.346	43.7	1.720	16	0.630	1	0.039	12.8	6.65	13.2	**NA202-10**	4	0.157	17.1	0.673	4.8	0.189	33.3	1.311	–	1/4-28UNF	0.26
17	–	40	1.575	19	0.784	28.5	1.122	12	0.472	0.6	0.024	9.55	4.80	13.2	**SA203**	–	–	6	0.236	4.8	0.189	28.6	1.126	M6×0.75	–	0.13
		40	1.575	19.1	0.752	28.6	1.126	13	0.512	0.6	0.024	9.55	4.80	13.2	**SA203F**	3.4	0.134	6.5	0.256	4.8	0.189	28.6	1.126	M6×0.75	–	0.13
		47	1.850	34.2	1.346	43.7	1.720	16	0.630	1	0.039	12.8	6.65	13.2	**NA203**	4	0.157	17.1	0.673	4.8	0.189	33.3	1.311	M6×0.75	–	0.25
		47	1.850	20	0.787	29.5	1.161	14	0.551	1	0.039	12.8	6.65	13.2	**SA204-12**	–	–	7	0.276	4.8	0.189	33.3	1.311	–	1/4-28UNF	0.15
–	3/4	47	1.850	21.5	0.846	31	1.220	15	0.591	1	0.039	12.8	6.65	13.2	**SA204-12F**	3.7	0.146	7.5	0.295	4.8	0.189	33.3	1.311	–	1/4-28UNF	0.19
		47	1.850	34.2	1.346	43.7	1.720	16	0.630	1	0.039	12.8	6.65	13.2	**NA204-12**	4	0.157	17.1	0.673	4.8	0.189	33.3	1.311	–	1/4-28UNF	0.23
		47	1.850	20	0.787	29.5	1.161	14	0.551	1	0.039	12.8	6.65	13.2	**SA204**	–	–	7	0.276	4.8	0.189	33.3	1.311	M6×0.75	–	0.15
20	–	47	1.850	21.5	0.846	31	1.220	15	0.591	1	0.039	12.8	6.65	13.2	**SA204F**	3.7	0.146	7.5	0.295	4.8	0.189	33.3	1.311	M6×0.75	–	0.19
		47	1.850	34.2	1.346	43.7	1.720	16	0.630	1	0.039	12.8	6.65	13.2	**NA204**	4	0.157	17.1	0.673	4.8	0.189	33.3	1.311	M6×0.75	–	0.22
–	7/8	52	2.047	21	0.827	30.5	1.201	15	0.591	1	0.039	14.0	7.85	13.9	**SA205-14**	–	–	7.5	0.295	4.8	0.189	38.1	1.311	–	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	**NA205-14**	5	0.197	17.5	0.689	4.8	0.189	38.1	1.500	–	1/4-28UNF	0.27
–	15/16	52	2.047	21	0.827	30.5	1.201	15	0.591	1	0.039	14.0	7.85	13.9	**SA205-15**	–	–	7.5	0.295	4.8	0.189	38.1	1.311	–	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	**SA205-15F**	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	**NA205-15**	5	0.197	17.5	0.689	4.8	0.189	38.1	1.500	–	1/4-28UNF	0.29
		52	2.047	21	0.827	30.5	1.201	15	0.591	1	0.039	14.0	7.85	13.9	**SA205**	–	–	7.5	0.295	4.8	0.189	38.1	1.311	M6×0.75	–	0.22
25	–	52	2.047	21.5	0.846	31	1.220	15	0.591	1	0.039	14.0	7.85	13.9	**SA205F**	3.7	0.146	7.5	0.295	4.8	0.189	38.1	1.311	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	**NA205**	5	0.197	17.5	0.689	4.8	0.189	38.1	1.500	M6×0.75	–	0.25
–	1	52	2.047	21	0.827	30.5	1.201	15	0.591	1	0.039	14.0	7.85	13.9	**SA205-16**	–	–	7.5	0.295	4.8	0.189	38.1	1.311	–	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	**SA205-16F**	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	**NA205-16**	5	0.197	17.5	0.689	4.8	0.189	38.1	1.500	–	1/4-28UNF	0.25
–	1 1/8	62	2.441	22	0.866	33.9	1.335	16	0.630	1	0.039	19.5	11.3	13.9	**SA206-18**	–	–	8	0.315	6	0.236	44.5	1.752	–	5/16-24UNF	0.3
		62	2.441	23.8	0.937	35.7	1.406	18	0.709	1	0.039	19.5	11.3	13.9	**SA206-18F**	4.7	0.185	9	0.354	6	0.236	44.5	1.752	–	5/16-24UNF	0.34
		62	2.441	36.5	1.437	48.4	1.906	19	0.748	1	0.039	19.5	11.3	13.9	**NA206-18**	5	0.197	18.3	0.720	6	0.236	44.5	1.752	–	5/16-24UNF	0.43
		62	2.441	22	0.866	33.9	1.335	16	0.630	1	0.039	19.5	11.3	13.9	**SA206**	–	–	8	0.315	6	0.236	44.5	1.752	M8×1	–	0.3
30	–	62	2.441	23.8	0.937	35.7	1.406	18	0.709	1	0.039	19.5	11.3	13.9	**SA206F**	4.7	0.185	9	0.354	6	0.236	44.5	1.752	M8×1	–	0.34
		62	2.441	36.5	1.437	48.4	1.906	19	0.748	1	0.039	19.5	11.3	13.9	**NA206**	5	0.197	18.3	0.720	6	0.236	44.5	1.752	M8×1	–	0.41
–	1 3/16	62	2.441	22	0.866	33.9	1.335	16	0.630	1	0.039	19.5	11.3	13.9	**SA206-19**	–	–	8	0.315	6	0.236	44.5	1.752	–	5/16-24UNF	0.3
		62	2.441	23.8	0.937	35.7	1.406	18	0.709	1	0.039	19.5	11.3	13.9	**SA206-19F**	4.7	0.185	9	0.354	6	0.236	44.5	1.752	–	5/16-24UNF	0.34
		62	2.441	36.5	1.437	48.4	1.906	19	0.748	1	0.039	19.5	11.3	13.9	**NA206-19**	5	0.197	18.3	0.720	6	0.236	44.5	1.752	–	5/16-24UNF	0.41
–	1 1/4	62	2.441	22	0.866	33.9	1.335	16	0.630	1	0.039	19.5	11.3	13.9	**SA206-20**	–	–	8	0.315	6	0.236	44.5	1.752	–	5/16-24UNF	0.3
		62	2.441	23.8	0.937	35.7	1.406	18	0.709	1	0.039	19.5	11.3	13.9	**SA206-20F**	4.7	0.185	9	0.354	6	0.236	44.5	1.752	–	5/16-24UNF	0.34
		62	2.441	36.5	1.437	48.4	1.906	19	0.748	1	0.039	19.5	11.3	13.9	**NA206-20**	5	0.197	18.3	0.720	6	0.236	44.5	1.752	–	5/16-24UNF	0.38
–	1 1/4	72	2.835	23	0.906	36.5	1.437	17	0.669	1.1	0.043	25.7	15.4	13.9	**SA207-20**	–	–	8.5	0.335	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.5
		72	2.835	25.4	1.000	38.9	1.531	19	0.748	1.1	0.043	25.7	15.4	13.9	**SA207-20F**	5.7	0.224	9.5	0.335	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.57
		72	2.835	37.6	1.480	51.1	2.012	20	0.787	1.1	0.043	25.7	15.4	13.9	**NA207-20**	5.5	0.217	18.8	0.740	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.68
–	1 5/16	72	2.835	23	0.906	36.5	1.437	17	0.669	1.1	0.043	25.7	15.4	13.9	**SA207-21**	–	–	8.5	0.335	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.5
		72	2.835	25.4	1.000	38.9	1.531	19	0.748	1.1	0.043	25.7	15.4	13.9	**SA207-21F**	5.7	0.224	9.5	0.335	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.57
		72	2.835	37.6	1.480	51.1	2.012	20	0.787	1.1	0.043	25.7	15.4	13.9	**NA207-21**	5.5	0.217	18.8	0.740	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.65

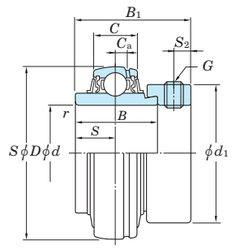
SA, SA-F, NA
Cylindrical bore
(with eccentric locking collar)
d (30) ~ 75 mm



SA



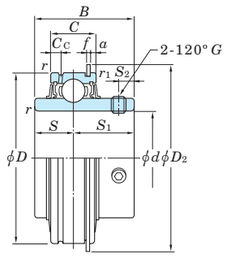
SAF



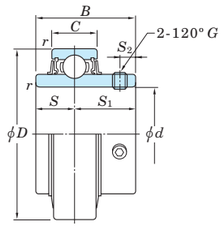
NA

Shaft Dia d mm	Shaft Dia d inch	Dimensions D mm	D inch	B mm	B inch	B_1 mm	B_1 inch	C mm	C inch	r (min.) mm	r (min.) inch	Basic Load Ratings kN C_r	Basic Load Ratings kN C_{0r}	Factor f_0	Bearing No.	Dimensions C_a mm	C_a inch	S mm	S inch	S_2 mm	S_2 inch	d_1 mm	d_1 inch	Set Screw Brg.Bore mm	Set Screw Brg.Bore inch	Mass kg
–	1 3/8	72	2.835	23	0.906	36.5	1.437	17	0.669	1.1	0.043	25.7	15.4	13.9	SA207-22	–	–	8.5	0.335	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.5
		72	2.835	25.4	1.000	38.9	1.531	19	0.748	1.1	0.043	25.7	15.4	13.9	SA207-22F	5.7	0.224	9.5	0.335	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.57
		72	2.835	37.6	1.480	51.1	2.012	20	0.787	1.1	0.043	25.7	15.4	13.9	NA207-22	5.5	0.217	18.8	0.740	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.61
35	–	72	2.835	23	0.906	36.5	1.437	17	0.669	1.1	0.043	25.7	15.4	13.9	SA207	–	–	8.5	0.335	6.8	0.268	55.6	2.189	M8×1	–	0.5
		72	2.835	25.4	1.000	38.9	1.531	19	0.748	1.1	0.043	25.7	15.4	13.9	SA207F	5.7	0.224	9.5	0.335	6.8	0.268	55.6	2.189	M8×1	–	0.57
		72	2.835	37.6	1.480	51.1	2.012	20	0.787	1.1	0.043	25.7	15.4	13.9	NA207	5.5	0.217	18.8	0.740	6.8	0.268	55.6	2.189	M8×1	–	0.61
–	1 7/16	72	2.835	23	0.906	36.5	1.437	17	0.669	1.1	0.043	25.7	15.4	13.9	SA207-23	–	–	8.5	0.335	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.5
		72	2.835	25.4	1.000	38.9	1.531	19	0.748	1.1	0.043	25.7	15.4	13.9	SA207-23F	5.7	0.224	9.5	0.335	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.57
		72	2.835	37.6	1.480	51.1	2.012	20	0.787	1.1	0.043	25.7	15.4	13.9	NA207-23	5.5	0.217	18.8	0.740	6.8	0.268	55.6	2.189	–	5/16-24UNF	0.58
–	1 1/2	80	3.150	27	1.063	40.5	1.595	18	0.709	1.1	0.043	29.1	17.8	14.0	SA208-24	–	–	9	0.354	6.8	0.268	60.3	2.374	–	5/16-24UNF	0.67
		80	3.150	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	29.1	17.8	14.0	SA208-24F	6.4	0.252	11	0.433	6.8	0.268	60.3	2.374	–	5/16-24UNF	0.75
		80	3.150	42.8	1.685	56.3	2.217	21	0.827	1.1	0.043	29.1	17.8	14.0	NA208-24	6	0.236	21.4	0.843	6.8	0.268	60.3	2.374	–	5/16-24UNF	0.83
–	1 9/16	80	3.150	27	1.063	40.5	1.595	18	0.709	1.1	0.043	29.1	17.8	14.0	SA208-25	–	–	9	0.354	6.8	0.268	60.3	2.374	–	5/16-24UNF	0.67
		80	3.150	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	29.1	17.8	14.0	SA208-25F	6.4	0.252	11	0.433	6.8	0.268	60.3	2.374	–	5/16-24UNF	0.75
		80	3.150	42.8	1.685	56.3	2.217	21	0.827	1.1	0.043	29.1	17.8	14.0	NA208-25	6	0.236	21.4	0.843	6.8	0.268	60.3	2.374	–	5/16-24UNF	0.79
40	–	80	3.150	27	1.063	40.5	1.595	18	0.709	1.1	0.043	29.1	17.8	14.0	SA208	–	–	9	0.354	6.8	0.268	60.3	2.374	M8×1	–	0.67
		80	3.150	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	29.1	17.8	14.0	SA208F	6.4	0.252	11	0.433	6.8	0.268	60.3	2.374	M8×1	–	0.75
		80	3.150	42.8	1.685	56.3	2.217	21	0.827	1.1	0.043	29.1	17.8	14.0	NA208	6	0.236	21.4	0.843	6.8	0.268	60.3	2.374	M8×1	–	0.78
–	1 5/8	85	3.346	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	34.1	21.3	14.0	SA209-26F	6	0.236	11	0.433	6.8	0.268	63.5	2.500	–	5/16-24UNF	0.82
		85	3.346	42.8	1.685	56.3	2.217	22	0.866	1.1	0.043	34.1	21.3	14.0	NA209-26	6	0.236	21.4	0.843	6.8	0.268	63.5	2.500	–	5/16-24UNF	0.96
–	1 11/16	85	3.346	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	34.1	21.3	14.0	SA209-27F	6	0.236	11	0.433	6.8	0.268	63.5	2.500	–	5/16-24UNF	0.82
		85	3.346	42.8	1.685	56.3	2.217	22	0.866	1.1	0.043	34.1	21.3	14.0	NA209-27	6	0.236	21.4	0.843	6.8	0.268	63.5	2.500	–	5/16-24UNF	0.91
–	1 3/4	85	3.346	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	34.1	21.3	14.0	SA209-28F	6	0.236	11	0.433	6.8	0.268	63.5	2.500	–	5/16-24UNF	0.82
		85	3.346	42.8	1.685	56.3	2.217	22	0.866	1.1	0.043	34.1	21.3	14.0	NA209-28	6	0.236	21.4	0.843	6.8	0.268	63.5	2.500	–	5/16-24UNF	0.87
45	–	85	3.346	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	34.1	21.3	14.0	SA209F	6	0.236	11	0.433	6.8	0.268	63.5	2.500	M8×1	–	0.82
		85	3.346	42.8	1.685	56.3	2.217	22	0.866	1.1	0.043	34.1	21.3	14.0	NA209	6	0.236	21.4	0.843	6.8	0.268	63.5	2.500	M8×1	–	0.85
–	1 7/8	90	3.543	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	35.1	23.3	14.4	SA210-30F	6.6	0.260	11	0.433	6.8	0.268	69.9	2.752	–	5/16-24UNF	0.85
		90	3.543	49.2	1.937	62.7	2.469	24	0.945	1.1	0.043	35.1	23.3	14.4	NA210-30	6	0.236	24.6	0.969	6.8	0.268	69.9	2.752	–	5/16-24UNF	1.08
–	1 15/16	90	3.543	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	35.1	23.3	14.4	SA210-31F	6.6	0.260	11	0.433	6.8	0.268	69.9	2.752	–	5/16-24UNF	0.85
		90	3.543	49.2	1.937	62.7	2.469	24	0.945	1.1	0.043	35.1	23.3	14.4	NA210-31	6	0.236	24.6	0.969	6.8	0.268	69.9	2.752	–	5/16-24UNF	1.04
50	–	90	3.543	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	35.1	23.3	14.4	SA210F	6.6	0.260	11	0.433	6.8	0.268	69.9	2.752	M8×1	–	0.85
		90	3.543	49.2	1.937	62.7	2.469	24	0.945	1.1	0.043	35.1	23.3	14.4	NA210	6	0.236	24.6	0.969	6.8	0.268	69.9	2.752	M8×1	–	1.01
–	2	90	3.543	49.2	1.937	62.7	2.469	24	0.945	1.1	0.043	35.1	23.3	14.4	NA210-32	6	0.236	24.6	0.969	6.8	0.268	69.9	2.752	–	5/16-24UNF	0.99
		100	3.937	32.4	1.276	48.4	1.906	24	0.945	1.5	0.059	43.4	29.4	14.4	SA211-32F	7	0.276	12	0.472	8	0.315	76.2	3.000	–	3/8-24UNF	1.2
		100	3.937	55.5	2.185	71.4	2.811	25	0.984	1.5	0.059	43.4	29.4	14.4	NA211-32	7	0.276	27.8	1.094	8	0.315	76.2	3.000	–	3/8-24UNF	1.58
–	2 1/8	100	3.937	32.4	1.276	48.4	1.906	24	0.945	1.5	0.059	43.4	29.4	14.4	SA211-34F	7	0.276	12	0.472	8	0.315	76.2	3.000	–	3/8-24UNF	1.2
		100	3.937	55.5	2.185	71.4	2.811	25	0.984	1.5	0.059	43.4	29.4	14.4	NA211-34	7	0.276	27.8	1.094	8	0.315	76.2	3.000	–	3/8-24UNF	1.49
55	–	100	3.937	32.4	1.276	48.4	1.906	24	0.945	1.5	0.059	43.4	29.4	14.4	SA211F	7	0.276	12	0.472	8	0.315	76.2	3.000	M10×1.25	–	1.2
		100	3.937	55.5	2.185	71.4	2.811	25	0.984	1.5	0.059	43.4	29.4	14.4	NA211	7	0.276	27.8	1.094	8	0.315	76.2	3.000	M10×1.25	–	1.39
–	2 3/16	100	3.937	32.4	1.276	48.4	1.906	24	0.945	1.5	0.059	43.4	29.4	14.4	SA211-35F	7	0.276	12	0.472	8	0.315	76.2	3.000	–	3/8-24UNF	1.2
		100	3.937	55.5	2.185	71.4	2.811	25	0.984	1.5	0.059	43.4	29.4	14.4	NA211-35	7	0.276	27.8	1.094	8	0.315	76.2	3.000	–	3/8-24UNF	1.36
	2 1/4	110	4.331	61.9	2.437	77.8	3.063	27	1.063	1.5	0.059	52.4	36.2	14.4	NA212-36	7.5	0.295	31	1.220	8	0.315	84.2	3.315	–	3/8-24UNF	2.03
60		110	4.331	61.9	2.437	77.8	3.063	27	1.063	1.5	0.059	52.4	36.2	14.4	NA212	7.5	0.295	31	1.220	8	0.315	84.2	3.315	M10×1.25	–	1.87
	2 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
65		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
	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
70		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	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	9	0.354	37.3	1.469	8.5	0.335	102	4.016	M10×1.25	–	2.74
		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

