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Technical section

Pillow block type



Square-flanged type



Rhombic-flanged type



Round-flanged type with spigot joint



Pressed steel flange type



Take-up type



Cartridge type



Hanger type



Ball bearings for units



Parts and accessories

Parts and accessories

Example of application

Example of application

Supplementary table

Supplementary table

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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).

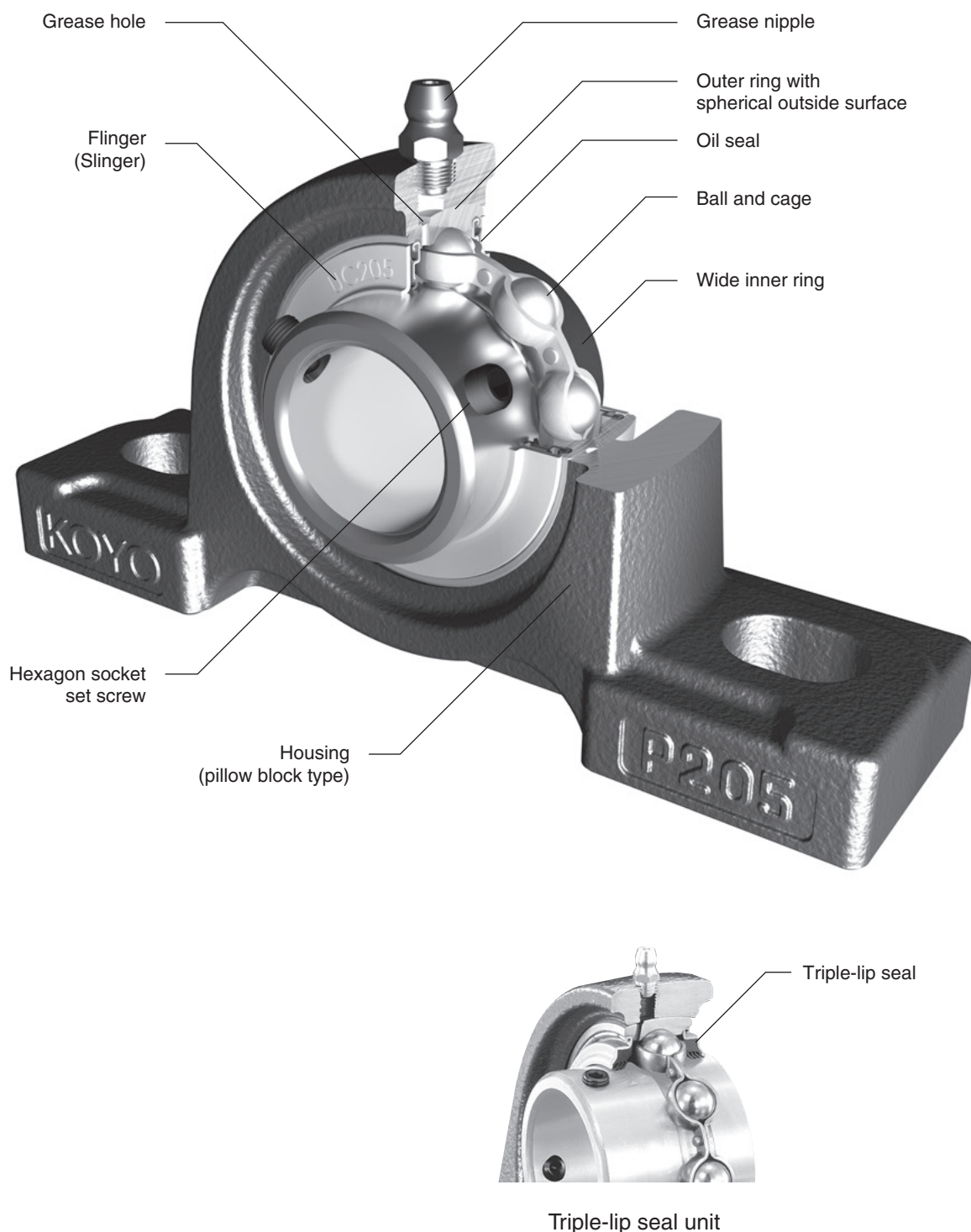


Fig. 1.1 Structure of ball bearing units (representative example)

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°.

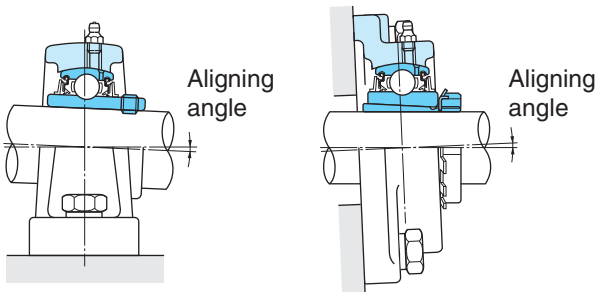


Fig. 1.2 Allowable aligning angle of ball bearing unit

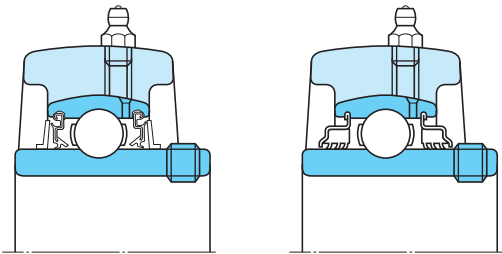
3 Superior sealing performance

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.

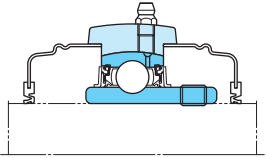
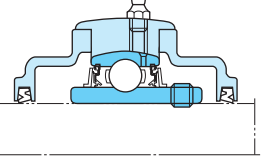
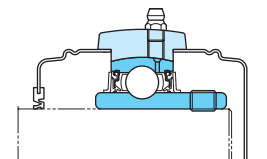
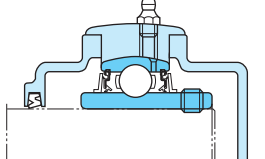
The oil seal is made of synthetic rubber featuring supreme oil proof. Its lip contacts with the inner ring of the bearing with optimal tension (radial load of lip).

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.



Standard type Triple-lip seal type (Supplementary code : L3)

	Pressed steel cover type	Cast iron cover type
Open ends type	 (Supplementary code : C)	 (Supplementary code : C, FC)
Closed end type	 (Supplementary code : CD)	 (Supplementary code : CD, FCD)

Unit with cover

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 temperature, 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.

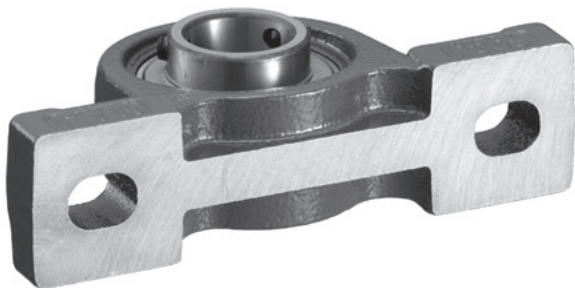
5 Highly rigid and strong housing

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.

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

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



6 Simple installation and handling

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 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

Housing special code
(Table 2.8)

Bearing special code (Table 2.7)

Supplementary code (Table 2.6)

Fitting code (Table 2.5)

Bore dia. No. (Table 2.4)

Diameter series code (Table 2.3)

Housing type code (Table 2.2)

Bearing type code (Table 2.1)

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

Table 2.1 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)
SA	Cylindrical bore, with eccentric locking collar (light duty type)
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 2.2 Housing type code

Housing type code	Details
P	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 2.2 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 2.3 Diameter series code

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

Table 2.4 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	(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 2.5 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 2.6 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 2.7 Bearing special code

Item	Bearing special code	Details
Grease	None	Alvania No.2 or equivalents
	D1	SH44M
	D2	SH33M
	D9	Demnum L-200
Set Screw	None	Bullet Point
	G4	Pointed tip
	G6	With full dog point
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	S3	Air handling fit, 100% noise check, the anti-rotation pin
	S5	For blower (oil seal : K3, inner clearance and bearing accuracy are specially controlled)
	S6	Stainless steel bearing
	S7	Plated bearing (for corrosion-resistance)

Table 2.8 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 cover mounting groove
	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)
	H4	Ductile iron (FCD450-10)
	H5	Rolled steel for general purpose (SS400)
	H9	Stainless steel cast steel model (SCS14)
Grease Nipple	None	A type
	N1	B type (67.5°)
	N2	C type (90°)

3 Types

3.1 Type list

Table 3.1 and Table 3.2 show the types of Koyo Ball Bearing Units and ball bearing for unit.

Koyo Ball Bearing Units are available in various types.

Table 3.1 Koyo Ball Bearing Units types

Type		Bearing bore dia. Surface (fixing to shaft)	Type code	Shaft dia.		Dimension table
				(inch)	(mm)	
1 Pillow block type	(1) Standard	Cylindrical bore (with set screws)	UCP	1/2 – 4	12 – 140	P.74
		Cylindrical bore (with eccentric locking collar)	NAP	1/2 – 2 15/16	12 – 75	P.80
			NAPK	1/2 – 2 15/16	12 – 75	P.82
		Tapered bore (with adapter)	UKP	3/4 – 4 1/2	20 – 125	P.84
	(2) Thick section type	Cylindrical bore (with set screws)	UCIP	1 1/2 – 4	40 – 140	P.90
		Tapered bore (with adapter)	UKIP	1 1/4 – 4 1/2	35 – 125	P.92
	(3) Tapped-base type	Cylindrical bore (with set screws)	UCPA	1/2 – 2	12 – 50	P.94
	(4) Higher centerheight type	Cylindrical bore (with set screws)	UCPH	1/2 – 2	12 – 50	P.96
	(5) Light duty type	Cylindrical bore (with set screws)	BLP	1/2 – 1 9/16	12 – 40	P.98
		Cylindrical bore (with eccentric locking collar)	ALP			
	(6) “Compact” series	Cylindrical bore (with set screws)	UP	N/A	10 – 30	P.100
	(7) Stainless-series	Cylindrical bore (with set screws)	UCSP-H1S6	N/A	20 – 50	P.102
UCSPA-H1S6			N/A	20 – 40	P.104	
USP-S6			N/A	10 – 30	P.106	
(8) Pressed steel type	Cylindrical bore (with set screws)	SBPP	1/2 – 1 1/4	12 – 30	P.108	
	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.110
			UCF-E	1/2 – 3 7/16	12 – 85	P.116
		Cylindrical bore (with eccentric locking collar)	NANF	1/2 – 2 7/16	12 – 60	P.120
		Tapered bore (with adapter)	UKF	3/4 – 4 1/2	20 – 125	P.122
	(2) With spigot joint	Cylindrical bore (with set screws)	UCFS	1 – 4	25 – 140	P.128
		Tapered bore (with adapter)	UKFS	3/4 – 4 1/2	20 – 125	P.130
	(3) Stainless-series	Cylindrical bore (with set screws)	UCSF-H1S6	N/A	20 – 50	P.132
3 Rhombic-flanged type	(1) Standard	Cylindrical bore (with set screws)	UCFL	1/2 – 4	12 – 130	P.134
			UCFL-E	1/2 – 3 1/4	12 – 85	P.140
		Cylindrical bore (with eccentric locking collar)	NANFL	1/2 – 2 3/16	12 – 55	P.144
		Tapered bore (with adapter)	UKFL	3/4 – 4 1/2	20 – 115	P.146
	(2) Adjustable type	Cylindrical bore (with set screws)	UCFA	1/2 – 2 3/16	12 – 55	P.150
	(3) Three-bolt type	Cylindrical bore (with set screws)	UCFB	1/2 – 2	12 – 50	P.152
	(4) Light duty type	Cylindrical bore (with set screws)	BLF	1/2 – 1 7/16	12 – 35	P.154
		Cylindrical bore (with eccentric locking collar)	ALF			
	(5) “Compact” series	Cylindrical bore (with set screws)	UFL	N/A	8 – 30	P.156
(6) Stainless-series	Cylindrical bore (with set screws)	UCSFL-H1S6	N/A	20 – 50	P.158	
		USFL-S6	N/A	10 – 30	P.160	
4 Round-flanged type with spigot joint		Cylindrical bore (with set screws)	UCFC	1/2 – 4	12 – 100	P.162
			UCFCX-E	1 – 4	25 – 100	P.166
		Tapered bore (with adapter)	UKFC	3/4 – 3 1/2	20 – 90	P.168
5 Pressed steel flange type	(1) Round-flanged type	Cylindrical bore (with set screws)	SBPF	1/2 – 1 7/16	12 – 35	P.172
		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.174
		Cylindrical bore (with eccentric locking collar)	SAPFL			

Table 3.1 Koyo Ball Bearing Units types (continued)

Type		Bearing bore dia. Surface (fixing to shaft)	Type code	Shaft dia.		Dimension table
				(inch)	(mm)	
6 Take-up type	(1) Standard	Cylindrical bore (with set screws)	UCT	$\frac{1}{2} - 4$	12 – 140	P.176
			UCT-E	$\frac{1}{2} - 3 \frac{7}{16}$	12 – 85	P.182
		Tapered bore (with adapter)	UKT	$\frac{3}{4} - 4 \frac{1}{2}$	20 – 125	P.186
	(2) Stainless-series	Cylindrical bore (with set screws)	UCST-H1S6	N/A	20 – 50	P.190
	(3) Section steel frame type	Cylindrical bore (with set screws)	UCTH	$\frac{1}{2} - 2 \frac{1}{2}$	12 – 65	P.192
	(4) Channel steel frame type	Cylindrical bore (with set screws)	UCTL	N/A	20 – 45	P.194
			UCTU	N/A	40 – 90	P.196
	(5) Pressed steel frame type	Cylindrical bore (with set screws)	SBPTH	N/A	12 – 25	P.200
			SBNPTH	N/A	12 – 25	P.202
7 Cartridge type		Cylindrical bore (with set screws)	UCC	$\frac{1}{2} - 4$	12 – 140	P.204
		Tapered bore (with adapter)	UKC	$\frac{3}{4} - 4 \frac{1}{2}$	20 – 125	P.208
8 Hanger type		Cylindrical bore (with set screws)	UCHA	$\frac{1}{2} - 3$	12 – 75	P.210

Table 3.2 Types of ball bearing for Koyo Ball Bearing Unit

Type		Bearing bore dia. Surface (fixing to shaft)	Type code	Shaft dia.		Dimension table
				(inch)	(mm)	
Ball bearing for units	(1) Standard	Cylindrical bore (with set screws)	UC	$\frac{1}{2} - 4$	12 – 140	P.212
	(2) Standard	Tapered bore (with adapter)	UK	$\frac{3}{4} - 4 \frac{1}{2}$	20 – 125	P.224
	(3) Standard	Cylindrical bore (with eccentric locking collar)	NA	$\frac{1}{2} - 3$	12 – 75	P.220
	(4) Light duty	Cylindrical bore (with set screws)	SB	$\frac{1}{2} - 1 \frac{1}{2}$	12 – 40	P.212
	(5) Light duty	Cylindrical bore (with eccentric locking collar)	SA	$\frac{1}{2} - 1 \frac{9}{16}$	12 – 40	P.220
			SA-F	$\frac{1}{2} - 2 \frac{3}{16}$	12 – 55	
	(6) "Compact"	Cylindrical bore (with set screws)	SU	N/A	8 – 30	P.212
	(7) Stainless steel	Cylindrical bore (with set screws)	UC-S6	N/A	20 – 50	P.218
			SU-S6	N/A	10 – 30	
	(8) Cylindrical outside surface (with lubricating mechanism and snap ring)	Cylindrical bore (with set screws)	ER	$\frac{1}{2} - 2 \frac{7}{16}$	12 – 60	P.230
	(9) Cylindrical outside surface	Cylindrical bore (with set screws)	RB	$\frac{1}{2} - 1 \frac{9}{16}$	12 – 40	P.230
	(10) Adapter assembly		H2300X	$\frac{3}{4} - 4 \frac{1}{2}$	20 – 125	P.232

3.2 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)

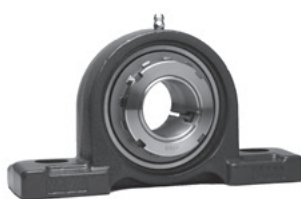
Diameter series	Code	Descriptions
2	C, CD	Pressed steel cover type
	FC, FCD	Cast iron cover type
X	C, CD	From X05 to X17 : pressed steel cover type X18 and X20 : cast iron cover type
	C, CD	Cast iron cover type

1 Pillow block type units

1 Pillow block type units



UCP



UKP

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

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

NAP

NAPK

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 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)

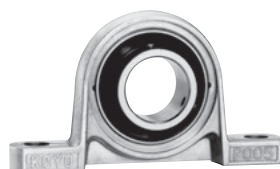
...Bearing **SA2** series are used.

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.

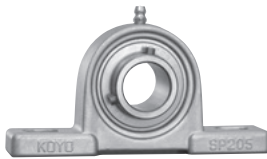
The housing can be installed to machines with two bolts.

Applications : Machineries for light load

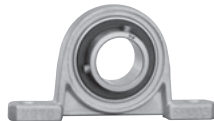
3 Types

(1 Pillow block type units)

7 Stainless-series pillow block type units



UCSP-H1S6



USP-S6

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

UCSPA-H1S6

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.

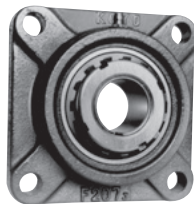
Applications : Light duty conveyor, environment exposed to light load and low speed rotation

2 Square-flanged type units

1 Square-flanged type units



UCF, UCF-E



UKF

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,

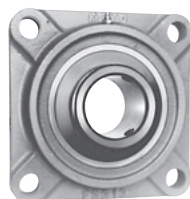
C, D (FC, FD) : Pressed steel cover type or cast iron cover type

NANF

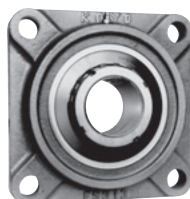
This bearing unit comprises the ball bearing for unit and the housing with square flange. It is suitable to use on a vertical surface, such as the side of machinery.

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

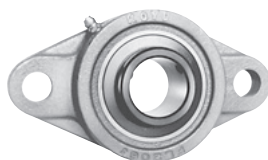
In this superior waterproof and anticorrosion square-flanged type unit, bearing and housing are made of stainless steel. The unit is thinner than standard UCF series units, leading to down-sizing of machinery. The housing can be installed to machines with four bolts.

Applications : Food machinery, agricultural machinery

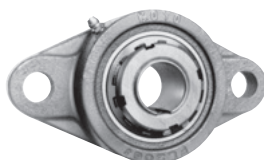
UCSF-H1S6

3 Rhombic-flanged 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 Rhombic-flanged 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



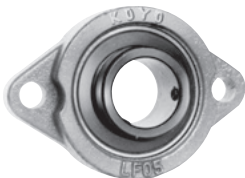
UCFB

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 rhombic 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

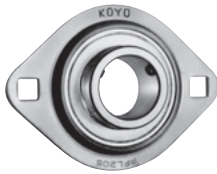
This lightweight round-flanged type unit for light load comprises the ball bearing for lightweight unit and the pressed steel plate housing.

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

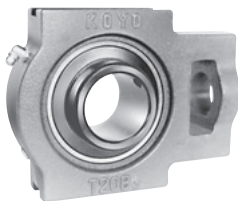
This lightweight rhombic-flanged type unit for light load comprises the ball bearing for lightweight unit and the pressed steel plate housing. Compared to the pressed steel round-flanged type unit, less mounting space is required.

The housing can be installed to machines with two bolts.

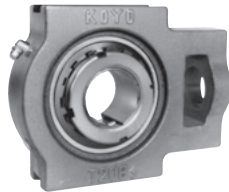
Applications : Light duty conveyor, environment exposed to light load and low speed rotation

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

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

UCT2-H1S6

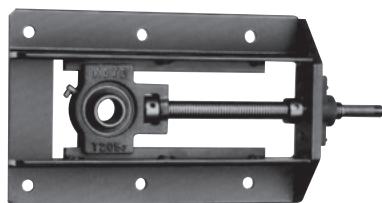
C, CD : Pressed stainless steel cover type

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

UCST-H1S6

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

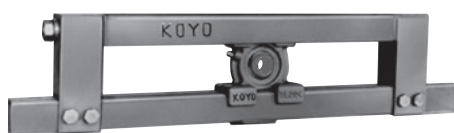
This unit comprises the take-up type unit, the section steel frame, adjuster bolt, and so on.

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.

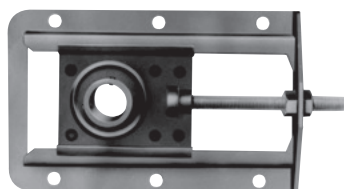
Since this unit is installed with the frame stood, the mounting space is reduced.

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.

3.3 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.

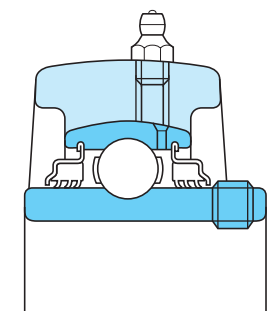


Fig. 3.1 Structure of triple-lip seal unit

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).

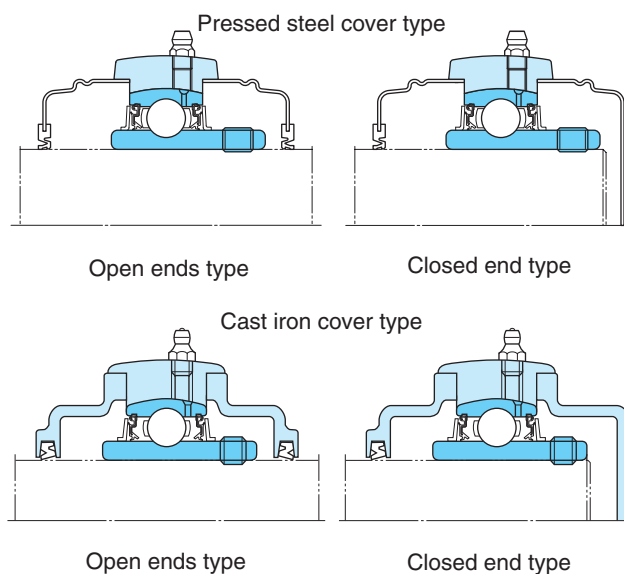


Fig. 3.2 Type and structure of unit with cover

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°C to 100°C .

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 3.3**.

Table 3.3 Specifications of heat resistant unit and cold resistant unit

Category	Special code	Operating temperature range ($^{\circ}\text{C}$)	Grease	Oil seal rubber material	Bearing internal clearance	
					UC type	UK type
Standard	(no code)	-20 to 100	Alvania No. 2 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.

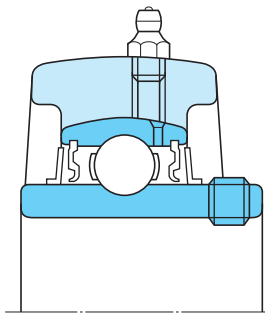


Fig. 3.3 Structure of bearing unit for blower

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°C to $+100^{\circ}\text{C}$

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

4 Selection of unit

4.1 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 4.1**.

Table 4.1 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	3 Types (P.12)
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	5 Life of bearing (P.30) 6 Bearing load (P.35) 7 Allowable rotational speed (P.42)
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	3 Types (P.12) (P.25) 7 Allowable rotational speed (P.42)
4 Selection against temperature	· Heat resistant type · Cold resistant type · Measures against expansion and contraction of shaft · Grease supply	Bearing temperature	3 Types (P.12) (P.25) 8 Operating temperature and bearing specifications (P.43) 10 Design of shaft and base (P.49) 14 Handling (P.63)
5 Selection of installing to shaft	· Set screw · Adapter · Eccentric locking collar	Rotational speed, load conditions, handling	3 Types (P.12) 14 Handling (P.63)
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	3 Types (P.12) (P.25) 7 Allowable rotational speed (P.42) 10 Design of shaft and base (P.49) 14 Handling (P.63)
7 Selection of strength of housings	· Cast iron · Cast steel · Pressed steel	Load conditions, load directions, presence of impact	9 Strength of housing (P.44)
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.63)
9 Selection of maintenance and check	· Periodic inspection · Grease supply	Environment, importance of machine, bearing temperature, grease life	14 Handling (P.63)

4 Selection of unit

4.2 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 4.2**.

Table 4.2 (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	SA, 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 4.2 (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)
		Thick section (highly strong)	IP	Cast iron			
		Tapped-base	PA			○	UC (-L3)
		Higher centerheight	PH	Cast iron	×	○	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				
		With spigot joint (square) (round)	FS FC	Cast iron	○	○	UC (-L3), UK (-L3)
		Rhombic	FL				
		Shaft alignment (adjustable rhombic)	FA	Cast iron	×	○	UC (-L3)
		Cantilever (deformed)	FB				
		Light duty (rhombic)	LF	Cast iron	×	×	SB
		"Compact" (rhombic)	FL0	Special light alloy	○	×	SU
		Anticorrosion (rhombic)	SFL-H1	Stainless steel	○	○	UC-S6
		Anticorrosion and compact (rhombic)	SFL0	Stainless steel	○	×	SU-S6

Table 4.2 (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) (rhombic)	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)

4.3 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 type must be fully taken into consideration.

5 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.

5.1 Basic rating life and basic rating load

5.1.1 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**”.

5.1.2 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.

5.2 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 **Equation (5.1)**. 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 **Equation (5.2)**.

$$\text{(Total revolution)} \quad L_{10} = \left(\frac{C_r}{P_r} \right)^3 \dots\dots\dots (5.1)$$

$$\text{(Time)} \quad L_{10h} = \frac{10^6}{60n} \left(\frac{C_r}{P_r} \right)^3 \dots\dots\dots (5.2)$$

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 “6 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 **Equation (5.2)** are shown below.

$$L_{10h} = 500 f_h^3 \dots\dots\dots (5.3)$$

$$\text{Life factor} \quad f_h = f_n \cdot \frac{C_r}{P_r} \dots\dots\dots (5.4)$$

$$\begin{aligned} \text{Speed factor} \quad f_n &= \left(\frac{10^6}{500 \times 60n} \right)^{1/3} \\ &= (0.03n)^{-1/3} \dots\dots\dots (5.5) \end{aligned}$$

Values of f_n , f_h and L_{10h} can be easily found by the nomogram of **Fig. 5.1**.

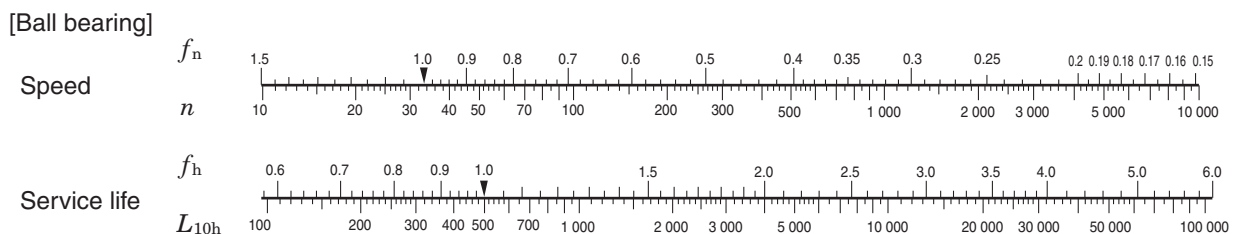


Fig. 5.1 Rotational speed (n) and its coefficients (f_n), and service life coefficient (f_h) and basic rating life (L_{10h})

5.2.1 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 °C 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 5.1**.

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

Table 5.1 Temperature factor

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

5.2.2 Modified rating life L_{nm}

The life of rolling bearings was standardized as a basic rating life in the 1960s, but in actual applications, sometimes the actual life and the basic rating life have been quite different due to the lubrication status and the influence of the usage environment. To make the calculated life closer to the actual life, a corrected rating life has been considered since the 1980s. In this corrected rating life, bearing characteristic factor a_2 (a correction factor for the case in which the characteristics related to the life are changed due to the bearing materials, manufacturing process, and design) and usage condition factor a_3 (a correction factor that takes into account usage conditions that have a direct influence on the bearing life, such as the lubrication) or factor a_{23} formed from the interdependence of these two factors, are considered with the basic rating life. These factors were handled differently by each bearing manufacturer, but they have been standardized as a modified rating life in **ISO 281** in 2007. In 2013, **JIS B 1518** (dynamic load ratings and rating life) was amended to conform to the **ISO**.

The basic rating life (L_{10}) shown in **Equation (5.1)** is the (fatigue) life with a dependability of 90 % under normal usage conditions for rolling bearings that have standard factors such as internal design, materials, and manufacturing quality. **JIS B 1518:2013** specifies a calculation method based on **ISO 281:2007**. To calculate accurate bearing life under a variety of operating conditions, it is necessary to consider elements such as the effect of changes in factors that can be anticipated when using different reliabilities and system approaches, and interactions between factors. Therefore, the specified calculation method considers additional stress due to the lubrication status, lubricant contamination, and fatigue load limit C_u (refer to P.33) on the inside of the bearing. The life that uses this life modification factor a_{ISO} , which considers the above factors, is called modified rating life L_{nm} and is calculated with the following **Equation (5.6)**.

$$L_{nm} = a_1 a_{ISO} L_{10} \quad (5.6)$$

In this equation,

L_{nm} : Modified rating life 10⁶ rotations

This rating life has been modified for one of or a combination of the following: reliability of 90 % or higher, fatigue load limit, special bearing characteristics, lubrication contamination, and special operating conditions.

L_{10} : Basic rating life 10⁶ rotations
(reliability: 90 %)

a_1 : Life modification factor for reliability
..... refer to section (1)

a_{ISO} : Life modification factor
..... refer to section (2)

[Remark] When bearing dimensions are to be selected given L_{nm} greater than 90 % in reliability, the strength of shaft and housing must be considered.

(1) Life modification factor for reliability a_1

The term “reliability” is defined as “for a group of apparently identical rolling bearings, operating under the same conditions, the percentage of the group that is expected to attain or exceed a specified life” in **ISO 281:2007**. Values of a_1 used to calculate a modified rating life with a reliability of 90 % or higher (a failure probability of 10 % or less) are shown in **Table 5.2**.

Table 5.2 Life modification factor for reliability a_1

Reliability, %	L_{nm}	a_1
90	L_{10m}	1
95	L_{5m}	0.64
96	L_{4m}	0.55
97	L_{3m}	0.47
98	L_{2m}	0.37
99	L_{1m}	0.25
99.2	$L_{0.8m}$	0.22
99.4	$L_{0.6m}$	0.19
99.6	$L_{0.4m}$	0.16
99.8	$L_{0.2m}$	0.12
99.9	$L_{0.1m}$	0.093
99.92	$L_{0.08m}$	0.087
99.94	$L_{0.06m}$	0.080
99.95	$L_{0.05m}$	0.077

(Citation from **JIS B 1518:2013**)

(2) Life modification factor a_{ISO}

a) System approach

The various influences on bearing life are dependent on each other. The system approach of calculating the modified life has been evaluated as a practical method for determining life modification factor a_{ISO} (ref. **Fig. 5.2**). Life modification factor a_{ISO} is calculated with the following equation. A diagram is available for each bearing type (radial ball bearings, radial roller bearings, thrust ball bearings, and thrust roller bearings). (Each diagram (**Figs. 5.3 to 5.6**) is a citation from **JIS B 1518:2013**.)

Note that in practical use, this is set so that life modification factor $a_{ISO} \geq 50$.

$$a_{ISO} = f\left(\frac{e_c C_u}{P}, \kappa\right) \dots\dots\dots (5.7)$$

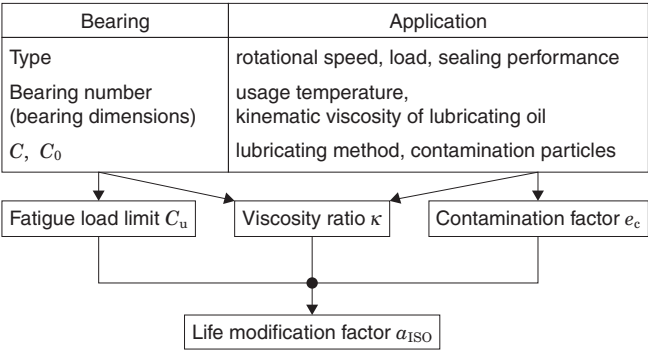


Fig. 5.2 System approach

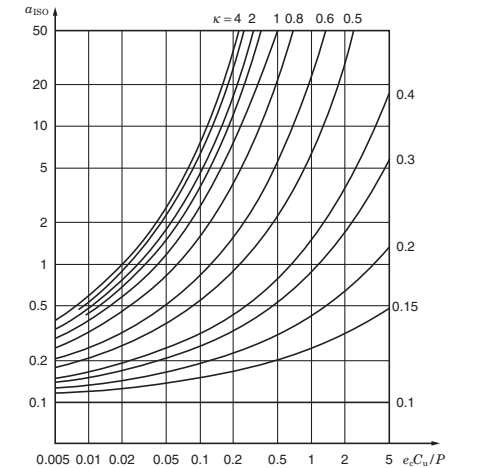


Fig. 5.3 Life modification factor a_{ISO}
(Radial ball bearings)

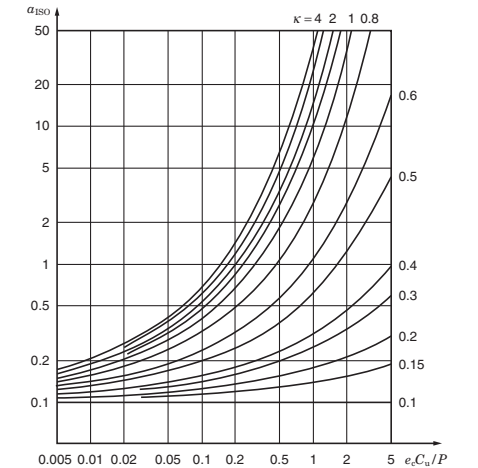


Fig. 5.4 Life modification factor a_{ISO}
(Radial roller bearings)

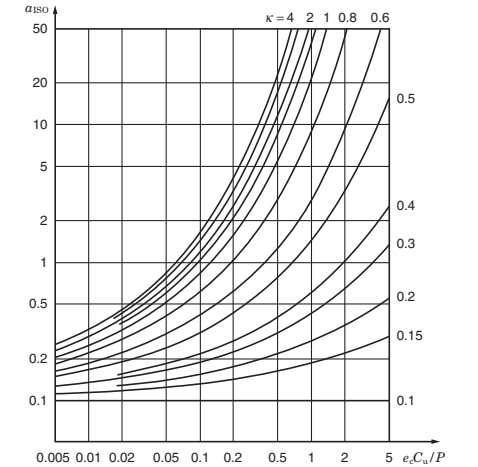


Fig. 5.5 Life modification factor a_{ISO}
(Thrust ball bearings)

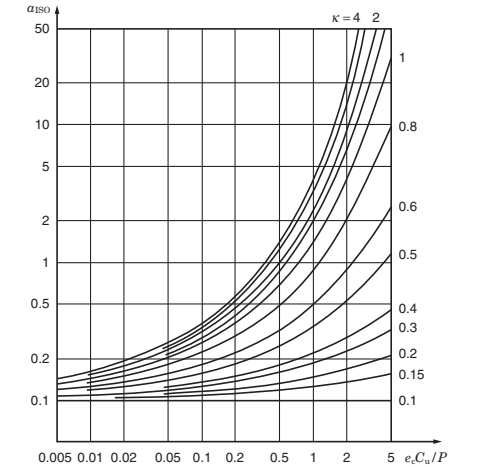


Fig. 5.6 Life modification factor a_{ISO}
(Thrust roller bearings)

(**Figs. 5.3 to 5.6** Citation from **JIS B 1518:2013**)

b) Fatigue load limit C_u

For regulated steel materials or alloy steel that has equivalent quality, the fatigue life is unlimited so long as the load condition does not exceed a certain value and so long as the lubrication conditions, lubrication cleanliness class, and other operating conditions are favorable. For general high-quality materials and bearings with high manufacturing quality, the fatigue stress limit is reached at a contact stress of approximately 1.5 GPa between the raceway and rolling elements. If one or both of the material quality and manufacturing quality are low, the fatigue stress limit will also be low.

The term “fatigue load limit” C_u is defined as “bearing load under which the fatigue stress limit is just reached in the most heavily loaded raceway contact” in ISO 281: 2007. and is affected by factors such as the bearing type, size, and material.

For details on the fatigue load limits of special bearings and other bearings not listed in this catalog, contact JTEKT.

c) Contamination factor e_c

If solid particles in the contaminated lubricant are caught between the raceway and the rolling elements, indentations may form on one or both of the raceway and the rolling elements. These indentations will lead to localized increases in stress, which will decrease the life. This decrease in life attributable to the contamination of the lubricant can be calculated from the contamination level as contamination factor e_c .

D_{pw} shown in this table is the pitch diameter of ball/roller set, which is expressed simply as $D_{pw} = (D + d)/2$. (D : Outside diameter, d : Bore diameter)

For information such as details on special lubricating conditions or detailed investigations, contact JTEKT.

d) Viscosity ratio κ

The lubricant forms an oil film on the roller contact surface, which separates the raceway and the rolling elements. The status of the lubricant oil film is expressed by viscosity ratio κ , the actual kinematic viscosity at the operating temperature ν divided by the reference kinematic viscosity ν_1 as shown in the following equation.

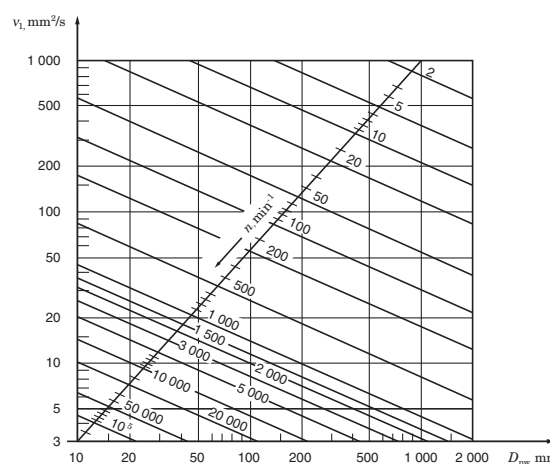
A κ greater than 4, equal to 4, or less than 0.1 is not applicable.

For details on lubricants such as grease and lubricants with extreme pressure additives, contact JTEKT.

$$\kappa = \frac{\nu}{\nu_1} \quad (5.8)$$

ν : Actual kinematic viscosity at the operating temperature; the viscosity of the lubricant at the operating temperature

ν_1 : Reference kinematic viscosity; determined according to the speed and pitch diameter of ball/roller set D_{pw} of the bearing (ref. Fig. 5.7)



(Fig. 5.7 Citation from JIS B 1518:2013)

Fig. 5.7 Reference kinematic viscosity ν_1

5.2.3 Service life of bearing system comprising two or more bearings

Even for systems which comprise two or more bearings, if one bearing is damaged, the entire system malfunctions.

Where all bearings used in an application are regarded as one system, the service life of the bearing system can be calculated using the following equation,

Table 5.3 Values of contamination factor e_c

Contamination level	e_c	
	$D_{pw} < 100 \text{ mm}$	$D_{pw} \geq 100 \text{ mm}$
Extremely high cleanliness: The size of the particles is approximately equal to the thickness of the lubricant oil film, this is found in laboratory-level environments.	1	1
High cleanliness: The oil has been filtered by an extremely fine filter, this is found with standard grease-packed bearings and sealed bearings.	0.8 to 0.6	0.9 to 0.8
Standard cleanliness: The oil has been filtered by a fine filter, this is found with standard grease-packed bearings and shielded bearings.	0.6 to 0.5	0.8 to 0.6
Minimal contamination: The lubricant is slightly contaminated.	0.5 to 0.3	0.6 to 0.4
Normal contamination: This is found when no seal is used and a coarse filter is used in an environment in which wear debris and particles from the surrounding area penetrate into the lubricant.	0.3 to 0.1	0.4 to 0.2
High contamination: This is found when the surrounding environment is considerably contaminated and the bearing sealing is insufficient.	0.1 to 0	0.1 to 0
Extremely high contamination	0	0

(Table 5.3 Citation from JIS B 1518:2013)

$$\frac{1}{L^e} = \frac{1}{L_1^e} + \frac{1}{L_2^e} + \frac{1}{L_3^e} + \dots \quad (5.9)$$

where :

L : rating life of system

$L_1, L_2, L_3 \dots$: rating life of each bearing

e : constant

$\left(\begin{array}{l} e = 10/9 \dots \text{ball bearing} \\ e = 9/8 \dots \text{roller bearing} \\ \text{The mean value is for a system using} \\ \text{both ball and roller bearings.} \end{array} \right)$

[Example]

When a shaft is supported by two roller bearings whose service lives are 50 000 hours and 30 000 hours respectively, the rating life of the bearing system supporting this shaft is calculated as follows, using **Equation (5.9)** :

$$\frac{1}{L^{9/8}} = \frac{1}{50\,000^{9/8}} + \frac{1}{30\,000^{9/8}}$$

$$L \doteq 20\,000 \text{ h}$$

The equation suggests that the rating life of these bearings as a system becomes shorter than that of the bearing with the shorter life.

This fact is very important in estimating bearing service life for applications using two or more bearings.

5.2.4 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 5.4**.

Table 5.4 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

5.3 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 equation shown below.

$$\log L = 6.10 - 4.40 \times 10^{-6} d_m n - 2.50 \left(\frac{P_r}{C_r} - 0.05 \right) - (0.021 - 1.80 \times 10^{-8} d_m n) T \quad (5.10)$$

Whereas,

L : Grease life h

d_m : Pitch dia. of ball set mm

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

$\left(\begin{array}{l} D : \text{Nominal bearing outer dia.,} \\ d : \text{Nominal bearing bore dia.} \end{array} \right)$

n : Rotational speed of bearing min⁻¹

P_r : Dynamic equivalent radial load N
(see “**6 Bearing load**”)

C_r : Basic dynamic radial load rating of bearing N

T : Operating temperature of bearing °C

Applicable conditions for the **Equation (5.10)** are shown below.

1) Operating temperature of bearing : T °C

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

$\left(\begin{array}{l} \text{If } T \text{ is smaller than } 50 (T < 50), \\ \text{following condition should be applied : } T = 50. \end{array} \right)$

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

2) Rotational speed of bearing : $d_m n$

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

$\left(\begin{array}{l} \text{If } d_m n \text{ is smaller than } 12.5 \times 10^4 (d_m n < 12.5 \times 10^4), \\ \text{following condition should be applied :} \\ d_m n = 12.5 \times 10^4 \end{array} \right)$

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 :
 $\frac{P_r}{C_r} \leq 0.2$

$\left(\begin{array}{l} \text{If } \frac{P_r}{C_r} \text{ is smaller than } 0.05 \left(\frac{P_r}{C_r} < 0.05 \right), \\ \text{following condition should be applied : } \frac{P_r}{C_r} = 0.05 \end{array} \right)$

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 **Equation (5.10)** is shown in **Fig. 5.8**.

6 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.

6.1 Loads applied to bearing

6.1.1 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.

$$F = f_w \cdot F_c \quad \text{..... (6.1)}$$

Whereas,

F : Load actually applied to bearing N

F_c : Theoretically calculated load N

f_w : Load factor (see **Table 6.1**)

Table 6.1 Load factor f_w

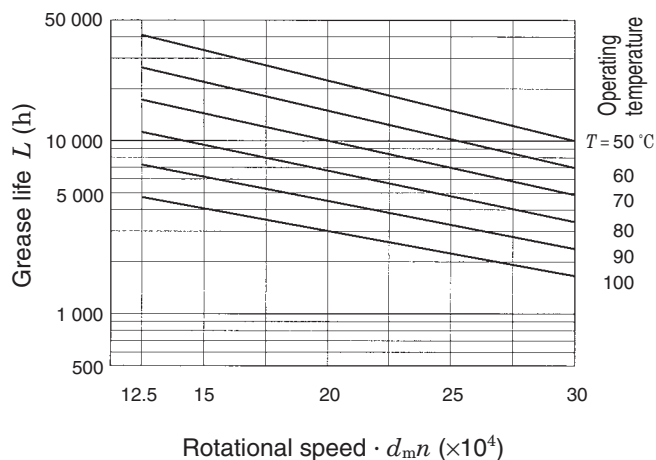
Operating conditions	Applications	f_w
Virtually no vibration or impact	Electric machines and instruments	1 – 1.2
Standard operation (weak impact)	Agricultural machines and blower	1.2 – 2
Great vibration and impact	Constructive machines and grinder	2 – 3

6.1.2 Loads in case of belt or chain transmission

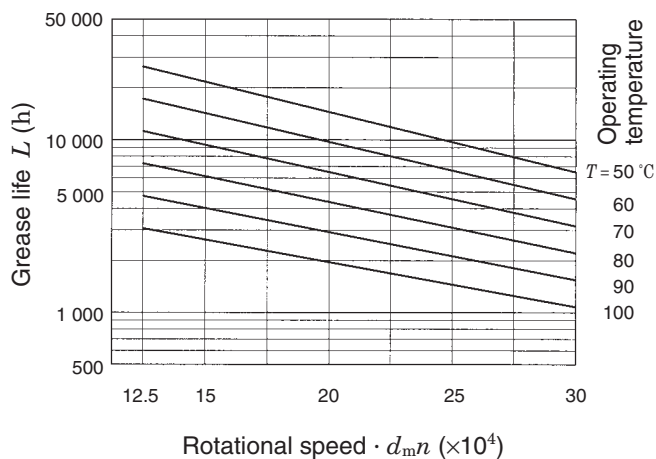
As for belt transmission, theoretical load applied to the pulley shaft can be found by effective transmission force of belt. Actually, the effective transmission force must be multiplied by load factor (f_w) obtained with taking vibration and impact generated while machine is being operated into consideration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

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



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



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

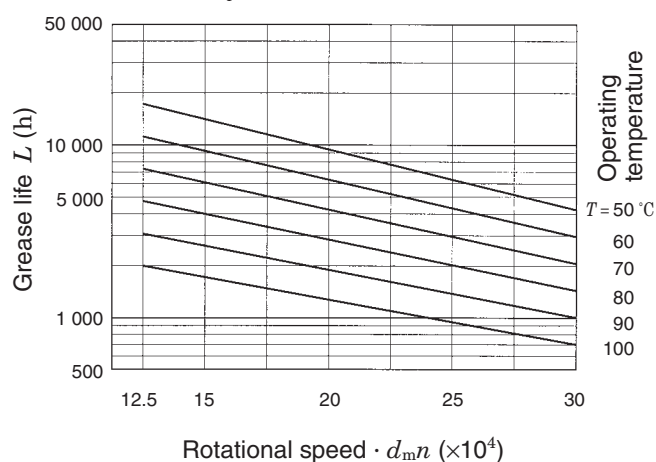


Fig. 5.8 Relation of grease life to bearing load, rotational speed, and operating temperature (reference)

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

$$= \frac{19.1 \times 10^6 W}{D_p \cdot n} \cdot f_w \cdot f_b \quad \text{..... (6.2)}$$

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 6.1)	
f_b : Belt factor (see Table 6.2)	

Table 6.2 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

6.1.3 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)

$$K_t = \frac{2M}{D_p} = \frac{19.1 \times 10^6 W}{D_p n} \quad \text{..... (6.3)}$$

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

$$K_r = K_t \tan \alpha \quad \text{..... (6.4)}$$

- (3) Synthetic load applied to gear

$$K_g = \sqrt{K_t^2 + K_r^2} = K_t \sec \alpha \quad \text{..... (6.5)}$$

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.

$$F_g = f_w \cdot f_g \cdot K_g \quad \text{..... (6.6)}$$

Whereas,

F_g : Load actually applied to gear	N
K_g : Theoretically synthetic load applied to gear	N
f_w : Load factor (see Table 6.1)	
f_g : Gear factor (see Table 6.3)	

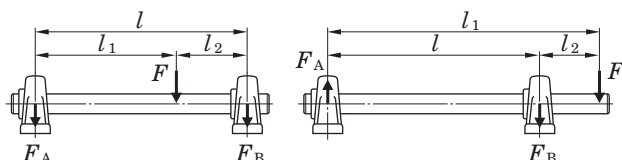
Table 6.3 Gear factor f_g

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

6.2 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. 6.1** 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.



$$F_A = \frac{l_2}{l} \cdot F \quad (6.7)$$

$$F_B = \frac{l_1}{l} \cdot F \quad (6.8)$$

Fig. 6.1 Distribution of load to bearing

6.3 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).

6.3.1 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 equation shown below.

$$P_r = XF_r + YF_a \quad (6.9)$$

Whereas,

P_r : Dynamic equivalent radial load	N
F_r : Radial load	N
F_a : Axial load	N
X : Radial load factor (see Table 6.4)	
Y : Axial load factor (see Table 6.4)	

Table 6.4 Radial load factor (X) and axial load factor (Y)

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

[Remarks] 1. C_{0r} (basic static radial load rating) and f_0 (factor) are shown in the dimensional tables.

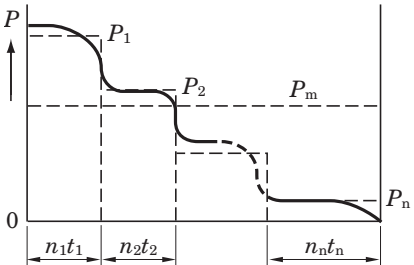
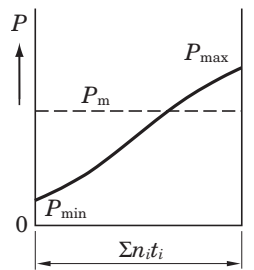
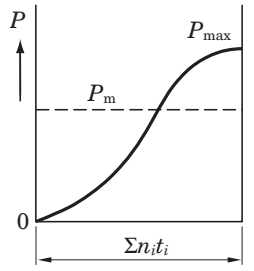
2. If $f_0 F_a / C_{0r}$ does not conform to the table above, find by interpolation.

6.3.2 Mean dynamic equivalent load in case of fluctuated load

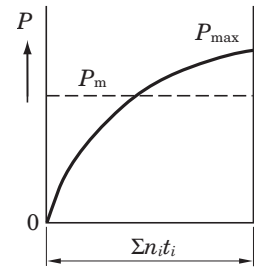
If level or direction of the load applied to a bearing is fluctuated, it is necessary to find the mean dynamic equivalent load to allow the same bearing life as that under actual fluctuated conditions.

Table 6.5 shows the method of finding the mean dynamic equivalent load under various fluctuated conditions.

Table 6.5 Calculation of mean dynamic equivalent load in case of fluctuated load

(1) Staged fluctuation	
	
$P_m = \sqrt[p]{\frac{P_1^p n_1 t_1 + P_2^p n_2 t_2 + \dots + P_n^p n_n t_n}{n_1 t_1 + n_2 t_2 + \dots + n_n t_n}} \quad \dots \dots \dots (6.10)$	
(2) Stageless fluctuation	
	
$P_m = \frac{P_{\min} + 2 P_{\max}}{3} \quad \dots \dots \dots (6.11)$	
(3) Sine curve fluctuation	
	
$P_m = 0.68 P_{\max} \quad \dots \dots \dots (6.12)$	

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



$$P_m = 0.75 P_{\max} \quad \dots \dots \dots (6.13)$$

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

6.4 Basic static load rating and static equivalent load

6.4.1 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.

6.4.2 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_{0r}) of the ball bearing for unit can be calculated by the equation below (use greater value).

$$P_{0r} = 0.6 F_r + 0.5 F_a \quad (6.14)$$

$$P_{0r} = F_r \quad (6.15)$$

Whereas,

P_{0r} : Static equivalent radial load N

F_r : Radial load N

F_a : Axial load N

6.4.3 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.

$$f_s = \frac{C_{0r}}{P_{0r}} \quad (6.16)$$

Whereas,

f_s : Safety factor (see **Table 6.6**)

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

P_{0r} : Static equivalent radial load N

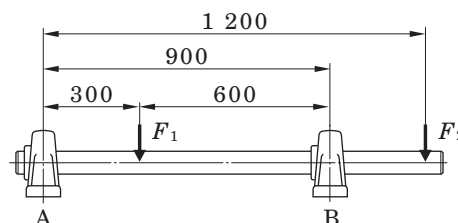
Table 6.6 Safety factor f_s (recommended)

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

6.5 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 **Equations (6.7) and (6.8)**.

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

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

$$F_{2A} = -\frac{1200 - 900}{900} \times 4.5 = -1.5 \text{ (kN)}$$

[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.

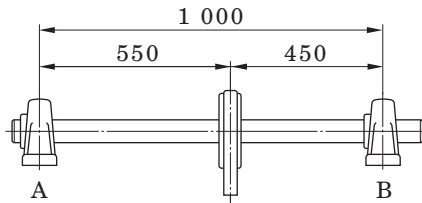
$$F_{1B} = \frac{300}{900} \times 1.5 = 0.5 \text{ (kN)}$$

$$F_{2B} = \frac{1200}{900} \times 4.5 = 6.0 \text{ (kN)}$$

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

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 **Equation (6.2)**.

From **Table 6.1**, 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 6.2**.

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

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

- (2) Find the load actually applied to the bearing A and bearing B (F_A and F_B) with **Equations (6.7)** and **(6.8)**.

$$F_A = \frac{450}{1000} \times 4.78 = 2.15 \text{ (kN)}$$

$$F_B = \frac{550}{1000} \times 4.78 = 2.63 \text{ (kN)}$$

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 6.4**.

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

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

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

- (2) Find the dynamic equivalent radial load P_r with **Equation (6.9)**.

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

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

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 6.1**, 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 **Equation (5.2)**.

$$L_{10h} = \frac{10^6}{60n} \cdot \left(\frac{C_r}{P_r} \right)^3 = \frac{10^6}{60 \times 1000} \times \left(\frac{26.7}{2.72} \right)^3$$

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

- (3) Calculate bearing life L_{10h} with the nomogram shown in **Fig. 5.1**.

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 $L_{10h} \doteq 16\,000$ 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. 5.1**, when life time L_h is 5 000 h ($L_h = 5\,000$ h), life factor f_h can be found as 2.16 ($f_h \doteq 2.16$), and speed factor f_n can be found as 0.28 ($f_n \doteq 0.28$) when the rotational speed n is 1 500 min⁻¹ ($n = 1\,500$ min⁻¹).

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

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

- (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 **Equations (5.4) and (5.5)**.

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

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

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

- (2) From **Table 6.6**, define safe factor f_s as 2 ($f_s = 2$), and find the static radial load rating of bearing required C_{0r} .

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

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

Example 7 Calculating bearing life in 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} ($n = 800 \text{ min}^{-1}$). Note that the radial load F_r includes load factor and gear factor.

- (1) From **Table 5.1**, find the dynamic load rating C_r with in the case that a bearing is used at 175°C .

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

Find the bearing life L_{10h} with using **Equation (5.2)**.

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

- (2) If a bearing unit is operated at 175°C , grease is degraded faster, and it cannot be used without lubrication. Supply grease at intervals specified in **Table 14.4**.
- (3) If the shaft 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 “10 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} ($n = 800 \text{ min}^{-1}$). Note that the radial load F_r includes load factor and belt factor. Operating temperature of the bearing should be 40°C .

Find the grease life L with using **Equation (5.10)**.

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

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 **Equation (5.2)**.

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

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

7 Allowable rotational speed

7.1 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 7.1 shows the standard allowable rotational speeds of ball bearing units.

Table 7.1 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 7.2**.

7.2 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 7.2 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 7.2 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	—	—	—	—	—

8 Operating temperature and bearing specifications

8.1 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 3.3**).

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.

8.2 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 service 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 **Equation (8.1)**.

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

$$S_{t1} = \alpha \cdot D_e \cdot \Delta t \quad (8.1)$$

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 $D_e \div 0.92 D$

Diameter series 3 $D_e \div 0.9 D$

D : Nominal bearing outer dia. mm

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

If a ball bearing unit is used 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 “10 Design of shaft and base”)

9 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.

9.1 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 9.1 shows the safety factor of gray cast iron products against load, and **Fig. 9.1** to **Fig. 9.7** show the outline values of static destruction strength of pillow block type, flange type and take-up type housings.

Table 9.1 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

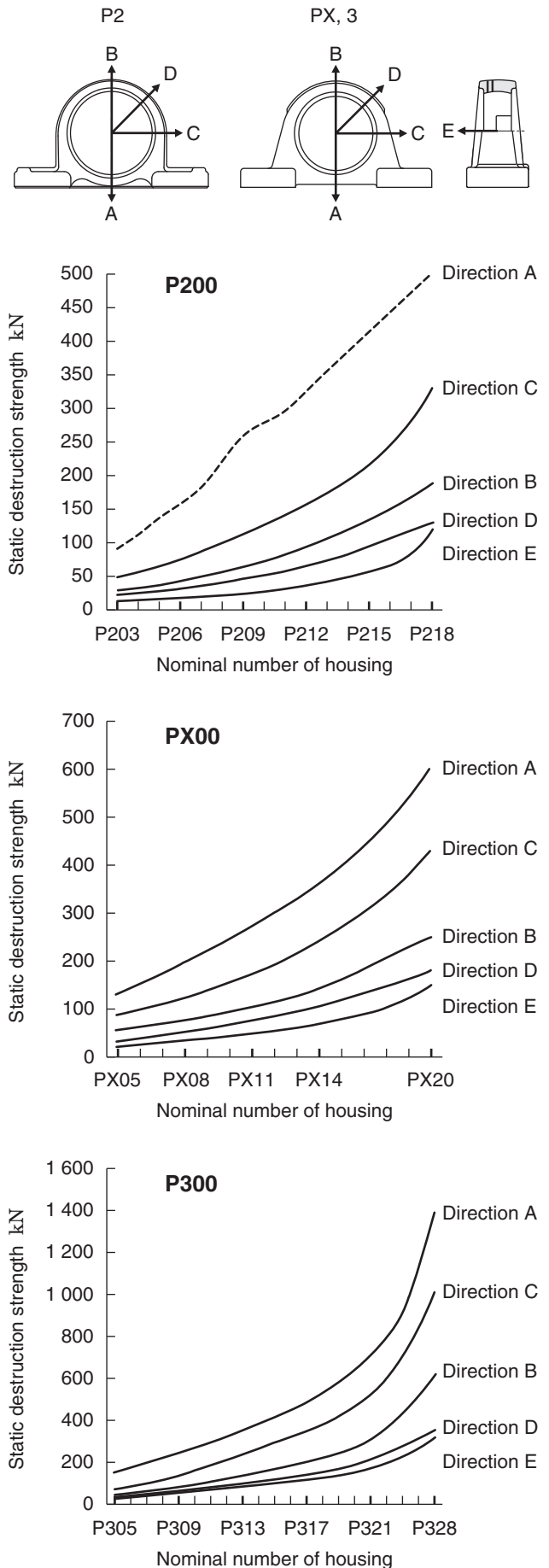


Fig. 9.1 Static destruction strength of pillow block type housing (P)

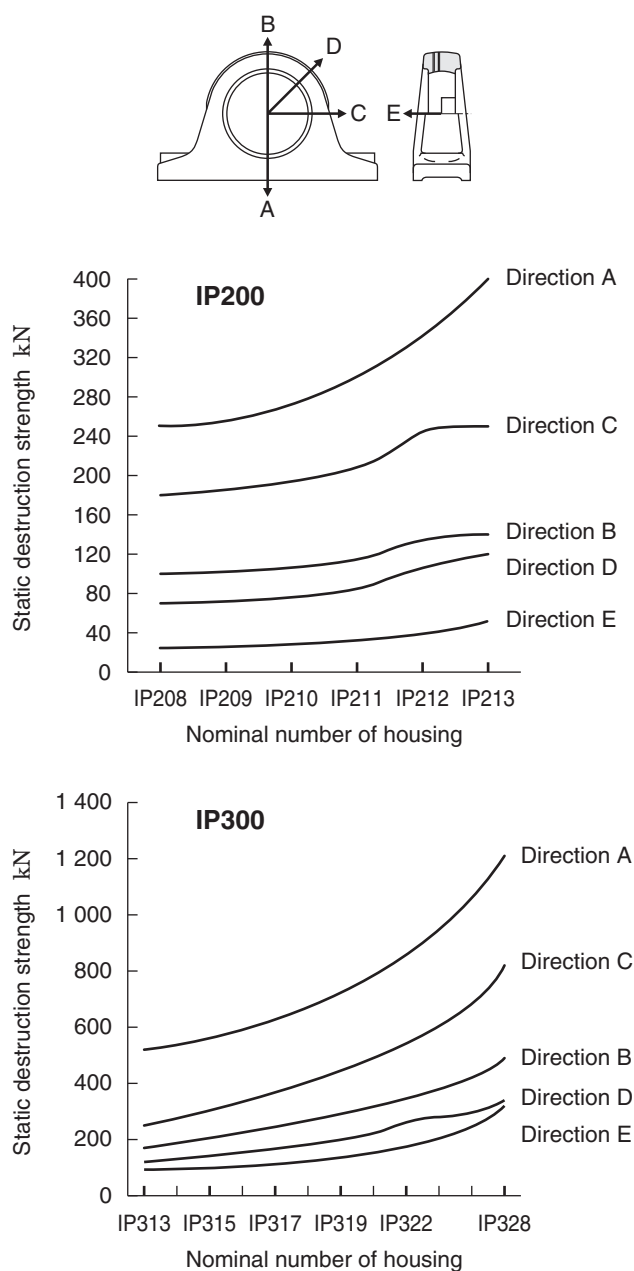


Fig. 9.2 Static destruction strength of thick section pillow block type housing (IP)

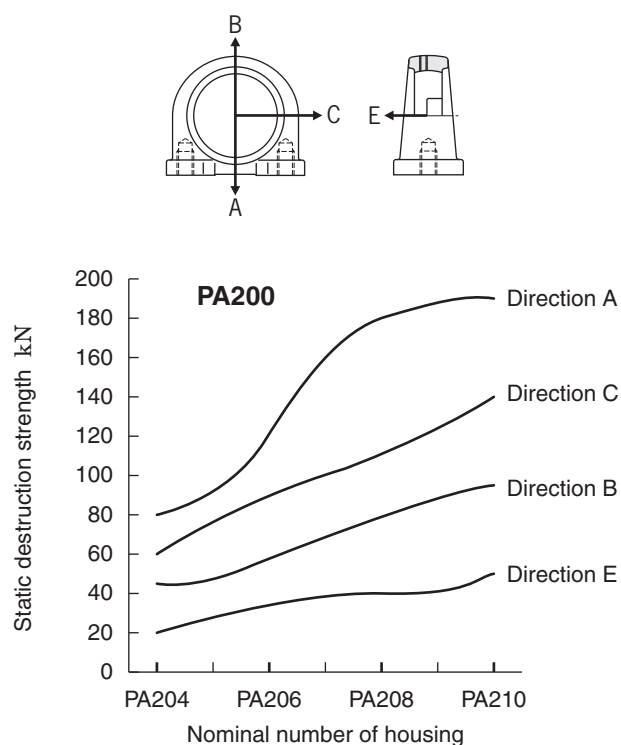


Fig. 9.3 Static destruction strength of tapped-base pillow block type housing (PA)

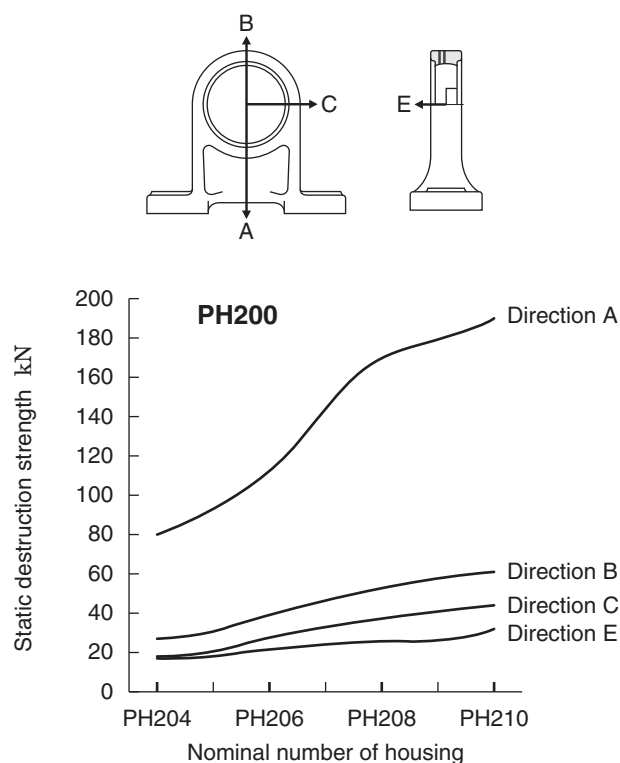


Fig. 9.4 Static destruction strength of higher centerheight pillow block type housing (PH)

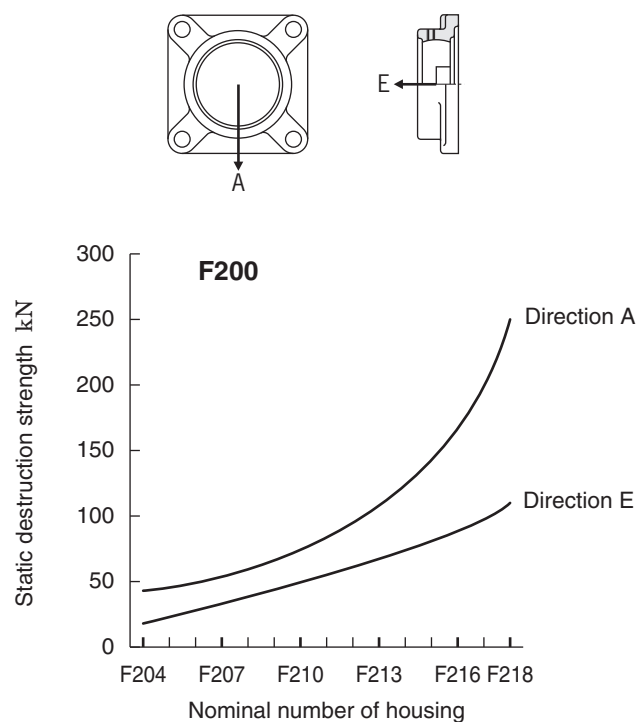


Fig. 9.5 Static destruction strength of square-flanged type housing (F)

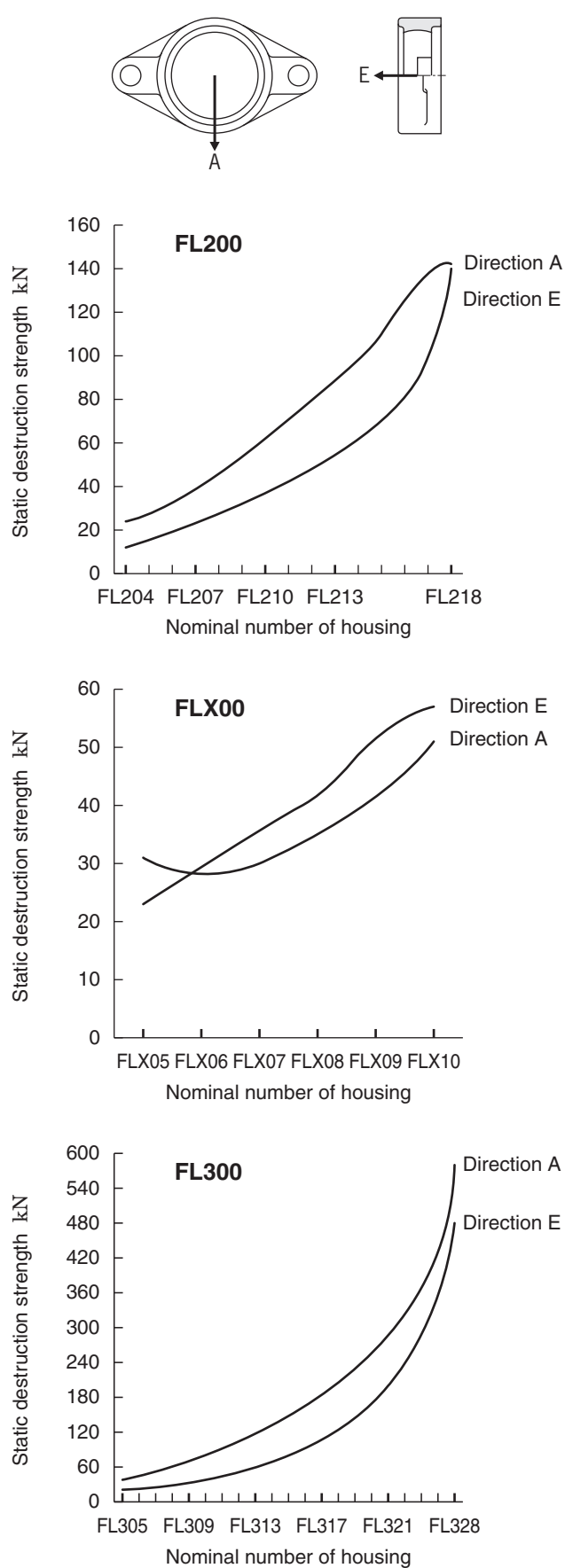


Fig. 9.6 Static destruction strength of rhombic-flanged type housing (FL)

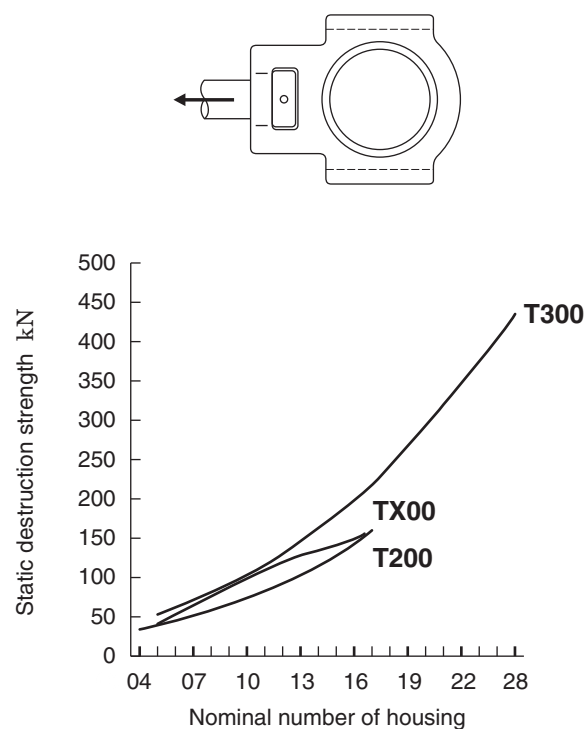


Fig. 9.7 Static destruction strength of take-up type housing (T)

9.2 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 9.2 shows the allowable load of the pressed steel housing.

Table 9.2 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)

9.3 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 9.3 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. 9.1**, PA200 of **Fig. 9.3**, F200 of **Fig. 9.5**, FL200 of **Fig. 9.6** and T200 of **Fig. 9.7**. For the basic values of the static destruction strength of the SP000 and SFL000 type housings, see P000 of **Fig. 9.8** and FL000 of **Fig. 9.9** and multiply them by 1.5 respectively.

Table 9.3 Safety factor of stainless steel products

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

9.4 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 9.4 shows safety factor for zinc alloy die-cast, and **Fig. 9.8** and **9.9** show the outline values of the static destruction strength of the zinc alloy die-cast housing.

Table 9.4 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

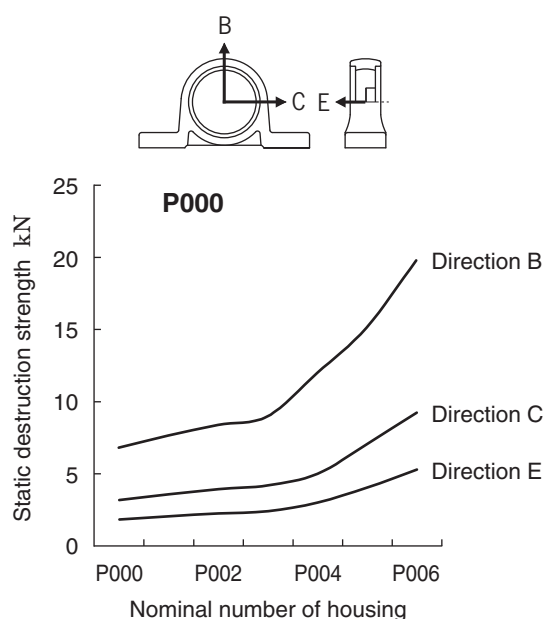


Fig. 9.8 Static destruction strength of “compact” housing (P)

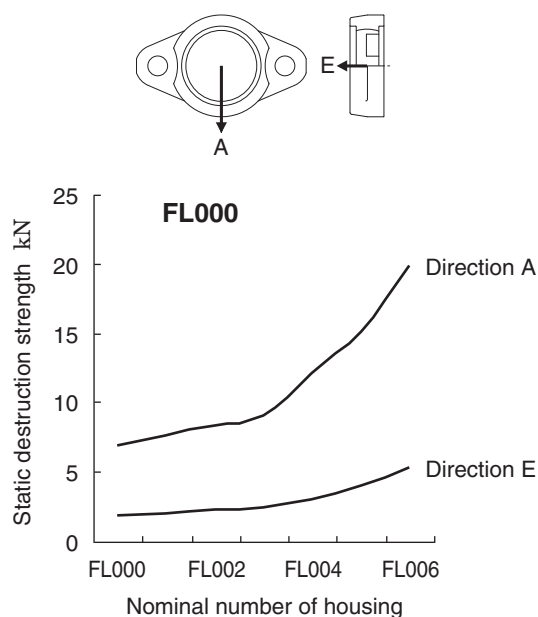


Fig. 9.9 Static destruction strength of “compact” housing (FL)

10 Design of shaft and base

10.1 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.

10.1.1 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 10.1 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 10.2** showing the guideline for the tolerance class of the shaft used.

Table 10.3 shows the recommended deviation from circular and cylindrical forms of the shaft used.

Table 10.1 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 10.2 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 10.3 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 10.4** as the bearing for blower (cylindrical bore with set screws) used is recommended.

Table 10.4 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 10.5 shows the tolerance of shaft used for the tapered bore bearing (with adapter).

Table 10.5 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.

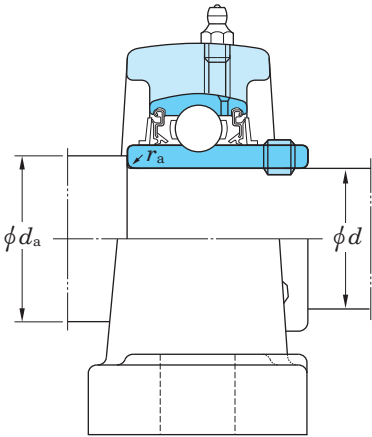
Therefore, for cylindrical bore bearing with eccentric locking collar, use of the shaft in the same tolerance class (h5 or j5) as that used with the bearing for blower (special code S5) is recommended (see **Table 10.4**).

10.1.2 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 10.6 shows the shoulder diameter and the fillet radius of the shouldered shaft.

Table 10.6 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

10.1.3 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.

Equation (10.1) shows the relation of temperature increase to expansion of the shaft.

$$\Delta l = \alpha \cdot \Delta t \cdot l \quad (10.1)$$

Whereas,

Δl : Expansion of shaft mm

α : Linear expansion coefficient of shaft

in the case of standard steel $11 \sim 12 \times 10^{-6}$

Δt : Temperature increase °C

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. 10.1 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 10.7** 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.

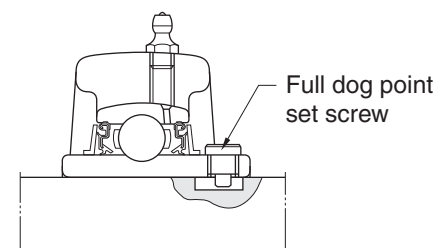
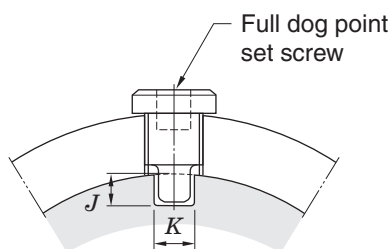


Fig. 10.1 Use on free side with full dog point set screw

Table 10.7 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. 10.2 shows the example of structure of the cartridge type unit as the free side unit.