ER, RB
Cylindrical bore (with set screws), Cylindrical outside surface
d 12 ~ 60 mm



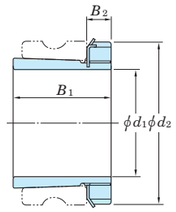
ER

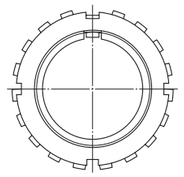


RB

Shaft Dia. mm	Shaft Dia. inch	Dimensions inch / mm D	B	C	r (min.)	r_1 (min.)	Basic Load Ratings kN C_r	C_{0r}	Factor f_0	Bearing No. (ER)	(RB)	Dimensions inch / mm S	S_1	S_2	C_c	a	f	D_2	Set Screw Brg. Bore G mm	inch	Mass kg (ER)	(RB)
12										**ER201**	**RB201**								M6×0.75	–	0.27	0.27
	1/2									**ER201-8**	**RB201-8**								–	1/4-28UNF	0.27	0.27
15		1.850	1.220	0.630	0.024	0.020	12.8	6.65	13.2	**ER202**	**RB202**	0.500	0.720	0.197	0.157	0.094	0.042	2.067	M6×0.75	–	0.25	0.25
		47	31	16	0.6	0.5						12.7	18.3	5	4	2.38	1.07	52.5				
	5/8									**ER202-10**	**RB202-10**								–	1/4-28UNF	0.25	0.25
17										**ER203**	**RB203**								M6×0.75	–	0.24	0.24
20	3/4	1.850	1.220	0.630	0.039	0.020	12.8	6.65	13.2	**ER204-12**	**RB204-12**	0.500	0.720	0.197	0.157	0.094	0.042	2.067	–	1/4-28UNF	0.22	0.22
		47	31	16	1	0.5				**ER204**	**RB204**	12.7	18.3	5	4	2.38	1.07	52.5	M6×0.75	–	0.22	0.22
	7/8									**ER205-14**	**RB205-14**								–	1/4-28UNF	0.3	0.29
25	15/16	2.047	1.343	0.748	0.039	0.020	14.0	7.85	13.9	**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
		52	34.1	19	1	0.5				**ER205**	**RB205**	14.3	19.8	5.5	5	2.38	1.07	57.7	M6×0.75	–	0.27	0.26
	1									**ER205-16**	**RB205-16**								–	1/4-28UNF	0.27	0.26
	1 1/8									**ER206-18**	**RB206-18**								–	1/4-28UNF	0.41	0.4
30		2.441	1.500	0.866	0.039	0.020	19.5	11.3	13.9	**ER206**	**RB206**	0.626	0.874	0.236	0.217	0.125	0.065	2.657	M6×0.75	–	0.39	0.38
	1 3/16	62	38.1	22	1	0.5				**ER206-19**	**RB206-19**	15.9	22.2	6	5.5	3.18	1.65	67.5	–	1/4-28UNF	0.39	0.38
	1 1/4									**ER206-20**	**RB206-20**								–	1/4-28UNF	0.37	0.36
	1 1/4									**ER207-20**	**RB207-20**								–	5/16-24UNF	0.69	0.68
	1 5/16									**ER207-21**	**RB207-21**								–	5/16-24UNF	0.66	0.65
35	1 3/8	2.835	1.689	0.945	0.043	0.020	25.7	15.4	13.9	**ER207-22**	**RB207-22**	0.689	1.000	0.256	0.217	0.125	0.065	3.087	–	5/16-24UNF	0.64	0.63
		72	42.9	24	1.1	0.5				**ER207**	**RB207**	17.5	25.4	6.5	5.5	3.18	1.65	78.4	M8×1	–	0.63	0.62
	1 7/16									**ER207-23**	**RB207-23**								–	5/16-24UNF	0.61	0.6
	1 1/2									**ER208-24**	**RB208-24**								–	5/16-24UNF	0.85	0.84
40	1 9/16	3.150	1.937	1.102	0.043	0.020	29.1	17.8	14.0	**ER208-25**	**RB208-25**	0.748	1.189	0.315	0.236	0.125	0.065	3.402	–	5/16-24UNF	0.82	0.81
		80	49.2	28	1.1	0.5				**ER208**	**RB208**	19	30.2	8	6	3.18	1.65	86.4	M8×1	–	0.81	0.78
	1 5/8									**ER209-26**	–								–	5/16-24UNF	1.0	–
45	1 11/16	3.346	1.937	1.102	0.043	0.020	34.1	21.3	14.0	**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				**ER209-28**	–	19	30.2	8	6	3.18	1.65	91.4	–	5/16-24UNF	0.92	–
										ER209	–								M8×1	–	0.90	–
	1 7/8									**ER210-30**	–								–	3/8-24UNF	1.05	–
50	1 15/16	3.543	2.031	1.102	0.043	0.020	35.1	23.3	14.4	**ER210-31**	–	0.748	1.283	0.354	0.295	0.125	0.095	3.791	–	3/8-24UNF	1.0	–
		90	51.6	28	1.1	0.5				**ER210**	–	19	32.6	9	7.5	3.18	2.41	96.3	M10×1.25	–	0.98	–
	2									**ER210-32**	–								–	3/8-24UNF	0.96	–
	2									**ER211-32**	–								–	3/8-24UNF	1.56	–
55	2 1/8	3.937	2.189	1.181	0.059	0.020	43.4	29.4	14.4	**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				**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	–
	2 1/4									**ER212-36**	–								–	3/8-24UNF	2.02	–
60		4.331	2.563	1.260	0.059	0.020	52.4	36.2	14.4	**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				**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	–

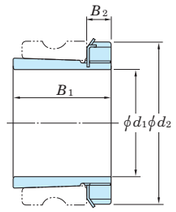
H300X, H2300X
d_1 20 ~ (70) mm

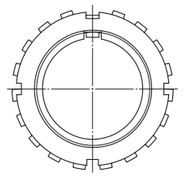




Shaft Dia. d_1 mm (H)	Shaft Dia. d_1 inch (HE)	Shaft Dia. d_1 inch (HS)	Dimensions inch/mm B_1	Dimensions inch/mm B_2	Dimensions inch/mm d_2	Adapter assembly No. (H)	Adapter assembly No. (HE)	Adapter assembly No. (HS)	Sleeve No. (H)	Sleeve No. (HE)	Sleeve No. (HS)	Lock Nut No.	Washer No.	Mass kg (H)	Mass kg (HE)	Mass kg (HS)
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	–
25	–	–	1.496	0.315	1.772	**H2306X**	–	–	A2306X	–	–	AN06	AW06X	0.13	–	–
	1	–	38	8	45	–	**HE2306X**	–	–	AE2306X	–	AN06	AW06X	–	0.12	–
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	–	–	1.693	0.354	2.047	**H2307X**	–	–	A2307X	–	–	AN07	AW07X	0.17	–	–
	–	1 1/8	43	9	52	–	–	**HS2307X**	–	–	AS2307X	AN07	AW07X	–	–	0.19
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	–
	–	1 3/8				–	–	**HS308X**	–	–	AS308X	AN08	AW08X	–	–	0.19
35	–	–	1.811	0.394	2.283	**H2308X**	–	–	A2308X	–	–	AN08	AW08X	0.22	–	–
	1 1/4	–	46	10	58	–	**HE2308X**	–	–	AE2308X	–	AN08	AW08X	–	0.28	–
	–	1 3/8				–	–	**HS2308X**	–	–	AS2308X	AN08	AW08X	–	–	0.22
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	–
	–	1 5/8				–	–	**HS309X**	–	–	AS309X	AN09	AW09X	–	–	0.23
40	–	–	1.969	0.433	2.559	**H2309X**	–	–	A2309X	–	–	AN09	AW09X	0.28	–	–
	1 1/2	–	50	11	65	–	**HE2309X**	–	–	AE2309X	–	AN09	AW09X	–	0.32	–
	–	1 5/8				–	–	**HS2309X**	–	–	AS2309X	AN09	AW09X	–	–	0.25
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	–
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	–
50	–	–	1.772	0.472	2.953	**H311X**	–	–	A311X	–	–	AN11	AW11X	0.35	–	–
	2	–	45	12	75	–	**HE311X**	–	–	AE311X	–	AN11	AW11X	–	0.33	–
	–	1 7/8				–	–	**HS311X**	–	–	AS311X	AN11	AW11X	–	–	0.41
50	–	–	2.323	0.472	2.953	**H2311X**	–	–	A2311X	–	–	AN11	AW11X	0.42	–	–
	2	–	59	12	75	–	**HE2311X**	–	–	AE2311X	–	AN11	AW11X	–	0.40	–
	–	1 7/8				–	–	**HS2311X**	–	–	AS2311X	AN11	AW11X	–	–	0.50
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
60	–	–	1.969	0.551	3.346	**H313X**	–	–	A313X	–	–	AN13	AW13X	0.46	–	–
	2 1/4	–	50	14	85	–	**HE313X**	–	–	AE313X	–	AN13	AW13X	–	0.56	–
	–	2 3/8				–	–	**HS313X**	–	–	AS313X	AN13	AW13X	–	–	0.45
60	–	–	2.559	0.551	3.346	**H2313X**	–	–	A2313X	–	–	AN13	AW13X	0.56	–	–
	2 1/4	–	65	14	85	–	**HE2313X**	–	–	AE2313X	–	AN13	AW13X	–	0.69	–
	–	2 3/8				–	–	**HS2313X**	–	–	AS2313X	AN13	AW13X	–	–	0.55
65	–	–	2.165	0.591	3.858	**H315X**	–	–	A315X	–	–	AN15	AW15X	0.83	–	–
	2 1/2	–	55	15	98	–	**HE315X**	–	–	AE315X	–	AN15	AW15X	–	0.89	–
65	–	–	2.874	0.591	3.858	**H2315X**	–	–	A2315X	–	–	AN15	AW15X	1.05	–	–
	2 1/2	–	73	15	98	–	**HE2315X**	–	–	AE2315X	–	AN15	AW15X	–	1.15	–
70	–	–	2.323	0.669	4.134	**H316X**	–	–	A316X	–	–	AN16	AW16X	1.05	–	–
	2 3/4	–	59	17	105	–	**HE316X**	–	–	AE316X	–	AN16	AW16X	–	1.05	–

H300X, H2300X
d_1 (70) ~ 125 mm





Shaft Dia. d_1 mm (H)	Shaft Dia. d_1 inch (HE)	Shaft Dia. d_1 inch (HS)	Dimensions inch/mm B_1	Dimensions inch/mm B_2	Dimensions inch/mm d_2	Adapter assembly No. (H)	Adapter assembly No. (HE)	Adapter assembly No. (HS)	Sleeve No. (H)	Sleeve No. (HE)	Sleeve No. (HS)	Lock Nut No.	Washer No.	Mass kg (H)	Mass kg (HE)	Mass kg (HS)
70	–	–	3.071	0.669	4.134	**H2316X**	–	–	A2316X	–	–	AN16	AW16X	1.3	–	–
	2 3/4	–	78	17	105	–	**HE2316X**	–	–	AE2316X	–	AN16	AW16X	–	1.3	–
75	–	–	2.480	0.709	4.331	**H317X**	–	–	A317X	–	–	AN17	AW17X	1.2	–	–
	3	–	63	18	110	–	**HE317X**	–	–	AE317X	–	AN17	AW17X	–	1.1	–
75	–	–	3.228	0.709	4.331	**H2317X**	–	–	A2317X	–	–	AN17	AW17X	1.45	–	–
	3	–	82	18	110	–	**HE2317X**	–	–	AE2317X	–	AN17	AW17X	–	1.35	–
80	–	–	2.559	0.709	4.724	**H318X**	–	–	A318X	–	–	AN18	AW18X	1.4	–	–
	–	–	65	18	120											
80	–	–	3.386	0.709	4.724	**H2318X**	–	–	A2318X	–	–	AN18	AW18X	1.7	–	–
	–	–	86	18	120											
85	–	–	3.543	0.748	4.921	**H2319X**	–	–	A2319X	–	–	AN19	AW19X	1.95	–	–
	3 1/4	–	90	19	125	–	**HE2319X**	–	–	AE2319X	–	AN19	AW19X	–	2.15	–
90	–	–	3.819	0.787	5.118	**H2320X**	–	–	A2320X	–	–	AN20	AW20X	2.2	–	–
	3 1/2	–	97	20	130	–	**HE2320X**	–	–	AE2320X	–	AN20	AW20X	–	2.3	–
100	–	–	4.134	0.827	5.709	**H2322X**	–	–	A2322X	–	–	AN22	AW22X	2.75	–	–
	4	–	105	21	145	–	**HE2322X**	–	–	AE2322X	–	AN22	AW22X	–	2.55	–
110	–	–	4.409	0.866	6.102	**H2324**	–	–	A2324	–	–	AN24	AW24	3.2	–	–
			112	22	155											
115	–	–	4.764	0.906	6.496	**H2326**	–	–	A2326	–	–	AN26	AW26	4.6	–	–
	4 1/2	–	121	23	165	–	**HE2326**	–	–	AE2326	–	AN26	AW26	–	4.7	–
125	–	–	5.157	0.945	7.087	**H2328**	–	–	A2328	–	–	AN28	AW28	5.5	–	–
			131	24	180											

16 Parts and accessories

16.1 Part No. of pressed steel covers

Table 16.1 Part No. of pressed steel cover for UC type bearing

Bearing No.	Shaft dia. (mm)	Pressed steel cover No.	
		Open ends type	Closed end type
UC201	12	C– 4×12	D– 4
UC202	15	C– 4×15	D– 4
UC203	17	C– 4×17	D– 4
UC204	20	C– 4×20	D– 4
UC205	25	C– 5×25	D– 5
UC206	30	C– 6×30	D– 6
UC207	35	C– 7×35	D– 7
UC208	40	C– 8×40	D– 8
UC209	45	C– 9×45	D– 9
UC210	50	C–10×50	D–10
UC211	55	C–11×55	D–11
UC212	60	C–12×60	D–12
UC213	65	C–13×65	D–13
UC214	70	C–14×70	D–14
UC215	75	C–15×75	D–15
UC216	80	C–16×80	D–16
UC217	85	C–17×85	D–17
UC218	90	C–18×90	D–18
UCX05	25	C– 6×25	D– 6
UCX06	30	C– 7×30	D– 7
UCX07	35	C– 8×35	D– 8
UCX08	40	C– 9×40	D– 9
UCX09	45	C–10×45	D–10
UCX10	50	C–11×50	D–11
UCX11	55	C–12×55	D–12
UCX12	60	C–13×60	D–13
UCX13	65	C–14×65	D–14
UCX14	70	C–15×70	D–15
UCX15	75	C–16×75	D–16
UCX16	80	C–17×80	D–17
UCX17	85	C–18×85	D–18

Remark In the Part No. of the pressed steel covers for shouldered shaft, shaft diameter follows the basic code of the cover. For example, Part No. of the cover for a shaft with 30 mm diameter for UC206 is C–6×30.

Table 16.2 Part No. of pressed steel cover for UK type bearing

Bearing No.	Shaft dia. (mm)	Pressed steel cover No.	
		Open ends type	Closed end 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

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 ends type	Closed end 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 ends type	Closed end 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 block type (P), square-flanged type (F), rhombic-flanged 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).

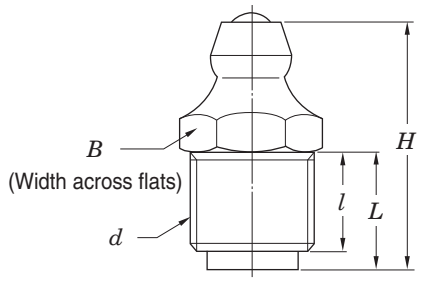
2) Items in parentheses are applicable to the round-flanged type with joint (FC), and can be mounted to housings with three hexagon socket head cap screws (use four to mount other items).

Remark In the nominal No. 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 number and dimensions of grease nipples and reducing socket

Table 16.5 Nominal number and dimensions of grease nipple

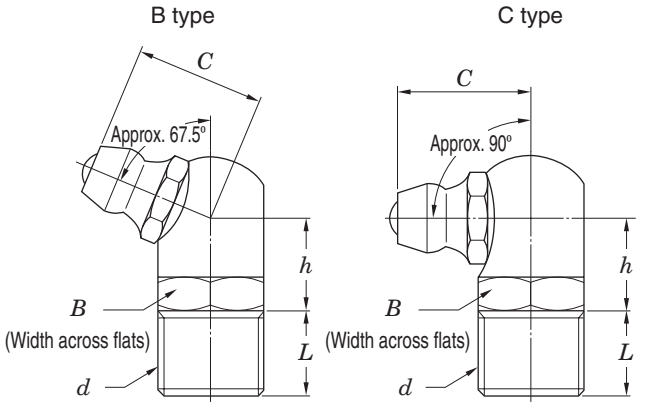
(1) Nominal number and dimensions of A type grease nipple



Unit : mm

Nominal grease nipple No.	Nominal screw code d	B	H	L	l
A–1/4-28UNF	1/4-28UNF	7	13.5	5.4	4
A–PT1/8	PT1/8	10	20	9.5	8

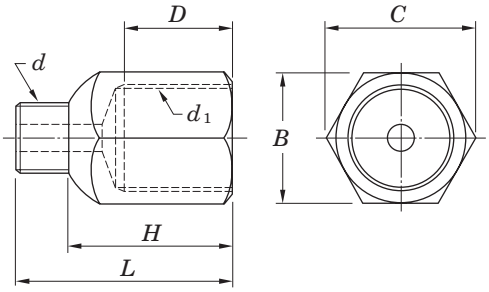
(2) Nominal number and dimensions of B and C type grease nipples



Unit : mm

Nominal grease nipple No.	Nominal screw code d	Type	B	C	h	L
B–1/4-28UNF	1/4-28UNF	B	8	9.5	6.5	5
C–1/4-28UNF		C				
B–PT1/8	PT1/8	B	10	12.5	8.5	8
C–PT1/8		C				

Table 16.6 Nominal number and dimensions of reducing socket code

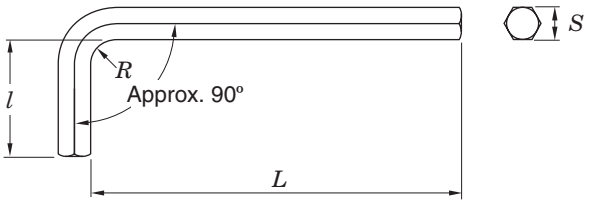


Unit : mm

Nominal No. of reducing socket	Nominal male thread code d	Nominal female thread code d_1	B	C	D	H	L
1/4-28UNF–PT1/8	1/4-28UNF	PT1/8	12	13.8	10	15	20
1/4-28UNF–PF1/8		PF1/8					
1/4-28UNF–PT1/4	1/4-28UNF	PT1/4	17	19.6	11	17	22
1/4-28UNF–PF1/4		PF1/4					
PT1/8–PT1/4	PT1/8	PT1/4	17	19.6	11	19	26
PT1/8–PF1/4		PF1/4					

16.4 Nominal number and dimensions of Allen key wrench

Table 16.7 Nominal number and dimensions of Allen key wrench



Unit : mm

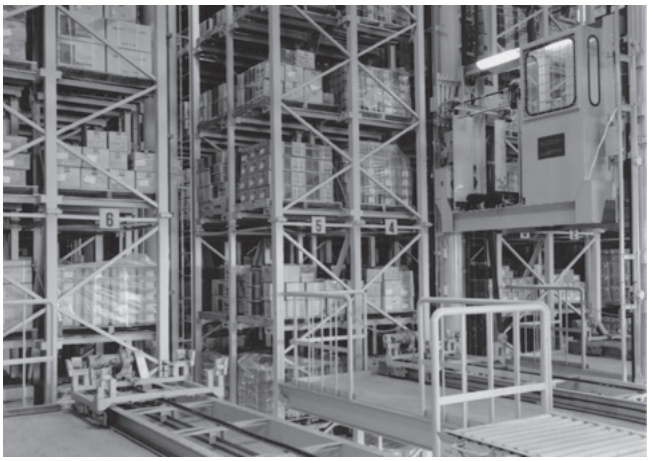
Nominal No. of Allen key wrench	S	L (Approx.)	l (Approx.)	R (Approx.)	Applicable set screw
2.5	2.5	56	18	2.5	M5
3	3	63	20	3	M6
4	4	70	25	4	M8
5	5	80	28	5	M10
6	6	90	32	6	M12, M14
8	8	100	36	8	M16, M18
10	10	112	40	10	M20

17 Example of use

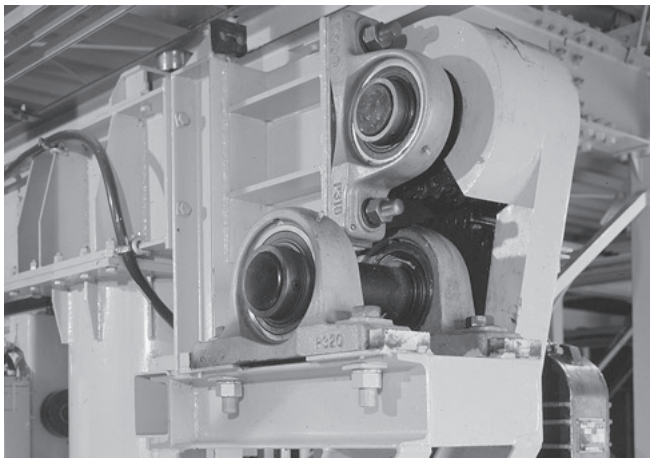
Koyo Ball Bearing units are used in varied equipment, and their performance contributes to technical advantages, automation, and energy-saving of equipment.

Automatic warehouse system

Many ball bearings are used in automatic warehouse systems for automation and energy-saving of the systems.



Automatic warehouse system



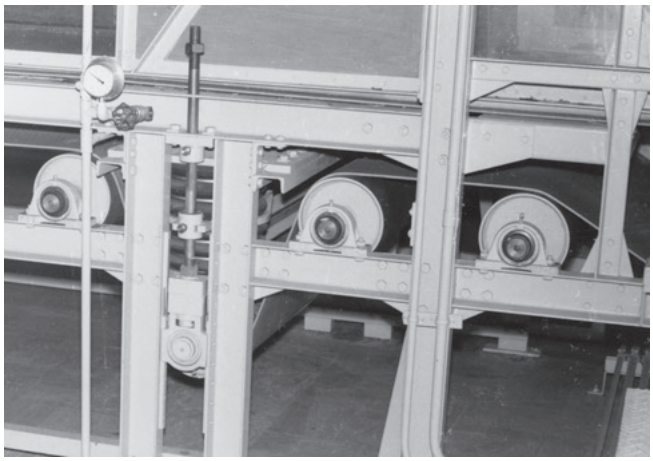
Mast driving system

Conveyor

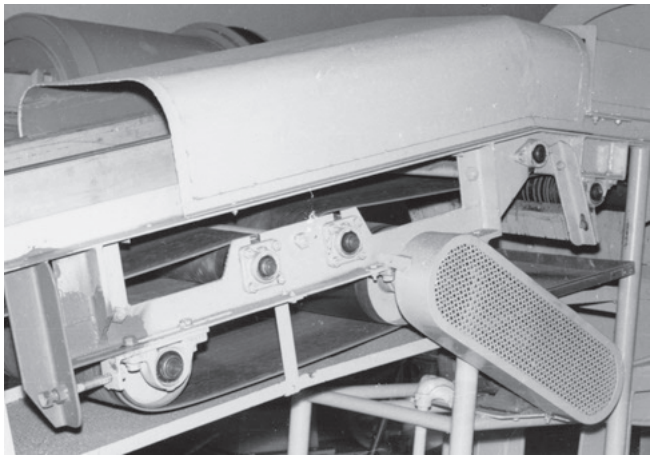
Delivery center

Koyo Ball bearings of various types including pillow block type, flange type, take-up type are used in conveyors of delivery centers.

Belt conveyor



Belt conveyor driving system

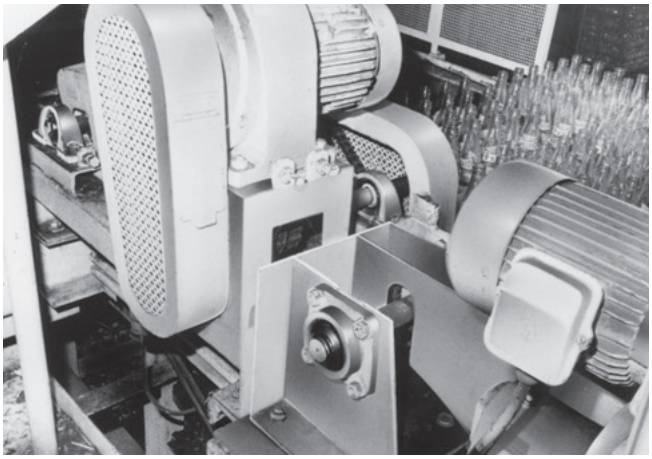


Belt conveyor driving system

Soft drink plant

Since soft drink manufacturing facilities are frequently cleaned for hygiene control, covered unit, “compact” series unit, and stainless-series unit are suitable for them.