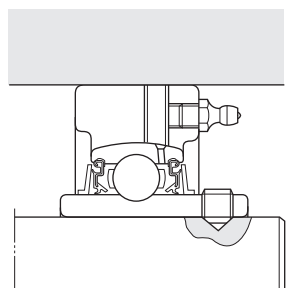


Fig. 10.2 Use of cartridge type unit on free side

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 “8 Operating temperature and bearing specifications”).

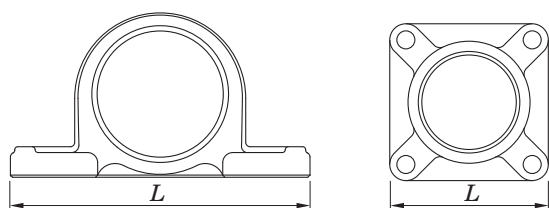
10.2 Design of base

10.2.1 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. 10.3 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. 10.3 Flatness of mounting surface of base (recommended)

10.2.2 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 10.8 shows the tolerance of cylindrical bore of the base that the cartridge type unit is to be installed.

Table 10.8 Tolerance of cylindrical bore for mounting cartridge type unit (recommended)

Unit : μm

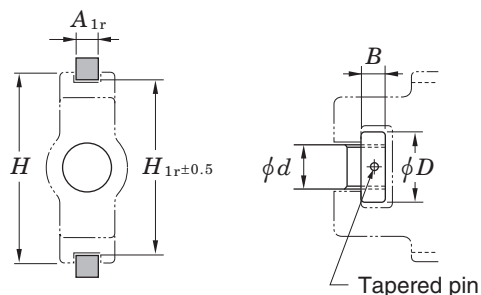
Nominal bore dia. of cylindrical bore (mm)		Tolerance of cylindrical bore			
		H7		G7	
over	up to	upper	lower	upper	lower
50	80	+30	0	+40	+10
80	120	+35	0	+47	+12
120	180	+40	0	+54	+14
180	250	+46	0	+61	+15
250	315	+52	0	+69	+17
315	400	+57	0	+75	+18

10.2.3 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 10.9 shows the dimensions of the guide rail, adjuster bolt, and round nut to install the take-up type unit to the base.

Table 10.9 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

10.3 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 **Supplementary 5** at the end of this catalogue.

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 ΔD_m		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.

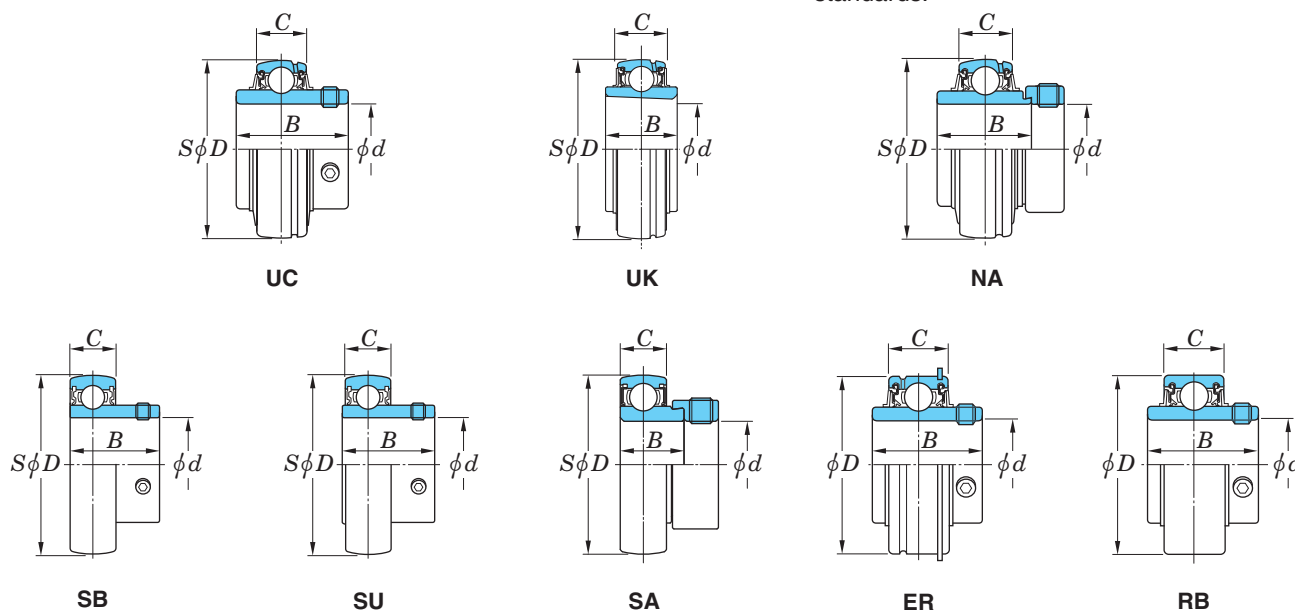


Table 11.1 Tolerances and permissible values of inner rings of ball bearings for ball bearing units

Unit : μm

Nominal bearing bore dia. d (mm)		Single plane mean bore diameter deviation Δd_{mp}		Single plane bore diameter variation V_{dsp}	eccentricity deviation of eccentric surface of inner ring and eccentric locking collar ΔH_s		Single inner (outer) ring width deviation $\Delta B_s (\Delta C_s)$		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.

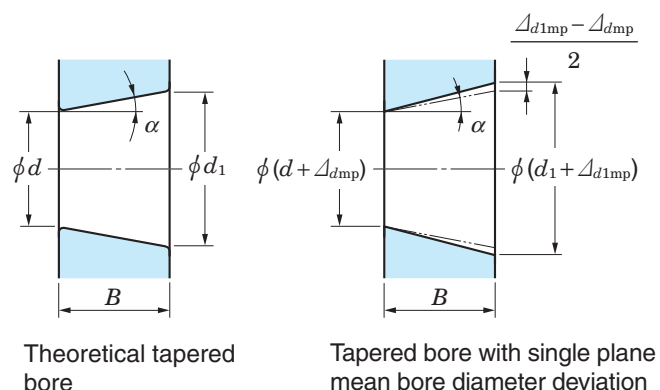
Table 11.3 Tolerances and permissible values of inner ring of ball bearing for blower unit (S5)

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



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

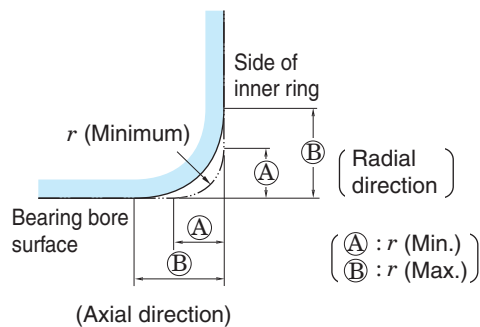
V_{dsp} : Single plane bore diameter variation (a tolerance for the diameter variation given by a maximum value applying in any radial plane of the bore)

B : Nominal inner ring width

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

$\alpha = 2^\circ 23' 9.4''$
 $= 2.38594^\circ$
 $= 0.041643 \text{ rad}$

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.

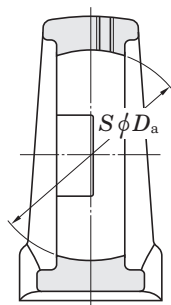
Table 11.6 shows the tolerance of diameter of the spherical bearing seat of housing. Usually, select tolerance class J7 that allows transition fitting of the housing and the bearing.

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. ΔD_{dam}		Deviation of spherical bearing seat dia. ΔD_{dam}		Deviation of spherical bearing seat dia. ΔD_{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 depending on the application.

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

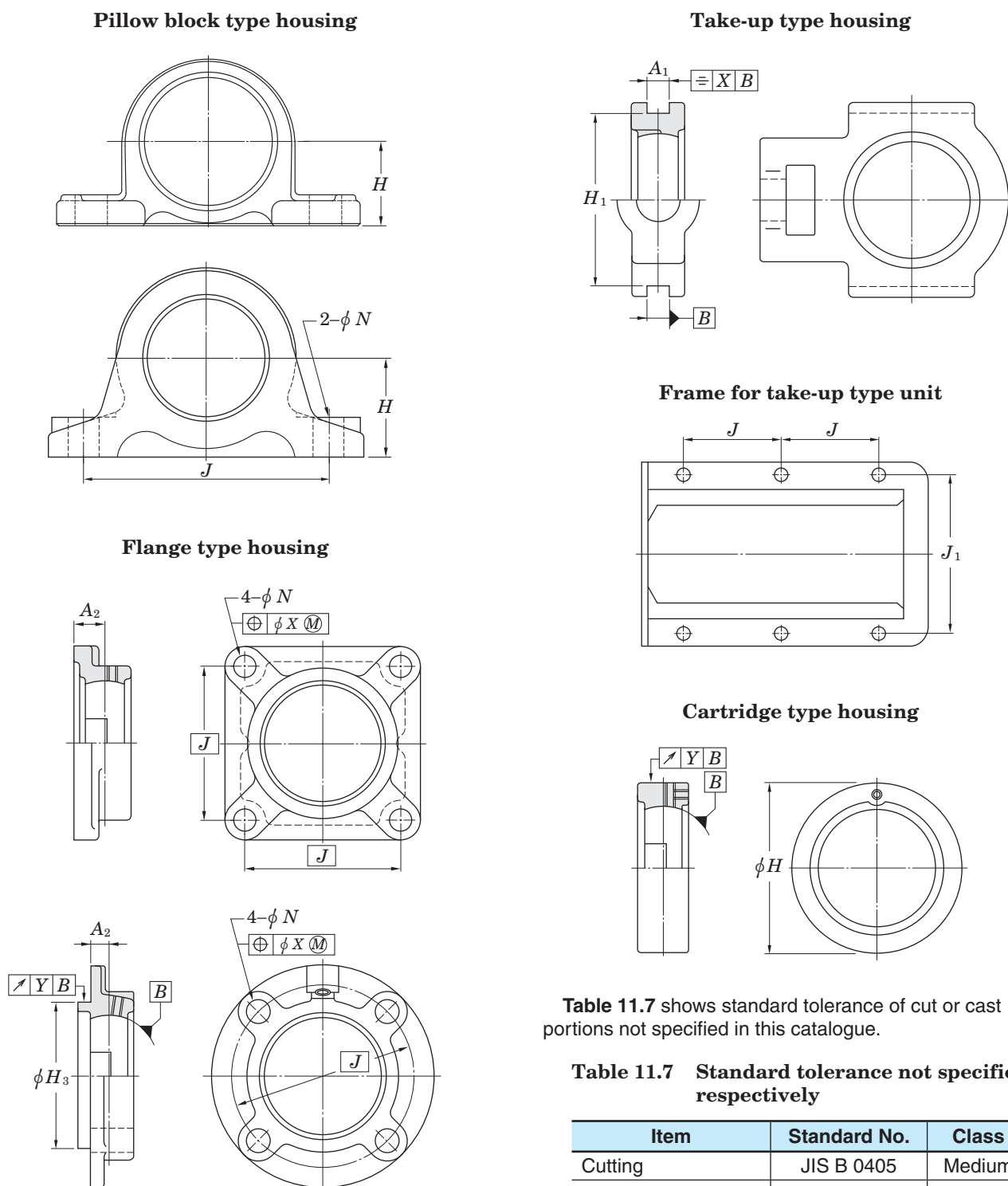


Table 11.7 shows standard tolerance of cut or cast portions not specified in this catalogue.

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

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

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 “8 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 N	Correction of clearance				
over	up to		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
SUJ 3	0.95– 1.10	0.40– 0.70	0.90– 1.15	0.025 or less	0.025 or less	0.90– 1.20	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	0.15 or less	–	0.60 or less	0.100 or less	0.035 or less	–	–
SPCD	0.10 or less	–	0.50 or less	0.040 or less	0.035 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 general structural rolled steel (SS400) (JIS G 3101)

Type code	Yielding point or bearing force N/mm ²			Tensile strength MPa	Thickness of steel mm	Tensile test piece	Elonga- tion %	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 12.5 Mechanical properties of zinc alloy die-cast (ZDC02) (JIS H 5301) (Reference)

Code	Tensile strength MPa	Elongation %	Impact MJ/m ²	Hardness HB
ZDC2	285	10	1.4	82

Table 12.6 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
SCS14	185 or more	440 or more	28 or more	183 or less

Table 12.7 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
SPCD	270 or more	36 or more

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

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

12.3 Materials of parts and accessories

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

Table 12.9 Materials of parts and accessories of ball bearing units

Designations	Materials	Code	Standard code
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	SUS304	JIS G 4303
Adapter sleeve for bearing	Mechanical structural carbon steel	S17C	JIS G 4051
Lock nut for bearing	Mechanical structural carbon steel	S17C	JIS G 4051
Washer for bearing	Cold-reduced carbon steel sheets and strips	SPCC	JIS G 3141
Eccentric locking collar	Mechanical structural carbon steel	S17C	JIS G 4051
Grease nipple	Copper and copper alloy rod	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 Equations below.

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

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

Whereas,

M : Friction torque of bearing 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.

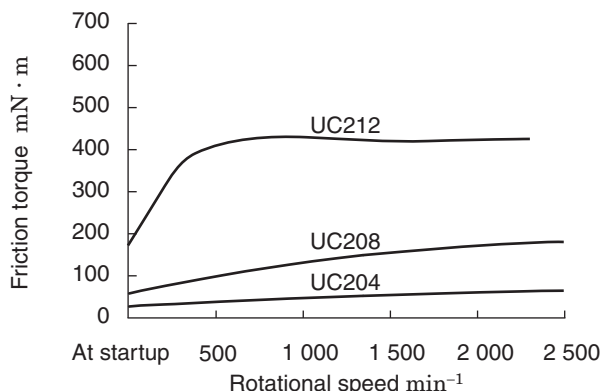


Fig. 13.1 Example of measurement result of ball bearing unit

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.

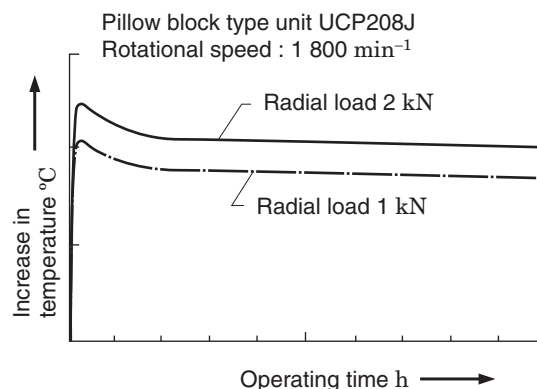


Fig. 13.2 Example of temperature measurement during operation of pillow block type unit

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.

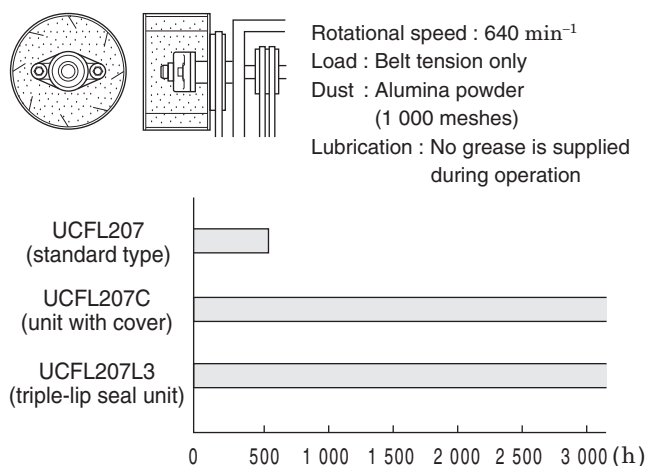


Fig. 13.3 Example of result of dust sprinkle rotating test (dust preventive performance)

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.

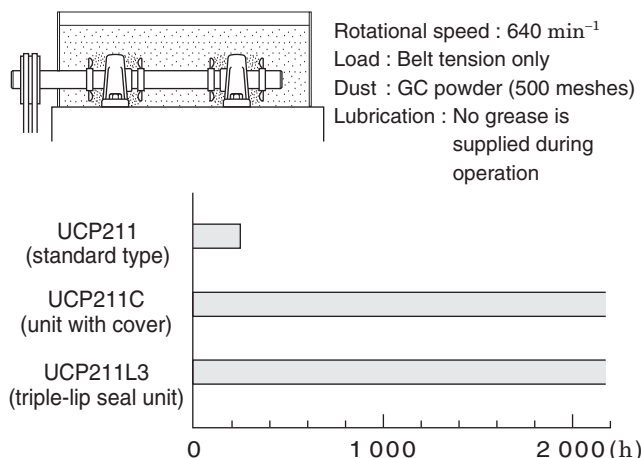


Fig. 13.4 Example of result of dust bury rotating test (dust preventive performance)

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.

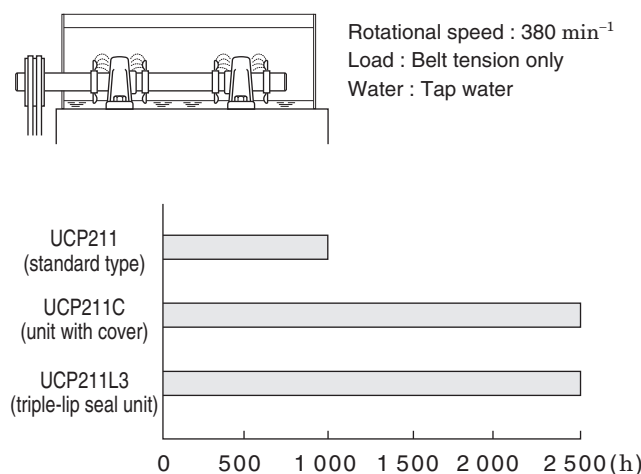


Fig. 13.5 Example result of waterproof performance test

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.

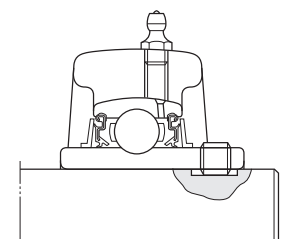


Fig. 14.1 Flat seat provided for shaft
(for improvement in set screw tightening effect)

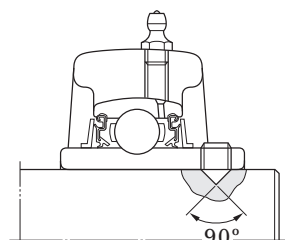


Fig. 14.2 Drilled seat provided for shaft
(for improvement in set screw tightening effect)

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 “10 Design of shaft and base”.

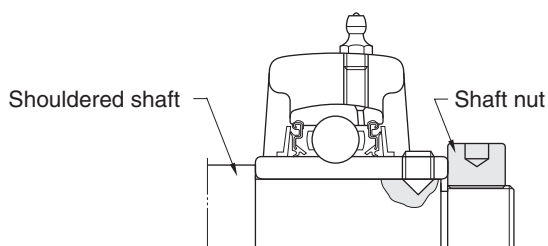


Fig. 14.3 Example of installation with using shouldered shaft and nut

The standard Koyo Ball Bearing Unit is equipped with the Bullet 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
Bullet Point (no indication)  *Bullet Point is developed by NIPPON PILLOW BLOCK CO., LTD. (FYH).	The tip of the Bullet Point setscrew has a ball shape, and it is designed to firmly grip the shaft by expanding its threads outward against the threads of the inner ring of the bearing as it is tightened. When shock or vibration are problems, the Bullet Point setscrew can remain affixed to the shaft longer than other set screw styles including double point, ball point, or others.
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 burr 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 tighten-

ing torque of the mounting bolt, see the **Supplementary table 2** at the end of this catalogue.

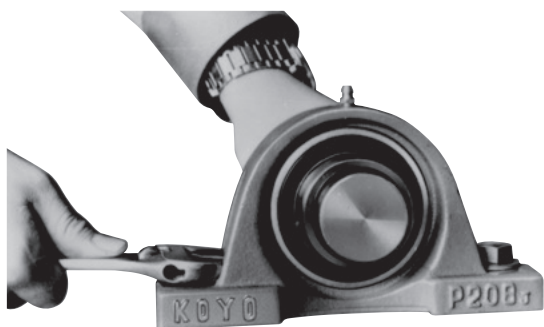


Fig. 14.4 Fixing ball bearing unit to base

(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 **Supplementary table 3** at the end of this catalogue.

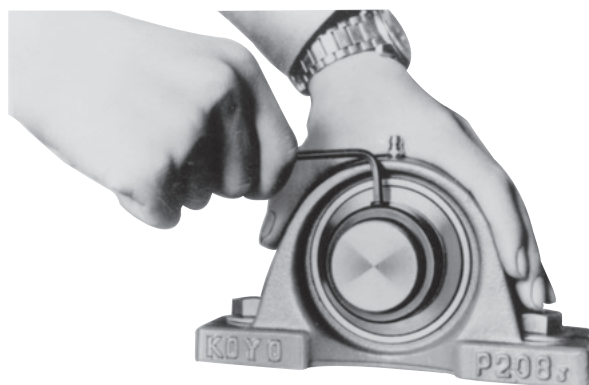


Fig. 14.5 Tightening of set screw

(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 burr 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**).

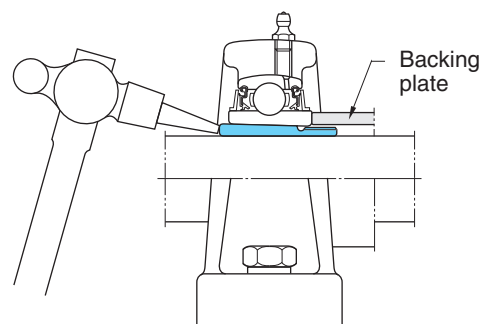


Fig. 14.6 Fitting adapter sleeve to bearing with tapered bore

(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 **Supplementary 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 **Supplementary 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**).

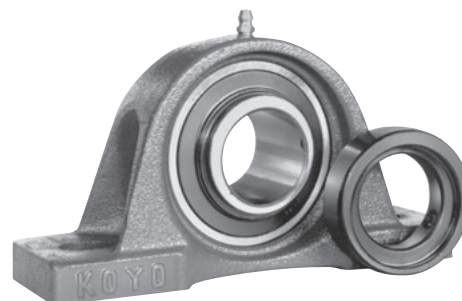


Fig. 14.9 Ball bearing unit with eccentric locking collar

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 burr 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 **Supplementary 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 **Supplementary 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**).

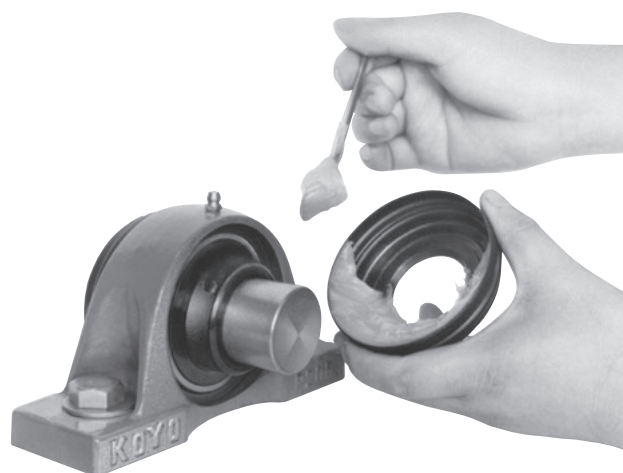
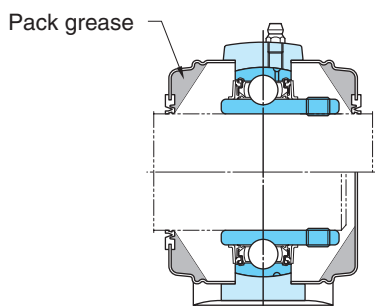


Fig. 14.11 Packing grease in internal space and seal lip of cover

- (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.

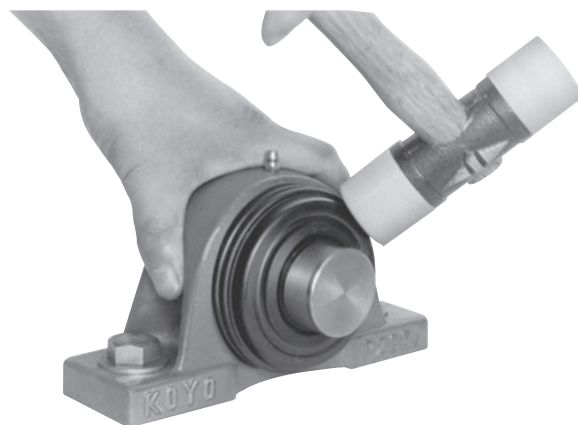


Fig. 14.12 Installing steel plate cover

- (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 **Supplementary 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 **Equation (5.10)** in page 34. 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. code	Greasing amount, g		
	Diameter Series ¹⁾		
	UC200	UCX00	UC300
01	0.7		
02	0.7		
03	0.7		
04	0.7		
05	0.8	1.3	1.8
06	1.3	1.8	2.5
07	1.8	2.3	3.4
08	2.3	2.8	4.6
09	2.8	3.2	6.3
10	3.2	4.3	8.1
11	4.3	5.5	11
12	5.5	6.8	14
13	6.8	7.7	17
14	7.7	9	21
15	9	11	25
16	11	14	29
17	14	17	34
18	17	21	40
19	—	—	47
20	—	29	61
21	—	—	69
22	—	—	84
24	—	—	98
26	—	—	126
28	—	—	151

Table 14.4 Greasing intervals of ball bearing unit (recommended)

Operating temperature, °C		Grease Intervals			Bearing used	Grease supplied
over	up to	Substantially clean	Much dust	Much dust and muddy water		
	50	(3 months) not necessary	(2 months) 1 year	(1 month) 4 months	(Low temperature D2K2) ¹⁾	(Lithium) 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 D1K2	Lithium
120	150	2 weeks	5 days	2 days		
150	180	1 week	2 days	1 day		

Note 1) Greasing intervals in parentheses are applicable to 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 3.3**). 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**).

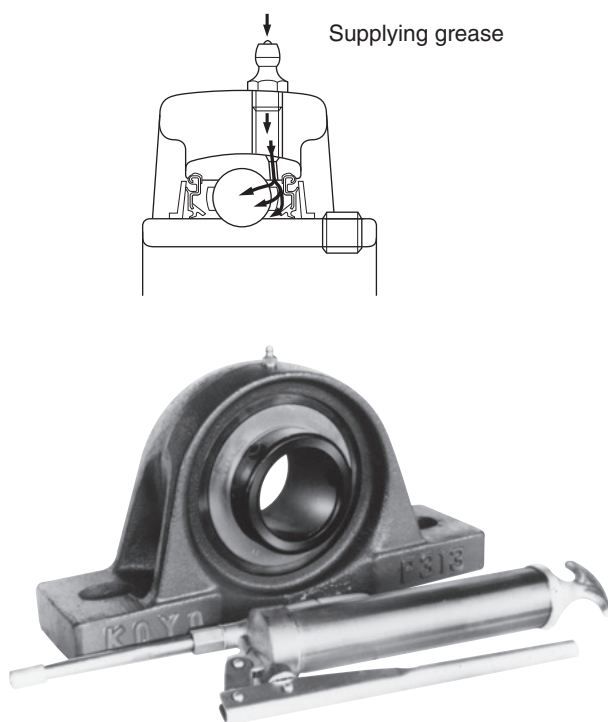


Fig. 14.13 Supplying grease to ball bearing unit

- (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.

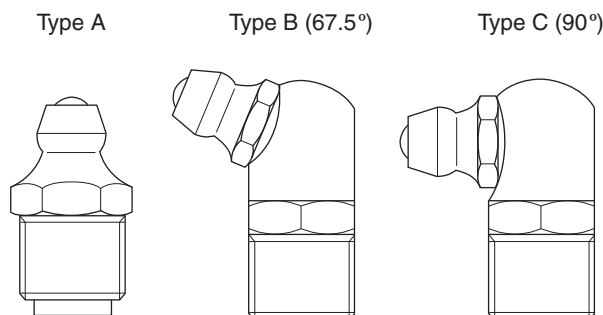


Fig. 14.14 Types of grease nipple for ball bearing unit

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.

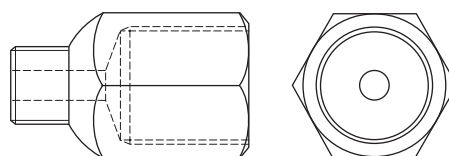


Fig. 14.15 Reducing socket for centralized lubricating

For details of grease nipples and reducing sockets, see “16 Parts and accessories”.

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 90° 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

1 Pillow block type

Pillow block type

UCP (d 12 ~ 140)	74
NAP (d 12 ~ 75)	80
NAPK (d 12 ~ 75)	82
UKP (d_1 20 ~ 125)	84

Thick section pillow block type

UCIP (d 40 ~ 140)	90
UKIP (d_1 35 ~ 125)	92

Tapped-base pillow block type

UCPA (d 12 ~ 50)	94
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Higher centerheight pillow block type

UCPH (d 12 ~ 50)	96
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Light duty pillow block type

BLP (d 12 ~ 40)	98
ALP (d 12 ~ 40)	98

“Compact” series pillow block type

UP (d 10 ~ 30)	100
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Stainless-series pillow block type

UCSP-H1S6 (d 20 ~ 50)	102
UCSPA-H1S6 (d 20 ~ 40)	104
USP-S6 (d 10 ~ 30)	106

Pressed steel pillow block type

SBPP (d 12 ~ 30)	108
SAPP (d 12 ~ 30)	108

2 Square-flanged type

Square-flanged type

UCF (d 12 ~ 140)	110
UCF-E (d 12 ~ 85)	116
NANF (d 12 ~ 60)	120
UKF (d_1 20 ~ 125)	122

Square-flanged type with spigot joint

UCFS (d 25 ~ 140)	128
UKFS (d_1 20 ~ 125)	130

Stainless-series square-flanged type

UCSF-H1S6 (d 20 ~ 50)	132
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3 Rhombic flanged type

Rhombic-flanged type

UCFL (d 12 ~ 120)	134
UCFL-E (d 12 ~ 85)	140
NANFL (d 12 ~ 55)	144
UKFL (d_1 20 ~ 110)	146

Adjustable rhombic-flanged type

UCFA (d 12 ~ 55)	150
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Three-bolt flange type

UCFB (d 12 ~ 50)	152
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Light duty rhombic-flanged type

BLF (d 12 ~ 35)	154
ALF (d 12 ~ 35)	154

“Compact” series rhombic-flanged type

UFL (d 8 ~ 30)	156
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Stainless-series rhombic-flanged type

UCSFL-H1S6 (d 20 ~ 50)	158
USFL-S6 (d 10 ~ 30)	160

4 Round-flanged type with spigot joint

Round-flanged type with spigot joint

UCFC (d 12 ~ 100)	162
UCFCX-E (d 25 ~ 100)	166
UKFC (d_1 20 ~ 90)	168

5 Pressed steel flange type

Pressed steel round-flanged type

SBPF (d 12 ~ 35)	172
SAPF (d 12 ~ 35)	172

Pressed steel rhombic-flanged type

SBPFL (d 12 ~ 35)	174
SAPFL (d 12 ~ 35)	174

6 Take-up type

Take-up type

UCT (d 12 ~ 140)	176
UCT-E (d 12 ~ 85)	182
UKT (d_1 20 ~ 125)	186

Stainless-series take-up type

UCST-H1S6 (d 20 ~ 50)	190
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Section steel frame take-up type

UCTH (d 12 ~ 65)	192
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Channel steel frame take-up type

UCTL (d 20 ~ 45)	194
UCTU (d 40 ~ 90)	196

Pressed steel frame take-up type

SBPTH (d 12 ~ 25)	200
SBNPTH (d 12 ~ 25)	202

7 Other units

Cartridge type

UCC (d 12 ~ 140)	204
UKC (d_1 20 ~ 125)	208

Hanger type

UCHA (d 12 ~ 75)	210
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8 Ball bearings for units

Cylindrical bore (with set screws)

UC, SB, SU (d 8 ~ 140)	212
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(Stainless-series)

Cylindrical bore (with set screws)

UC-S6, SU-S6 (d 10 ~ 50)	218
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Cylindrical bore

(with eccentric locking collar)

SA, SA-F, NA (d 12 ~ 75)	220
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Tapered bore (with adapter)

UK (d_1 20 ~ 125)	224
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Cylindrical bore (with set screws)

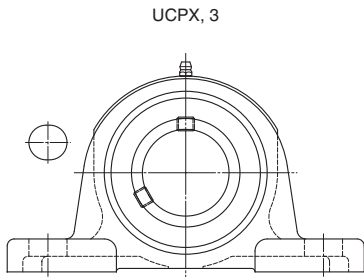
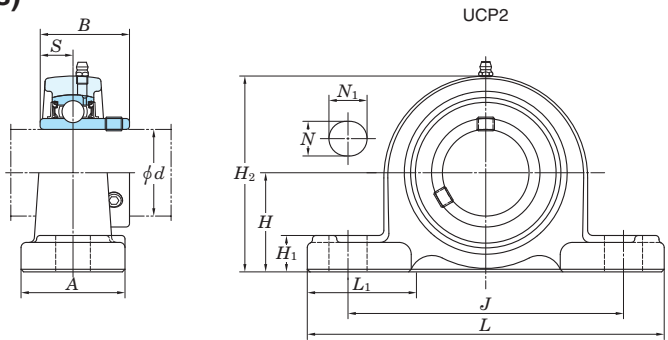
Cylindrical outside surface

ER, RB (d 12 ~ 60)	230
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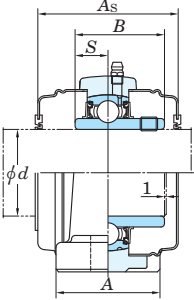
9 Adapter assemblies

H2300X (d_1 20 ~ 125)	232
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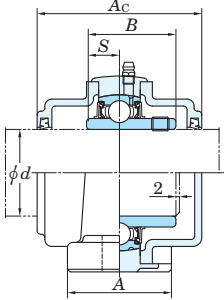
UCP
Cylindrical bore (with set screws)
d 12 ~ (45) mm



With Pressed Steel Covers



With Cast Iron Covers



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

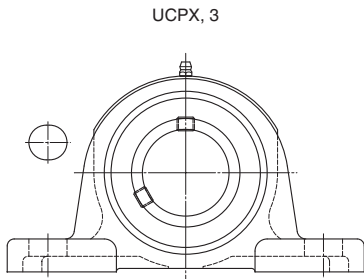
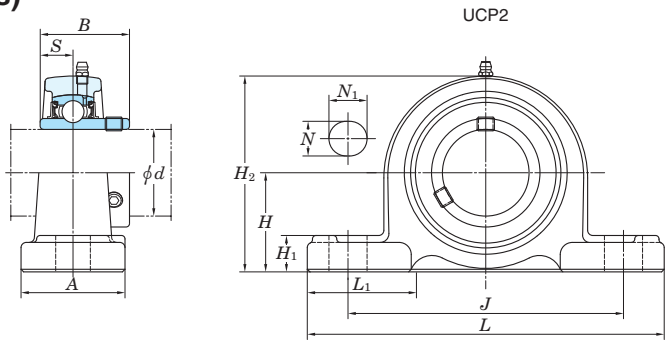
Housing No.			ΔH_s
P203-P210	PX05-PX10	P305-P310	± 0.15
P211-P218	PX11-PX18	P311-P318	± 0.2
	PX20	P319-P328	± 0.3

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

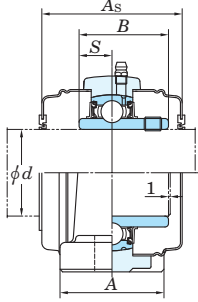


Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Standard				Mass kg	Basic Load Ratings kN		Fatigue Load Limit kN	Factor <i>f</i> ₀	With Pressed Steel Covers				With Cast Iron Covers																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
														Unit No.	Housing No.	Bearing No.			<i>C</i> _r	<i>C</i> _{0r}			<i>C</i> _u	Unit No. Open Ends Type	Unit No. Closed End Type	Dimension mm inch <i>A</i> _s	Mass kg	Unit No. Open Ends Type	Unit No. Closed End Type	Dimension mm inch <i>A</i> _c	Mass kg																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
<i>d</i>		<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>N</i> ₁	<i>H</i> ₁	<i>H</i> ₂	<i>L</i> ₁	<i>B</i>	<i>S</i>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												

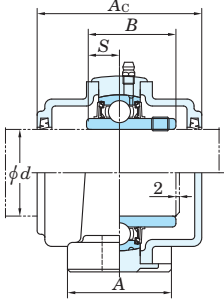
UCP
Cylindrical bore (with set screws)
d (45) ~ (75) mm



With Pressed Steel Covers



With Cast Iron Covers



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

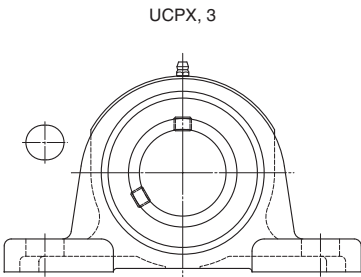
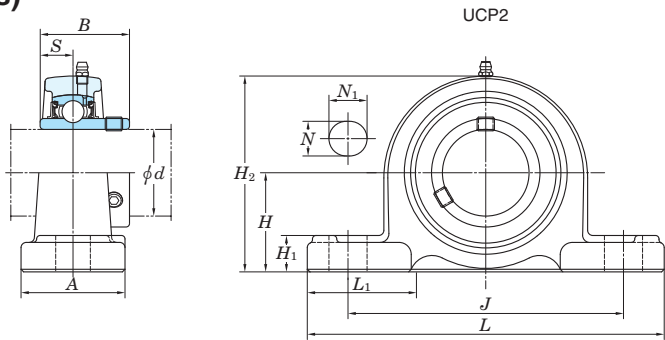
Housing No.			ΔH_s
P203~P210	PX05~PX10	P305~P310	± 0.15
P211~P218	PX11~PX18	P311~P318	± 0.2
	PX20	P319~P328	± 0.3

Unit: mm

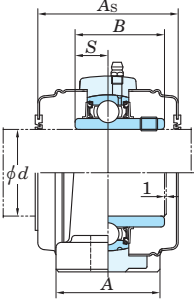
Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Standard				Mass kg	Basic Load Ratings kN		Fatigue Load Limit kN <i>C_u</i>	Factor <i>f₀</i>	With Pressed Steel Covers				With Cast Iron Covers					
		<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>N</i> ₁	<i>H</i> ₁	<i>H</i> ₂	<i>L</i> ₁	<i>B</i>	<i>S</i>		Unit No.	Housing No.	Bearing No.	<i>C_r</i>		<i>C</i> _{0r}	Unit No. Open Closed Ends Type End Type			Dimension mm inch <i>A_s</i>	Mass kg	Unit No. Open Closed Ends Type End Type	Dimension mm inch <i>A_c</i>	Mass kg					
45	1 3/4	2 41/64 67	9 21/32 245	2 5/8 67	7 15/32 190	25/32 20	1 3/16 30	13/16 21	5 3/16 132	2 15/16 75	2.244 57	0.866 22	5/8 M16	UCP309-28 UCP309	P309	UC309-28 UC309	4.9 4.9	48.9	29.5	1.34	13.3	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	
	1 7/8 1 15/16 2	2 1/4 57.2	8 1/8 206	2 3/8 60	6 1/4 159	25/32 20	7/8 22	13/16 21	4 7/16 113	2 3/8 60	2.031 51.6	0.748 19	5/8 M16	UCP210-30 UCP210-31 UCP210 UCP210-32	P210	UC210-30 UC210-31 UC210 UC210-32	2.9 2.9 2.9 2.9	35.1	23.3	1.06	14.4	— — UCP210C —	— — UCP210CD —	— — 74 —	— — 2 29/32 —	— — 2.9 —	— — UCP210FC —	— — UCP210FCD —	— — 97 —	— — 3 13/16 —	— — 3.9 —	
50	1 15/16 2	2 1/2 63.5	9 1/2 241	2 7/8 73	6 23/32 171	25/32 20	1 13/32 36	7/8 22	4 31/32 126	3 76	2.189 55.6	0.874 22.2	5/8 M16	UCPX10-31 UCPX10 UCPX10-32	PX10	UCX10-31 UCX10 UCX10-32	4.6 4.6 4.6	43.4	29.4	1.34	14.4	— — —	— — —	— — UCPX10C —	— — UCPX10CD —	— — 76 —	— — 3 —	— — 4.6 —	— — — —	— — — —	— — — —	— — — —
	—	2 61/64 75	10 13/16 275	2 15/16 75	8 11/32 212	25/32 20	1 3/8 35	15/16 24	5 13/16 148	3 15/32 88	2.402 61	0.866 22	5/8 M16	UCP310	P310	UC310	6.6	62.0	38.3	1.74	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	
	2 2 1/8 2 3/16	2 1/2 63.5	8 5/8 219	2 3/8 60	6 23/32 171	25/32 20	7/8 22	29/32 23	4 29/32 125	2 9/16 65	2.189 55.6	0.874 22.2	5/8 M16	UCP211-32 UCP211-34 UCP211 UCP211-35	P211	UC211-32 UC211-34 UC211 UC211-35	3.6 3.6 3.6 3.6	43.4	29.4	1.34	14.4	— — UCP211C —	— — UCP211CD —	— — 76 —	— — 3 —	— — 3.6 —	— — UCP211FC —	— — UCP211FCD —	— — 99 —	— — 3 29/32 —	— — 4.8 —	
55	2 3/16 2 1/4	2 3/4 69.8	10 1/4 260	3 1/8 79	7 1/4 184	31/32 25	1 13/32 36	1 3/32 28	5 15/32 139	3 9/32 83	2.563 65.1	1.000 25.4	3/4 M20	UCPX11 UCPX11-35 UCPX11-36	PX11	UCX11 UCX11-35 UCX11-36	6.5 6.5 6.5	52.4	36.2	1.65	14.4	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —		
	2	3 5/32 80	12 7/32 310	3 5/32 80	9 9/32 236	25/32 20	1 1/2 38	1 1/16 27	6 7/32 158	3 17/32 90	2.598 66	0.984 25	5/8 M16	UCP311-32 UCP311	P311	UC311-32 UC311	7.9 7.9	71.6	45.0	2.05	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	
	2 1/4 2 3/8 2 7/16	2 3/4 69.8	9 1/2 241	2 3/4 70	7 1/4 184	25/32 20	31/32 25	31/32 25	5 7/16 138	2 7/8 73	2.563 65.1	1.000 25.4	5/8 M16	UCP212-36 UCP212 UCP212-38 UCP212-39	P212	UC212-36 UC212 UC212-38 UC212-39	4.9 4.9 4.9 4.9	52.4	36.2	1.65	14.4	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —		
60	2 7/16 —	3 76.2	11 1/4 286	3 1/4 83	8 203	31/32 25	1 9/16 40	1 3/32 28	5 31/32 152	3 15/32 88	2.563 65.1	1.000 25.4	3/4 M20	UCPX12 UCPX12-39	PX12	UCX12 UCX12-39	7.7 7.7	57.2	40.1	1.82	14.4	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	
	—	3 11/32 85	13 330	3 11/32 85	9 27/32 250	31/32 25	1 1/2 38	1 5/32 29	6 9/16 167	4 1/16 103	2.795 71	1.024 26	3/4 M20	UCP312	P312	UC312	9.5	81.9	52.2	2.37	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	
	2 1/2 2 1/2	3 76.2	10 7/16 265	2 3/4 70	8 203	31/32 25	1 3/16 30	1 1/16 27	5 29/32 150	3 1/16 78	2.563 65.1	1.000 25.4	3/4 M20	UCP213-40 UCP213	P213	UC213-40 UC213	5.9 5.9	57.2	40.1	1.82	14.4	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	
65	2 1/2	3 76.2	11 1/4 286	3 1/4 83	8 203	31/32 25	1 9/16 40	1 3/32 28	6 3/32 155	3 15/32 88	2.937 74.6	1.189 30.2	3/4 M20	UCPX13-40 UCPX13	PX13	UCX13-40 UCX13	8.1 8.1	62.2	44.1	2.01	14.5	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	
	2 1/2	3 35/64 90	13 3/8 340	3 17/32 90	10 1/4 260	31/32 25	1 1/2 38	1 1/4 32	6 15/16 176	4 11/32 110	2.953 75	1.181 30	3/4 M20	UCP313-40 UCP313	P313	UC313-40 UC313	10.7 10.7	92.7	59.9	2.68	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	
	2 3/4	3 1/8 79.4	10 15/32 266	2 27/32 72	8 9/32 210	31/32 25	1 3/16 30	1 1/16 27	6 3/16 157	2 15/16 75	2.937 74.6	1.189 30.2	3/4 M20	UCP214-44 UCP214	P214	UC214-44 UC214	6.8 6.8	62.2	44.1	2.01	14.5	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	
70	2 3/4	3 1/2 88.9	13 330	3 1/2 89	9 229	1 1/16 27	1 31/32 50	1 1/4 32	6 23/32 171	3 27/32 98	3.063 77.8	1.331 33.3	7/8 M22	UCPX14-44 UCPX14	PX14	UCX14-44 UCX14	10.2 10.2	67.4	48.3	2.17	14.5	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	
	2 3/4	3 47/64 95	14 3/16 360	3 17/32 90	11 1/32 280	1 1/16 27	1 9/16 40	1 3/8 35	7 5/16 186	4 11/32 110	3.071 78	1.299 33	7/8 M22	UCP314-44 UCP314	P314	UC314-44 UC314	12.4 12.4	104	68.2	2.96	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	
	2 15/16 3	3 1/4 82.6	10 13/16 275	2 29/32 74	8 17/32 217	31/32 25	1 3/16 30	1 3/32 28	6 3/8 162	3 1/16 78	3.063 77.8	1.311 33.3	3/4 M20	UCP215-47 UCP215 UCP215-48	P215	UC215-47 UC215 UC215-48	7.4 7.4 7.4	67.4	48.3	2.17	14.5	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	
75	2 15/16 3	3 1/2 88.9	13 330	3 1/2 89	9 229	1 1/16 27	1 31/32 50	1 1/4 32	6 7/8 175	3 29/32 99	3.252 82.6	1.311 33.3	7/8 M22	UCPX15-47 UCPX15 UCPX15-48	PX15	UCX15-47 UCX15 UCX15-48	10.8 10.8 10.8	72.7	53.0	2.30	14.6	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF..... 201~210, X05~X09, 305~308
A-R1/8..... 211~218, X10~X20, 309~328
3. As for the triple-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.
6. Housings of spheroidal graphite iron casting are also available.

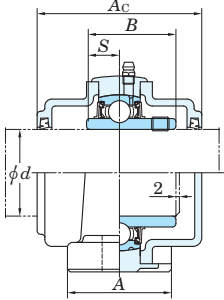
UCP
Cylindrical bore (with set screws)
d (75) ~ 140 mm



With Pressed Steel Covers



With Cast Iron Covers



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

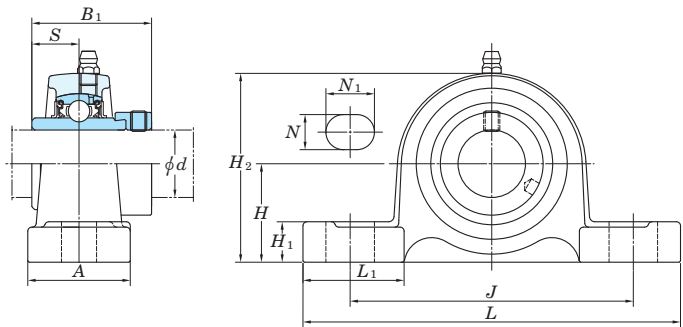
Housing No.			ΔH_s
P203~P210	PX05~PX10	P305~P310	± 0.15
P211~P218	PX11~PX18	P311~P318	± 0.2
	PX20	P319~P328	± 0.3

Unit: mm

Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Standard				Mass kg	Basic Load Ratings kN		Fatigue Load Limit kN	Factor f_0	With Pressed Steel Covers				With Cast Iron Covers								
		H	L	A	J	N	N_1	H_1	H_2	L_1	B	S		Unit No.	Housing No.	Bearing No.							Dimension mm inch	Mass kg			Dimension mm inch	Mass kg							
																			Open Ends Type	Closed End Type					Open Ends Type	Closed End Type									
d																	C_r	C_{Or}	C_u																
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					—	—	—	—	—	—	—	—	—	—	—	—	—	—
	3	100	380	100	290	27	40	35	198	107	82	32	M22	UCP315		UC315	14.8	113	77.2	3.24	13.2	—	—	—	—	—	—	UCP315C	UCP315CD	134	5 9/32	17.3			
														UCP315-48		UC315-48	14.8					—	—	—	—	—	—	—	—	—	—	—	—		
80	3 1/8	3 1/2	11 1/2	3 1/16	9 1/8	31/32	1 3/8	1 3/16	6 27/32	3 9/32	3.252	1.311	3/4	UCP216-50	P216	UC216-50	9.0	72.7	53.0	2.30	14.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		88.9	292	78	232	25	35	30	174	83	82.6	33.3	M20	UCP216		UC216	9.0					UCP216C	UCP216CD	109	4 9/32	9.0	UCP216FC	UCP216FCD	138	5 7/16	11.4				
	—	4	15	4	11 1/8	1 1/16	2 9/32	1 11/32	7 11/16	4 9/16	3.374	1.343	7/8	UCPX16	PX16	UCX16	15.3	84.0	61.9	2.60	14.5	UCPX16C	UCPX16CD	113	4 7/16	15.3	—	—	—	—	—	—	—	—	
		—	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	3.53	13.3	—	—	—	—	—	—	—	—	—	—	—	—	—
85	3 1/4	3 3/4	12 7/32	3 9/32	9 23/32	31/32	1 3/8	1 1/4	7 9/32	3 7/16	3.374	1.343	3/4	UCP217-52	P217	UC217-52	10.8	84.0	61.9	2.60	14.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		95.2	310	83	247	25	35	32	185	87	85.7	34.1	M20	UCP217		UC217	10.8					UCP217C	UCP217CD	113	4 7/16	10.8	UCP217FC	UCP217FCD	142	5 19/32	13.5				
	3 7/16	4	15	4	11 1/8	1 1/16	2 3/8	1 11/32	7 7/8	4 9/16	3.780	1.563	7/8	UCPX17	PX17	UCX17	16.1	96.1	71.5	2.91	14.5	UCPX17C	UCPX17CD	123	4 27/32	16.1	—	—	—	—	—	—	—	—	
			101.6	381	102	283	27	60	34	200	116	96	39.7	M22	UCPX17-55	UCX17-55	16.1					—	—	—	—	—	—	—	—	—	—	—	—	—	
90	3 1/2	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	3.82	13.3	—	—	—	—	—	—	—	—	—	—	—	—	—	
		112	420	110	320	33	45	40	220	120	96	40	M27									UCP317C	UCP317CD	146	5 3/4	23.6									
	3 1/2	4	12 7/8	3 15/32	10 5/16	1 1/16	1 9/16	1 5/16	7 25/32	3 11/16	3.780	1.563	7/8	UCP218-56	P218	UC218-56	13.9	96.1	71.5	2.91	14.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		101.6	327	88	262	27	40	33	198	94	96	39.7	M22	UCP218		UC218	13.9					UCP218C	UCP218CD	123	4 27/32	13.9	UCP218FC	UCP218FCD	152	6	17.0				
95	—	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	3.23	14.4	—	—	—	—	—	—	—	—	—	—	—	—	—	
		101.6	381	111	283	27	60	38	204	116	104	42.9	M22								UCPX18C	UCPX18CD	158	6 7/32	22.5										
	3 1/2	4 41/64	16 15/16	4 11/32	13	1 5/16	1 25/32	1 9/16	9 7/32	4 23/32	3.780	1.575	1	UCP318-56	P318	UC318-56	22.8	143	107	4.11	13.3	—	—	—	—	—	—	—	—	—	—	—	—	—	
			118	430	110	330	33	45	40	234	120	96	40	M27		UCP318	UC318	22.8					UCP318C	UCP318CD	150	5 29/32	26.6								
95	—	4 59/64	18 1/2	4 23/32	14 3/16	1 13/32	1 31/32	1 13/16	9 3/4	4 29/32	4.055	1.614	1 1/8	UCP319	P319	UC319	29.0	153	119	4.45	13.3	—	—	—	—	—	—	—	—	—	—	—	—	—	
100	3 15/16	5	17	4 3/4	13 1/4	1 5/16	2 9/16	1 25/32	9 21/32	4 31/32	4.626	1.937	1	UCPX20	PX20	UCX20	30.4	133	105	3.91	14.4	—	—	—	—	—	—	—	—	—	—	—	—	—	
		4	127	432	121	337	33	65	45	245	126	117.5	49.2	M27		UCPX20-63	UCX20-63	30.4					—	—	—	—	—	—	—	—	—	—	—	—	
														UCPX20-64		UCX20-64	30.4					—	—	—	—	—	—	—	—	—	—	—	—	—	
	3 15/16	5 33/64	19 9/32	4 23/32	14 31/32	1 13/32	1 31/32	1 13/16	10 3/4	5 1/2	4.252	1.654	1 1/8	UCP320	P320	UC320	35.1	173	141	5.08	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	
	140	490	120	380	36	50	46	273	140	108	42	M30	UCP320-63	UC320-63		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	5.41	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	
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	6.15	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	
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	6.10	13.5	—	—	—	—	—	—	—	—	—	—	—	—	—	
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	6.79	13.6	—	—	—	—	—	—	—	—	—	—	—	—	—	
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	7.54	13.6	—	—	—	—	—	—	—	—	—	—	—	—	—	

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF..... 201~210, X05~X09, 305~308
A-R1/8..... 211~218, X10~X20, 309~328
3. As for the triple-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.
6. Housings of spheroidal graphite iron casting are also available.

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



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

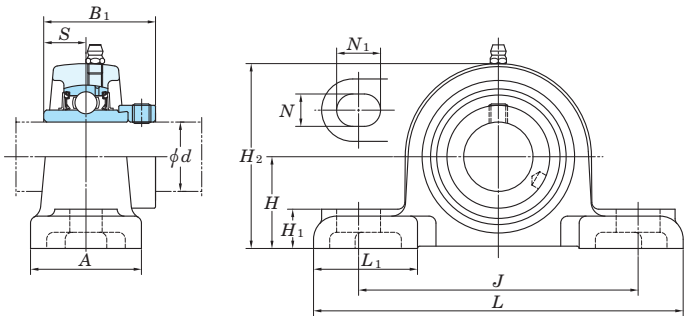
Unit: mm	
Housing No.	ΔH_s
P203-P210	± 0.15
P211-P215	± 0.2

Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Fatigue Load Limit kN	Factor f_0	Mass kg
<i>d</i>		<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>N</i> ₁	<i>H</i> ₁	<i>H</i> ₂	<i>L</i> ₁	<i>B</i> ₁	<i>S</i>					<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _u		
12	1/2	1 3/16	5	1 1/2	3 3/4	1/2	23/32	5/8	2 3/8	1 13/32	1.720	0.673	3/8	NAP201	P203	NA201	12.8	6.65	0.302	13.2	0.71
	5/8	30.2	127	38	95	13	18	16	60	36	43.7	17.1	M10	NAP201-8		NA201-8					0.69
														NAP202		NA202					0.66
15	3/4	1 5/16	5	1 1/2	3 3/4	1/2	23/32	5/8	2 9/16	1 13/32	1.720	0.673	3/8	NAP202-10	P204	NA202-10	12.8	6.65	0.302	13.2	0.73
		33.3	127	38	95	13	18	16	65	36	43.7	17.1	M10	NAP203		NA203					0.66
														NAP204		NA204					0.73
20	7/8	1 7/16	5 1/2	1 1/2	4 1/8	1/2	23/32	5/8	2 3/4	1 1/2	1.748	0.689	3/8	NAP205-14	P205	NA205-14	14.0	7.85	0.357	13.9	0.87
	15/16	36.5	140	38	105	13	18	16	70	38	44.4	17.5	M10	NAP205-15		NA205-15					0.87
														NAP205		NA205					0.87
25	1	1 11/16	6 1/2	1 7/8	4 3/4	21/32	13/16	21/32	3 5/16	1 7/8	1.906	0.720	1/2	NAP206-18	P206	NA206-18	19.5	11.3	0.514	13.9	1.4
	1 3/16	42.9	165	48	121	17	21	17	84	48	48.4	18.3	M14	NAP206		NA206					1.4
	1 1/4													NAP206-19		NA206-19					1.4
30	1 1/4	1 7/8	6 9/16	1 7/8	5	21/32	13/16	23/32	3 3/4	1 27/32	2.012	0.740	1/2	NAP207-20	P207	NA207-20	25.7	15.4	0.700	13.9	1.8
	1 5/16	47.6	167	48	127	17	21	18	95	47	51.1	18.8	M14	NAP207-21		NA207-21					1.8
	1 3/8													NAP207-22		NA207-22					1.8
35	1 7/16													NAP207	P208	NA207	29.1	17.8	0.809	14.0	2.1
														NAP207-23		NA207-23					2.1
														NAP208		NA208					2.1
40	1 1/2	1 15/16	7 1/4	2 1/8	5 13/32	21/32	13/16	23/32	3 27/32	2 3/32	2.217	0.843	1/2	NAP208-24	P209	NA208-24	34.1	21.3	0.968	14.0	2.4
	1 9/16	49.2	184	54	137	17	21	18	98	53	56.3	21.4	M14	NAP208-25		NA208-25					2.4
														NAP208		NA208					2.4
45	1 5/8	2 1/8	7 15/32	2 1/8	5 3/4	21/32	13/16	25/32	4 3/16	2 5/32	2.217	0.843	1/2	NAP209-26	P210	NA209-26	35.1	23.3	1.06	14.4	3.1
	1 11/16	54	190	54	146	17	21	20	106	55	56.3	21.4	M14	NAP209-27		NA209-27					3.1
	1 3/4													NAP209-28		NA209-28					3.1
50	1 7/8	2 1/4	8 1/8	2 3/8	6 1/4	25/32	7/8	13/16	4 7/16	2 3/8	2.469	0.969	5/8	NAP209	P211	NA209	43.4	29.4	1.34	14.4	3.9
	1 15/16	57.2	206	60	159	20	22	21	113	60	62.7	24.6	M16	NAP210-30		NA210-30					3.9
														NAP210-31		NA210-31					3.9
55	2	2 1/2	8 5/8	2 3/8	6 23/32	25/32	7/8	29/32	4 29/32	2 9/16	2.811	1.094	5/8	NAP210-32	P212	NA210-32	52.4	36.2	1.65	14.4	5.2
	2 1/8	63.5	219	60	171	20	22	23	125	65	71.4	27.8	M16	NAP211-32		NA211-32					5.2
	2 3/16													NAP211-34		NA211-34					5.2
60	2 1/4	2 3/4	9 1/2	2 3/4	7 1/4	25/32	31/32	31/32	5 7/16	2 7/8	3.063	1.220	5/8	NAP211	P213	NA211	57.2	40.1	1.82	14.4	6.5
	2 3/8	69.8	241	70	184	20	25	25	138	73	77.8	31	M16	NAP212-36		NA212-36					6.5
	2 7/16													NAP212		NA212					6.5
65	2 1/2	3	10 7/16	2 3/4	8	31/32	1 3/16	1 1/16	5 29/32	3 1/16	3.374	1.343	3/4	NAP212-38	P214	NA212-38	62.2	44.1	2.01	14.5	7.7
		76.2	265	70	203	25	30	27	150	78	85.7	34.1	M20	NAP212-39		NA212-39					7.7
														NAP213		NA213					7.7
70	2 3/4	3 1/8	10 15/32	2 27/32	8 9/32	31/32	1 3/16	1 1/16	6 3/16	2 15/16	3.374	1.343	3/4	NAP213-40	P215	NA213-40	67.4	48.3	2.17	14.5	7.9
		79.4	266	72	210	25	30	27	157	75	85.7	34.1	M20	NAP214		NA214					7.9
														NAP215		NA215					7.9
75	2 15/16	3 1/4	10 13/16	2 29/32	8 17/32	31/32	1 3/16	1 3/32	6 3/8	3 1/16	3.626	1.469	3/4	NAP214-44	P215	NA214-44	67.4	48.3	2.17	14.5	7.9
		82.6	275	74	217	25	30	28	162	78	92.1	37.3	M20	NAP215		NA215					7.9
														NAP215		NA215					7.9

Remarks 1. In Part No. of unit, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF 201~210
A-R1/8 211~215

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.
6. Housings of spheroidal graphite iron casting are also available.

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



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

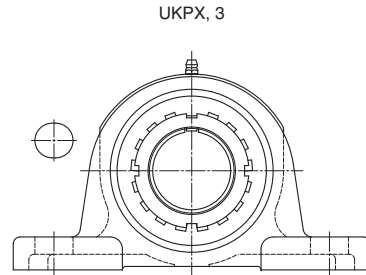
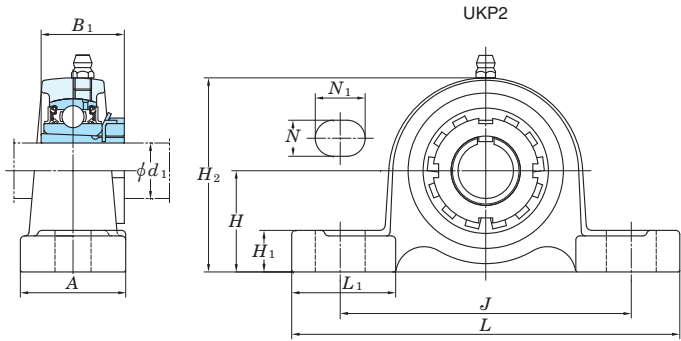
Unit: mm	
Housing No.	ΔH_b
PK204~PK210	±0.15
PK211~PK215	±0.2

Shaft Dia mm inch		Dimensions inch mm											Bolt Size inch	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN		Fatigue Load Limit kN	Factor f_0	Mass kg
d		H	L	A	J	N	N_1	H_1	H_2	L_1	B_1	S						C_r	C_{0r}	C_u		
12	1/2													NAPK201		NA201						
15	5/8	1 1/4	5 1/4	1 5/8	3 27/32	7/16	9/16	9/16	2 15/32	1 25/32	1.72	0.673	3/8	NAPK201-8	PK204	NA201-8		12.8	6.65	0.302	13.2	0.82
17	3/4	31.8	133	41	98	11	14	14	63	45	43.7	17.1		NAPK202		NA202						
														NAPK202-10		NA202-10						
														NAPK203		NA203						
														NAPK204-12		NA204-12						
														NAPK204		NA204						
20																						
25	1 7/8	1 5/16	5 1/2	1 23/32	4 1/8	7/16	9/16	5/8	2 11/16	1 25/32	1.748	0.689	3/8	NAPK205-14	PK205	NA205-14		14.0	7.85	0.357	13.9	1
	15/16	33.3	140	44	105	11	14	16	68	45	44.4	17.5		NAPK205-15		NA205-15						
	1													NAPK205		NA205						
														NAPK205-16		NA205-16						
30	1 1/8	1 9/16	6 5/16	1 7/8	4 3/4	9/16	3/4	21/32	3 5/32	1 25/32	1.906	0.72	1/2	NAPK206-18	PK206	NA206-18		19.5	11.3	0.514	13.9	1.4
	1 3/16	39.7	160	48	121	14	19	17	80	45	48.4	18.3		NAPK206		NA206						
	1 1/4													NAPK206-19		NA206-19						
														NAPK206-20		NA206-20						
35	1 1/4	1 13/16	6 9/16	1 7/8	5	9/16	3/4	3/4	3 5/8	1 25/32	2.012	0.74	1/2	NAPK207-20	PK207	NA207-20		25.7	15.4	0.700	13.9	2
	1 5/16	46	167	48	127	14	19	19	92	45	51.1	18.8		NAPK207-21		NA207-21						
	1 3/8													NAPK207-22		NA207-22						
	1 7/16													NAPK207		NA207						
														NAPK207-23		NA207-23						
40	1 1/2	1 15/16	7 1/8	2 1/8	5 3/8	9/16	1 1/32	3/4	3 15/16	1 31/32	2.217	0.843	1/2	NAPK208-24	PK208	NA208-24		29.1	17.8	0.809	14.0	2.5
	1 9/16	49.2	181	54	136.5	14	26.3	19	100	50	56.3	21.4		NAPK208-25		NA208-25						
														NAPK208		NA208						
45	1 5/8	2 1/16	7 15/32	2 1/8	5 7/8	9/16	1 1/8	25/32	4 3/16	2 1/16	2.217	0.843	1/2	NAPK209-26	PK209	NA209-26		34.1	21.3	0.968	14.0	2.7
	1 11/16	52.4	190	54	149.2	14	28.6	20	106	52	56.3	21.4		NAPK209-27		NA209-27						
	1 3/4													NAPK209-28		NA209-28						
														NAPK209		NA209						
50	1 7/8	2 3/16	8	2 1/4	6 1/4	9/16	3/4	7/8	4 13/32	25/32	2.469	0.969	1/2	NAPK210-30	PK210	NA210-30		35.1	23.3	1.06	14.4	3.2
	1 15/16	55.6	203	57	159	14	19	22	112	55	62.7	24.6		NAPK210-31		NA210-31						
	2													NAPK210		NA210						
														NAPK210-32		NA210-32						
55	2	2 7/16	9 1/8	2 3/8	7 1/8	23/32	15/16	31/32	4 7/8	2 19/32	2.811	1.094	5/8	NAPK211-32	PK211	NA211-32		43.4	29.4	1.34	14.4	4.6
	2 1/8	61.9	232	60	181	18	24	25	124	66	71.4	27.8		NAPK211-34		NA211-34						
	2 3/16													NAPK211		NA211						
	2 1/4													NAPK211-35		NA211-35						
60	2 3/8	2 11/16	9 1/2	2 17/32	7 17/32	23/32	15/16	13/32	5 11/32	2 9/16	3.063	1.22	5/8	NAPK212-36	PK212	NA212-36		52.4	36.2	1.65	14.4	5.2
	2 7/16	68.3	241	64	191	18	24	28	136	65	77.8	31		NAPK212		NA212						
														NAPK212-38		NA212-38						
														NAPK212-39		NA212-39						
75	2 15/16	3 5/16	11 31/32	3 7/32	9 1/2	7/8	1/4	1 1/2	6 1/2	3 7/16	3.626	1.469	3/4	NAPK215-47	PK215	NA215-47		67.4	48.3	2.17	14.5	9.6
		84.1	304	82	241	22	32	38	165	87	92.1	37.3		NAPK215		NA215						

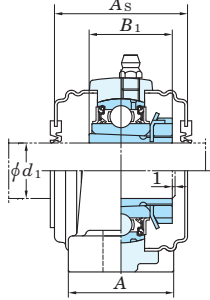
Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF 201~210
A-R1/8 211~215

3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Representative examples of the forms of housing are indicated.
5. Housings of spheroidal graphite iron casting are also available.

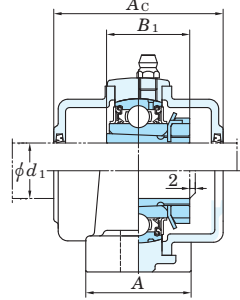
UKP
Tapered bore (with adapter)
d₁ 20 ~ (50) mm



With Pressed Steel Covers



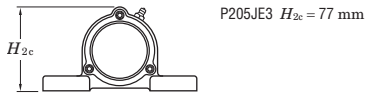
With Cast Iron Covers



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

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

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



Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard				Adapter Assembly No.	Mass kg	Basic		Fatigue Load Limit kN	Factor	With Pressed Steel Covers				With Cast Iron Covers				
		Unit No.	Housing No.	Bearing No.		Load Ratings kN			Unit No.	Dimension mm inch	Mass kg		Open Ends Type	Closed End Type	Open Ends Type	Closed End Type			Dimension mm inch	Mass kg											
d_1		H	L	A	J	N	N_1	H_1	H_2	L_1	B_1					C_r	C_{0r}	C_u	f_0												
20	$\frac{3}{4}$	$1\frac{7}{16}$ 36.5	$5\frac{1}{2}$ 140	$1\frac{1}{2}$ 38	$4\frac{1}{8}$ 105	$\frac{1}{2}$ 13	$\frac{23}{32}$ 18	$\frac{5}{8}$ 16	$2\frac{3}{4}$ 70	$1\frac{1}{2}$ 38	$1\frac{3}{8}$ 35	$\frac{3}{8}$ M10	UKP205	P205	UK205	HE2305X H2305X	0.84 0.84	14.0	7.85	0.357	13.9	— UKP205C	— UKP205CD	— 49	— $1\frac{15}{16}$	— 0.84	— UKP205FC	— UKP205FCD	— 66	— $2\frac{19}{32}$	— 1.3
	$\frac{3}{4}$	$1\frac{3}{4}$ 44.4	$6\frac{1}{4}$ 159	2 51	$4\frac{11}{16}$ 119	$\frac{21}{32}$ 17	$\frac{31}{32}$ 25	$\frac{5}{8}$ 16	$3\frac{3}{8}$ 86	$1\frac{27}{32}$ 47	$1\frac{3}{8}$ 35	$\frac{1}{2}$ M14	UKPX05	PX05	UKX05	HE2305X H2305X	1.5 1.5	19.5	11.3	0.514	13.9	— UKPX05C	— UKPX05CD	— 53	— $2\frac{3}{32}$	— 1.5	— —	— —	— —	— —	
	$\frac{3}{4}$	$1\frac{49}{64}$ 45	$6\frac{7}{8}$ 175	$1\frac{3}{4}$ 45	$5\frac{3}{16}$ 132	$\frac{21}{32}$ 17	$\frac{25}{32}$ 20	$\frac{5}{8}$ 16	$3\frac{11}{32}$ 85	$2\frac{5}{32}$ 55	$1\frac{3}{8}$ 35	$\frac{1}{2}$ M14	UKP305	P305	UK305	HE2305X H2305X	1.7 1.7	21.2	10.9	0.495	12.6	— —	— —	— —	— —	— —	— —	— —	— —	— —	
25	1	$1\frac{11}{16}$ 42.9	$6\frac{1}{2}$ 165	$1\frac{7}{8}$ 48	$4\frac{3}{4}$ 121	$\frac{21}{32}$ 17	$\frac{13}{16}$ 21	$\frac{21}{32}$ 17	$3\frac{5}{16}$ 84	$1\frac{7}{8}$ 48	$1\frac{1}{2}$ 38	$\frac{1}{2}$ M14	UKP206	P206	UK206	H2306X HE2306X	1.4 1.4	19.5	11.3	0.514	13.9	— UKP206C	— UKP206CD	— 53	— $2\frac{3}{32}$	— 1.4	— UKP206FC	— UKP206FCD	— 70	— $2\frac{3}{4}$	— 1.9
	1	$1\frac{7}{8}$ 47.6	$6\frac{7}{8}$ 175	$2\frac{1}{4}$ 57	5 127	$\frac{21}{32}$ 17	$\frac{31}{32}$ 25	$\frac{21}{32}$ 17	$3\frac{21}{32}$ 93	$2\frac{5}{32}$ 55	$1\frac{1}{2}$ 38	$\frac{1}{2}$ M14	UKPX06	PX06	UKX06	H2306X HE2306X	2.1 2.1	25.7	15.4	0.700	13.9	— UKPX06C	— UKPX06CD	— 60	— $2\frac{3}{8}$	— 2.1	— —	— —	— —	— —	
	1	$1\frac{31}{32}$ 50	$7\frac{3}{32}$ 180	$1\frac{31}{32}$ 50	$5\frac{1}{2}$ 140	$\frac{21}{32}$ 17	$\frac{25}{32}$ 20	$\frac{21}{32}$ 17	$3\frac{3}{4}$ 95	$2\frac{3}{32}$ 53	$1\frac{1}{2}$ 38	$\frac{1}{2}$ M14	UKP306	P306	UK306	H2306X HE2306X	2.3 2.3	26.7	15.0	0.682	13.3	— —	— —	— —	— —	— —	— —	— —	— —	— —	
30	$1\frac{1}{8}$	$1\frac{7}{8}$ 47.6	$6\frac{9}{16}$ 167	$1\frac{7}{8}$ 48	5 127	$\frac{21}{32}$ 17	$\frac{13}{16}$ 21	$\frac{23}{32}$ 18	$3\frac{3}{4}$ 95	$1\frac{27}{32}$ 47	$1\frac{11}{16}$ 43	$\frac{1}{2}$ M14	UKP207	P207	UK207	HS2307X H2307X	1.7 1.7	25.7	15.4	0.700	13.9	— UKP207C	— UKP207CD	— 60	— $2\frac{3}{8}$	— 1.7	— UKP207FC	— UKP207FCD	— 78	— $3\frac{1}{16}$	— 2.5
	$1\frac{1}{8}$	$2\frac{1}{8}$ 54	8 203	$2\frac{1}{4}$ 57	$5\frac{21}{32}$ 144	$\frac{21}{32}$ 17	$\frac{1}{32}$ 30	$\frac{3}{4}$ 19	$4\frac{1}{8}$ 105	$2\frac{17}{32}$ 64	$1\frac{11}{16}$ 43	$\frac{1}{2}$ M14	UKPX07	PX07	UKX07	HS2307X H2307X	2.7 2.7	29.1	17.8	0.809	14.0	— UKPX07C	— UKPX07CD	— 69	— $2\frac{23}{32}$	— 2.7	— —	— —	— —	— —	
	$1\frac{1}{8}$	$2\frac{13}{64}$ 56	$8\frac{9}{32}$ 210	$2\frac{7}{32}$ 56	$6\frac{5}{16}$ 160	$\frac{21}{32}$ 17	$\frac{31}{32}$ 25	$\frac{3}{4}$ 19	$4\frac{7}{32}$ 107	$2\frac{9}{16}$ 65	$1\frac{11}{16}$ 43	$\frac{1}{2}$ M14	UKP307	P307	UK307	HS2307X H2307X	3.0 3.0	33.4	19.3	0.877	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	
35	$1\frac{1}{4}$	$1\frac{15}{16}$ 49.2	$7\frac{1}{4}$ 184	$2\frac{1}{8}$ 54	$5\frac{13}{32}$ 137	$\frac{21}{32}$ 17	$\frac{13}{16}$ 21	$\frac{23}{32}$ 18	$3\frac{27}{32}$ 98	$2\frac{3}{32}$ 53	$1\frac{13}{16}$ 46	$\frac{1}{2}$ M14	UKP208	P208	UK208	HE2308X HS2308X H2308X	2.0 2.0 2.0	29.1	17.8	0.809	14.0	— UKP208C	— UKP208CD	— 69	— $2\frac{23}{32}$	— 2.0	— UKP208FC	— UKP208FCD	— 86	— $3\frac{3}{8}$	— 2.9
	$1\frac{1}{4}$	$2\frac{5}{16}$ 58.7	$8\frac{3}{4}$ 222	$2\frac{5}{8}$ 67	$6\frac{5}{32}$ 156	$\frac{25}{32}$ 20	$1\frac{1}{4}$ 32	$\frac{13}{16}$ 21	$4\frac{1}{2}$ 114	$2\frac{25}{32}$ 71	$1\frac{13}{16}$ 46	$\frac{5}{8}$ M16	UKPX08	PX08	UKX08	HE2308X HS2308X H2308X	3.5 3.5 3.5	34.1	21.3	0.968	14.0	— UKPX08C	— UKPX08CD	— 69	— $2\frac{23}{32}$	— 3.5	— —	— —	— —	— —	
	$1\frac{1}{4}$	$2\frac{23}{64}$ 60	$8\frac{21}{32}$ 220	$2\frac{3}{8}$ 60	$6\frac{11}{16}$ 170	$\frac{21}{32}$ 17	$1\frac{1}{16}$ 27	$\frac{3}{4}$ 19	$4\frac{21}{32}$ 118	$2\frac{9}{16}$ 65	$1\frac{13}{16}$ 46	$\frac{1}{2}$ M14	UKP308	P308	UK308	HE2308X HS2308X H2308X	3.8 3.8 3.8	40.7	24.0	1.09	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	
40	$1\frac{1}{2}$	$2\frac{1}{8}$ 54	$7\frac{15}{32}$ 190	$2\frac{1}{8}$ 54	$5\frac{3}{4}$ 146	$\frac{21}{32}$ 17	$\frac{13}{16}$ 21	$\frac{25}{32}$ 20	$4\frac{3}{16}$ 106	$2\frac{5}{32}$ 55	$1\frac{31}{32}$ 50	$\frac{1}{2}$ M14	UKP209	P209	UK209	HE2309X H2309X	2.3 2.3	34.1	21.3	0.968	14.0	— UKP209C	— UKP209CD	— 69	— $2\frac{23}{32}$	— 2.3	— UKP209FC	— UKP209FCD	— 88	— $3\frac{15}{32}$	— 3.2
	$1\frac{1}{2}$	$2\frac{5}{16}$ 58.7	$8\frac{3}{4}$ 222	$2\frac{5}{8}$ 67	$6\frac{5}{32}$ 156	$\frac{25}{32}$ 20	$1\frac{5}{16}$ 33	$\frac{13}{16}$ 21	$4\frac{9}{16}$ 116	$2\frac{25}{32}$ 71	$1\frac{31}{32}$ 50	$\frac{5}{8}$ M16	UKPX09	PX09	UKX09	HE2309X H2309X	3.7 3.7	35.1	23.3	1.06	14.4	— UKPX09C	— UKPX09CD	— 74	— $2\frac{29}{32}$	— 3.7	— —	— —	— —	— —	
	$1\frac{1}{2}$	$2\frac{41}{64}$ 67	$9\frac{21}{32}$ 245	$2\frac{5}{8}$ 67	$7\frac{15}{32}$ 190	$\frac{25}{32}$ 20	$1\frac{3}{16}$ 30	$\frac{13}{16}$ 21	$5\frac{3}{16}$ 132	$2\frac{15}{16}$ 75	$1\frac{31}{32}$ 50	$\frac{5}{8}$ M16	UKP309	P309	UK309	HE2309X H2309X	5.0 5.0	48.9	29.5	1.34	13.3	— —	— —	— —	— —	— —	— —	— —	— —	— —	
45	$1\frac{3}{4}$	$2\frac{1}{4}$ 57.2	$8\frac{1}{8}$ 206	$2\frac{3}{8}$ 60	$6\frac{1}{4}$ 159	$\frac{25}{32}$ 20	$\frac{7}{8}$ 22	$\frac{13}{16}$ 21	$4\frac{7}{16}$ 113	$2\frac{3}{8}$ 60	$2\frac{5}{32}$ 55	$\frac{5}{8}$ M16	UKP210	P210	UK210	HE2310X H2310X	3.0 3.0	35.1	23.3	1.06	14.4	— UKP210C	— UKP210CD	— 74	— $2\frac{29}{32}$	— 3.0	— UKP210FC	— UKP210FCD	— 97	— $3\frac{13}{16}$	— 4.1
	$1\frac{3}{4}$	$2\frac{1}{2}$ 63.5	$9\frac{1}{2}$ 241	$2\frac{7}{8}$ 73	$6\frac{23}{32}$ 171	$\frac{25}{32}$ 20	$1\frac{13}{32}$ 36	$\frac{7}{8}$ 22	$4\frac{31}{32}$ 126	3 76	$2\frac{5}{32}$ 55	$\frac{5}{8}$ M16	UKPX10	PX10	UKX10	HE2310X H2310X	4.6 4.6	43.4	29.4	1.34	14.4	— UKPX10C	— UKPX10CD	— 76	— 3	— 4.6	— —	— —	— —	— —	
	$1\frac{3}{4}$	$2\frac{61}{64}$ 75	$10\frac{13}{16}$ 275	$2\frac{15}{16}$ 75	$8\frac{11}{32}$ 212	$\frac{25}{32}$ 20	$1\frac{3}{8}$ 35	$\frac{15}{16}$ 24	$5\frac{13}{16}$ 148	$3\frac{15}{32}$ 88	$2\frac{5}{32}$ 55	$\frac{5}{8}$ M16	UKP310	P310	UK310	HE2310X H2310X	6.7 6.7	62.0	38.3	1.74	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	
50	$1\frac{7}{8}$	$2\frac{1}{2}$ 63.5	$8\frac{5}{8}$ 219	$2\frac{3}{8}$ 60	$6\frac{23}{32}$ 171	$\frac{25}{32}$ 20	$\frac{7}{8}$ 22	$\frac{29}{32}$ 23	$4\frac{29}{32}$ 125	$2\frac{9}{16}$ 65	$2\frac{5}{16}$ 59	$\frac{5}{8}$ M16	UKP211	P211	UK211	HS2311X H2311X HE2311X	3.7 3.7 3.7	43.4	29.4	1.34	14.4	— UKP211C	— UKP211CD	— 76	— 3	— 3.7	— UKP211FC	— UKP211FCD	— 99	— $3\frac{29}{32}$	— 5.0
	$1\frac{7}{8}$	$2\frac{3}{4}$ 69.8	$10\frac{1}{4}$ 260	$3\frac{1}{8}$ 79	$7\frac{1}{4}$ 184	$\frac{31}{32}$ 25	$1\frac{13}{32}$ 36	$1\frac{3}{32}$ 28	$5\frac{15}{32}$ 139	$3\frac{9}{32}$ 83	$2\frac{5}{16}$ 59	$\frac{3}{4}$ M20	UKPX11	PX11	UKX11	HS2311X H2311X HE2311X	6.2 6.2 6.2	52.4	36.2	1.65	14.4	— UKPX11C	— UKPX11CD	— 89	— $3\frac{1}{2}$	— 6.2	— —	— —	— —	— —	

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)

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

A-1/4-28UNF..... 205~210, X05~X09, 305~308

A-R1/8..... 211~218, X10~X20, 309~328

3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables.