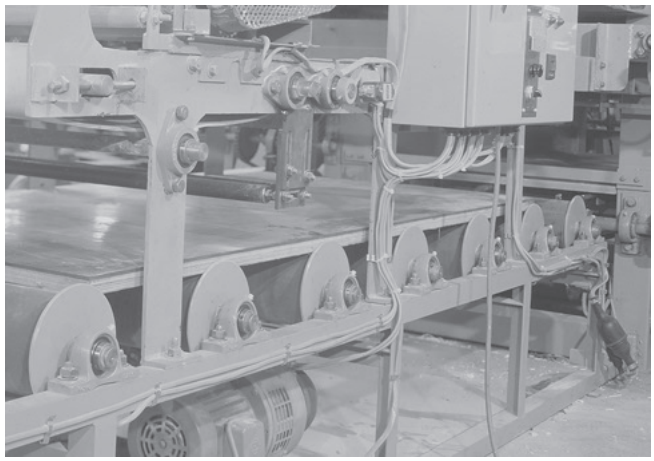
Bottle filling line conveyor



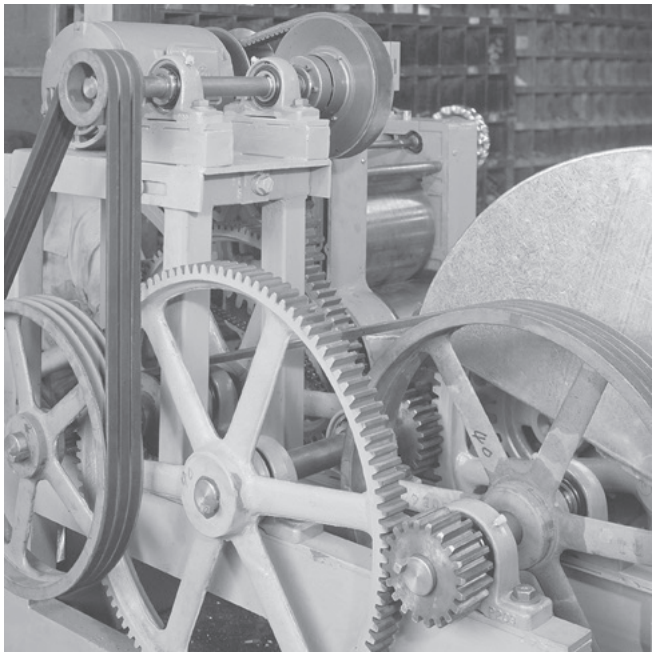
Pallet driving system

Noodle manufacturing plant

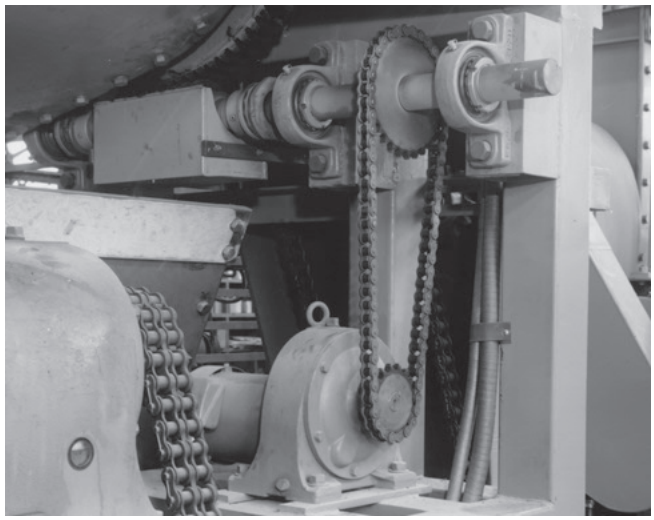
Triple-lip seal units or covered units are suitable for locations dusted with a great deal of noodle flour.



Feeding system



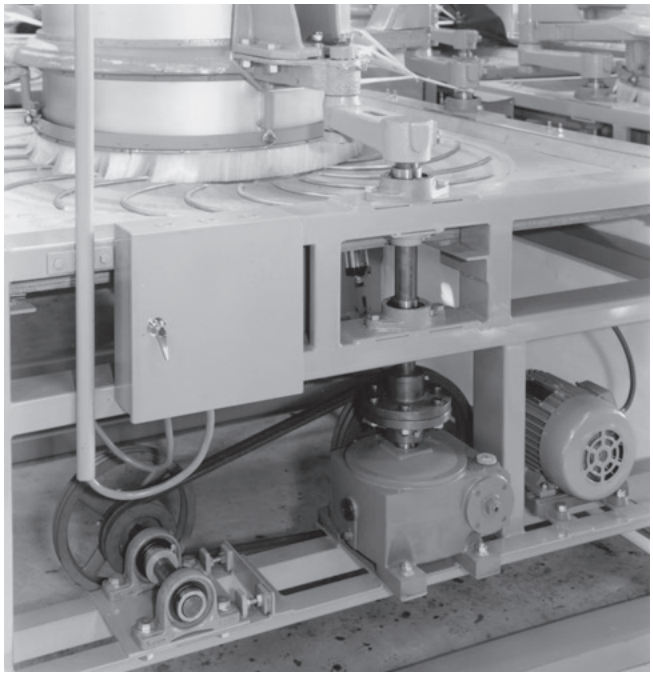
Noodle manufacturing machine driving system



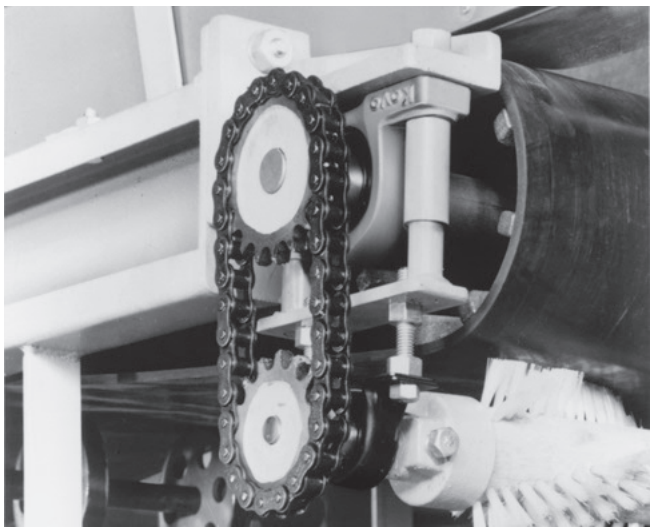
Mixer driving system

Tea manufacturing plant

Koyo Ball Bearings contribute to the automation of tea manufacturing lines and downsizing of tea manufacturing machines.



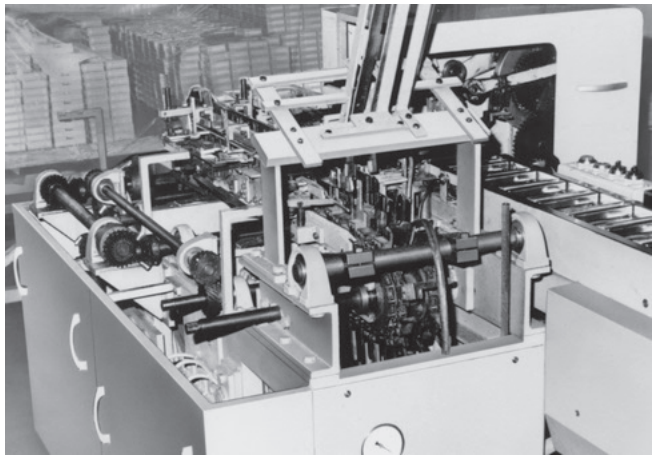
Tea processor driving system



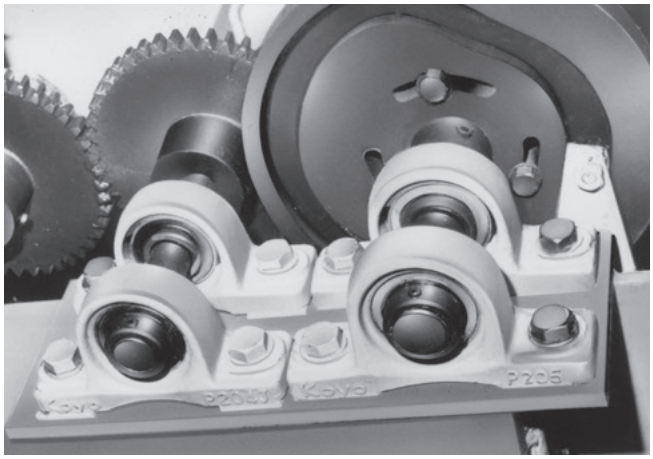
Conveyor driving system

Packing machine

Koyo Ball Bearings, used in transmission units, cam shafts, and conveyors, contribute to high-efficiency and automation of packing lines.



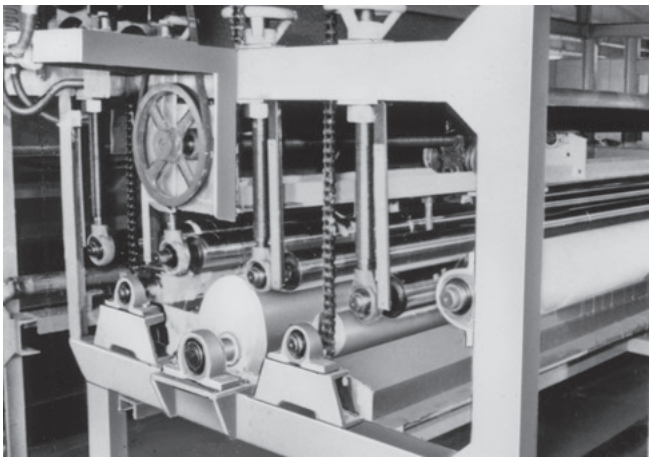
Packing machine



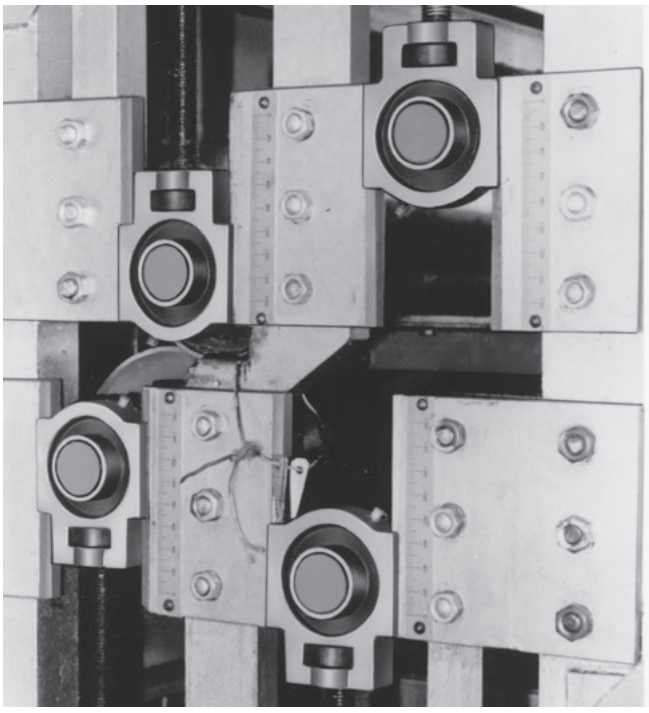
Cam shaft

Textile machine

Take-up units are suitable for locations where adjustment of distance between shaft axes is required, while hanger units are suitable for locations where the shaft must be hung because of the structure of the machine.



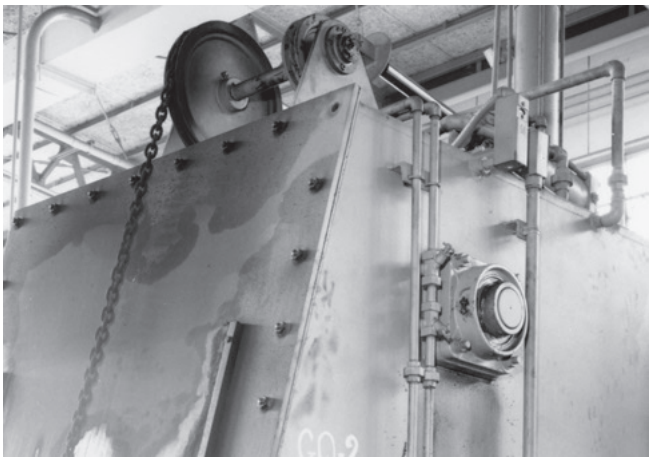
Carpet pasting system



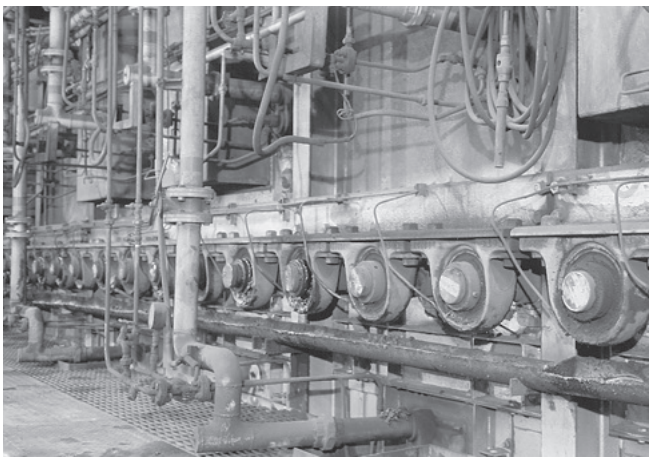
Carpet feeding shaft

Heat treatment system

The heat resistant unit is used for applications at a high temperature.



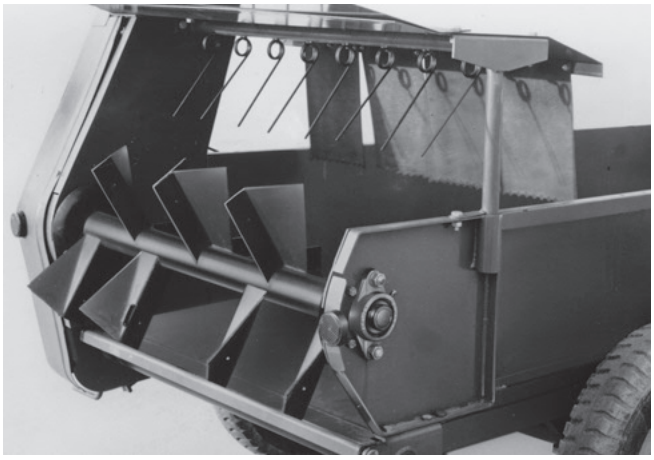
Carburizing furnace



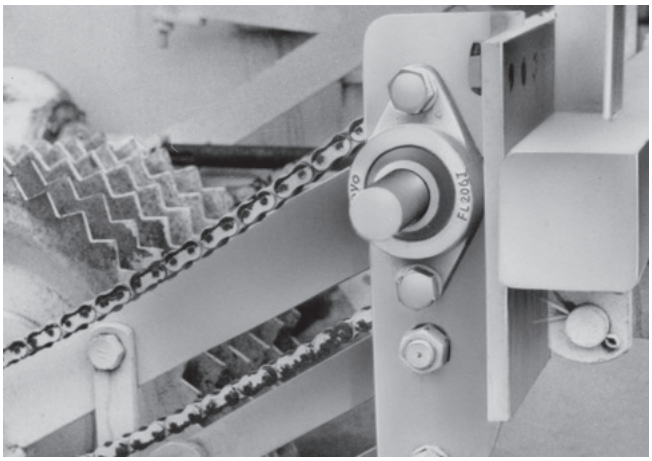
Heat treatment furnace

Agricultural machine

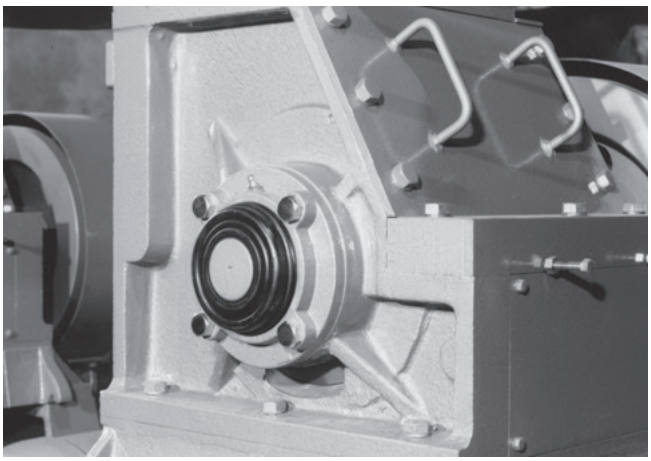
Koyo Ball Bearings contribute to downsizing and high-performance of agricultural machines. Triple-lip seal units or covered units are suitable for locations where are subject to a great deal of mud water and dusts.