(Example of Part No. : UKP206J + H2306X, UK206 + H2306X)

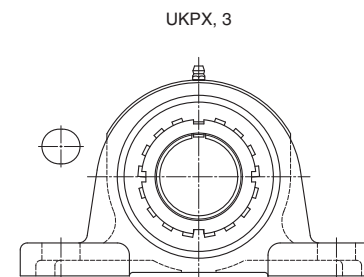
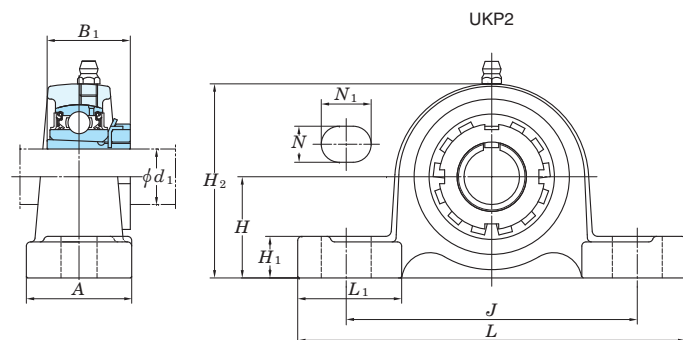
4. As for the triple-lip seal type product (205 is the double-lip seal type product), supplementary code L3 (or L2) follows the Part No. of unit or bearing.

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

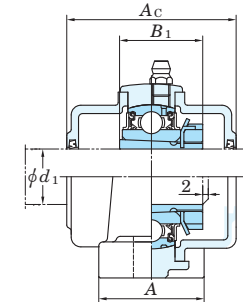
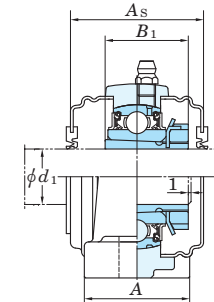
6. Representative examples of the forms of housing are indicated.

7. Housings of spheroidal graphite iron casting are also available.

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



With Cast Iron Covers



Unit: mm

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

Shaft Dia. mm inch		Dimensions										Bolt Size inch mm	Standard				Adapter Assembly No.	Mass kg	Basic		Fatigue Load Limit kN	Factor	With Pressed Steel Covers				With Cast Iron Covers				
		inch mm											Unit No.	Housing No.	Bearing No.				Load Ratings kN				Unit No.	Dimension mm inch	Mass	Unit No.	Dimension mm inch	Mass			
d ₁		H	L	A	J	N	N ₁	H ₁	H ₂	L ₁	B ₁					C _r	C _{0r}	C _u	f ₀	Open Ends Type	Closed End Type	A _s		Open Ends Type	Closed End Type	A _c					
50	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						—	—	—	—	—	—	—	—			
	2	80	310	80	236	20	38	27	158	90	59	M16				H2311X	8.1	71.6	45.0	2.05	13.2	—	—	—	—	—	—	—	—	—	
																HE2311X	8.1							—	—	—	—	—	—	—	—
55	2 1/8	2 3/4	9 1/2	2 3/4	7 1/4	25/32	31/32	31/32	5 7/16	2 7/8	2 7/16	5/8	UKP212	P212	UK212						—	—	—	—	—	—	—	—			
		69.8	241	70	184	20	25	25	138	73	62	M16				H2312X	4.8	52.4	36.2	1.65	14.4	UKP212C	UKP212CD	89	3 1/2	4.8	UKP212FC	UKP212FCD	114	4 1/2	6.3
	2 1/8	3	21 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						—	—	—	—	—	—	—	—	—		
			76.2	286	83	203	25	40	28	152	88	62				M20	H2312X	7.5	57.2	40.1	1.82	14.4	UKPX12C	UKPX12CD	89	3 1/2	7.5	—	—	—	—
60	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						—	—	—	—	—	—	—	—			
		85	330	85	250	25	38	29	167	103	62	M20				H2312X	9.4	81.9	52.2	2.37	13.2	—	—	—	—	—	—	—	—	—	
																HS2312X	9.4							UKP312C	UKP312CD	124	4 7/8	11.8			
65	2 1/4	3	10 7/16	2 3/4	8	31/32	1 3/16	1 1/16	5 29/32	3 1/16	2 9/16	3/4	UKP213	P213	UK213						—	—	—	—	—	—	—	—			
	2 3/8	76.2	265	70	203	25	30	27	150	78	65	M20				H2313X	5.8	57.2	40.1	1.82	14.4	UKP213C	UKP213CD	89	3 1/2	5.8	UKP213FC	UKP213FCD	114	4 1/2	7.5
																HS2313X	5.8							—	—	—	—	—	—	—	—
	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						—	—	—	—	—	—	—	—	—		
			76.2	286	83	203	25	40	28	155	88	65				M20	H2313X	7.8	62.2	44.1	2.01	14.5	UKPX13C	UKPX13CD	99	3 29/32	7.8	—	—	—	—
70	2 3/8																				—	—	—	—	—	—	—	—			
	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						—	—	—	—	—	—	—	—			
			90	340	90	260	25	38	32	176	110	65				M20	H2313X	10.8	92.7	59.9	2.68	13.2	—	—	—	—	—	—	—	—	—
	2 3/8																				—	—	—	—	—	—	—	—			
														HS2313X	10.8							UKP313C	UKP313CD	122	4 13/16	13.2					
75	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 1/16	2 7/8	3/4	UKP215	P215	UK215						—	—	—	—	—	—	—	—			
		82.6	275	74	217	25	30	28	162	78	73	M20				H2315X	7.5	67.4	48.3	2.17	14.5	UKP215C	UKP215CD	99	3 29/32	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						—	—	—	—	—	—	—	—			
			88.9	330	89	229	27	50	32	175	99	73				M22	H2315X	10.5	72.7	53.0	2.30	14.6	UKPX15C	UKPX15CD	109	4 9/32	10.5	—	—	—	—
80	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						—	—	—	—	—	—	—	—			
		100	380	100	290	27	40	35	198	107	73	M22				H2315X	14.9	113	77.2	3.24	13.2	—	—	—	—	—	—	—	—	—	
																HE2315X	14.9							UKP315C	UKP315CD	134	5 9/32	17.7			
	2 3/4	3 1/2	11 1/2	3 1/16	9 1/8	31/32	1 3/8	1 3/16	6 27/32	3 9/32	3 1/16	3/4	UKP216	P216	UK216						—	—	—	—	—	—	—	—			
			88.9	292	78	232	25	35	30	174	83	78				M20	H2316X	9.2	72.7	53.0	2.30	14.6	UKP216C	UKP216CD	109	4 9/32	9.2	UKP216FC	UKP216FCD	138	5 7/16
85	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						—	—	—	—	—	—	—	—			
		101.6	381	102	283	27	58	34	195	116	78	M22				H2316X	15.4	84.0	61.9	2.60	14.5	UKPX16C	UKPX16CD	113	4 7/16	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						—	—	—	—	—	—	—	—			
			106	400	110	300	27	40	35	209	120	78				M22	H2316X	18.6	123	86.7	3.53	13.3	—	—	—	—	—	—	—	—	—
90	3	3 3/4	12 7/32	3 9/32	9 23/32	31/32	1 3/8	1 1/4	7 9/32	3 7/16	3 7/32	3/4	UKP217	P217	UK217						—	—	—	—	—	—	—	—			
		95.2	310	83	247	25	35	32	185	87	82	M20				H2317X	11.0	84.0	61.9	2.60	14.5	UKP217C	UKP217CD	113	4 7/16	11.0	UKP217FC	UKP217FCD	142	5 19/32	13.8
	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						—	—	—	—	—	—	—	—			
			101.6	381	102	283	27	60	34	200	116	82				M22	H2317X	15.8	96.1	71.5	2.91	14.5	UKPX17C	UKPX17CD	123	4 27/32	15.8	—	—	—	—
95	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						—	—	—	—	—	—	—	—			
		112	420	110	320	33	45	40	220	120	82	M27				H2317X	20.2	133	96.8	3.82	13.3	—	—	—	—	—	—	—	—	—	—
	—	4	12 7/8	3 15/32	10 5/16	1 1/16	1 9/16	1 5/16	7 25/32	3 11/16	3 3/8	7/8	UKP218	P218	UK218						—	—	—	—	—	—	—	—			
			101.6	327	88	262	27	40	33	198	94	86				M22	H2318X	13.8	96.1	71.5	2.91	14.5	UKP218C	UKP218CD	123	4 27/32	13.8	UKP218FC	UKP218FCD	152	6
—	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						—	—	—	—	—	—	—	—				
		101.6	381	111	283	27	60	38	204	116	86				M22	H2318X	18.6	109	81.9	3.23	14.4	—	—	—	—	—	—	—	—	—	—
—	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						—	—	—	—	—	—	—	—				
		118	430	110	330	33	45	40	234	120	86				M27	H2318X	22.8	143	107	4.11	13.3	—	—	—	—	—	—	—	—	—	—
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						—	—	—	—	—	—	—	—			
		125	470	120	360	36	50	46	248	125	90	M30				H2319X	29.3	153	119	4.45	13.3	—	—	—	—	—	—	—	—	—	—
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						—	—	—	—	—	—	—	—			
		127	432	121	337	33	65	45	245	126	97	M27				H2320X	29.3	133	105	3.91	14.4	—	—	—	—	—	—	—	—	—	—

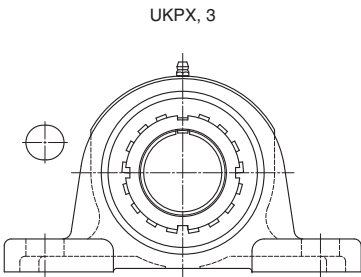
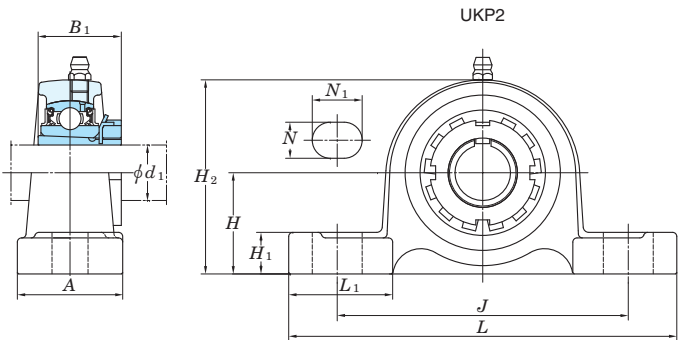
(Example of Part No. : UKP206J + H2306X, UK206 + H2306X)

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

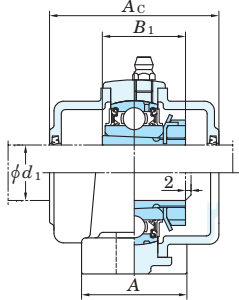
7. Housings of spheroidal graphite iron casting are also available.

7. Housings of spherical graphite iron casting are also available.

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



With Cast Iron Covers

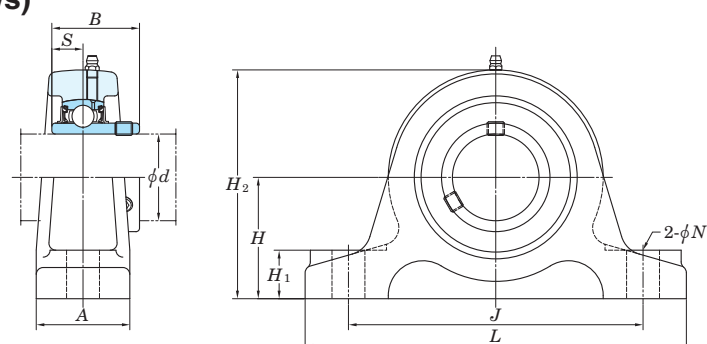


Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_s)

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

Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard					Adapter Assembly No.	Mass kg	Basic		Fatigue Load Limit kN C _u	Factor f ₀	With Pressed Steel Covers				With Cast Iron Covers																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
													Unit No.	Housing No.	Bearing No.		Load Ratings kN C _r C _{0r}			Unit No. Open Ends Type	Closed End Type			Dimension mm inch		Mass kg	Unit No. Open Ends Type		Closed End Type	Dimension mm inch		Mass kg																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
d ₁		H	L	A	J	N	N ₁	H ₁	H ₂	L ₁	B ₁						C _r	C _{0r}	C _u																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

- Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 2.5** in P.11.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF 205~210, X05~X09, 305~308
A-R1/8 211~218, X10~X20, 309~328
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables.
(Example of Part No. : UKP206J + H2306X, UK206 + H2306X)
4. As for the triple-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.
7. Housings of spheroidal graphite iron casting are also available.

d 40 ~ 140 mm

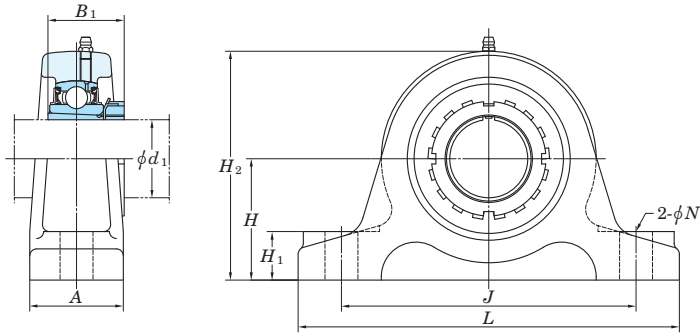
Unit: mm

Housing No.		ΔH_s	ΔJ_s	ΔN_s
IP208~IP210		± 0.15	± 0.5	± 0.2
IP211~IP213	IP313~IP318	± 0.2	± 0.7	
	IP319~IP328	± 0.3		± 0.3

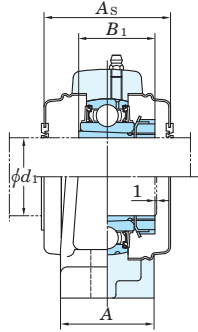
Shaft Dia. mm inch		Dimensions									Bolt Size inch mm	Standard				Mass	Basic		Fatigue Load Limit kN	Factor	With Pressed Steel Covers				With Cast Iron Covers							
		 mm	 mm	 mm	 mm	 mm	 mm	 mm	 mm	 mm		 mm	Unit No.	Housing No.	Bearing No.		 kg	 kN			 kN	 kg	Unit No.	Dimension mm inch	Mass	Unit No.	Dimension mm inch	Mass				
<i>d</i>		<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>H</i> ₁	<i>H</i> ₂	<i>B</i>	<i>S</i>					<i>C_r</i>	<i>C_{0r}</i>	<i>C_u</i>	<i>f</i> ₀	Open Ends Type	Closed End Type	<i>A_s</i>	kg	Open Ends Type	Closed End Type	<i>A_c</i>	kg						
40	1 1/2 1 9/16	2 23/64 60	7 7/8 200	2 3/8 60	5 29/32 150	3/4 19	3 1/32 25	4 17/32 115	1.937 49.2	0.748 19	5/8 M16	UCIP208-24 UCIP208-25 UCIP208	IP208	UC208-24 UC208-25 UC208	3.4 3.4 3.4	29.1	17.8	0.809	14.0	— — UCIP208C	— — UCIP208CD	— — 69	— — 2 23/32	3.4	— — UCIP208FC	— — UCIP208FCD	— — 86	— — 3 3/8	— — 4.2			
	45	1 5/8 1 11/16 1 3/4	2 3/4 70	8 9/32 210	2 3/8 60	6 19/64 160	3/4 19	3 1/32 25	5 1/32 128	1.937 49.2	0.748 19	5/8 M16	UCIP209-26 UCIP209-27 UCIP209-28 UCIP209	IP209	UC209-26 UC209-27 UC209-28 UC209	3.9 3.9 3.9 3.9	34.1	21.3	0.968	14.0	— — — UCIP209C	— — — UCIP209CD	— — — 69	— — — 2 23/32	3.9	— — — UCIP209FC	— — — UCIP209FCD	— — — 88	— — — 3 15/32	— — — 4.7		
		50	1 7/8 1 15/16 2	2 3/4 70	8 21/32 220	2 3/8 60	6 11/16 170	3/4 19	1 3/32 28	5 3/16 132	2.031 51.6	0.748 19	5/8 M16	UCIP210-30 UCIP210-31 UCIP210 UCIP210-32	IP210	UC210-30 UC210-31 UC210 UC210-32	4.8 4.8 4.8 4.8	35.1	23.3	1.06	14.4	— — UCIP210C	— — UCIP210CD	— — 74	— — 2 29/32	4.8	— — UCIP210FC	— — UCIP210FCD	— — 97	— — 3 13/16	— — 5.8	
55			2 2 1/8 2 3/16	3 5/32 80	9 1/16 230	2 3/8 60	7 3/32 180	3/4 19	1 3/32 28	5 13/16 148	2.189 55.6	0.874 22.2	5/8 M16	UCIP211-32 UCIP211-34 UCIP211 UCIP211-35	IP211	UC211-32 UC211-34 UC211 UC211-35	5.3 5.3 5.3 5.3	43.4	29.4	1.34	14.4	— — UCIP211C	— — UCIP211CD	— — 76	— — 3	5.3	— — UCIP211FC	— — UCIP211FCD	— — 99	— — 3 29/32	— — 6.3	
	60		2 1/4 2 3/8 2 7/16	3 5/32 80	10 1/4 260	2 3/4 70	7 7/8 200	7/8 22	1 3/16 30	6 3/32 155	2.563 65.1	1.000 25.4	3/4 M20	UCIP212-36 UCIP212 UCIP212-38 UCIP212-39	IP212	UC212-36 UC212 UC212-38 UC212-39	7.2 7.2 7.2 7.2	52.4	36.2	1.65	14.4	— UCIP212C	— UCIP212CD	89 —	3 1/2 —	7.2	— UCIP212FC	— UCIP212FCD	114 —	4 1/2 —	— 8.7	
		65	2 1/2 2 1/2	3 35/64 90	11 1/32 280	2 3/4 70	8 21/32 220	7/8 22	1 3/16 30	6 25/32 172	2.563 65.1	1.000 25.4	3/4 M20	UCIP213-40 UCIP213	IP213	UC213-40 UC213	8.8 8.8	57.2	40.1	1.82	14.4	— UCIP213C	— UCIP213CD	— 89	— 3 1/2	8.8	— UCIP213FC	— UCIP213FCD	— 114	— 4 1/2	— 10.5	
70			2 3/4	4 21/64 110	13 310	2 15/16 70	10 5/8 250	3 1/32 22	1 3/8 30	8 15/32 208	3.071 75	1.299 30	7/8 M20	UCIP313-40 UCIP313	IP313	UC313-40 UC313	13.4 13.4	92.7	59.9	2.68	13.2	— —	— —	— —	— —	— —	— UCIP313C	— UCIP313CD	— 122	— 4 13/16	— 15.5	
	75		2 3/4	4 21/64 110	13 330	2 15/16 75	10 5/8 270	3 1/32 25	1 3/8 35	8 15/32 215	3.071 78	1.299 33	7/8 M22	UCIP314-44 UCIP314	IP314	UC314-44 UC314	15.3 15.3	104	68.2	2.96	13.2	— —	— —	— —	— —	— —	— UCIP314C	— UCIP314CD	— 124	— 4 7/8	— 17.6	
		80	2 15/16 3	4 23/32 120	13 3/8 340	2 15/16 75	11 1/32 280	3 1/32 25	1 3/8 35	9 1/16 230	3.228 82	1.260 32	7/8 M22	UCIP315-47 UCIP315 UCIP315-48	IP315	UC315-47 UC315 UC315-48	17.6 17.6 17.6	113	77.2	3.24	13.2	— — —	— — —	— — —	— — —	— — —	— UCIP315C	— UCIP315CD	— 134	— 5 9/32	— 20.1	
85			—	4 23/32 120	13 25/32 350	3 11/32 85	11 27/64 290	3 1/32 25	1 9/16 40	9 1/4 235	3.386 86	1.339 34	7/8 M22	UCIP316	IP316	UC316	20.3	123	86.7	3.53	13.3	— —	— —	— —	— —	— —	— —	— —	— UCIP316C	— UCIP316CD	— 138	— 5 7/16
	90		—	5 1/8 130	14 9/16 370	3 11/32 85	12 13/64 310	3 1/32 25	1 9/16 40	10 1/32 255	3.780 96	1.575 40	7/8 M22	UCIP317	IP317	UC317	25.9	133	96.8	3.82	13.3	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
		95	3 1/2	5 1/8 130	15 3/4 400	3 11/32 85	13 330	1 5/32 29	1 25/32 45	10 1/4 260	3.780 96	1.575 40	1 M27	UCIP318-56 UCIP318	IP318	UC318-56 UC318	28.6 28.6	143	107	4.11	13.3	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
100			—	5 29/32 150	16 5/32 410	3 11/32 85	13 25/64 340	1 5/32 29	1 25/32 45	11 7/32 285	4.055 103	1.614 41	1 M27	UCIP319	IP319	UC319	31.7	153	119	4.45	13.3	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
	110		—	5 29/32 150	16 15/16 430	3 11/32 85	14 11/64 360	1 5/32 29	1 25/32 45	11 5/8 295	4.252 108	1.654 42	1 M27	UCIP320 UCIP320-63 UCIP320-64	IP320	UC320 UC320-63 UC320-64	36.9 36.9 36.9	173	141	5.08	13.2	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	
		120	—	6 11/16 170	19 9/32 490	3 15/16 100	16 9/64 410	1 1/4 32	1 31/32 50	13 3/16 335	4.606 117	1.811 46	1 1/8 M30	UCIP322	IP322	UC322	52.4	205	180	6.15	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
130			—	6 11/16 170	20 3/32 510	3 15/16 100	16 59/64 430	1 1/4 32	1 31/32 50	13 19/32 345	4.961 126	2.008 51	1 1/8 M30	UCIP324	IP324	UC324	58.7	207	185	6.10	13.5	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
	140		—	7 7/8 200	21 21/32 550	4 11/32 110	18 1/2 470	1 1/4 32	1 31/32 50	15 11/32 390	5.315 135	2.126 54	1 1/8 M30	UCIP326	IP326	UC326	76.2	229	214	6.79	13.6	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
		140	—	7 7/8 200	23 7/32 590	4 11/32 110	19 11/16 500	1 3/8 35	2 5/32 55	15 3/4 400	5.709 145	2.323 59	1 1/4 M33	UCIP328	IP328	UC328	87.0	253	246	7.54	13.6	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —

5. Housings of spheroidal graphite iron casting are also available.

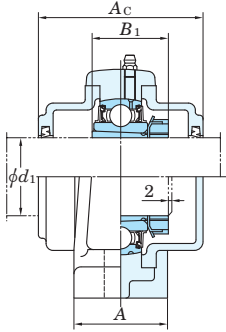
UKIP
Tapered bore (with adapter)
d₁ 35 ~ 125 mm



With Pressed Steel Covers



With Cast Iron Covers



Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_b), variations of tolerance of distance between centers of bolt holes (ΔB_b) and variations of tolerance of bolt hole diameter (ΔN_b)

Unit: mm

Housing No.		ΔH_s	ΔJ_s	ΔN_s
IP208~IP210		± 0.15	± 0.5	± 0.2
IP211~IP213	IP313~IP318	± 0.2	± 0.7	
	IP319~IP328	± 0.3		± 0.3

Unit: mm

Shaft Dia.		Dimensions								Bolt Size	Standard					Mass	Basic		Fatigue	Factor	With Pressed Steel Covers				With Cast Iron Covers							
mm	inch	inch mm									Unit No.	Housing No.	Bearing No.	Adapter Assembly No.		Load Ratings kN	Load Limit kN		Unit No.	Dimension mm inch	Mass	Unit No.	Dimension mm inch	Mass								
d ₁		H	L	A	J	N	H ₁	H ₂	B ₁	inch mm				kg	C _r	C _{0r}	C _u	f ₀	Open Ends Type	Closed End Type	A _s	kg	Open Ends Type	Closed End Type	A _e	kg						
35	1 1/4	2 23/64	7 7/8	2 3/8	5 29/32	3/4	3 1/32	4 17/32	1 13/16	5/8	UKIP208	IP208	UK208	HE2308X	3.5	29.1	17.8	0.809	14.0	—	—	—	—	—	—	—	—					
	1 3/8	60	200	60	150	19	25	115	46	M16				HS2308X	3.5					—	—	—	—	—	—	—	—	—	—	—	—	—
														H2308X	3.5					UKIP208C	UKIP208CD	69	2 23/32	3.5	UKIP208FC	UKIP208FCD	86	3 3/8	—	—	—	
40	1 1/2	2 3/4	8 9/32	2 3/8	6 19/64	3/4	3 1/32	5 1/32	1 31/32	5/8	UKIP209	IP209	UK209	HE2309X	4.0	34.1	21.3	0.968	14.0	—	—	—	—	—	—	—	—					
		70	210	60	160	19	25	128	50	M16				H2309X	4.0					UKIP209C	UKIP209CD	69	2 23/32	4.0	UKIP209FC	UKIP209FCD	88	3 15/32	—	—	—	
45	1 3/4	2 3/4	8 21/32	2 3/8	6 11/16	3/4	1 3/32	5 3/16	2 5/32	5/8	UKIP210	IP210	UK210	HE2310X	4.8	35.1	23.3	1.06	14.4	—	—	—	—	—	—	—	—					
		70	220	60	170	19	28	132	55	M16				H2310X	4.8					UKIP210C	UKIP210CD	74	2 29/32	4.8	UKIP210FC	UKIP210FCD	97	3 13/16	—	—	—	
50	1 7/8	3 5/32	9 1/16	2 3/8	7 3/32	3/4	1 3/32	5 13/16	2 5/16	5/8	UKIP211	IP211	UK211	HS2311X	5.3	43.4	29.4	1.34	14.4	—	—	—	—	—	—	—	—					
	2	80	230	60	180	19	28	148	59	M16				H2311X	5.3					UKIP211C	UKIP211CD	76	3	5.3	UKIP211FC	UKIP211FCD	99	3 29/32	—	—	—	
55	2 1/8	3 5/32	10 1/4	2 3/4	7 7/8	7/8	1 3/16	6 3/32	2 7/16	3/4	UKIP212	IP212	UK212	HS2312X	7.1	52.4	36.2	1.65	14.4	—	—	—	—	—	—	—	—					
		80	260	70	200	22	30	155	62	M20				H2312X	7.1					UKIP212C	UKIP212CD	89	3 1/2	7.1	UKIP212FC	UKIP212FCD	114	4 1/2	—	—	—	
60	2 1/4	3 35/64	11 1/32	2 3/4	8 21/32	7/8	1 3/16	6 25/32	2 9/16	3/4	UKIP213	IP213	UK213	HE2313X	8.7	57.2	40.1	1.82	14.4	—	—	—	—	—	—	—	—					
	2 3/8	90	280	70	220	22	30	172	65	M20				H2313X	8.7					UKIP213C	UKIP213CD	89	3 1/2	8.7	UKIP213FC	UKIP213FCD	114	4 1/2	—	—	—	
														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				HE2313X	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	3.24	13.2	—	—	—	—	—	—	—	—					
		120	340	75	280	25	35	230	73	M22				H2315X	17.7					—	—	—	—	—	UKIP315C	UKIP315CD	134	5 9/32	—	—	—	
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	3.53	13.3	—	—	—	—	—	—	—	—					
		120	350	85	290	25	40	235	78	M22				H2316X	20.4					—	—	—	—	—	UKIP316C	UKIP316CD	138	5 7/16	—	—	—	
75	3	5 1/8	14 9/16	3 11/32	12 13/64	31/32	1 9/16	10 1/32	3 7/32	7/8	UKIP317	IP317	UK317	H2317X	25.7	133	96.8	3.82	13.3	—	—	—	—	—	—	—	—					
		130	370	85	310	25	40	255	82	M22				HE2317X	25.7					—	—	—	—	—	UKIP317C	UKIP317CD	146	5 3/4	—	—	—	
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	4.11	13.3	—	—	—	—	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	4.45	13.3	—	—	—	—	—	—	—	—					
		150	410	85	340	29	45	285	90	M27				H2319X	32.0					—	—	—	—	—	UKIP319C	UKIP319CD	162	6 3/8	—	—	—	
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	5.08	13.2	—	—	—	—	—	—	—	—					
		150	430	85	360	29	45	295	97	M27				H2320X	36.6					—	—	—	—	—	UKIP320C	UKIP320CD	174	6 27/32	—	—	—	
100	4	6 11/16	19 9/32	3 15/16	16 9/64	1 1/4	1 31/32	13 3/16	4 1/8	1 1/8	UKIP322	IP322	UK322	H2322X	52.2	205	180	6.15	13.2	—	—	—	—	—	—	—	—					
		170	490	100	410	32	50	335	105	M30				HE2322X	52.2					—	—	—	—	—	UKIP322C	UKIP322CD	188	7 13/32	—	—	—	
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	6.10	13.5	—	—	—	—	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	6.79	13.6	—	—	—	—	—	—	—	—					
		200	550	110	470	32	50	390	121	M30				H2326	76.0					—	—	—	—	—	UKIP326C	UKIP326CD	214	8 7/16	—	—	—	
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	7.54	13.6	—	—	—	—	UKIP328C	UKIP328CD	222	8 3/4	104				

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)

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

A-1/4-28UNF 208~210

A-R1/8 211~213, 313~328

3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables.

(Example of Part No. : UKIP208J + H2308X, UK208 + H2308X)

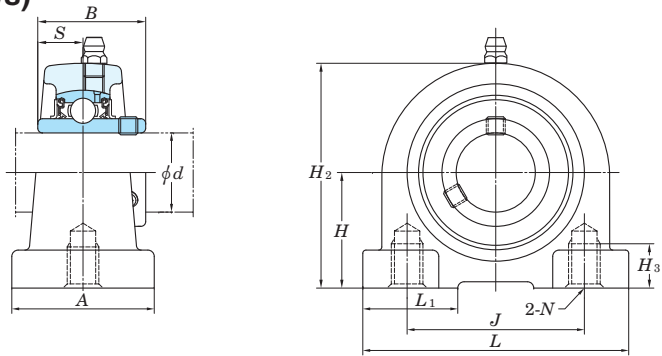
4. As for the triple-lip seal type product, supplementary code L3 follows the Part No. of unit or bearing.

(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.

6. Housings of spheroidal graphite iron casting are also available.

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



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

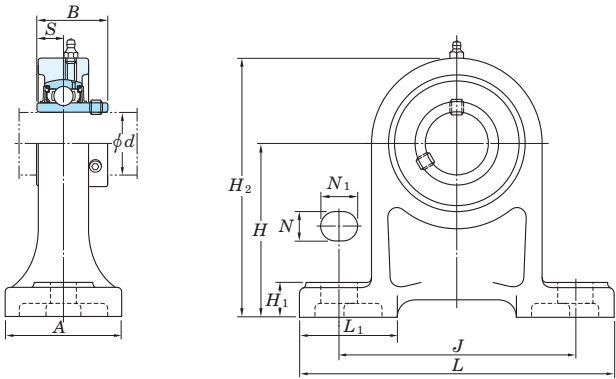
Unit: mm		
Housing No.	ΔH_s	ΔJ_s
PA204-PA210	±0.15	±0.5

Shaft Dia. mm inch		Dimensions inch mm										Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN		Fatigue Load Limit kN	Factor f_0	Mass kg
d		H	L	A	J	N	H_2	H_3	L_1	B	S					C_r	C_{0r}	C_u		
12	1/2											UCPA201		UC201						0.64
15	5/8	1 3/16	3	1 9/16	2 3/64	M10×1.5	2 3/8	1/2	1 1/16	1.220	0.500	UCPA201-8	PA204	UC201-8		12.8	6.65	0.302	13.2	0.62
17	3/4	30.2	76	40	52				27	31	12.7	UCPA202		UC202						0.61
20												UCPA202-10		UC202-10						
												UCPA203		UC203						
												UCPA204-12		UC204-12						
												UCPA204		UC204						0.59
25	1 7/8	1 7/16	3 5/16	1 25/32	2 13/64	M10×1.5	2 25/32	1/2	1 3/16	1.343	0.563	UCPA205-14	PA205	UC205-14		14.0	7.85	0.357	13.9	0.83
	15/16	36.5	84	45	56				30	34.1	14.3	UCPA205-15		UC205-15						
	1											UCPA205		UC205						
												UCPA205-16		UC205-16						
30	1 1/8	1 11/16	3 11/16	1 31/32	2 19/32	M14×2	3 5/16	23/32	1 13/32	1.500	0.626	UCPA206-18	PA206	UC206-18		19.5	11.3	0.514	13.9	1.2
	1 3/16	42.9	94	50	66				36	38.1	15.9	UCPA206		UC206						
	1 1/4											UCPA206-19		UC206-19						
												UCPA206-20		UC206-20						
35	1 1/4	1 7/8	4 11/32	2 5/32	3 5/32	M14×2	3 21/32	25/32	1 5/8	1.689	0.689	UCPA207-20	PA207	UC207-20		25.7	15.4	0.700	13.9	1.7
	1 5/16	47.6	110	55	80				41	42.9	17.5	UCPA207-21		UC207-21						
	1 3/8											UCPA207-22		UC207-22						
	1 7/16											UCPA207		UC207						
												UCPA207-23		UC207-23						
40	1 1/2	1 15/16	4 9/16	2 9/32	3 5/16	M14×2	3 27/32	25/32	1 5/8	1.937	0.748	UCPA208-24	PA208	UC208-24		29.1	17.8	0.809	14.0	2.0
	1 9/16	49.2	116	58	84				41	49.2	19	UCPA208-25		UC208-25						
												UCPA208		UC208						
45	1 5/8	2 9/64	4 23/32	2 3/8	3 35/64	M14×2	4 3/16	31/32	1 21/32	1.937	0.748	UCPA209-26	PA209	UC209-26		34.1	21.3	0.968	14.0	2.2
	1 11/16	54.2	120	60	90				42	49.2	19	UCPA209-27		UC209-27						
	1 3/4											UCPA209-28		UC209-28						
												UCPA209		UC209						
50	1 7/8	2 1/4	5 1/8	2 17/32	3 45/64	M16×2	4 7/16	31/32	1 27/32	2.031	0.748	UCPA210-30	PA210	UC210-30		35.1	23.3	1.06	14.4	2.8
	1 15/16	57.2	130	64	94				47	51.6	19	UCPA210-31		UC210-31						
	2											UCPA210		UC210						
												UCPA210-32		UC210-32						

Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See Table 2.5 in P.11.)
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 + H2305X, UK205 + H2305X)
6. Housings of spheroidal graphite iron casting are also available.

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



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

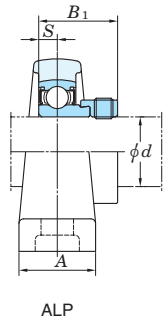
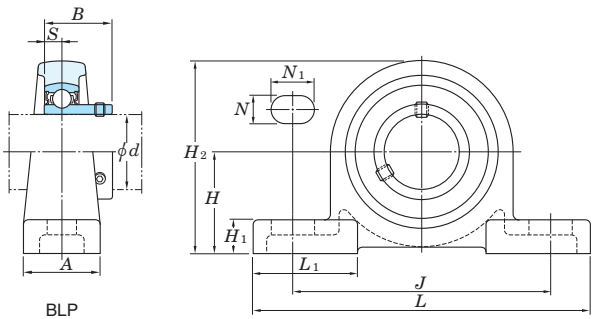
Unit: mm	
Housing No.	ΔH_s
PH204~PH210	±0.15

Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN		Fatigue Load Limit kN	Factor f_0	Mass kg
d		H	L	A	J	N	N_1	H_1	H_2	L_1	B	S						C_r	C_{0r}	C_u		
12	$\frac{1}{2}$													UCPH201		UC201						0.96
15	$\frac{5}{8}$	$2\frac{3}{4}$	5	$1\frac{9}{16}$	$3\frac{3}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{19}{32}$	$3\frac{31}{32}$	$1\frac{13}{16}$	1.220	0.500	$\frac{3}{8}$	UCPH201-8	PH204	UC201-8		12.8	6.65	0.302	13.2	0.94
17	$\frac{3}{4}$	70	127	40	95	13	19	15	101	46	31	12.7	M10	UCPH202		UC202						0.93
20														UCPH202-10		UC202-10						
														UCPH203		UC203						
														UCPH204-12		UC204-12						
														UCPH204		UC204						0.91
25	$\frac{7}{8}$ $\frac{15}{16}$ 1	$3\frac{5}{32}$	$5\frac{1}{2}$	$1\frac{31}{32}$	$4\frac{1}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{5}{8}$	$4\frac{1}{2}$	$1\frac{15}{16}$	1.343	0.563	$\frac{3}{8}$	UCPH205-14	PH205	UC205-14		14.0	7.85	0.357	13.9	1.2
		80	140	50	105	13	19	16	114	49	34.1	14.3	M10	UCPH205-15		UC205-15						
														UCPH205		UC205						
														UCPH205-16		UC205-16						
30	$1\frac{1}{8}$ $1\frac{3}{16}$ $1\frac{1}{4}$	$3\frac{35}{64}$	$6\frac{1}{2}$	$1\frac{31}{32}$	$4\frac{3}{4}$	$\frac{21}{32}$	$\frac{13}{16}$	$\frac{23}{32}$	$5\frac{1}{8}$	$2\frac{7}{32}$	1.500	0.626	$\frac{1}{2}$	UCPH206-18	PH206	UC206-18		19.5	11.3	0.514	13.9	1.6
		90	165	50	121	17	21	18	130	56	38.1	15.9	M14	UCPH206		UC206						
														UCPH206-19		UC206-19						
														UCPH206-20		UC206-20						
35	$1\frac{1}{4}$ $1\frac{5}{16}$ $1\frac{3}{8}$ $1\frac{7}{16}$	$3\frac{47}{64}$	$6\frac{9}{16}$	$2\frac{3}{8}$	5	$\frac{21}{32}$	$\frac{13}{16}$	$\frac{23}{32}$	$5\frac{1}{2}$	$2\frac{1}{8}$	1.689	0.689	$\frac{1}{2}$	UCPH207-20	PH207	UC207-20		25.7	15.4	0.700	13.9	2.0
		95	167	60	127	17	21	18	140	54	42.9	17.5	M14	UCPH207-21		UC207-21						
														UCPH207-22		UC207-22						
														UCPH207		UC207						
														UCPH207-23		UC207-23						
40	$1\frac{1}{2}$ $1\frac{9}{16}$	$3\frac{15}{16}$	$7\frac{1}{4}$	$2\frac{3}{4}$	$5\frac{13}{32}$	$\frac{21}{32}$	$\frac{13}{16}$	$\frac{25}{32}$	$5\frac{29}{32}$	$2\frac{1}{4}$	1.937	0.748	$\frac{1}{2}$	UCPH208-24	PH208	UC208-24		29.1	17.8	0.809	14.0	2.7
		100	184	70	137	17	21	20	150	57	49.2	19	M14	UCPH208-25		UC208-25						
														UCPH208		UC208						
45	$1\frac{5}{8}$ $1\frac{11}{16}$ $1\frac{3}{4}$	$4\frac{9}{64}$	$7\frac{15}{32}$	$2\frac{3}{4}$	$5\frac{3}{4}$	$\frac{21}{32}$	$\frac{13}{16}$	$\frac{25}{32}$	$6\frac{7}{32}$	$2\frac{9}{32}$	1.937	0.748	$\frac{1}{2}$	UCPH209-26	PH209	UC209-26		34.1	21.3	0.968	14.0	3.0
		105	190	70	146	17	21	20	158	58	49.2	19	M14	UCPH209-27		UC209-27						
														UCPH209-28		UC209-28						
														UCPH209		UC209						
50	$1\frac{7}{8}$ $1\frac{15}{16}$ 2	$4\frac{21}{64}$	$8\frac{1}{8}$	$2\frac{3}{4}$	$6\frac{1}{4}$	$\frac{25}{32}$	$\frac{7}{8}$	$\frac{7}{8}$	$6\frac{1}{2}$	$2\frac{9}{16}$	2.031	0.748	$\frac{5}{8}$	UCPH210-30	PH210	UC210-30		35.1	23.3	1.06	14.4	3.5
		110	206	70	159	20	22	22	165	65	51.6	19	M16	UCPH210-31		UC210-31						
														UCPH210		UC210						
														UCPH210-32		UC210-32						

Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See Table 2.5 in P.11.)
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 + H2305X, UK205 + H2305X)

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



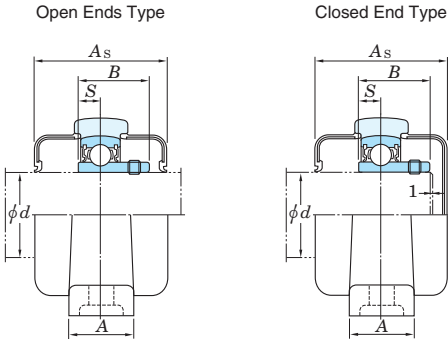
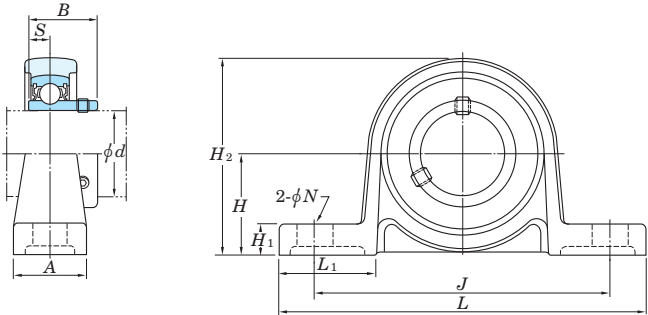
Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_s)

Housing No.	ΔH_s
LP203~LP208	± 0.15

Shaft Dia. mm inch	Dimensions inch mm											Bolt Size inch mm	Unit No.	Bearing No.		Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN		Fatigue Load Limit kN	Factor	Mass kg	
	<i>d</i>	<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>N</i> ₁	<i>H</i> ₁	<i>H</i> ₂	<i>L</i> ₁	<i>S</i>								<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _u	<i>f</i> ₀	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	3/8	BLP201	SB201		ALP201	SA201							
15	5/8	30.2	114	25	87	11	16	12	57	35	6	M10	BLP201-8	SB201-8		ALP201-8	SA201-8	LP203	9.55	4.80	0.218	13.2	0.36	0.39
17													BLP202	SB202		ALP202	SA202							
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	3/8	BLP202-10	SB202-10		ALP202-10	SA202-10							
		33.3	125	27	97	11	16	13	65	38	7	M10	BLP203	SB203		ALP203	SA203							
													BLP204-12	SB204-12		ALP204-12	SA204-12	LP204	12.8	6.65	0.302	13.2	0.51	0.51
													BLP204	SB204		ALP204	SA204							
25	7/8	1 7/16	5 1/8	1 5/32	3 15/16	7/16	5/8	1/2	2 25/32	1 17/32	0.295	3/8	BLP205-14	SB205-14		ALP205-14	SA205-14							
	15/16	36.5	130	29	100	11	16	13	71	39	7.5	M10	BLP205-15	SB205-15		ALP205-15	SA205-15	LP205	14.0	7.85	0.357	13.9	0.57	0.61
													BLP205	SB205		ALP205	SA205							
													BLP205-16	SB205-16		ALP205-16	SA205-16							
30	1 1/8	1 11/16	6 5/32	1 5/16	4 23/32	9/16	13/16	9/16	3 9/32	1 27/32	0.315	1/2	BLP206-18	SB206-18		ALP206-18	SA206-18							
	1 3/16	42.9	156	33	120	14	21	14	83	47	8	M12	BLP206	SB206		ALP206	SA206	LP206	19.5	11.3	0.514	13.9	0.69	0.72
	1 1/4												BLP206-19	SB206-19		ALP206-19	SA206-19							
													BLP206-20	SB206-20		ALP206-20	SA206-20							
													BLP207-20	SB207-20		ALP207-20	SA207-20							
35	1 1/4	1 7/8	6 1/2	1 3/8	5	9/16	13/16	5/8	3 21/32	1 31/32	0.335	1/2	BLP207-22	SB207-22		ALP207-22	SA207-22	LP207	25.7	15.4	0.700	13.9	0.94	1.0
	1 5/16	47.6	165	35	127	14	21	16	93	50	8.5	M12	BLP207	SB207		ALP207	SA207							
	1 3/8												BLP207-23	SB207-23		ALP207-23	SA207-23							
	1 7/16												BLP208-24	SB208-24		ALP208-24	SA208-24							
40	1 1/2	2	7 1/4	1 15/32	5 1/2	9/16	7/8	23/32	4 1/32	2 5/32	0.354	1/2	BLP208	SB208		ALP208	SA208	LP208	29.1	17.8	0.809	14.0	1.8	1.9
	1 9/16	50.8	184	37	140	14	22	18	102	55	9	M12				ALP208-25	SA208-25							

Remarks 1. In Part No. of unit, fitting codes follow bore diameter codes. (See Table 2.5 in P.11.)
2. Allowable load to housing in radial direction is approximately half of basic load rating of bearing, *C_r* (when safety factor is 4).
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

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



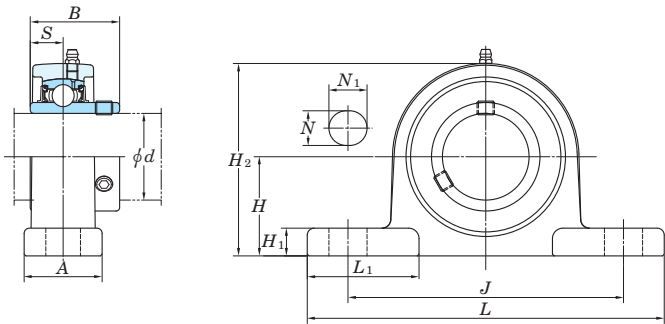
Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_s) and variations of tolerance of distance between centers of bolt holes (ΔJ_s)

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

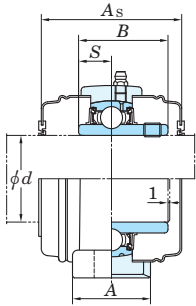
Shaft Dia. mm	Dimensions inch mm										Bolt Size inch mm	Standard				Mass kg	Basic Load Ratings kN		Fatigue Load Limit kN	Factor <i>f</i> ₀	With Rubber Coated Covers								
	<i>d</i>	<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>H</i> ₁	<i>H</i> ₂	<i>L</i> ₁	<i>B</i>		<i>S</i>	Unit No.	Housing No.	Bearing No.						<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _u		Unit No.		Dimension mm inch		Mass kg
																									Open Ends Type	Closed End Type	<i>A</i> _s		
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	0.089	12.3	UP000C	UP000CD	29	^{1 5} / ₃₂	0.07			
12	³ / ₄ 19	^{2 25} / ₃₂ 71	⁵ / ₈ 16	^{2 13} / ₆₄ 56	⁹ / ₃₂ 7	¹ / ₄ 6	^{1 1} / ₂ 38	³ / ₄ 19	0.591 15	0.197 5	¹ / ₄ M6	UP001	P001	SU001			0.090	5.10	2.40	0.109	13.2	UP001C	UP001CD	29	^{1 5} / ₃₂	0.09			
15	⁵⁵ / ₆₄ 22	^{3 5} / ₃₂ 80	⁵ / ₈ 16	^{2 31} / ₆₄ 63	⁹ / ₃₂ 7	⁹ / ₃₂ 7	^{1 11} / ₁₆ 43	¹³ / ₁₆ 21	0.650 16.5	0.217 5.5	¹ / ₄ M6	UP002	P002	SU002			0.11	5.60	2.85	0.130	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	0.148	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	0.230	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	0.266	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	0.375	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 2.5 in P.11.)
2. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

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



With Pressed Stainless Steel Covers



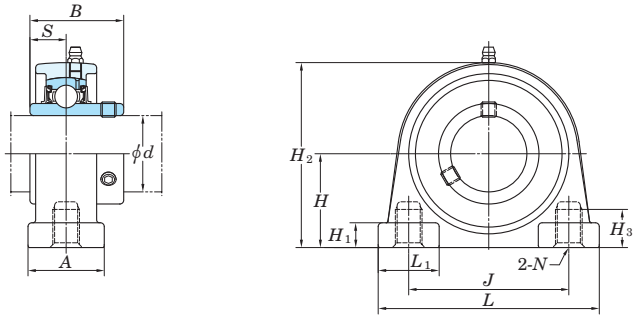
Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_s)

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

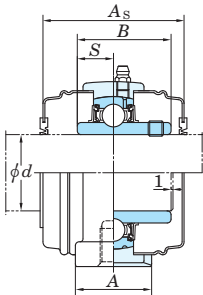
Shaft Dia. mm	Dimensions											Bolt Size inch mm	Standard				Mass kg	Basic		Fatigue Load Limit kN	Factor	With Pressed Stainless Steel Covers						
	inch mm												Unit No.	Housing No.	Bearing No.			C _r	C _{0r}			C _u	f ₀	Unit No.		Dimension		Mass kg
	H	L	A	J	N	N ₁	H ₁	H ₂	L ₁	B	S													Open Ends Type	Closed End Type	A _s	mm	
d	H	L	A	J	N	N ₁	H ₁	H ₂	L ₁	B	S	mm					C _r	C _{0r}	C _u	f ₀			A _s	mm	inch	kg		
20	1 5/16 33.3	5 127	1 3/16 30	3 3/4 95	1/2 13	23/32 18	7/16 11	2 15/32 63	1 21/32 42	1.220 31	0.500 12.7	3/8 M10	UCSP204H1S6	SP204H1	UC204S6		0.6	10.9	5.35	0.243	13.2	UCSP204H1CS6	UCSP204H1CDS6	45	1 25/32	0.6		
25	1 7/16 36.5	5 1/2 140	1 3/16 30	4 1/8 105	1/2 13	3/4 19	15/32 12	2 23/32 69	1 13/16 46	1.343 34.1	0.563 14.3	3/8 M10	UCSP205H1S6	SP205H1	UC205S6		0.7	11.9	6.3	0.286	13.9	UCSP205H1CS6	UCSP205H1CDS6	49	1 15/16	0.7		
30	1 11/16 42.9	6 1/2 165	1 13/32 36	4 3/4 121	21/32 17	13/16 21	1/2 13	3 3/16 81	2 1/8 54	1.500 38.1	0.626 15.9	1/2 M14	UCSP206H1S6	SP206H1	UC206S6		1.1	16.5	9.05	0.411	13.9	UCSP206H1CS6	UCSP206H1CDS6	53	2 3/32	1.1		
35	1 7/8 47.6	6 9/16 167	1 1/2 38	5 127	21/32 17	13/16 21	9/16 14	3 19/32 91	2 51	1.689 42.9	0.689 17.5	1/2 M14	UCSP207H1S6	SP207H1	UC207S6		1.4	21.8	12.3	0.559	13.9	UCSP207H1CS6	UCSP207H1CDS6	60	2 3/8	1.4		
40	1 15/16 49.2	7 1/4 184	1 9/16 40	5 13/32 137	21/32 17	13/16 21	9/16 14	3 13/16 97	2 3/8 60	1.937 49.2	0.748 19	1/2 M14	UCSP208H1S6	SP208H1	UC208S6		1.7	24.8	14.3	0.650	14.0	UCSP208H1CS6	UCSP208H1CDS6	69	2 23/32	1.7		
45	2 1/8 54	7 15/32 190	1 9/16 40	5 3/4 146	21/32 17	13/16 21	19/32 15	4 3/32 104	2 13/32 61	1.937 49.2	0.748 19	1/2 M14	UCSP209H1S6	SP209H1	UC209S6		2	27.8	16.2	0.736	14.0	UCSP209H1CS6	UCSP209H1CDS6	69	2 23/32	2.0		
50	2 1/4 57.2	8 1/8 206	1 25/32 45	6 1/4 159	25/32 20	7/8 22	5/8 16	4 3/8 111	2 9/16 65	2.031 51.6	0.748 19	5/8 M16	UCSP210H1S6	SP210H1	UC210S6		2.5	29.8	18.6	0.845	14.4	UCSP210H1CS6	UCSP210H1CDS6	74	2 29/32	2.5		

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See Table 2.5 in P.11.)
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



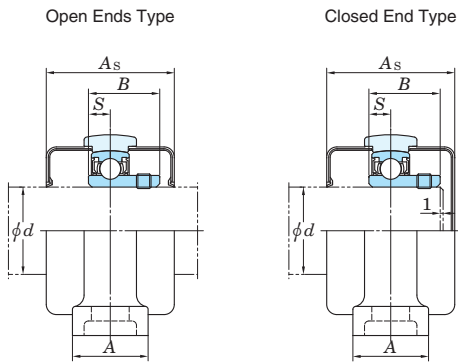
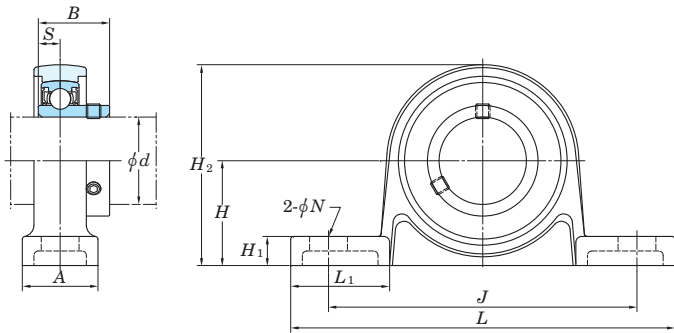
Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_s) and variations of tolerance of distance between centers of bolt holes (ΔJ_s)

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

Shaft Dia. mm	Dimensions											Standard				Mass	Basic		Fatigue	Factor	With Pressed Stainless Steel Covers				Mass
	inch											Unit No.	Housing No.	Bearing No.			Load Ratings kN	Load Limit kN			Unit No.		Dimension		
	mm																				Open		Closed		
<i>d</i>	<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>H</i> ₁	<i>H</i> ₂	<i>H</i> ₃	<i>L</i> ₁	<i>B</i>	<i>S</i>					<i>C_r</i>	<i>C</i> _{0r}	<i>C_u</i>	<i>f</i> ₀	Ends Type	End Type	<i>A_s</i>			
20	1 3/16 30.2	3 76	1 3/16 30	2 3/64 52	M10×1.5	13/32 10	2 3/8 60	33/64 13	7/8 22	1.220 31	0.500 12.7	UCSPA204H1S6	SPA204H1	UC204S6		0.47	10.9	5.35	0.243	13.2	UCSPA204H1CS6	UCSPA204H1CDS6	45	1 25/32	0.46
25	1 7/16 36.5	3 5/16 84	1 3/16 30	2 13/64 56	M10×1.5	15/32 12	2 23/32 69	33/64 13	15/16 24	1.343 34.1	0.563 14.3	UCSPA205H1S6	SPA205H1	UC205S6		0.63	11.9	6.3	0.286	13.9	UCSPA205H1CS6	UCSPA205H1CDS6	49	1 15/16	0.63
30	1 11/16 42.9	3 11/16 94	1 13/32 36	2 19/32 66	M14×2	15/32 12	3 3/16 81	45/64 18	1 3/32 28	1.500 38.1	0.626 15.9	UCSPA206H1S6	SPA206H1	UC206S6		0.91	16.5	9.05	0.411	13.9	UCSPA206H1CS6	UCSPA206H1CDS6	53	2 3/32	0.91
35	1 7/8 47.6	4 11/32 110	1 1/2 38	3 5/32 80	M14×2	1/2 13	3 19/32 91	25/32 20	1 3/16 30	1.689 42.9	0.689 17.5	UCSPA207H1S6	SPA207H1	UC207S6		1.3	21.8	12.3	0.559	13.9	UCSPA207H1CS6	UCSPA207H1CDS6	60	2 3/8	1.3
40	1 15/16 49.2	4 9/16 116	1 9/16 40	3 5/16 84	M14×2	1/2 13	3 13/16 97	25/32 20	1 1/4 32	1.937 49.2	0.748 19	UCSPA208H1S6	SPA208H1	UC208S6		1.6	24.8	14.3	0.650	14.0	UCSPA208H1CS6	UCSPA208H1CDS6	69	2 23/32	1.5

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See Table 2.5 in P.11.)
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



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

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

Shaft Dia. mm	Dimensions										Bolt Size	Standard				Mass	Basic		Fatigue	Factor	With Rubber Coated Covers				Mass		
	inch mm											Unit No.	Housing No.	Bearing No.			Load Ratings kN				Load Limit kN		Unit No.			Dimension	
	<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>H</i> ₁	<i>H</i> ₂	<i>L</i> ₁	<i>B</i>	<i>S</i>							<i>C</i> _r	<i>C</i> _{0r}					<i>C</i> _u	<i>f</i> ₀		Open Ends Type	Closed End Type
<i>d</i>	<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>H</i> ₁	<i>H</i> ₂	<i>L</i> ₁	<i>B</i>	<i>S</i>	inch mm				kg												
10	⁴⁵ / ₆₄	2 ⁵ / ₈	⁵ / ₈	2 ³ / ₃₂	⁹ / ₃₂	³ / ₁₆	1 ³ / ₈	²³ / ₃₂	0.591	0.197	¹ / ₄	USP000S6	SP000	SU000S6		0.076	3.9	1.55	0.070	12.3	USP000CS6	USP000CDS6	29	1 ⁵ / ₃₂	0.08		
	18	67	16	53	7	5	35	18	15	5	M6																
12	³ / ₄	2 ²⁵ / ₃₂	⁵ / ₈	2 ⁷ / ₃₂	⁹ / ₃₂	³ / ₁₆	1 ¹⁵ / ₃₂	²³ / ₃₂	0.591	0.197	¹ / ₄	USP001S6	SP001	SU001S6		0.08	4.3	1.9	0.086	13.2	USP001CS6	USP001CDS6	29	1 ⁵ / ₃₂	0.08		
	19	71	16	56	7	5	37	18.5	15	5	M6																
15	⁵⁵ / ₆₄	3 ⁵ / ₃₂	⁵ / ₈	2 ¹⁵ / ₃₂	⁹ / ₃₂	¹ / ₄	1 ¹¹ / ₁₆	¹³ / ₁₆	0.650	0.217	¹ / ₄	USP002S6	SP002	SU002S6		0.11	4.7	2.25	0.102	13.9	USP002CS6	USP002CDS6	31	1 ⁷ / ₃₂	0.11		
	22	80	16	63	7	6	42.5	20.5	16.5	5.5	M6																
17	¹⁵ / ₁₆	3 ¹¹ / ₃₂	²³ / ₃₂	2 ⁵ / ₈	⁹ / ₃₂	¹ / ₄	1 ¹³ / ₁₆	¹³ / ₁₆	0.689	0.236	¹ / ₄	USP003S6	SP003	SU003S6		0.14	5.1	2.6	0.118	14.4	USP003CS6	USP003CDS6	33	1 ⁵ / ₁₆	0.14		
	24	85	18	67	7	6	46	21	17.5	6	M6																
20	1 ⁷ / ₆₄	3 ¹⁵ / ₁₆	²⁵ / ₃₂	3 ⁵ / ₃₂	¹³ / ₃₂	⁵ / ₁₆	2 ⁵ / ₃₂	³¹ / ₃₂	0.827	0.276	⁵ / ₁₆	USP004S6	SP004	SU004S6		0.23	7.9	4	0.182	13.9	USP004CS6	USP004CDS6	38	1 ¹ / ₂	0.23		
	28	100	20	80	10	8	54.5	25	21	7	M8																
25	1 ¹⁷ / ₆₄	4 ¹³ / ₃₂	²⁵ / ₃₂	3 ¹⁷ / ₃₂	¹³ / ₃₂	¹¹ / ₃₂	2 ¹³ / ₃₂	1 ³ / ₃₂	0.866	0.276	⁵ / ₁₆	USP005S6	SP005	SU005S6		0.28	8.5	4.65	0.211	14.5	USP005CS6	USP005CDS6	40	1 ⁹ / ₁₆	0.28		
	32	112	20	90	10	9	61	27.5	22	7	M8																
30	1 ²⁷ / ₆₄	5 ³ / ₁₆	1 ¹ / ₃₂	4 ³ / ₁₆	¹ / ₂	¹³ / ₃₂	2 ²³ / ₃₂	1 ¹¹ / ₃₂	0.965	0.295	³ / ₈	USP006S6	SP006	SU006S6		0.43	11.2	6.6	0.300	14.7	USP006CS6	USP006CDS6	44	1 ²³ / ₃₂	0.43		
	36	132	26	106	13	10	69	34	24.5	7.5	M10																

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See Table 2.5 in P.11.)
2. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

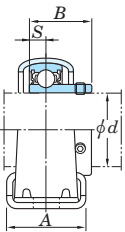
SBPP

Cylindrical bore
(with set screws)

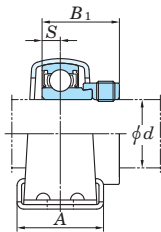
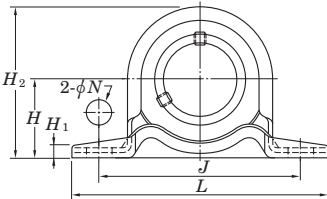
d 12 ~ 30 mm

SAPP

Cylindrical bore
(with eccentric locking collar)



SBPP



SAPP

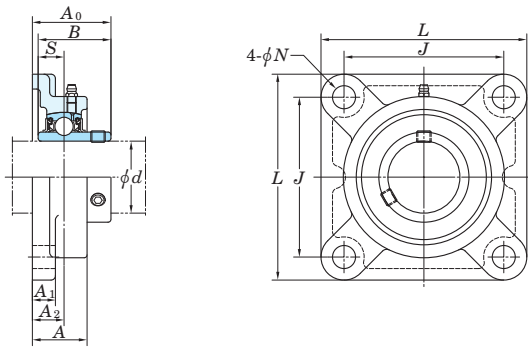
Variations of tolerance of distance between centers of bolt holes (ΔJ_s) and variations of tolerance of bolt hole diameter (ΔN_s)

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

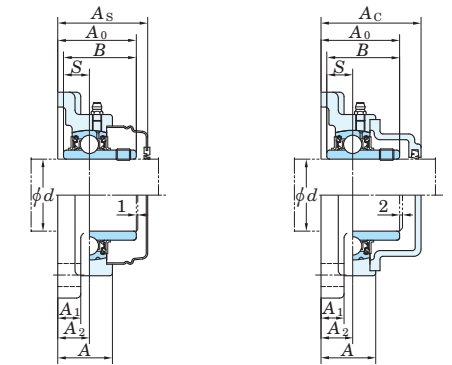
Shaft Dia mm inch		Dimensions inch mm									Bolt Size inch mm	Unit No.	Bearing No.		Unit No.	Bearing No.	Housing No.	Basic Load Ratings kN C_r C_{0r}		Fatigue Load Limit kN C_u	Factor f_0	Mass kg SBPP SAPP	
d		H	L	A	J	N	H_1	H_2	S	SBPP B	SAPP B_1												
12	$\frac{1}{2}$											SBPP201	SB201		SAPP201	SA201							
15	$\frac{5}{8}$	$\frac{7}{8}$	$3\frac{3}{8}$	$\frac{31}{32}$	$2\frac{43}{64}$	$\frac{3}{8}$	$\frac{1}{8}$	$1\frac{23}{32}$	0.236	0.866	1.122	SBPP201-8	SB201-8		SAPP201-8	SA201-8	PP203	9.55	4.80	0.218	13.2	0.16	0.19
17												SBPP202	SB202		SAPP202	SA202							
												SBPP202-10	SB202-10		SAPP202-10	SA202-10							
20	$\frac{3}{4}$	1	$3\frac{27}{32}$	$1\frac{1}{4}$	$2\frac{63}{64}$	$\frac{3}{8}$	$\frac{1}{8}$	2	0.276	0.984	1.161	SBPP202-10	SB202-10		SAPP202-10	SA202-10							
												SBPP203	SB203		SAPP203	SA203							
												SBPP203-12	SB203-12		SAPP203-12	SA203-12							
25	$\frac{7}{8}$ $\frac{15}{16}$	$1\frac{1}{8}$	$4\frac{1}{4}$	$1\frac{1}{4}$	$3\frac{25}{64}$	$\frac{29}{64}$	$\frac{5}{32}$	$2\frac{7}{32}$	0.295	1.063	1.201	SBPP204	SB204		SAPP204	SA204	PP204	12.8	6.65	0.302	13.2	0.23	0.23
												SBPP204-12	SB204-12		SAPP204-12	SA204-12							
												SBPP205-14	SB205-14		SAPP205-14	SA205-14							
												SBPP205-15	SB205-15		SAPP205-15	SA205-15	PP205	14.0	7.85	0.357	13.9	0.28	0.32
												SBPP205	SB205		SAPP205	SA205							
												SBPP205-16	SB205-16		SAPP205-16	SA205-16							
30	$1\frac{1}{8}$ $1\frac{3}{16}$ $1\frac{1}{4}$	$1\frac{5}{16}$	$4\frac{19}{32}$	$1\frac{1}{2}$	$3\frac{3}{4}$	$\frac{29}{64}$	$\frac{5}{32}$	$2\frac{5}{8}$	0.315	1.181	1.335	SBPP206-18	SB206-18		SAPP206-18	SA206-18							
												SBPP206	SB206		SAPP206	SA206	PP206	19.5	11.3	0.514	13.9	0.47	0.50
												SBPP206-19	SB206-19		SAPP206-19	SA206-19							
												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.

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



With Pressed Steel Cover With Cast Iron Cover



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

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

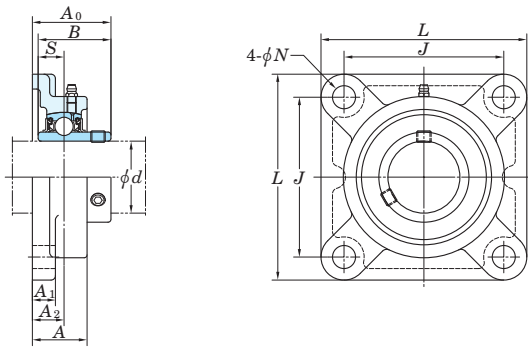
Variations of tolerance of bolt hole diameter (ΔN_s)
Unit: mm

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

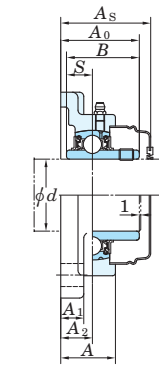
Shaft Dia. mm inch		Dimensions inch mm									Bolt Size inch mm	Standard				Basic		Fatigue Load Limit kN <i>C_u</i>	Factor <i>f₀</i>	With Pressed Steel Cover				With Cast Iron Cover						
												Unit No.	Housing No.	Bearing No.		Mass kg	Load Ratings kN <i>C_r</i> <i>C_{0r}</i>				Unit No.		Dimension mm inch		Mass kg	Unit No.		Dimension mm inch		Mass kg
<i>d</i>		<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>	<i>S</i>						<i>C_r</i>	<i>C_{0r}</i>			Open End Type	Closed End Type	<i>A_s</i>			Open End Type	Closed End Type	<i>A_c</i>			
12 15 17 20	1/2											UCF201		UC201		0.64				UCF201C	UCF201D	37.5	1 15/32	0.64	—	—	—	—		
	5/8	3 3/8	1	2 33/64	15/32	7/16	19/32	1 5/16	1.220	0.500	3/8	UCF201-8		UC201-8		0.64				—	—	—	—	—	—	—	—	—		
		86	25.5	64	12	11	15	33.3	31	12.7	M10	UCF202		UC202		0.62	12.8	6.65	0.302	13.2	UCF202C	UCF202D	37.5	1 15/32	0.62	—	—	—	—	
												UCF202-10		UC202-10		0.62				—	—	—	—	—	—	—	—	—		
		3/4											UCF203		UC203		0.61				UCF203C	UCF203D	37.5	1 15/32	0.61	—	—	—	—	
25	7/8											UCF204-12		UC204-12		0.61				—	—	—	—	—	—	—	—	—		
												UCF204		UC204		0.59				UCF204C	UCF204D	37.5	1 15/32	0.59	UCF204FC	UCF204FD	46	1 13/16	0.74	
		3 3/4	1 1/16	2 3/4	15/32	1/2	5/8	1 13/32	1.343	0.563	3/8	UCF205-14		UC205-14		0.83				—	—	—	—	—	—	—	—	—		
		95	27	70	12	13	16	35.8	34.1	14.3	M10	UCF205-15		UC205-15		0.83	14.0	7.85	0.357	13.9	—	—	—	—	—	—	—	—		
	1	4 1/4	1 3/16	3 17/64	15/32	1/2	45/64	1 19/32	1.500	0.626	3/8	UCF205		UC205		0.83				UCF205C	UCF205D	40.5	1 19/32	0.83	UCF205FC	UCF205FD	49	1 15/16	1.0	
30	1 1/8											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	3/8	UCFX05		UCX05		1.2	19.5	11.3	0.514	13.9	UCFX05C	UCFX05D	44.5	1 3/4	1.2	—	—	—	—	
		108	30	83	12	13	18	40.2	38.1	15.9	M10	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	1/2	UCF305		UC305		1.3	21.2	10.9	0.495	12.6	—	—	—	—	—	—	—	—		
	1	110	29	80	16	13	16	39	38	15	M14	UCF305-16		UC305-16		1.3				UCF305C	UCF305D	54	2 1/8	1.6	—	—	—	—		
35	1 3/16											UCF206-18		UC206-18		1.1				—	—	—	—	—	—	—	—	—		
		4 1/4	1 7/32	3 17/64	15/32	1/2	45/64	1 19/32	1.500	0.626	3/8	UCF206		UC206		1.1	19.5	11.3	0.514	13.9	UCF206C	UCF206D	44.5	1 3/4	1.1	UCF206FC	UCF206FD	53	2 3/32	1.4
		108	31	83	12	13	18	40.2	38.1	15.9	M10	UCF206-19		UC206-19		1.1				—	—	—	—	—	—	—	—	—		
		1 1/4										UCF206-20		UC206-20		1.1				—	—	—	—	—	—	—	—	—		
	1 3/16	4 19/32	1 11/32	3 5/8	5/8	9/16	3/4	1 3/4	1.689	0.689	1/2	UCFX06		UCX06		1.6				UCFX06C	UCFX06D	49	1 15/16	1.6	—	—	—	—		
1 1/4	117	34	92	16	14	19	44.4	42.9	17.5	M14	UCFX06-19		UCX06-19		1.6	25.7	15.4	0.700	13.9	—	—	—	—	—	—	—	—			
—	4 29/32	1 1/4	3 47/64	5/8	19/32	45/64	1 23/32	1.693	0.669	1/2	UCFX06-20		UCX06-20		1.6				—	—	—	—	—	—	—	—	—			
40	1 1/8											UCF306		UC306		1.9	26.7	15.0	0.682	13.3	—	—	—	—	—	—	—	—		
		125	32	95	16	15	18	44	43	17	M14	—	—	—	—	—	—	—	—	UCF306C	UCF306D	59	2 5/16	2.2	—	—	—	—		
		1 1/4										UCF207-20		UC207-20		1.5				—	—	—	—	—	—	—	—	—		
		1 5/16	4 19/32	1 11/32	3 5/8	35/64	19/32	3/4	1 3/4	1.689	0.689	7/16	UCF207-21		UC207-21		1.5	25.7	15.4	0.700	13.9	—	—	—	—	—	—	—	—	
	1 3/8	117	34	92	14	15	19	44.4	42.9	17.5	M12	UCF207-22		UC207-22		1.5				—	—	—	—	—	—	—	—	—		
1 7/16											UCF207		UC207		1.5				UCF207C	UCF207D	49	1 15/16	1.5	UCF207FC	UCF207FD	58	2 9/32	1.9		
1 7/16	4 19/32	1 11/32	3 5/8	5/8	9/16	53/64	2 1/32	1.937	0.748	1/2	UCF207-23		UC207-23		1.5				—	—	—	—	—	—	—	—	—			
45	1 3/8											UCFX07-22		UCX07-22		2.0				—	—	—	—	—	—	—	—	—		
		5 1/8	1 1/2	4 1/64	5/8	9/16	53/64	2 1/32	1.937	0.748	1/2	UCFX07		UCX07		2.0	29.1	17.8	0.809	14.0	UCFX07C	UCFX07D	55.5	2 3/16	2.0	—	—	—	—	
		130	38	102	16	14	21	51.2	49.2	19	M14	UCFX07-23		UCX07-23		2.0				—	—	—	—	—	—	—	—	—		
		1 7/16										UCF307		UC307		2.3	33.4	19.3	0.877	13.2	—	—	—	—	—	—	—	—		
	—	5 5/16	1 13/32	3 15/16	3/4	5/8	25/32	1 15/16	1.890	0.748	5/8	—	—	—	—	—	—	—	—	UCF307C	UCF307D	64	2 17/32	2.7	—	—	—	—		
45	1 1/2											UCF208-24		UC208-24		1.9				—	—	—	—	—	—	—	—	—		
		5 1/8	1 13/32	4 1/64	5/8	19/32	53/64	2 1/32	1.937	0.748	1/2	UCF208-25		UC208-25		1.9	29.1	17.8	0.809	14.0	—	—	—	—	—	—	—	—	—	
		130	36	102	16	15	21	51.2	49.2	19	M14	UCF208		UC208		1.9				UCF208C	UCF208D	55.5	2 3/16	1.9	UCF208FC	UCF208FD	64	2 17/32	2.3	
		1 1/2	5 13/32	1 9/16	4 9/64	3/4	9/16	55/64	2 1/16	1.937	0.748	5/8	UCFX08-24		UCX08-24		2.4	34.1	21.3	0.968	14.0	—	—	—	—	—	—	—	—	
	1 1/2	137	40	105	19	14	22	52.2	49.2	19	M16	UCFX08		UCX08		2.4				UCFX08C	UCFX08D	56.5	2 7/32	2.4	—	—	—	—		
1 1/2	5 29/32	1 9/16	4 13/32	3/4	21/32	29/32	2 7/32	2.047	0.748	5/8	UCF308-24		UC308-24		3.1	40.7	24.0	1.09	13.2	—	—	—	—	—	—	—	—	—		
—	150	40	112	19	17	23	56	52	19	M16	UCF308		UC308		3.1				—	—	—	—	—	—	—	—	—			
45	1 5/8											UCF209-26		UC209-26		2.2				—	—	—	—	—	—	—	—	—		
		5 13/32	1 1/2	4 9/64	5/8	5/8	55/64	2 1/16	1.937	0.748	1/2	UCF209-27		UC209-27		2.2	34.1	21.3	0.968	14.0	—	—	—	—	—	—	—	—	—	
		137	38	105	16	16	22	52.2	49.2	19	M14	UCF209-28		UC209-28		2.2				—	—	—	—	—	—	—	—	—		
		1 3/4										UCF209		UC209		2.2				UCF209C	UCF209D	56.5	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	5/8	UCFX09-28		UCX09-28		2.7				—	—	—	—	—	—	—	—	—		
—	143	40	111	19	14	23	55.6	51.6	19	M16	UCFX09		UCX09		2.7	35.1	23.3	1.06	14.4	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 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF..... 201~210, X05~X09, 305~308
A-R1/8..... 211~218, X10~X20, 309~328
3. As for the triple-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.
5. Housings of spheroidal graphite iron casting are also available.

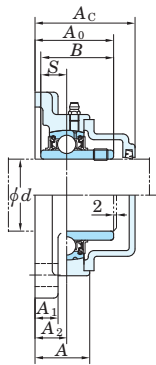
UCF
Cylindrical bore (with set screws)
d (45) ~ (75) mm



With Pressed Steel Cover



With Cast Iron Cover



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

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

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

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

Shaft Dia. mm inch		Dimensions inch mm									Bolt Size inch mm	Standard				Basic		Fatigue Load Limit kN	Factor	With Pressed Steel Cover				With Cast Iron Cover			
												Unit No.	Housing No.	Bearing No.	Mass kg	Load Ratings kN				Unit No.	Dimension mm inch		Mass kg	Unit No.		Dimension mm inch	
<i>C_r</i>	<i>C_{0r}</i>	<i>C_u</i>	<i>f₀</i>	Open End Type	Closed End Type	<i>A_s</i>	<i>A_c</i>																				
45	1 3/4	6 5/16 160	1 23/32 44	4 59/64 125	3/4 19	23/32 18	63/64 25	2 3/8 60	2.244 57	0.866 22	5/8 M16	UCF309-28 UCF309	F309	UC309-28 UC309	4.0 4.0	48.9 29.5	1.34	13.3	— —	— —	— —	— —	UCF309C	UCF309D	76 3	4.6	
	1 7/8 1 15/16	5 5/8 143	1 9/16 40	4 3/8 111	5/8 16	5/8 16	55/64 22	2 5/32 54.6	2.031 51.6	0.748 19	1/2 M14	UCF210-30 UCF210-31 UCF210 UCF210-32	F210	UC210-30 UC210-31 UC210 UC210-32	2.5 2.5 2.5 2.5	35.1 23.3	1.06	14.4	— — UCF210C —	— — UCF210D —	— — 59 2 5/16 —	— — 2.5 —	— — UCF210FC —	— — UCF210FD —	70.5 2 25/32 —	3.0	
50	2	—	—	—	—	—	—	—	—	—	—	UCFX10-31 UCFX10 UCFX10-32	FX10	UCX10-31 UCX10 UCX10-32	3.7 3.7 3.7	43.4 29.4	1.34	14.4	— UCFX10C —	— UCFX10D —	— 64 2 17/32 —	— 3.7 —	— — —	— — —	— — —	—	
	1 15/16	6 3/8 162	1 23/32 44	5 1/8 130	3/4 19	25/32 20	1 1/32 26	2 11/32 59.4	2.189 55.6	0.874 22.2	5/8 M16	UCFX10-31 UCFX10 UCFX10-32	FX10	UCX10-31 UCX10 UCX10-32	3.7 3.7 3.7	43.4 29.4	1.34	14.4	— UCFX10C —	— UCFX10D —	— 64 2 17/32 —	— 3.7 —	— — —	— — —	— — —	—	
	2	6 7/8 175	1 7/8 48	5 13/64 132	29/32 23	3/4 19	1 7/64 28	2 5/8 67	2.402 61	0.866 22	3/4 M20	UCF310	F310	UC310	5.1	62.0 38.3	1.74	13.2	— —	— —	— —	— —	UCF310C	UCF310D	83 3 9/32	5.9	
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
55	2	—	—	—	—	—	—	—	—	—	—	UCF211-32 UCF211-34 UCF211 UCF211-35	F211	UC211-32 UC211-34 UC211 UC211-35	3.4 3.4 3.4 3.4	43.4 29.4	1.34	14.4	— — UCF211C —	— — UCF211D —	— — 63 2 15/32 —	— — 3.4 —	— — UCF211FC —	— — UCF211FD —	74.5 2 15/16 —	4.0	
	2 1/8	6 3/8 162	1 11/16 43	5 1/8 130	3/4 19	23/32 18	63/64 25	2 5/16 58.4	2.189 55.6	0.874 22.2	5/8 M16	UCF211-32 UCF211-34 UCF211 UCF211-35	F211	UC211-32 UC211-34 UC211 UC211-35	3.4 3.4 3.4 3.4	43.4 29.4	1.34	14.4	— — UCF211C —	— — UCF211D —	— — 63 2 15/32 —	— — 3.4 —	— — UCF211FC —	— — UCF211FD —	74.5 2 15/16 —	4.0	
	2 3/16	—	—	—	—	—	—	—	—	—	—	UCFX11 UCFX11-35 UCFX11-36	FX11	UCX11 UCX11-35 UCX11-36	4.9 4.9 4.9	52.4 36.2	1.65	14.4	— UCFX11C —	— UCFX11D —	— 73.5 2 29/32 —	— 4.9 —	— — —	— — —	— — —	—	
	2 3/16	6 7/8 175	1 15/16 49	5 5/8 143	3/4 19	25/32 20	1 9/64 29	2 23/32 68.7	2.563 65.1	1.000 25.4	5/8 M16	UCFX11 UCFX11-35 UCFX11-36	FX11	UCX11 UCX11-35 UCX11-36	4.9 4.9 4.9	52.4 36.2	1.65	14.4	— UCFX11C —	— UCFX11D —	— 73.5 2 29/32 —	— 4.9 —	— — —	— — —	— — —	—	
	2 1/4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	2	7 9/32 185	2 1/16 52	5 33/64 140	29/32 23	25/32 20	1 3/16 30	2 25/32 71	2.598 66	0.984 25	3/4 M20	UCF311-32 UCF311	F311	UC311-32 UC311	5.6 5.6	71.6 45.0	2.05	13.2	— —	— —	— —	— —	UCF311C	UCF311D	87 3 7/16	6.5	
60	2 1/4	—	—	—	—	—	—	—	—	—	—	UCF212-36 UCF212 UCF212-38 UCF212-39	F212	UC212-36 UC212 UC212-38 UC212-39	4.2 4.2 4.2 4.2	52.4 36.2	1.65	14.4	— — UCF212C —	— — UCF212D —	— — 73.5 2 29/32 —	— — 4.2 —	— — UCF212FC —	— — UCF212FD —	86 3 3/8 —	5.0	
	2 3/8	6 7/8 175	1 7/8 48	5 5/8 143	3/4 19	23/32 18	1 9/64 29	2 23/32 68.7	2.563 65.1	1.000 25.4	5/8 M16	UCF212-36 UCF212 UCF212-38 UCF212-39	F212	UC212-36 UC212 UC212-38 UC212-39	4.2 4.2 4.2 4.2	52.4 36.2	1.65	14.4	— — UCF212C —	— — UCF212D —	— — 73.5 2 29/32 —	— — 4.2 —	— — UCF212FC —	— — UCF212FD —	86 3 3/8 —	5.0	
	2 7/16	—	—	—	—	—	—	—	—	—	—	UCFX12 UCFX12-39	FX12	UCX12 UCX12-39	5.7 5.7	57.2 40.1	1.82	14.4	— UCFX12C —	— UCFX12D —	— 78.5 3 3/32 —	— 5.7 —	— — —	— — —	— — —	—	
	2 7/16	7 3/8 187	2 5/16 59	5 55/64 149	3/4 19	13/16 21	1 11/32 34	2 29/32 73.7	2.563 65.1	1.000 25.4	5/8 M16	UCFX12 UCFX12-39	FX12	UCX12 UCX12-39	5.7 5.7	57.2 40.1	1.82	14.4	— UCFX12C —	— UCFX12D —	— 78.5 3 3/32 —	— 5.7 —	— — —	— — —	— — —	—	
	—	7 11/16 195	2 7/32 56	5 29/32 150	29/32 23	7/8 22	1 19/64 33	3 1/16 78	2.795 71	1.024 26	3/4 M20	UCF312	F312	UC312	6.9	81.9 52.2	2.37	13.2	— —	— —	— —	— —	UCF312C	UCF312D	95 3 3/4	8.1	
65	2 1/2	7 3/8 187	1 31/32 50	5 55/64 149	3/4 19	7/8 22	1 3/16 30	2 3/4 69.7	2.563 65.1	1.000 25.4	5/8 M16	UCF213-40 UCF213	F213	UC213-40 UC213	5.2 5.2	57.2 40.1	1.82	14.4	— UCF213C —	— UCF213D —	— 74.5 2 15/16 —	— 5.2 —	— UCF213FC —	— UCF213FD —	87 3 7/16 —	6.0	
	2 1/2	7 3/8 187	2 5/16 59	5 55/64 149	3/4 19	13/16 21	1 11/32 34	3 3/32 78.4	2.937 74.6	1.189 30.2	5/8 M16	UCFX13-40 UCFX13	FX13	UCX13-40 UCX13	6.3 6.3	62.2 44.1	2.01	14.5	— UCFX13C —	— UCFX13D —	— 83.5 3 9/32 —	— 6.3 —	— — —	— — —	— — —	—	
	2 1/2	8 3/16 208	2 9/32 58	6 17/32 166	29/32 23	7/8 22	1 19/64 33	3 1/16 78	2.953 75	1.181 30	3/4 M20	UCF313-40 UCF313	F313	UC313-40 UC313	7.8 7.8	92.7 59.9	2.68	13.2	— — —	— — —	— — —	— — —	UCF313C	UCF313D	94 3 11/16	8.9	
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
70	2 3/4	7 19/32 193	2 1/8 54	5 63/64 152	3/4 19	7/8 22	1 7/32 31	2 31/32 75.4	2.937 74.6	1.189 30.2	5/8 M16	UCF214-44 UCF214	F214	UC214-44 UC214	5.9 5.9	62.2 44.1	2.01	14.5	— UCF214C —	— UCF214D —	— 80.5 3 5/32 —	— 5.9 —	— UCF214FC —	— UCF214FD —	93 3 21/32 —	6.8	
	2 3/4	7 3/4 197	2 3/8 60	5 63/64 152	29/32 23	7/8 22	1 29/64 37	3 7/32 81.5	3.063 77.8	1.331 33.3	3/4 M20	UCFX14-44 UCFX14	FX14	UCX14-44 UCX14	7.0 7.0	67.4 48.3	2.17	14.5	— UCFX14C —	— UCFX14D —	— 86.5 3 13/32 —	— 7.0 —	— — —	— — —	— — —	—	
	2 3/4	8 29/32 226	2 13/32 61	7 1/64 178	63/64 25	31/32 25	1 27/64 36	3 3/16 81	3.071 78	1.299 33	7/8 M22	UCF314-44 UCF314	F314	UC314-44 UC314	10.1 10.1	104 68.2	2.96	13.2	— —	— —	— —	— —	UCF314C	UCF314D	98 3 27/32	11.2	
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
75	2 15/16	—	—	—	—	—	—	—	—	—	—	UCF215-47 UCF215 UCF215-48	F215	UC215-47 UC215 UC215-48	6.4 6.4 6.4	67.4 48.3	2.17	14.5	— UCF215C —	— UCF215D —	— 83.5 3 9/32 —	— 6.4 —	— UCF215FC —	— UCF215FD —	96 3 25/32 —	7.4	
	3	7 7/8 200	2 7/32 56	6 17/64 159	3/4 19	7/8 22	1 11/32 34	3 3/32 78.5	3.063 77.8	1.311 33.3	5/8 M16	UCF215-47 UCF215 UCF215-48	F215	UC215-47 UC215 UC215-48	6.4 6.4 6.4	67.4 48.3	2.17	14.5	— UCF215C —	— UCF215D —	— 83.5 3 9/32 —	— 6.4 —	— UCF215FC —	— UCF215FD —	96 3 25/32 —	7.4	
	2 15/16	7 3/4 197	2 11/16 68	5 63/64 152	29/32 23	15/16 24	1 9/16 40	3 17/32 89.3	3.252 82.6	1.311 33.3	3/4 M20	UCFX15-47 UCFX15 UCFX15-48	FX15	UCX15-47 UCX15 UCX15-48	8.4 8.4 8.4	72.7 53.0	2.30	14.6	— UCFX15C —	— UCFX15D —	— 94.5 3 23/32 —	— 8.4 —	— — —	— — —	— — —	—	
	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)

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

A-1/4-28UNF..... 201~210, X05~X09, 305~308

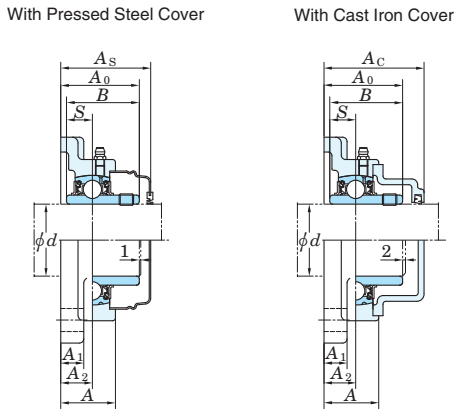
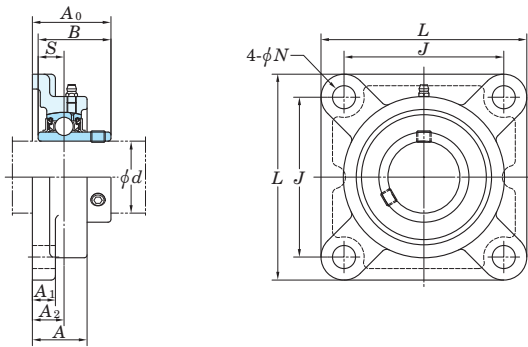
A-R1/8..... 211~218, X10~X20, 309~328

3. As for the triple-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.

5. Housings of spheroidal graphite iron casting are also available.

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



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

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

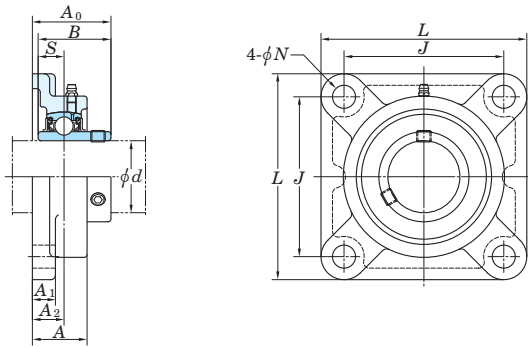
Variations of tolerance of bolt hole diameter (ΔN_s)

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

Shaft Dia.		Dimensions										Bolt Size	Standard				Basic	Fatigue	Factor	With Pressed Steel Cover				With Cast Iron Cover					
mm	inch	inch mm										inch mm	Unit No.	Housing No.	Bearing No.		Mass	Load Ratings kN	Load Limit kN		Unit No.		Dimension mm inch	Mass	Unit No.		Dimension mm inch	Mass	
d		L	A	J	N	A ₁	A ₂	A ₀	B	S					kg	C _r	C _{0r}	C _u	f ₀	Open End Type	Closed End Type			Open End Type	Closed End Type				
75	2 15/16	9 9/32 236	2 19/32 66	7 1/4 184	63/64 25	31/32 25	1 17/32 39	3 1/2 89	3.228 82	1.260 32	7/8 M22	UCF315-47 UCF315 UCF315-48	F315	UC315-47 UC315 UC315-48	11.6 11.6 11.6						— — —	— — —	— — —	— — —	UCF315C — —	UCF315D — —	— 106 —	— 4 3/16 —	— 12.9 —
	3 1/8	8 3/16 208	2 9/32 58	6 1/2 165	29/32 23	7/8 22	1 11/32 34	3 9/32 83.3	3.252 82.6	1.311 33.3	3/4 M20	UCF216-50 UCF216	F216	UC216-50 UC216	7.3 7.3	72.7	53.0	2.30	14.6	— UCF216C	— UCF216D	— 88.5	— 3 15/32	— 7.3	— UCF216FC	— UCF216FD	— 103	— 4 1/16	— 8.5
	—	8 7/16 214	2 3/4 70	6 47/64 171	29/32 23	15/16 24	1 9/16 40	3 19/32 91.6	3.374 85.7	1.343 34.1	3/4 M20	UCFX16	FX16	UCX16	9.4	84.0	61.9	2.60	14.5	UCFX16C	UCFX16D	96.5	3 13/16	9.4	—	—	—	—	—
80	—	9 27/32 250	2 11/16 68	7 23/32 196	1 7/32 31	1 1/16 27	1 1/2 38	3 17/32 90	3.386 86	1.339 34	1 M27	UCF316	F316	UC316	12.8	123	86.7	3.53	13.3	—	—	—	—	UCF316C	UCF316D	107	4 7/32	14.2	
	3 1/4	8 21/32 220	2 15/32 63	6 57/64 175	29/32 23	1 13/32 24	3 7/16 36	3 3/716 87.6	3.374 85.7	1.343 34.1	3/4 M20	UCF217-52 UCF217	F217	UC217-52 UC217	8.9 8.9	84.0	61.9	2.60	14.5	— UCF217C	— UCF217D	— 92.5	— 3 21/32	— 8.9	— UCF217FC	— UCF217FD	— 107	— 4 7/32	— 10.3
	3 7/16	8 7/16 214	2 3/4 70	6 47/64 171	29/32 23	15/16 24	1 9/16 40	3 25/32 96.3	3.780 96	1.563 39.7	3/4 M20	UCFX17 UCFX17-55	FX17	UCX17 UCX17-55	10.8 10.8	96.1	71.5	2.91	14.5	— —	— —	— —	— —	— —	— —	— —	— —	— —	
85	—	10 1/4 260	2 29/32 74	8 1/32 204	1 7/32 31	1 1/16 27	1 47/64 44	3 15/16 100	3.780 96	1.575 40	1 M27	UCF317	F317	UC317	15.3	133	96.8	3.82	13.3	—	—	—	—	UCF317C	UCF317D	117	4 19/32	16.9	
	3 1/2	9 1/4 235	2 11/16 68	7 23/64 187	29/32 23	31/32 25	1 9/16 40	3 25/32 96.3	3.780 96	1.563 39.7	3/4 M20	UCF218-56 UCF218	F218	UC218-56 UC218	11.4 11.4	96.1	71.5	2.91	14.5	— UCF218C	— UCF218D	— 101.5	— 4	— 11.4	— UCF218FC	— UCF218FD	— 116	— 4 9/16	— 12.9
	—	8 7/16 214	3 76	6 47/64 171	29/32 23	15/16 24	1 49/64 45	4 3/16 106.1	4.094 104	1.689 42.9	3/4 M20	UCFX18	FX18	UCX18	11.9	109	81.9	3.23	14.4	—	—	—	—	UCFX18C	UCFX18D	124	4 7/8	13.6	
90	3 1/2	11 1/32 280	3 76	8 1/2 216	1 3/8 35	1 3/16 30	1 47/64 44	3 15/16 100	3.780 96	1.575 40	1 1/8 M30	UCF318-56 UCF318	F318	UC318-56 UC318	18.9 18.9	143	107	4.11	13.3	— —	— —	— —	— —	— UCF318C	— UCF318D	— 119	— 4 11/16	— 20.8	
	—	11 13/32 290	3 11/16 94	8 31/32 228	1 3/8 35	1 3/16 30	2 21/64 59	4 3/4 121	4.055 103	1.614 41	1 1/8 M30	UCF319	F319	UC319	21.6	153	119	4.45	13.3	—	—	—	—	UCF319C	UCF319D	140	5 1/2	23.8	
	3 15/16	10 9/16 268	3 13/16 97	8 5/16 211	1 7/32 31	1 3/32 28	2 21/64 59	5 127.3	4.626 117.5	1.937 49.2	1 M27	UCFX20 UCFX20-63 UCFX20-64	FX20	UCX20 UCX20-63 UCX20-64	19.4 19.4 19.4						— — —	— — —	— — —	— — —	UCFX20C — —	UCFX20D — —	152 — —	5 31/32 — —	21.6 — —
100	4	12 7/32 310	3 11/16 94	9 17/32 242	1 1/2 38	1 1/4 32	2 21/64 59	4 29/32 125	4.252 108	1.654 42	1 1/4 M33	UCF320 UCF320-63 UCF320-64	F320	UC320 UC320-63 UC320-64	25.8 25.8 25.8	173	141	5.08	13.2	— — —	— — —	— — —	— — —	UCF320C — —	UCF320D — —	146 — —	5 3/4 — —	28.6 — —	
	—	12 7/32 310	3 11/16 94	9 17/32 242	1 1/2 38	1 1/4 32	2 21/64 59	5 127	4.409 112	1.732 44	1 1/4 M33	UCF321	F321	UC321	30.2	184	153	5.41	13.2	—	—	—	—	UCF321C	UCF321D	148	5 13/16	33.2	
	110	—	13 3/8 340	3 25/32 96	10 15/32 266	1 39/64 41	1 3/8 35	2 23/64 60	5 5/32 131	4.606 117	1.811 46	1 3/8 M36	UCF322	F322	UC322	35.3	205	180	6.15	13.2	—	—	—	—	UCF322C	UCF322D	154	6 1/16	41.7
120	—	14 9/16 370	4 11/32 110	11 27/64 290	1 39/64 41	1 9/16 40	2 9/16 65	5 1/2 140	4.961 126	2.008 51	1 3/8 M36	UCF324	F324	UC324	47.3	207	185	6.10	13.5	—	—	—	—	UCF324C	UCF324D	163	6 13/32	52.1	
130	—	16 5/32 410	4 17/32 115	12 19/32 320	1 39/64 41	1 25/32 45	2 9/16 65	5 3/4 146	5.315 135	2.126 54	1 3/8 M36	UCF326	F326	UC326	65.5	229	214	6.79	13.6	—	—	—	—	UCF326C	UCF326D	172	6 25/32	71.6	
140	—	17 23/32 450	4 29/32 125	13 25/32 350	1 39/64 41	2 5/32 55	2 61/64 75	6 11/32 161	5.709 145	2.323 59	1 3/8 M36	UCF328	F328	UC328	80.4	253	246	7.54	13.6	—	—	—	—	UCF328C	UCF328D	186	7 5/16	89	

- Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
- A-1/4-28UNF 201~210, X05~X09, 305~308
- A-R1/8 211~218, X10~X20, 309~328
3. As for the triple-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.
5. Housings of spheroidal graphite iron casting are also available.

UCF-E
Cylindrical bore (with set screws)
d 12 ~ 55 mm



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

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

Unit: mm

Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.		ΔN_s
F204E-F217E	FX05E-FX17E	± 0.2

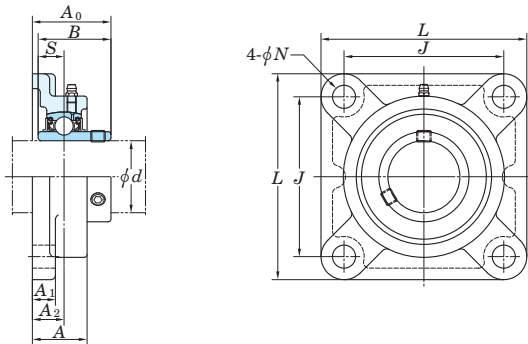
Unit: mm

Shaft Dia. mm inch		Dimensions inch mm									Bolt Size inch	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN		Fatigue Load Limit kN	Factor f_0	Mass kg
d		L	A	J	N	A_1	A_2	A_0	B	S						C_r	C_{0r}	C_u		
12	1/2											UCF201E UCF201-8E UCF202E UCF202-10E UCF203E UCF204-12E UCF204E	F204E	UC201 UC201-8 UC202 UC202-10 UC203 UC204-12 UC204		12.8	6.65	0.302	13.2	0.64
15	5/8	3 3/8	1	2 33/64	7/16	7/16	19/32	1 5/16	1.220	0.500	3/8									0.62
17	3/4	86	25.5	64	11	11	15	33.3	31	12.7										0.61
20																				0.59
25	7/8	3 3/4	1 1/16	2 3/4	15/32	1/2	5/8	1 13/32	1.343	0.563	3/8	UCF205-14E UCF205-15E UCF205E UCF205-16E	F205E	UC205-14 UC205-15 UC205 UC205-16		14.0	7.85	0.357	13.9	0.83
	15/16	95	27	70	12	13	16	35.8	34.1	14.3										
30	1	4 1/4	1 3/16	3 17/64	15/32	1/2	45/64	1 19/32	1.500	0.626	3/8	UCFX05E UCFX05-16E	FX05E	UCX05 UCX05-16		19.5	11.3	0.514	13.9	1.2
	1 1/8											UCF206-18E UCF206E UCF206-19E UCF206-20E	F206E	UC206-18 UC206 UC206-19 UC206-20		19.5	11.3	0.514	13.9	1.1
	1 3/16	108	31	83	13	13	18	40.2	38.1	15.9										
	1 1/4											UCFX06E UCFX06-19E UCFX06-20E	FX06E	UCX06 UCX06-19 UCX06-20		25.7	15.4	0.700	13.9	1.6
35	1 1/4	4 19/32	1 11/32	3 5/8	33/64	9/16	3/4	1 3/4	1.689	0.689	7/16	UCF207-20E UCF207-21E UCF207-22E UCF207E UCF207-23E	F207E	UC207-20 UC207-21 UC207-22 UC207 UC207-23		25.7	15.4	0.700	13.9	1.5
	1 5/16																			
	1 3/8	117	34	92	13	15	19	44.4	42.9	17.5										
	1 7/16											UCFX07-22E UCFX07E UCFX07-23E	FX07E	UCX07-22 UCX07 UCX07-23		29.1	17.8	0.809	14.0	2.0
40	1 1/2	5 1/8	1 13/32	4 1/64	35/64	19/32	53/64	2 1/32	1.937	0.748	1/2	UCF208-24E UCF208-25E UCF208E	F208E	UC208-24 UC208-25 UC208		29.1	17.8	0.809	14.0	1.9
	1 9/16	130	36	102	14	15	21	51.2	49.2	19										
45	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 UCFX08E	FX08E	UCX08-24 UCX08		34.1	21.3	0.968	14.0	2.4
	1 3/4	137	40	105	15	14	22	52.2	49.2	19										
50	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 UCFX09E	FX09E	UCX09-28 UCX09		35.1	23.3	1.06	14.4	2.7
	1 15/16	143	40	111	15	14	23	55.6	51.6	19										
55	2	6 3/8	1 23/32	5 1/8	21/32	25/32	1 1/32	2 11/32	2.189	0.874	9/16	UCFX10-31E UCFX10E UCFX10-32E	FX10E	UCX10-31 UCX10 UCX10-32		43.4	29.4	1.34	14.4	3.7
	2 1/8																			
	2 3/16	162	43	130	17	18	25	58.4	55.6	22.2	5/8	UCF211-32E UCF211-34E UCF211E UCF211-35E	F211E	UC211-32 UC211-34 UC211 UC211-35		43.4	29.4	1.34	14.4	3.4
	2 3/16																			
	2 1/4	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 UCFX11-35E UCFX11-36E	FX11E	UCX11 UCX11-35 UCX11-36		52.4	36.2	1.65	14.4	4.9
		175	49	143	16.5	20	29	68.7	65.1	25.4										

Remarks 1. In Part No. of unit, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF..... 201~210, X05~X09
A-R1/8..... 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.
5. Housings of spheroidal graphite iron casting are also available.

UCF-E
Cylindrical bore (with set screws)
d 60 ~ 85 mm



Shaft Dia.		Dimensions									Bolt Size	Unit No.	Housing No.	Bearing No.		Basic Load Ratings		Fatigue Load Limit	Factor	Mass							
mm	inch	inch														kN		kN									
		mm																									
<i>d</i>		<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>	<i>S</i>						<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _u	<i>f</i> ₀	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	F212E	UC212-36	52.4	36.2	1.65	14.4	4.2								
	2 3/8	175	48	143	17	18	29	68.7	65.1	25.4		UCF212E		UC212													
	2 7/16											UCF212-38E		UC212-38													
												UCF212-39E		UC212-39													
65	2 7/16	7 3/8	2 5/16	5 55/64	21/32	13/16	1 11/32	2 29/32	2.563	1.000	9/16	UCFX12E	FX12E	UCX12	57.2	40.1	1.82	14.4	5.7								
		187	59	149	16.5	21	34	73.7	65.1	25.4		UCFX12-39E		UCX12-39													
	2 1/2	7 3/8	1 31/32	5 55/64	43/64	7/8	1 3/16	2 3/4	2.563	1.000		UCF213-40E		F213E						UC213-40							
		187	50	149	17	22	30	69.7	65.1	25.4		UCF213E								UC213							
70	2 1/2	7 3/8	1 31/32	5 55/64	21/32	13/16	1 11/32	3 3/32	2.937	1.189	9/16	UCFX13-40E	FX13E	UCX13-40	62.2	44.1	2.01	14.5	6.3								
		187	59	149	16.5	21	34	78.4	74.6	30.2		UCFX13E		UCX13													
	2 3/4	7 3/4	2 3/8	5 63/64	25/32	7/8	1 29/64	3 7/32	3.063	1.331		UCFX14-44E		FX14E						UCX14-44							
		197	60	152	20	22	37	81.5	77.8	33.3		UCFX14E								UCX14							
75	2 15/16	7 3/4	2 11/16	5 63/64	25/32	15/16	1 9/16	3 17/32	3.252	1.311	1 1/16	UCFX15-47E	FX15E	UCX15-47	72.7	53.0	2.30	14.6	8.4								
	3	197	68	152	20	24	40	89.3	82.6	33.3		UCFX15E		UCX15													
	80	3 1/8	8 3/16	2 9/32	6 1/2	3/4	7/8	1 11/32	3 9/32	3.252		1.311		1 1/16						UCF216-50E	F216E	UC216-50	72.7	53.0	2.30	14.6	7.3
			208	58	165	19	22	34	83.3	82.6		33.3								UCF216E		UC216					
—		8 7/16	2 3/4	6 47/64	25/32	15/16	1 9/16	3 19/32	3.374	1.343	UCFX16E	FX16E	UCX16		84.0	61.9	2.60	14.5	9.4								
		214	70	171	20	24	40	91.6	85.7	34.1																	
85	3 1/4	8 21/32	2 15/32	6 57/64	3/4	15/16	1 13/32	3 7/16	3.374	1.343	1 1/16	UCF217-52E	F217E	UC217-52						84.0	61.9	2.60	14.5	8.9			
		220	63	175	19	24	36	87.6	85.7	34.1		UCF217E		UC217													
	3 7/16	8 7/16	2 3/4	6 47/64	25/32	15/16	1 9/16	3 25/32	3.780	1.563		UCFX17E		FX17E	UCX17	96.1	71.5	2.91	14.5						10.8		
		214	70	171	20	24	40	96.3	96	39.7		UCFX17-55E			UCX17-55												

Remarks 1. In Part No. of unit, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF..... 201~210, X05~X09
A-R1/8..... 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.
5. Housings of spheroidal graphite iron casting are also available.

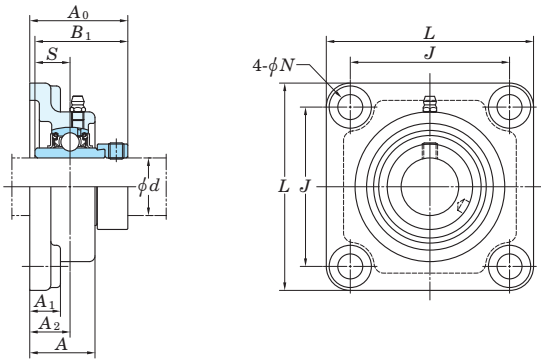
Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Housing No.		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})

Housing No.		Δ_{Ns}
F204E~F217E	FX05E~FX17E	±0.2

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



Variations of tolerance of distance from mounting surface to center of spherical bore (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})

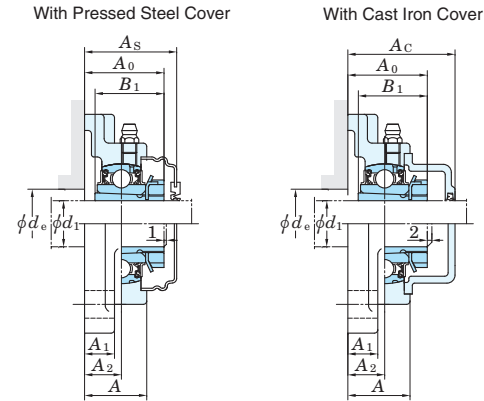
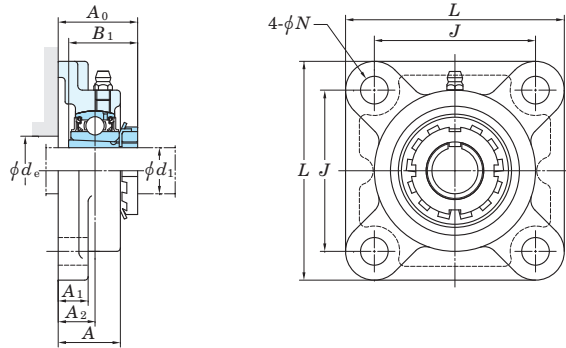
Unit: mm	
Housing No.	Δ_{Ns}
NF204~NF212	±0.2

Shaft Dia mm inch		Dimensions inch mm									Bolt Size inch	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN		Fatigue Load Limit kN	Factor f_0	Mass kg
<i>d</i>		<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i> ₁	<i>S</i>						<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _u		
12	1/2											NANF201		NA201						
15	5/8	3 3/8	1 5/32	2 33/64	7/16	19/32	3/4	1 25/32	1.720	0.673	3/8	NANF201-8	NF204	NA201-8		12.8	6.65	0.302	13.2	0.73
17	3/4	86	29.5	64	11	15	19	45.6	43.7	17.1		NANF202		NA202						
20												NANF202-10		NA202-10						
												NANF203		NA203						
												NANF204-12		NA204-12						
												NANF204		NA204						
25	7/8	3 3/4	1 7/32	2 3/4	15/32	19/32	25/32	1 27/32	1.748	0.689	7/16	NANF205-14	NF205	NA205-14		14.0	7.85	0.357	13.9	0.95
	15/16	95	31	70	12	15	20	46.9	44.4	17.5		NANF205-15		NA205-15						
	1											NANF205		NA205						
												NANF205-16		NA205-16						
30	1 1/8	4 1/4	1 11/32	3 17/64	33/64	5/8	53/64	2	1.906	0.720	7/16	NANF206-18	NF206	NA206-18		19.5	11.3	0.514	13.9	1.4
	1 3/16	108	34	83	13	16	21	51.1	48.4	18.3		NANF206		NA206						
	1 1/4											NANF206-19		NA206-19						
												NANF206-20		NA206-20						
35	1 1/4	4 19/32	1 7/16	3 5/8	33/64	21/32	27/32	2 1/8	2.012	0.740	7/16	NANF207-20	NF207	NA207-20		25.7	15.4	0.700	13.9	1.8
	1 5/16											NANF207-21		NA207-21						
	1 3/8	117	36.5	92	13	17	21.5	53.8	51.1	18.8		NANF207-22		NA207-22						
												NANF207		NA207						
	1 7/16											NANF207-23		NA207-23						
40	1 1/2	5 1/8	1 17/32	4 1/64	35/64	21/32	15/16	2 5/16	2.217	0.843	1/2	NANF208-24	NF208	NA208-24		29.1	17.8	0.809	14.0	2.2
	1 9/16	130	39	102	14	17	24	58.9	56.3	21.4		NANF208-25		NA208-25						
												NANF208		NA208						
45	1 5/8	5 13/32	1 9/16	4 9/64	5/8	23/32	15/16	2 5/16	2.217	0.843	9/16	NANF209-26	NF209	NA209-26		34.1	21.3	0.968	14.0	2.6
	1 11/16											NANF209-27		NA209-27						
	1 3/4	137	40	105	16	18	24	58.9	56.3	21.4		NANF209-28		NA209-28						
												NANF209		NA209						
50	1 7/8	5 5/8	1 27/32	4 3/8	43/64	25/32	1 1/8	2 5/8	2.469	0.969	9/16	NANF210-30	NF210	NA210-30		35.1	23.3	1.06	14.4	3.0
	1 15/16											NANF210-31		NA210-31						
												NANF210		NA210						
	2											NANF210-32		NA210-32						
55	2	6 3/8	1 31/32	5 1/8	43/64	13/16	1 17/64	2 31/32	2.811	1.094	5/8	NANF211-32	NF211	NA211-32		43.4	29.4	1.34	14.4	4.1
	2 1/8											NANF211-34		NA211-34						
												NANF211		NA211						
	2 3/16	162	50	130	17	21	32	75.6	71.4	27.8		NANF211-35		NA211-35						
	2 1/4											NANF212-36		NA212-36						
60	2 3/8	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	1.65	14.4	4.9
	2 7/16											NANF212-38		NA212-38						
												NANF212-39		NA212-39						

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF 201~210
A-R1/8 211~212

3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
4. Housings of spheroidal graphite iron casting are also available.

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



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

Housing No.			ΔA_{2s}	X
F205~F210	FX05~FX10	F305~F310	± 0.5	0.7
F211~F218	FX11~FX20	F311~F328	± 0.8	1

Unit: mm

Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.			ΔN_s
F205~F218	FX05~FX18	F305~F315	± 0.2
	FX20	F316~F328	± 0.3

Unit: mm

Shaft Dia.		Dimensions										Bolt Size	Standard				Adapter Assembly No.	Mass kg	Basic		Fatigue	Factor	With Pressed Steel Cover				With Cast Iron Cover				
mm	inch	inch mm										Unit No.	Housing No.	Bearing No.	Load Ratings kN	Load Limit kN			mm	inch	Mass kg		Unit No.		mm	inch	Mass kg				
d_1		L	A	J	N	A_1	A_2	A_0	B_1	d_e (min.)	mm												Open End Type	Closed End Type				A_s	kg	Open End Type	Closed End Type
20	$\frac{3}{4}$	3 $\frac{3}{4}$ 95	1 $\frac{1}{16}$ 27	2 $\frac{3}{4}$ 70	$\frac{15}{32}$ 12	$\frac{1}{2}$ 13	$\frac{5}{8}$ 16	1 $\frac{13}{32}$ 36	1 $\frac{3}{8}$ 35	1 $\frac{3}{16}$ 30	$\frac{3}{8}$ M10	UKF205	F205	UK205		HE2305X H2305X	0.87 0.87	14.0	7.85	0.357	13.9	— UKF205C	— UKF205D	— 40.5	— 1 $\frac{19}{32}$	— 0.87	— UKF205FC	— UKF205FD	— 49	— 1 $\frac{15}{16}$	— 1.1
	$\frac{3}{4}$	4 $\frac{1}{4}$ 108	1 $\frac{3}{16}$ 30	3 $\frac{17}{64}$ 83	$\frac{15}{32}$ 12	$\frac{1}{2}$ 13	$\frac{45}{64}$ 18	1 $\frac{9}{16}$ 39.5	1 $\frac{3}{8}$ 35	1 $\frac{3}{16}$ 30	$\frac{3}{8}$ M10	UKFX05	FX05	UKX05		HE2305X H2305X	1.2 1.2	19.5	11.3	0.514	13.9	— UKFX05C	— UKFX05D	— 44.5	— 1 $\frac{3}{4}$	— 1.2	— —	— —	— —	— —	
	$\frac{3}{4}$	4 $\frac{11}{32}$ 110	1 $\frac{5}{32}$ 29	3 $\frac{9}{32}$ 80	$\frac{5}{8}$ 16	$\frac{1}{2}$ 13	$\frac{5}{8}$ 16	1 $\frac{15}{32}$ 37.5	1 $\frac{3}{8}$ 35	— —	$\frac{1}{2}$ M14	UKF305	F305	UK305		HE2305X H2305X	1.4 1.4	21.2	10.9	0.495	12.6	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
	$\frac{3}{4}$	4 $\frac{1}{4}$ 108	1 $\frac{7}{32}$ 31	3 $\frac{17}{64}$ 83	$\frac{15}{32}$ 12	$\frac{1}{2}$ 13	$\frac{45}{64}$ 18	1 $\frac{9}{16}$ 39.5	1 $\frac{1}{2}$ 38	1 $\frac{13}{32}$ 36	$\frac{3}{8}$ M10	UKF206	F206	UK206		H2306X HE2306X	1.3 1.3	19.5	11.3	0.514	13.9	UKF206C —	UKF206D —	44.5 —	1 $\frac{3}{4}$ —	1.3 —	UKF206FC —	UKF206FD —	53 —	2 $\frac{3}{32}$ —	1.6 —
25	1	4 $\frac{19}{32}$ 117	1 $\frac{11}{32}$ 34	3 $\frac{5}{8}$ 92	$\frac{5}{8}$ 16	$\frac{9}{16}$ 14	$\frac{3}{4}$ 19	1 $\frac{21}{32}$ 42	1 $\frac{1}{2}$ 38	1 $\frac{13}{32}$ 36	$\frac{1}{2}$ M14	UKFX06	FX06	UKX06		H2306X HE2306X	1.6 1.6	25.7	15.4	0.700	13.9	UKFX06C —	UKFX06D —	49 —	1 $\frac{15}{16}$ —	1.6 —	— —	— —	— —	— —	— —
	1	4 $\frac{29}{32}$ 125	1 $\frac{1}{4}$ 32	3 $\frac{47}{64}$ 95	$\frac{5}{8}$ 16	$\frac{19}{32}$ 15	$\frac{45}{64}$ 18	1 $\frac{5}{8}$ 41	1 $\frac{1}{2}$ 38	— —	$\frac{1}{2}$ M14	UKF306	F306	UK306		H2306X HE2306X	1.9 1.9	26.7	15.0	0.682	13.3	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
	1 $\frac{1}{8}$	4 $\frac{19}{32}$ 117	1 $\frac{11}{32}$ 34	3 $\frac{5}{8}$ 92	$\frac{35}{64}$ 14	$\frac{19}{32}$ 15	$\frac{3}{4}$ 19	1 $\frac{11}{16}$ 43	1 $\frac{11}{16}$ 43	1 $\frac{5}{8}$ 41	$\frac{7}{16}$ M12	UKF207	F207	UK207		HS2307X H2307X	1.6 1.6	25.7	15.4	0.700	13.9	— UKF207C	— UKF207D	— 49	— 1 $\frac{15}{16}$	— 1.6	— UKF207FC	— UKF207FD	— 58	— 2 $\frac{9}{32}$	— 2.0
	1 $\frac{1}{8}$	5 $\frac{1}{8}$ 130	1 $\frac{1}{2}$ 38	4 $\frac{1}{64}$ 102	$\frac{5}{8}$ 16	$\frac{9}{16}$ 14	$\frac{53}{64}$ 21	1 $\frac{27}{32}$ 47	1 $\frac{11}{16}$ 43	1 $\frac{5}{8}$ 41	$\frac{1}{2}$ M14	UKFX07	FX07	UKX07		HS2307X H2307X	2.0 2.0	29.1	17.8	0.809	14.0	— UKFX07C	— UKFX07D	— 55.5	— 2 $\frac{3}{16}$	— 2.0	— —	— —	— —	— —	— —
30	1 $\frac{1}{8}$	5 $\frac{5}{16}$ 135	1 $\frac{13}{32}$ 36	3 $\frac{15}{16}$ 100	$\frac{3}{4}$ 19	$\frac{5}{8}$ 16	$\frac{25}{32}$ 20	1 $\frac{25}{32}$ 45.5	1 $\frac{11}{16}$ 43	— —	$\frac{5}{8}$ M16	UKF307	F307	UK307		HS2307X H2307X	2.3 2.3	33.4	19.3	0.877	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
	1 $\frac{1}{4}$ 1 $\frac{3}{8}$	5 $\frac{1}{8}$ 130	1 $\frac{13}{32}$ 36	4 $\frac{1}{64}$ 102	$\frac{5}{8}$ 16	$\frac{19}{32}$ 15	$\frac{53}{64}$ 21	1 $\frac{7}{8}$ 48	1 $\frac{13}{16}$ 46	1 $\frac{13}{16}$ 46	$\frac{1}{2}$ M14	UKF208	F208	UK208		HE2308X HS2308X H2308X	1.9 1.9 1.9	29.1	17.8	0.809	14.0	— — UKF208C	— — UKF208D	— — 55.5	— — 2 $\frac{3}{16}$	— — 1.9	— — UKF208FC	— — UKF208FD	— — 64	— — 2 $\frac{17}{32}$	— — 2.3
	1 $\frac{1}{4}$ 1 $\frac{3}{8}$	5 $\frac{13}{32}$ 137	1 $\frac{9}{16}$ 40	4 $\frac{9}{64}$ 105	$\frac{3}{4}$ 19	$\frac{9}{16}$ 14	$\frac{55}{64}$ 22	1 $\frac{31}{32}$ 50	1 $\frac{13}{16}$ 46	1 $\frac{13}{16}$ 46	$\frac{5}{8}$ M16	UKFX08	FX08	UKX08		HE2308X HS2308X H2308X	2.3 2.3 2.3	34.1	21.3	0.968	14.0	— — UKFX08C	— — UKFX08D	— — 56.5	— — 2 $\frac{7}{32}$	— — 2.3	— — —	— — —	— — —	— — —	— — —
	1 $\frac{1}{4}$ 1 $\frac{3}{8}$	5 $\frac{29}{32}$ 150	1 $\frac{9}{16}$ 40	4 $\frac{13}{32}$ 112	$\frac{3}{4}$ 19	$\frac{21}{32}$ 17	$\frac{29}{32}$ 23	2 50.5	1 $\frac{13}{16}$ 46	— —	$\frac{5}{8}$ M16	UKF308	F308	UK308		HE2308X HS2308X H2308X	3.1 3.1 3.1	40.7	24.0	1.09	13.2	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —
40	1 $\frac{1}{2}$	5 $\frac{13}{32}$ 137	1 $\frac{1}{2}$ 38	4 $\frac{9}{64}$ 105	$\frac{5}{8}$ 16	$\frac{5}{8}$ 16	$\frac{55}{64}$ 22	2 51	1 $\frac{31}{32}$ 50	2 $\frac{1}{16}$ 52	$\frac{1}{2}$ M14	UKF209	F209	UK209		HE2309X H2309X	2.3 2.3	34.1	21.3	0.968	14.0	— UKF209C	— UKF209D	— 56.5	— 2 $\frac{7}{32}$	— 2.3	— UKF209FC	— UKF209FD	— 66	— 2 $\frac{19}{32}$	— 2.8
	1 $\frac{1}{2}$	5 $\frac{5}{8}$ 143	1 $\frac{9}{16}$ 40	4 $\frac{3}{8}$ 111	$\frac{3}{4}$ 19	$\frac{9}{16}$ 14	$\frac{29}{32}$ 23	2 $\frac{1}{16}$ 52	1 $\frac{31}{32}$ 50	2 $\frac{1}{16}$ 52	$\frac{5}{8}$ M16	UKFX09	FX09	UKX09		HE2309X H2309X	2.7 2.7	35.1	23.3	1.06	14.4	— UKFX09C	— UKFX09D	— 60	— 2 $\frac{3}{8}$	— 2.7	— —	— —	— —	— —	— —
	1 $\frac{1}{2}$	6 $\frac{5}{16}$ 160	1 $\frac{23}{32}$ 44	4 $\frac{59}{64}$ 125	$\frac{3}{4}$ 19	$\frac{23}{32}$ 18	$\frac{63}{64}$ 25	2 $\frac{5}{32}$ 55	1 $\frac{31}{32}$ 50	— —	$\frac{5}{8}$ M16	UKF309	F309	UK309		HE2309X H2309X	4.1 4.1	48.9	29.5	1.34	13.3	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
	1 $\frac{1}{2}$	6 $\frac{5}{16}$ 160	1 $\frac{23}{32}$ 44	4 $\frac{59}{64}$ 125	$\frac{3}{4}$ 19	$\frac{23}{32}$ 18	$\frac{63}{64}$ 25	2 $\frac{5}{32}$ 55	1 $\frac{31}{32}$ 50	— —	$\frac{5}{8}$ M16	UKF309	F309	UK309		HE2309X H2309X	4.1 4.1	48.9	29.5	1.34	13.3	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
45	1 $\frac{3}{4}$	5 $\frac{5}{8}$ 143	1 $\frac{9}{16}$ 40	4 $\frac{3}{8}$ 111	$\frac{5}{8}$ 16	$\frac{5}{8}$ 16	$\frac{55}{64}$ 22	2 $\frac{1}{16}$ 52	2 $\frac{5}{32}$ 55	2 $\frac{9}{32}$ 58	$\frac{1}{2}$ M14	UKF210	F210	UK210		HE2310X H2310X	2.6 2.6	35.1	23.3	1.06	14.4	— UKF210C	— UKF210D	— 59	— 2 $\frac{5}{16}$	— 2.6	— UKF210FC	— UKF210FD	— 70.5	— 2 $\frac{25}{32}$	— 3.1
	1 $\frac{3}{4}$	6 $\frac{3}{8}$ 162	1 $\frac{23}{32}$ 44	5 $\frac{1}{8}$ 130	$\frac{3}{4}$ 19	$\frac{25}{32}$ 20	1 $\frac{1}{32}$ 26	2 $\frac{9}{32}$ 58	2 $\frac{5}{32}$ 55	2 $\frac{9}{32}$ 58	$\frac{5}{8}$ M16	UKFX10	FX10	UKX10		HE2310X H2310X	3.6 3.6	43.4	29.4	1.34	14.4	— UKFX10C	— UKFX10D	— 64	— 2 $\frac{17}{32}$	— 3.6	— —	— —	— —	— —	— —
	1 $\frac{3}{4}$	6 $\frac{7}{8}$ 175	1 $\frac{7}{8}$ 48	5 $\frac{13}{64}$ 132	$\frac{29}{32}$ 23	$\frac{3}{4}$ 19	1 $\frac{7}{64}$ 28	2 $\frac{3}{8}$ 60	2 $\frac{5}{32}$ 55	— —	$\frac{3}{4}$ M20	UKF310	F310	UK310		HE2310X H2310X	5.1 5.1	62.0	38.3	1.74	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
	1 $\frac{3}{4}$	6 $\frac{7}{8}$ 175	1 $\frac{7}{8}$ 48	5 $\frac{13}{64}$ 132	$\frac{29}{32}$ 23	$\frac{3}{4}$ 19	1 $\frac{7}{64}$ 28	2 $\frac{3}{8}$ 60	2 $\frac{5}{32}$ 55	— —	$\frac{3}{4}$ M20	UKF310	F310	UK310		HE2310X H2310X	5.1 5.1	62.0	38.3	1.74	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —
50	1 $\frac{7}{8}$	6 $\frac{3}{8}$ 162	1 $\frac{11}{16}$ 43	5 $\frac{1}{8}$ 130	$\frac{3}{4}$ 19	$\frac{23}{32}$ 18	$\frac{63}{64}$ 25	2 $\frac{1}{4}$ 57.5	2 $\frac{5}{16}$ 59	2 $\frac{17}{32}$ 64	$\frac{5}{8}$ M16	UKF211	F211	UK211		HS2311X H2311X HE2311X	3.5 3.5 3.5	43.4	29.4	1.34	14.4	— UKF211C	— UKF211D	— 63	— 2 $\frac{15}{32}$	— 3.5	— UKF211FC	— UKF211FD	— 74.5	— 2 $\frac{15}{16}$	— 4.1
	2	6 $\frac{3}{8}$ 162	1 $\frac{11}{16}$ 43	5 $\frac{1}{8}$ 130	$\frac{3}{4}$ 19	$\frac{23}{32}$ 18	$\frac{63}{64}$ 25	2 $\frac{1}{4}$ 57.5	2 $\frac{5}{16}$ 59	2 $\frac{17}{32}$ 64	$\frac{5}{8}$ M16	UKF211	F211	UK211		HS2311X H2311X HE2311X	3.5 3.5 3.5	43.4	29.4	1.34	14.4	— UKF211C	— UKF211D	— 63	— 2 $\frac{15}{32}$	— 3.5	— UKF211FC	— UKF211FD	— 74.5	— 2 $\frac{15}{16}$	— 4.1
	1 $\frac{7}{8}$	6 $\frac{7}{8}$ 175	1 $\frac{15}{16}$ 49	5 $\frac{5}{8}$ 143	$\frac{3}{4}$ 19	$\frac{25}{32}$ 20	1 $\frac{9}{64}$ 29	2 $\frac{17}{32}$ 64.5	2 $\frac{5}{16}$ 59	2 $\frac{17}{32}$ 64	$\frac{5}{8}$ M16	UKFX11	FX11	UKX11		HS2311X H2311X HE2311X	4.6 4.6 4.6	52.4	36.2	1.65	14.4	— UKFX11C	— UKFX11D	— 73.5	— 2 $\frac{29}{32}$	— 4.6	— —	— —	— —	— —	— —
	2	6 $\frac{7}{8}$ 175	1 $\frac{15}{16}$ 49	5 $\frac{5}{8}$ 143	$\frac{3}{4}$ 19	$\frac{25}{32}$ 20	1 $\frac{9}{64}$ 29	2 $\frac{17}{32}$ 64.5	2 $\frac{5}{16}$ 59	2 $\frac{17}{32}$ 64	$\frac{5}{8}$ M16	UKFX11	FX11	UKX11		HS2311X H2311X HE2311X	4.6 4.6 4.6	52.4	36.2	1.65	14.4	— UKFX11C	— UKFX11D	— 73.5	— 2 $\frac{29}{32}$	— 4.6	— —	— —	— —	— —	— —

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)

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

A-1/4-28UNF..... 205~210, X05~X09, 305~308

A-R1/8..... 211~218, X10~X20, 309~328

3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables.

(Example of Part No. : UKF206J + H2306X, UK206 + H2306X)

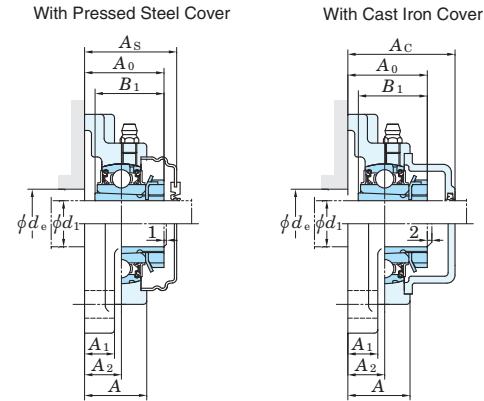
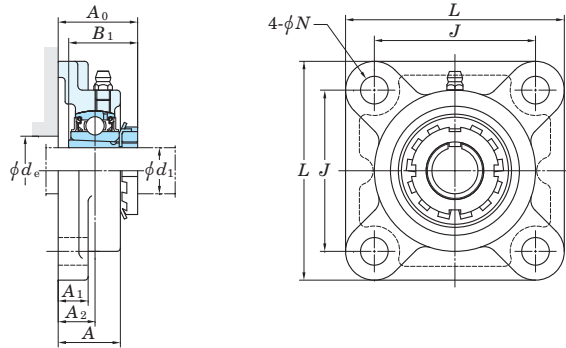
4. As for the triple-lip seal type product (205 is the double-lip seal type product), supplementary code L3 (L2) follows the Part No. of unit or bearing.

(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.

6. Housings of spheroidal graphite iron casting are also available.

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



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

Housing No.			ΔA_{2s}	X
F205~F210	FX05~FX10	F305~F310	±0.5	0.7
F211~F218	FX11~FX20	F311~F328	±0.8	1

Unit: mm

Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.			ΔN_s
F205~F218	FX05~FX18	F305~F315	±0.2
	FX20	F316~F328	±0.3

Unit: mm

Shaft Dia. mm inch		Dimensions inch mm									Bolt Size inch mm	Standard				Adapter Assembly No.	Mass kg	Basic		Fatigue Load Limit kN C _u	Factor f ₀	With Pressed Steel Cover				With Cast Iron Cover			
		L	A	J	N	A ₁	A ₂	A ₀	B ₁	d _e (min.)		Unit No.	Housing No.	Bearing No.				C _r	C _{0r}			Unit No.		Dimension mm inch A _s	Mass kg	Unit No.		Dimension mm inch A _c	Mass kg
																						Open End Type	Closed End Type			Open End Type	Closed End Type		
50	1 7/8	7 9/32	2 1/16	5 33/64	29/32	25/32	1 3/16	2 17/32	2 5/16	—	3/4	UKF311	F311	UK311		HS2311X	5.9	71.6	45.0	2.05	13.2	—	—	—	—	—	—	—	—
	2	185	52	140	23	20	30	64	59	—	M20					H2311X	5.9					—	—	—	UKF311C	UKF311D	87	3 7/16	6.8
																HE2311X	5.9					—	—	—	—	—	—		
55	2 1/8	6 7/8	1 7/8	5 5/8	3/4	23/32	1 9/64	2 19/32	2 7/16	2 23/32	5/8	UKF212	F212	UK212		HS2312X	4.1	52.4	36.2	1.65	14.4	—	—	—	—	—	—	—	—
	2 1/8	175	48	143	19	18	29	65.5	62	69	M16					H2312X	4.1					UKF212C	UKF212D	73.5	2 29/32	4.1	UKF212FC	UKF212FD	86
		2 1/8	187	59	149	19	21	34	65	62	69	M16	UKFX12	FX12	UKX12		HS2312X	5.5	57.2	40.1	1.82	14.4	—	—	—	—	—	—	—
												H2312X					5.5	UKFX12C					UKFX12D	78.5	3 3/32	5.5	—	—	—
60	2 1/8	7 11/16	2 7/32	5 29/32	29/32	7/8	1 19/64	2 3/4	2 7/16	—	3/4	UKF312	F312	UK312		HS2312X	6.8	81.9	52.2	2.37	13.2	—	—	—	—	—	—	—	—
	2 1/4	195	56	150	23	22	33	69.5	62	—	M20					H2312X	6.8					—	—	—	UKF312C	UKF312D	95	3 3/4	8.0
		2 3/8	187	50	149	19	22	30	67.5	65	74	M16	UKF213	F213	UK213		HE2313X	5.1	57.2	40.1	1.82	14.4	—	—	—	—	—	—	—
												H2313X					5.1	UKF213C					UKF213D	74.5	2 15/16	5.1	UKF213FC	UKF213FD	87
	2 1/4	187	59	149	19	21	34	68	65	74	M16	UKFX13	FX13	UKX13		HE2313X	6.0	62.2	44.1	2.01	14.5	—	—	—	—	—	—	—	—
																H2313X	6.0					UKFX13C	UKFX13D	83.5	3 9/32	6.0	—	—	—
65	2 1/4	8 3/16	2 9/32	6 17/32	29/32	7/8	1 19/64	2 13/16	2 9/16	—	3/4	UKF313	F313	UK313		HE2313X	7.9	92.7	59.9	2.68	13.2	—	—	—	—	—	—	—	—
	2 3/8	208	58	166	23	22	33	71.5	65	—	M20					H2313X	7.9					—	—	—	UKF313C	UKF313D	94	3 11/16	9.0
		2 1/2	200	56	159	19	22	34	74.5	73	85	M16	UKF215	F215	UK215		HE2315X	6.5	67.4	48.3	2.17	14.5	—	—	—	—	—	—	—
												H2315X					6.5	UKF215C					UKF215D	83.5	3 9/32	6.5	UKF215FC	UKF215FD	96
70	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	2.30	14.6	—	—	—	—	—	—	—	—
	2 1/2	197	68	152	23	24	40	76	73	85	M20					H2315X	8.1					UKFX15C	UKFX15D	94.5	3 23/32	8.1	—	—	—
		2 3/4	236	66	184	25	25	39	81.5	73	—	M22	UKF315	F315	UK315		HE2315X	11.7	113	77.2	3.24	13.2	—	—	—	—	—	—	—
												H2315X					11.7	—					—	—	UKF315C	UKF315D	106	4 3/16	13.1
75	2 3/4	8 3/16	2 9/32	6 1/2	29/32	7/8	1 11/32	3 3/32	3 1/16	3 17/32	3/4	UKF216	F216	UK216		HE2316X	7.6	72.7	53.0	2.30	14.6	—	—	—	—	—	—	—	—
	2 3/4	208	58	165	23	22	34	78.5	78	90	M20					H2316X	7.6					UKF216C	UKF216D	88.5	3 15/32	7.6	UKF216FC	UKF216FD	103
		2 3/4	214	70	171	23	24	40	79	78	90	M20	UKFX16	FX16	UKX16		HE2316X	9.5	84.0	61.9	2.60	14.5	—	—	—	—	—	—	—
												H2316X					9.5	UKFX16C					UKFX16D	96.5	3 25/32	9.5	—	—	—
80	—	9 1/4	2 11/16	7 23/64	29/32	31/32	1 9/16	3 17/32	3 3/8	4 1/32	3/4	UKF316	F316	UK316		HE2316X	12.9	123	86.7	3.53	13.3	—	—	—	—	—	—	—	—
	—	235	68	187	23	25	40	82.5	78	—	M27					H2316X	12.9					—	—	—	UKF316C	UKF316D	107	4 7/32	14.5
		3	220	63	175	23	24	36	82.5	82	96	M20	UKF217	F217	UK217		H2317X	9.0	84.0	61.9	2.60	14.5	—	—	—	—	—	—	—
												HE2317X					9.0	UKF217C					UKF217D	92.5	3 21/32	9.0	UKF217FC	UKF217FD	107
85	3	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	2.91	14.5	—	—	—	—	—	—	—	—
	3	214	70	171	23	24	40	82	82	96	M20					HE2317X	10.4					UKFX17C	UKFX17D	101.5	4	10.4	—	—	—
		3	260	74	204	31	27	44	92	82	—	M27	UKF317	F317	UK317		H2317X	15.2	133	96.8	3.82	13.3	—	—	—	—	—	—	—
												HE2317X					15.2	—					—	—	UKF317C	UKF317D	117	4 19/32	17.0
90	—	9 1/4	2 11/16	7 23/64	29/32	31/32	1 9/16	3 17/32	3 3/8	4 1/32	3/4	UKF218	F218	UK218		H2318X	11.4	96.1	71.5	2.91	14.5	—	—	—	—	—	—	—	—
	—	235	68	187	23	25	40	89.5	86	102	M20					H2318X	11.4					UKF218C	UKF218D	101.5	4	11.4	UKF218FC	UKF218FD	116
		3	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	3.23	14.4	—	—	—	—	—	—	—
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	UKF318					F318	UK318						H2318X	19.0	143	107	4.11	13.3
		290	94	228	35	30	59	111	90	—	M30		HE2319X	21.9	UKF318C	UKF318D			119	4 11/16	21.1								
95	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		H2319X	21.9	153	119	4.45	13.3	—	—	—	—	—	—	—	—
		290	94	228	35	30	59	111	90	—	M30					HE2319X	21.9					UKF319C	UKF319D	140	5 1/2	24.3			
	100	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	3.91	14.4	—	—	—	—	—	—	—
		268	97	211	31	28	59	106	97	112	M27	H2320X					18.4	UKFX20C					UKFX20D	152	5 31/32	20.9			

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)

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

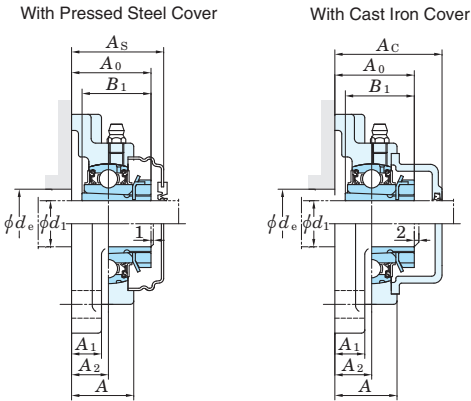
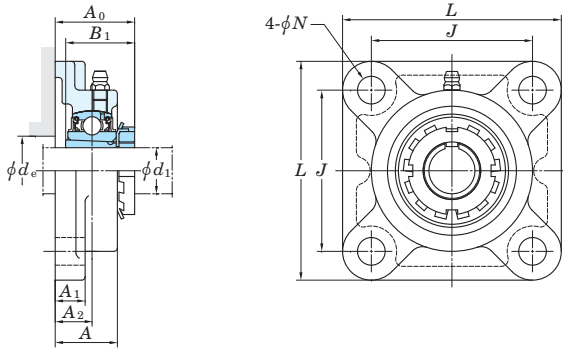
A-1/4-28UNF 205~210, X05~X09, 305~308

A-R1/8 211~218, X10~X20, 309~328

3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables.

(Example of Part No. : UKF206J + H2306X, UK206 + H2306X)

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



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

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})

Housing No.			Δ_{Ns}
F205~F218	FX05~FX18	F305~F315	± 0.2
	FX20	F316~F328	± 0.3

Shaft Dia. mm inch		Dimensions									Bolt Size inch mm	Standard						Basic Load Ratings kN C_r C_{0r}	Fatigue Load Limit kN C_u	Factor f_0	With Pressed Steel Cover				With Cast Iron Cover					
		inch mm										Unit No.	Housing No.	Bearing No.		Adapter Assembly No.	Mass kg				Unit No.		Dimension mm inch	Mass kg	Unit No.		Dimension mm inch	Mass kg		
		L	A	J	N	A_1	A_2	A_0	B_1	d_e (min.)											Open End Type	Closed End Type			A_s	kg			Open End Type	Closed End Type
90	3 1/2	12 7/32	3 11/16	9 17/32	1 1/2	1 1/4	2 21/64	4 7/16	3 13/16	—	1 1/4	UKF320	F320	UK320		HE2320X H2320X	25.4 25.4	173 141	5.08	13.2	—	—	—	—	—	—	—	—	—	—
		310	94	242	38	32	59	113	97	—	M33										—	—	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 HE2322X	35.2 35.2	205 180	6.15	13.2	—	—	—	—	—	—	—	—	—	
		340	96	266	41	35	60	120	105	—	M36										—	—	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	6.10	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 H2326	65.3 65.3	229 214	6.79	13.6	—	—	—	—	—	—	—	—	—	
		410	115	320	41	45	65	131.5	121	—	M36										—	—	UKF326C	UKF326D	172	6 25/32	71.9			
125	—	17 23/32	4 29/32	13 25/32	1 39/64	2 5/32	2 61/64	5 13/16	5 5/32	—	1 3/8	UKF328	F328	UK328		H2328	74.9	253 246	7.54	13.6	—	—	—	—	—	—	—	—	—	
		450	125	350	41	55	75	147.5	131	—	M36										—	—	UKF328C	UKF328D	186	7 5/16	83.5			

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)

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

A-1/4-28UNF 205~210, X05~X09, 305~308

A-R1/8 211~218, X10~X20, 309~328

3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables.

(Example of Part No. : UKF206J + H2306X, UK206 + H2306X)

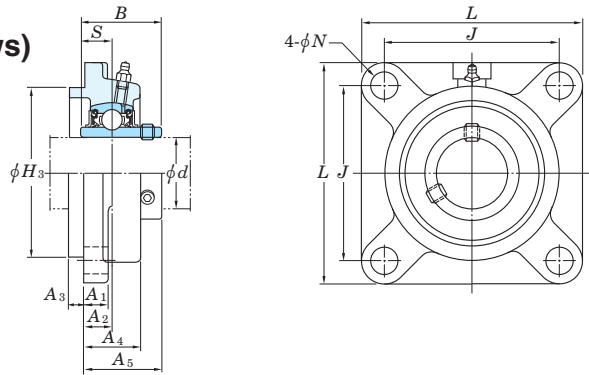
4. As for the triple-lip seal type product (205 is the double-lip seal type product), supplementary code L3 (L2) follows the Part No. of unit or bearing.

(Example of Part No. : UKF206JL3 + H2306X, UK206L3 + H2306X)

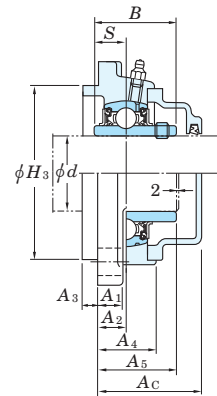
5. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter assemblies.

6. Housings of spheroidal graphite iron casting are also available.

UCFS
Cylindrical bore (with set screws)
d 25 ~ 140 mm



With Cast Iron Cover



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

Unit: mm				
Housing No.	ΔH_{3s}	ΔA_{2s}	X	Y
FS305	0 -0.046	±0.5	0.7	0.2
FS306~FS308	0 -0.054			
FS309~FS310	0 -0.063			
FS311~FS313	0 -0.072	±0.8	1	0.3
FS314~FS319	0 -0.081			~FS318 FS319~
FS320~FS322	0 -0.089			0.4
FS324~FS328	0 -0.089			0.4

Variations of tolerance of bolt hole diameter (ΔN_s)

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

Shaft Dia. mm inch		Dimensions												Bolt Size inch mm	Standard				Mass	Basic		Fatigue Load Limit kN	Factor	With Cast Iron Cover				
		inch mm													Unit No.	Housing No.	Bearing No.			Load Ratings kN				Open End Type	Closed End Type	Dimension mm inch		Mass
																				C _r	C _{0r}					C _u	f ₀	
d		L	H ₃	J	N	A ₁	A ₂	A ₃	A ₄	A ₅	B	S	mm					kg	C _r	C _{0r}	C _u	f ₀			A _c	kg		
25	1	4 11/32	3.1496	3 5/32	5/8	1/2	23/64	9/32	7/8	1 1/4	1.496	0.591	1/2	UCFS305	FS305	UC305		1.4	21.2	10.9	0.495	12.6	UCFS305C	UCFS305D	47	1 27/32	1.7	
		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	0.682	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	0.877	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	1.09	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	1.34	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	1.74	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	2.05	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	2.37	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	2.68	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	2.96	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 5/8	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					—	—	—	—	—	
		236	200	184	25	25	21	18	48	71	82	32	M22	UCFS315		UC315		13.7	113	77.2	3.24	13.2	UCFS315C	UCFS315D	88	3 15/32	15.0	
80	—	9 27/32	8.2677	7 23/32	1 7/32	1 1/16	45/64	25/32	1 7/8	2 3/4	3.386	1.339	1	UCFS316	FS316	UC316		15.1	123	86.7	3.53	13.3	—	—	—	—	—	
		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	3.82	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	4.11	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	4.45	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					UCFS320C	UCFS320D	126	4 31/32	32.3	
		310	260	242	38	32	39	20	74	105	108	42	M33	UCFS320-63		UC320-63		29.5	173	141	5.08	13.2	—	—	—	—	—	
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	5.41	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	6.15	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	6.10	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	6.79	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	7.54	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 2.5 in P.11.)

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

A-1/4-28UNF..... 305~308

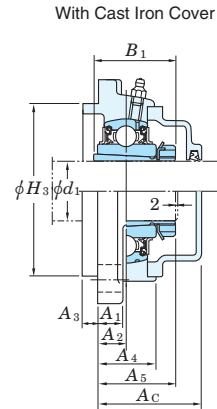
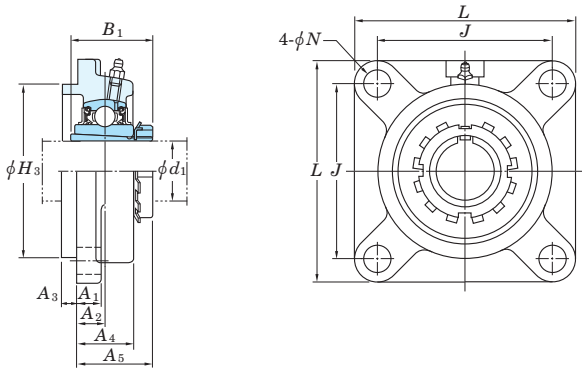
A-R1/8..... 309~328

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.