Small wagon



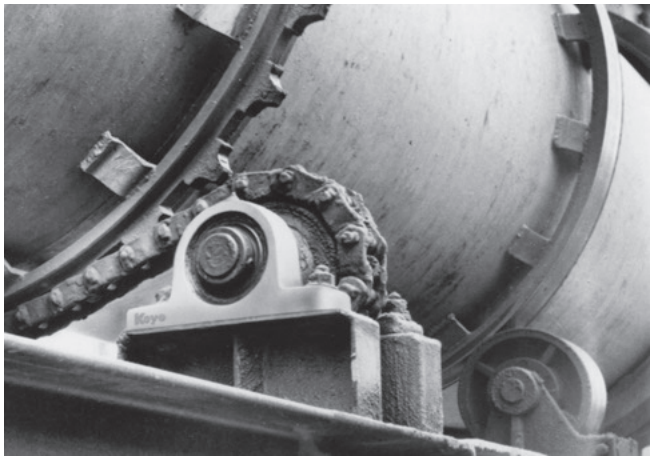
Beat harvester power transmission system



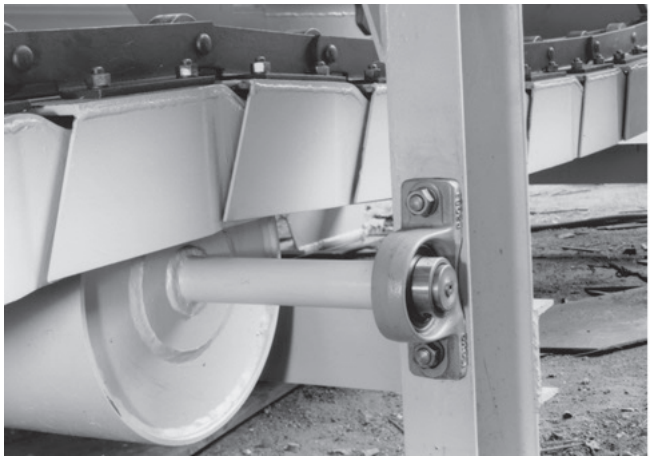
Grain mill

Construction machinery

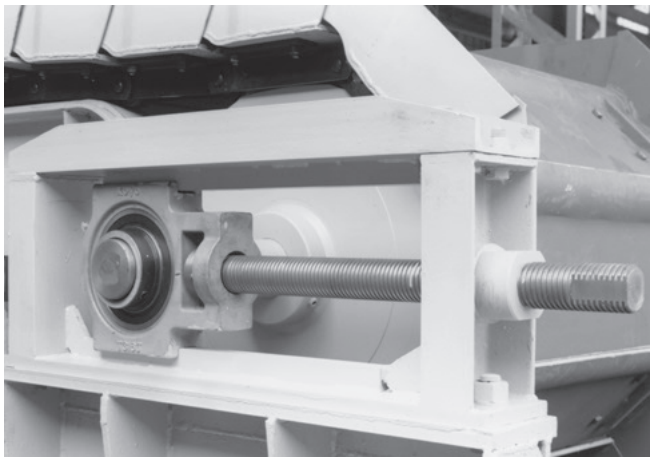
Koyo Ball Bearings contribute to high-performance and longer service life of construction machinery used under severe environment.



Concrete mixer



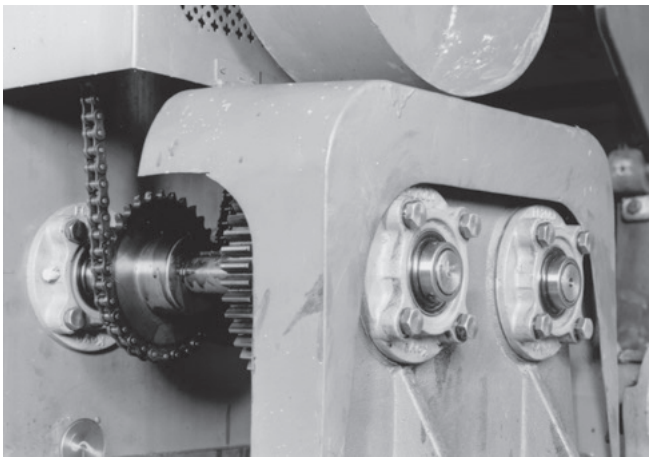
Conveyor



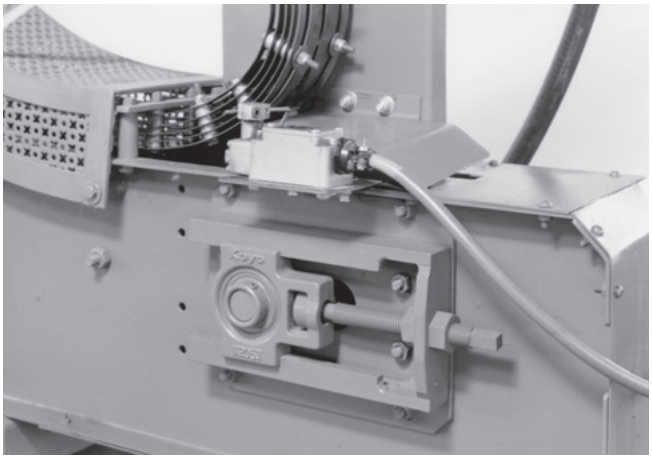
Conveyor

Other applications

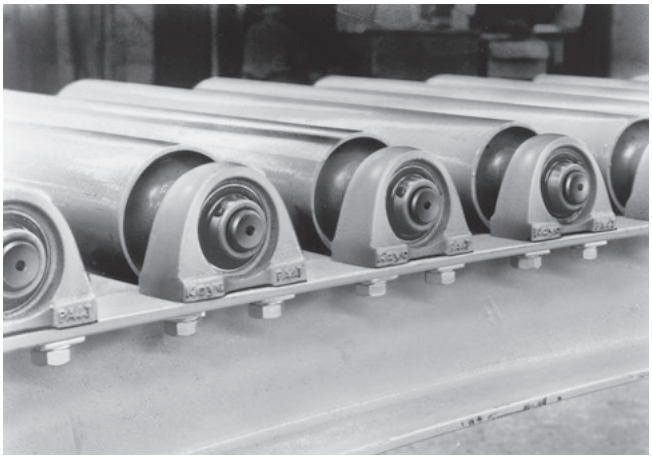
Ball Bearings of various types appropriate for applications and specifications are used.



(Round-flanged type with spigot joint)



(Take-up type unit)



(Pillow block type unit)

Supplementary table (contents)

Supplementary table 1 Simplified chart of ball bearing unit combinations

Type	Housing for units	Ball bearing for units						
		Cylindrical bore (with set screws) 				Tapered bore (with adapter) 		
		UC200	UCX00	UC300	Stainless steel UC200S6	UK200	UKX00	UK300
Pillow block type 	P200, PX00, P300 PK200 P200SC, P300SC	UCP200 UCP200SC	UCPX00	UCP300 UCP300SC		UKP200 UKP200SC	UKPX00	UKP300 UKP300SC
	IP200, IP300 PA200, SPA200H1	UCIP200 UCPA200		UCIP300	UCSPA200H1S6	UKIP200		UKIP300
	PH200 LP200	UCPH200						
	P000, SP000 SP200H1 PP200				UCSP200H1S6			
Square-flanged type 	F200, FX00, F300 F200E, FX00E SF200H1 NF200 FS300	UCF200 UCF200E	UCFX00 UCFX00E	UCF300 UCFS300	 UCSF200H1S6	UKF200	UKFX00	UKF300 UKFS300
Oval flange type 	FL200, FLX00, FL300 FL200E FA200	UCFL200 UCFL200E UCFA200	UCFLX00	UCFL300		UKFL200	UKFLX00	UKFL300
	FB200 LF200	UCFB200						
	FL000, SFL000 NFL200 SFL200H1				UCSFL200H1S6			
Round-flanged type with spigot joint 	FC200, FCX00, FCX00E	UCFC200	UCFCX00 UCFCX00E			UKFC200	UKFCX00	
Pressed steel flange type 	PF200 PFL200							
Take-up type 	T200, TX00, T300 T200E, TX00E ST200H1 T200+H	UCT200 UCT200E UCTH200	UCTX00 UCTX200E	UCT300	 UCST200H1S6	UKT200	UKTX00	UKT300
	TL200 TU200, TU300	UCTL200 UCTU200		 UCTU300		(UKTL200) (UKTU200)		 (UKTU300)
	PTH200 NPTH200							
Cartridge type 	C200, CX00, C300	UCC200	UCCX00	UCC300		UKC200	UKCX00	UKC300
Hanger type 	HA200	UCHA200						

Ball bearing for units					Housing for units	Type
Cylindrical bore (with set screws)			Cylindrical bore (with eccentric locking collar)			
						
"Compact" series SU000	Stainless steel SU000S6	SB200	SA200	NA200		
				NAP200 NAPK200	P200, PX00, P300 PK200 P200SC, P300SC	Pillow block type 
					IP200, IP300 PA200, SPA200H1	
		BLP200	ALP200		PH200 LP200	
UP000	USP000S6	SBPP200	SAPP200		P000, SP000 SP200H1 PP200	
				NANF200	F200, FX00, F300 F200E, FX00E SF200H1 NF200 FS300	Square-flanged type 
					FL200, FLX00, FL300 FL200E FA200	Oval flange type 
		BLF200	ALF200		FB200 LF200	
UFL000	USFL000S6			NANFL200	FL000, SFL000 NFL200 SFL200H1	
				NAFC200	FC200, FCX00, FCX00E	Round-flanged type with spigot joint 
		SBPF200 SBPFL200	SAPF200 SAPFL200		PF200 PFL200	Pressed steel flange type 
				NAT200	T200, TX00, T300 T200E, TX00E ST200H1 T200+H	Take-up type 
					TL200 TU200, TU300	
		SBPTH200 SBNPTH200			PTH200 NPTH200	
				NAC200	C200, CX00, C300	Cartridge type 
					HA200	Hanger type 

Supplementary table 2 Tightening torques of mounting bolts for housing and cast iron cover

(1) Tightening torques of mounting bolts for housing (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 mounting bolts for cast iron cover (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

Supplementary table 3 Tightening torques of set screws for inner ring and eccentric locking collar

(1) Tightening torques of set screws for inner ring and eccentric locking collar (metric series) (recommended)

Nominal size of screws	Tightening torques, N · m	Part No. of applicable bearings						
		UC200, RB200	UCX00	UC300	NA200	SB200	SU000	ER200
M 3X0.35	0.7						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	–	204–207	–	201–206
M 6X1	4	–	–	–	204, 205	–		
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				

(2) Tightening torques of set screws for inner ring and eccentric locking collar (inch series) (recommended)

Nominal size of screws	Tightening torques, N · m	Part No. of applicable bearings		
		UC200, ER200, RB200	UCX00	SB200
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	

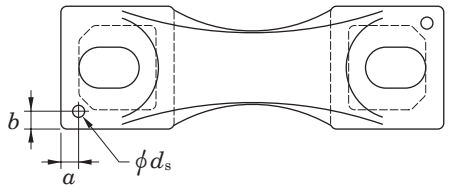
Supplementary table 4 Tightening torques of adapter lock nuts (reference)

Bore code	Tightening torques, N · m		
	UK200	UKX00	UK300
05	24.5	34	29
06	29	39	44
07	39	49	59
08	49	73	78
09	59	78	117
10	73	108	147
11	98	137	177
12	127	167	225
13	147	196	265
15	167	215	373

Bore code	Tightening torques, N · m		
	UK200	UKX00	UK300
16	196	255	441
17	225	294	530
18	265	343	608
19	–	–	706
20		490	883
22		–	1 220
24			1 470
26			1 770
28			2 150

Supplementary table 5 Machining dimensions of holes for housing dowel pins

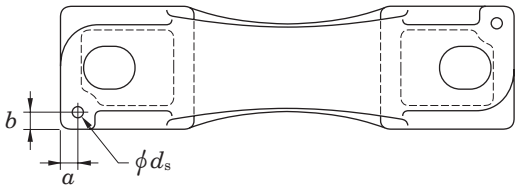
(1) Machining dimensions of holes for pillow block type housing (P) dowel pins (recommended)



Unit : mm

Nominal No.	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

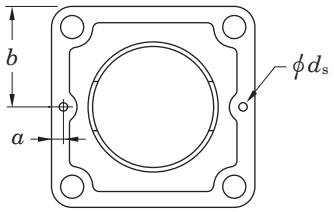
(2) Machining dimensions of holes for cast steel pillow block type housing (PSC) dowel pins (recommended)



Unit : mm

Nominal No.	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

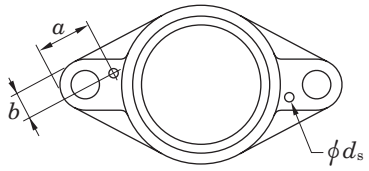
(3) Machining dimensions of holes for square-flanged type housing (F) dowel pins (recommended)



Unit : mm

Nominal No.	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 for Rombic-flanged type housing (FL) dowel pins (recommended)



Unit : mm

Nominal No.	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
FL321	86	34	13	40
FL322	86	36	13	42
FL324	94	41	13	48
FL326	95	41	13	50
FL328	103	45	13	60

Supplementary table 6 Shaft tolerances (deviation from nominal dimensions)

Nominal shaft dia. (mm)		Deviation classes of shaft dia.															
Over	Up to	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} : Single plane mean bore diameter deviation

Unit : μm

k 5	k 6	k 7	m 5	m 6	m 7	n 5	n 6	p 6	r 6	r 7	Nominal shaft dia. (mm) Over	Up to	(Reference) Δ_{dmp}* of bearing (class 0)
+ 6 + 1	+ 9 + 1	+13 + 1	+ 9 + 4	+12 + 4	+ 16 + 4	+13 + 8	+ 16 + 8	+ 20 + 12	+ 23 + 15	+ 27 + 15	3	6	0 − 8
+ 7 + 1	+10 + 1	+16 + 1	+12 + 6	+15 + 6	+ 21 + 6	+16 +10	+ 19 + 10	+ 24 + 15	+ 28 + 19	+ 34 + 19	6	10	0 − 8
+ 9 + 1	+12 + 1	+19 + 1	+15 + 7	+18 + 7	+ 25 + 7	+20 +12	+ 23 + 12	+ 29 + 18	+ 34 + 23	+ 41 + 23	10	18	0 − 8
+11 + 2	+15 + 2	+23 + 2	+17 + 8	+21 + 8	+ 29 + 8	+24 +15	+ 28 + 15	+ 35 + 22	+ 41 + 28	+ 49 + 28	18	30	0 − 10
+13 + 2	+18 + 2	+27 + 2	+20 + 9	+25 + 9	+ 34 + 9	+28 +17	+ 33 + 17	+ 42 + 26	+ 50 + 34	+ 59 + 34	30	50	0 − 12
+15 + 2	+21 + 2	+32 + 2	+24 +11	+30 +11	+ 41 + 11	+33 +20	+ 39 + 20	+ 51 + 32	+ 60 + 41	+ 71 + 41	50	65	0 − 15
									+ 62 + 43	+ 73 + 43	65	80	
+18 + 3	+25 + 3	+38 + 3	+28 +13	+35 +13	+ 48 + 13	+38 +23	+ 45 + 23	+ 59 + 37	+ 73 + 51	+ 86 + 51	80	100	0 − 20
									+ 76 + 54	+ 89 + 54	100	120	
+21 + 3	+28 + 3	+43 + 3	+33 +15	+40 +15	+ 55 + 15	+45 +27	+ 52 + 27	+ 68 + 43	+ 88 + 63	+103 + 63	120	140	0 − 25
									+ 90 + 65	+105 + 65	140	160	
									+ 93 + 68	+108 + 68	160	180	
+24 + 4	+33 + 4	+50 + 4	+37 +17	+46 +17	+ 63 + 17	+51 +31	+ 60 + 31	+ 79 + 50	+106 + 77	+123 + 77	180	200	0 − 30
									+109 + 80	+126 + 80	200	225	
									+113 + 84	+130 + 84	225	250	
+27 + 4	+36 + 4	+56 + 4	+43 +20	+52 +20	+ 72 + 20	+57 +34	+ 66 + 34	+ 88 + 56	+126 + 94	+146 + 94	250	280	0 − 35
									+130 + 98	+150 + 98	280	315	
+29 + 4	+40 + 4	+61 + 4	+46 +21	+57 +21	+ 78 + 21	+62 +37	+ 73 + 37	+ 98 + 62	+144 +108	+165 +108	315	355	0 − 40
									+150 +114	+171 +114	355	400	
+32 + 5	+45 + 5	+68 + 5	+50 +23	+63 +23	+ 86 + 23	+67 +40	+ 80 + 40	+108 + 68	+166 +126	+189 +126	400	450	0 − 45
									+172 +132	+195 +132	450	500	
+32 0	+44 0	+70 0	+58 +26	+70 +26	+ 96 + 26	+76 +44	+ 88 + 44	+122 + 78	+194 +150	+220 +150	500	560	0 − 50
									+199 +155	+225 +155	560	630	
+36 0	+50 0	+80 0	+66 +30	+80 +30	+110 + 30	+86 +50	+100 + 50	+138 + 88	+225 +175	+255 +175	630	710	0 − 75
									+235 +185	+265 +185	710	800	
+40 0	+56 0	+90 0	+74 +34	+90 +34	+124 + 34	+96 +56	+112 + 56	+156 +100	+266 +210	+300 +210	800	900	0 −100
									+276 +220	+310 +220	900	1 000	

Supplementary table 7 Housing bore tolerances (deviation from nominal dimensions)

Nominal Bore dia. (mm)		Deviation classes of housing bore														
Over	Up to	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} : Single plane mean outside diameter deviation

Unit : μm

K 5	K 6	K 7	M 5	M 6	M 7	N 5	N 6	N 7	P 6	P 7	R 7	Nominal Bore dia. (mm) Over	Up to	(Reference) Δ_{Dmp}* of bearing (class 0)
+ 2 − 6	+ 2 − 9	+ 6 − 12	− 4 −12	− 4 − 15	0 − 18	− 9 − 17	− 9 − 20	− 5 − 23	− 15 − 26	− 11 − 29	− 16 − 34	10	18	0 − 8
+ 1 − 8	+ 2 −11	+ 6 − 15	− 5 −14	− 4 − 17	0 − 21	− 12 − 21	− 11 − 24	− 7 − 28	− 18 − 31	− 14 − 35	− 20 − 41	18	30	0 − 9
+ 2 − 9	+ 3 −13	+ 7 − 18	− 5 −16	− 4 − 20	0 − 25	− 13 − 24	− 12 − 28	− 8 − 33	− 21 − 37	− 17 − 42	− 25 − 50	30	50	0 − 11
+ 3 −10	+ 4 −15	+ 9 − 21	− 6 −19	− 5 − 24	0 − 30	− 15 − 28	− 14 − 33	− 9 − 39	− 26 − 45	− 21 − 51	− 30 − 60	50	65	0 − 13
											− 32 − 62	65	80	
+ 2 −13	+ 4 −18	+ 10 − 25	− 8 −23	− 6 − 28	0 − 35	− 18 − 33	− 16 − 38	− 10 − 45	− 30 − 52	− 24 − 59	− 38 − 73	80	100	0 − 15
											− 41 − 76	100	120	
+ 3 −15	+ 4 −21	+ 12 − 28	− 9 −27	− 8 − 33	0 − 40	− 21 − 39	− 20 − 45	− 12 − 52	− 36 − 61	− 28 − 68	− 48 − 88	120	140	(up to 150) 0 − 18 (over to 150) 0 − 25
											− 50 − 90	140	160	
											− 53 − 93	160	180	
+ 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	

Supplementary Table 8 (1) SI units and conversion factors

Mass	SI units	Other Units[1)]	Conversion into SI units	Conversion from SI units
Angle	rad [radian(s)]	° [degree(s)] *	1° = π / 180 rad	1 rad = 57.295 78°
		' [minute(s)] *	1' = π / 10 800 rad	
		" [second(s)] *	1" = π / 648 000 rad	
Length	m [meter(s)]	Å [Angstrom unit]	1 Å = 10^{-10} m = 0.1 nm = 100 pm	1 m = 10^{10} Å
		μ [micron(s)]	1 μ = 1 μm	
		in [inch(es)]	1 in = 25.4 mm	1 m = 39.37 in
		ft [foot(feet)]	1 ft = 12 in = 0.304 8 m	1 m = 3.280 8 ft
		yd [yard(s)]	1 yd = 3 ft = 0.914 4 m	1 m = 1.093 6 yd
		mile [mile(s)]	1 mile = 5 280 ft = 1 609.344 m	1 km = 0.621 4 mile
Area	m^2	a [are(s)]	1 a = 100 m^2	
		ha [hectare(s)]	1 ha = 10^4 m^2	
		acre [acre(s)]	1 acre = 4 840 yd^2 = 4 046.86 m^2	1 km^2 = 247.1 acre
Volume	m^3	ℓ, L [liter(s)] *	1 ℓ = 1 dm^3 = 10^{-3} m^3	1 m^3 = 10^3 ℓ
		cc [cubic centimeters]	1 cc = 1 cm^3 = 10^{-6} m^3	1 m^3 = 10^6 cc
		gal (US) [gallon(s)]	1 gal (US) = 231 in^3 = 3.785 41 dm^3	1 m^3 = 264.17 gal
		floz (US) [fluid ounce(s)]	1 floz (US) = 29.573 5 cm^3	1 m^3 = 33 814 floz
		barrel (US) [barrels(US)]	1 barrel (US) = 158.987 dm^3	1 m^3 = 6.289 8 barrel
Time	s [second(s)]	min [minute(s)] *		
		h [hour(s)] *		
		d [day(s)] *		
Angular velocity	rad/s			
Velocity	m/s	kn [knot(s)]	1 kn = 1 852 m/h	1 km/h = 0.539 96 kn
		m/h *		
Acceleration	m/s^2	G	1 G = 9.806 65 m/s^2	1 m/s^2 = 0.101 97 G
Frequency	Hz [hertz]	c/s [cycle(s)/second]	1 c/s = 1 s^{-1} = 1 Hz	
Rotational frequency	s^{-1}	rpm [revolutions per minute]	1 rpm = 1/60 s^{-1}	1 s^{-1} = 60 rpm
		min^{-1} *		
		r/min		
Mass	kg [kilogram(s)]	t [ton(s)] *	1 t = 10^3 kg	
		lb [pound(s)]	1 lb = 0.453 592 37 kg	1 kg = 2.204 6 lb
		gr [grain(s)]	1 gr = 64.798 91 mg	1 g = 15.432 4 gr
		oz [ounce(s)]	1 oz = 1/16 lb = 28.349 5 g	1 kg = 35.274 0 oz
		ton (UK) [ton(s) (UK)]	1 ton (UK) = 1 016.05 kg	1 t = 0.984 2 ton (UK)
		ton (US) [ton(s) (US)]	1 ton (US) = 907.185 kg	1 t = 1.102 3 ton (US)
		car [carat(s)]	1 car = 200 mg	1 g = 5 car

Note 1) * : Unit can be used as an SI unit.
No asterisk : Unit cannot be used.

Supplementary Table 8 (2) SI units and conversion factors

Mass	SI units	Other Units[1)]	Conversion into SI units	Conversion from SI units
Density	kg/m^3			
Linear density	kg/m			
Momentum	kg · m/s			
Moment of momentum, **Angular momentum**	kg · m^2/s			
Moment of inertia	kg · m^2			
Force	N [newton(s)]	dyn [dyne(s)] kgf [kilogram-force] gf [gram-force] tf [ton-force] lbf [pound-force]	1 dyn = 10^{-5} N 1 kgf = 9.806 65 N 1 gf = 9.806 65 × 10^{-3} N 1 tf = 9.806 65 × 10^3 N 1 lbf = 4.448 22 N	1 N = 10^5 dyn 1 N = 0.101 97 kgf 1 N = 0.224 809 lbf
Moment of force	N · m [newton meter(s)]	gf · cm kgf · cm kgf · m tf · m lbf · ft	1 gf · cm = 9.806 65 × 10^{-5} N · m 1 kgf · cm = 9.806 65 × 10^{-2} N · m 1 kgf · m = 9.806 65 N · m 1 tf · m = 9.806 65 × 10^3 N · m 1 lbf · ft = 1.355 82 N · m	 1 N · m = 0.101 97 kgf · m 1 N · m = 0.737 56 lbf · ft
Pressure, **Normal stress**	Pa [pascal(s)] or N/m^2 {1 Pa = 1 N/m^2}	gf/cm^2 kgf/mm^2 kgf/m^2 lbf/in^2 bar [bar(s)] at [engineering air pressure] mH_2O, mAq [meter water column] atm [atmosphere] mHg [meter mercury column] Torr [torr]	1 gf/cm^2 = 9.806 65 × 10 Pa 1 kgf/mm^2 = 9.806 65 × 10^6 Pa 1 kgf/m^2 = 9.806 65 Pa 1 lbf/in^2 = 6 894.76 Pa 1 bar = 10^5 Pa 1 at = 1kgf/cm^2 = 9.806 65 × 10^4 Pa 1 mH_2O = 9.806 65 × 10^3 Pa 1 atm = 101 325 Pa 1 mHg = $\frac{101\ 325}{0.76}$ Pa 1 Torr = 1mmHg = 133.322 Pa	 1 MPa = 0.101 97 kgf/mm^2 1 Pa = 0.101 97 kgf/m^2 1 Pa = 0.145 × 10^{-3} lbf/in^2 1 Pa = 10^{-2} mbar 1 Pa = 7.500 6 × 10^{-3} Torr
Viscosity	Pa · s [pascal second]	P [poise] $kgf \cdot s/m^2$	10^{-2} P = 1 cP = 1 mPa · s 1 $kgf \cdot s/m^2$ = 9.806 65 Pa · s	 1 Pa · s = 0.101 97 $kgf \cdot s/m^2$
Kinematic viscosity	m^2/s	St [stokes]	10^{-2} St = 1 cSt = 1 mm^2/s	
Surface tension	N/m			

Note 1) ∗ : Unit can be used as an SI unit.
No asterisk : Unit cannot be used.

Supplementary Table 8 (3) SI units and conversion factors

Mass	SI units	Other Units[1)]	Conversion into SI units	Conversion from SI units
Work, energy	J [joule(s)] {1 J = 1 N · m}	eV [electron volt(s)] *	1 eV = (1.602 189 2 ± 0.000 004 6) × 10^{-19} J	
		erg [erg(s)]	1 erg = 10^{-7} J	1 J = 10^{7} erg
		kgf · m	1 kgf · m = 9.806 65 J	1 J = 0.101 97 kgf · m
		lbf · ft	1 lbf · ft = 1.355 82 J	1 J = 0.737 56 lbf · ft
Power	W [watt(s)]	erg/s [ergs per second]	1 erg/s = 10^{-7} W	
		kgf · m/s	1 kgf · m/s = 9.806 65 W	1 W = 0.101 97 kgf · m/s
		PS [French horse-power]	1 PS = 75 kgf · m/s = 735.5 W	1 W = 0.001 36 PS
		HP [horse-power (British)]	1 HP = 550 lbf · ft/s = 745.7 W	1 W = 0.001 34 HP
		lbf · ft/s	1 lbf · ft/s = 1.355 82 W	
Thermo-dynamic temperature	K [kelvin(s)]			
Celsius temperature	°C [celsius(s)] {t °C = (t + 273.15) K}	°F [degree(s) Fahrenheit]	t°F = $\frac{5}{9}$ (t − 32) °C	t°C = ($\frac{5}{9}$ t + 32) °F
Linear expansion coefficient	K^{-1}	$°C^{-1}$ [per degree]		
Heat	J [joule(s)] {1 J = 1 N · m}	erg [erg(s)]	1 erg = 10^{-7} J	1 J = 10^{7} erg
		kgf · m		
		cal_{IT} [I. T. calories]	1 cal_{IT} = 4.186 8 J	1 J = 0.238 85 cal_{IT}
			1 $Mcal_{IT}$ = 1.163 kW · h	1 kW · h = 0.86 × 10^{6} cal_{IT}
Thermal conductivity	W/ (m · K)	W/ (m · °C)	1 W/ (m · °C) = 1 W/ (m · K)	
		cal/ (s · m · °C)	1 cal/ (s · m · °C) = 4.186 05 W/ (m · K)	
Coefficient of heat transfer	W/ (m^2 · K)	W/ (m^2 · °C)	1 W/ (m^2 · °C) = 1 W/ (m^2 · K)	
		cal/ (s · m^2 · °C)	1 cal/ (s · m^2 · °C) = 4.186 05 W/ (m^2 · K)	
Heat capacity	J/K	J/°C	1 J/°C = 1 J/K	
Massic heat capacity	J/ (kg · K)	J/ (kg · °C)		

Note 1) * : Unit can be used as an SI unit.
No asterisk : Unit cannot be used.