5. Housings of spheroidal graphite iron casting are also available.

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



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

Variations of tolerance of bolt hole diameter (ΔN_s)

Unit: mm				
Housing No.	ΔH_{3s}	ΔA_{2s}	X	Y
FS305	0 -0.046	±0.5	0.7	0.2
FS306~FS308	0 -0.054			
FS309~FS310	0 -0.063			
FS311~FS313	0 -0.072	±0.8	1	0.3
FS315~FS319	0 -0.081			~FS318 FS319~
FS320~FS322	0 -0.089			0.4
FS324~FS328	0 -0.089			

Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard			Adapter Assembly No.	Mass kg	Basic Load Ratings kN		Fatigue Load Limit kN	Factor f_0	With Cast Iron Cover				
d_1		L	H_3	J	N	A_1	A_2	A_3	A_4	A_5	B_1	Unit No.	Housing No.	Bearing No.	C_r			C_{0r}	C_u			Open End Type	Closed End Type	Dimension mm inch	Mass kg	
20	3/4	4 11/32 110	3.1496 80	3 5/32 80	5/8 16	1/2 13	23/64 9	9/32 7	7/8 22	1 3/16 30.5	1 3/8 35	1/2 M14	UKFS305	FS305	UK305	HE2305X H2305X	1.4 1.4	21.2	10.9	0.495	12.6	— UKFS305C	— UKFS305D	— 47	— 1 27/32	— 1.7
		4 29/32 125	3.5433 90	3 47/64 95	5/8 16	19/32 15	25/64 10	5/16 8	15/16 24	1 5/16 33	1 1/2 38	1/2 M14				H2306X HE2306X	1.9 1.9	26.7	15.0	0.682	13.3	UKFS306C —	UKFS306D —	51	2	2.2
25	1	5 5/16 135	3.9370 100	3 15/16 100	3/4 19	5/8 16	7/16 11	23/64 9	1 1/16 27	1 7/16 36.5	1 11/16 43	5/8 M16	UKFS307	FS307	UK307	HS2307X H2307X	2.4 2.4	33.4	19.3	0.877	13.2	— UKFS307C	— UKFS307D	— 55	— 2 5/32	— 2.9
		4 29/32 150	4.5276 115	4 13/32 112	3/4 19	21/32 17	33/64 13	25/64 10	1 3/16 30	1 19/32 40.5	1 13/16 46	5/8 M16				HE2308X HS2308X H2308X	3.4 3.4 3.4	40.7	24.0	1.09	13.2	— — UKFS308C	— — UKFS308D	— — 61	— — 2 13/32	— — 3.9
30	1 1/8	6 5/16 160	4.9213 125	4 59/64 125	3/4 19	23/32 18	35/64 14	7/16 11	1 5/16 33	1 23/32 44	1 31/32 50	5/8 M16	UKFS309	FS309	UK309	HE2309X H2309X	4.4 4.4	48.9	29.5	1.34	13.3	— UKFS309C	— UKFS309D	— 65	— 2 9/16	— 5.0
		6 7/8 175	5.5118 140	5 13/64 132	29/32 23	3/4 19	5/8 16	15/32 12	1 13/32 36	1 7/8 48	2 5/32 55	3/4 M20				HE2310X H2310X	5.3 5.3	62.0	38.3	1.74	13.2	— UKFS310C	— UKFS310D	— 71	— 2 25/32	— 6.1
35	1 1/4	7 9/32 185	5.9055 150	5 33/64 140	29/32 23	25/32 20	43/64 17	33/64 13	1 17/32 39	2 51	2 5/16 59	3/4 M20	UKFS311	FS311	UK311	HS2311X H2311X HE2311X	6.3 6.3 6.3	71.6	45.0	2.05	13.2	— UKFS311C	— UKFS311D	— 74	— 2 29/32	— 7.2
		2	7 11/16 195	6.2992 160	5 29/32 150	29/32 23	7/8 22	3/4 19	35/64 14	1 21/32 42	2 3/16 55.5	2 7/16 62				3/4 M20	HS2312X H2312X	7.3 7.3	81.9	52.2	2.37	13.2	— UKFS312C	— UKFS312D	— 81	— 3 3/16
40	2 1/4	8 3/16 208	6.8898 175	6 17/32 166	29/32 23	7/8 22	19/32 15	45/64 18	1 9/16 40	2 3/32 53.5	2 9/16 65	3/4 M20	UKFS313	FS313	UK313	HE2313X H2313X HS2313X	8.9 8.9 8.9	92.7	59.9	2.68	13.2	— UKFS313C	— UKFS313D	— 76	— 3	— 10.0
		2 3/8	9 9/32 236	7.8740 200	7 1/4 184	63/64 25	31/32 25	53/64 21	45/64 18	1 7/8 48	2 1/2 63.5	2 7/8 73				7/8 M22	HE2315X H2315X	13.4 13.4	113	77.2	3.24	13.2	— UKFS315C	— UKFS315D	— 88	— 3 15/32
45	1 3/4	9 27/32 250	8.2677 210	7 23/32 196	1 7/32 31	1 1/16 27	45/64 18	25/32 20	1 7/8 48	2 15/32 62.5	3 1/16 78	1 M27	UKFS316	FS316	UK316	HE2316X H2316X	15.1 15.1	123	86.7	3.53	13.3	— UKFS316C	— UKFS316D	— 87	— 3 7/16	— 16.7
		3	10 1/4 260	8.6614 220	8 1/32 204	1 7/32 31	1 1/16 27	15/16 24	25/32 20	2 1/8 54	2 27/32 72	3 7/32 82				1 M27	H2317X HE2317X	17.1 17.1	133	96.8	3.82	13.3	UKFS317C —	UKFS317D —	97	3 13/16
50	1 7/8	11 1/32 280	9.4488 240	8 1/2 216	1 3/8 35	1 3/16 30	15/16 24	25/32 20	2 7/32 56	2 27/32 72	3 3/8 86	1 1/8 M30	UKFS318	FS318	UK318	H2318X	21.4	143	107	4.11	13.3	— UKFS318C	— UKFS318D	— 99	— 3 29/32	— 23.5
		3 1/4	11 13/32 290	9.8425 250	8 31/32 228	1 3/8 35	1 3/16 30	1 17/32 39	25/32 20	2 29/32 74	2 19/32 91	3 17/32 90				1 1/8 M30	HE2319X H2319X	24.8 24.8	153	119	4.45	13.3	— UKFS319C	— UKFS319D	— 120	— 4 23/32
55	2 1/8	12 7/32 310	10.2362 260	9 17/32 242	1 1/2 38	1 1/4 32	1 17/32 39	25/32 20	2 29/32 74	2 21/32 93	3 13/16 97	1 1/4 M33	UKFS320	FS320	UK320	HE2320X H2320X	29.1 29.1	173	141	5.08	13.2	— UKFS320C	— UKFS320D	— 126	— 4 31/32	— 32.2
		4	13 3/8 340	11.8110 300	10 15/32 266	1 39/64 41	1 3/8 35	1 3/8 35	63/64 25	2 25/32 71	2 3/4 95	4 1/8 105				1 3/8 M36	H2322X HE2322X	38.6 38.6	205	180	6.15	13.2	— UKFS322C	— UKFS322D	— 129	— 5 3/32
60	2 1/4	14 9/16 370	12.9921 330	11 27/64 290	1 39/64 41	1 9/16 40	1 3/8 35	1 3/16 30	3 5/32 80	3 21/32 100.5	4 13/32 112	1 3/8 M36	UKFS324	FS324	UK324	H2324	50.9	207	185	6.10	13.5	— UKFS324C	— UKFS324D	— 133	— 5 1/4	— 56.0
		4 1/2	16 5/32 410	14.1732 360	12 19/32 320	1 39/64 41	1 25/32 45	1 3/8 35	1 3/16 30	3 11/32 85	4 101.5	4 3/4 121				1 3/8 M36	HE2326 H2326	67.5 67.5	229	214	6.79	13.6	— UKFS326C	— UKFS326D	— 142	— 5 29/32
65	—	17 23/32 450	15.7480 400	13 25/32 350	1 39/64 41	2 5/32 55	1 49/64 45	1 3/16 30	3 3/4 95	4 5/8 117.5	5 5/32 131	1 3/8 M36	UKFS328	FS328	UK328	H2328	94.0	253	246	7.54	13.6	— UKFS328C	— UKFS328D	— 156	— 6 5/32	— 102

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)

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

A-1/4-28UNF..... 305~308

A-R1/8..... 309~328

3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables.
(Example of Part No. : UKFS307J + H2307X, UK307 + H2307X)

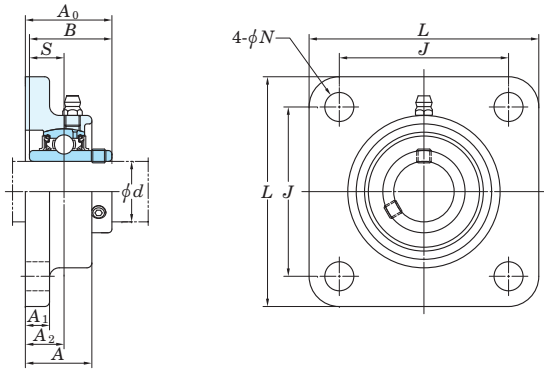
4. As for the triple-lip seal type product, supplementary code L3 follows the Part No. of unit or bearing.

(Example of Part No. : UKFS307JL3 + H2307X, UK307L3 + H2307X)

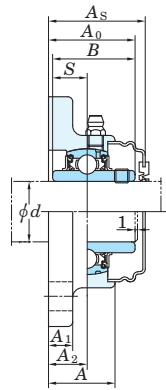
5. For the dimensions and forms of applicable bearings and adapters, see the dimensional tables of ball bearing for unit and adapter assemblies.

6. Housings of spheroidal graphite iron casting are also available.

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

Housing No.	ΔA_{2s}	X
SF204H1~210H1	± 0.5	0.7

Unit: mm

Variations of tolerance of bolt hole diameter (ΔN_s)

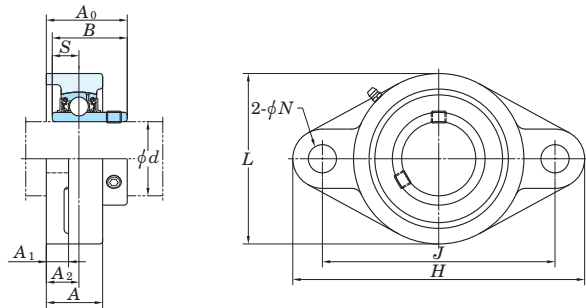
Housing No.	ΔN_s
SF204H1~210H1	± 0.2

Unit: mm

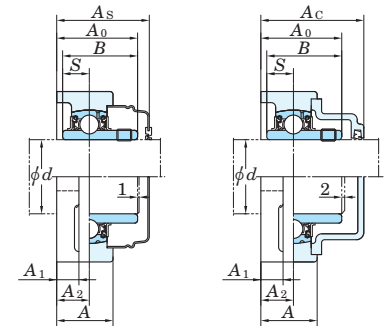
Shaft Dia. mm	Dimensions inch mm									Bolt Size inch mm	Standard				Mass	Basic		Fatigue	Factor	With Pressed Stainless Steel Cover					
											Unit No.	Housing No.	Bearing No.			Load Ratings				Load Limit	Unit No.	Dimension		Mass	
	kN	kN	mm	inch	kg	C _r	C _{0r}	C _u	f ₀							Open End Type	Closed End Type					A _s	kg		
<i>d</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>	<i>S</i>																
20	3 3⁄8 86	1 1⁄32 26	2 33⁄64 64	15⁄32 12	13⁄32 10	19⁄32 15	1 5⁄16 33.3	1.220 31	0.500 12.7	3⁄8 M10	UCSF204H1S6	SF204H1	UC204S6		0.66	10.9	5.35	0.243	13.2	UCSF204H1CS6	UCSF204H1DS6	37.5	1 15⁄32	0.66	
25	3 3⁄4 95	1 3⁄32 27.5	2 3⁄4 70	15⁄32 12	13⁄32 10	5⁄8 16	1 13⁄32 35.8	1.343 34.1	0.563 14.3	3⁄8 M10	UCSF205H1S6	SF205H1	UC205S6		0.85	11.9	6.3	0.286	13.9	UCSF205H1CS6	UCSF205H1DS6	40.5	1 19⁄32	0.85	
30	4 1⁄4 108	1 7⁄32 31	3 17⁄64 83	15⁄32 12	13⁄32 10	45⁄64 18	1 19⁄32 40.2	1.500 38.1	0.626 15.9	3⁄8 M10	UCSF206H1S6	SF206H1	UC206S6		1.2	16.5	9.05	0.411	13.9	UCSF206H1CS6	UCSF206H1DS6	44.5	1 3⁄4	1.2	
35	4 19⁄32 117	1 11⁄32 34	3 5⁄8 92	35⁄64 14	7⁄16 11	3⁄4 19	1 3⁄4 44.4	1.689 42.9	0.689 17.5	7⁄16 M12	UCSF207H1S6	SF207H1	UC207S6		1.5	21.8	12.3	0.559	13.9	UCSF207H1CS6	UCSF207H1DS6	49	1 15⁄16	1.5	
40	5 1⁄8 130	1 13⁄32 36	4 1⁄64 102	5⁄8 16	15⁄32 12	53⁄64 21	2 1⁄32 51.2	1.937 49.2	0.748 19	1⁄2 M14	UCSF208H1S6	SF208H1	UC208S6		2	24.8	14.3	0.650	14.0	UCSF208H1CS6	UCSF208H1DS6	55.5	2 3⁄16	2.0	
45	5 13⁄32 137	1 1⁄2 38	4 9⁄64 105	5⁄8 16	1⁄2 13	55⁄64 22	2 1⁄16 52.2	1.937 49.2	0.748 19	1⁄2 M14	UCSF209H1S6	SF209H1	UC209S6		2.3	27.8	16.2	0.736	14.0	UCSF209H1CS6	UCSF209H1DS6	56.5	2 7⁄32	2.3	
50	5 5⁄8 143	1 9⁄16 40	4 3⁄8 111	5⁄8 16	1⁄2 13	55⁄64 22	2 5⁄32 54.6	2.031 51.6	0.748 19	1⁄2 M14	UCSF210H1S6	SF210H1	UC210S6		2.6	29.8	18.6	0.845	14.4	UCSF210H1CS6	UCSF210H1DS6	59	2 5⁄16	2.6	

- Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See Table 2.5 in P.11.)
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.

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



With Pressed Steel Cover With Cast Iron Cover



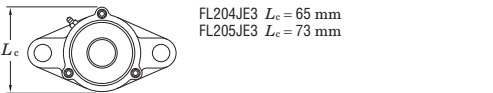
Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Housing No.			ΔA_{2s}	X
FL204~FL210	FLX05~FLX10	FL305~FL310	± 0.5	0.7
FL211~FL218		FL311~FL324	± 0.8	1

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

Housing No.			ΔN_s
FL204~FL218	FLX05~FLX10	FL305~FL311	± 0.2
		FL312~FL324	± 0.3

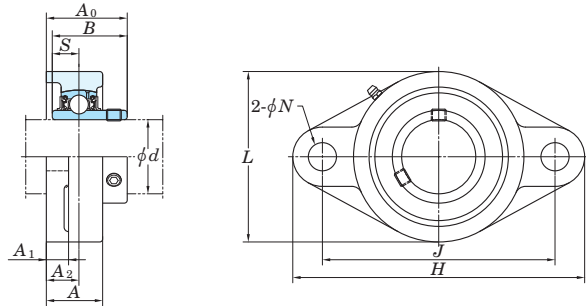
Forms and dimensions of L_c of FL204JE3 and FL205JE3 (housing with cast iron cover) are shown below.



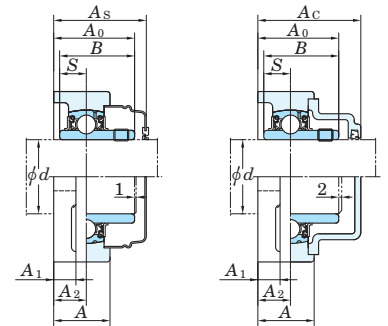
Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard				Mass	Basic Load Ratings kN		Fatigue Load Limit kN	Factor	With Pressed Steel Cover				With Cast Iron Cover										
d		H	L	A	J	N	A_1	A_2	A_0	B	S		Unit No.	Housing No.	Bearing No.			C_r	C_{0r}	C_u	f_0	Unit No. Open End Type Closed End Type		Dimension mm inch		Mass kg	Unit No. Open End Type Closed End Type		Dimension mm inch		Mass kg					
												mm					kg																			
12 15 17 20	1/2 5/8 3/4												UCFL201 UCFL201-8 UCFL202 UCFL202-10 UCFL203 UCFL204-12 UCFL204	FL204	UC201 UC201-8 UC202 UC202-10 UC203 UC204-12 UC204		0.50 0.50 0.48 0.48 0.47 0.47 0.45	12.8	6.65	0.302	13.2	UCFL201C — UCFL202C — UCFL203C — UCFL204C	UCFL201D — UCFL202D — UCFL203D — UCFL204D	37.5 — 37.5 — 37.5 — 37.5	1 15/32 — 1 15/32 — 1 15/32 — 1 15/32	0.50 — 0.48 — 0.47 — 0.45	— — — — — — UCFL204FC	— — — — — — UCFL204FD	— — — — — — 46	— — — — — — 1 13/16	— — — — — — 0.6					
25	7/8 15/16												UCFL205-14 UCFL205-15 UCFL205 UCFL205-16	FL205	UC205-14 UC205-15 UC205 UC205-16		0.64 0.64 0.64 0.64	14.0	7.85	0.357	13.9	— — UCFL205C —	— — UCFL205D —	— — 40.5 —	— — 1 19/32 —	— — 0.64 —	— — UCFL205FC —	— — UCFL205FD —	— — 49 —	— — 1 15/16 —	— — 0.83 —					
	1												UCFLX05 UCFLX05-16	FLX05	UCX05 UCX05-16		1.1 1.1	19.5	11.3	0.514	13.9	UCFLX05C —	UCFLX05D —	44.5 —	1 3/4 —	1.1 —	— —	— —	— —	— —	— —					
30	1 1/8 1 3/16 1 1/4 1 3/16 1 1/4 —												UCFL206-18 UCFL206 UCFL206-19 UCFL206-20	FL206	UC206-18 UC206 UC206-19 UC206-20		0.93 0.93 0.93 0.93	19.5	11.3	0.514	13.9	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —						
														UCFLX06 UCFLX06-19 UCFLX06-20	FLX06	UCX06 UCX06-19 UCX06-20		1.5 1.5 1.5	25.7	15.4	0.700	13.9	UCFLX06C — —	UCFLX06D — —	49 — —	1 15/16 — —	1.5 — —	— — —	— — —	— — —	— — —					
35	1 1/4 1 5/16 1 3/8 1 7/16 1 3/8 1 7/16 —												UCFL207-20 UCFL207-21 UCFL207-22 UCFL207 UCFL207-23	FL207	UC207-20 UC207-21 UC207-22 UC207 UC207-23		1.2 1.2 1.2 1.2 1.2	25.7	15.4	0.700	13.9	— — — UCFL207C —	— — — UCFL207D —	— — — 49 —	— — — 1 15/16 —	— — — 1.2 —	— — — UCFL207FC —	— — — UCFL207FD —	— — — 58 —	— — — 2 9/32 —	— — — 1.6 —					
														UCFLX07-22 UCFLX07 UCFLX07-23	FLX07	UCX07-22 UCX07 UCX07-23		1.9 1.9 1.9	29.1	17.8	0.809	14.0	— UCFLX07C —	— UCFLX07D —	— 55.5 —	— 2 3/16 —	— 1.9 —	— — —	— — —	— — —	— — —					
40	1 1/2 1 9/16 1 1/2 1 1/2												UCFL208-24 UCFL208-25 UCFL208	FL208	UC208-24 UC208-25 UC208		1.6 1.6 1.6	29.1	17.8	0.809	14.0	— — — UCFL208C	— — — UCFL208D	— — — 55.5	— — — 2 3/16	— — — 1.6	— — — UCFL208FC	— — — UCFL208FD	— — — 64	— — — 2 17/32	— — — 2.0					
														UCFL308-24 UCFL308	FL308	UC308-24 UC308		2.5 2.5	40.7	24.0	1.09	13.2	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —				
45	1 5/8 1 11/16 1 3/4 1 3/4											UCFL209-26 UCFL209-27 UCFL209-28 UCFL209 UCFLX09-28 UCFLX09	FL209	UC209-26 UC209-27 UC209-28 UC209 UCX09-28 UCX09			1.9 1.9 1.9 1.9 2.4 2.4	34.1					21.3	0.968	14.0	— — — UCFL209C —	— — — UCFL209D —	— — — 56.5 —	— — — 2 7/32 —	— — — 1.9 —	— — — UCFL209FC —	— — — UCFL209FD —	— — — 66 —	— — — 2 19/32 —	— — — 2.3 —	

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF..... 201~210, X05~X09, 305~308
A-R1/8..... 211~218, X10, 309~324
3. As for the triple-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.
5. Housings of spheroidal graphite iron casting are also available.

UCFL
Cylindrical bore (with set screws)
d (45) ~ (90) mm



With Pressed Steel Cover With Cast Iron Cover



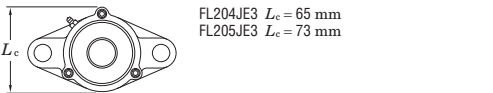
Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Housing No.			ΔA_{2s}	X
FL204~FL210	FLX05~FLX10	FL305~FL310	± 0.5	0.7
FL211~FL218		FL311~FL324	± 0.8	1

Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.			ΔN_s
FL204~FL218	FLX05~FLX10	FL305~FL311	± 0.2
		FL312~FL324	± 0.3

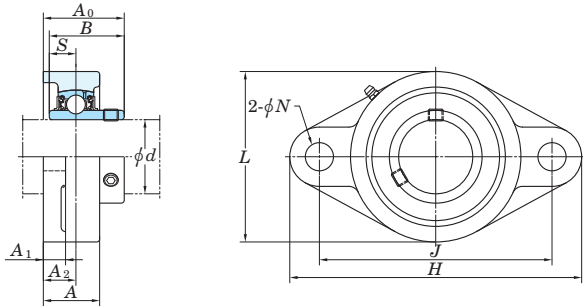
Forms and dimensions of L_c of FL204JE3 and FL205JE3 (housing with cast iron cover) are shown below.



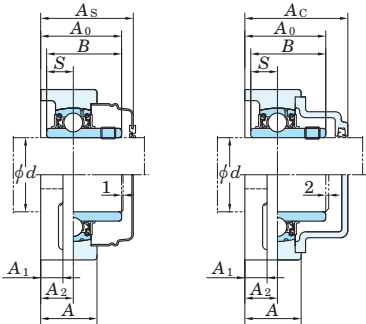
Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard				Basic		Fatigue Load Limit kN	Factor	With Pressed Steel Cover				With Cast Iron Cover									
													Unit No.	Housing No.	Bearing No.		Mass kg	Load Ratings kN				Unit No.		Dimension mm inch		Mass kg	Unit No.		Dimension mm inch		Mass kg			
<i>d</i>	<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>	<i>S</i>	<i>C</i> _r	<i>C</i> _{0r}						<i>C</i> _u	<i>f</i> ₀	Open End Type		Closed End Type	<i>A</i> _s		Open End Type		Closed End Type	<i>A</i> _c						
45	1 ¾	9 1/16 230	4 29/32 125	1 23/32 44	6 31/32 177	63/64 25	23/32 18	63/64 25	2 ¾ 60	2.244 57	0.866 22	7/8 M22	UCFL309-28 UCFL309	FL309	UC309-28 UC309	3.5 3.5	48.9	29.5	1.34	13.3	— —	— —	— —	— —	UCFL309C	UCFL309D	76 3	— 4.1						
	1 7/8 1 15/16 2	7 ¾ 197	4 17/32 115	1 9/16 40	6 3/16 157	¾ 19	19/32 15	55/64 22	2 5/32 54.6	2.031 51.6	0.748 19	5/8 M16	UCFL210-30 UCFL210-31 UCFL210 UCFL210-32	FL210	UC210-30 UC210-31 UC210 UC210-32	2.2 2.2 2.2 2.2	35.1	23.3	1.06	14.4	— — UCFL210C —	— — UCFL210D —	— — 59 —	— — 2 5/16 —	2.2 —	UCFL210FC —	UCFL210FD —	70.5 —	2 25/32 —	2.7 —				
50	1 15/16 2	8 1/2 216	5 1/4 133	1 23/32 44	7 1/4 184	¾ 19	25/32 20	1 1/32 26	2 11/32 59.4	2.189 55.6	0.874 22.2	5/8 M16	UCFLX10-31 UCFLX10 UCFLX10-32	FLX10	UCX10-31 UCX10 UCX10-32	3.8 3.8 3.8	43.4	29.4	1.34	14.4	— — —	— — —	— — 64	— — 2 17/32	3.8 —	— — —	— — —	— — —	— — —					
	—	9 7/16 240	5 1/2 140	1 7/8 48	7 23/64 187	63/64 25	¾ 19	1 7/64 28	2 5/8 67	2.402 61	0.866 22	7/8 M22	UCFL310	FL310	UC310	4.4	62.0	38.3	1.74	13.2	— —	— —	— —	— —	UCFL310C	UCFL310D	83 3 9/32	— 5.2						
	2 2 1/8 2 3/16 2	8 13/16 224	5 1/8 130	1 11/16 43	7 1/4 184	¾ 19	23/32 18	63/64 25	2 5/16 58.4	2.189 55.6	0.874 22.2	5/8 M16	UCFL211-32 UCFL211-34 UCFL211 UCFL211-35	FL211	UC211-32 UC211-34 UC211 UC211-35	3.3 3.3 3.3 3.3	43.4	29.4	1.34	14.4	— — UCFL211C —	— — UCFL211D —	— — 63 —	— — 2 15/32 —	3.3 —	UCFL211FC —	UCFL211FD —	74.5 —	2 15/16 —	3.9 —				
55	2 2 1/8 2 3/16 2	9 27/32 250	5 29/32 150	2 1/16 52	7 51/64 198	63/64 25	25/32 20	1 3/16 30	2 25/32 71	2.598 66	0.984 25	7/8 M22	UCFL311-32 UCFL311	FL311	UC311-32 UC311	5.3 5.3	71.6	45.0	2.05	13.2	— — — —	— — — —	— — — —	— — — —	UCFL311C —	UCFL311D —	87 3 7/16	— 6.2						
	2 1/4 2 3/8 2 7/16 —	9 27/32 250	5 1/2 140	1 7/8 48	7 61/64 202	29/32 23	23/32 18	1 9/64 29	2 23/32 68.7	2.563 65.1	1.000 25.4	¾ M20	UCFL212-36 UCFL212 UCFL212-38 UCFL212-39	FL212	UC212-36 UC212 UC212-38 UC212-39	4.2 4.2 4.2 4.2	52.4	36.2	1.65	14.4	— — — —	— — — —	— — 73.5 —	— — 2 29/32 —	4.2 —	UCFL212C —	UCFL212D —	86 —	3 ¾ —	5.0 —				
	—	10 5/8 270	6 5/16 160	2 7/32 56	8 11/32 212	1 7/32 31	7/8 22	1 19/64 33	3 1/16 78	2.795 71	1.024 26	1 M27	UCFL312	FL312	UC312	6.5	81.9	52.2	2.37	13.2	— —	— —	— —	— —	UCFL312C —	UCFL312D —	95 3 ¾	— 7.7						
65	2 1/2 2 1/2	10 5/32 258	6 3/32 155	1 31/32 50	8 17/64 210	29/32 23	25/32 20	1 3/16 30	2 ¾ 69.7	2.563 65.1	1.000 25.4	¾ M20	UCFL213-40 UCFL213	FL213	UC213-40 UC213	5.1 5.1	57.2	40.1	1.82	14.4	— — UCFL213C —	— — UCFL213D —	— — 74.5 —	— — 2 15/16 —	5.1 —	UCFL213FC —	UCFL213FD —	87 3 7/16	— 5.9					
	2 1/2	11 5/8 295	6 7/8 175	2 9/32 58	9 29/64 240	1 7/32 31	31/32 25	1 19/64 33	3 1/16 78	2.953 75	1.181 30	1 M27	UCFL313-40 UCFL313	FL313	UC313-40 UC313	8.5 8.5	92.7	59.9	2.68	13.2	— — — —	— — — —	— — — —	— — — —	UCFL313C —	UCFL313D —	94 3 11/16	— 9.6						
70	2 ¾ 2 ¾	10 7/16 265	6 5/16 160	2 1/8 54	8 1/2 216	29/32 23	25/32 20	1 7/32 31	2 31/32 75.4	2.937 74.6	1.189 30.2	¾ M20	UCFL214-44 UCFL214	FL214	UC214-44 UC214	5.7 5.7	62.2	44.1	2.01	14.5	— — UCFL214C —	— — UCFL214D —	— — 80.5 —	— — 3 5/32 —	5.7 —	UCFL214FC —	UCFL214FD —	93 3 21/32	— 6.6					
	2 ¾	12 13/32 315	7 9/32 185	2 13/32 61	9 27/32 250	1 ¾ 35	1 3/32 28	1 27/64 36	3 3/16 81	3.071 78	1.299 33	1 1/8 M30	UCFL314-44 UCFL314	FL314	UC314-44 UC314	9.7 9.7	104	68.2	2.96	13.2	— — — —	— — — —	— — — —	— — — —	UCFL314C —	UCFL314D —	98 3 27/32	— 10.8						
75	2 15/16 3 2 15/16 3	10 13/16 275	6 1/2 165	2 7/32 56	8 55/64 225	29/32 23	25/32 20	1 11/32 34	3 3/32 78.5	3.063 77.8	1.311 33.3	¾ M20	UCFL215-47 UCFL215 UCFL215-48	FL215	UC215-47 UC215 UC215-48	6.4 6.4 6.4	67.4	48.3	2.17	14.5	— — — —	— — — —	— — — —	— — — —	UCFL215C —	UCFL215D —	83.5 —	3 9/32 —	6.4 —	UCFL215FC —	UCFL215FD —	96 —	3 25/32 —	7.4 —
	—	12 19/32 320	7 11/16 195	2 19/32 66	10 15/64 260	1 ¾ 35	1 3/16 30	1 17/32 39	3 1/2 89	3.228 82	1.260 32	1 1/8 M30	UCFL315-47 UCFL315 UCFL315-48	FL315	UC315-47 UC315 UC315-48	11.3 11.3 11.3	113	77.2	3.24	13.2	— — — —	— — — —	— — — —	— — — —	UCFL315C —	UCFL315D —	106 —	4 3/16 —	12.6 —					
	3 1/8 —	11 13/32 290	7 3/32 180	2 9/32 58	9 11/64 233	63/64 25	25/32 20	1 11/32 34	3 9/32 83.3	3.252 82.6	1.311 33.3	7/8 M22	UCFL216-50 UCFL216	FL216	UC216-50 UC216	7.8 7.8	72.7	53.0	2.30	14.6	— — UCFL216C —	— — UCFL216D —	— — 88.5 —	— — 3 15/32 —	7.8 —	UCFL216FC —	UCFL216FD —	103 4 1/16	— 9.0					
80	—	13 31/32 355	8 9/32 210	2 11/16 68	11 7/32 285	1 1/2 38	1 1/4 32	1 1/2 38	3 17/32 90	3.386 86	1.339 34	1 1/4 M33	UCFL316	FL316	UC316	14.4	123	86.7	3.53	13.3	— —	— —	— —	— —	UCFL316C —	UCFL316D —	107 4 7/32	— 15.8						
	3 1/4 —	12 305	7 15/32 190	2 15/32 63	9 49/64 248	63/64 25	7/8 22	1 27/64 36	3 7/16 87.6	3.374 85.7	1.343 34.1	7/8 M22	UCFL217-52 UCFL217	FL217	UC217-52 UC217	9.8 9.8	84.0	61.9	2.60	14.5	— — UCFL217C —	— — UCFL217D —	— — 92.5 —	— — 3 21/32 —	9.8 —	UCFL217FC —	UCFL217FD —	107 4 7/32	— 11.2					
	—	14 9/16 370	8 21/32 220	2 29/32 74	11 13/16 300	1 1/2 38	1 1/4 32	1 47/64 44	3 15/16 100	3.780 96	1.575 40	1 1/4 M33	UCFL317	FL317	UC317	16.0	133	96.8	3.82	13.3	— —	— —	— —	— —	UCFL317C —	UCFL317D —	117 4 19/32	— 17.6						
90	3 1/2	12 19/32 320	8 1/16 205	2 11/16 68	10 7/16 265	63/64 25	29/32 23	1 37/64 40	3 25/32 96.3	3.780 96	1.563 39.7	7/8 M22	UCFL218-56 UCFL218	FL218	UC218-56 UC218	12.3 12.3	96.1	71.5	2.91	14.5	— — UCFL218C —	— — UCFL218D —	— — 101.5 4	— — — —	— — 12.3 —	— — UCFL218FC —	— — UCFL218FD —	— — 116 4 9/16	— 13.8					

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF..... 201~210, X05~X09, 305~308
A-R

UCFL
Cylindrical bore (with set screws)
d (90) ~ 120 mm



With Pressed Steel Cover With Cast Iron Cover



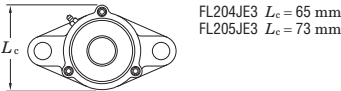
Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Housing No.			ΔA_{2s}	X
FL204~FL210	FLX05~FLX10	FL305~FL310	± 0.5	0.7
FL211~FL218		FL311~FL324	± 0.8	1

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

Housing No.			ΔN_s
FL204~FL218	FLX05~FLX10	FL305~FL311	± 0.2
		FL312~FL324	± 0.3

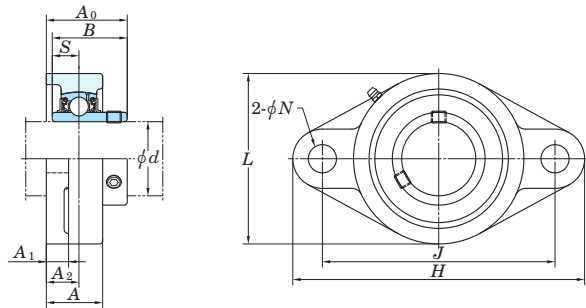
Forms and dimensions of L_c of FL204JE3 and FL205JE3 (housing with cast iron cover) are shown below.



Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard				Mass	Basic Load Ratings kN		Fatigue Load Limit kN	Factor	With Pressed Steel Cover				With Cast Iron Cover				
<i>d</i>		<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>	<i>S</i>		Unit No.	Housing No.	Bearing No.		<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _u	<i>f</i> ₀	Unit No.		Dimension mm inch	Mass	Unit No.		Dimension mm inch	Mass		
																					Open End Type	Closed End Type	<i>A</i> _s	kg	Open End Type	Closed End Type	<i>A</i> _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				13.3	—	—	—	—	—	—	—	—	—
		385	235	76	315	38	36	44	100	96	40	M33	UCFL318				UC318	19.0	143	107	4.11	13.3	—	—	—	—	UCFL318C	UCFL318D	119	4 11/16
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	4.45	13.3	—	—	—	—	UCFL319C	UCFL319D	140	5 1/2	26.8
		405	250	94	330	41	40	59	121	103	41	M36						24.6	153	119	4.45	13.3	—	—	—	—	UCFL319C	UCFL319D	140	5 1/2
100	3 15/16 4	17 5/16	10 5/8	3 11/16	14 11/64	1 47/64	1 9/16	2 21/64	4 29/32	4.252	1.654	1 1/2	UCFL320	FL320	UC320		29.4					—	—	—	—	UCFL320C	UCFL320D	146	5 3/4	32.2
													UCFL320-63				UC320-63	29.4	173	141	5.08	13.2	—	—	—	—	—	—	—	—
													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	6.15	13.2	—	—	—	—	UCFL322C	UCFL322D	154	6 1/16	39.6
		470	300	96	390	44	42	60	131	117	46	M39						36.2	205	180	6.15	13.2	—	—	—	—	UCFL322C	UCFL322D	154	6 1/16
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	6.10	13.5	—	—	—	—	UCFL324C	UCFL324D	163	6 13/32	56.4
		520	330	110	430	47	48	65	140	126	51	M42						51.6	207	185	6.10	13.5	—	—	—	—	UCFL324C	UCFL324D	163	6 13/32

- Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF..... 201~210, X05~X09, 305~308
A-R1/8..... 211~218, X10, 309~324
3. As for the triple-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.
5. Housings of spheroidal graphite iron casting are also available.

UCFL-E
Cylindrical bore (with set screws)
d 12 ~ 75 mm



Variations of tolerance of distance from mounting surface to center of spherical bore (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 inch		Dimensions inch mm										Bolt Size inch	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN		Fatigue Load Limit kN	Factor f_0	Mass kg
d		H	L	A	J	N	A_1	A_2	A_0	B	S						C_r	C_{0r}	C_u		
12	$\frac{1}{2}$												UCFL201E		UC201						0.42
15	$\frac{5}{8}$	$3\frac{27}{32}$	$2\frac{7}{32}$	1	3	$\frac{25}{64}$	$\frac{7}{16}$	$\frac{19}{32}$	$1\frac{5}{16}$	1.220	0.500	$\frac{5}{16}$	UCFL201-8E	FL203E	UC201-8		12.8	6.65	0.302	13.2	0.4
		98	56	25.5	76.2	10	11	15	33.3	31	12.7		UCFL202E		UC202						
													UCFL202-10E		UC202-10						
17													UCFL203E		UC203						0.39
20	$\frac{3}{4}$	$4\frac{7}{16}$	$2\frac{3}{8}$	1	$3\frac{17}{32}$	$\frac{25}{64}$	$\frac{7}{16}$	$\frac{19}{32}$	$1\frac{5}{16}$	1.220	0.500	$\frac{5}{16}$	UCFL204-12E	FL204E	UC204-12		12.8	6.65	0.302	13.2	0.48
		113	60	25.5	89.7	10	11	15	33.3	31	12.7		UCFL204E		UC204						
25	$\frac{7}{8}$ $\frac{15}{16}$	$5\frac{1}{8}$	$2\frac{11}{16}$	$1\frac{1}{16}$	$3\frac{57}{64}$	$\frac{15}{32}$	$\frac{1}{2}$	$\frac{5}{8}$	$1\frac{13}{32}$	1.343	0.563	$\frac{3}{8}$	UCFL205-14E	FL205E	UC205-14		14.0	7.85	0.357	13.9	0.64
		130	68	27	98.8	12	13	16	35.8	34.1	14.3		UCFL205-15E		UC205-15						
													UCFL205E		UC205						
													UCFL205-16E		UC205-16						
30	$1\frac{1}{8}$ $1\frac{3}{16}$ $1\frac{1}{4}$	$5\frac{13}{16}$	$3\frac{5}{32}$	$1\frac{7}{32}$	$4\frac{19}{32}$	$\frac{15}{32}$	$\frac{1}{2}$	$\frac{45}{64}$	$1\frac{19}{32}$	1.500	0.626	$\frac{3}{8}$	UCFL206-18E	FL206E	UC206-18		19.5	11.3	0.514	13.9	0.93
		148	80	31	116.7	12	13	18	40.2	38.1	15.9		UCFL206E		UC206						
													UCFL206-19E		UC206-19						
													UCFL206-20E		UC206-20						
35	$1\frac{1}{4}$ $1\frac{5}{16}$ $1\frac{3}{8}$ $1\frac{7}{16}$	$6\frac{11}{32}$	$3\frac{17}{32}$	$1\frac{11}{32}$	$5\frac{1}{8}$	$\frac{33}{64}$	$\frac{9}{16}$	$\frac{3}{4}$	$1\frac{3}{4}$	1.689	0.689	$\frac{7}{16}$	UCFL207-20E	FL207E	UC207-20		25.7	15.4	0.700	13.9	1.2
		161	90	34	130.2	13	14	19	44.4	42.9	17.5		UCFL207-21E		UC207-21						
													UCFL207-22E		UC207-22						
													UCFL207E		UC207						
													UCFL207-23E		UC207-23						
40	$1\frac{1}{2}$ $1\frac{9}{16}$	$6\frac{7}{8}$	$3\frac{15}{16}$	$1\frac{13}{32}$	$5\frac{21}{32}$	$\frac{33}{64}$	$\frac{9}{16}$	$\frac{53}{64}$	$2\frac{1}{32}$	1.937	0.748	$\frac{7}{16}$	UCFL208-24E	FL208E	UC208-24		29.1	17.8	0.809	14.0	1.6
		175	100	36	143.7	13	14	21	51.2	49.2	19		UCFL208-25E		UC208-25						
													UCFL208E		UC208						
45	$1\frac{5}{8}$ $1\frac{11}{16}$ $1\frac{3}{4}$	$7\frac{13}{32}$	$4\frac{1}{4}$	$1\frac{1}{2}$	$5\frac{27}{32}$	$\frac{19}{32}$	$\frac{19}{32}$	$\frac{55}{64}$	$2\frac{1}{16}$	1.937	0.748	$\frac{1}{2}$	UCFL209-26E	FL209E	UC209-26		34.1	21.3	0.968	14.0	1.9
		188	108	38	148.4	15	15	22	52.2	49.2	19		UCFL209-27E		UC209-27						
													UCFL209-28E		UC209-28						
													UCFL209E		UC209						
50	$1\frac{7}{8}$ $1\frac{15}{16}$ 2	$7\frac{3}{4}$	$4\frac{17}{32}$	$1\frac{9}{16}$	$6\frac{3}{16}$	$\frac{19}{32}$	$\frac{19}{32}$	$\frac{55}{64}$	$2\frac{5}{32}$	2.031	0.748	$\frac{1}{2}$	UCFL210-30E	FL210E	UC210-30		35.1	23.3	1.06	14.4	2.2
		197	115	40	157	15	15	22	54.6	51.6	19		UCFL210-31E		UC210-31						
													UCFL210E		UC210						
													UCFL210-32E		UC210-32						
55	2 $2\frac{1}{8}$ $2\frac{3}{16}$ $2\frac{1}{4}$	$8\frac{13}{16}$	$5\frac{1}{8}$	$1\frac{11}{16}$	$7\frac{1}{4}$	$\frac{21}{32}$	$\frac{23}{32}$	$\frac{63}{64}$	$2\frac{5}{16}$	2.189	0.874	$\frac{9}{16}$	UCFL211-32E	FL211E	UC211-32		43.4	29.4	1.34	14.4	3.3
		224	130	43	184	16.5	18	25	58.4	55.6	22.2		UCFL211-34E		UC211-34						
													UCFL211E		UC211						
													UCFL211-35E		UC211-35						
60	$2\frac{3}{8}$ $2\frac{7}{16}$	$9\frac{27}{32}$	$5\frac{1}{2}$	$1\frac{7}{8}$	$7\frac{61}{64}$	$\frac{21}{32}$	$\frac{23}{32}$	$1\frac{9}{64}$	$2\frac{23}{32}$	2.563	1.000	$\frac{9}{16}$	UCFL212-36E	FL212E	UC212-36		52.4	36.2	1.65	14.4	4.2
		250	140	48	202	16.5	18	29	68.7	65.1	25.4		UCFL212E		UC212						
													UCFL212-38E		UC212-38						
													UCFL212-39E		UC212-39						
65	$2\frac{1}{2}$	$10\frac{5}{32}$	$6\frac{3}{32}$	$1\frac{31}{32}$	$8\frac{17}{64}$	$\frac{21}{32}$	$\frac{25}{32}$	$1\frac{3}{16}$	$2\frac{3}{4}$	2.563	1.000	$\frac{9}{16}$	UCFL213-40E	FL213E	UC213-40		57.2	40.1	1.82	14.4	5.2
		258	155	50	210	16.5	20	30	69.7	65.1	25.4		UCFL213E		UC213						
70	$2\frac{3}{4}$	$10\frac{7}{16}$	$6\frac{9}{16}$	$2\frac{1}{8}$	$8\frac{1}{2}$	$\frac{21}{32}$	$\frac{25}{32}$	$1\frac{7}{32}$	$2\frac{31}{32}$	2.937	1.189	$\frac{9}{16}$	UCFL214-44E	FL214E	UC214-44		62.2	44.1	2.01	14.5	5.7
		265	160	54	216	16.5	20	31	75.4	74.6	30.2		UCFL214E		UC214						
75	$2\frac{15}{16}$ 3	$10\frac{13}{16}$	$6\frac{1}{2}$	$2\frac{7}{32}$	$8\frac{55}{64}$	$\frac{3}{4}$	$\frac{25}{32}$	$1\frac{11}{32}$	$3\frac{3}{32}$	3.063	1.311	$\frac{11}{16}$	UCFL215-47E	FL215E	UC215-47		67.4	48.3	2.17	14.5	6.4
		275	165	56	225	19	20	34	78.5	77.8	33.3		UCFL215E		UC215						
													UCFL215-48E		UC215-48						

Remarks 1. In Part No. of unit, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)

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

A-1/4-28UNF 201~210

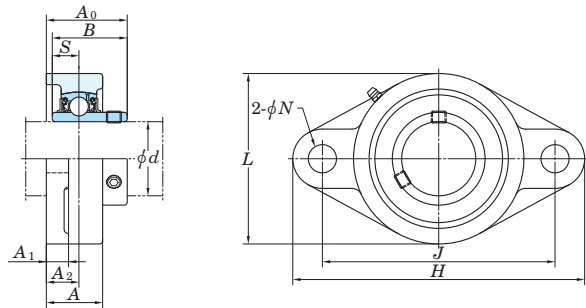
A-R1/8 211~217

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.

5. Housings of spheroidal graphite iron casting are also available.

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



Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN		Fatigue Load Limit kN	Factor	Mass
<i>d</i>		<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>	<i>S</i>						<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _u	<i>f</i> 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 UCFL216E	FL216E	UC216-50 UC216		72.7	53.0	2.30	14.6	7.8
		290	180	58	233	19	20	34	83.3	82.6	33.3										
85	3 1/4	12	7 15/32	2 15/32	9 49/64	3/4	7/8	1 27/64	3 7/16	3.374	1.343	11/16	UCFL217-52E UCFL217E	FL217E	UC217-52 UC217		84.0	61.9	2.60	14.5	9.8
		305	190	63	248	19	22	36	87.6	85.7	34.1										

- Remarks 1. In Part No. of unit, fitting codes follow bore diameter numbers. (See **Table 2.5** in P.11.)
2. Part No. of applicable grease nipples are shown below.
 A-1/4-28UNF 201~210
 A-R1/8 211~217
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.
5. Housings of spheroidal graphite iron casting are also available.

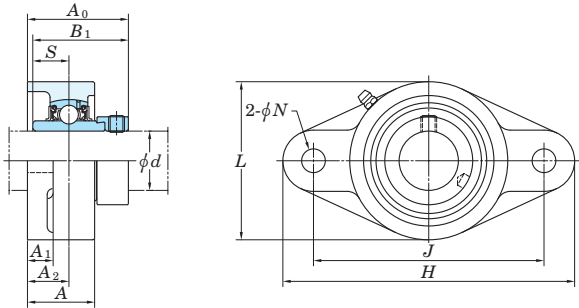
Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

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

Variations of tolerance of bolt hole diameter (ΔN_s)

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

NANFL
Cylindrical bore
(with eccentric locking collar)
d 12 ~ 55 mm



Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

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 inch		Dimensions inch mm										Bolt Size inch	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN		Fatigue Load Limit kN	Factor f_0	Mass kg
<i>d</i>		<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i> ₁	<i>S</i>						<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _u		
12	1/2												NANFL201 NANFL201-8 NANFL202 NANFL202-10 NANFL203 NANFL204-12 NANFL204	NFL204	NA201 NA201-8 NA202 NA202-10 NA203 NA204-12 NA204		12.8	6.65	0.302	13.2	0.59
15	5/8	4 7/16	2 3/8	1 5/32	3 17/32	25/64	7/16	3/4	1 25/32	1.720	0.673	5/16									
17	3/4	113	60	29.5	89.7	10	11	19	45.6	43.7	17.1										
20																					
25	7/8 15/16 1	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	NANFL205-14 NANFL205-15 NANFL205 NANFL205-16	NFL205	NA205-14 NA205-15 NA205 NA205-16		14.0	7.85	0.357	13.9	0.9
30	1 1/8 1 3/16 1 1/4	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	NANFL206-18 NANFL206 NANFL206-19 NANFL206-20	NFL206	NA206-18 NA206 NA206-19 NA206-20		19.5	11.3	0.514	13.9	1.1
35	1 1/4 1 5/16 1 3/8 1 7/16	6 11/32	3 17/32	1 7/16	5 1/8	33/64	9/16	27/32	2 1/8	2.012	0.740	7/16	NANFL207-20 NANFL207-21 NANFL207-22 NANFL207 NANFL207-23	NFL207	NA207-20 NA207-21 NA207-22 NA207 NA207-23		25.7	15.4	0.700	13.9	1.6
40	1 1/2 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	NANFL208-24 NANFL208-25 NANFL208	NFL208	NA208-24 NA208-25 NA208		29.1	17.8	0.809	14.0	2.0
45	1 5/8 1 11/16 1 3/4	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	NANFL209-26 NANFL209-27 NANFL209-28 NANFL209	NFL209	NA209-26 NA209-27 NA209-28 NA209		34.1	21.3	0.968	14.0	2.3
50	1 7/8 1 15/16 2	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	NANFL210-30 NANFL210-31 NANFL210 NANFL210-32	NFL210	NA210-30 NA210-31 NA210 NA210-32		35.1	23.3	1.06	14.4	2.7
55	2 2 1/8 2 3/16	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	NANFL211-32 NANFL211-34 NANFL211 NANFL211-35	NFL211	NA211-32 NA211-34 NA211 NA211-35		43.4	29.4	1.34	14.4	4.1

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)

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

A-1/4-28UNF 201~210

A-R1/8 211

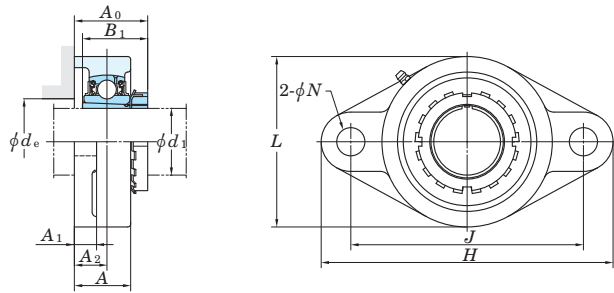
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

4. Housings of spheroidal graphite iron casting are also available.

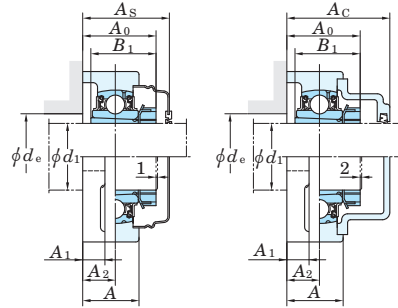
UKFL

Tapered bore (with adapter)

d₁ 20 ~ 50 mm



With Pressed Steel Cover With Cast Iron Cover



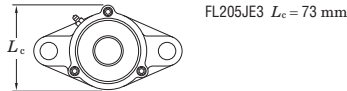
Variations of tolerance of distance from mounting surface to center of spherical bore (Δ_{A2s}) and tolerance of position of bolt hole (X)

Housing No.			Δ_{A2s}	X
FL205~FL210	FLX05~FLX10	FL305~FL310	± 0.5	0.7
FL211~FL218		FL311~FL324	± 0.8	1

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

Housing No.			Δ_{Ns}
FL205~FL218	FLX05~FLX10	FL305~FL311	± 0.2
		FL312~FL324	± 0.3

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



Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard				Adapter Assembly No.	Mass kg	Basic Load Ratings kN		Fatigue Load Limit kN C _u	Factor f ₀	With Pressed Steel Cover				With Cast Iron Cover						
		H	L	A	J	N	A ₁	A ₂	A ₀	B ₁	d _e (min.)		Unit No.	Housing No.	Bearing No.				Unit No.				Dimension mm inch		Mass kg	Unit No.		Dimension mm inch		Mass kg			
																			Open End Type	Closed End Type			A _s			Open End Type	Closed End Type	A _c					
20	3/4	5 1/8 130	2 11/16 68	1 1/16 27	3 57/64 99	5/8 16	1/2 13	5/8 16	1 13/32 36	1 3/8 35	1 3/16 30	1/2 M14	UKFL205	FL205	UK205		HE2305X H2305X	0.68 0.68	14.0 7.85	0.357	13.9	— UKFL205C	— UKFL205D	— 40.5	— 1 19/32	— 0.68	— UKFL205FC	— UKFL205FD	— 49	— 1 15/16	— 0.89		
	3/4	5 9/16 141	3 9/32 83	1 3/16 30	4 39/64 117	15/32 12	1/2 13	45/64 18	1 9/16 39.5	1 3/8 35	1 3/16 30	3/8 M10	UKFLX05	FLX05	UKX05		HE2305X H2305X	1.0 1.0	19.5 11.3	0.514	13.9	— UKFLX05C	— UKFLX05D	— 44.5	— 1 3/4	— 1.0	— —	— —	— —	— —			
	3/4	5 29/32 150	3 5/32 80	1 5/32 29	4 29/64 113	3/4 19	1/2 13	5/8 16	1 15/32 37.5	1 3/8 35	— —	5/8 M16	UKFL305	FL305	UK305		HE2305X H2305X	1.1 1.1	21.2 10.9	0.495	12.6	— —	— —	— —	— —	— —	— —	UKFL305C UKFL305D	54 2 1/8	— 1.4			
25	1	5 13/16 148	3 5/32 80	1 7/32 31	4 39/64 117	5/8 16	1/2 13	45/64 18	1 9/16 39.5	1 1/2 38	1 13/32 36	3/8 M14	UKFL206	FL206	UK206		H2306X HE2306X	0.97 0.97	19.5 11.3	0.514	13.9	UKFL206C —	UKFL206D —	44.5 —	1 3/4 —	0.97 —	UKFL206FC —	UKFL206FD —	53 —	2 3/32 —	1.2 —		
	1	6 5/32 156	3 3/4 95	1 11/32 34	5 1/8 130	5/8 16	9/16 14	3/4 19	1 21/32 42	1 1/2 38	1 13/32 36	3/8 M14	UKFLX06	FLX06	UKX06		H2306X HE2306X	1.5 1.5	25.7 15.4	0.700	13.9	UKFLX06C —	UKFLX06D —	49 —	1 15/16 —	1.5 —	— —	— —	— —	— —			
	1	7 9/32 180	3 17/32 90	1 1/4 32	5 9/32 134	29/32 23	19/32 15	45/64 18	1 5/8 41	1 1/2 38	— —	3/4 M20	UKFL306	FL306	UK306		H2306X HE2306X	1.5 1.5	26.7 15.0	0.682	13.3	— —	— —	— —	— —	— —	UKFL306C —	UKFL306D —	59 —	2 5/16 —	1.8 —		
	1	6 11/32 161	3 17/32 90	1 11/32 34	5 1/8 130	5/8 16	9/16 14	3/4 19	1 11/16 43	1 11/16 43	1 5/8 41	3/8 M14	UKFL207	FL207	UK207		HS2307X H2307X	1.3 1.3	25.7 15.4	0.700	13.9	— UKFL207C	— UKFL207D	49 49	1 15/16 1 15/16	1.3 1.3	— UKFL207FC	— UKFL207FD	58 58	2 9/32 2 9/32	1.7 —		
30	1 1/8	6 23/32 171	4 1/8 105	1 1/2 38	5 43/64 144	5/8 16	9/16 14	53/64 21	1 27/32 47	1 11/16 43	1 5/8 41	3/8 M14	UKFLX07	FLX07	UKX07		HS2307X H2307X	1.8 1.8	29.1 17.8	0.809	14.0	— UKFLX07C	— UKFLX07D	55.5 55.5	2 3/16 2 3/16	1.8 1.8	— —	— —	— —	— —	— —		
	1 1/8	7 9/32 185	3 15/16 100	1 13/32 36	5 35/64 141	29/32 23	5/8 16	25/32 20	1 25/32 45.5	1 11/16 43	— —	3/4 M20	UKFL307	FL307	UK307		HS2307X H2307X	1.9 1.9	33.4 19.3	0.877	13.2	— —	— —	— —	— —	— —	— —	UKFL307C —	UKFL307D —	64 64	2 17/32 2 17/32	2.4 2.4	
	1 1/4 1 3/8	6 7/8 175	3 15/16 100	1 13/32 36	5 43/64 144	5/8 16	9/16 14	53/64 21	1 7/8 48	1 13/16 46	1 13/16 46	3/8 M14	UKFL208	FL208	UK208		HE2308X HS2308X H2308X	1.6 1.6 1.6	29.1 17.8	0.809	14.0	— — UKFL208C	— — UKFL208D	55.5 55.5	2 3/16 2 3/16	1.6 1.6	— — UKFL208FC	— — UKFL208FD	64 64	2 17/32 2 17/32	2.0 2.0		
35	1 1/4 1 3/8	7 1/16 179	4 3/8 111	1 9/16 40	5 53/64 148	5/8 16	9/16 14	55/64 22	1 31/32 50	1 13/16 46	1 13/16 46	3/8 M14	UKFLX08	FLX08	UKX08		HE2308X HS2308X H2308X	2.1 2.1 2.1	34.1 21.3	0.968	14.0	— — UKFLX08C	— — UKFLX08D	56.5 56.5	2 7/32 2 7/32	2.1 2.1	— — —	— — —	— — —	— — —	— — —		
	1 1/4 1 3/8	7 7/8 200	4 13/32 112	1 9/16 40	6 7/32 158	29/32 23	21/32 17	29/32 23	2 50.5	1 13/16 46	— —	3/4 M20	UKFL308	FL308	UK308		HE2308X HS2308X H2308X	2.5 2.5 2.5	40.7 24.0	1.09	13.2	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —			
	1 1/2	7 13/32 188	4 1/4 108	1 1/2 38	5 53/64 148	3/4 19	19/32 15	55/64 22	2 51	1 31/32 50	2 1/16 52	5/8 M16	UKFL209	FL209	UK209		HE2309X H2309X	2.0 2.0	34.1 21.3	0.968	14.0	— UKFL209C	— UKFL209D	56.5 56.5	2 7/32 2 7/32	2.0 2.0	— UKFL209FC	— UKFL209FD	66 66	2 19/32 2 19/32	2.5 2.5		
40	1 1/2	7 7/16 189	4 9/16 116	1 9/16 40	6 3/16 157	5/8 16	9/16 14	29/32 23	2 1/16 52	1 31/32 50	2 1/16 52	3/8 M14	UKFLX09	FLX09	UKX09		HE2309X H2309X	2.5 2.5	35.1 23.3	1.06	14.4	— UKFLX09C	— UKFLX09D	60 60	2 3/8 2 3/8	2.5 2.5	— —	— —	— —	— —	— —		
	1 1/2	9 1/16 230	4 29/32 125	1 23/32 44	6 31/32 177	63/64 25	23/32 18	63/64 25	2 5/32 55	1 31/32 50	— —	7/8 M22	UKFL309	FL309	UK309		HE2309X H2309X	3.6 3.6	48.9 29.5	1.34	13.3	— —	— —	— —	— —	— —	— —	— —	UKFL309C —	UKFL309D —	76 76	3 3	4.2 4.2
	1 3/4	7 3/4 197	4 17/32 115	1 9/16 40	6 3/16 157	3/4 19	19/32 15	55/64 22	2 1/16 52	2 5/32 55	2 9/32 58	5/8 M16	UKFL210	FL210	UK210		HE2310X H2310X	2.3 2.3	35.1 23.3	1.06	14.4	— UKFL210C	— UKFL210D	59 59	2 5/16 2 5/16	2.3 2.3	— UKFL210FC	— UKFL210FD	70.5 70.5	2 25/32 2 25/32	2.8 2.8		
45	1 3/4	8 1/2 216	5 1/4 133	1 23/32 44	7 1/4 184	3/4 19	25/32 20	1 1/32 26	2 9/32 58	2 5/32 55	2 9/32 58	5/8 M16	UKFLX10	FLX10	UKX10		HE2310X H2310X	3.7 3.7	43.4 29.4	1.34	14.4	— UKFLX10C	— UKFLX10D	64 64	2 17/32 2 17/32	3.7 3.7	— —	— —	— —	— —	— —		
	1 3/4	9 7/16 240	5 1/2 140	1 7/8 48	7 23/64 187	63/64 25	3/4 19	1 7/64 28	2 3/8 60	2 5/32 55	— —	7/8 M22	UKFL310	FL310	UK310		HE2310X H2310X	4.4 4.4	62.0 38.3	1.74	13.2	— —	— —	— —	— —	— —	— —	— —	UKFL310C —	UKFL310D —	83 83	3 9/32 3 9/32	5.2 5.2
	1 7/8 2	8 13/16 224	5 1/8 130	1 11/16 43	7 1/4 184	3/4 19	23/32 18	63/64 25	2 1/4 57.5	2 5/16 59	2 17/32 64	5/8 M16	UKFL211	FL211	UK211		HS2311X H2311X HE2311X	3.3 3.3 3.3	43.4 29.4	1.34	14.4	— UKFL211C	— UKFL211D	63 63	2 15/32 2 15/32	3.3 3.3	— UKFL211FC	— UKFL211FD	74.5 74.5	2 15/16 2 15/16	3.9 3.9		
50	1 7/8 2	9 27/32 250	5 29/32 150	2 1/16 52	7 51/64 198	63/64 25	25/32 20	1 3/16 30	2 17/32 64	2 5/16 59	— —	7/8 M22	UKFL311	FL311	UK311		HS2311X H2311X HE2311X	5.6 5.6 5.6	71.6 45.0	2.05	13.2	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —			

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)

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

A-1/4-28UNF..... 205~210, X05~X09, 305~308

A-R1/8..... 211~218, X10, 309~324

3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables.

(Example of Part No. : UKFL206J + H2306X, UK206 + H2306X)

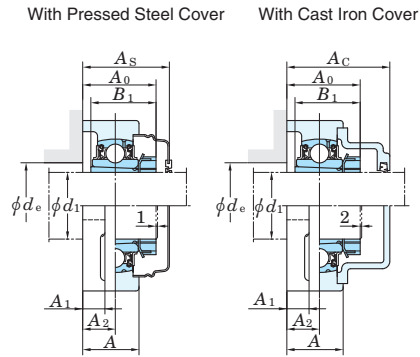
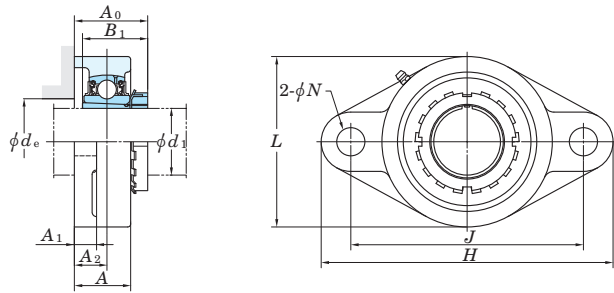
4. As for the triple-lip seal type product (205 is the double-lip seal type product), supplementary code L3 (or L2) follows the Part No. of unit or bearing.

(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.

6. Housings of spheroidal graphite iron casting are also available.

UKFL
Tapered bore (with adapter)
d₁ 55 ~ 110 mm



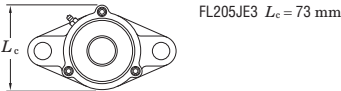
Variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}) and tolerance of position of bolt hole (X)

Housing No.			ΔA_{2s}	X
FL205~FL210	FLX05~FLX10	FL305~FL310	± 0.5	0.7
FL211~FL218		FL311~FL324	± 0.8	1

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

Housing No.			ΔN_s
FL205~FL218	FLX05~FLX10	FL305~FL311	± 0.2
		FL312~FL324	± 0.3

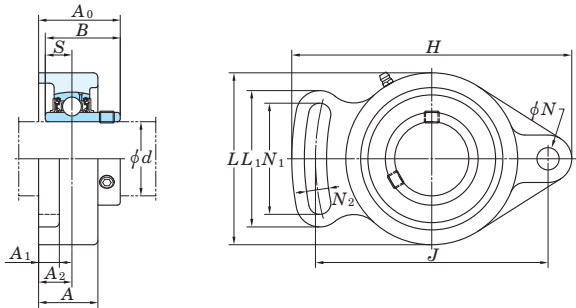
Forms and dimensions of L_c of FL205JE3 (housing with cast iron cover) are shown below.



Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard				Adapter Assembly No.	Mass kg	Basic Load Ratings		Fatigue Load Limit kN C _u	Factor f ₀	With Pressed Steel Cover				With Cast Iron Cover					
													Unit No.	Housing No.	Bearing No.				C _r	C _{0r}			Unit No.		Dimension		Mass kg	Unit No.		Dimension		Mass kg
		Open End Type	Closed End Type	mm	inch	Open End Type	Closed End Type	mm	inch																							
d ₁		H	L	A	J	N	A ₁	A ₂	A ₀	B ₁	d _e (min.)																					
55	2 1/8	9 27/32 250	5 1/2 140	1 7/8 48	7 61/64 202	29/32 23	23/32 18	1 9/64 29	2 19/32 65.5	2 7/16 62	2 23/32 69	3/4 M20	UKFL212	FL212	UK212		HS2312X H2312X	4.1 4.1	52.4	36.2	1.65	14.4	— UKFL212C	— UKFL212D	— 73.5	— 2 29/32	— 4.1	— UKFL212FC	— UKFL212FD	— 86	— 3 3/8	— 4.9
	2 1/8	10 5/8 270	6 5/16 160	2 7/32 56	8 11/32 212	1 7/32 31	7/8 22	1 19/64 33	2 3/4 69.5	2 7/16 62	— —	1 M27	UKFL312	FL312	UK312		HS2312X H2312X	6.9 6.9	81.9	52.2	2.37	13.2	— —	— —	— —	— —	— —	— UKFL312C	— UKFL312D	— 95	— 3 3/8	— 8.1
	2 1/4	10 5/32 258	6 3/32 155	1 31/32 50	8 17/64 210	29/32 23	25/32 20	1 3/16 30	2 21/32 67.5	2 9/16 65	2 29/32 74	3/4 M20	UKFL213	FL213	UK213		HE2313X H2313X HS2313X	5.0 5.0 5.0	57.2	40.1	1.82	14.4	— UKFL213C	— UKFL213D	— 74.5	— 2 15/16	— 5.0	— UKFL213FC	— UKFL213FD	— 87	— 3 7/16	— 5.9
60	2 3/8	258	155	50	210	23	20	30	67.5	65	74	M20	UKFL213	FL213	UK213		HS2313X	5.0	57.2	40.1	1.82	14.4	—	—	—	—	—	—	—	—	—	
	2 1/4	11 5/8 295	6 7/8 175	2 9/32 58	9 29/64 240	1 7/32 31	31/32 25	1 19/64 33	2 13/16 71.5	2 9/16 65	— —	1 M27	UKFL313	FL313	UK313		HE2313X H2313X HS2313X	8.6 8.6 8.6	92.7	59.9	2.68	13.2	— —	— —	— —	— —	— —	— UKFL313C	— UKFL313D	— 94	— 3 11/16	— 9.7
	2 3/8	295	175	58	240	31	25	33	71.5	65	—	M27	UKFL313	FL313	UK313		HS2313X	8.6	92.7	59.9	2.68	13.2	—	—	—	—	—	—	—	—	—	
65	2 1/2	10 13/16 275	6 1/2 165	2 7/32 56	8 55/64 225	29/32 23	25/32 20	1 11/32 34	2 15/16 74.5	2 7/8 73	3 11/32 85	3/4 M20	UKFL215	FL215	UK215		HE2315X H2315X	6.6 6.6	67.4	48.3	2.17	14.5	— UKFL215C	— UKFL215D	— 83.5	— 3 9/32	— 6.6	— UKFL215FC	— UKFL215FD	— 96	— 3 25/32	— 7.6
	2 1/2	12 19/32 320	7 11/16 195	2 19/32 66	10 15/64 260	1 3/8 35	1 3/16 30	1 17/32 39	2 7/32 81.5	2 7/8 73	— —	1 1/8 M30	UKFL315	FL315	UK315		HE2315X H2315X	11.4 11.4	113	77.2	3.24	13.2	— —	— —	— —	— —	— —	— UKFL315C	— UKFL315D	— 106	— 4 3/16	— 12.8
	2 3/4	11 13/32 290	7 3/32 180	2 9/32 58	9 11/64 233	63/64 25	25/32 20	1 11/32 34	3 3/32 78.5	3 1/16 78	3 17/32 90	7/8 M22	UKFL216	FL216	UK216		HE2316X H2316X	8.1 8.1	72.7	53.0	2.30	14.6	— UKFL216C	— UKFL216D	— 88.5	— 3 15/32	— 8.1	— UKFL216FC	— UKFL216FD	— 103	— 4 1/16	— 9.4
70	2 3/4	13 31/32 355	8 9/32 210	2 11/16 68	11 7/32 285	1 1/2 38	1 1/4 32	1 1/2 38	3 1/4 82.5	3 1/16 78	— —	1 1/4 M33	UKFL316	FL316	UK316		HE2316X H2316X	13.9 13.9	123	86.7	3.53	13.3	— —	— —	— —	— —	— —	— UKFL316C	— UKFL316D	— 107	— 4 7/32	— 15.5
	3	12 7 15/32 305	2 15/32 190	9 49/64 63	63/64 248	7/8 25	1 27/64 22	3 1/4 36	3 7/32 82.5	3 25/32 82	7/8 96	M22	UKFL217	FL217	UK217		H2317X HE2317X	9.9 9.9	84.0	61.9	2.60	14.5	UKFL217C	UKFL217D	92.5	3 21/32	9.9	UKFL217FC	UKFL217FD	107	4 7/32	11.3
	3	14 9/16 370	8 21/32 220	2 29/32 74	11 13/16 300	1 1/2 38	1 1/4 32	1 47/64 44	3 5/8 92	3 7/32 82	— —	1 1/4 M33	UKFL317	FL317	UK317		H2317X HE2317X	15.8 15.8	133	96.8	3.82	13.3	— —	— —	— —	— —	— —	— UKFL317C	— UKFL317D	117	4 19/32	17.6
80	—	12 19/32 320	8 1/16 205	2 11/16 68	10 7/16 265	63/64 25	29/32 23	1 37/64 40	3 17/32 89.5	3 3/8 86	4 1/32 102	7/8 M22	UKFL218	FL218	UK218		H2318X	12.2	96.1	71.5	2.91	14.5	UKFL218C	UKFL218D	101.5	4	12.2	UKFL218FC	UKFL218FD	116	4 9/16	13.8
	—	15 5/32 385	9 1/4 235	3 76	12 13/32 315	1 1/2 38	1 13/32 36	1 47/64 44	3 5/8 92	3 3/8 86	— —	1 1/4 M33	UKFL318	FL318	UK318		H2318X	19.1	143	107	4.11	13.3	—	—	—	—	—	—	—	—	—	
	3 1/4	15 15/16 405	9 27/32 250	3 11/16 94	13 330	1 39/64 41	1 9/16 40	2 21/64 59	4 3/8 111	3 17/32 90	— —	1 3/8 M36	UKFL319	FL319	UK319		HE2319X H2319X	24.9 24.9	153	119	4.45	13.3	— —	— —	— —	— —	— —	— UKFL319C	— UKFL319D	— 140	— 5 1/2	— 27.3
90	3 1/2	17 5/16 440	10 5/8 270	3 11/16 94	14 11/64 360	1 47/64 44	1 9/16 40	2 21/64 59	4 7/16 113	3 13/16 97	— —	1 1/2 M39	UKFL320	FL320	UK320		HE2320X H2320X	29.0 29.0	173	141	5.08	13.2	— —	— —	— —	— —	— —	— UKFL320C	— UKFL320D	— 146	— 5 3/4	— 32.1
100	4	18 1/2 470	11 13/16 300	3 25/32 96	15 23/64 390	1 47/64 44	1 21/32 42	2 23/64 60	4 23/32 120	4 1/8 105	— —	1 1/2 M39	UKFL322	FL322	UK322		H2322X HE2322X	36.1 36.1	205	180	6.15	13.2	— —	— —	— —	— —	— —	— UKFL322C	— UKFL322D	— 154	— 6 1/16	— 39.6
110	—	20 15/32 520	13 330	4 11/32 110	16 59/64 430	1 27/32 47	1 7/8 48	2 9/16 65	5 1/8 130.5	4 13/32 112	— —	1 5/8 M42	UKFL324	FL324	UK324		H2324	51.9	207	185	6.10	13.5	—	—	—	—	—	—	—	—	—	

- Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF..... 205~210, X05~X09, 305~308
A-R1/8..... 211~218, X10, 309~324
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables.
(Example of Part No. : UKFL206J + H2306X, UK206 + H2306X)
4. As for the triple-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.
6. Housings of spheroidal graphite iron casting are also available.