Supplementary Table 8 (4) SI units and conversion factors

Mass	SI units	Other Units[1)]	Conversion into SI units	Conversion from SI units
Electric current	A [ampere(s)]			
Electric charge, quantity of electricity	C [coulomb(s)] {1 C = 1 A · s}	A · h ＊	1 A · h = 3.6 kC	
Tension, electric potential	V [volt(s)] {1 V = 1 W/A}			
Capacitance	F [farad(s)] {1 F = 1 C/V}			
Magnetic field strength	A/m	Oe [oersted(s)]	1 Oe = $\frac{10^3}{4\pi}$ A/m	1 A/m = $4\pi \times 10^{-3}$ Oe
Magnetic flux density	T [tesla(s)] {1 T = 1 N/(A · m) = 1 Wb/m^2 = 1 V · s/m^2}	Gs [gauss(es)] γ [gamma(s)]	1 Gs = 10^{-4} T 1 γ = 10^{-9} T	1 T = 10^4 Gs 1 T = 10^9 γ
Magnetic flux	Wb [weber(s)] {1 Wb = 1 V · s}	Mx [maxwell(s)]	1 Mx = 10^{-8} Wb	1 Wb = 10^8 Mx
Self inductance	H [henry (– ries)] {1 H = 1 Wb/A}			
Resistance (to direct current)	Ω [ohm(s)] {1 Ω = 1 V/A}			
Conductance (to direct current)	S [siemens] {1 S = 1 A/V}			
Active power	W {1 W = 1 J/s = 1 A · V}			

Note 1) ＊ : Unit can be used as an SI unit.
No asterisk : Unit cannot be used.

Supplementary table 9 Inch/millimeter conversion

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

Supplementary table 10 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	Up to 372	Virtually identical to tensile strength, provided buckling can be ignored	0.8 K_t
Mild steel	C 0.15–0.25%	7.8	204	157	372– 392		0.75 K_t
Middle hard steel	C 0.25–0.40%	7.8	206	245–294	490– 590		0.75 K_t
Hard steel	C 0.40–0.50%	7.8	216	343	590– 690		0.7 K_t
Maximum hard steel	C 0.50–0.65%	7.8	216	372	690– 830		0.65 K_t
Mild steel	C 0.18% hot rolling	7.8	206	176	421		314
Hard steel	Oil hardening, tempering at 700 ℃	7.8	206	343	590		461
Tool steel	C 0.60–1.50% hardening	7.8	216	441	660		820
Cast steel	General	7.8–7.9	206–211	176–245	343– 600	343–600	284–382
Cast steel (mild)	C 0.15–0.22%	7.8–7.9	206	196	363– 431	363–431	284
Cast steel (middle hard)	C 0.22–0.30%	7.8–7.9	211	225	392– 490	392–490	333
Cast steel (hard)	C 0.30–0.40%	7.9	211	245	490– 590	490–590	382
Nickel steel	C 0.25–0.35% Ni 2–5%	7.85	206–216	333	640– 830	640	401
Chrome steel	C 0.13–0.48% Cr 0.9–1.2%	7.85	206–216	–	780– 980	–	–
Nickel chrome steel	C, Ni, Cr included	7.85	206–216	–	740– 980	–	382–500
Chromium molybdenum steel	C, Cr, Mo included	7.85	206–216	–	830– 980	–	–
Manganese steel	C 0.2–0.46% Mn 1–1.4%	7.85	206–216	–	440–1 080	–	–
Spring steel		7.86	216	735	1 080–1 670	1 670	–
Stainless steel	C, Cr, Ni included	7.75	206–216	–	620	–	410
Brass casting	Cu 60% Zn 40%	8.5	69	–	176– 216	108	147
Brass (forged plate)	Cu 60% Zn 40%	8.4	78– 98	–	274– 392	314	206
Brass (forged rod)	Cu 60% Zn 40%	8.4	82	–	520	314	314
Phosphor bronze casting	Cu 90% Sn 10% P 0.1%	8.8	93–103	–	196– 294	137	176
Phosphor bronze (forging)	Cu 90% Sn 10% P 0.1%	8.8	132	–	294– 980	206	382
Tin		7.28	39– 54	–	27	–	–
Lead		11.34	15– 17	–	20	–	–
Zinc		7.1	78–127	–	78– 176	–	–

(2) Allowable stress

Unit : MPa

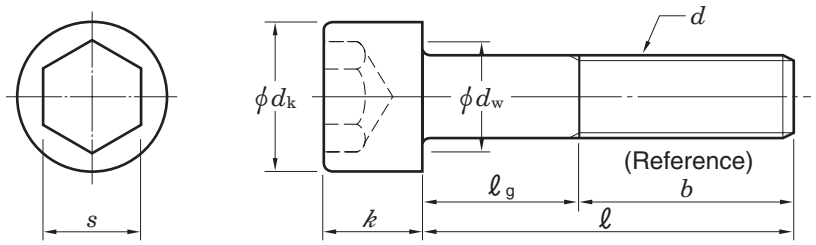
Material	Tensile K_t			Compression K_c		Bending K_b			Shear K_s			Torsion K_d		
	a	b	c	a	b	a	b	c	a	b	c	a	b	c
Cast iron (cast)	29– 34	20– 23	10–12	88– 98	59– 65	45– 59	30– 39	15–20	29– 34	20–23	10–12	26– 34	18–23	88–118
Cast iron (machined)	29– 34	20– 23	10–12	88– 98	59– 65	55– 71	–	–	29– 34	20–23	10–12	26– 34	18–23	88–118
Malleable cast iron	44– 69	29– 46	15–23	59– 88	39– 59	44– 98	29– 46	15–23	–	–	–	29– 39	20–26	10– 13
Cast steel	59–118	39– 78	20–39	88–147	59– 98	74–118	49– 78	25–39	47– 94	31–63	16–31	47– 94	31–63	16– 31
Mild steel	98–157	66–105	32–52	98–157	66–105	88–147	59– 98	35–49	78–127	52–85	26–42	78–137	52–91	26– 46
Middle hard steel	118–176	78–118	39–59	118–176	78–118	118–176	78–118	39–59	94–137	63–94	31–47	88–137	59–94	29– 47
Nickel steel	118–176	78–118	39–59	118–176	78–118	118–176	78–118	39–59	94–137	63–94	31–47	88–137	59–92	29– 47
Carbon steel casting	88–118	59– 78	29–39	88–118	59– 78	88–118	59– 78	29–39	71– 93	47–63	24–31	35– 47	24–31	12– 16
Brass (rolled)	10– 59	26– 35	13–20	39– 59	26– 39	39– 59	26– 39	13–20	34– 47	21–31	11–16	31– 47	21–31	11– 16
Bronze	29– 39	20– 26	10–13	29– 39	20– 26	29– 39	20– 26	10–13	–	–	–	–	–	–
Phosphor bronze	59– 88	39– 59	20–29	59– 88	39– 59	59– 88	39– 59	20–29	44– 69	29–46	15–23	44– 69	29–46	15– 23
Aluminum casting	10– 12	7– 8	2– 4	–	–	15– 20	10– 13	5– 7	–	–	–	–	–	–

Remarks 1. a is applicable in the case of static load, b is applicable in the case of dynamic load, and c is applicable to in the case of repeated load.

2. Bending allowable stress K_b and torsion allowable stress K_d of cast iron are applicable when the cross section is round and safety factor is within a range from 5 to 6.

Supplementary table 11 (1) Hexagon socket head cap screws (abstract from JIS B 1176)

M 1.6 – 24



Allowance of bolt length (ℓ)

Unit : mm

Bolt length (ℓ) Over	Up to	Allowance of length
–	3	±0.2
3	6	±0.24
6	10	±0.29
10	16	±0.35
16	30	±0.42
30	50	±0.5
50	80	±0.6
80	120	±0.7
120	180	±0.8
180	240	±0.95
240	300	±1.05

(1) Parts class A M 1.6–24

Unit : mm

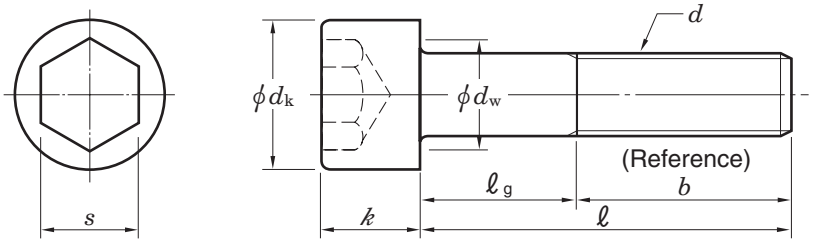
Nominal size of screw d / Coarse screw thread pitch	M 1.6	M 2	M 2.5	M 3	M 4	M 5	M 6	M 8	M 10	M 12	(M 14)	M 16	(M 18)	M 20	(M 22)	M 24
	0.35	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2	2.5	2.5	2.5	3
Head dia. d_k	3	3.8	4.5	5.5	7	8.5	10	13	16	18	21	24	27	30	33	36
Head height k	1.6	2	2.5	3	4	5	6	8	10	12	14	16	18	20	22	24
Bearing surface dia. d_w (min.)	2.72	3.4	4.18	5.07	6.53	8.03	9.38	12.33	15.33	17.23	20.17	23.17	25.87	28.87	31.81	34.81
Nominal size of hexagon socket s	1.5	1.5	2	2.5	3	4	5	6	8	10	12	14	14	17	17	19
Thread length b (reference)	15	16	17	18	20	22	24	28	32	36	40	44	48	52	56	60

Nominal length ℓ	Body length ℓ_g (max.)															
	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
2.5																
3																
4																
5																
6																
8																
10																
12																
16																
20		4														
25			8	7												
30				12	10	8										
35					15	13	11									
40					20	18	16	12								
45						23	21	17	13							
50						28	26	22	18	14						
55							31	27	23	19						
60							36	32	28	24	20	16				
65								37	33	29	25	21	17			
70								42	38	34	30	26	22	18		
80								52	48	44	40	36	32	28	24	
90									58	54	50	46	42	38	34	30
100									68	64	60	56	52	48	44	40
110										74	70	66	62	58	54	50
120										84	80	76	72	68	64	60
130											90	86	82	78	74	70
140											100	96	92	88	84	80
150												106	102	98	94	90
160												116	112	108	104	100
180													132	128	124	120
200														148	144	140

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.

Supplementary table 11 (2) Hexagon socket head cap screws (abstract from JIS B 1176)

M 27 – 52



Allowance of bolt length (ℓ)

Unit : mm

Bolt length (ℓ) Over	Bolt length (ℓ) Up to	Allowance of length
–	3	±0.2
3	6	±0.24
6	10	±0.29
10	16	±0.35
16	30	±0.42
30	50	±0.5
50	80	±0.6
80	120	±0.7
120	180	±0.8
180	240	±0.95
240	300	±1.05

(2) Parts class A M 27–52

Unit : mm

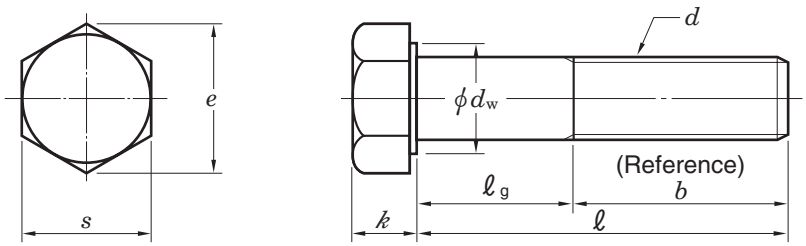
Nominal size of screw d / Coarse screw thread pitch	(M 27)	M 30	(M 33)	M 36	(M 39)	M 42	(M 45)	M 48	(M 52)
	3	3.5	3.5	4	4	4.5	4.5	5	5
Head dia. d_k	40	45	50	54	58	63	68	72	78
Head height k	27	30	33	36	39	42	45	48	52
Bearing surface dia. d_w (min.)	38.61	43.61	48.61	52.54	56.34	61.34	66.34	70.34	76.34
Nominal size of hexagon socket s	19	22	24	27	27	32	32	36	36
Thread length b (reference)	66	72	78	84	90	96	102	108	116

Nominal length ℓ	(M 27)	M 30	(M 33)	M 36	(M 39)	M 42	(M 45)	M 48	(M 52)
	Body length ℓ_g (max.)								
45									
50			(M 33)	M 36					
55									
60					(M 39)	M 42			
65									
70							(M 45)	M 48	
80	(M 27)								(M 52)
90	24	M 30	(M 33)						
100	34	28	22						
110	44	38	32	M 36	(M 39)	M 42			
120	54	48	42	36	30	24	(M 45)		
130	64	58	52	46	40	34	28	M 48	
140	74	68	62	56	50	44	38	32	(M 52)
150	84	78	72	66	60	54	48	42	34
160	94	88	82	76	70	64	58	52	44
180	114	108	102	96	90	84	78	72	64
200	134	128	122	116	110	104	98	92	84
220	154	148	142	136	130	124	118	112	104
240	174	168	162	156	150	144	138	132	124
260	194	188	182	176	170	164	158	152	144
280	214	208	202	196	190	184	178	172	164
300	234	228	222	216	210	204	198	192	184

Remarks
1. Priority is given to the nominal sizes of screws without parentheses.
2. Nominal lengths (ℓ) to be recommended for the nominal sizes of screw are within the range enclosed by bold lines in the column of "Body length ℓ_g". In the column of "Body length ℓ_g", thread of the screw with length shorter than that indicated under dotted lines should be continuous. For the continuous thread stud screw, the incomplete thread portion length under the neck of the screw should be approximately three times of the thread pitch.
3. The sides of the head of screw should be single or double knurled. The d_k values in the table are the maximum values without knurls.
4. Roundness or chamfers on the bearing surface should be provided between the diameter of the head (d_k) and the diameter of bearing surface (d_w), and the surface should be free from burrs.

Supplementary table 12 (1) Hexagon head bolts (abstract from JIS B 1180)

Parts class A M 1.6 – 24



Allowance of bolt length (ℓ)

Unit : mm

Bolt length (ℓ) Over	Bolt length (ℓ) Up to	Allowance of length
–	20	±0.35
20	30	±0.42
30	50	±0.5
50	80	±0.6
80	120	±0.7
120	150	±0.8

(1) Parts class A M 1.6–24

Unit : mm

Nominal size of screw d		M 1.6	M 2	M 2.5	M 3	(M 3.5)	M 4	M 5	M 6	M 8	M 10	M 12	(M 14)	M 16	(M 18)	M 20	(M 22)	M 24
	Coarse screw thread pitch	0.35	0.4	0.45	0.5	0.6	0.7	0.8	1	1.25	1.5	1.75	2	2	2.5	2.5	2.5	3
	Fine thread	–	–	–	–	–	–	–	–	M 8 × 1	M 10 × 1	M 12 ×1.5	–	M 16 ×1.5	–	M 20 ×1.5	–	M 24 × 2
		–	–	–	–	–	–	–	–	–	(M 10 ×1.25)	(M 12 ×1.25)	(M 14 ×1.5)	–	(M 18 ×1.5)	(M 20 × 2)	(M 22 ×1.5)	–
Bearing surface dia. d_w (min.)		2.27	3.07	4.07	4.57	5.07	5.88	6.88	8.88	11.63	14.63	16.63	19.64	22.49	25.34	28.19	31.71	33.61
Width across flats s (max.)		3.2	4	5	5.5	6	7	8	10	13	16	18	21	24	27	30	34	36
Width across corners e (min.)		3.41	4.32	5.45	6.01	6.58	7.66	8.79	11.05	14.38	17.77	20.03	23.36	26.75	30.14	33.53	37.72	39.98
Head height k (basic)		1.1	1.4	1.7	2	2.4	2.8	3.5	4	5.3	6.4	7.5	8.8	10	11.5	12.5	14	15
Thread length b (reference)	$\ell \leq 125$	9	10	11	12	13	14	16	18	22	26	30	34	38	42	46	50	54
	$125 < \ell \leq 150$	–	–	–	–	–	–	–	–	–	–	–	40	44	48	52	56	60

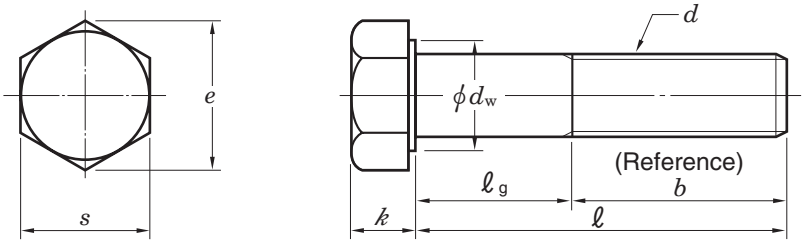
Nominal length ℓ	Body length ℓ_g (max.)																	
12	3	M 2	M 2.5															
16	7	6	5	M 3	(M 3.5)													
20		10	9	8	7	M 4	M 5											
25			14	13	12	11	9	M 6										
30				18	17	16	14	12										
35					22	21	19	17	M 8									
40						26	24	22	18	M 10								
45							29	27	23	19	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)

Supplementary table 12 (2) Hexagon head bolts (abstract from JIS B 1180)

Parts class B M 16 – 64



Allowance of bolt length (ℓ)

Unit : mm

Bolt length (ℓ) Over	Bolt length (ℓ) Up to	Allowance of length
–	80	±1.5
80	90	±1.7
90	120	±1.75
120	180	±2
180	240	±2.3
240	300	±2.6
300	400	±2.85
400	500	±3.15

(2) Parts class B M 16–64

Unit : mm

Nominal size of screw d		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
	Coarse screw thread pitch	2	2.5	2.5	2.5	3	3	3.5	3.5	4	4	4.5	4.5	5	5	5.5	5.5	6
	Fine thread	M 16 ×1.5	–	M 20 ×1.5	–	M 24 × 2	–	M 30 × 2	–	M 36 × 3	–	M 42 × 3	–	M 48 × 3	–	M 56 × 4	–	M 64 × 4
		–	(M 18 ×1.5)	(M 20 × 2)	(M 22 ×1.5)	–	(M 27 × 2)	–	(M 33 × 2)	–	(M 39 × 3)	–	(M 45 × 3)	–	(M 52 × 4)	–	(M 60 × 4)	–
Bearing surface dia. d_w (min.)		22	24.85	27.7	31.35	33.25	38	42.75	46.55	51.11	55.86	59.95	64.7	69.45	74.2	78.66	83.41	88.16
Width across flats s (max.)		24	27	30	34	36	41	46	50	55	60	65	70	75	80	85	90	95
Width across corners e (min.)		26.17	29.56	32.95	37.29	39.55	45.2	50.85	55.37	60.79	66.44	71.3	76.95	82.6	88.25	93.56	99.21	104.86
Head height k (basic)		10	11.5	12.5	14	15	17	18.7	21	22.5	25	26	28	30	33	35	38	40
Thread length b (reference)	$\ell \leq 125$	38	42	46	50	54	60	66	–	–	–	–	–	–	–	–	–	–
	$125 < \ell \leq 200$	44	48	52	56	60	66	72	78	84	90	96	102	108	116	–	–	–
	$200 < \ell \leq 500$	–	–	–	69	73	79	85	91	97	103	109	115	121	129	137	145	153

Nominal length ℓ	Body length ℓ_g (max.)																
65	M 16	(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

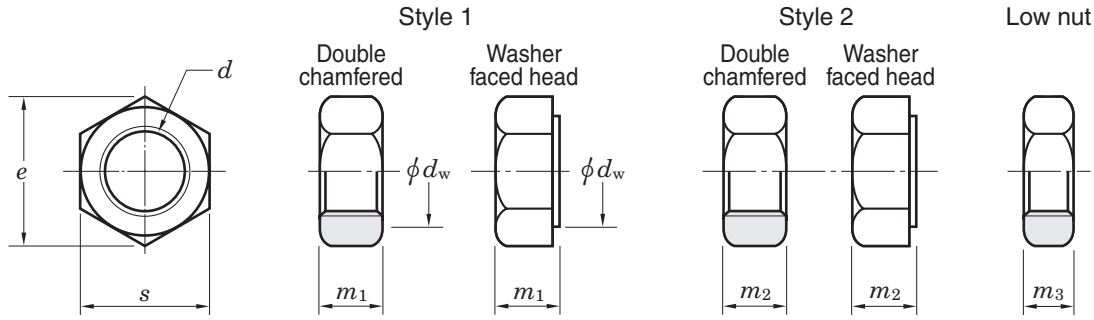
As for the bolts with nominal length within this area, standards of (1) parts class A should be observed.

As for the bolts with nominal length within this area, standards of continuous thread stud hexagon head bolt (parts class A or B) should be observed.

Remarks 1. Priority is given to the nominal sizes of screws without parentheses.
2. Nominal lengths (ℓ) to be recommended for the nominal sizes of screw are within the range enclosed by bold lines.
3. Body length ℓ_g (maximum) should be found by the following formula : ℓ_g (maximum) = Nominal length (ℓ) – Thread length (b)

Supplementary table 13 Hexagon head nuts (abstract from JIS B 1181)

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**
		0.35	0.4	0.45	0.5	0.6	0.7	0.8	1	1.25	1.5	1.75	2	2
	Fine thread	–	–	–	–	–	–	–	–	**M 8 × 1**	**M 10 × 1**	**M 12 × 1.5**	–	**M 16 × 1.5**
		–	–	–	–	–	–	–	–	–	(M 10 ×1.25)	(M 12 ×1.25)	(M 14 × 1.5)	–
Bearing surface dia. d_w (min.)		2.27	3.07	4.07	4.57	5.07	5.88	6.88	8.88	11.63	14.63	16.63	19.64	22.49
Width across flats s (max.)		3.2	4	5	5.5	6	7	8	10	13	16	18	21	24
Width across corners e (min.)		3.41	4.32	5.45	6.01	6.58	7.66	8.79	11.05	14.38	17.77	20.03	23.36	26.75
Height	m_1 (max.)	1.3	1.6	2	2.4	2.8	3.2	4.7	5.2	6.8	8.4	10.8	12.8	14.8
	m_2 (max.)	–	–	–	–	–	–	5.1	5.7	7.5	9.3	12	14.1	16.4
	m_3 (max.)	1	1.2	1.6	1.8	2	2.2	2.7	3.2	4	5	6	7	8

Remark Priority is given to the nominal sizes of screws without parentheses.

(2) Parts class B M 18–64

Unit : mm

Nominal size of screw d																
	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**
		2.5	2.5	2.5	3	3	3.5	3.5	4	4	4.5	4.5	5	5	5.5	5.5	6
	Fine thread	–	**M 20 ×1.5**	–	**M 24 × 2**	–	**M 30 × 2**	–	**M 36 × 3**	–	**M 42 × 3**	–	**M 48 × 3**	–	**M 56 × 4**	–	**M 64 × 4**
		(M 18 ×1.5)	(M 20 × 2)	(M 22 ×1.5)	–	(M 27 × 2)	–	(M 33 × 2)	–	(M 39 × 3)	–	(M 45 × 3)	–	(M 52 × 4)	–	(M 60 × 4)	–
Bearing surface dia. d_w (min.)		24.85	27.7	31.35	33.25	38	42.75	46.55	51.11	55.86	59.95	64.7	69.45	74.2	78.66	83.41	88.16
Width across flats s (max.)		27	30	34	36	41	46	50	55	60	65	70	75	80	85	90	95
Width across corners e (min.)		29.56	32.95	37.29	39.55	45.2	50.85	55.37	60.79	66.44	71.3	76.95	82.6	88.25	93.56	99.21	104.86
Height	m_1 (max.)	15.8	18	19.4	21.5	23.8	25.6	28.7	31	33.4	34	36	38	42	45	48	51
	m_2 (max.)	17.6	20.3	21.8	23.9	26.7	28.6	32.5	34.7	–	–	–	–	–	–	–	–
	m_3 (max.)	9	10	11	12	13.5	15	16.5	18	19.5	21	22.5	24	26	28	30	32

Remark Priority is given to the nominal sizes of screws without parentheses.

Supplementary table 14 Steel hardness conversion

Rockwell	Vickers	Brinell		Rockwell		Shore
C scale 1 471.0 N (150 kgf)		Standard steel ball	Tungsten carbide steel ball	A scale 588.4 N (60 kgf)	B scale 980.7 N (100 kgf)	
68	940			85.6		97
67	900			85.0		95
66	865			84.5		92
65	832		739	83.9		91
64	800		722	83.4		88
63	772		705	82.8		87
62	746		688	82.3		85
61	720		670	81.8		83
60	697		654	81.2		81
59	674		634	80.7		80
58	653		615	80.1		78
57	633		595	79.6		76
56	613		577	79.0		75
55	595	–	560	78.5		74
54	577	–	543	78.0		72
53	560	–	525	77.4		71
52	544	500	512	76.8		69
51	528	487	496	76.3		68
50	513	475	481	75.9		67
49	498	464	469	75.2		66
48	484	451	455	74.7		64
47	471	442	443	74.1		63
46	458	432	432	73.6		62
45	446	421		73.1		60
44	434	409		72.5		58
43	423	400		72.0		57
42	412	390		71.5		56
41	402	381		70.9		55
40	392	371		70.4	–	54
39	382	362		69.9	–	52
38	372	353		69.4	–	51
37	363	344		68.9	–	50
36	354	336		68.4	(109.0)	49
35	345	327		67.9	(108.5)	48
34	336	319		67.4	(108.0)	47
33	327	311		66.8	(107.5)	46
32	318	301		66.3	(107.0)	44
31	310	294		65.8	(106.0)	43
30	302	286		65.3	(105.5)	42
29	294	279		64.7	(104.5)	41
28	286	271		64.3	(104.0)	41
27	279	264		63.8	(103.0)	40
26	272	258		63.3	(102.5)	38
25	266	253		62.8	(101.5)	38
24	260	247		62.4	(101.0)	37
23	254	243		62.0	100.0	36
22	248	237		61.5	99.0	35
21	243	231		61.0	98.5	35
20	238	226		60.5	97.8	34
(18)	230	219		–	96.7	33
(16)	222	212		–	95.5	32
(14)	213	203		–	93.9	31
(12)	204	194		–	92.3	29
(10)	196	187			90.7	28
(8)	188	179			89.5	27
(6)	180	171			87.1	26
(4)	173	165			85.5	25
(2)	166	158			83.5	24
(0)	160	152			81.7	24

Supplementary table 15 Viscosity conversion

Kinematic viscosity mm^2/s	Saybolt SUS (second)		Redwood R (second)		Engler E (degree)
	100 °F	210 °F	50 °C	100 °C	
2	32.6	32.8	30.8	31.2	1.14
3	36.0	36.3	33.3	33.7	1.22
4	39.1	39.4	35.9	36.5	1.31
5	42.3	42.6	38.5	39.1	1.40
6	45.5	45.8	41.1	41.7	1.48
7	48.7	49.0	43.7	44.3	1.56
8	52.0	52.4	46.3	47.0	1.65
9	55.4	55.8	49.1	50.0	1.75
10	58.8	59.2	52.1	52.9	1.84
11	62.3	62.7	55.1	56.0	1.93
12	65.9	66.4	58.2	59.1	2.02
13	69.6	70.1	61.4	62.3	2.12
14	73.4	73.9	64.7	65.6	2.22
15	77.2	77.7	68.0	69.1	2.32
16	81.1	81.7	71.5	72.6	2.43
17	85.1	85.7	75.0	76.1	2.54
18	89.2	89.8	78.6	79.7	2.64
19	93.3	94.0	82.1	83.6	2.76
20	97.5	98.2	85.8	87.4	2.87
21	102	102	89.5	91.3	2.98
22	106	107	93.3	95.1	3.10
23	110	111	97.1	98.9	3.22
24	115	115	101	103	3.34
25	119	120	105	107	3.46
26	123	124	109	111	3.58
27	128	129	112	115	3.70
28	132	133	116	119	3.82
29	137	138	120	123	3.95
30	141	142	124	127	4.07
31	145	146	128	131	4.20
32	150	150	132	135	4.32
33	154	155	136	139	4.45
34	159	160	140	143	4.57

Kinematic viscosity mm^2/s	Saybolt SUS (second)		Redwood R (second)		Engler E (degree)
	100 °F	210 °F	50 °C	100 °C	
35	163	164	144	147	4.70
36	168	170	148	151	4.83
37	172	173	153	155	4.96
38	177	178	156	159	5.08
39	181	183	160	164	5.21
40	186	187	164	168	5.34
41	190	192	168	172	5.47
42	195	196	172	176	5.59
43	199	201	176	180	5.72
44	204	205	180	185	5.85
45	208	210	184	189	5.98
46	213	215	188	193	6.11
47	218	219	193	197	6.24
48	222	224	197	202	6.37
49	227	228	201	206	6.50
50	231	233	205	210	6.63
55	254	256	225	231	7.24
60	277	279	245	252	7.90
65	300	302	266	273	8.55
70	323	326	286	294	9.21
75	346	349	306	315	9.89
80	371	373	326	336	10.5
85	394	397	347	357	11.2
90	417	420	367	378	11.8
95	440	443	387	399	12.5
100	464	467	408	420	13.2
120	556	560	490	504	15.8
140	649	653	571	588	18.4
160	742	747	653	672	21.1
180	834	840	734	757	23.7
200	927	933	816	841	26.3
250	1 159	1 167	1 020	1 051	32.9
300	1 391	1 400	1 224	1 241	39.5

Remark 1 mm^2/s = 1 cSt (centistokes)

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