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



Variations of tolerance of distance from mounting surface to center of spherical bore (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 inch		Dimensions inch mm														Bolt Size	Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Fatigue Load Limit kN	Factor f_0	Mass kg
d		H	L	A	J	N	N_1	N_2	L_1	A_1	A_2	A_0	B	S	mm					C_r	C_{0r}	C_u		
12	$\frac{1}{2}$																UCFA201		UC201					0.47
15	$\frac{5}{8}$	3 $\frac{27}{32}$	2 $\frac{5}{16}$	1 $\frac{5}{16}$	3 $\frac{5}{64}$	2 $\frac{5}{64}$	1 $\frac{9}{16}$	1 $\frac{3}{32}$	1 $\frac{31}{32}$	7 $\frac{1}{16}$	3 $\frac{5}{64}$	1 $\frac{1}{4}$	1.220	0.500	5 $\frac{1}{16}$	UCFA201-8	FA204	UC201-8		12.8	6.65	0.302	13.2	0.45
17	$\frac{3}{4}$	98	59	24	78	10	40	10	50	11	13.8	32.1	31	12.7	M8	UCFA202		UC202						
																UCFA202-10		UC202-10						0.44
20																UCFA203		UC203						
																UCFA204-12		UC204-12						
																UCFA204		UC204						0.42
25	$\frac{7}{8}$ $\frac{15}{16}$ 1	4 $\frac{7}{8}$	2 $\frac{3}{4}$	1 $\frac{1}{16}$	3 $\frac{55}{64}$	7 $\frac{1}{16}$	1 $\frac{15}{16}$	7 $\frac{1}{16}$	2 $\frac{17}{32}$	1 $\frac{1}{2}$	5 $\frac{5}{8}$	1 $\frac{13}{32}$	1.343	0.563	3 $\frac{3}{8}$	UCFA205-14	FA205	UC205-14		14.0	7.85	0.357	13.9	0.68
		124	70	27	98	11	49	11	64	13	16	35.8	34.1	14.3	M10	UCFA205-15		UC205-15						
																UCFA205		UC205						
																UCFA205-16		UC205-16						
30	1 $\frac{1}{8}$ 1 $\frac{3}{16}$ 1 $\frac{1}{4}$	5 $\frac{9}{16}$	3 $\frac{9}{32}$	1 $\frac{3}{16}$	4 $\frac{39}{64}$	7 $\frac{1}{16}$	2 $\frac{7}{32}$	1 $\frac{5}{32}$	2 $\frac{11}{16}$	1 $\frac{1}{2}$	4 $\frac{5}{64}$	1 $\frac{9}{16}$	1.500	0.626	3 $\frac{3}{8}$	UCFA206-18	FA206	UC206-18		19.5	11.3	0.514	13.9	1.0
		141	83	30	117	11	56	12	68	13	17.8	40	38.1	15.9	M10	UCFA206		UC206						
																UCFA206-19		UC206-19						
																UCFA206-20		UC206-20						
35	1 $\frac{1}{4}$ 1 $\frac{5}{16}$ 1 $\frac{3}{8}$ 1 $\frac{7}{16}$	6 $\frac{3}{32}$	3 $\frac{25}{32}$	1 $\frac{11}{32}$	5 $\frac{1}{8}$	3 $\frac{3}{64}$	2 $\frac{15}{32}$	1 $\frac{1}{2}$	2 $\frac{15}{16}$	9 $\frac{1}{16}$	4 $\frac{7}{64}$	1 $\frac{23}{32}$	1.689	0.689	7 $\frac{1}{16}$	UCFA207-20	FA207	UC207-20		25.7	15.4	0.700	13.9	1.5
		155	96	34	130	13	63	13	75	14	18.6	44	42.9	17.5	M12	UCFA207-21		UC207-21						
																UCFA207-22		UC207-22						
																UCFA207		UC207						
																UCFA207-23		UC207-23						
40	1 $\frac{1}{2}$ 1 $\frac{9}{16}$	6 $\frac{23}{32}$	4 $\frac{1}{8}$	1 $\frac{1}{2}$	5 $\frac{43}{64}$	3 $\frac{3}{64}$	2 $\frac{3}{4}$	1 $\frac{1}{2}$	3 $\frac{5}{16}$	9 $\frac{1}{16}$	1 $\frac{13}{16}$	2	1.937	0.748	7 $\frac{1}{16}$	UCFA208-24	FA208	UC208-24		29.1	17.8	0.809	14	1.9
		171	105	38	144	13	70	13	84	14	20.8	51	49.2	19	M12	UCFA208-25		UC208-25						
																UCFA208		UC208						
45	1 $\frac{5}{8}$ 1 $\frac{11}{16}$ 1 $\frac{3}{4}$	7 $\frac{1}{16}$	4 $\frac{3}{8}$	1 $\frac{9}{16}$	5 $\frac{53}{64}$	1 $\frac{19}{32}$	2 $\frac{27}{32}$	1 $\frac{19}{32}$	3 $\frac{15}{32}$	9 $\frac{1}{16}$	5 $\frac{55}{64}$	2 $\frac{1}{16}$	1.937	0.748	1 $\frac{1}{2}$	UCFA209-26	FA209	UC209-26		34.1	21.3	0.968	14	1.7
		179	111	40	148	15	72	15	88	14	21.8	52	49.2	19	M14	UCFA209-27		UC209-27						
																UCFA209-28		UC209-28						
																UCFA209		UC209						
50	1 $\frac{7}{8}$ 1 $\frac{15}{16}$ 2	7 $\frac{7}{16}$	4 $\frac{9}{16}$	1 $\frac{9}{16}$	6 $\frac{3}{16}$	1 $\frac{19}{32}$	2 $\frac{15}{16}$	1 $\frac{19}{32}$	3 $\frac{5}{8}$	9 $\frac{1}{16}$	5 $\frac{57}{64}$	2 $\frac{5}{32}$	2.031	0.748	1 $\frac{1}{2}$	UCFA210-30	FA210	UC210-30		35.1	23.3	1.06	14.4	2.0
		189	116	40	157	15	75	15	92	14	22.5	55.1	51.6	19	M14	UCFA210-31		UC210-31						
																UCFA210		UC210						
																UCFA210-32		UC210-32						
55	2 2 $\frac{1}{8}$ 2 $\frac{3}{16}$	8 $\frac{1}{2}$	5 $\frac{1}{4}$	1 $\frac{23}{32}$	7 $\frac{1}{4}$	5 $\frac{5}{8}$	3 $\frac{3}{8}$	5 $\frac{5}{8}$	4 $\frac{1}{32}$	2 $\frac{25}{32}$	1 $\frac{1}{64}$	2 $\frac{5}{16}$	2.189	0.874	1 $\frac{1}{2}$	UCFA211-32	FA211	UC211-32		43.4	29.4	1.34	14.4	3.6
		216	133	44	184	16	86	16	102	20	25.7	59.1	55.6	22.2	M14	UCFA211-34		UC211-34						
																UCFA211		UC211						
																UCFA211-35		UC211-35						

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)

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

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

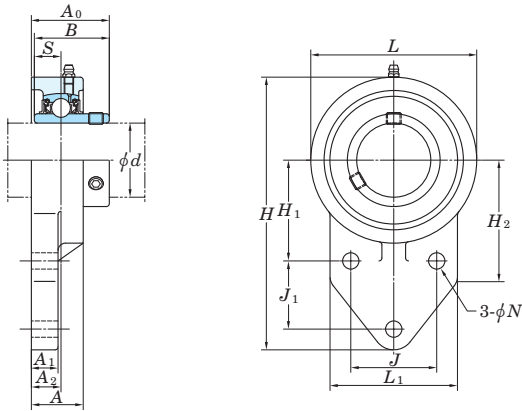
A-R1/8..... 211

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. : UCFA206JL3, UC206L3)

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

5. Tapered bore (with adapter) type products are also available. (Example of Part No. : UKFA205J + H2305X, UK205 + H2305X)

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



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

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

Variations of tolerance of bolt hole diameter (ΔN_s)

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

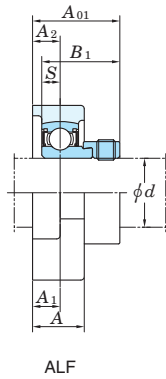
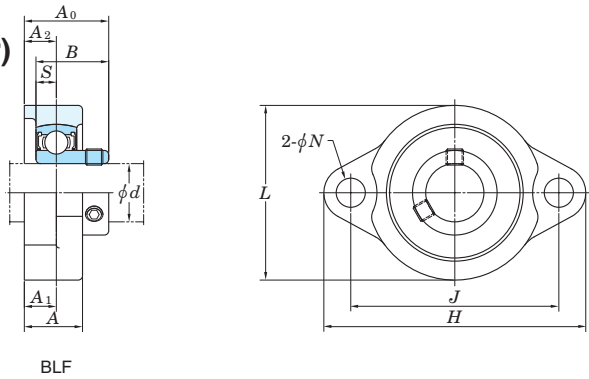
Shaft Dia. mm inch		Dimensions inch mm														Bolt Size inch mm	Unit No.	Housing No.		Bearing No.	Basic Load Ratings kN		Fatigue Load Limit kN	Factor	Mass
<i>d</i>		<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>J</i> ₁	<i>N</i>	<i>H</i> ₁	<i>H</i> ₂	<i>L</i> ₁	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>	<i>S</i>				<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _u	<i>f</i> ₀	kg		
12	1/2 5/8 3/4															5/16 M8	UCFB201 UCFB201-8 UCFB202 UCFB202-10 UCFB203 UCFB204-12 UCFB204	FB204		UC201 UC201-8 UC202 UC202-10 UC203 UC204-12 UC204	12.8	6.65	0.302	13.2	0.64 0.62 0.61 0.59
15		4 11/32	2 7/16	15/16	1 17/64	1 1/16	3/8	1 21/32	2 1/16	2 1/16	1/2	17/32	1 1/4	1.220	0.500										
17		110	62	24.5	32	27	9.5	42	52	52	13	13.5	31.8	31	12.7										
20																									
25	7/8 15/16 1	4 9/16	2 11/16	1 1/16	1 11/32	1 1/16	3/8	1 49/64	2 1/16	2 7/32	1/2	19/32	1 3/8	1.343	0.563	5/16 M8	UCFB205-14 UCFB205-15 UCFB205 UCFB205-16	FB205		UC205-14 UC205-15 UC205 UC205-16	14.0	7.85	0.357	13.9	0.68
30	1 1/8 1 3/16 1 1/4	5 1/8	3 1/16	1 3/16	1 37/64	1 9/64	3/8	1 31/32	2 5/32	2 9/16	1/2	43/64	1 17/32	1.500	0.626	5/16 M8	UCFB206-18 UCFB206 UCFB206-19 UCFB206-20	FB206		UC206-18 UC206 UC206-19 UC206-20	19.5	11.3	0.514	13.9	0.92
35	1 1/4 1 5/16 1 3/8 1 7/16	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 M8	UCFB207-20 UCFB207-21 UCFB207-22 UCFB207 UCFB207-23	FB207		UC207-20 UC207-21 UC207-22 UC207 UC207-23	25.7	15.4	0.700	13.9	1.3
40	1 1/2 1 9/16	6 15/32	3 15/16	1 3/8	1 31/32	1 39/64	7/16	2 23/64	2 27/32	3 1/16	5/8	25/32	1 31/32	1.937	0.748	3/8 M10	UCFB208-24 UCFB208-25 UCFB208	FB208		UC208-24 UC208-25 UC208	29.1	17.8	0.809	14.0	1.8
45	1 5/8 1 11/16 1 3/4	6 27/32	4 3/16	1 3/8	2 1/8	1 11/16	7/16	2 9/16	3	3 5/32	23/32	25/32	1 31/32	1.937	0.748	3/8 M10	UCFB209-26 UCFB209-27 UCFB209-28 UCFB209	FB209		UC209-26 UC209-27 UC209-28 UC209	34.1	21.3	0.968	14.0	2.0
50	1 7/8 1 15/16 2	7 1/4	4 13/32	1 7/16	2 9/32	1 13/16	7/16	2 43/64	3 7/32	3 3/8	23/32	25/32	2 1/16	2.031	0.748	3/8 M10	UCFB210-30 UCFB210-31 UCFB210 UCFB210-32	FB210		UC210-30 UC210-31 UC210 UC210-32	35.1	23.3	1.06	14.4	2.3

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See Table 2.5 in P.11.)
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 + H2305X, UK205 + H2305X)

BLF
Cylindrical bore
(with set screws)
d 12 ~ 35 mm

ALF
Cylindrical bore
(with eccentric locking collar)



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

Housing No.	ΔA_{2s}	ΔJ_s
LF203~LF207	± 0.5	± 0.7

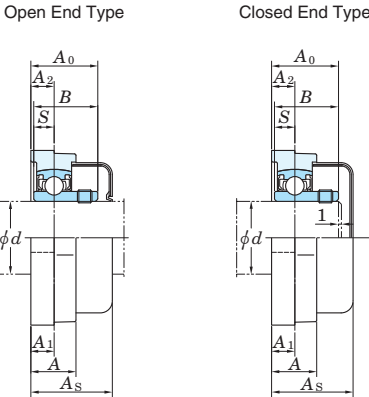
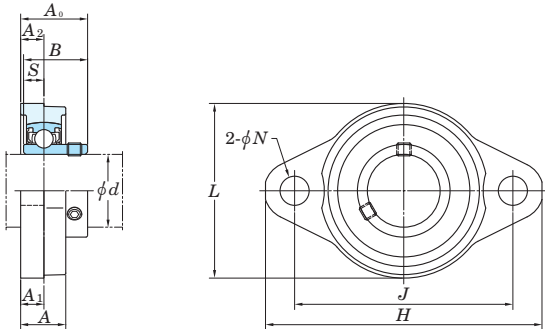
Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.	ΔN_s
LF203~LF207	± 0.2

Shaft Dia. mm inch		Dimensions inch mm												Bolt Size inch mm	Unit No.	Bearing No.		Unit No.	Bearing No.	Housing No.	Basic Load Ratings		Fatigue Load Limit	Factor	Mass			
		<i>d</i>	<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>S</i>	BLF		ALF								kN		kN		<i>f</i> ₀	kg		
											<i>A</i> ₀	<i>B</i>	<i>A</i> ₀₁								<i>B</i> ₁	<i>C</i> _r	<i>C</i> _{0r}			<i>C</i> _u	BLF	ALF
12																												
15	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									
														M6	BLF201-8	SB201-8		ALF201-8	SA201-8									
															BLF202	SB202		ALF202	SA202	LF203	9.55	4.80	0.218	13.2	0.25	0.28		
17	5/8														BLF202-10	SB202-10		ALF202-10	SA202-10									
															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	0.302	13.2	0.33	0.33		
														M8	BLF204	SB204		ALF204	SA204									
25	7/8														BLF205-14	SB205-14		ALF205-14	SA205-14									
	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	0.357	13.9	0.38	0.42		
														M8	BLF205	SB205		ALF205	SA205									
	1														BLF205-16	SB205-16		ALF205-16	SA205-16									
30	1 1/8														BLF206-18	SB206-18		ALF206-18	SA206-18									
	1 3/16	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	0.514	13.9	0.57	0.60		
	1 1/4													M10	BLF206-19	SB206-19		ALF206-19	SA206-19									
															BLF206-20	SB206-20		ALF206-20	SA206-20									
35	1 1/4														BLF207-20	SB207-20		ALF207-20	SA207-20									
	1 5/16	4 13/16	3 1/2	15/16	3 15/16	15/32	1/2	33/64	0.335	1 7/16	1.260	1 5/8	1.437	3/8	BLF207-22	SB207-22		ALF207-21	SA207-21	LF207	25.7	15.4	0.700	13.9	0.77	0.85		
	1 3/8													M10	BLF207	SB207		ALF207-22	SA207-22									
															BLF207-23	SB207-23		ALF207-23	SA207-23									
	1 7/16																											

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See Table 2.5 in P.11.)
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)
 $d \sim 8 \sim 30 \text{ mm}$



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

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

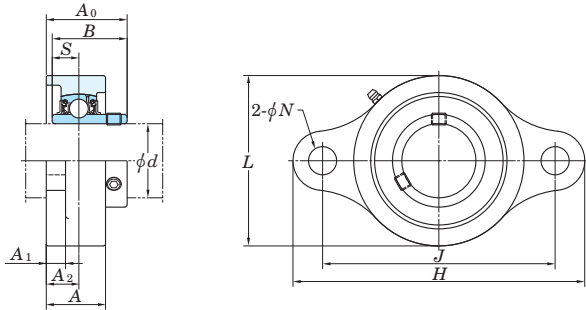
Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.	ΔN_s
FL08	± 0.2
FL000-FL006	

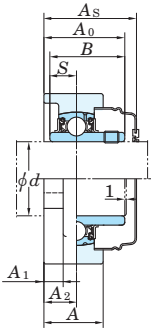
Shaft Dia. mm	Dimensions inch mm										Bolt Size inch mm	Standard				Mass kg	Basic Load Ratings kN		Fatigue Load Limit kN	Factor f ₀	With Rubber Coated Cover					
	Unit No.	Housing No.	Bearing No.									Unit No.		Dimension mm inch			Mass kg									
												Open End Type	Closed End Type	A _s												
d	H	L	A	J	N	A ₁	A ₂	A ₀	B	S						C _r	C _{0r}	C _u								
8	1 7/8 48	1 1/16 27	1 1/32 8.5	1 29/64 37	3/16 4.8	5/32 4	5/32 4	1/2 12.5	0.472 12	0.1378 3.5	No.8 M4	UFL08	FL08	SU08		0.030	3.27	1.37	0.062	12.4	—	—	—	—	—	—
10	2 3/8 60	1 13/32 36	15/32 12	1 49/64 45	9/32 7	1/4 6	15/64 6	5/8 16	0.591 15	0.197 5	1/4 M6	UFL000	FL000	SU000		0.050	4.55	1.95	0.089	12.3	UFL000C	UFL000D	20.5	13/16	0.05	
12	2 15/32 63	1 1/2 38	15/32 12	1 57/64 48	9/32 7	1/4 6	15/64 6	5/8 16	0.591 15	0.197 5	1/4 M6	UFL001	FL001	SU001		0.065	5.10	2.40	0.109	13.2	UFL001C	UFL001D	20.5	13/16	0.07	
15	2 5/8 67	1 21/32 42	1/2 13	2 3/32 53	9/32 7	1/4 6.5	1/4 6.5	11/16 17.5	0.650 16.5	0.217 5.5	1/4 M6	UFL002	FL002	SU002		0.085	5.60	2.85	0.130	13.9	UFL002C	UFL002D	22	7/8	0.09	
17	2 25/32 71	1 13/16 46	9/16 14	2 13/64 56	9/32 7	9/32 7	9/32 7	23/32 18.5	0.689 17.5	0.236 6	1/4 M6	UFL003	FL003	SU003		0.11	6.00	3.25	0.148	14.4	UFL003C	UFL003D	23.5	15/16	0.11	
20	3 17/32 90	2 5/32 55	5/8 16	2 51/64 71	13/32 10	5/16 8	5/16 8	7/8 22	0.827 21	0.276 7	5/16 M8	UFL004	FL004	SU004		0.18	9.40	5.05	0.230	13.9	UFL004C	UFL004D	27	1 1/16	0.18	
25	3 3/4 95	2 3/8 60	5/8 16	2 61/64 75	13/32 10	5/16 8	5/16 8	29/32 23	0.866 22	0.276 7	5/16 M8	UFL005	FL005	SU005		0.23	10.1	5.85	0.266	14.5	UFL005C	UFL005D	28	1 3/32	0.23	
30	4 13/32 112	2 3/4 70	23/32 18	3 11/32 85	1/2 13	11/32 9	23/64 9	1 1/32 26	0.965 24.5	0.295 7.5	3/8 M10	UFL006	FL006	SU006		0.31	13.2	8.25	0.375	14.7	UFL006C	UFL006D	31	1 7/32	0.31	

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See Table 2.5 in P.11.)
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 Cover



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

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

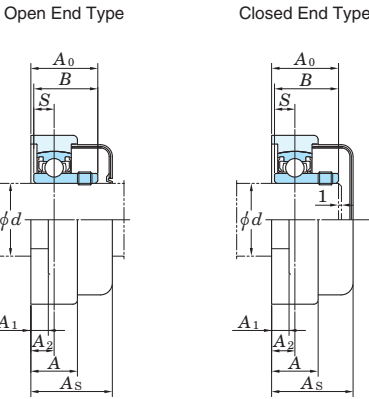
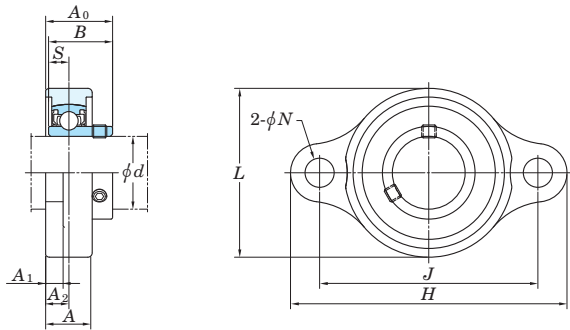
Variations of tolerance of bolt hole diameter (ΔN_s)

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

Shaft Dia. mm	Dimensions										Bolt Size	Standard				Bearing No.	Mass	Basic		Fatigue Load Limit	Factor	With Pressed Stainless Steel Cover					
	inch mm											Unit No.	Housing No.					kN	kN				Unit No.		Dimension		Mass
<i>d</i>	<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>	<i>S</i>	inch mm					<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _u	<i>f</i> ₀	Open End Type	Closed End Type	<i>A</i> _s	inch	kg			
20	4 7/16 113	2 3/8 60	1 1/32 26	3 35/64 90	15/32 12	13/32 10	19/32 15	1 5/16 33.3	1.220 31	0.500 12.7	3/8 M10	UCSFL204H1S6	SFL204H1		UC204S6	0.47	10.9	5.35	0.243	13.2	UCSFL204H1CS6	UCSFL204H1DS6	38	1 1/2	0.47		
25	5 1/8 130	2 11/16 68	1 3/32 27.5	3 57/64 99	5/8 16	13/32 10	5/8 16	1 13/32 35.8	1.343 34.1	0.563 14.3	1/2 M14	UCSFL205H1S6	SFL205H1		UC205S6	0.61	11.9	6.30	0.286	13.9	UCSFL205H1CS6	UCSFL205H1DS6	40	1 9/16	0.61		
30	5 13/16 148	3 5/32 80	1 7/32 31	4 39/64 117	5/8 16	13/32 10	45/64 18	1 19/32 40.2	1.500 38.1	0.626 15.9	1/2 M14	UCSFL206H1S6	SFL206H1		UC206S6	0.9	16.5	9.05	0.411	13.9	UCSFL206H1CS6	UCSFL206H1DS6	45	1 15/32	0.9		
35	6 11/32 161	3 11/32 85	1 11/32 34	5 1/8 130	5/8 16	7/16 11	3/4 19	1 3/4 44.4	1.689 42.9	0.689 17.5	1/2 M14	UCSFL207H1S6	SFL207H1		UC207S6	1.1	21.8	12.3	0.559	13.9	UCSFL207H1CS6	UCSFL207H1DS6	49	1 15/16	1.1		
40	6 7/8 175	3 11/16 94	1 13/32 36	5 43/64 144	5/8 16	15/32 12	53/64 21	2 1/32 51.2	1.937 49.2	0.748 19	1/2 M14	UCSFL208H1S6	SFL208H1		UC208S6	1.4	24.8	14.3	0.650	14.0	UCSFL208H1CS6	UCSFL208H1DS6	56	2 7/32	1.4		
45	7 13/32 188	3 15/16 100	1 1/2 38	5 53/64 148	3/4 19	1/2 13	55/64 22	2 1/16 52.2	1.937 49.2	0.748 19	5/8 M16	UCSFL209H1S6	SFL209H1		UC209S6	1.6	27.8	16.2	0.736	14.0	UCSFL209H1CS6	UCSFL209H1DS6	57	2 7/32	1.6		
50	7 3/4 197	4 3/16 106	1 9/16 40	6 3/16 157	3/4 19	1/2 13	55/64 22	2 5/32 54.6	2.031 51.6	0.748 19	5/8 M16	UCSFL210H1S6	SFL210H1		UC210S6	1.9	29.8	18.6	0.845	14.4	UCSFL210H1CS6	UCSFL210H1DS6	59	2 5/16	1.9		

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See Table 2.5 in P.11.)
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



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

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

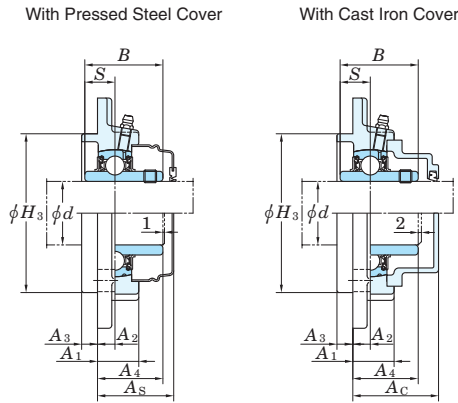
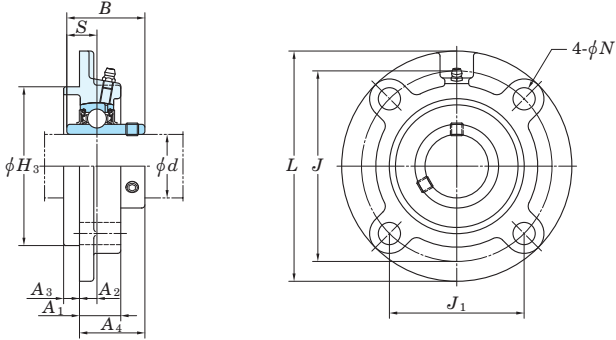
Variations of tolerance of bolt hole diameter (ΔN_s)

Housing No.	ΔN_s
SFL000-SFL006	± 0.2

Shaft Dia. mm	Dimensions inch mm										Bolt Size inch mm	Standard				Mass kg	Basic Load Ratings kN		Fatigue Load Limit kN	Factor	With Rubber Coated Cover			
												Unit No.	Housing No.	Bearing No.			Unit No.				Dimension mm inch		Mass kg	
	Open End Type	Closed End Type	A_s																					
<i>d</i>	<i>H</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>	<i>S</i>					<i>C_r</i>	<i>C_{0r}</i>	<i>C_u</i>	<i>f</i> ₀						
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	0.070	12.3	USFL000CS6	USFL000DS6	20.5 13/16	0.08	
12	2 15/32 63	1 13/32 36	15/32 12	1 57/64 48	9/32 7	3/16 5	15/64 6	5/8 16	0.591 15	0.197 5	1/4 M6	USFL001S6	SFL001	SU001S6		0.080	4.3 1.9	0.086	13.2	USFL001CS6	USFL001DS6	20.5 13/16	0.08	
15	2 5/8 67	1 5/8 41	1/2 13	2 3/32 53	9/32 7	1/4 6	1/4 6.5	11/16 17.5	0.650 16.5	0.217 5.5	1/4 M6	USFL002S6	SFL002	SU002S6		0.1	4.7 2.25	0.102	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	0.118	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	0.182	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	0.211	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	0.300	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 2.5 in P.11.)
2. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

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



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

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

Variations of tolerance of bolt hole diameter (ΔN_b)

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

Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Standard				Mass kg	Basic Load Ratings kN		Fatigue Load Limit kN	Factor <i>f</i> ₀	With Pressed Steel Cover				With Cast Iron Cover				
		Unit No.	Housing No.	Bearing No.		<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _u	Unit No.		Dimension mm inch			Mass kg	Unit No.		Dimension mm inch		Mass kg												
Open End Type	Closed End Type								<i>A</i> _s		Open End Type	Closed End Type	<i>A</i> _e																		
12	1/2 5/8 3/4	3 15/16 100	2.4409 62	3 5/64 78	2 11/64 55.1	15/32 12	13/16 20.5	25/64 10	13/64 5	1 1/8 28.3	1.220 31	0.500 12.7	3/8 M10	UCFC201	FC204	UC201	0.78 0.78 0.76 0.76 0.75 0.75 0.73	12.8	6.65	0.302	13.2	UCFC201C	UCFC201D	32.5	1 9/32	0.78	—	—	—	—	—
UCFC201-8														UC201-8		—						—	—	—	—	—					
UCFC202														UC202		—						—	—	—	—	—					
UCFC202-10														UC202-10		—						—	—	—	—	—					
UCFC203														UC203		—						—	—	—	—	—					
15	5/8	100	62	78	55.1	12	20.5	10	5	28.3	31	12.7	3/8	UCFC204-12	FC204	UC204-12	0.75 0.75 0.73	12.8	6.65	0.302	13.2	UCFC204C	UCFC204D	32.5	1 9/32	0.73	UCFC204FC	UCFC204FD	41	1 17/32	0.84
UCFC204														UC204		—						—	—	—	—	—					
UCFC205-14														UC205-14		—						—	—	—	—	—					
UCFC205-15														UC205-15		—						—	—	—	—	—					
UCFC205														UC205		—						—	—	—	—	—					
17	3/4	100	62	78	55.1	12	20.5	10	5	28.3	31	12.7	3/8	UCFC205-16	FC205	UC205-16	0.95 0.95 0.95 0.95	14.0	7.85	0.357	13.9	UCFC205C	UCFC205D	34.5	1 11/32	0.95	UCFC205FC	UCFC205FD	43	1 21/32	1.1
UCFC205-16														UC205-16		—						—	—	—	—	—					
UCFC206-18														UC206-18		—						—	—	—	—	—					
UCFC206														UC206		—						—	—	—	—	—					
UCFC206-19														UC206-19		—						—	—	—	—	—					
20	3/4	100	62	78	55.1	12	20.5	10	5	28.3	31	12.7	3/8	UCFC206-20	FC206	UC206-20	1.3 1.3 1.3 1.3	19.5	11.3	0.514	13.9	UCFC206C	UCFC206D	36.5	1 7/16	1.3	UCFC206FC	UCFC206FD	45	1 25/32	1.6
UCFC206-20														UC206-20		—						—	—	—	—	—					
UCFCX06														UCX06		—						—	—	—	—	—					
UCFCX06-19														UCX06-19		—						—	—	—	—	—					
UCFCX06-20														UCX06-20		—						—	—	—	—	—					
25	1	115	70	90	63.6	12	21	10	6	29.8	34.1	14.3	3/8 M10	UCFCX07-22	FCX07	UCX07-22	1.5 1.5 1.5	25.7	15.4	0.700	13.9	UCFCX07C	UCFCX07D	43.5	1 23/32	1.9	—	—	—	—	—
														UCFCX07		UCX07						—	—	—	—	—	—				
														UCFCX07-23		UCX07-23						—	—	—	—	—	—				
														UCFC207-20		UC207-20						—	—	—	—	—	—				
														UCFC207-21		UC207-21						—	—	—	—	—	—				
30	1 1/4	125	80	100	70.7	12	23	10	8	32.2	38.1	15.9	3/8 M10	UCFC207-22	FC207	UC207-22	1.7 1.7 1.7 1.7 1.7	25.7	15.4	0.700	13.9	UCFC207C	UCFC207D	41	1 5/8	1.7	UCFC207FC	UCFC207FD	50	1 31/32	2.1
														UCFC207		UC207						—	—	—	—	—	—				
														UCFC207-23		UC207-23						—	—	—	—	—	—				
														UCFCX07-22		UCX07-22						—	—	—	—	—	—				
														UCFCX07		UCX07						—	—	—	—	—	—				
35	1 3/8	135	90	110	77.8	14	26	11	8	36.4	42.9	17.5	7/16 M12	UCFCX07-23	FCX07	UCX07-23	1.9 1.9 1.9	29.1	17.8	0.809	14.0	UCFCX07C	UCFCX07D	43.5	1 23/32	1.9	—	—	—	—	—
														UCFCX07-23		UCX07-23						—	—	—	—	—	—				
														UCFC208-24		UC208-24						—	—	—	—	—	—				
														UCFC208-25		UC208-25						—	—	—	—	—	—				
														UCFC208		UC208						—	—	—	—	—	—				
40	1 1/2	133	92	111	78.5	12	26	9	11	39.2	49.2	19	3/8 M10	UCFCX08-24	FCX08	UCX08-24	2.0 2.0 2.0	34.1	21.3	0.968	14.0	UCFCX08C	UCFCX08D	43.5	1 23/32	2.0	—	—	—	—	—
														UCFCX08		UCX08						—	—	—	—	—	—				
														UCFC209-26		UC209-26						—	—	—	—	—	—				
														UCFC209-27		UC209-27						—	—	—	—	—	—				
														UCFC209-28		UC209-28						—	—	—	—	—	—				
45	1 3/4	160	105	132	93.3	16	26	10	12	40.2	49.2	19	1/2 M14	UCFC209	FC209	UC209	2.6 2.6 2.6 2.6	34.1	21.3	0.968	14.0	UCFC209C	UCFC209D	44.5	1 3/4	2.6	UCFC209FC	UCFC209FD	54	2 1/8	3.0
														UCFC209		UC209						—	—	—	—	—	—				
														UCFCX09-28		UCX09-28						—	—	—	—	—	—				
														UCFCX09		UCX09						—	—	—	—	—	—				
														UCFC210-30		UC210-30						—	—	—	—	—	—				
50	2	165	110	138	97.6	16	28	10	12	42.6	51.6	19	1/2 M14	UCFC210-31	FC210	UC210-31	2.9 2.9 2.9 2.9	35.1	23.3	1.06	14.4	UCFC210C	UCFC210D	47	1 27/32	2.9	UCFC210FC	UCFC210FD	58.5	2 5/16	3.4
														UCFC210-32		UC210-32						—	—	—	—	—	—				
														UCFCX10-31		UCX10-31						—	—	—	—	—	—				
														UCFCX10		UCX10						—	—	—	—	—	—				
														UCFCX10-32		UCX10-32						—	—	—	—	—	—				

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)

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

A-1/4-28UNF..... 201~210, X05~X09

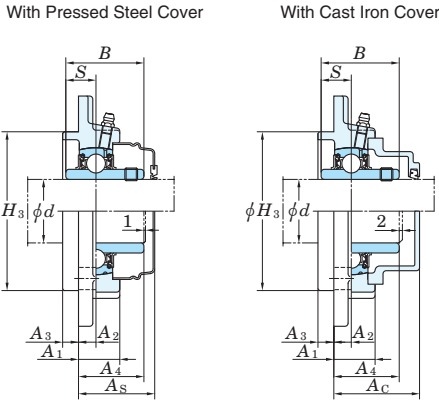
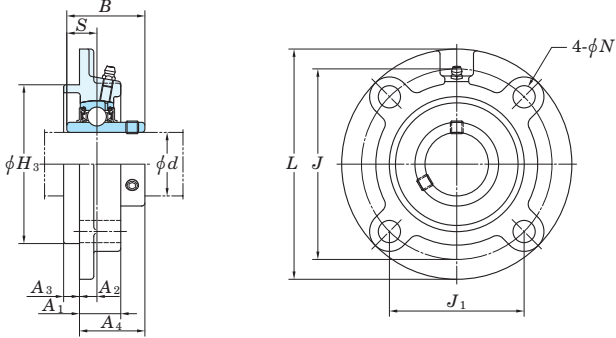
A-R1/8..... 211~218, X10~X20

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.

Round-flanged type with spigot joint

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



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

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

Variations of tolerance of bolt hole diameter (ΔN_s)

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

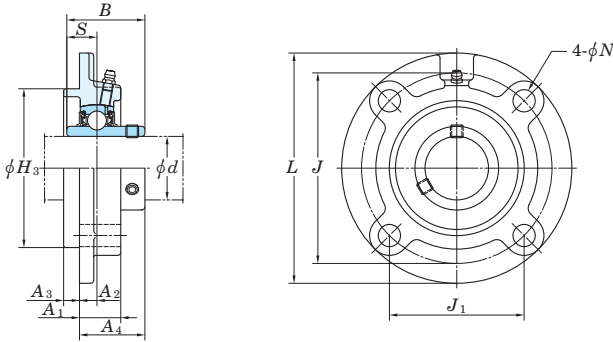
Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Standard			Mass kg	Basic Load Ratings kN		Fatigue Load Limit kN	Factor f ₀	With Pressed Steel Cover				With Cast Iron Cover						
		Unit No.	Housing No.	Bearing No.	Open End Type	Closed End Type	Dimension mm inch	Mass kg	Unit No.	Open End Type	Closed End Type	Dimension mm inch		Mass kg																		
d		L	H ₃	J	J ₁	N	A ₁	A ₂	A ₃	A ₄	B	S				C _r	C _{0r}	C _u														
55	2													UCFC211-32	FC211	UC211-32	4.2					—	—	—	—	—	—	—	—	—		
	2 1/8	7 9/32	4.9213	5 29/32	4 11/64	3/4	1 7/32	33/64	15/32	1 13/16	2.189	0.874	5/8	UCFC211-34		UC211-34	4.2	43.4	29.4	1.34	14.4	—	—	—	—	—	—	—	—	—	—	
		185	125	150	106.1	19	31	13	12	46.4	55.6	22.2	M16	UCFC211		UC211	4.2					UCFC211C	UCFC211D	51	2	4.2	UCFC211FC	UCFC211FD	62.5	2 15/32	4.8	
	2 3/16													UCFC211-35		UC211-35	4.2					—	—	—	—	—	—	—	—	—	—	
	2 3/16	7 3/32	5	5 63/64	4 15/64	5/8	1 1/32	5/32	55/64	1 23/32	2.563	1.000	1/2	UCFCX11	FCX11	UCX11	4.3	52.4	36.2	1.65	14.4	UCFCX11C	UCFCX11D	48.5	1 29/32	4.3	—	—	—	—		
	2 1/4	180	127	152	107.5	16	26	4	22	43.7	65.1	25.4	M14	UCFCX11-35		UCX11-35	4.3					—	—	—	—	—	—	—	—	—	—	
														UCFCX11-36		UCX11-36	4.3					—	—	—	—	—	—	—	—	—	—	
																						—	—	—	—	—	—	—	—	—	—	
60	2 1/4													UCFC212-36	FC212	UC212-36	5.0					—	—	—	—	—	—	—	—	—		
	2 3/8	7 11/16	5.3150	6 19/64	4 29/64	3/4	1 13/32	43/64	15/32	2 7/32	2.563	1.000	5/8	UCFC212		UC212	5.0	52.4	36.2	1.65	14.4	UCFC212C	UCFC212D	61.5	2 13/32	5.0	UCFC212FC	UCFC212FD	74	2 29/32	5.8	
	2 7/16													UCFC212-38		UC212-38	5.0					—	—	—	—	—	—	—	—	—	—	
														UCFC212-39		UC212-39	5.0					—	—	—	—	—	—	—	—	—	—	
	2 7/16	7 5/8	5.5118	6 1/2	4 19/32	5/8	1 5/16	7/16	25/32	2	2.563	1.000	1/2	UCFCX12	FCX12	UCX12	5.3	57.2	40.1	1.82	14.4	UCFCX12C	UCFCX12D	55.5	2 3/16	5.3	—	—	—	—		
		194	140	165	116.7	16	33	11	20	50.7	65.1	25.4	M14	UCFCX12-39		UCX12-39	5.3					—	—	—	—	—	—	—	—	—	—	
	2 1/2	8 1/16	5.7087	6 11/16	4 47/64	3/4	1 13/32	5/8	35/64	2 3/16	2.563	1.000	5/8	UCFC213-40		UC213-40	5.6	57.2	40.1	1.82	14.4	—	—	—	—	—	—	—	—	—	—	
		205	145	170	120.2	19	36	16	14	55.7	65.1	25.4	M16	UCFC213		UC213	5.6					UCFC213C	UCFC213D	60.5	2 3/8	5.6	UCFC213FC	UCFC213FD	73	2 7/8	6.4	
65	2 1/2	7 5/8	5.5118	6 1/2	4 19/32	5/8	1 5/16	7/16	25/32	2 3/16	2.937	1.189	1/2	UCFCX13-40	FCX13	UCX13-40	5.7	62.2	44.1	2.01	14.5	—	—	—	—	—	—	—	—	—	—	
		194	140	165	116.7	16	33	11	20	55.4	74.6	30.2	M14	UCFCX13		UCX13	5.7					UCFCX13C	UCFCX13D	60.5	2 3/8	5.7	—	—	—	—	—	
																					—	—	—	—	—	—	—	—	—	—		
	2 3/4	8 15/32	5.9055	6 31/32	4 59/64	3/4	1 9/16	43/64	35/64	2 13/32	2.937	1.189	5/8	UCFC214-44		UC214-44	6.8	62.2	44.1	2.01	14.5	—	—	—	—	—	—	—	—	—	—	
70		215	150	177	125.1	19	40	17	14	61.4	74.6	30.2	M16	UCFC214	UC214	6.8					UCFC214C	UCFC214D	66.5	2 5/8	6.8	UCFC214FC	UCFC214FD	79	3 1/8	7.7		
	2 3/4	8 3/4	6.4567	7 31/64	5 9/32	3/4	1 13/32	35/64	25/32	2 5/16	3.063	1.331	5/8	UCFCX14-44	FCX14	UCX14-44	7.3	67.4	48.3	2.17	14.5	—	—	—	—	—	—	—	—	—	—	
		222	164	190	134.3	19	36	14	20	58.5	77.8	33.3	M16	UCFCX14		UCX14	7.3					UCFCX14C	UCFCX14D	63.5	2 1/2	7.3	—	—	—	—	—	
																						—	—	—	—	—	—	—	—	—	—	
75	2 15/16	8 21/32	6.2992	7 1/4	5 1/8	3/4	1 9/16	45/64	5/8	2 15/32	3.063	1.331	5/8	UCFC215-47		FC215	UC215-47	7.2	67.4	48.3	2.17	14.5	—	—	—	—	—	—	—	—	—	—
	3	220	160	184	130.1	19	40	18	16	62.5	77.8	33.3	M16	UCFC215	UC215		7.2					UCFC215C	UCFC215D	67.5	2 21/32	7.2	UCFC215FC	UCFC215FD	80	3 5/32	8.2	
																						—	—	—	—	—	—	—	—	—	—	
	2 15/16	8 3/4	6.4567	7 31/64	5 9/32	3/4	1 3/8	15/32	55/64	2 13/32	3.252	1.311	5/8	UCFCX15-47	FCX15		UCX15-47	8.0	72.7	53.0	2.30	14.6	—	—	—	—	—	—	—	—	—	—
	222	164	190	134.3	19	35	12	22	61.3	82.6	33.3	M16	UCFCX15	UCX15		8.0					UCFCX15C	UCFCX15D	66.5	2 5/8	8.0	—	—	—	—	—	—	
																					—	—	—	—	—	—	—	—	—	—		
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	3/4	UCFC216-50	FC216	UC216-50	8.7	72.7	53.0	2.30	14.6	—	—	—	—	—	—	—	—	—	—	
		240	170	200	141.4	23	42	18	16	67.3	82.6	33.3	M20	UCFC216		UC216	8.7					UCFC216C	UCFC216D	72.5	2 27/32	8.7	UCFC216FC	UCFC216FD	87	3 7/16	9.9	
	—	10 1/4	7.3228	8 5/8	6 3/32	29/32	1 13/32	25/64	63/64	2 7/16	3.374	1.343	3/4	UCFCX16		FCX16	UCX16	11.3	84.0	61.9	2.60	14.5	—	—	—	—	—	—	—	—	—	—
		260	186	219	154.8	23	36	10	25	61.6	85.7	34.1	M20										UCFCX16C	UCFCX16D	66.5	2 5/8	11.3	—	—	—	—	—
85	3 1/4	9 27/32	7.0866	8 3/16	5 51/64	29/32	1 25/32	45/64	45/64	2 3/4	3.374	1.343	3/4	UCFC217-52	FC217		UC217-52	10.3	84.0	61.9	2.60	14.5	—	—	—	—	—	—	—	—	—	—
		250	180	208	147.1	23	45	18	18	69.6	85.7	34.1	M20	UCFC217			UC217	10.3					UCFC217C	UCFC217D	74.5	2 15/16	10.3	UCFC217FC	UCFC217FD	89	3 1/2	11.7
		10 1/4	7.3228	8 5/8	6 3/32	29/32	1 13/32	25/64	63/64	2 5/8	3.780	1.563	3/4	UCFCX17		UCX17	12.9	96.1	71.5	2.91	14.5	UCFCX17C	UCFCX17D	71.5	2 13/16	12.9	—	—	—	—	—	
	3 7/16	260	186	219	154.8	23	36	10	25	66.3	96	39.7	M20	UCFCX17-55		UCX17-55	12.9					—	—	—	—	—	—	—	—	—	—	
90	3 1/2	10 7/16	7.4803	8 21/32	6 1/8	29/32	1 31/32	55/64	45/64	3 3/32	3.780	1.563	3/4	UCFC218-56	FC218	UC218-56	13.3	96.1	71.5	2.91	14.5	—	—	—	—	—	—	—	—	—	—	
		265	190	220	155.5	23	50	22	18	78.3	96	39.7	M20	UCFC218		UC218	13.3					UCFC218C	UCFC218D	83.5	3 9/32	13.3	UCFC218FC	UCFC218FD	98	3 27/32	14.8	
		10 1/4	7.3228	8 5/8	6 3/32	29/32	1 11/16	15/32	1 7/64	2 7/8	4.094	1.689	3/4	UCFCX18		FCX18	UCX18	13.5	109	81.9	3.23	14.4	—	—	—	—	—	—	—	—	—	—
	—	260	186	219	154.8	23	43	12	28	73.1	104	42.9	M20										UCFCX18C	UCFCX18C	92	3 5/8	15.4	—	—	—	—	—
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	3/4	UCFCX20	FCX20		UCX20	18.2	133	105	3.91	14.4	—	—	—	—	—	—	—	—	—	
		276	206	238	168.3	23	66	22	28	90.3	117.5	49.2	M20	UCFCX20-63			UCX20-63	18.2					—	—	—	—	—	—	—	—	—	—
														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 2.5 in P.11.)

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

A-1/4-28

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



Shaft Dia. mm inch		Dimensions inch mm											Bolt Size inch mm	Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN		Fatigue Load Limit kN	Factor f ₀	Mass kg
d		L	H ₃	J	J ₁	N	A ₁	A ₂	A ₃	A ₄	B	S						C _r	C _{0r}	C _u		
25	1	4 3/8	3.000	3 5/8	2 9/16	3/8	15/16	25/64	15/64	1 9/32	1.500	0.626	5/16	UCFCX05E	FCX05E	UCX05		19.5	11.3	0.514	13.9	1.2
		111	76.2	92	65	9.5	24	10	6	32.2	38.1	15.9	M8	UCFCX05-16E		UCX05-16						
30	1 3/16 1 1/4	5	3.375	4 9/64	2 59/64	15/32	7/8	5/16	3/8	1 5/16	1.689	0.689	3/8	UCFCX06E	FCX06E	UCX06		25.7	15.4	0.700	13.9	1.5
		127	85.725	105	74.2	12	22.5	8	9.5	33.4	42.9	17.5	M10	UCFCX06-19E		UCX06-19						
35	1 3/8 1 7/16	5 1/4	3.625	4 3/8	3 3/32	15/32	1 1/32	23/64	7/16	1 17/32	1.937	0.748	3/8	UCFCX07-22E	FCX07E	UCX07-22		29.1	17.8	0.809	14.0	1.9
		133	92.075	111	78.5	12	26	9	11	39.2	49.2	19	M10	UCFCX07E		UCX07						
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	0.968	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	1.06	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 2	6 3/8	4.5	5 23/64	3 25/32	35/64	31/32	9/32	5/8	1 19/32	2.189	0.874	7/16	UCFCX10-31E	FCX10E	UCX10-31		43.4	29.4	1.34	14.4	3.2
		162	114.3	136	96.2	14	25	7	16	40.4	55.6	22.2	M12	UCFCX10E		UCX10						
60	2 7/16	7 5/8	5.500	6 1/2	4 19/32	5/8	1 5/16	7/16	25/32	2	2.563	1.000	1/2	UCFCX12E	FCX12E	UCX12		57.2	40.1	1.82	14.4	5.3
		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	2.01	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	2.17	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 3	8 3/4	6.375	7 31/64	5 9/32	3/4	1 3/8	15/32	55/64	2 13/32	3.252	1.311	5/8	UCFCX15-47E	FCX15E	UCX15-47		72.7	53.0	2.30	14.6	8.0
		222	161.925	190	134.3	19	35	12	22	61.3	82.6	33.3	M16	UCFCX15E		UCX15						
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	2.60	14.5	11.3
		260	187.325	219	154.8	23	36	10	25	61.6	85.7	34.1	M20									
85	3 7/16	10 1/4	7.375	8 5/8	6 3/32	29/32	1 13/32	25/64	63/64	2 5/8	3.780	1.563	3/4	UCFCX17E	FCX17E	UCX17		96.1	71.5	2.91	14.5	12.9
		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	3.23	14.4	13.5
		260	187.325	219	154.8	23	43	12	28	73.1	104	42.9	M20									
100	3 15/16 4	10 7/8	8.125	9 3/8	6 5/8	29/32	2 19/32	55/64	1 7/64	3 9/16	4.626	1.937	3/4	UCFCX20E	FCX20E	UCX20		133	105	3.91	14.4	18.2
		276	206.375	238	168.3	23	66	22	28	90.3	117.5	49.2	M20	UCFCX20-63E		UCX20-63						
														UCFCX20-64E		UCX20-64						

Remarks 1. In Part No. of unit, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF X05~X09
A-R1/8 X10~X20

3. As for the triple-lip seal type product, supplementary code L3 follows the Part No. of unit or bearing.
(Example of Part No. : UCFCX06EL3, UCX06L3)
4. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of spheroidal graphite iron casting are also available.

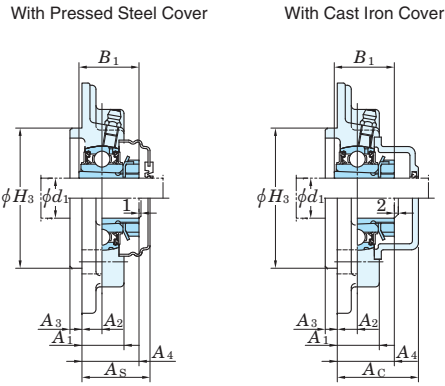
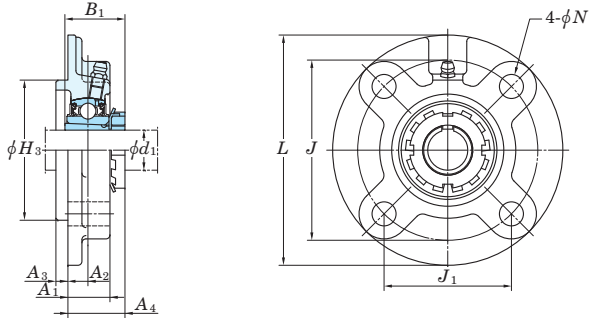
Variations of tolerance of spigot joint outside diameter (ΔH_{3s}), variations of tolerance of distance from mounting surface to center of spherical bore (ΔA_{2s}), tolerance of position of bolt hole (X), and tolerance of circumferential runout of spigot joint (Y)

Unit: mm				
Housing No.	ΔH_{3s}	ΔA_{2s}	X	Y
FCX05E	0 -0.046	±0.5	0.7	0.2
FCX06E-FCX10E	0 -0.054			
FCX12E-FCX15E	0 -0.063	±0.8	1	0.3
FCX16E-FCX18E	0 -0.072			
FCX20E				

Variations of tolerance of bolt hole diameter (ΔN_s)

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

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



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

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

Variations of tolerance of bolt hole diameter (ΔN_b)

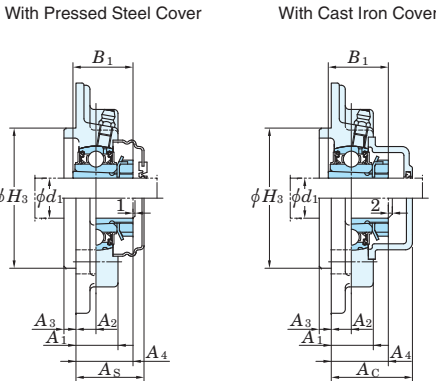
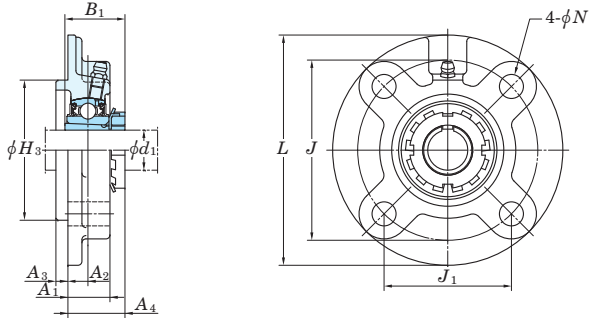
Housing No.	ΔN_b
FC204~FC218 FCX05~FCX20	±0.2

Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard Unit No.	Housing No.	Bearing No.		Adapter Assembly No.	Mass kg	Basic Load Ratings kN C _r C _{0r}	Fatigue Load Limit kN C _u	Factor f ₀	With Pressed Steel Cover			With Cast Iron Cover		
d ₁		L	H ₃	J	J ₁	N	A ₁	A ₂	A ₃	A ₄	B ₁											Unit No. Open End Type Closed End Type	Dimension mm inch A _s	Mass kg	Unit No. Open End Type Closed End Type	Dimension mm inch A _c	Mass kg
20	3/4	4 17/32	2.7559	3 35/64	2 1/2	15/32	13/16	25/64	15/64	1 3/16	1 3/8	3/8	UKFC205	FC205	UK205		HE2305X H2305X	0.99 0.99	14.0 7.85	0.357	13.9	— UKFC205C UKFC205D	— 34.5 1 11/32	— 0.99	— UKFC205FC UKFC205FD	— 43 1 21/32	— 1.2
	3/4	4 3/8	2.9921	3 5/8	2 9/16	3/8	15/16	25/64	15/64	1 5/32	1 3/8	5/16	UKFCX05	FCX05	UKX05		HE2305X H2305X	1.2 1.2	19.5 11.3	0.514	13.9	— UKFCX05C UKFCX05D	— 36.5 1 7/16	— 1.2	— UKFC206C UKFC206D	— 45 1 25/32	— 1.6
	1	4 29/32	3.1496	3 15/16	2 25/32	15/32	29/32	25/64	5/16	1 1/4	1 1/2	3/8	UKFC206	FC206	UK206		H2306X HE2306X	1.3 1.3	19.5 11.3	0.514	13.9	— UKFC206C UKFC206D	— 36.5 1 7/16	— 1.3	— UKFC206FC UKFC206FD	— 45 1 25/32	— 1.6
25	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 HE2306X	1.5 1.5	25.7 15.4	0.700	13.9	— UKFCX06C UKFCX06D	— 38 1 1/2	— 1.5	— —	— —	— —
	1	127	85	105	74.2	12	22.5	8	9.5	29	38	M10															
30	1 1/8	5 5/16	3.5433	4 21/64	3 1/16	35/64	1 1/32	7/16	5/16	1 3/8	1 11/16	7/16	UKFC207	FC207	UK207		HS2307X H2307X	1.7 1.7	25.7 15.4	0.700	13.9	— UKFC207C UKFC207D	— 41 1 5/8	— 1.7	— UKFC207FC UKFC207FD	— 50 1 31/32	— 2.1
	1 1/8	135	90	110	77.8	14	26	11	8	35	43	M12															
	1 1/8	133	92	111	78.5	12	26	9	11	31.5	43	M10	UKFCX07	FCX07	UKX07		HS2307X H2307X	1.9 1.9	29.1 17.8	0.809	14.0	— UKFCX07C UKFCX07D	— 43.5 1 23/32	— 1.9	— —	— —	— —
35	1 1/4	5 23/32	3.9370	4 23/32	3 11/32	35/64	1 1/32	7/16	25/64	1 1/2	1 13/16	7/16	UKFC208	FC208	UK208		HE2308X HS2308X H2308X	2.0 2.0 2.0	29.1 17.8	0.809	14.0	— UKFC208C UKFC208D	— 45.5 1 25/32	— 2.0	— UKFC208FC UKFC208FD	— 54 2 1/8	— 2.4
	1 3/8	145	100	120	84.8	14	26	11	10	38	46	M12															
	1 1/4	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 HS2308X H2308X	1.9 1.9 1.9	34.1 21.3	0.968	14.0	— UKFCX08C UKFCX08D	— 43.5 1 23/32	— 1.9	— —	— —	— —
40	1 1/2	6 5/16	4.1339	5 13/64	3 43/64	5/8	1 1/32	25/64	15/32	1 17/32	1 31/32	1/2	UKFC209	FC209	UK209		HE2309X H2309X	2.7 2.7	34.1 21.3	0.968	14.0	— UKFC209C UKFC209D	— 44.5 1 3/4	— 2.7	— UKFC209FC UKFC209FD	— 54 2 1/8	— 3.2
	1 1/2	160	105	132	93.3	16	26	10	12	39	50	M14															
	1 1/2	155	108	130	91.9	14	25	8	12	33.5	50	M12	UKFCX09	FCX09	UKX09		HE2309X H2309X	2.6 2.6	35.1 23.3	1.06	14.4	— UKFCX09C UKFCX09D	— 45 1 25/32	— 2.6	— —	— —	— —
45	1 3/4	6 1/2	4.3307	5 7/16	3 27/32	5/8	1 3/32	25/64	15/32	1 9/16	2 5/32	1/2	UKFC210	FC210	UK210		HE2310X H2310X	3.0 3.0	35.1 23.3	1.06	14.4	— UKFC210C UKFC210D	— 47 1 27/32	— 3.0	— UKFC210FC UKFC210FD	— 58.5 2 5/16	— 3.5
	1 3/4	165	110	138	97.6	16	28	10	12	40	55	M14															
	1 3/4	162	118	136	96.2	14	25	7	16	34.5	55	M12	UKFCX10	FCX10	UKX10		HE2310X H2310X	3.1 3.1	43.4 29.4	1.34	14.4	— UKFCX10C UKFCX10D	— 45 1 25/32	— 3.1	— —	— —	— —
50	1 7/8	7 9/32	4.9213	5 29/32	4 11/64	3/4	1 7/32	33/64	15/32	1 25/32	2 5/16	5/8	UKFC211	FC211	UK211		HS2311X H2311X HE2311X	4.3 4.3 4.3	43.4 29.4	1.34	14.4	— UKFC211C UKFC211D	— 51 2	— 4.3	— UKFC211FC UKFC211FD	— 62.5 2 15/32	— 4.9
	2	185	125	150	106.1	19	31	13	12	45.5	59	M16															
	1 7/8	7 3/32	5	5 63/64	4 15/64	5/8	1 1/32	5/32	55/64	1 5/16	2 5/16	1/2	UKFCX11	FCX11	UKX11		HS2311X H2311X HE2311X	4.0 4.0 4.0	52.4 36.2	1.65	14.4	— UKFCX11C UKFCX11D	— 48.5 1 29/32	— 4.0	— —	— —	— —
55	2 1/8	7 11/16	5.3150	6 19/64	4 29/64	3/4	1 13/32	43/64	15/32	2 3/32	2 7/16	5/8	UKFC212	FC212	UK212		HS2312X H2312X	4.9 4.9	52.4 36.2	1.65	14.4	— UKFC212C UKFC212D	— 61.5 2 13/32	— 4.9	— UKFC212FC UKFC212FD	— 74 2 29/32	— 5.7
	2 1/8	195	135	160	113.1	19	36	17	12	53.5	62	M16															
	2 1/8	194	140	165	116.7	16	33	11	20	42	62	M14	UKFCX12	FCX12	UKX12		HS2312X H2312X	5.1 5.1	57.2 40.1	1.82	14.4	— UKFCX12C UKFCX12D	— 55.5 2 3/16	— 5.1	— —	— —	— —
60	2 1/4	8 1/16	5.7087	6 11/16	4 47/64	3/4	1 13/32	5/8	35/64	2 3/32	2 9/16	5/8	UKFC213	FC213	UK213		HE2313X H2313X HS2313X	5.5 5.5 5.5	57.2 40.1	1.82	14.4	— UKFC213C UKFC213D	— 60.5 2 3/8	— 5.5	— UKFC213FC UKFC213FD	— 73 2 7/8	— 6.4
	2 3/8	205	145	170	120.2	19	36	16	14	53.5	65	M16															
	2 1/4	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 H2313X HS2313X	5.3 5.3 5.3	62.2 44.1	2.01	14.5	— UKFCX13C UKFCX13D	— 60.5 2 3/8	— 5.3	— —	— —	— —
65	2 1/2	8 21/32	6.2992	7 1/4	5 1/8	3/4	1 9/16	45/64	5/8	2 5/16	2 7/8	5/8	UKFC215	FC215	UK215		HE2315X H2315X	7.4 7.4	67.4 48.3	2.17	14.5	— UKFC215C UKFC215D	— 67.5 2 21/32	— 7.4	— UKFC215FC UKFC215FD	— 80 3 5/32	— 8.4
	2 1/2	220	160	184	130.1	19	40	18	16	58.5	73	M16															
	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 H2315X	7.7 7.7	72.7 53.0	2.30	14.6	— UKFCX15C UKFCX15D	— 66.5 2 5/8	— 7.7	— —	— —	— —

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF..... 205~210, X05~X09
A-R1/8..... 211~218, X10~X20

3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables.
(Example of Part No. : UKFC206J + H2306X, UK206 + H2306X)
4. As for the triple-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.
6. Housings of spheroidal graphite iron casting are also available.

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



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

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

Unit: mm

Variations of tolerance of bolt hole diameter (ΔN_s)

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

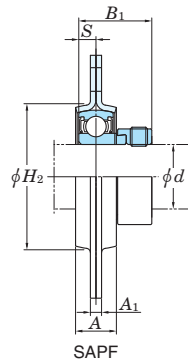
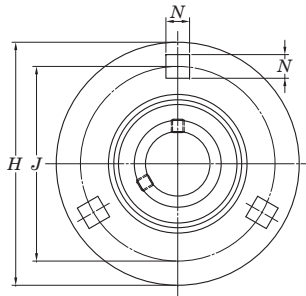
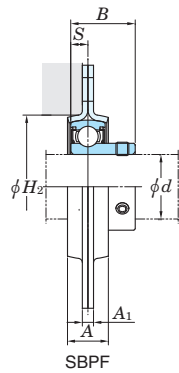
Unit: mm

Shaft Dia. mm inch		Dimensions inch mm										Bolt Size inch mm	Standard				Adapter Assembly No.	Mass kg	Basic Load Ratings kN		Fatigue Load Limit kN	Factor <i>f</i> ₀	With Pressed Steel Cover				With Cast Iron Cover			
													Unit No.	Housing No.	Bearing No.				<i>C</i> _r	<i>C</i> _{0r}			<i>C</i> _u	Unit No.		Dimension mm inch	Mass kg	Unit No.		Dimension mm inch
Open End Type	Closed End Type	<i>A</i> _s	Open End Type	Closed End Type	<i>A</i> _c																									
<i>d</i> ₁	<i>L</i>	<i>H</i> ₃	<i>J</i>	<i>J</i> ₁	<i>N</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₃	<i>A</i> ₄	<i>B</i> ₁		UKFC216		UK216		HE2316X H2316X	9.0 9.0	72.7 53.0	2.30	14.6	— UKFC216C	— UKFC216D	— 72.5 2 ²⁷ / ₃₂	— 9.0	UKFC216FC	UKFC216FD	— 87 3 ⁷ / ₁₆	— 10.3		
70	2 ³ / ₄	9 ⁷ / ₁₆ 240	6.6929 170	7 ⁷ / ₈ 200	5 ⁹ / ₁₆ 141.4	29/32 23	1 ³¹ / ₃₂ 42	45/64 18	5/8 16	2 ¹⁵ / ₃₂ 62.5	3 ¹ / ₁₆ 78	3/4 M20	UKFC216	FC216	UK216		HE2316X H2316X	9.0 9.0	72.7 53.0	2.30	14.6	— UKFC216C	— UKFC216D	— 72.5 2 ²⁷ / ₃₂	— 9.0	UKFC216FC	UKFC216FD	— 87 3 ⁷ / ₁₆	— 10.3	
	2 ³ / ₄	10 ¹ / ₄ 260	7.3228 186	8 ⁵ / ₈ 219	6 ³ / ₃₂ 154.8	29/32 23	1 ¹³ / ₃₂ 36	25/64 10	63/64 25	1 ¹⁵ / ₁₆ 49	3 ¹ / ₁₆ 78	3/4 M20	UKFCX16	FCX16	UKX16		HE2316X H2316X	11.4 11.4	84.0 61.9	2.60	14.5	— UKFCX16C	— UKFCX16D	— 66.5 2 ⁵ / ₈	— 11.4	— —	— —	— —	— —	
	75	3	9 ²⁷ / ₃₂ 250	7.0866 180	8 ³ / ₁₆ 208	5 ⁵¹ / ₆₄ 147.1	29/32 23	1 ²⁵ / ₃₂ 45	45/64 18	45/64 18	3 ¹⁷ / ₃₂ 64.5	3 ⁷ / ₃₂ 82	3/4 M20	UKFC217	FC217	UK217		H2317X HE2317X	10.4 10.4	84.0 61.9	2.60	14.5	UKFC217C	UKFC217D	74.5 2 ¹⁵ / ₁₆	10.4	UKFC217FC	UKFC217FD	89 3 ¹ / ₂	11.8
3		10 ¹ / ₄ 260	7.3228 186	8 ⁵ / ₈ 219	6 ³ / ₃₂ 154.8	29/32 23	1 ¹³ / ₃₂ 36	25/64 10	63/64 25	2 ¹ / ₁₆ 52	3 ⁷ / ₃₂ 82	3/4 M20	UKFCX17	FCX17	UKX17		H2317X HE2317X	12.6 12.6	96.1 71.5	2.91	14.5	UKFCX17C —	UKFCX17D —	71.5 2 ¹³ / ₁₆ —	12.6 —	— —	— —	— —	— —	
		—	10 ⁷ / ₁₆ 265	7.4803 190	8 ²¹ / ₃₂ 220	6 ¹ / ₈ 155.5	29/32 23	1 ³¹ / ₃₂ 50	55/64 22	45/64 18	2 ¹³ / ₁₆ 71.5	3 ³ / ₈ 86	3/4 M20	UKFC218	FC218	UK218		H2318X	13.3	96.1 71.5	2.91	14.5	UKFC218C	UKFC218D	83.5 3 ⁹ / ₃₂	13.3	UKFC218FC	UKFC218FD	98 3 ²⁷ / ₃₂	14.9
80	—	10 ¹ / ₄ 260	7.3228 186	8 ⁵ / ₈ 219	6 ³ / ₃₂ 154.8	29/32 23	1 ¹¹ / ₁₆ 43	15/32 12	1 ⁷ / ₆₄ 28	2 ⁵ / ₃₂ 55	3 ³ / ₈ 86	3/4 M20	UKFCX18	FCX18	UKX18		H2318X	13.0	109 81.9	3.23	14.4	—	—	—	—	UKFCX18C	UKFCX18D	92 3 ⁵ / ₈	15.1	
	3 ¹ / ₂	10 ⁷ / ₈ 276	8.1102 206	9 ³ / ₈ 238	6 ⁵ / ₈ 168.3	29/32 23	2 ¹⁹ / ₃₂ 66	55/64 22	1 ⁷ / ₆₄ 28	2 ²³ / ₃₂ 69	3 ¹³ / ₁₆ 97	3/4 M20	UKFCX20	FCX20	UKX20		HE2320X H2320X	17.1 17.1	133 105	3.91	14.4	— —	— —	— —	— —	UKFCX20C	UKFCX20D	116 4 ⁹ / ₁₆	19.9	

- Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
- A-1/4-28UNF 205~210, X05~X09
- A-R1/8 211~218, X10~X20
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables.
- (Example of Part No. : UKFC206J + H2306X, UK206 + H2306X)
4. As for the triple-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.
6. Housings of spheroidal graphite iron casting are also available.

SBPF
Cylindrical bore
(with set screws)
d 12 ~ 35 mm

SAPF
Cylindrical bore
(with eccentric locking collar)



Variations of tolerance of distance between centers of bolt holes (ΔJ_b)

Unit: mm

Housing No.	ΔJ_b
PF203~PF207	±0.4

Variations of tolerance of bolt hole diameter (ΔN_b)

Unit: mm

Housing No.	ΔN_b
PF203~PF207	±0.25

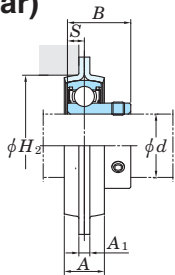
Shaft Dia mm inch		Dimensions inch mm									Bolt Size inch mm	Unit No.	Bearing No.		Unit No.	Bearing No.	Housing No.	Basic Load Ratings		Fatigue Load Limit	Factor	Mass	
		<i>H</i>	<i>A</i>	<i>A</i> ₁	<i>J</i>	<i>N</i>	<i>H</i> ₂	<i>S</i>	SBPF <i>B</i>	SAPF <i>B</i> ₁								<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _u	<i>f</i> ₀	SBPF	SAPF
<i>d</i>																							
12	1/2 5/8	3 3/16	9/16	5/32	2 1/2	9/32	1 15/16	0.236	0.866	1.122	1/4 M6	SBPF201 SBPF201-8 SBPF202 SBPF202-10 SBPF203	SB201 SB201-8 SB202 SB202-10 SB203		SAPF201 SAPF201-8 SAPF202 SAPF202-10 SAPF203	SA201 SA201-8 SA202 SA202-10 SA203	PF203	9.55 4.80	0.218	13.2	0.27 0.3		
15																							
17																							
20	3/4	3 17/32	5/8	5/32	2 13/16	23/64	2 5/32	0.276	0.984	1.161	5/16 M8	SBPF204-12 SBPF204	SB204-12 SB204		SAPF204-12 SAPF204	SA204-12 SA204	PF204	12.8 6.65	0.302	13.2	0.33 0.33		
25	7/8 15/16 1	3 3/4	23/32	5/32	2 63/64	23/64	2 3/8	0.295	1.063	1.201	5/16 M8	SBPF205-14 SBPF205-15 SBPF205 SBPF205-16	SB205-14 SB205-15 SB205 SB205-16		SAPF205-14 SAPF205-15 SAPF205 SAPF205-16	SA205-14 SA205-15 SA205 SA205-16	PF205	14.0 7.85	0.357	13.9	0.38 0.42		
30	1 1/8 1 3/16 1 1/4	4 7/16	3/4	13/64	3 9/16	7/16	2 25/32	0.315	1.181	1.335	3/8 M10	SBPF206-18 SBPF206 SBPF206-19 SBPF206-20 SBPF207-20	SB206-18 SB206 SB206-19 SB206-20 SB207-20		SAPF206-18 SAPF206 SAPF206-19 SAPF206-20	SA206-18 SA206 SA206-19 SA206-20	PF206	19.5 11.3	0.514	13.9	0.62 0.65		
35	1 1/4 1 5/16 1 3/8 1 7/16	4 13/16	7/8	13/64	3 15/16	7/16	3 3/16	0.335	1.260	1.437	3/8 M10	SBPF207-22 SBPF207 SBPF207-23	SB207-22 SB207 SB207-23		SAPF207-20 SAPF207-21 SAPF207-22 SAPF207 SAPF207-23	SA207-20 SA207-21 SA207-22 SA207 SA207-23	PF207	25.7 15.4	0.700	13.9	0.82 0.9		

Note 1) *H*₂ is the minimum size of the mounting hole.

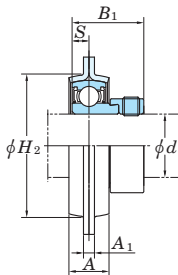
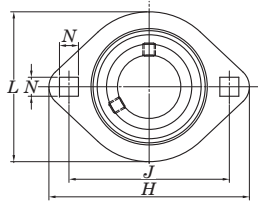
Remark For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

SBPFL
Cylindrical bore
(with set screws)
d 12 ~ 35 mm

SAPFL
Cylindrical bore
(with eccentric locking collar)



SBPFL



SAPFL

Variations of tolerance of distance between centers of bolt holes (ΔJ_b)

Housing No.	ΔJ_b
PFL203~PFL207	± 0.4

Variations of tolerance of bolt hole diameter (ΔN_b)

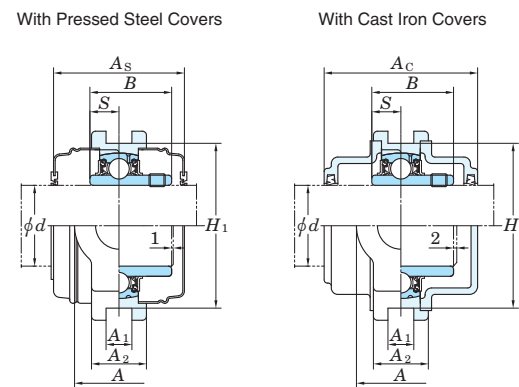
Housing No.	ΔN_b
PFL203~PFL207	± 0.25

Shaft Dia		Dimensions										Bolt Size	Unit No.	Bearing No.		Unit No.	Bearing No.	Housing No.	Basic Load Ratings		Fatigue Load Limit	Factor	Mass		
mm	inch	inch										inch	mm							kN		kN		kg	
<i>d</i>		<i>H</i>	<i>L</i>	<i>A</i>	<i>A</i> ₁	<i>J</i>	<i>N</i>	<i>H</i> ₂	<i>S</i>	SBPFL <i>B</i>	SAPFL <i>B</i> ₁									<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _u	<i>f</i> ₀	SBPFL	SAPFL
12																									
15	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	PFL203	9.55	4.80	0.218	13.2	0.19	0.22	
		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
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	2 5/32	0.276	0.984	1.161	5/16	SBPFL204-12	SB204-12		SAPFL204-12	SA204-12	PFL204	12.8	6.65	0.302	13.2	0.24	0.24	
		90	67	16	4	71.5	9	55	7	25	29.5	M8	SBPFL204	SB204		SAPFL204	SA204								
25	7/8	3 3/4	2 25/32	23/32	5/32	2 63/64	23/64	2 3/8	0.295	1.063	1.201	5/16	SBPFL205-14	SB205-14		SAPFL205-14	SA205-14	PFL205	14.0	7.85	0.357	13.9	0.28	0.32	
	15/16												SBPFL205-15	SB205-15		SAPFL205-15	SA205-15								
													SBPFL205	SB205		SAPFL205	SA205								
	1												SBPFL205-16	SB205-16		SAPFL205-16	SA205-16								
30	1 1/8	4 7/16	3 5/16	3/4	13/64	3 9/16	7/16	2 25/32	0.315	1.181	1.335	3/8	SBPFL206-18	SB206-18		SAPFL206-18	SA206-18	PFL206	19.5	11.3	0.514	13.9	0.38	0.41	
	1 3/16	113	84	19	5.2	90.5	11	71	8	30	33.9	M10	SBPFL206	SB206		SAPFL206	SA206								
													SBPFL206-19	SB206-19		SAPFL206-19	SA206-19								
	1 1/4												SBPFL206-20	SB206-20		SAPFL206-20	SA206-20								
35	1 1/4	4 13/16	3 11/16	7/8	13/64	3 15/16	7/16	3 3/16	0.335	1.260	1.437	3/8	SBPFL207-20	SB207-20		SAPFL207-20	SA207-20	PFL207	25.7	15.4	0.700	13.9	0.66	0.74	
	1 5/16	122	94	22	5.2	100	11	81	8.5	32	36.5	M10	SBPFL207-22	SB207-22		SAPFL207-22	SA207-22								
	1 3/8												SBPFL207	SB207		SAPFL207	SA207								
													SBPFL207-23	SB207-23		SAPFL207-23	SA207-23								
	1 7/16																								

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.

Figure 1 consists of two technical drawings of mechanical parts with various dimensions labeled. The left drawing shows a cross-section of a component with dimensions B , S , H_1 , H , A_1 , A_2 , and A . The right drawing shows a cross-section of a component with dimensions L_1 , L_2 , L_3 , L , N_1 , N_2 , and H_2 .

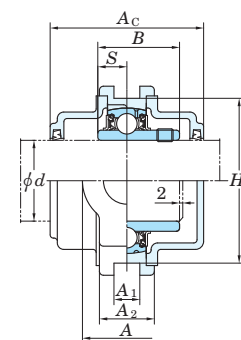
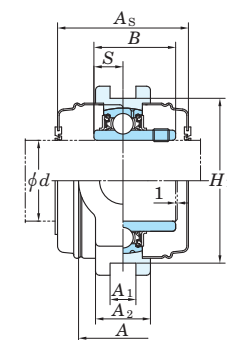
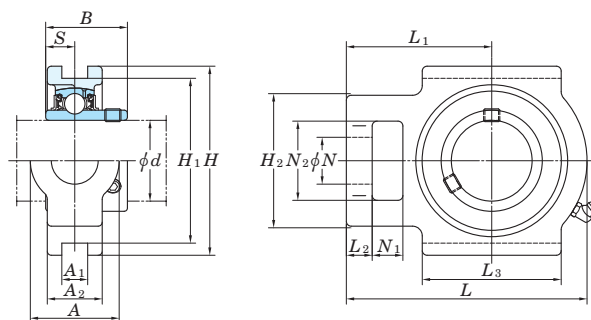


Housing No.			Δ_{A1s}	Δ_{H1s}	X
T204~T210	TX05~TX10	T305~T310	+0.2 0	0 -0.5	0.5
T211~T217	TX11~TX17	T311~T318 T319~T322 T324~T328	+0.3 0	0 -0.8	0.6 0.7 0.8

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

[illegible]

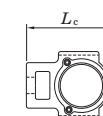
5. Housings of spheroidal graphite iron casting are also available.

$d \text{ (45) } \sim \text{ (75) mm}$ 

Unit: mm

Housing No.			Δ_{A1s}	Δ_{H1s}	X
T204~T210	TX05~TX10	T305~T310	+0.2	0 -0.5	0.5
T211~T217	TX11~TX17	T311~T318	+0.3	0	0.6
		T319~T322	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

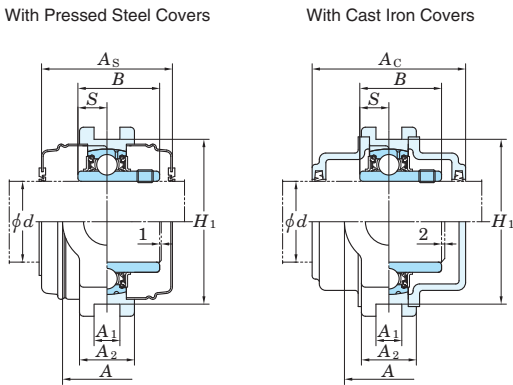
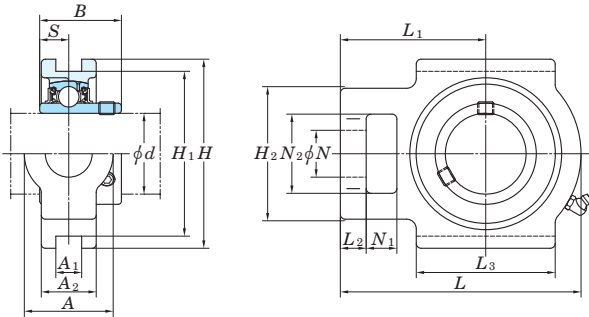
Shaft Dia.		Dimensions															Standard				Basic		Fatigue	Factor	With Pressed Steel Covers				With Cast Iron Covers				
mm	inch	inch mm															Unit No.	Housing No.		Bearing No.	Mass	Load Ratings kN		Load Limit kN		Unit No.		Dimension mm	Mass	Unit No.		Dimension mm	Mass
d		A	A ₁	A ₂	H	H ₁	H ₂	L	L ₁	L ₂	L ₃	N	N ₁	N ₂	B	S				C _r	C _{0r}	C _u	f ₀	Open Ends Type	Closed End Type	A _s	kg	Open Ends Type	Closed End Type	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 UCT309	T309		UC309-28 UC309	4.1 4.1	48.9	29.5	1.34	13.3	— —	— —	— —	— —	— —	— —	— —	— —
	1 7/8	1 15/16	5/8	1 15/32	4 19/32	4 1/64	3 9/32	5 7/8	3 17/32	5/8	3 3/8	1 5/32	3/4	1 15/16	2.031	0.748	UCT210-30 UCT210-31 UCT210 UCT210-32	T210		UC210-30 UC210-31 UC210 UC210-32	2.6 2.6 2.6 2.6	35.1	23.3	1.06	14.4	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —		
50	2	2 17/32	55/64	1 21/32	5 3/4	5 1/8	4 1/32	6 23/32	4 3/16	3/4	3 3/4	1 3/8	31/32	2 17/32	2.189	0.874	UCTX10-31 UCTX10 UCTX10-32	TX10		UCX10-31 UCX10 UCX10-32	4.4 4.4 4.4	43.4	29.4	1.34	14.4	— — —	— — —	— — —	— — —	— — —	— — —		
	1 15/16	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	1.74	13.2	— —	— —	— —	— —	— —	— —	— —	
55	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	UCT211-32 UCT211-34 UCT211 UCT211-35	T211		UC211-32 UC211-34 UC211 UC211-35	4.0 4.0 4.0 4.0	43.4	29.4	1.34	14.4	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —		
	2 3/16	2 17/32	55/64	1 23/32	5 3/4	5 1/8	4 1/32	7 5/8	4 11/16	3/4	4 1/32	1 3/8	1 1/4	2 17/32	2.563	1.000	UCTX11 UCTX11-35 UCTX11-36	TX11		UCX11 UCX11-35 UCX11-36	5.3 5.3 5.3	52.4	36.2	1.65	14.4	— — —	— — —	— — —	— — —	— — —	— — —		
60	2 1/4	2 19/32	55/64	1 23/32	6 13/32	5 29/32	4 1/8	8 5/32	5	13/16	4 17/32	1 17/32	1 5/32	2 19/32	2.598	0.984	UCT311-32 UCT311	T311		UC311-32 UC311	6.1 6.1	71.6	45.0	2.05	13.2	— —	— —	— —	— —	— —	— —	— —	
	2 3/8	2 17/32	55/64	1 21/32	5 3/4	5 1/8	4 1/32	7 5/8	4 11/16	3/4	4 1/32	1 3/8	1 1/4	2 17/32	2.563	1.000	UCT212-36 UCT212 UCT212-38 UCT212-39	T212		UC212-36 UC212 UC212-38 UC212-39	4.9 4.9 4.9 4.9	52.4	36.2	1.65	14.4	— — — —	— — — —	— — — —	— — — —	— — — —	— — — —		
65	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	2.563	1.000	UCTX12 UCTX12-39	TX12		UCX12 UCX12-39	7.4 7.4	57.2	40.1	1.82	14.4	— —	— —	— —	— —	— —	— —	— —	
	2 7/16	2 25/32	55/64	1 13/16	7	6 19/64	4 7/16	8 21/32	5 5/16	29/32	4 27/32	1 5/8	1 7/32	2 25/32	2.795	1.024	UCT312	T312		UC312	7.6	81.9	52.2	2.37	13.2	— —	— —	— —	— —	— —	— —	— —	
70	2 3/4	2 3/4	1 1/32	1 7/8	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2.563	1.000	UCT213-40 UCT213	T213		UC213-40 UCT213	6.9 6.9	57.2	40.1	1.82	14.4	— —	— —	— —	— —	— —	— —	— —	
	2 1/2	2 3/4	1 1/32	1 7/8	6 9/16	5 15/16	4 3/8	8 13/16	5 13/32	13/16	4 3/4	1 5/8	1 1/4	2 3/4	2.937	1.189	UCTX13-40 UCTX13	TX13		UCX13-40 UCX13	7.6 7.6	62.2	44.1	2.01	14.5	— —	— —	— —	— —	— —	— —	— —	
75	3	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 UCT313	T313		UC313-40 UC313	9.3 9.3	92.7	59.9	2.68	13.2	— —	— —	— —	— —	— —	— —	— —	
	2 15/16	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	UCT214-44 UCT214	T214		UC214-44 UCT214	7.0 7.0	62.2	44.1	2.01	14.5	— —	— —	— —	— —	— —	— —	— —	
80	2 3/4	2 3/4	1 1/32	1 7/8	6 9/16	5 15/16	4 3/8	9 1/8	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.063	1.331	UCTX14-44 UCTX14	TX14		UCX14-44 UCX14	7.9 7.9	67.4	48.3	2.17	14.5	— —	— —	— —	— —	— —	— —	— —	
	2 15/16	3 17/32	1 1/32	2 1/16	7 15/16	7 3/32	5 1/8	9 29/32	6 3/32	31/32	5 1/2	1 13/16	1 13/32	3 11/32	3.071	1.299	UCT314-44 UCT314	T314		UC314-44 UC314	11.1 11.1	104	68.2	2.96	13.2	— —	— —	— —	— —	— —	— —	— —	
85	3 1/8	2 3/4	1 1/32	1 7/8	6 9/16	5 15/16	4 3/8	9 1/8	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.063	1.331	UCT215-47 UCT215 UCT215-48	T215		UC215-47 UCT215 UCT215-48	7.3 7.3 7.3	67.4	48.3	2.17	14.5	— — —	— — —	— — —	— — —	— — —	— — —	— — —	
	3 1/4	2 3/4	1 7/64	1 7/8	7 1/4	6 1/2	4 3/8	9 1/4	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.252	1.311	UCTX15-47 UCTX15 UCTX15-48	TX15		UCX15-47 UCX15 UCTX15-48	8.7 8.7 8.7	72.7	53.0	2.30	14.6	— — —	— — —	— — —	— — —	— — —	— — —	— — —	

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.

5. Housings of spheroidal graphite iron casting are also available.

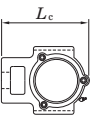
UCT
Cylindrical bore (with set screws)
d (75) ~ 140 mm



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

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

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



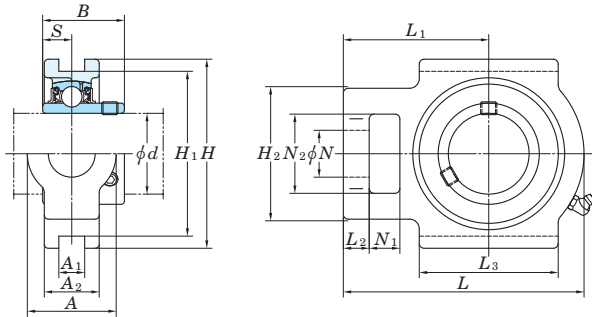
T204JE3 $L_c = 97$ mm
T205JE3 $L_c = 102$ mm

Shaft Dia. mm inch		Dimensions inch mm															Standard			Bearing No.	Mass kg	Basic Load Ratings kN		Fatigue Load Limit kN	Factor	With Pressed Steel Covers				With Cast Iron Covers			
d		A	A ₁	A ₂	H	H ₁	H ₂	L	L ₁	L ₂	L ₃	N	N ₁	N ₂	B	S	Unit No.	Housing No.	C _r			C _{0r}	C _u	f ₀	Unit No.		Dimension mm inch	Mass	Unit No.		Dimension mm inch	Mass	
		Open Ends Type	Closed End Type	A _s	kg	Open Ends Type	Closed End Type	A _c	kg																								
75	2 15/16	3 17/32	1 1/32	2 5/32	8 1/2	7 9/16	5 3/16	10 5/16	6 5/16	31/32	5 29/32	1 13/16	1 13/32	3 11/32	3.228	1.260	UCT315-47 UCT315 UCT315-48	T315	UC315-47 UC315 UC315-48	13.0 13.0 13.0	113	77.2	3.24	13.2	— — —	— — —	— — —	— — —	— — —	— — —	— — —		
	3	90	26	55	216	192	132	262	160	25	150	46	36	85	82	32																	
	3 1/8	2 3/4	1 1/32	2	7 1/4	6 1/2	4 3/8	9 1/4	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.252	1.311	UCT216-50 UCT216	T216	UC216-50 UC216	8.2 8.2	72.7	53.0	2.30	14.6	— — —	— — —	— — —	— — —	— — —	— — —	— — —		
80	—	2 7/8	1 7/64	2 1/8	7 25/32	6 13/16	4 7/8	10 1/4	6 3/8	1 3/32	6 3/16	1 7/8	1 1/2	2 7/8	3.374	1.343	UCTX16	TX16	UCX16	11.7	84.0	61.9	2.60	14.5	— — —	— — —	— — —	— — —	— — —	— — —	— — —		
	—	73	28	54	198	173	124	260	162	28	157	48	38	73	85.7	34.1									UCT216C UCT216CD	UCT216C UCT216CD	109 4 9/32	8.2	UCT216FC UCT216FCD	UCT216FC UCT216FCD	138 5 7/16	10.6	
	—	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	3.53	13.3	— — —	— — —	— — —	— — —	— — —	— — —	— — —		
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 UCT217	T217	UC217-52 UC217	11.0 11.0	84.0	61.9	2.60	14.5	— — —	— — —	— — —	— — —	— — —	— — —	— — —		
	—	73	30	54	198	173	124	260	162	29	157	48	38	73	85.7	34.1	UCTX17	TX17	UCX17	11.7	96.1	71.5	2.91	14.5	— — —	— — —	— — —	— — —	— — —	— — —	— — —		
	3 7/16	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	UCTX17-55		UCX17-55	11.7					— — —	— — —	— — —	— — —	— — —	— — —	— — —		
90	—	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	3.82	13.3	— — —	— — —	— — —	— — —	— — —	— — —	— — —		
	—	102	32	64	240	214	152	298	183	30	170	53	42	98	96	40									— — —	— — —	— — —	— — —	— — —	— — —	— — —		
	3 1/2	4 11/32	1 17/64	2 19/32	10 1/32	8 31/32	6 5/16	12 9/32	7 9/16	1 3/16	6 7/8	2 1/4	1 13/16	4 3/16	3.780	1.575	UCT318-56 UCT318	T318	UC318-56 UC318	21.6 21.6	143	107	4.11	13.3	— — —	— — —	— — —	— — —	— — —	— — —	— — —		
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	4.45	13.3	— — —	— — —	— — —	— — —	— — —	— — —	— — —		
	—	110	35	72	270	240	165	322	197	31	180	57	46	106	103	41									— — —	— — —	— — —	— — —	— — —	— — —	— — —		
100	3 15/16	4 23/32	1 3/8	2 15/16	11 13/32	10 15/64	6 7/8	13 19/32	8 9/32	1 1/4	7 7/8	2 5/16	1 7/8	4 17/32	4.252	1.654	UCT320 UCT320-63 UCT320-64	T320	UC320 UC320-63 UC320-64	30.7 30.7 30.7	173	141	5.08	13.2	— — —	— — —	— — —	— — —	— — —	— — —	— — —		
	4	120	35	75	290	260	175	345	210	32	200	59	48	115	108	42									— — —	— — —	— — —	— — —	— — —	— — —	— — —		
	—	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	5.41	13.2	— — —	— — —	— — —	— — —	— — —	— — —	— — —		
110	—	5 1/8	1 1/2	3 5/32	12 19/32	11 7/32	7 9/32	15 5/32	9 1/4	1 1/2	8 15/32	2 9/16	2 1/16	4 29/32	4.606	1.811	UCT322	T322	UC322	39.7	205	180	6.15	13.2	— — —	— — —	— — —	— — —	— — —	— — —	— — —		
	—	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	6.10	13.5	— — —	— — —	— — —	— — —	— — —	— — —	— — —		
	—	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	6.79	13.6	— — —	— — —	— — —	— — —	— — —	— — —	— — —		
	—	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	7.54	13.6	— — —	— — —	— — —	— — —	— — —	— — —	— — —		
	—	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 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
B-1/4-28UNF..... 201~210, X05~X09, 305~308
B-R1/8..... 211~217, X10~X17, 309~328

3. As for the triple-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.
5. Housings of spheroidal graphite iron casting are also available.

UCT-E
Cylindrical bore (with set screws)
d 12 ~ 50 mm



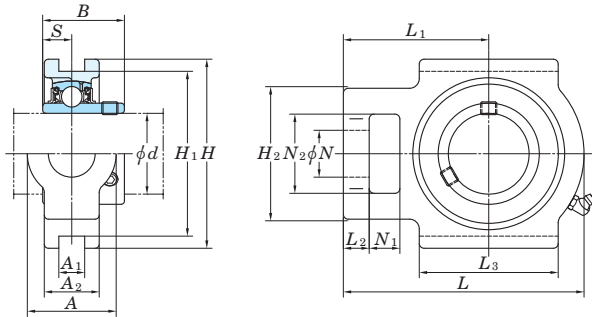
Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

Housing No.		Δ_{A1s}	Δ_{H1s}	X
T204E-T210E	TX05E-TX10E	+0.2 0	0 -0.5	0.5
T211E-T217E	TX11E-TX17E	+0.3 0	0 -0.8	0.6

Shaft Dia. mm inch		Dimensions inch mm															Unit No.		Housing No.	Bearing No.	Basic Load Ratings kN		Fatigue Load Limit kN	Factor	Mass
d		A	A ₁	A ₂	H	H ₁	H ₂	L	L ₁	L ₂	L ₃	N	N ₁	N ₂	B	S					C _r	C _{0r}	C _u	f ₀	kg
12	1/2																UCT201E UCT201-8E UCT202E UCT202-10E UCT203E UCT204-12E UCT204E		T204E	UC201 UC201-8 UC202 UC202-10 UC203 UC204-12 UC204	12.8	6.65	0.302	13.2	0.81 0.79 0.78 0.76
15	5/8	1 1/4	17/32	13/16	3 1/2	3	2	3 11/16	2 13/32	13/32	2	3/4	5/8	1 1/4	1.220	0.500									
17	3/4	32	13.5	21	89	76.2	51	94	61	10	51	19	16	32	31	12.7									
20																									
25	7/8	1 1/4	17/32	15/16	3 1/2	3	2	3 13/16	2 7/16	13/32	2	3/4	5/8	1 1/4	1.343	0.563	UCT205-14E UCT205-15E UCT205E UCT205-16E		T205E	UC205-14 UC205-15 UC205 UC205-16	14.0	7.85	0.357	13.9	0.84
	15/16	32	13.5	24	89	76.2	51	97	62	10	51	19	16	32	34.1	14.3									
30	1	1 15/32	17/32	1 3/32	4 1/32	3 1/2	2 7/32	4 7/16	2 3/4	13/32	2 1/4	7/8	5/8	1 15/32	1.500	0.626	UCTX05E UCTX05-16E		TX05E	UCX05 UCX05-16	19.5	11.3	0.514	13.9	1.4
	1 1/8	37	13.5	28	102	88.9	56	113	70	10	57	22	16	37	38.1	15.9									
	1 3/16	1 15/32	17/32	1 3/32	4 1/32	3 1/2	2 7/32	4 7/16	2 3/4	13/32	2 1/4	7/8	5/8	1 15/32	1.500	0.626	UCT206-18E UCT206E UCT206-19E UCT206-20E		T206E	UC206-18 UC206 UC206-19 UC206-20	19.5	11.3	0.514	13.9	1.3
	1 1/4	37	13.5	28	102	88.9	56	113	70	10	57	22	16	37	38.1	15.9									
35	1 3/16	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 UCTX06-19E UCTX06-20E		TX06E	UCX06 UCX06-19 UCX06-20	25.7	15.4	0.700	13.9	1.7
	1 1/4	37	13.5	30	102	88.9	64	129	78	13	64	22	16	37	42.9	17.5									
	1 5/16	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	UCT207-20E UCT207-21E UCT207-22E UCT207E UCT207-23E		T207E	UC207-20 UC207-21 UC207-22 UC207 UC207-23	25.7	15.4	0.700	13.9	1.6
	1 3/8	37	13.5	30	102	88.9	64	129	78	13	64	22	16	37	42.9	17.5									
40	1 7/16	1 15/16	11/16	1 13/32	4 1/2	4	3 9/32	5 21/32	3 15/32	19/32	3 9/32	1 5/32	3/4	1 15/16	1.937	0.748	UCTX07-22E UCTX07E UCTX07-23E		TX07E	UCX07-22 UCX07 UCX07-23	29.1	17.8	0.809	14.0	2.7
	1 3/8	49	17.5	36	114	101.6	83	144	88	15	83	29	19	49	49.2	19									
	1 7/16	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	UCT208-24E UCT208-25E UCT208E		T208E	UC208-24 UC208-25 UC208	29.1	17.8	0.809	14.0	2.5
45	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 UCTX08E		TX08E	UCX08-24 UCX08	34.1	21.3	0.968	14.0	2.6
	1 9/16	49	17.5	33	114	101.6	83	144	88	16	83	29	19	49	49.2	19									
	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									
50	1 5/8	1 15/16	11/16	1 3/8	4 19/32	4	3 9/32	5 21/32	3 7/16	5/8	3 9/32	1 5/32	3/4	1 15/16	1.937	0.748	UCT209-26E UCT209-27E UCT209-28E UCT209E		T209E	UC209-26 UC209-27 UC209-28 UC209	34.1	21.3	0.968	14.0	2.4
	1 11/16	49	17.5	35	117	101.6	83	144	87	16	83	29	19	49	49.2	19									
	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 UCTX09E		TX09E	UCX09-28 UCX09	35.1	23.3	1.06	14.4	2.9
	1 3/4	49	17.5	38	117	101.6	83	149	90	16	86	29	19	49	51.6	19									
50	1 7/8	1 15/16	11/16	1 15/32	4 19/32	4	3 9/32	5 7/8	3 17/32	5/8	3 3/8	1 5/32	3/4	1 15/16	2.031	0.748	UCT210-30E UCT210-31E UCT210E UCT210-32E		T210E	UC210-30 UC210-31 UC210 UC210-32	35.1	23.3	1.06	14.4	2.6
	1 15/16	49	17.5	37	117	101.6	83	149	90	16	86	29	19	49	51.6	19									
	2	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 UCTX10E UCTX10-32E		TX10E	UCX10-31 UCX10 UCX10-32	43.4	29.4	1.34	14.4	4.4
	1 15/16	64	27	42	146	130.17	102	171	106	19	95	35	25	64	55.6	22.2									

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
B-1/4-28UNF 201~210, X05~X09
B-R1/8 211~217, 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. : UCT206EL3, UC206L3)
4. As for the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of spheroidal graphite iron casting are also available.

UCT-E
Cylindrical bore (with set screws)
d 55 ~ 85 mm



Variations of tolerance of groove width (Δ_{A1s}), variations of tolerance of distance between both grooves (Δ_{H1s}), and tolerance of symmetry of both groove sides (X)

Unit: mm

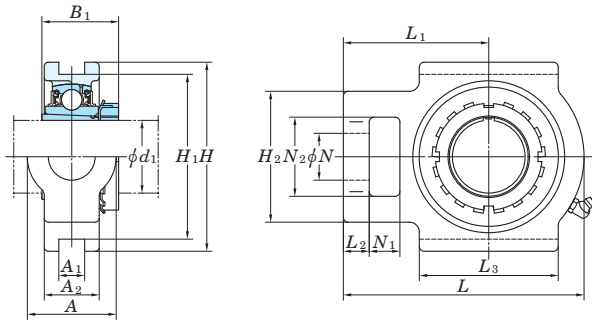
Housing No.		Δ_{A1s}	Δ_{H1s}	X
T204E-T210E	TX05E-TX10E	+0.2 0	0 -0.5	0.5
T211E-T217E	TX11E-TX17E	+0.3 0	0 -0.8	0.6

Shaft Dia. mm inch		Dimensions inch mm															Unit No.		Housing No.	Bearing No.	Basic Load Ratings kN		Fatigue Load Limit kN	Factor	Mass
d		A	A ₁	A ₂	H	H ₁	H ₂	L	L ₁	L ₂	L ₃	N	N ₁	N ₂	B	S				C _r	C _{0r}	C _u	f ₀	kg	
55	2	2 17/32 64	1 1/16 27	1 1/2 38	5 3/4 146	5 1/8 130.17	4 1/64 102	6 23/32 171	4 3/16 106	3/4 19	3 3/4 95	1 3/8 35	3 1/32 25	2 17/32 64	2.189 55.6	0.874 22.2	UCT211-32E		T211E	UC211-32	43.4	29.4	1.34	14.4	4.0
	2 1/8																UCT211-34E			UC211-34					
	2 3/16																UCT211E			UC211					
																	UCT211-35E			UC211-35					
	2 3/16	2 17/32 64	1 1/16 27	1 23/32 44	5 3/4 146	5 1/8 130.17	4 1/64 102	7 5/8 194	4 11/16 119	3/4 19	4 1/32 102	1 3/8 35	1 1/4 32	2 17/32 64	2.563 65.1	1.000 25.4	UCTX11E		TX11E	UCX11	52.4	36.2	1.65	14.4	5.3
2 1/4	UCTX11-35E																	UCX11-35							
																	UCTX11-36E			UCX11-36					
60	2 1/4	2 17/32 64	1 1/16 27	1 21/32 42	5 3/4 146	5 1/8 130.17	4 1/64 102	7 5/8 194	4 11/16 119	3/4 19	4 1/32 102	1 3/8 35	1 1/4 32	2 17/32 64	2.563 65.1	1.000 25.4	UCT212-36E		T212E	UC212-36	52.4	36.2	1.65	14.4	4.9
	2 3/8																UCT212E			UC212					
	2 7/16																UCT212-38E			UC212-38					
																	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	1.82	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	1.82	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	2.01	14.5
		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	2.01	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	2.17	14.5
		70	27	48	167	150.8	111	232	140	21	121	41	32	70	77.8	33.3	UCTX14E		UCX14						
75	2 15/16	2 3/4	1 1/16	1 7/8	6 9/16	5 15/16	4 3/8	9 1/8	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.063	1.331	UCT215-47E		T215E	UC215-47	67.4	48.3	2.17	14.5	7.3
	3	70	27	48	167	150.8	111	232	140	21	121	41	32	70	77.8	33.3	UCT215E			UC215					
																		UCT215-48E			UC215-48				
	2 15/16	2 3/4	1 1/16	1 7/8	7 1/4	6 1/2	4 3/8	9 1/4	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.252	1.311	UCTX15-47E		TX15E	UCX15-47	72.7	53.0	2.30	14.6	8.7
		70	27	48	184	165	111	235	140	21	121	41	32	70	82.6	33.3	UCTX15E			UCX15					
	3																UCTX15-48E			UCX15-48					
80	3 1/8	2 3/4	1 1/16	2	7 1/4	6 1/2	4 3/8	9 1/4	5 1/2	13/16	4 3/4	1 5/8	1 1/4	2 3/4	3.252	1.311	UCT216-50E		T216E	UC216-50	72.7	53.0	2.30	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	2.60	14.5
		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	2.60	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	2.91	14.5
		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 2.5** in P.11.)
2. Part No. of applicable grease nipples are shown below.
B-1/4-28UNF..... 201~210, X05~X09
B-R1/8..... 211~217, X10~X17

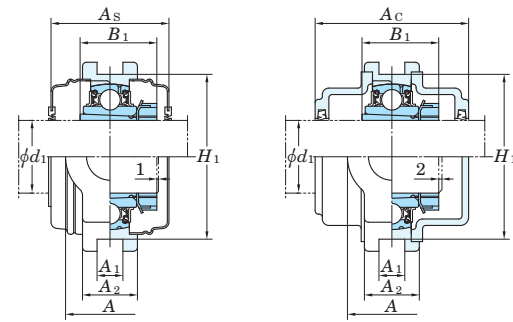
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip seal type products), supplementary code L3 (L2) follows the Part No. of unit or bearing. (Example of Part No. : UCT206EL3, UC206L3)
4. As for the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
5. Housings of spheroidal graphite iron casting are also available.

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



With Pressed Steel Covers

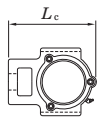
With Cast Iron Covers



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)

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	0.6
		T319~T322		-0.8	0.7
		T324~T328			0.8

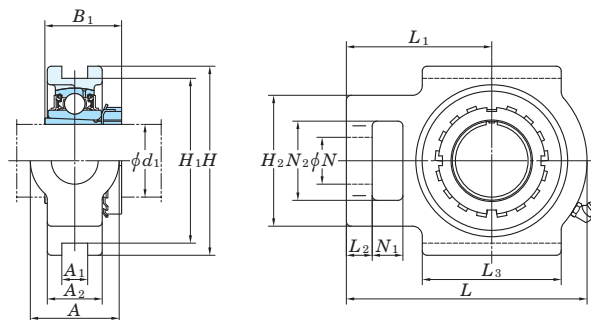
Form and dimension of L_c of T205JE3 (housing with cast iron covers) are shown below.



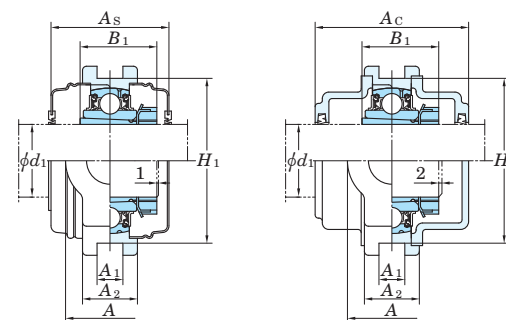
T205JE3 $L_c = 102$ mm

Shaft Dia. mm inch		Dimensions inch mm														Standard				Adapter Assembly No.	Mass kg	Basic		Fatigue Load Limit kN	Factor	With Pressed Steel Covers				With Cast Iron Covers																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
																Unit No.	Housing No.	Bearing No.	C _r			C _{0r}	C _u			f ₀	Unit No.		Dimension mm inch	Mass kg	Unit No.		Dimension mm inch	Mass kg																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
B-1/4-28UNF..... 205~210, X05~X09, 305~308
B-R1/8..... 211~217, X10~X17, 309~328
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables. (Example of Part No. : UKT206J + H2306X, UK206 + H2306X)
4. As for the triple-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.
6. Housings of spheroidal graphite iron casting are also available.

d_1 55 ~ 125 mm

With Cast Iron Covers



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 T319~T322 T324~T328	+0.3 0 0	0 -0.8	0.6 0.7 0.8

T205JE3 $L_c = 102$ mm

Shaft Dia. mm inch		Dimensions inch mm														Standard				Adapter Assembly No.	Mass	Basic		Fatigue Load Limit kN	Factor	With Pressed Steel Covers				With Cast Iron Covers						
																Unit No.	Housing No.	Bearing No.	Load Ratings kN			Load Limit kN	Unit No.			Dimension mm inch	Mass	Unit No.	Dimension mm inch	Mass						
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			C _r	C _{0r}	C _u	f ₀	Open Ends Type	Closed End Type	A _s	kg	Open Ends Type	Closed End Type	A _c	kg							
55	2 1/8	2 17/32 64	55/64 22	1 21/32 42	5 3/4 146	5 1/8 130	4 1/32 102	7 5/8 194	4 11/16 119	3/4 19	4 1/32 102	1 3/8 35	1 1/4 32	2 17/32 64	2 7/16 62	UKT212	T212	UK212		4.8 4.8	52.4	36.2	1.65	14.4	— UKT212C	— UKT212CD	— 89	— 3 1/2	— 4.8	— UKT212FC	— UKT212FCD	— 114	— 4 1/2	— 6.3		
	2 1/8	2 3/4 70	1 1/32 26	1 7/8 48	6 9/16 167	5 15/16 151	4 3/8 111	8 13/16 224	5 13/32 137	13/16 21	4 3/4 121	1 5/8 41	1 1/4 32	2 3/4 70	2 7/16 62	UKTX12	TX12	UKX12		7.3 7.3	57.2	40.1	1.82	14.4	— UKTX12C	— UKTX12CD	— 89	— 3 1/2	— 7.3	— —	— —	— —	— —			
	2 1/8	2 25/32 71	55/64 22	1 13/16 46	7 178	6 19/64 160	4 7/16 113	8 21/32 220	5 5/16 135	29/32 23	4 27/32 123	1 5/8 41	1 7/32 31	2 25/32 71	2 7/16 62	UKT312	T312	UK312		7.5 7.5	81.9	52.2	2.37	13.2	— —	— —	— —	— —	— —	UKT312C	UKT312CD	124	4 7/8	9.9		
60	2 1/4	2 3/4 70	1 1/32 26	1 23/32 44	6 9/16 167	5 15/16 151	4 3/8 111	8 13/16 224	5 13/32 137	13/16 21	4 3/4 121	1 5/8 41	1 1/4 32	2 3/4 70	2 9/16 65	UKT213	T213	UK213		6.8 6.8 6.8	57.2	40.1	1.82	14.4	— UKT213C	— UKT213CD	— 89	— 3 1/2	— 6.8	— UKT213FC	— UKT213FCD	— 114	— 4 1/2	— 8.5		
	2 3/8																																			
	2 1/4	2 3/4 70	1 1/32 26	1 7/8 48	6 9/16 167	5 15/16 151	4 3/8 111	8 13/16 224	5 13/32 137	13/16 21	4 3/4 121	1 5/8 41	1 1/4 32	2 3/4 70	2 9/16 65	UKTX13	TX13	UKX13		7.2 7.2 7.2	62.2	44.1	2.01	14.5	— UKTX13C	— UKTX13CD	— 99	— 3 29/32	— 7.2	— —	— —	— —	— —	— —		
	2 3/8																																			
	2 1/4	3 5/32 80	1 1/32 26	1 31/32 50	7 15/32 190	6 11/16 170	4 9/16 116	9 3/8 238	5 3/4 146	31/32 25	5 9/32 134	1 11/16 43	1 1/4 32	2 3/4 70	2 9/16 65	UKT313	T313	UK313		9.4 9.4 9.4	92.7	59.9	2.68	13.2	— — —	— — —	— — —	— — —	— — —	UKT313C	UKT313CD	122	4 13/16	11.6		
65	2 1/2	2 3/4 70	1 1/32 26	1 13/16 48	6 9/16 167	5 15/16 151	4 3/8 111	8 13/16 232	5 13/32 140	13/16 21	4 3/4 121	1 5/8 41	1 1/4 32	2 3/4 70	2 7/8 73	UKT215	T215	UK215		7.4 7.4	67.4	48.3	2.17	14.5	— UKT215C	— UKT215CD	— 99	— 3 29/32	— 7.4	— UKT215FC	— UKT215FCD	— 124	— 4 7/8	— 9.4		
	2 1/2	2 3/4 70	1 7/64 28	1 7/8 48	7 1/4 184	6 1/2 165	4 3/8 111	9 1/4 235	5 1/2 140	13/16 21	4 3/4 121	1 5/8 41	1 1/4 32	2 3/4 70	2 7/8 73	UKTX15	TX15	UKX15		8.4 8.4	72.7	53.0	2.30	14.6	— UKTX15C	— UKTX15CD	— 109	— 4 9/32	— 8.4	— —	— —	— —	— —	— —		
	2 1/2	3 17/32 90	1 1/32 26	2 5/32 55	8 1/2 216	7 9/16 192	5 3/16 132	10 5/16 262	6 9/16 160	31/32 25	5 29/32 150	1 13/16 46	1 1/2 36	3 11/32 85	2 7/8 73	UKT315	T315	UK315		13.1 13.1	113	77.2	3.24	13.2	— —	— —	— —	— —	— —	UKT315C	UKT315CD	134	5 9/32	15.9		
70	2 3/4	2 3/4 70	1 1/32 26	2 184	7 1/4 165	6 1/2 111	4 3/8 111	9 1/4 235	5 1/2 140	13/16 21	4 3/4 121	1 5/8 41	1 1/4 32	2 3/4 70	3 1/16 78	UKT216	T216	UK216		8.5 8.5	72.7	53.0	2.30	14.6	— UKT216C	— UKT216CD	— 109	— 4 9/32	— 8.5	— UKT216FC	— UKT216FCD	— 138	— 5 7/16	— 11.0		
	2 3/4	2 7/8 73	1 7/64 28	2 1/8 54	7 25/32 198	6 13/16 173	4 7/8 124	10 1/4 260	6 3/8 162	1 3/32 28	6 3/16 157	1 7/8 48	1 1/2 38	2 7/8 73	3 1/16 78	UKTX16	TX16	UKX16		11.8 11.8	84.0	61.9	2.60	14.5	— UKTX16C	— UKTX16CD	— 113	— 4 7/16	— 11.8	— —	— —	— —	— —	— —		
	2 3/4	4 1/32 102	1 3/16 30	2 3/8 60	9 1/16 230	8 1/32 204	5 29/32 150	11 3/32 282	6 27/32 174	1 3/32 28	6 5/16 160	2 3/32 53	1 21/32 42	3 27/32 98	3 1/16 78	UKT316	T316	UK316		16.3 16.3	123	86.7	3.53	13.3	— —	— —	— —	— —	— —	UKT316C	UKT316CD	138	5 7/16	19.4		
75	3	2 7/8 73	3 1/16 30	2 1/8 54	7 25/32 198	6 13/16 173	4 7/8 124	10 1/4 260	6 3/8 162	1 5/32 29	6 3/16 157	1 7/8 48	1 1/2 38	2 7/8 73	3 7/32 82	UKT217	T217	UK217		11.2 11.2	84.0	61.9	2.60	14.5	— UKT217C	— UKT217CD	— 113	— 4 7/16	— 11.2	— UKT217FC	— UKT217FCD	— 142	— 5 19/32	— 14.0		
	3	2 7/8 73	1 7/64 28	2 1/8 54	7 25/32 198	6 13/16 173	4 7/8 124	10 1/4 260	6 3/8 162	1 3/32 28	6 3/16 157	1 7/8 48	1 1/2 38	2 7/8 73	3 7/32 82	UKTX17	TX17	UKX17		11.4 11.4	96.1	71.5	2.91	14.5	— UKTX17C	— UKTX17CD	— 123	— 4 27/32	— 11.4	— —	— —	— —	— —	— —		
	3	4 1/32 102	1 17/64 32	2 17/32 64	9 7/16 240	8 27/64 214	5 31/32 152	11 23/32 298	7 7/32 183	1 3/16 30	6 11/16 170	2 3/32 53	1 21/32 42	3 27/32 98	3 7/32 82	UKT317	T317	UK317		18.9 18.9	133	96.8	3.82	13.3	— —	— —	— —	— —	— —	UKT317C	UKT317CD	146	5 3/4	22.4		
	3	4 11/32 110	1 7/64 32	2 19/32 66	10 1/8 255	8 31/32 228	6 9/16 160	12 9/32 312	7 9/16 192	3 1/16 30	6 7/8 175	2 1/4 57	1 13/16 46	4 3/16 106	3 3/8 86	UKT318	T318	UK318							— —	— —	— —	— —	— —	UKT318C	UKT318CD	150	5 29/32	25.9		
85	3 1/4	4 11/32 110	1 3/8 35	2 27/32 72	10 5/8 270	9 29/64 240	6 1/2 165	12 11/16 322	7 3/4 197	1 7/32 31	7 3/32 180	2 1/4 57	1 13/16 46	4 3/16 106	3 17/32 90	UKT319	T319	UK319		25.2 25.2	153	119	4.45	13.3	— —	— —	— —	— —	— —	UKT319C	UKT319CD	162	6 3/8	29.9		
90	3 1/2	4 23/32 120	1 3/8 35	2 15/16 75	11 13/32 290	10 15/64 260	6 7/8 175	13 19/32 345	8 9/32 210	1 1/4 32	7 7/8 200	2 5/16 59	1 7/8 48	4 17/32 115	3 13/16 97	UKT320	T320	UK320		30.4 30.4	173	141	5.08	13.2	— —	— —	— —	— —	— —	UKT320C	UKT320CD	174	6 27/32	36.6		
100	4	5 1/8 130	1 1/2 38	3 5/32 80	12 19/32 320	11 7/32 285	7 9/32 185	15 5/32 385	9 1/4 235	1 1/2 38	8 15/32 215	2 9/16 65	2 1/16 52	4 29/32 125	4 1/8 105	UKT322	T322	UK322		39.5 39.5	205	180	6.15	13.2	— —	— —	— —	— —	— —	UKT322C	UKT322CD	188	7 13/32	46.4		
110	—	5 1/2 140	1 49/64 45	3 17/32 90	13 31/32 355	12 9/32 320	8 9/32 210	17 432	10 1/2 267	1 21/32 42	9 1/16 230	2 3/4 70	2 3/8 60	5 1/2 140	4 13/32 112	UKT324	T324	UK324			54.7	207	185	6.10	13.5	— —	— —	— —	— —	— —	UKT324C	UKT324CD	196	7 23/32	65.0	
115	4 1/2	5 29/32 150	1 31/32 50	3 15/16 100	15 5/32 385	13 25/32 350	8 21/32 220	18 5/16 465	11 7/32 285	1 25/32 45	9 7/16 240	2 15/16 75	2 9/16 65	5 29/32 150	4 3/4 121	UKT326	T326	UK326		69.1 69.1	229	214	6.79	13.6	— —	— —	— —	— —	— —	— —	— —	UKT326C	UKT326CD	214	8 7/16	82.4
125	—	6 3/32 155	1 31/32 50	3 15/16 100	16 11/32 415	14 61/64 380	9 1/16 230	20 9/32 515	12 13/32 315	1 31/32 50	10 1/32 255	3 5/32 80	2 3/4 70	6 5/16 160	5 5/32 131	UKT328	T328	UK328			85.1	253	246	7.54	13.6	— —	— —	— —	— —	— —	UKT328C	UKT328CD	222	8 3/4	102	

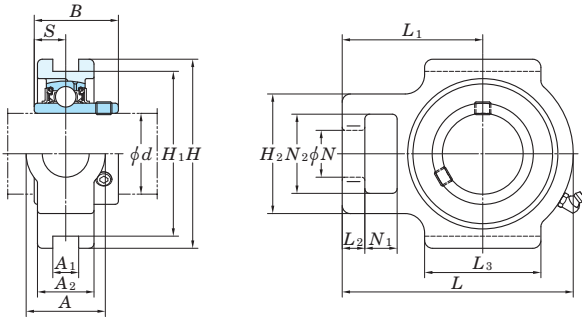
4. As for the triple-lip seal type product (205 is the double-lip seal type product), supplementary code L3 (or L2) follows the Part No. of unit or bearing.

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

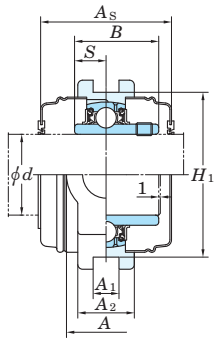
6. Housings of spheroidal graphite iron casting are also available.

c. Readings of spherical graphite from casting are also available.

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



With Pressed Stainless Steel Covers



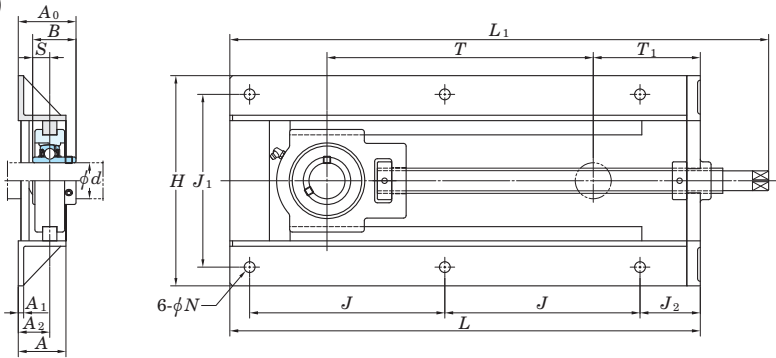
Variations of tolerance of groove width (ΔA_{1s}), variations of tolerance of distance between both grooves (ΔH_{1s}), and tolerance of symmetry of both groove sides (X)

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

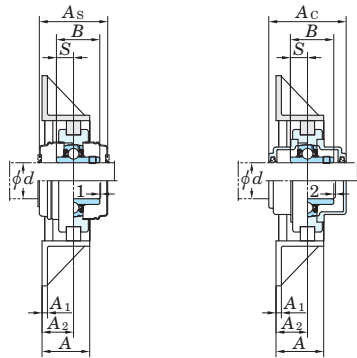
Shaft Dia. mm	Dimensions inch mm															Unit No.		Housing No.	Bearing No.	Basic Load Ratings kN		Fatigue Load Limit kN	Factor	Mass	With Pressed Stainless Steel Covers				
																				Unit No.					Dimension mm inch		Mass		
																				Open Ends Type	Closed End Type				A _s	kg			
<i>d</i>	<i>A</i>	<i>A</i> ₁	<i>A</i> ₂	<i>H</i>	<i>H</i> ₁	<i>H</i> ₂	<i>L</i>	<i>L</i> ₁	<i>L</i> ₂	<i>L</i> ₃	<i>N</i>	<i>N</i> ₁	<i>N</i> ₂	<i>B</i>	<i>S</i>				<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _u	<i>f</i> ₀	kg						
20	1 1/4 32	15/32 12	29/32 23	3 1/2 89	2 63/64 76	1 13/16 46	3 1/2 89	2 5/16 59	11/32 9	1 23/32 44	3/4 19	23/32 18	1 1/4 32	1.220 31	0.500 12.7	UCST204H1S6		ST204H1	UC204S6	10.9	5.35	0.243	13.2	0.73	UCST204H1CS6	UCST204H1CDS6	45	1 25/32	0.73
25	1 1/4 32	15/32 12	31/32 25	3 1/2 89	2 63/64 76	1 13/16 46	3 21/32 93	2 3/8 60	11/32 9	1 23/32 44	3/4 19	23/32 18	1 1/4 32	1.343 34.1	0.563 14.3	UCST205H1S6		ST205H1	UC205S6	11.9	6.30	0.286	13.9	0.79	UCST205H1CS6	UCST205H1CDS6	49	1 15/16	0.79
30	1 15/32 37	15/32 12	1 1/16 27	4 1/32 102	3 1/2 89	2 1/16 52	4 3/16 106	2 5/8 67	11/32 9	1 31/32 50	7/8 22	23/32 18	1 15/32 37	1.500 38.1	0.626 15.9	UCST206H1S6		ST206H1	UC206S6	16.5	9.05	0.411	13.9	1.1	UCST206H1CS6	UCST206H1CDS6	53	2 3/32	1.1
35	1 15/32 37	15/32 12	1 7/32 31	4 1/32 102	3 1/2 89	2 7/32 56	4 11/16 119	2 15/16 75	7/16 11	2 7/32 56	7/8 22	23/32 18	1 15/32 37	1.689 42.9	0.689 17.5	UCST207H1S6		ST207H1	UC207S6	21.8	12.3	0.559	13.9	1.5	UCST207H1CS6	UCST207H1CDS6	60	2 3/8	1.5
40	1 15/16 49	5/8 16	1 1/4 32	4 1/2 114	4 1/64 102	2 29/32 74	5 5/16 135	3 11/32 85	9/16 14	2 17/32 64	1 5/32 29	25/32 20	1 15/16 49	1.937 49.2	0.748 19	UCST208H1S6		ST208H1	UC208S6	24.8	14.3	0.650	14.0	2.0	UCST208H1CS6	UCST208H1CDS6	69	2 23/32	2.0
45	1 15/16 49	5/8 16	1 11/32 34	4 19/32 117	4 1/64 102	2 29/32 74	5 13/32 137	3 11/32 85	9/16 14	2 19/32 66	1 5/32 29	25/32 20	1 15/16 49	1.937 49.2	0.748 19	UCST209H1S6		ST209H1	UC209S6	27.8	16.2	0.736	14.0	2.1	UCST209H1CS6	UCST209H1CDS6	69	2 23/32	2.1
50	1 15/16 49	5/8 16	1 3/8 35	4 19/32 117	4 1/64 102	2 29/32 74	5 5/8 143	3 7/16 87	9/16 14	2 27/32 72	1 5/32 29	25/32 20	1 15/16 49	2.031 51.6	0.748 19	UCST210H1S6		ST210H1	UC210S6	29.8	18.6	0.845	14.4	2.3	UCST210H1CS6	UCST210H1CDS6	74	2 29/32	2.3

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See Table 2.5 in P.11.)
2. Part No. of the applicable grease nipple is B-1/4-28UNFN12.
3. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UCTH
Cylindrical bore (with set screws)
d 12 ~ 65 mm



With Pressed Steel Covers With Cast Iron Covers



Variations of tolerance of distance between centers of bolt holes (ΔJ_s , ΔJ_{1s})

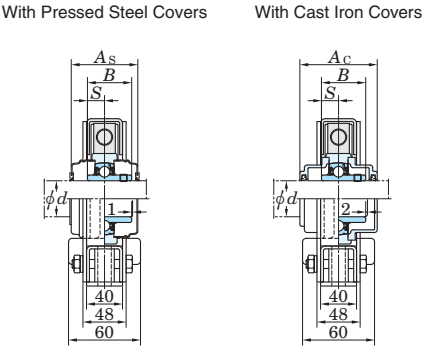
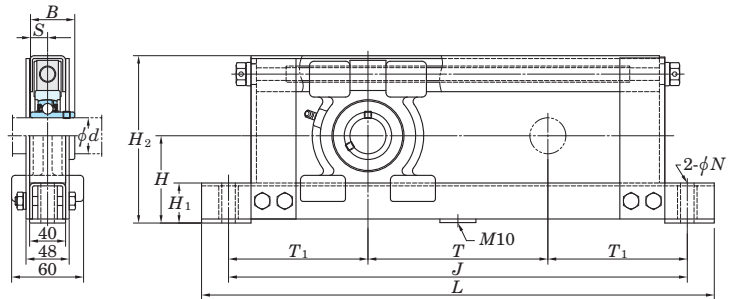
Nominal unit code	ΔJ_s	ΔJ_{1s}
UCTH201~UCTH213	±0.5	±0.5

Shaft Dia. mm inch		Dimensions inch mm															Bolt Size inch mm	Standard		Bearing No.	Mass	Basic Load Ratings kN		Fatigue Load Limit kN	Factor	With Pressed Steel Covers				With Cast Iron Covers						
		Unit No.			Unit No.		Dimension mm inch	Mass	Unit No.		Dimension mm inch	Mass																								
d		H	L		L ₁	A			J	J ₁			J ₂	N	T	T ₁	A ₁	A ₂	A ₀	B	S		kg	C _r	C _{0r}	C _u	f ₀	Open Ends Type	Closed End Type	A _s	kg	Open Ends Type	Closed End Type	A _c	kg	
12	1/2 5/8 3/4																M10	UCTH201-150		UC201	6.7	12.8	6.65	0.302	13.2	UCTH201C-150	UCTH201CD-150	45	1 25/32	6.7	—	—	—	—		
15		7 7/8	12 17/32	14 13/16	1 31/32	4 39/64	6 1/16	2 9/16	15/32	6 1/32	3 15/32	1/4	1 7/64	1 13/16	1.220	0.500		UCTH201-8-150	UC201-8	6.7	—					—	—	—	—	—	—	—	—	—	—	—
17		200	318	376	50	117	154	65	12	153	88	6	28	46.3	31	12.7		UCTH202-150	UC202	6.7	—					—	—	—	—	—	—	—	—	—	—	—
20		UCTH202-10-150	UC202-10	6.7	—	—	—	—	—	—	—	—	—	—	—	—		—	UCTH203-150	UC203	6.7					—	—	—	—	—	—	—	—	—	—	—
																		UCTH204-12-150		UC204-12	6.7						UCTH204C-150	UCTH204CD-150	45	1 25/32	6.7	—	—	—	—	
																		UCTH204-150		UC204	6.7						UCTH204C-150	UCTH204CD-150	45	1 25/32	6.7	UCTH204FC-150	UCTH204FCD-150	62	2 7/16	7.0
25	7/8 15/16 1																M10	UCTH205-14-150		UC205-14	6.7	14.0	7.85	0.357	13.9	—	—	—	—	—	—	—	—	—	—	
		UCTH205-15-150	UC205-15	6.7	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—																
		UCTH205-150	UC205	6.7	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
		UCTH205-16-150	UC205-16	6.7	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
30	1 1/8 1 3/16 1 1/4																M10	UCTH206-18-150		UC206-18	8.0	19.5	11.3	0.514	13.9	—	—	—	—	—	—	—	—	—	—	
		UCTH206-150	UC206	8.0	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
		UCTH206-19-150	UC206-19	8.0	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
		UCTH206-20-150	UC206-20	8.0	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
35	1 1/4 1 5/16 1 3/8 1 7/16																M10	UCTH207-20-230		UC207-20	10.5	25.7	15.4	0.700	13.9	—	—	—	—	—	—	—	—	—	—	
		UCTH207-21-230	UC207-21	10.5	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
		UCTH207-22-230	UC207-22	10.5	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
		UCTH207-230	UC207	10.5	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
																		UCTH207-23-230		UC207-23	10.5						UCTH207C-230	UCTH207CD-230	60	2 3/8	10.5	UCTH207FC-230	UCTH207FCD-230	78	3 1/16	11.2
40	1 1/2 1 9/16																M10	UCTH208-24-300		UC208-24	12.5	29.1	17.8	0.809	14.0	—	—	—	—	—	—	—	—	—	—	
		UCTH208-25-300	UC208-25	12.5	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
		UCTH208-300	UC208	12.5	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
		UCTH208C-300	UCTH208CD-300	69	2 23/32	12.5	UCTH208FC-300	UCTH208FCD-300	86	3 3/8	13.3																									
45	1 5/8 1 11/16 1 3/4																M10	UCTH209-26-300		UC209-26	12.4	34.1	21.3	0.968	14.0	—	—	—	—	—	—	—	—	—	—	
		UCTH209-27-300	UC209-27	12.4	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
		UCTH209-28-300	UC209-28	12.4	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
		UCTH209-300	UC209	12.4	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
50	1 7/8 1 15/16 2																M12	UCTH210-30-300		UC210-30	12.6	35.1	23.3	1.06	14.4	—	—	—	—	—	—	—	—	—	—	
		UCTH210-31-300	UC210-31	12.6	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
		UCTH210-300	UC210	12.6	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
		UCTH210-32-300	UC210-32	12.6	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
55	2 2 1/8 2 3/16																M12	UCTH211-32-300		UC211-32	20.1	43.4	29.4	1.34	14.4	—	—	—	—	—	—	—	—	—	—	
		UCTH211-34-300	UC211-34	20.1	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
		UCTH211-300	UC211	20.1	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
		UCTH211-35-300	UC211-35	20.1	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
60	2 1/4 2 3/8 2 7/16																M12	UCTH212-36-300		UC212-36	21.4	52.4	36.2	1.65	14.4	—	—	—	—	—	—	—	—	—	—	
		UCTH212-300	UC212	21.4	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
		UCTH212-38-300	UC212-38	21.4	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
		UCTH212-39-300	UC212-39	21.4	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															
65	2 1/2																M12	UCTH213-40-300		UC213-40	25.5	57.2	40.1	1.82	14.4	—	—	—	—	—	—	—	—	—	—	
		UCTH213-300	UC213	25.5	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—															

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
B-1/4-28UNF 201~210
B-R1/8 211~213
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 + H2305X, UK205 + H2305X)

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



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

Nominal unit code	ΔH_s	ΔJ_s
UCTL204-207	± 2	± 0.5
UCTL208, 209		± 0.8

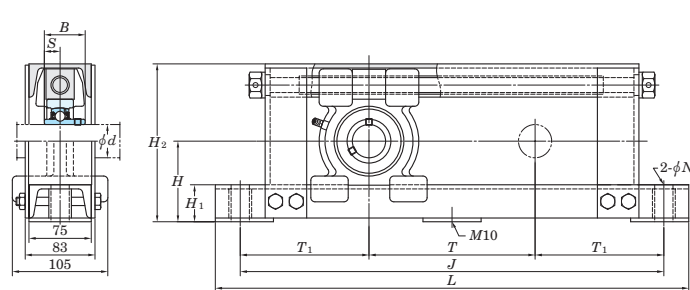
Unit: mm

Shaft Dia. mm	Dimensions mm										Bolt Size mm	Standard				Basic Load Ratings kN		Fatigue Load Limit kN	Factor	With Pressed Steel Covers				With Cast Iron Covers				
												Unit No.	Bearing No.	Mass kg						Unit No.		Dimension mm	Mass kg	Unit No.		Dimension mm	Mass kg	
	Open Ends Type	Closed End Type	A _s	kg	Open Ends Type	Closed End Type	A _c	kg																				
<i>d</i>	<i>H</i>	<i>H</i> ₁	<i>H</i> ₂	<i>L</i>	<i>J</i>	<i>N</i>	<i>T</i>	<i>T</i> ₁	<i>B</i>	<i>S</i>					<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _u	<i>f</i> ₀										
20	77	44	146	430	370	15	100	135	31	12.7	M12	UCTL204-100	UC204	6.0		12.8	6.65	0.302	13.2	UCTL204C-100	UCTL204CD-100	45	6.0	—	—	—	—	
	77	44	146	530	470	15	200	135	31	12.7	M12	UCTL204-200	UC204	7.0		12.8	6.65	0.302	13.2	UCTL204C-200	UCTL204CD-200	45	7.0	—	—	—	—	
	77	44	146	630	570	15	300	135	31	12.7	M12	UCTL204-300	UC204	7.5		12.8	6.65	0.302	13.2	UCTL204C-300	UCTL204CD-300	45	7.5	—	—	—	—	
	77	44	146	730	670	15	400	135	31	12.7	M12	UCTL204-400	UC204	8.0		12.8	6.65	0.302	13.2	UCTL204C-400	UCTL204CD-400	45	8.0	—	—	—	—	
25	82	44	156	440	380	15	100	140	34.1	14.3	M12	UCTL205-100	UC205	7.0		14.0	7.85	0.357	13.9	UCTL205C-100	UCTL205CD-100	49	7.0	—	—	—	—	
	82	44	156	540	480	15	200	140	34.1	14.3	M12	UCTL205-200	UC205	7.5		14.0	7.85	0.357	13.9	UCTL205C-200	UCTL205CD-200	49	7.5	—	—	—	—	
	82	44	156	640	580	15	300	140	34.1	14.3	M12	UCTL205-300	UC205	8.0		14.0	7.85	0.357	13.9	UCTL205C-300	UCTL205CD-300	49	8.0	—	—	—	—	
	82	44	156	740	680	15	400	140	34.1	14.3	M12	UCTL205-400	UC205	9.0		14.0	7.85	0.357	13.9	UCTL205C-400	UCTL205CD-400	49	9.0	—	—	—	—	
30	87	44	166	450	390	15	100	145	38.1	15.9	M12	UCTL206-100	UC206	7.0		19.5	11.3	0.514	13.9	UCTL206C-100	UCTL206CD-100	53	7.0	UCTL206FC-100	UCTL206FCD-100	70	7.5	
	87	44	166	550	490	15	200	145	38.1	15.9	M12	UCTL206-200	UC206	8.0		19.5	11.3	0.514	13.9	UCTL206C-200	UCTL206CD-200	53	8.0	UCTL206FC-200	UCTL206FCD-200	70	8.5	
	87	44	166	650	590	15	300	145	38.1	15.9	M12	UCTL206-300	UC206	9.0		19.5	11.3	0.514	13.9	UCTL206C-300	UCTL206CD-300	53	9.0	UCTL206FC-300	UCTL206FCD-300	70	9.5	
	87	44	166	750	690	15	400	145	38.1	15.9	M12	UCTL206-400	UC206	9.5		19.5	11.3	0.514	13.9	UCTL206C-400	UCTL206CD-400	53	9.5	UCTL206FC-400	UCTL206FCD-400	70	10	
35	92	44	176	460	400	15	100	150	42.9	17.5	M12	UCTL207-100	UC207	8.0		25.7	15.4	0.700	13.9	UCTL207C-100	UCTL207CD-100	60	8.0	UCTL207FC-100	UCTL207FCD-100	78	9.0	
	92	44	176	560	500	15	200	150	42.9	17.5	M12	UCTL207-200	UC207	8.5		25.7	15.4	0.700	13.9	UCTL207C-200	UCTL207CD-200	60	8.5	UCTL207FC-200	UCTL207FCD-200	78	9.5	
	92	44	176	660	600	15	300	150	42.9	17.5	M12	UCTL207-300	UC207	9.0		25.7	15.4	0.700	13.9	UCTL207C-300	UCTL207CD-300	60	9.0	UCTL207FC-300	UCTL207FCD-300	78	10	
	92	44	176	760	700	15	400	150	42.9	17.5	M12	UCTL207-400	UC207	10		25.7	15.4	0.700	13.9	UCTL207C-400	UCTL207CD-400	60	10	UCTL207FC-400	UCTL207FCD-400	78	11	
40	97	44	186	470	410	15	100	155	49.2	19	M12	UCTL208-100	UC208	8.5		29.1	17.8	0.809	14.0	UCTL208C-100	UCTL208CD-100	69	8.5	UCTL208FC-100	UCTL208FCD-100	86	9.5	
	97	44	186	570	510	15	200	155	49.2	19	M12	UCTL208-200	UC208	9.0		29.1	17.8	0.809	14.0	UCTL208C-200	UCTL208CD-200	69	9.0	UCTL208FC-200	UCTL208FCD-200	86	10	
	97	44	186	670	610	15	300	155	49.2	19	M12	UCTL208-300	UC208	10		29.1	17.8	0.809	14.0	UCTL208C-300	UCTL208CD-300	69	10	UCTL208FC-300	UCTL208FCD-300	86	11	
	97	44	186	770	710	15	400	155	49.2	19	M12	UCTL208-400	UC208	10.5		29.1	17.8	0.809	14.0	UCTL208C-400	UCTL208CD-400	69	10.5	UCTL208FC-400	UCTL208FCD-400	86	11.5	
45	100	44	192	480	420	15	100	160	49.2	19	M12	UCTL209-100	UC209	9.0		34.1	21.3	0.968	14.0	UCTL209C-100	UCTL209CD-100	69	9.0	UCTL209FC-100	UCTL209FCD-100	88	10	
	100	44	192	580	520	15	200	160	49.2	19	M12	UCTL209-200	UC209	9.5		34.1	21.3	0.968	14.0	UCTL209C-200	UCTL209CD-200	69	9.5	UCTL209FC-200	UCTL209FCD-200	88	10.5	
	100	44	192	680	620	15	300	160	49.2	19	M12	UCTL209-300	UC209	10.5		34.1	21.3	0.968	14.0	UCTL209C-300	UCTL209CD-300	69	10.5	UCTL209FC-300	UCTL209FCD-300	88	11.5	
	100	44	192	780	720	15	400	160	49.2	19	M12	UCTL209-400	UC209	11		34.1	21.3	0.968	14.0	UCTL209C-400	UCTL209CD-400	69	11	UCTL209FC-400	UCTL209FCD-400	88	12	

- Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter codes. (See Table 2.5 in P.11.)
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.

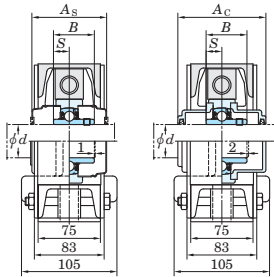
5. If heavy load ($P_r/C_r > 0.12$), vibration, or impact occurs, contact with JTEKT.
6. Tapered bore (with adapter) type bearing units are also available. (Example of Part No. : UKTL206J-100 + H2306X, UK206 + H2306X)
7. If frame parts need to be corrosion resistant, contact with JTEKT.
8. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.

UCTU
Cylindrical bore (with set screws)
d 40 ~ 80 mm



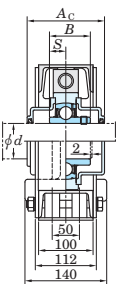
UCTU200

With Pressed Steel Covers With Cast Iron Covers



UCTU300

With Cast Iron Covers



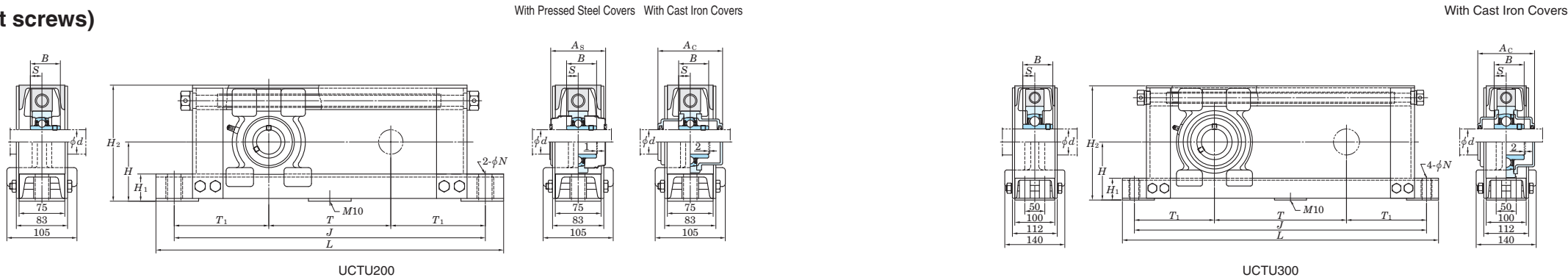
Variations of tolerance of distance from mounting bottom to center of spherical bore (ΔH_s) and variations of tolerance of distance between centers of bolt holes (ΔJ_s)

Unit: mm

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

Shaft Dia. mm	Dimensions mm										Bolt Size mm	Standard				Basic		Fatigue Load Limit kN	Factor	With Pressed Steel Covers				With Cast Iron Covers			
												Unit No.	Bearing No.	Mass		Load Ratings kN				Dimension mm	Mass	Unit No.		Dimension mm	Mass		
	<i>d</i>	<i>H</i>	<i>H</i> ₁	<i>H</i> ₂	<i>L</i>	<i>J</i>	<i>N</i>	<i>T</i>	<i>T</i> ₁	<i>B</i>						<i>S</i>	<i>C</i> _r					<i>C</i> _{0r}	<i>C</i> _u			<i>f</i> ₀	Open Ends Type
40	97	44	190	870	810	22	500	155	49.2	19	M18	UCTU208-500	UC208	21		29.1	17.8	0.809	14.0	UCTU208C-500	UCTU208CD-500	69	21	UCTU208FC-500	UCTU208FCD-500	86	22
	97	44	190	970	910	22	600	155	49.2	19	M18	UCTU208-600	UC208	22		29.1	17.8	0.809	14.0	UCTU208C-600	UCTU208CD-600	69	22	UCTU208FC-600	UCTU208FCD-600	86	23
	97	44	190	1 070	1 010	22	700	155	49.2	19	M18	UCTU208-700	UC208	24		29.1	17.8	0.809	14.0	UCTU208C-700	UCTU208CD-700	69	24	UCTU208FC-700	UCTU208FCD-700	86	25
	97	44	190	1 170	1 110	22	800	155	49.2	19	M18	UCTU208-800	UC208	26		29.1	17.8	0.809	14.0	UCTU208C-800	UCTU208CD-800	69	26	UCTU208FC-800	UCTU208FCD-800	86	27
	97	44	190	1 270	1 210	22	900	155	49.2	19	M18	UCTU208-900	UC208	28		29.1	17.8	0.809	14.0	UCTU208C-900	UCTU208CD-900	69	28	UCTU208FC-900	UCTU208FCD-900	86	29
45	102	44	200	880	820	22	500	160	49.2	19	M18	UCTU209-500	UC209	22		34.1	21.3	0.968	14.0	UCTU209C-500	UCTU209CD-500	69	22	UCTU209FC-500	UCTU209FCD-500	88	23
	102	44	200	980	920	22	600	160	49.2	19	M18	UCTU209-600	UC209	24		34.1	21.3	0.968	14.0	UCTU209C-600	UCTU209CD-600	69	24	UCTU209FC-600	UCTU209FCD-600	88	25
	102	44	200	1 080	1 020	22	700	160	49.2	19	M18	UCTU209-700	UC209	25		34.1	21.3	0.968	14.0	UCTU209C-700	UCTU209CD-700	69	25	UCTU209FC-700	UCTU209FCD-700	88	26
	102	44	200	1 180	1 120	22	800	160	49.2	19	M18	UCTU209-800	UC209	27		34.1	21.3	0.968	14.0	UCTU209C-800	UCTU209CD-800	69	27	UCTU209FC-800	UCTU209FCD-800	88	28
	102	44	200	1 280	1 220	22	900	160	49.2	19	M18	UCTU209-900	UC209	29		34.1	21.3	0.968	14.0	UCTU209C-900	UCTU209CD-900	69	29	UCTU209FC-900	UCTU209FCD-900	88	30
50	107	44	210	890	830	22	500	165	51.6	19	M18	UCTU210-500	UC210	23		35.1	23.3	1.06	14.4	UCTU210C-500	UCTU210CD-500	74	23	UCTU210FC-500	UCTU210FCD-500	97	24
	107	44	210	990	930	22	600	165	51.6	19	M18	UCTU210-600	UC210	25		35.1	23.3	1.06	14.4	UCTU210C-600	UCTU210CD-600	74	25	UCTU210FC-600	UCTU210FCD-600	97	26
	107	44	210	1 090	1 030	22	700	165	51.6	19	M18	UCTU210-700	UC210	27		35.1	23.3	1.06	14.4	UCTU210C-700	UCTU210CD-700	74	27	UCTU210FC-700	UCTU210FCD-700	97	28
	107	44	210	1 190	1 130	22	800	165	51.6	19	M18	UCTU210-800	UC210	28		35.1	23.3	1.06	14.4	UCTU210C-800	UCTU210CD-800	74	28	UCTU210FC-800	UCTU210FCD-800	97	29
	107	44	210	1 290	1 230	22	900	165	51.6	19	M18	UCTU210-900	UC210	30		35.1	23.3	1.06	14.4	UCTU210C-900	UCTU210CD-900	74	30	UCTU210FC-900	UCTU210FCD-900	97	31
55	115	44	230	910	850	22	500	175	55.6	22.2	M18	UCTU211-500	UC211	25		43.4	29.4	1.34	14.4	UCTU211C-500	UCTU211CD-500	76	25	UCTU211FC-500	UCTU211FCD-500	99	26
	115	44	230	1 010	950	22	600	175	55.6	22.2	M18	UCTU211-600	UC211	27		43.4	29.4	1.34	14.4	UCTU211C-600	UCTU211CD-600	76	27	UCTU211FC-600	UCTU211FCD-600	99	28
	115	44	230	1 110	1 050	22	700	175	55.6	22.2	M18	UCTU211-700	UC211	28		43.4	29.4	1.34	14.4	UCTU211C-700	UCTU211CD-700	76	28	UCTU211FC-700	UCTU211FCD-700	99	29
	115	44	230	1 210	1 150	22	800	175	55.6	22.2	M18	UCTU211-800	UC211	30		43.4	29.4	1.34	14.4	UCTU211C-800	UCTU211CD-800	76	30	UCTU211FC-800	UCTU211FCD-800	99	31
	115	44	230	1 310	1 250	22	900	175	55.6	22.2	M18	UCTU211-900	UC211	32		43.4	29.4	1.34	14.4	UCTU211C-900	UCTU211CD-900	76	32	UCTU211FC-900	UCTU211FCD-900	99	33
60	120	44	240	920	860	22	500	180	65.1	25.4	M18	UCTU212-500	UC212	26		52.4	36.2	1.65	14.4	UCTU212C-500	UCTU212CD-500	89	26	UCTU212FC-500	UCTU212FCD-500	114	28
	120	44	240	1 020	960	22	600	180	65.1	25.4	M18	UCTU212-600	UC212	28		52.4	36.2	1.65	14.4	UCTU212C-600	UCTU212CD-600	89	28	UCTU212FC-600	UCTU212FCD-600	114	30
	120	44	240	1 120	1 060	22	700	180	65.1	25.4	M18	UCTU212-700	UC212	30		52.4	36.2	1.65	14.4	UCTU212C-700	UCTU212CD-700	89	30	UCTU212FC-700	UCTU212FCD-700	114	32
	120	44	240	1 220	1 160	22	800	180	65.1	25.4	M18	UCTU212-800	UC212	31		52.4	36.2	1.65	14.4	UCTU212C-800	UCTU212CD-800	89	31	UCTU212FC-800	UCTU212FCD-800	114	33
	120	44	240	1 320	1 260	22	900	180	65.1	25.4	M18	UCTU212-900	UC212	33		52.4	36.2	1.65	14.4	UCTU212C-900	UCTU212CD-900	89	33	UCTU212FC-900	UCTU212FCD-900	114	35
65	145	55	285	940	880	22	500	190	75	30	M18	UCTU313-500	UC313	40		92.7	59.9	2.68	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	2.68	13.2	—	—	—	—	UCTU313C-600	UCTU313CD-600	122	45
	145	55	285	1 140	1 080	22	700	190	75	30	M18	UCTU313-700	UC313	46		92.7	59.9	2.68	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	2.68	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	2.68	13.2	—	—	—	—	UCTU313C-900	UCTU313CD-900	122	53
70	150	55	295	960	900	22	500	200	78	33	M18	UCTU314-500	UC314	44		104	68.2	2.96	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	2.96	13.2	—	—	—	—	UCTU314C-600	UCTU314CD-600	124	48
	150	55	295	1 160	1 100	22	700	200	78	33	M18	UCTU314-700	UC314	48		104	68.2	2.96	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	2.96	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	2.96	13.2	—	—	—	—	UCTU314C-900	UCTU314CD-900	124	55
75	155	55	305	980	920	22	500	210	82	32	M18	UCTU315-500	UC315	54		113	77.2	3.24	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	3.24	13.2	—	—	—	—	UCTU315C-600	UCTU315CD-600	134	60
	155	55	305	1 180	1 120	22	700	210	82	32	M18	UCTU315-700	UC315	59		113	77.2	3.24	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	3.24	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	3.24									

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



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

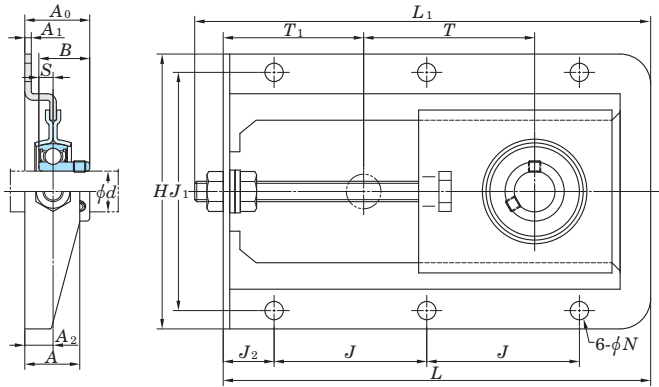
Nominal unit code	ΔH_s	ΔJ_s
UCTU208-212	± 2	± 0.8
UCTU313-315		± 0.8
UCTU316-318		± 1.2

Shaft Dia. mm	Dimensions mm										Bolt Size mm	Standard				Basic		Fatigue Load Limit kN	Factor	With Pressed Steel Covers				With Cast Iron Covers				
												Unit No.	Bearing No.	Mass		Load Ratings kN				Unit No.	Dimension mm	Mass	Unit No.		Dimension mm	Mass		
	<i>C_r</i>	<i>C_{0r}</i>	Open Ends Type	Closed End Type	Open Ends Type	Closed End Type	<i>A_s</i>	kg	<i>A_c</i>	kg																		
<i>d</i>	<i>H</i>	<i>H</i> ₁	<i>H</i> ₂	<i>L</i>	<i>J</i>	<i>N</i>	<i>T</i>	<i>T</i> ₁	<i>B</i>	<i>S</i>																		
85	165	55	325	1 020	960	22	500	230	96	40	M18	UCTU317-500	UC317	62		133	96.8	3.82	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	3.82	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	3.82	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	3.82	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	3.82	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	4.11	13.3	—	—	—	—	UCTU318C-500	UCTU318CD-500	150	68	
	170	55	335	1 150	1 090	22	600	245	96	40	M18	UCTU318-600	UC318	67		143	107	4.11	13.3	—	—	—	—	UCTU318C-600	UCTU318CD-600	150	70	
	170	55	335	1 250	1 190	22	700	245	96	40	M18	UCTU318-700	UC318	70		143	107	4.11	13.3	—	—	—	—	UCTU318C-700	UCTU318CD-700	150	73	
	170	55	335	1 350	1 290	22	800	245	96	40	M18	UCTU318-800	UC318	72		143	107	4.11	13.3	—	—	—	—	UCTU318C-800	UCTU318CD-800	150	75	
	170	55	335	1 450	1 390	22	900	245	96	40	M18	UCTU318-900	UC318	74		143	107	4.11	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 2.5** in P.11.)
2. Part No. of applicable grease nipples are shown below.
C-1/4-28UNF..... 208~210
C-R1/8..... 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 + H2308X, UK208 + H2308X)
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.

SBPTH
Cylindrical bore (with set screws)
d 12 ~ 25 mm



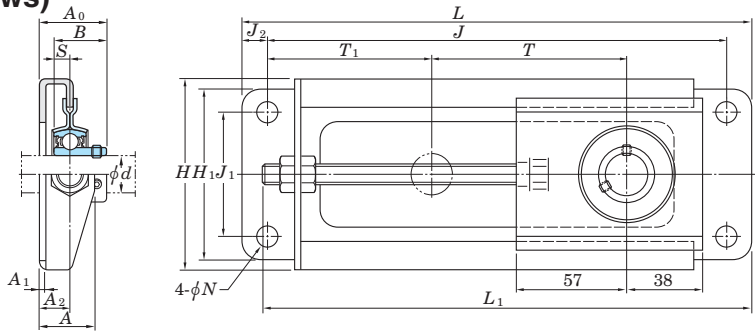
Variations of tolerance of distance between centers of bolt holes (ΔJ_s , ΔJ_{1s})

Nominal unit code	ΔJ_s	ΔJ_{1s}
SBPTH201~SBPTH205	±0.7	±0.7

Shaft Dia. mm <i>d</i>	Dimensions																Bolt Size inch mm	Unit No.		Bearing No.	Basic Load Ratings kN		Fatigue Load Limit kN	Factor	Mass
	inch mm																				<i>C_r</i> <i>C_{0r}</i>		<i>C_u</i>	<i>f₀</i>	kg
	<i>H</i>	<i>L</i>	<i>L</i> ₁	<i>A</i>	<i>J</i>	<i>J</i> ₁	<i>J</i> ₂	<i>N</i>	<i>T</i>	<i>T</i> ₁	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>	<i>S</i>										
12	5 ⁵ / ₁₆	8 ⁹ / ₃₂	8 ²¹ / ₃₂	1 ¹ / ₁₆	2 ⁶¹ / ₆₄	4 ³⁹ / ₆₄	3 ¹ / ₃₂	1 ¹¹ / ₃₂	3 ¹⁵ / ₃₂	2 ²³ / ₃₂	1 ¹ / ₈	3 ³⁵ / ₆₄	1 ³ / ₁₆	0.866	0.236	5 ⁵ / ₁₆	SBPTH201-90		SB201	9.55	4.80	0.218	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	3 ¹ / ₃₂	1 ¹¹ / ₃₂	3 ¹⁵ / ₃₂	2 ²³ / ₃₂	1 ¹ / ₈	3 ³⁵ / ₆₄	1 ³ / ₁₆	0.866	0.236	5 ⁵ / ₁₆	SBPTH202-90		SB202	9.55	4.80	0.218	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	3 ¹ / ₃₂	1 ¹¹ / ₃₂	3 ¹⁵ / ₃₂	2 ²³ / ₃₂	1 ¹ / ₈	3 ³⁵ / ₆₄	1 ³ / ₁₆	0.866	0.236	5 ⁵ / ₁₆	SBPTH203-90		SB203	9.55	4.80	0.218	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	3 ¹ / ₃₂	1 ¹¹ / ₃₂	3 ¹⁵ / ₃₂	2 ²³ / ₃₂	1 ¹ / ₈	3 ³⁵ / ₆₄	1 ¹ / ₄	0.984	0.276	5 ⁵ / ₁₆	SBPTH204-90		SB204	12.8	6.65	0.302	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	3 ¹ / ₃₂	1 ¹¹ / ₃₂	3 ¹⁵ / ₃₂	2 ²³ / ₃₂	1 ¹ / ₈	3 ³⁵ / ₆₄	1 ⁵ / ₁₆	1.063	0.295	5 ⁵ / ₁₆	SBPTH205-90		SB205	14.0	7.85	0.357	13.9	0.91	
	135	210	220	27	75	117	25	9	88	69	3.2	13.9	33.4	27	7.5	M8									

Remarks 1. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
2. If heavy load ($P_r/C_r > 0.12$), vibration, or impact occurs, contact with JTEKT.

SBNPTH
Cylindrical bore (with set screws)
d 12 ~ 25 mm



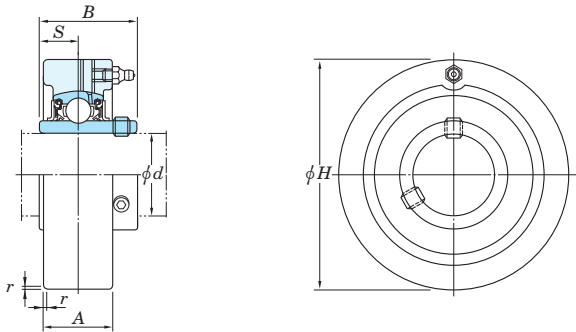
Variations of tolerance of distance between centers of bolt holes (ΔJ_s , ΔJ_{1s})

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

Shaft Dia. mm <i>d</i>	Dimensions inch mm																	Bolt Size inch mm	Unit No.		Bearing No.	Basic Load Ratings kN		Fatigue Load Limit kN	Factor	Mass
	<i>H</i>	<i>H</i> ₁	<i>L</i>	<i>L</i> ₁	<i>A</i>	<i>J</i>	<i>J</i> ₁	<i>J</i> ₂	<i>N</i>	<i>T</i>	<i>T</i> ₁	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>B</i>	<i>S</i>	<i>C</i> _r					<i>C</i> _{0r}	<i>C</i> _u	<i>f</i> 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	0.218	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	0.218	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	0.218	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	0.302	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	0.357	13.9	0.93	
	100	90	260	246	27	235	65	12.5	11	100	83.5	3.2	15	34.5	27	7.5	M8									

Remarks 1. For the dimensions and forms of applicable bearings, see the dimensional tables of ball bearing for unit.
2. If heavy load ($P_r/C_r > 0.12$), vibration, or impact occurs, contact with JTEKT.

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



d (45) ~ 90 mm

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

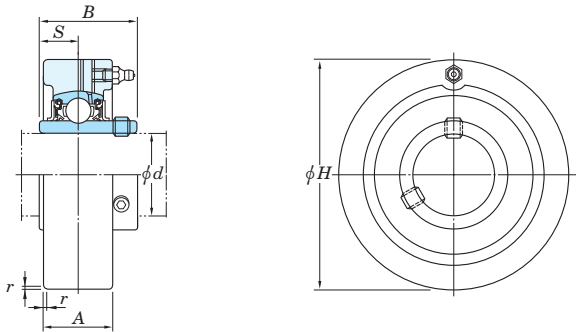
Housing No.			ΔH_s	ΔA_s	Y
C204-C205			0 -0.030	±0.2	0.2
C206-C210	CX05-CX08	C305-C308	0 -0.035		
C211-C213	CX09-CX10	C309-C310	0	±0.3	0.3
	CX11-CX12	C311-C314	-0.040		
		C315-C318	0		
		C319	-0.046		
		C320-C322	0 -0.052		
		C324-C328	0 -0.057	±0.4	0.4

Shaft Dia. mm inch		Dimensions inch mm					Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Fatigue Load Limit kN	Factor f_0	Mass kg
d		H	A	r	B	S				C_r	C_{0r}	C_u		
12	1/2						UCC201		UC201					0.52
15	5/8	2.835	25/32	0.06	1.220	0.500	UCC201-8		UC201-8					0.50
							UCC202		UC202					
17	3/4	72	20	1.5	31	12.7	UCC202-10	C204	UC202-10	12.8	6.65	0.302	13.2	0.49
							UCC203		UC203					0.47
							UCC204-12		UC204-12					
20							UCC204		UC204					
25	7/8	3.150	55/64	0.06	1.343	0.563	UCC205-14		UC205-14					
	15/16						UCC205-15	C205	UC205-15	14.0	7.85	0.357	13.9	0.64
	1	80	22	1.5	34.1	14.3	UCC205		UC205					
							UCC205-16		UC205-16					
		3.543	1 1/16	0.06	1.500	0.626	UCCX05		UCX05					
		90	27	1.5	38.1	15.9	UCCX05-16	CX05	UCX05-16	19.5	11.3	0.514	13.9	1.0
		3.543	1 1/32	0.08	1.496	0.591	UCC305		UC305					
	1	90	26	2	38	15	UCC305-16	C305	UC305-16	21.2	10.9	0.495	12.6	1.5
30	1 1/8	3.346	1 1/16	0.06	1.500	0.626	UCC206-18		UC206-18					
	1 3/16	85	27	1.5	38.1	15.9	UCC206	C206	UC206	19.5	11.3	0.514	13.9	0.81
	1 1/4						UCC206-19		UC206-19					
							UCC206-20		UC206-20					
		3.937	1 3/16	0.08	1.689	0.689	UCCX06		UCX06					
	1 3/16	100	30	2	42.9	17.5	UCCX06-19	CX06	UCX06-19	25.7	15.4	0.700	13.9	1.3
	1 1/4						UCCX06-20		UCX06-20					
		3.937	1 7/64	0.08	1.693	0.669	UCC306		UC306					
	—	100	28	2	43	17	UCC306	C306	UC306	26.7	15.0	0.682	13.3	1.7
35	1 1/4						UCC207-20		UC207-20					
	1 5/16	3.543	1 7/64	0.08	1.689	0.689	UCC207-21		UC207-21					
	1 3/8	90	28	2	42.9	17.5	UCC207-22	C207	UC207-22	25.7	15.4	0.700	13.9	0.93
							UCC207		UC207					
	1 7/16						UCC207-23		UC207-23					
	1 3/8	4.331	1 11/32	0.08	1.937	0.748	UCCX07-22		UCX07-22					
		110	34	2	49.2	19	UCCX07	CX07	UCX07	29.1	17.8	0.809	14.0	1.7
	1 7/16						UCCX07-23		UCX07-23					
		4.331	1 17/64	0.12	1.890	0.748	UCC307		UC307					
	—	110	32	3	48	19	UCC307	C307	UC307	33.4	19.3	0.877	13.2	2.2
40	1 1/2	3.937	1 3/16	0.08	1.937	0.748	UCC208-24		UC208-24					
	1 9/16	100	30	2	49.2	19	UCC208-25	C208	UC208-25	29.1	17.8	0.809	14.0	1.2
							UCC208		UC208					
	1 1/2	4.724	1 1/2	0.08	1.937	0.748	UCCX08-24		UCX08-24					
		120	38	2	49.2	19	UCCX08	CX08	UCX08	34.1	21.3	0.968	14.0	2.3
	1 1/2	4.724	1 11/32	0.12	2.047	0.748	UCC308-24		UC308-24					
		120	34	3	52	19	UCC308	C308	UC308	40.7	24.0	1.09	13.2	2.2
45	1 5/8						UCC209-26		UC209-26					
	1 11/16	4.331	1 7/32	0.08	1.937	0.748	UCC209-27		UC209-27					
	1 3/4	110	31	2	49.2	19	UCC209-28	C209	UC209-28	34.1	21.3	0.968	14.0	1.5
							UCC209		UC209					

Shaft Dia. mm inch		Dimensions inch mm					Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Fatigue Load Limit kN	Factor f_0	Mass kg
d		H	A	r	B	S				C_r	C_{0r}	C_u		
45	1 3/4	4.724	1 1/2	0.08	2.031	0.748	UCCX09-28		UCX09-28					
		120	38	2	51.6	19	UCCX09	CX09	UCX09	35.1	23.3	1.06	14.4	2.3
	1 3/4	5.118	1 1/2	0.12	2.244	0.866	UCC309-28		UC309-28					
		130	38	3	57	22	UCC309	C309	UC309	48.9	29.5	1.34	13.3	2.8
50	1 7/8						UCC210-30		UC210-30					
	1 15/16	4.724	1 19/64	0.08	2.031	0.748	UCC210-31		UC210-31					
	2	120	33	2	51.6	19	UCC210	C210	UC210	35.1	23.3	1.06	14.4	2.0
							UCC210-32		UC210-32					
	1 15/16	5.118	1 37/64	0.1	2.189	0.874	UCCX10-31		UCX10-31					
	2	130	40	2.5	55.6	22.2	UCCX10	CX10	UCX10	43.4	29.4	1.34	14.4	2.8
							UCCX10-32		UCX10-32					
	—	5.512	1 37/64	0.12	2.402	0.866	UCC310		UC310					
		140	40	3	61	22	UCC310	C310	UC310	62.0	38.3	1.74	13.2	3.2
55	2						UCC211-32		UC211-32					
	2 1/8	4.921	1 3/8	0.1	2.189	0.874	UCC211-34		UC211-34					
	2 3/16	125	35	2.5	55.6	22.2	UCC211	C211	UC211	43.4	29.4	1.34	14.4	2.2
							UCC211-35		UC211-35					
		5.906	1 21/32	0.1	2.563	1.000	UCCX11		UCX11					
	2 3/16	150	42	2.5	65.1	25.4	UCCX11-35		UCX11-35					
	2 1/4						UCCX11-36	CX11	UCX11-36	52.4	36.2	1.65	14.4	4.0
	2	5.906	1 47/64	0.12	2.598	0.984	UCC311-32		UC311-32					
		150	44	3	66	25	UCC311	C311	UC311	71.6	45.0	2.05	13.2	3.9
60	2 1/4						UCC212-36		UC212-36					
	2 3/8	5.118	1 1/2	0.1	2.563	1.000	UCC212		UC212					
	2 7/16	130	38	2.5	65.1	25.4	UCC212-38	C212	UC212-38	52.4	36.2	1.65	14.4	2.6
							UCC212-39		UC212-39					
		6.299	1 47/64	0.1	2.563	1.000	UCCX12		UCX12					
	2 7/16	160	44	2.5	65.1	25.4	UCCX12-39		UCX12-39					
		6.299	1 13/16	0.12	2.795	1.024	UCC312		UC312					
	—	160	46	3	71	26	UCC312	C312	UC312	81.9	52.2	2.37	13.2	4.8
65	2 1/2	5.512	1 37/64	0.1	2.563	1.000	UCC213-40		UC213-40					
		140	40	2.5	65.1	25.4	UCC213	C213	UC213	57.2	40.1	1.82	14.4	3.0
	2 1/2	6.693	1 31/32	0.12	2.953	1.181	UCC313-40		UC313-40					
		170	50	3	75	30	UCC313	C313	UC313	92.7	59.9	2.68	13.2	5.7
70	2 3/4	7.087	2 3/64	0.12	3.071	1.299	UCC314-44		UC314-44					
		180	52	3	78	33	UCC314	C314	UC314	104	68.2	2.96	13.2	6.7
75	2 15/16	7.480	2 11/64	0.16	3.228	1.260	UCC315-47		UC315-47					
	3	190	55	4	82	32	UCC315	C315	UC315	113	77.2	3.24	13.2	7.8
							UCC315-48		UC315-48					
80	—	7.874	2 23/64	0.16	3.386	1.339	UCC316		UC316					
		200	60	4	86	34	UCC316	C316	UC316	123	86.7	3.53	13.3	9.2
85	—	8.465	2 33/64	0.16	3.780	1.575	UCC317		UC317					
		215	64	4	96	40	UCC317	C317	UC317	133	96.8	3.82	13.3	11.7
90	3 1/2	8.858	2 19/32	0.16	3.780	1.575	UCC318-56		UC318-56					
		225	66	4	96	40	UCC318	C318	UC318	143	107	4.11	13.3	13.1

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF 201~213, X05~X12, 305~308
A-R1/8 309~328
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



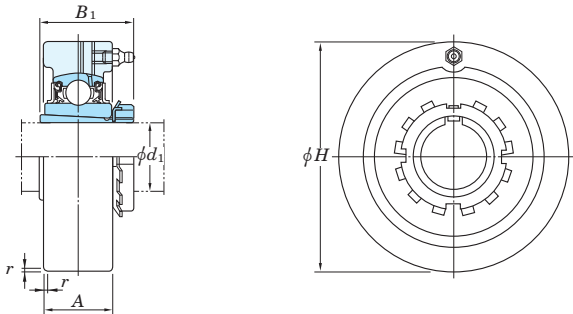
Shaft Dia. mm inch		Dimensions inch mm					Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Fatigue Load Limit kN	Factor <i>f</i> ₀	Mass kg
<i>d</i>		<i>H</i>	<i>A</i>	<i>r</i>	<i>B</i>	<i>S</i>				<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _u		
95	—	9.449 240	2 53/64 72	0.16 4	4.055 103	1.614 41	UCC319	C319	UC319	153	119	4.45	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	5.08	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	5.41	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	6.15	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	6.10	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	6.79	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	7.54	13.6	52.9

- Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 2.5** in P.11.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF 201~213, X05~X12, 305~308
A-R1/8 309~328
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 (ΔH_s), variations of tolerance of width (ΔA_s), and tolerance of circumferential runout of outside diameter (Y)

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

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



Shaft Dia. mm inch		Dimensions inch mm				Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Fatigue Load Limit kN	Factor	Adapter Assembly No.	Mass kg
d ₁		H	A	r	B ₁				C _r	C _{0r}	C _u	f ₀		
20	³ / ₄	3.150	⁵⁵ / ₆₄	0.06	1 ³ / ₈	UKC205	C205	UK205	14.0	7.85	0.357	13.9	HE2305X H2305X	0.7
	³ / ₄	3.543	1 ¹ / ₁₆	0.06	1 ³ / ₈	UKCX05	CX05	UKX05	19.5	11.3	0.514	13.9	HE2305X H2305X	0.99
	³ / ₄	3.543	1 ¹ / ₃₂	0.08	1 ³ / ₈	UKC305	C305	UK305	21.2	10.9	0.495	12.6	HE2305X H2305X	1.6
25	1	3.346	1 ¹ / ₁₆	0.06	1 ¹ / ₂	UKC206	C206	UK206	19.5	11.3	0.514	13.9	H2306X HE2306X	0.89
	1	3.937	1 ³ / ₁₆	0.08	1 ¹ / ₂	UKCX06	CX06	UKX06	25.7	15.4	0.700	13.9	H2306X HE2306X	1.3
	1	3.937	1 ¹ / ₆₄	0.08	1 ¹ / ₂	UKC306	C306	UK306	26.7	15.0	0.682	13.3	H2306X HE2306X	1.8
30	1 ¹ / ₈	3.543	1 ¹ / ₆₄	0.08	1 ¹¹ / ₁₆	UKC207	C207	UK207	25.7	15.4	0.700	13.9	HS2307X H2307X	1.0
	1 ¹ / ₈	4.331	1 ¹¹ / ₃₂	0.08	1 ¹¹ / ₁₆	UKCX07	CX07	UKX07	29.1	17.8	0.809	14.0	HS2307X H2307X	1.8
	1 ¹ / ₈	4.331	1 ¹⁷ / ₆₄	0.12	1 ¹¹ / ₁₆	UKC307	C307	UK307	33.4	19.3	0.877	13.2	HS2307X H2307X	2.2
35	1 ¹ / ₄	3.937	1 ³ / ₁₆	0.08	1 ¹³ / ₁₆	UKC208	C208	UK208	29.1	17.8	0.809	14.0	HE2308X HS2308X H2308X	1.5
	1 ¹ / ₄	4.724	1 ¹ / ₂	0.08	1 ¹³ / ₁₆	UKCX08	CX08	UKX08	34.1	21.3	0.968	14.0	HE2308X HS2308X H2308X	2.4
	1 ¹ / ₄	4.724	1 ¹¹ / ₃₂	0.12	1 ¹³ / ₁₆	UKC308	C308	UK308	40.7	24.0	1.09	13.2	HE2308X HS2308X H2308X	2.2
40	1 ¹ / ₂	4.331	1 ⁷ / ₃₂	0.08	1 ³¹ / ₃₂	UKC209	C209	UK209	34.1	21.3	0.968	14.0	HE2309X H2309X	1.8
	1 ¹ / ₂	4.724	1 ¹ / ₂	0.08	1 ³¹ / ₃₂	UKCX09	CX09	UKX09	35.1	23.3	1.06	14.4	HE2309X H2309X	2.4
	1 ¹ / ₂	5.118	1 ¹ / ₂	0.12	1 ³¹ / ₃₂	UKC309	C309	UK309	48.9	29.5	1.34	13.3	HE2309X H2309X	2.8
45	1 ³ / ₄	4.724	1 ¹⁹ / ₆₄	0.08	2 ⁵ / ₃₂	UKC210	C210	UK210	35.1	23.3	1.06	14.4	HE2310X H2310X	2.2
	1 ³ / ₄	5.118	1 ³⁷ / ₆₄	0.1	2 ⁵ / ₃₂	UKCX10	CX10	UKX10	43.4	29.4	1.34	14.4	HE2310X H2310X	2.9
	1 ³ / ₄	5.512	1 ³⁷ / ₆₄	0.12	2 ⁵ / ₃₂	UKC310	C310	UK310	62.0	38.3	1.74	13.2	HE2310X H2310X	3.2
50	1 ⁷ / ₈	4.921	1 ³ / ₈	0.1	2 ⁵ / ₁₆	UKC211	C211	UK211	43.4	29.4	1.34	14.4	HS2311X H2311X HE2311X	2.7

Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See **Table 2.5** in P.11.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF..... 205~213, X05~X12, 305~308
A-R1/8..... 309~328
3. In Part No. of unit with adapters and bearing with adapters, Part No. of applicable adapter follow the Part No. shown in the dimensional tables. (Example of Part No. : UKC206J + H2306X, UK206 + H2306X)
4. As for the triple-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.

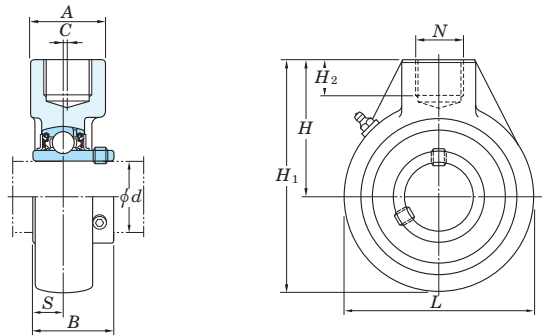
d₁ (50) ~ 125 mm

Shaft Dia. mm inch		Dimensions inch mm				Unit No.	Housing No.	Bearing No.	Basic Load Ratings kN		Fatigue Load Limit kN	Factor	Adapter Assembly No.	Mass kg
d ₁		H	A	r	B ₁				C _r	C _{0r}	C _u	f ₀		
50	1 ⁷ / ₈	5.906	1 ²¹ / ₃₂	0.1	2 ⁵ / ₁₆	UKCX11	CX11	UKX11	52.4	36.2	1.65	14.4	HS2311X H2311X HE2311X	4.1
	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	2.05	13.2	HS2311X H2311X HE2311X	4.1
55	2	150	44	3	59									
	2 ¹ / ₈	5.118	1 ¹ / ₂	0.1	2 ⁷ / ₁₆	UKC212	C212	UK212	52.4	36.2	1.65	14.4	HS2312X H2312X	3.1
	2 ¹ / ₈	6.299	1 ⁴⁷ / ₆₄	0.1	2 ⁷ / ₁₆	UKCX12	CX12	UKX12	57.2	40.1	1.82	14.4	HS2312X H2312X	4.4
60	2 ¹ / ₈	6.299	1 ¹³ / ₁₆	0.12	2 ⁷ / ₁₆	UKC312	C312	UK312	81.9	52.2	2.37	13.2	HS2312X H2312X	4.7
	2 ¹ / ₄	5.512	1 ³⁷ / ₆₄	0.1	2 ⁹ / ₁₆	UKC213	C213	UK213	57.2	40.1	1.82	14.4	HE2313X H2313X HS2313X	3.3
	2 ³ / ₈	6.693	1 ³¹ / ₃₂	0.12	2 ⁹ / ₁₆	UKC313	C313	UK313	92.7	59.9	2.68	13.2	HE2313X H2313X HS2313X	5.8
65	2 ¹ / ₂	7.480	2 ¹¹ / ₆₄	0.16	2 ⁷ / ₈	UKC315	C315	UK315	113	77.2	3.24	13.2	HE2315X H2315X	8.0
70	2 ³ / ₄	7.874	2 ²³ / ₆₄	0.16	3 ¹ / ₁₆	UKC316	C316	UK316	123	86.7	3.53	13.3	HE2316X H2316X	9.2
75	3	8.465	2 ³³ / ₆₄	0.16	3 ⁷ / ₃₂	UKC317	C317	UK317	133	96.8	3.82	13.3	H2317X HE2317X	11.6
80	—	8.858	2 ¹⁹ / ₃₂	0.16	3 ³ / ₈	UKC318	C318	UK318	143	107	4.11	13.3	H2318X	13.1
85	3 ¹ / ₄	9.449	2 ⁵³ / ₆₄	0.16	3 ¹⁷ / ₃₂	UKC319	C319	UK319	153	119	4.45	13.3	HE2319X H2319X	16.1
90	3 ¹ / ₂	10.236	2 ⁶¹ / ₆₄	0.16	3 ¹³ / ₁₆	UKC320	C320	UK320	173	141	5.08	13.2	HE2320X H2320X	19.2
100	4	11.811	3 ⁵ / ₃₂	0.2	4 ¹ / ₈	UKC322	C322	UK322	205	180	6.15	13.2	H2322X HE2322X	29.1
110	—	12.598	3 ³⁵ / ₆₄	0.2	4 ¹³ / ₃₂	UKC324	C324	UK324	207	185	6.10	13.5	H2324	36.2
115	4 ¹ / ₂	13.386	3 ¹⁵ / ₁₆	0.24	4 ³ / ₄	UKC326	C326	UK326	229	214	6.79	13.6	HE2326 H2326	42.8
125	—	14.173	3 ¹⁵ / ₁₆	0.24	5 ⁵ / ₃₂	UKC328	C328	UK328	253	246	7.54	13.6	H2328	52.9

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

Housing No.			ΔH_8	ΔA_8	Y
C205			0 -0.030	±0.2	0.2
C206-C210	CX05-CX08	C305-C308	0 -0.035		
C211-C213	CX09-CX10 CX11-CX12	C309-C310	0	±0.3	0.3
		C311-C314	-0.040		
		C315-C318	0		
		C319	-0.046		
		C320-C322	0 -0.052		
		C324-C328	0 -0.057	±0.4	0.4

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



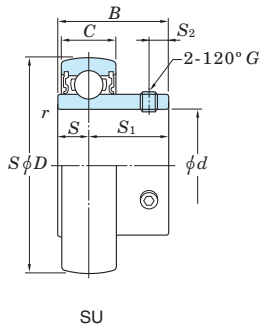
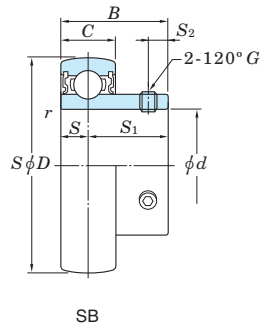
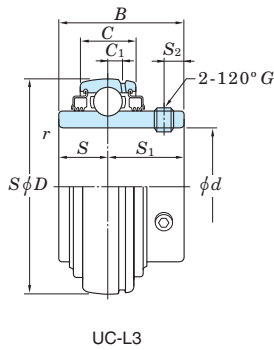
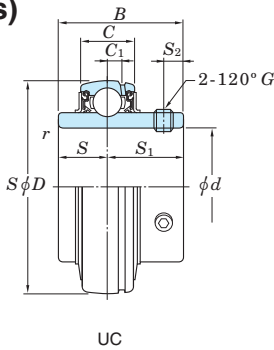
Note 1)Dimensions N screw hole is apply JIS B0203 (Taper Pipe Threads) standards.
It can not apply to the Parallel Pipe External Thread.
Also, below shown the dimensions of Taper Pipe Internal Thread.

Nominal of Thread	Female Thread			Thread	Apply Male Thread
	Major Diameter	Pitch Diameter	Minor Diameter	Number of Threads (in 25.4 mm)	
	D	D ₂	D ₁	n	
Rp 3/4	26.441	25.279	24.117	14	R 3/4
Rp 1	33.249	31.770	30.291	11	R 1
Rp 1 1/2	41.910	40.431	38.952	11	R 1 1/2
Rp 1 1/4	47.803	46.324	44.845	11	R 1 1/4

Shaft Dia. mm inch		Dimensions inch mm									Unit No.	Housing No.	Bearing No.		Basic Load Ratings kN		Fatigue Load Limit kN	Factor f ₀	Mass kg
d		H	A	L	H ₁	H ₂	N ¹⁾	C	B	S					C _r	C _{0r}	C _u		
12	1/2										UCHA201		UC201						0.77
15	5/8	2 17/32	1 9/16	2 17/32	3 25/32	3/4		—	1.220	0.500	UCHA201-8	HA204	UC201-8		12.8	6.65	0.302	13.2	0.75
17	3/4	64	40	64	96	19	Rp 3/4	—	31	12.7	UCHA202		UC202						0.74
20											UCHA202-10		UC202-10						0.72
											UCHA203		UC203						
											UCHA204-12		UC204-12						
											UCHA204		UC204						
25	7/8	2 17/32	1 9/16	3 1/16	4 1/16	3/4		—	1.343	0.563	UCHA205-14	HA205	UC205-14		14.0	7.85	0.357	13.9	0.87
	15/16	64	40	78	103	19	Rp 3/4	—	34.1	14.3	UCHA205-15		UC205-15						
	1										UCHA205		UC205						
											UCHA205-16		UC205-16						
30	1 1/8	2 17/32	1 9/16	3 1/16	4 1/16	3/4		—	1.500	0.626	UCHA206-18	HA206	UC206-18		19.5	11.3	0.514	13.9	0.83
	1 3/16	64	40	78	103	19	Rp 3/4	—	38.1	15.9	UCHA206		UC206						
	1 1/4										UCHA206-19		UC206-19						
											UCHA206-20		UC206-20						
35	1 1/4	2 3/4	1 9/16	3 5/8	4 9/16	3/4		—	1.689	0.689	UCHA207-20	HA207	UC207-20		25.7	15.4	0.700	13.9	1.2
	1 5/16	70	40	92	116	19	Rp 3/4	—	42.9	17.5	UCHA207-21		UC207-21						
	1 3/8										UCHA207-22		UC207-22						
	1 7/16										UCHA207		UC207						
											UCHA207-23		UC207-23						
40	1 1/2	2 7/8	1 9/16	3 25/32	4 3/4	3/4		5/64	1.937	0.748	UCHA208-24	HA208	UC208-24		29.1	17.8	0.809	14.0	1.3
	1 9/16	73	40	96	121	19	Rp 3/4	2	49.2	19	UCHA208-25		UC208-25						
											UCHA208		UC208						
45	1 5/8	3 7/32	1 7/8	4 1/4	5 11/32	13/16		13/64	1.937	0.748	UCHA209-26	HA209	UC209-26		34.1	21.3	0.968	14.0	1.7
	1 11/16	82	48	108	136	21	Rp 1	5	49.2	19	UCHA209-27		UC209-27						
	1 3/4										UCHA209-28		UC209-28						
											UCHA209		UC209						
50	1 7/8	3 9/32	1 7/8	4 21/32	5 19/32	13/16		13/64	2.031	0.748	UCHA210-30	HA210	UC210-30		35.1	23.3	1.06	14.4	2.1
	1 15/16	83	48	118	142	21	Rp 1	5	51.6	19	UCHA210-31		UC210-31						
	2										UCHA210		UC210						
											UCHA210-32		UC210-32						
55	2	3 7/16	2 3/8	4 31/32	5 29/32	31/32		9/32	2.189	0.874	UCHA211-32	HA211	UC211-32		43.4	29.4	1.34	14.4	2.8
	2 1/8	87	60	126	150	25	Rp 1 1/4	7	55.6	22.2	UCHA211-34		UC211-34						
	2 3/16										UCHA211		UC211						
	2 1/4										UCHA211-35		UC211-35						
60	2 3/8	4 1/32	2 3/8	5 19/32	6 13/16	1 3/32		23/64	2.563	1.000	UCHA212-36	HA212	UC212-36		52.4	36.2	1.65	14.4	3.9
	2 7/16	102	60	142	173	28	Rp 1 1/4	9	65.1	25.4	UCHA212		UC212						
											UCHA212-38		UC212-38						
											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	1.82	14.4	5.8
		117	70	166	200	32	Rp 1 1/2	9.5	65.1	25.4	UCHA213		UC213						
70	2 3/4	4 19/32	2 3/4	6 17/32	7 7/8	1 1/4		3/8	2.937	1.189	UCHA214-44	HA214	UC214-44		62.2	44.1	2.01	14.5	5.9
		117	70	166	200	32	Rp 1 1/2	9.5	74.6	30.2	UCHA214		UC214						
75	2 15/16	4 19/32	2 3/4	6 17/32	7 7/8	1 1/4		3/8	3.063	1.311	UCHA215-47	HA215	UC215-47		67.4	48.3	2.17	14.5	5.6
	3	117	70	166	200	32	Rp 1 1/2	9.5	77.8	33.3	UCHA215		UC215						
											UCHA215-48		UC215-48						

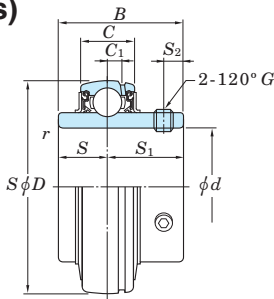
Remarks 1. In Part No. of unit and units with covers, fitting codes follow bore diameter numbers. (See Table 2.5 in P.11.)
2. Part No. of applicable grease nipples are shown below.
A-1/4-28UNF..... 201~210
A-R1/8..... 211~215
3. As for the triple-lip seal type product (from 201 to 205 are the double-lip 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 and adapters, see the dimensional tables of ball bearing for unit and adapter assemblies.
5. Tapered bore (with adapter) type products are also available. (Example of Part No. : UKHA205J + H2305X, UK205 + H2305X)

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

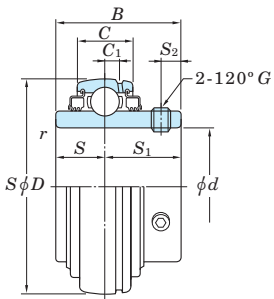


Shaft Dia. mm inch		Dimensions								Basic Load Ratings kN		Fatigue Load Limit kN	Factor		Bearing No.		Dimensions								Set Screw Brg. Bore G		Mass
d		D		B		C		r (min.)		C _r	C _{0r}	C _u	f ₀		Standard	L3 Type	C ₁		S		S ₁		S ₂		mm	inch	kg
		mm	inch	mm	inch	mm	inch	mm	inch								mm	inch	mm	inch	mm	inch	mm	inch			
8	—	22	0.866	12	0.472	7	0.276	0.3	0.012	3.27	1.37	0.062	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	0.089	12.3		SU000	—	—	—	5	0.197	10	0.394	3	0.118	M3×0.35	—	0.024
12	—	28	1.102	15	0.591	8	0.315	0.3	0.012	5.10	2.40	0.109	13.2		SU001	—	—	—	5	0.197	10	0.394	3	0.118	M3×0.35	—	0.026
		40	1.575	22	0.866	12	0.472	0.6	0.024	9.55	4.80	0.218	13.2		SB201	—	—	—	6	0.236	16	0.630	4	0.157	M5×0.5	—	0.10
—	1/2	47	1.850	31	1.220	16	0.630	0.6	0.024	12.8	6.65	0.302	13.2		UC201	UC201L2	4	0.157	12.7	0.500	18.3	0.720	5	0.197	M6×0.75	—	0.21
		40	1.575	22	0.866	12	0.472	0.6	0.024	9.55	4.80	0.218	13.2		SB201-8	—	—	—	6	0.236	16	0.630	4	0.157	—	No.10-32UNF	0.10
—	1/2	47	1.850	31	1.220	16	0.630	0.6	0.024	12.8	6.65	0.302	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	0.130	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	0.218	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	0.302	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	0.218	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	0.302	13.2		UC202-10	UC202-10L2	4	0.157	12.7	0.500	18.3	0.720	5	0.197	—	1/4-28UNF	0.19
17	—	35	1.378	17.5	0.689	10	0.394	0.3	0.012	6.00	3.25	0.148	14.4		SU003	—	—	—	6	0.236	11.5	0.453	3.3	0.130	M4×0.5	—	0.050
		40	1.575	22	0.866	12	0.472	0.6	0.024	9.55	4.80	0.218	13.2		SB203	—	—	—	6	0.236	16	0.630	4	0.157	M5×0.5	—	0.10
—	3/4	47	1.850	31	1.220	16	0.630	0.6	0.024	12.8	6.65	0.302	13.2		UC203	UC203L2	4	0.157	12.7	0.500	18.3	0.720	5	0.197	M6×0.75	—	0.18
		47	1.850	25	0.984	14	0.551	1	0.039	12.8	6.65	0.302	13.2		SB204-12	—	—	—	7	0.276	18	0.709	5	0.197	—	1/4-28UNF	0.15
—	3/4	47	1.850	31	1.220	16	0.630	1	0.039	12.8	6.65	0.302	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	0.230	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	0.302	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	0.302	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	0.357	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	0.357	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	0.357	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	0.357	13.9		UC205-15	UC205-15L2	5	0.197	14.3	0.563	19.8	0.780	5.5	0.217	—	1/4-28UNF	0.21
25	—	47	1.850	22	0.866	12	0.472	0.6	0.024	10.1	5.85	0.266	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	0.357	13.9		SB205	—	—	—	7.5	0.295	19.5	0.768	5.5	0.217	M6×0.75	—	0.18
—	1	52	2.047	34.1	1.343	17	0.669	1	0.039	14.0	7.85	0.357	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	0.495	12.6		UC305	—	6	0.236	15	0.591	23	0.906	6	0.236	M6×0.75	—	0.45
—	1	62	2.441	38.1	1.500	19	0.748	1	0.039	19.5	11.3	0.514	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	0.357	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	0.357	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	0.495	12.6		UC305-16	—	6	0.236	15	0.591	23	0.906	6	0.236	M6×0.75	—	0.44
—	1 1/8	62	2.441	38.1	1.500	19	0.748	1	0.039	19.5	11.3	0.514	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
		62	2.441	30	1.181	16	0.630	1	0.039	19.5	11.3	0.514	13.9		SB206-18	—	—	—	8	0.315	22	0.866	6	0.236	—	1/4-28UNF	0.27
—	1 1/8	62	2.441	38.1	1.500	19	0.748	1	0.039	19.5	11.3	0.514	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	0.375	14.7		SU006	—	—	—	7.5	0.295	17	0.669	5.5	0.217	M5×0.5	—	0.15
30	—	62	2.441	30	1.181	16	0.630	1	0.039	19.5	11.3	0.514	13.9		SB206	—	—	—	8	0.315	22	0.866	6	0.236	M6×0.75	—	0.27
		62	2.441	38.1	1.500	19	0.748	1	0.039	19.5	11.3	0.514	13.9		UC206	UC206L3	5	0.197	15.9	0.626	22.2	0.874	6	0.236	M6×0.75	—	0.32
—	1 1/4	72	2.835	42.9	1.689	20	0.787	1	0.039	25.7	15.4	0.700	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	0.682	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	0.514	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																	

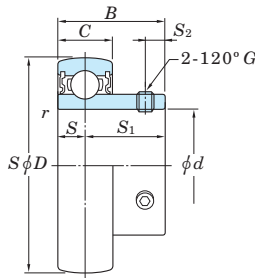
UC, SB, SU
Cylindrical bore (with set screws)
d (30) ~ (60) mm



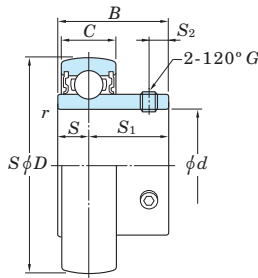
UC



UC-L3



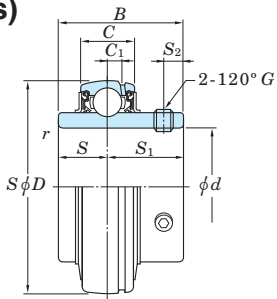
SB



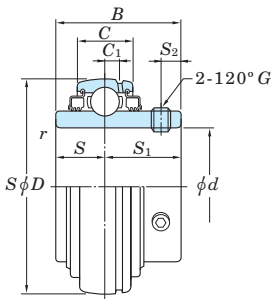
SU

Shaft Dia. mm inch		Dimensions								Basic Load Ratings kN		Fatigue Load Limit kN	Factor		Bearing No.		Dimensions								Set Screw Brg. Bore G		Mass
d		D		B		C		r (min.)		C _r C _{0r}		C _u	f ₀		Standard	L3 Type	C ₁		S		S ₁		S ₂		mm inch	kg	
		mm	inch	mm	inch	mm	inch	mm	inch								mm	inch	mm	inch	mm	inch	mm	inch			
–	1 3/8	72	2.835	32	1.260	17	0.669	1.1	0.043	25.7	15.4	0.700	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	0.700	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	0.809	14.0		UCX07-22	UCX07-22L3	6	0.236	19	0.748	30.2	1.189	8	0.315	–	5/16-24UNF	0.75
35	–	72	2.835	32	1.260	17	0.669	1.1	0.043	25.7	15.4	0.700	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	0.700	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	0.809	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	0.877	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	0.700	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	0.700	13.9		UC207-23	UC207-23L3	5.5	0.217	17.5	0.689	25.4	1.000	6.5	0.256	–	5/16-24UNF	0.45
		80	3.150	49.2	1.937	21	0.827	1.1	0.043	29.1	17.8	0.809	14.0		UCX07-23	UCX07-23L3	6	0.236	19	0.748	30.2	1.189	8	0.315	–	5/16-24UNF	0.72
–	1 1/2	80	3.150	34	1.339	18	0.709	1.1	0.043	29.1	17.8	0.809	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	0.809	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	0.968	14.0		UCX08-24	UCX08-24L3	6	0.236	19	0.748	30.2	1.189	8	0.315	–	5/16-24UNF	0.87
		90	3.543	52	2.047	28	1.102	1.5	0.059	40.7	24.0	1.09	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	0.809	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	0.809	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	0.809	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	0.968	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	1.09	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	0.968	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	0.968	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	0.968	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	1.06	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	1.34	13.3		UC309-28	UC309-28L3	8.5	0.335	22	0.866	35	1.378	10	0.394	M10×1.25	–	1.35
		85	3.346	49.2	1.937	22	0.866	1.1	0.043	34.1	21.3	0.968	14.0		UC209	UC209L3	6	0.236	19	0.748	30.2	1.189	8	0.315	M8×1	–	0.68
45	–	90	3.543	51.6	2.031	24	0.945	1.1	0.043	35.1	23.3	1.06	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	1.34	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	1.06	14.4		UC210-30	UC210-30L3	6	0.236	19	0.748	32.6	1.283	9	0.354	–
–	1 15/16	90	3.543	51.6	2.031	24	0.945	1.1	0.043	35.1	23.3	1.06	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	1.34	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	1.06	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	1.34	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	1.74	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	1.06	14.4		UC210-32	UC210-32L3	6	0.236	19	0.748	32.6	1.283	9	0.354	–	3/8-24UNF	0.78
–	2	100	3.937	55.6	2.189	25	0.984	1.1	0.043	43.4	29.4	1.34	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
		100	3.937	55.6	2.189	25	0.984	1.5	0.059	43.4	29.4	1.34	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
–	2 1/8	120	4.724	66	2.598	34	1.339	2	0.079	71.6	45.0	2.05	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	1.34	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	1.34	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	1.65	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	2.05															

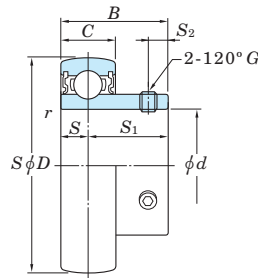
UC, SB, SU
Cylindrical bore (with set screws)
d (60) ~ 140 mm



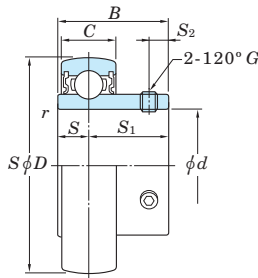
UC



UC-L3



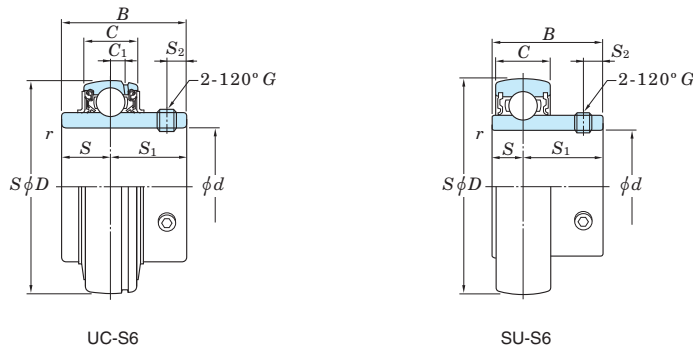
SB



SU

Shaft Dia. mm inch		Dimensions								Basic Load Ratings kN		Fatigue Load Limit kN	Factor		Bearing No.		Dimensions								Set Screw Brg. Bore G		Mass
d		D		B		C		r (min.)		C _r	C _{0r}	C _u	f ₀		Standard	L3 Type	C ₁		S		S ₁		S ₂		mm	inch	kg
		mm	inch	mm	inch	mm	inch	mm	inch								mm	inch	mm	inch	mm	inch	mm	inch			
—	2 7/16	110	4.331	65.1	2.563	27	1.063	1.5	0.059	52.4	36.2	1.65	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	1.82	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
—	2 1/2	120	4.724	65.1	2.563	28	1.102	1.5	0.059	57.2	40.1	1.82	14.4		UC213-40	UC213-40L3	7.5	0.295	25.4	1.000	39.7	1.563	12	0.472	—	1/2-20UNF	1.94
		125	4.921	74.6	2.937	30	1.181	1.5	0.059	62.2	44.1	2.01	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	2.68	13.2		UC313-40	UC313-40L3	12	0.472	30	1.181	45	1.772	12	0.472	M12×1.5	—	3.24
65	—	120	4.724	65.1	2.563	28	1.102	1.5	0.059	57.2	40.1	1.82	14.4		UC213	UC213L3	7.5	0.295	25.4	1.000	39.7	1.563	12	0.472	M12×1.5	—	1.86
		125	4.921	74.6	2.937	30	1.181	1.5	0.059	62.2	44.1	2.01	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	2.68	13.2		UC313	UC313L3	12	0.472	30	1.181	45	1.772	12	0.472	M12×1.5	—	3.16
—	2 3/4	125	4.921	74.6	2.937	30	1.181	1.5	0.059	62.2	44.1	2.01	14.5		UC214-44	UC214-44L3	9	0.354	30.2	1.189	44.4	1.748	12	0.472	—	1/2-20UNF	2.06
		130	5.118	77.8	3.063	32	1.260	1.5	0.059	67.4	48.3	2.17	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	2.96	13.2		UC314-44	UC314-44L3	12.5	0.492	33	1.299	45	1.772	12	0.472	M12×1.5	—	3.91
70	—	125	4.921	74.6	2.937	30	1.181	1.5	0.059	62.2	44.1	2.01	14.5		UC214	UC214L3	9	0.354	30.2	1.189	44.4	1.748	12	0.472	M12×1.5	—	2.05
		130	5.118	77.8	3.063	32	1.260	1.5	0.059	67.4	48.3	2.17	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	2.96	13.2		UC314	UC314L3	12.5	0.492	33	1.299	45	1.772	12	0.472	M12×1.5	—	3.90
—	2 15/16	130	5.118	77.8	3.063	32	1.260	1.5	0.059	67.4	48.3	2.17	14.5		UC215-47	UC215-47L3	9	0.354	33.3	1.311	44.5	1.752	12	0.472	—	1/2-20UNF	2.23
		140	5.512	82.6	3.252	33	1.299	1.5	0.059	72.7	53.0	2.30	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	3.24	13.2		UC315-47	UC315-47L3	14.5	0.571	32	1.260	50	1.969	14	0.551	M14×1.5	—	4.72
75	—	130	5.118	77.8	3.063	32	1.260	1.5	0.059	67.4	48.3	2.17	14.5		UC215	UC215L3	9	0.354	33.3	1.311	44.5	1.752	12	0.472	M12×1.5	—	2.21
		140	5.512	82.6	3.252	33	1.299	1.5	0.059	72.7	53.0	2.30	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	3.24	13.2		UC315	UC315L3	14.5	0.571	32	1.260	50	1.969	14	0.551	M14×1.5	—	4.70
—	3	130	5.118	77.8	3.063	32	1.260	1.5	0.059	67.4	48.3	2.17	14.5		UC215-48	UC215-48L3	9	0.354	33.3	1.311	44.5	1.752	12	0.472	—	1/2-20UNF	2.12
		140	5.512	82.6	3.252	33	1.299	1.5	0.059	72.7	53.0	2.30	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	3.24	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	2.30	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
80	—	140	5.512	82.6	3.252	33	1.299	2	0.079	72.7	53.0	2.30	14.6		UC216	UC216L3	9	0.354	33.3	1.311	49.3	1.941	14	0.551	M12×1.5	—	2.79
		150	5.906	85.7	3.374	35	1.378	2	0.079	84.0	61.9	2.60	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	3.53	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	2.60	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
85	—	150	5.906	85.7	3.374	35	1.378	2	0.079	84.0	61.9	2.60	14.5		UC217	UC217L3	10	0.394	34.1	1.343	51.6	2.031	14	0.551	M12×1.5	—	3.45
		160	6.299	96	3.780	38	1.496	2	0.079	96.1	71.5	2.91	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	3.82	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	2.91	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	2.91	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	4.11	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	2.91	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	3.23	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	4.11	13.3		UC318	UC318L3	15.5	0.610	40	1.575	56	2.205	16	0.630	M16×1.5	—	7.87
		200	7.874	103	4.055	50	1.969	3	0.118	153	119	4.45	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	3.91	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	5.08	13.2		UC320	UC320L3	18	0.709	42	1.654	66	2.598	20	0.787	M18×1.5	—	11.2
		190	7.480	117.5	4.626	43	1.693	2.1	0.08																		

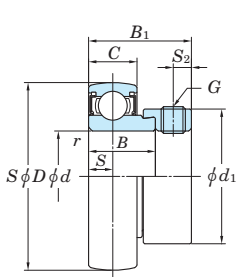
UC-S6, SU-S6 (Stainless-series)
Cylindrical bore (with set screws)
d 10 ~ 50 mm



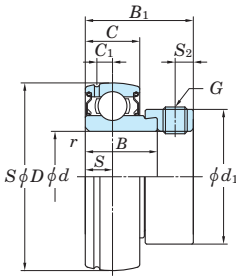
Shaft Dia. mm	Dimensions								Basic Load Ratings kN		Fatigue Load Limit kN	Factor	Bearing No.		Dimensions								Set Screw Dia. G	Mass
d	D		B		C		r (min.)		C _r	C _{0r}	C _u	f ₀			C ₁	S	S ₁	S ₂						
	mm	inch	mm	inch	mm	inch	mm	inch							mm	inch	mm	inch	mm	inch	mm	kg		
10	26	1.024	15	0.591	8	0.315	0.3	0.012	3.9	1.55	0.070	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	0.086	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	0.102	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	0.118	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	0.182	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	0.243	13.2	UC204S6		4	0.157	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	0.211	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	0.286	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	0.300	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	0.411	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	0.559	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	0.650	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	0.736	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	0.845	14.4	UC210S6		6	0.236	19	0.748	32.6	1.283	9	0.354	M8×1	0.80

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

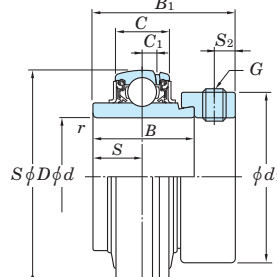
SA, SA-F, NA
Cylindrical bore
(with eccentric locking collar)
d 12 ~ (30) mm



SA



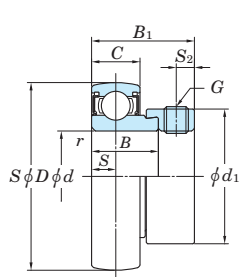
SA-F



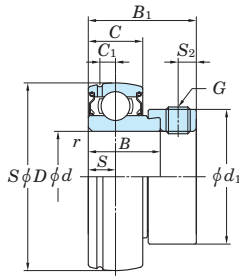
NA

Shaft Dia mm inch		Dimensions										Basic Load Ratings kN		Fatigue Load Limit kN	Factor		Bearing No.	Dimensions						Set Screw Dia. G		Mass		
d		D		B		B ₁		C		r (min.)		C _r C _{0r}		C _u	f ₀			C ₁		S		S ₂		d ₁		mm inch		kg
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch							mm	inch	mm	inch	mm	inch	mm	inch			
12	—	40	1.575	19	0.784	28.5	1.122	12	0.472	0.6	0.024	9.55	4.80	0.218	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	0.218	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	0.302	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	0.218	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	0.218	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	0.302	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	0.218	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	0.218	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	0.302	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	0.218	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	0.302	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	0.218	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	0.218	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	0.302	13.2		NA203	4	0.157	17.1	0.673	4.8	0.189	33.3	1.311	M6×0.75	—	0.25
—	3/4	47	1.850	20	0.787	29.5	1.161	14	0.551	1	0.039	12.8	6.65	0.302	13.2		SA204-12	—	—	7	0.276	4.8	0.189	33.3	1.311	—	1/4-28UNF	0.15
		47	1.850	21.5	0.846	31	1.220	15	0.591	1	0.039	12.8	6.65	0.302	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	0.302	13.2		NA204-12	4	0.157	17.1	0.673	4.8	0.189	33.3	1.311	—	1/4-28UNF	0.23
20	—	47	1.850	20	0.787	29.5	1.161	14	0.551	1	0.039	12.8	6.65	0.302	13.2		SA204	—	—	7	0.276	4.8	0.189	33.3	1.311	M6×0.75	—	0.15
		47	1.850	21.5	0.846	31	1.220	15	0.591	1	0.039	12.8	6.65	0.302	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	0.302	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	0.357	13.9		SA205-14	—	—	7.5	0.295	4.8	0.189	38.1	1.500	—	1/4-28UNF	0.22
		52	2.047	34.9	1.374	44.4	1.748	17	0.669	1	0.039	14.0	7.85	0.357	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	0.357	13.9		SA205-15	—	—	7.5	0.295	4.8	0.189	38.1	1.500	—	1/4-28UNF	0.22
		52	2.047	21.5	0.846	31	1.220	15	0.591	1	0.039	14.0	7.85	0.357	13.9		SA205-15F	3.7	0.146	7.5	0.295	4.8	0.189	38.1	1.500	—	1/4-28UNF	0.23
		52	2.047	34.9	1.374	44.4	1.748	17	0.669	1	0.039	14.0	7.85	0.357	13.9		NA205-15	5	0.197	17.5	0.689	4.8	0.189	38.1	1.500	—	1/4-28UNF	0.29
25	—	52	2.047	21	0.827	30.5	1.201	15	0.591	1	0.039	14.0	7.85	0.357	13.9		SA205	—	—	7.5	0.295	4.8	0.189	38.1	1.500	M6×0.75	—	0.22
		52	2.047	21.5	0.846	31	1.220	15	0.591	1	0.039	14.0	7.85	0.357	13.9		SA205F	3.7	0.146	7.5	0.295	4.8	0.189	38.1	1.500	M6×0.75	—	0.23
		52	2.047	34.9	1.374	44.4	1.748	17	0.669	1	0.039	14.0	7.85	0.357	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	0.357	13.9		SA205-16	—	—	7.5	0.295	4.8	0.189	38.1	1.500	—	1/4-28UNF	0.22
		52	2.047	21.5	0.846	31	1.220	15	0.591	1	0.039	14.0	7.85	0.357	13.9		SA205-16F	3.7	0.146	7.5	0.295	4.8	0.189	38.1	1.500	—	1/4-28UNF	0.23
		52	2.047	34.9	1.374	44.4	1.748	17	0.669	1	0.039	14.0	7.85	0.357	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	0.514	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	0.514	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	0.514	13.9		NA206-18	5	0.197	18.3	0.720	6	0.236	44.5	1.752	—	5/16-24UNF	0.43
30	—	62	2.441	22	0.866	33.9	1.335	16	0.630	1	0.039	19.5	11.3	0.514	13.9		SA206	—	—	8	0.315	6	0.236	44.5	1.752	M8×1	—	0.3
		62	2.441	23.8	0.937	35.7	1.406	18	0.709	1	0.039	19.5	11.3	0.514	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	0.514	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	0.514	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	0.514	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	0.514	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	0.514	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															

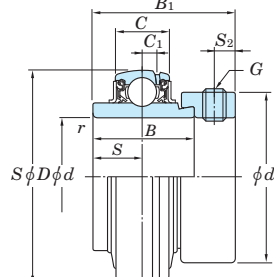
SA, SA-F, NA
Cylindrical bore
(with eccentric locking collar)
d (30) ~ 75 mm



SA



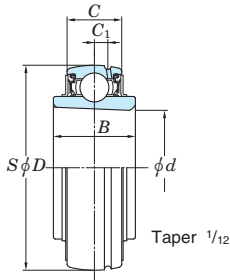
SA-F



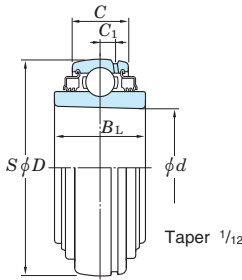
NA

Shaft Dia mm inch		Dimensions										Basic Load Ratings kN		Fatigue Load Limit kN	Factor		Bearing No.	Dimensions								Set Screw Dia. G		Mass
<i>d</i>		<i>D</i>		<i>B</i>		<i>B</i> ₁		<i>C</i>		<i>r</i> (min.)		<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _u	<i>f</i> ₀		<i>C</i> ₁	<i>S</i>	<i>S</i> ₂	<i>d</i> ₁		<i>G</i>						
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch						mm	inch	mm	inch	mm	inch	mm	inch	kg			
–	1 3⁄8	72	2.835	23	0.906	36.5	1.437	17	0.669	1.1	0.043	25.7	15.4	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.700	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	0.809	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	0.809	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	0.809	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	0.809	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	0.809	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	0.809	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	0.809	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	0.809	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	0.809	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	0.968	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	0.968	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	0.968	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	0.968	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	0.968	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	0.968	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	0.968	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	0.968	14.0		NA209	6	0.236	21.4	0.843	6.8	0.268	63.5	2.500	M8×1	–	0.85
		90	3.543	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	35.1	23.3	1.06	14.4		SA210-30F	6.6	0.260	11	0.433	6.8	0.268	69.9	2.752	–	5⁄16-24UNF	0.85
–	1 7⁄8	90	3.543	49.2	1.937	62.7	2.469	24	0.945	1.1	0.043	35.1	23.3	1.06	14.4		NA210-30	6	0.236	24.6	0.969	6.8	0.268	69.9	2.752	–	5⁄16-24UNF	1.08
		90	3.543	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	35.1	23.3	1.06	14.4		SA210-31F	6.6	0.260	11	0.433	6.8	0.268	69.9	2.752	–	5⁄16-24UNF	0.85
–	1 15⁄16	90	3.543	49.2	1.937	62.7	2.469	24	0.945	1.1	0.043	35.1	23.3	1.06	14.4		NA210-31	6	0.236	24.6	0.969	6.8	0.268	69.9	2.752	–	5⁄16-24UNF	1.04
		90	3.543	30.2	1.189	43.7	1.720	22	0.866	1.1	0.043	35.1	23.3	1.06	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	1.06	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	1.06	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	1.34	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	1.34	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	1.34	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	1.34	14.4		NA211-34	7	0.276	27.8	1.094	8	0.315	76.2	3.000	–	3⁄8-24UNF	1.49
		100	3.937	32.4	1.276	48.4	1.906	24	0.945	1.5	0.059	43.4	29.4	1.34	14.4		SA211F	7	0.276	12	0.472	8	0.315	76.2	3.000	M10×1.25	–	1.2
55	–	100	3.937	55.5	2.185	71.4	2.811	25	0.984	1.5	0.059	43.4	29.4	1.34	14.4		NA211	7	0.276	27.8	1.094	8	0.315	76.2	3.000	M10×1.25	–	1.39
		100	3.937	32.4	1.276	48.4	1.906	24	0.945	1.5	0.059	43.4	29.4	1.34	14.4		SA211-35F	7	0.276	12	0.472	8	0.315	76.2	3.000	–	3⁄8-24UNF	1.2
		100	3.																									

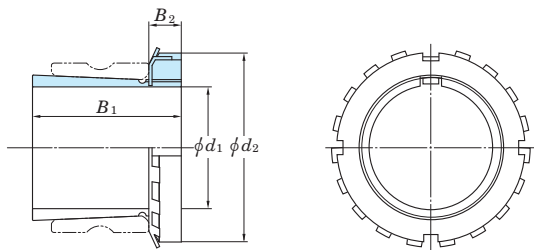
UK
Tapered bore (with adapter)
d₁ 20 ~ (50) mm



UK



UK-L3



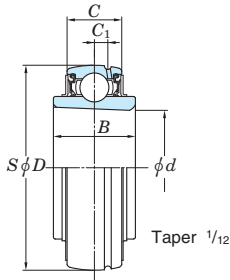
Adapter Assembly

Shaft Dia. mm inch		Dimensions inch mm						Basic Load Ratings kN		Fatigue Load Limit kN	Factor	Bearing No.		Mass kg		Adapter Assembly No.	H23 Series Adapter Dimensions inch mm			Mass kg	Sleeve No.
d ₁		d	D	B	B _L	C	C ₁	C _r	C _{0r}	C _u	f ₀	Standard	L3 Type	Standard	L3 Type		B ₁	B ₂	d ₂		
20	3/4	0.984 25	2.047 52	0.945 24	0.945 24	0.669 17	0.197 5	14.0	7.85	0.357	13.9	UK205	UK205L2	0.18	0.18	HE2305X H2305X	1.378 35	0.315 8	1.496 38	0.095	AE2305X A2305X
	3/4	0.984 25	2.441 62	1.063 27	—	0.748 19	0.197 5	19.5	11.3	0.514	13.9	UKX05	—	0.27	—	HE2305X H2305X	1.378 35	0.315 8	1.496 38	0.095	AE2305X A2305X
	3/4	0.984 25	2.441 62	1.063 27	—	0.866 22	0.236 6	21.2	10.9	0.495	12.6	UK305	—	0.40	—	HE2305X H2305X	1.378 35	0.315 8	1.496 38	0.095	AE2305X A2305X
25	1	1.181 30	2.441 62	1.063 27	1.063 27	0.748 19	0.197 5	19.5	11.3	0.514	13.9	UK206	UK206L3	0.29	0.29	H2306X HE2306X	1.496 38	0.315 8	1.772 45	0.13	A2306X HE2306X
	1	1.181 30	2.835 72	1.181 30	—	0.787 20	0.217 5.5	25.7	15.4	0.700	13.9	UKX06	—	0.43	—	H2306X HE2306X	1.496 38	0.315 8	1.772 45	0.13	A2306X HE2306X
	1	1.181 30	2.835 72	1.181 30	—	0.945 24	0.256 6.5	26.7	15.0	0.682	13.3	UK306	—	0.47	—	H2306X HE2306X	1.496 38	0.315 8	1.772 45	0.13	A2306X HE2306X
30	1 1/8	1.378 35	2.835 72	1.181 30	1.181 30	0.787 20	0.217 5.5	25.7	15.4	0.700	13.9	UK207	UK207L3	0.43	0.43	HS2307X H2307X	1.693 43	0.354 9	2.047 52	0.17	AS2307X A2307X
	1 1/8	1.378 35	3.150 80	1.339 34	—	0.827 21	0.236 6	29.1	17.8	0.809	14.0	UKX07	—	0.53	—	HS2307X H2307X	1.693 43	0.354 9	2.047 52	0.17	AS2307X A2307X
	1 1/8	1.378 35	3.150 80	1.299 33	1.299 33	1.024 26	0.295 7.5	33.4	19.3	0.877	13.2	UK307	UK307L3	0.60	0.60	HS2307X H2307X	1.693 43	0.354 9	2.047 52	0.17	AS2307X A2307X
35	1 1/4	1.575 40	3.150 80	1.339 34	1.339 34	0.827 21	0.236 6	29.1	17.8	0.809	14.0	UK208	UK208L3	0.58	0.58	HE2308X HS2308X H2308X	1.811 46	0.394 10	2.283 58	0.22	AE2308X AS2308X A2308X
	1 1/4	1.575 40	3.346 85	1.417 36	—	0.866 22	0.236 6	34.1	21.3	0.968	14.0	UKX08	—	0.58	—	HE2308X HS2308X H2308X	1.811 46	0.394 10	2.283 58	0.22	AE2308X AS2308X A2308X
	1 1/4	1.575 40	3.543 90	1.378 35	1.378 35	1.102 28	0.315 8	40.7	24.0	1.09	13.2	UK308	UK308L3	0.80	0.80	HE2308X HS2308X H2308X	1.811 46	0.394 10	2.283 58	0.22	AE2308X AS2308X A2308X
40	1 1/2	1.772 45	3.346 85	1.417 36	1.417 36	0.866 22	0.236 6	34.1	21.3	0.968	14.0	UK209	UK209L3	0.65	0.65	HE2309X H2309X	1.969 50	0.433 11	2.559 65	0.28	AE2309X A2309X
	1 1/2	1.772 45	3.543 90	1.417 36	—	0.945 24	0.236 6	35.1	23.3	1.06	14.4	UKX09	—	0.67	—	HE2309X H2309X	1.969 50	0.433 11	2.559 65	0.28	AE2309X A2309X
	1 1/2	1.772 45	3.937 100	1.496 38	1.496 38	1.181 30	0.335 8.5	48.9	29.5	1.34	13.3	UK309	UK309L3	1.08	1.08	HE2309X H2309X	1.969 50	0.433 11	2.559 65	0.28	AE2309X A2309X
45	1 3/4	1.969 50	3.543 90	1.417 36	1.417 36	0.945 24	0.236 6	35.1	23.3	1.06	14.4	UK210	UK210L3	0.65	0.65	HE2310X H2310X	2.165 55	0.472 12	2.756 70	0.36	AE2310X A2310X
	1 3/4	1.969 50	3.937 100	1.575 40	—	0.984 25	0.276 7	43.4	29.4	1.34	14.4	UKX10	—	0.89	—	HE2310X H2310X	2.165 55	0.472 12	2.756 70	0.36	AE2310X A2310X
	1 3/4	1.969 50	4.331 110	1.575 40	1.575 40	1.260 32	0.354 9	62.0	38.3	1.74	13.2	UK310	UK310L3	1.38	1.38	HE2310X H2310X	2.165 55	0.472 12	2.756 70	0.36	AE2310X A2310X
50	1 7/8	2.165 55	3.937 100	1.575 40	1.575 40	0.984 25	0.276 7	43.4	29.4	1.34	14.4	UK211	UK211L3	1.09	1.09	HS2311X H2311X HE2311X	2.323 59	0.472 12	2.953 75	0.42	AS2311X A2311X AE2311X
	2	2.165 55	4.331 110	1.850 47	—	1.063 27	0.295 7.5	52.4	36.2	1.65	14.4	UKX11	—	1.15	—	HS2311X H2311X HE2311X	2.323 59	0.472 12	2.953 75	0.42	AS2311X A2311X AE2311X

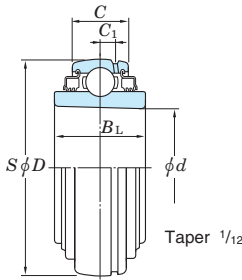
Remarks 1. In Part No. of unit with adapters, Part No. of applicable adapters follow the Part No. shown in the dimensional tables.
(Example of Part No. : UK206 + H2306X, UK206L3 + H2306X)

2. Adapter series applicable to UK200 series
UK200..... H2300X series
UK200L3 (or L2) H2300X series
3. UK205 is the double-lip seal type product (L2).
4. Inch bore diameter series adapters are also available (see the dimensional tables of adapters assemblies).

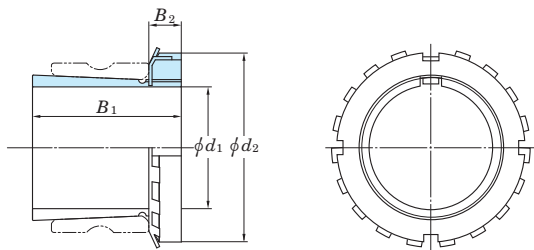
UK
Tapered bore (with adapter)
d₁ (50) ~ (90) mm



UK



UK-L3



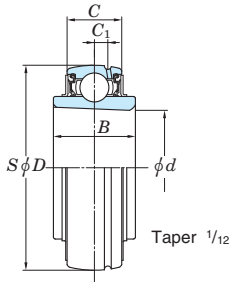
Adapter Assembly

Shaft Dia. mm inch		Dimensions inch mm						Basic Load Ratings kN		Fatigue Load Limit kN	Factor	Bearing No.		Mass kg		Adapter Assembly No.	H23 Series Adapter Dimensions inch mm			Mass kg	Sleeve No.
d ₁		d	D	B	B _L	C	C ₁	C _r	C _{0r}	C _u	f ₀	Standard	L3 Type	Standard	L3 Type		B ₁	B ₂	d ₂		
50	1 7/8	2.165	4.724	1.693	1.693	1.339	0.394	71.6	45.0	2.05	13.2	UK311	UK311L3	1.78	1.78	HS2311X H2311X HE2311X	2.323 59	0.472 12	2.953 75	0.42	AS2311X A2311X AE2311X
	2	55	120	43	43	34	10														
55	2 1/8	2.362	4.331	1.850	1.850	1.063	0.295	52.4	36.2	1.65	14.4	UK212	UK212L3	1.41	1.41	HS2312X H2312X	2.441 62	0.512 13	3.150 80	0.48	AS2312X A2312X
	2 1/8	2.362	4.724	1.417	—	1.102	0.295	57.2	40.1	1.82	14.4	UKX12	—	1.45	—	HS2312X H2312X	2.441 62	0.512 13	3.150 80	0.48	AS2312X A2312X
	2 1/8	2.362	5.118	1.850	1.850	1.417	0.453	81.9	52.2	2.37	13.2	UK312	UK312L3	2.06	2.06	HS2312X H2312X	2.441 62	0.512 13	3.150 80	0.48	AS2312X A2312X
	60	130	47	47	36	11.5															
60	2 1/4	2.559	4.724	1.417	1.850	1.102	0.295	57.2	40.1	1.82	14.4	UK213	UK213L3	1.34	1.67	HE2313X H2313X HS2313X	2.559 65	0.551 14	3.346 85	0.56	AE2313X A2313X AS2313X
	2 3/8	65	120	36	47	28	7.5														
	2 1/4	2.559	4.921	1.575	—	1.181	0.354	62.2	44.1	2.01	14.5	UKX13	—	1.62	—	HE2313X H2313X HS2313X	2.559 65	0.551 14	3.346 85	0.56	AE2313X A2313X AS2313X
	2 3/8	65	125	40	—	30	9														
	2 1/4	2.559	5.512	1.929	1.929	1.496	0.472	92.7	59.9	2.68	13.2	UK313	UK313L3	2.71	2.71	HE2313X H2313X HS2313X	2.559 65	0.551 14	3.346 85	0.56	AE2313X A2313X AS2313X
	2 3/8	65	140	49	49	38	12														
65	2 1/2	2.953	5.118	1.575	2.008	1.260	0.354	67.4	48.3	2.17	14.5	UK215	UK215L3	1.50	1.99	HE2315X H2315X	2.874 73	0.591 15	3.858 98	1.05	AE2315X A2315X
	2 1/2	2.953	5.512	1.654	—	1.299	0.354	72.7	53.0	2.30	14.6	UKX15	—	2.10	—	HE2315X H2315X	2.874 73	0.591 15	3.858 98	1.05	AE2315X A2315X
	2 1/2	2.953	6.299	2.165	2.165	1.654	0.571	113	77.2	3.24	13.2	UK315	UK315L3	3.80	3.80	HE2315X H2315X	2.874 73	0.591 15	3.858 98	1.05	AE2315X A2315X
	75	160	55	55	42	14.5															
70	2 3/4	3.150	5.512	1.654	2.165	1.299	0.354	72.7	53.0	2.30	14.6	UK216	UK216L3	1.96	2.56	HE2316X H2316X	3.071 78	0.669 17	4.134 105	1.3	AE2316X A2316X
	2 3/4	3.150	5.906	1.732	—	1.378	0.394	84.0	61.9	2.60	14.5	UKX16	—	2.64	—	HE2316X H2316X	3.071 78	0.669 17	4.134 105	1.3	AE2316X A2316X
	2 3/4	3.150	6.693	2.165	2.165	1.732	0.591	123	86.7	3.53	13.3	UK316	UK316L3	4.39	4.39	HE2316X H2316X	3.071 78	0.669 17	4.134 105	1.3	AE2316X A2316X
75	3	3.346	5.906	1.732	2.244	1.378	0.394	84.0	61.9	2.60	14.5	UK217	UK217L3	2.42	3.10	H2317X HE2317X	3.228 82	0.709 18	4.331 110	1.45	A2317X AE2317X
	3	3.346	6.299	1.890	—	1.496	0.433	96.1	71.5	2.91	14.5	UKX17	—	3.25	—	H2317X HE2317X	3.228 82	0.709 18	4.331 110	1.45	A2317X AE2317X
	3	3.346	7.087	2.362	2.362	1.811	0.591	133	96.8	3.82	13.3	UK317	UK317L3	5.30	5.30	H2317X HE2317X	3.228 82	0.709 18	4.331 110	1.45	A2317X AE2317X
	180	60	60	46	15																
80	—	3.543	6.299	1.890	2.480	1.496	0.433	96.1	71.5	2.91	14.5	UK218	UK218L3	2.90	3.77	H2318X	3.386 86	0.709 18	4.724 120	1.7	A2318X
	—	3.543	6.693	1.969	—	1.575	0.453	109	81.9	3.23	14.4	UKX18	—	3.80	—	H2318X	3.386 86	0.709 18	4.724 120	1.7	A2318X
	—	3.543	7.480	2.362	2.362	1.890	0.610	143	107	4.11	13.3	UK318	UK318L3	6.20	6.20	H2318X	3.386 86	0.709 18	4.724 120	1.7	A2318X
85	3 1/4	3.740	7.874	2.598	2.598	1.969	0.650	153	119	4.45	13.3	UK319	UK319L3	7.31	7.31	H2319X	3.543 90	0.748 19	4.921 125	1.95	A2319X
	95	200	66	66	50	16.5															
90	3 1/2	3.937	7.480	2.126	—	1.693	0.512	133	105	3.91	14.4	UKX20	—	5.36	—	HE2320X H2320X	3.819 97	0.787 20	5.118 130	2.2	AE2320X A2320X
	100	190	54	—	43	13															

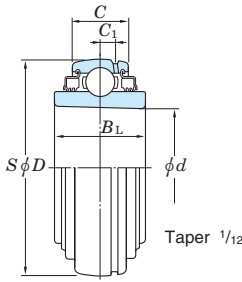
Remarks 1. In Part No. of unit with adapters, Part No. of applicable adapters follow the Part No. shown in the dimensional tables.
(Example of Part No. : UK206 + H2306X, UK206L3 + H2306X)

2. Adapter series applicable to UK200 series
UK200..... H2300X series
UK200L3 (or L2) H2300X series
3. UK205 is the double-lip seal type product (L2).
4. Inch bore diameter series adapters are also available (see the dimensional tables of adapters assemblies).

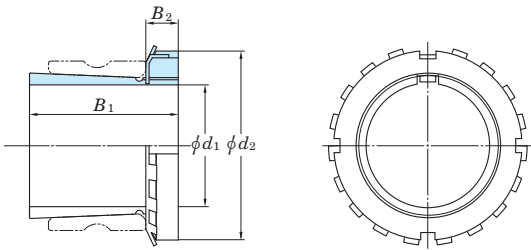
UK
Tapered bore (with adapter)
 d_1 (90) ~ 125 mm



UK



UK-L3

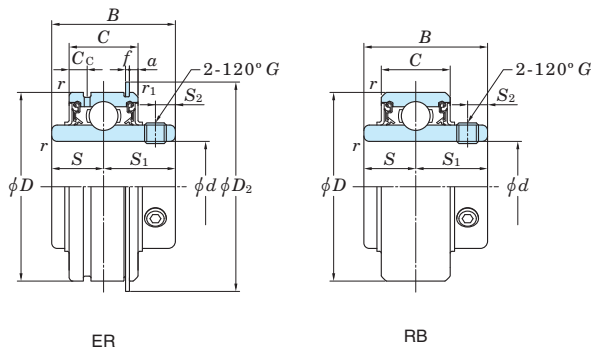


Adapter Assembly

Shaft Dia. mm inch		Dimensions inch mm						Basic Load Ratings kN		Fatigue Load Limit kN	Factor	Bearing No.		Mass kg		Adapter Assembly No.	H23 Series Adapter Dimensions inch mm			Mass kg	Sleeve No.
d_1		d	D	B	B_L	C	C_1	C_r	C_{0r}	C_u	f_0	Standard	L3 Type	Standard	L3 Type		B_1	B_2	d_2		
90	3 1/2	3.937	8.465	2.677	2.677	2.126	0.709	173	141	5.08	13.2	UK320	UK320L3	8.70	8.70	HE2320X	3.819	0.787	5.118	2.2	AE2320X
		100	215	68	68	54	18										97	20	130		A2320X
100	4	4.331	9.449	3.071	3.071	2.362	0.787	205	180	6.15	13.2	UK322	UK322L3	12.2	12.2	H2322X	4.134	0.827	5.709	2.75	A2322X
		110	240	78	78	60	20										105	21	145		AE2322X
110	—	4.724	10.236	3.425	3.425	2.520	0.827	207	185	6.10	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	6.79	13.6	UK326	UK326L3	18.8	18.8	HE2326	4.764	0.906	6.496	4.6	AE2326
		130	280	87	87	68	22										121	23	165		A2326
125	—	5.512	11.811	3.819	3.819	2.835	0.906	253	246	7.54	13.6	UK328	UK328L3	23.9	23.9	H2328	5.157	0.945	7.087	5.5	A2328
		140	300	97	97	72	23										131	24	180		

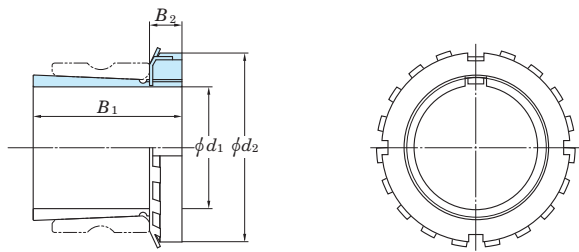
- Remarks 1. In Part No. of unit with adapters, Part No. of applicable adapters follow the Part No. shown in the dimensional tables.
(Example of Part No. : UK206 + H2306X, UK206L3 + H2306X)
2. Adapter series applicable to UK200 series
UK200..... H2300X series
UK200L3 (or L2) H2300X series
3. UK205 is the double-lip seal type product (L2).
4. Inch bore diameter series adapters are also available (see the dimensional tables of adapters assemblies).

ER, RB
Cylindrical bore (with set screws),
Cylindrical outside surface
d 12 ~ 60 mm



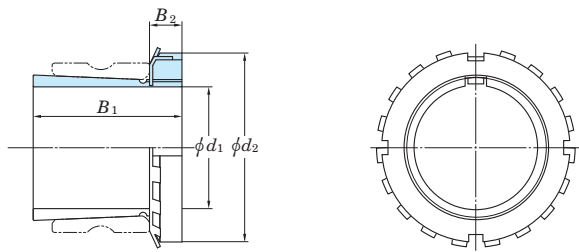
Shaft Dia. mm inch		Dimensions inch mm					Basic Load Ratings kN		Fatigue Load Limit kN	Factor	Bearing No.		Dimensions inch mm							Set Screw Dia. G		Mass kg	
<i>d</i>		<i>D</i>	<i>B</i>	<i>C</i>	<i>r</i> (min.)	<i>r</i> ₁ (min.)	<i>C</i> _r	<i>C</i> _{0r}	<i>C</i> _u	<i>f</i> ₀	(ER)	(RB)	<i>S</i>	<i>S</i> ₁	<i>S</i> ₂	<i>C</i> _c	<i>a</i>	<i>f</i>	<i>D</i> ₂	mm	inch	(ER)	(RB)
12	1/2	1.850	1.220	0.630	0.024	0.020	12.8	6.65	0.302	13.2	ER201	RB201								M6×0.75	—	0.27	0.27
15	5/8	47	31	16	0.6	0.5					ER201-8	RB201-8	0.500	0.720	0.197	0.157	0.094	0.042	2.067	—	1/4-28UNF	0.27	0.27
17											ER202	RB202	12.7	18.3	5	4	2.38	1.07	52.5	M6×0.75	—	0.25	0.25
											ER202-10	RB202-10								—	1/4-28UNF	0.25	0.25
											ER203	RB203								M6×0.75	—	0.24	0.24
20	3/4	1.850	1.220	0.630	0.039	0.020	12.8	6.65	0.302	13.2	ER204-12	RB204-12	0.500	0.720	0.197	0.157	0.094	0.042	2.067	—	1/4-28UNF	0.22	0.22
		47	31	16	1	0.5					ER204	RB204	12.7	18.3	5	4	2.38	1.07	52.5	M6×0.75	—	0.22	0.22
25	7/8	2.047	1.343	0.748	0.039	0.020	14.0	7.85	0.357	13.9	ER205-14	RB205-14								—	1/4-28UNF	0.3	0.29
	15/16										ER205-15	RB205-15	0.563	0.780	0.217	0.197	0.094	0.042	2.272	—	1/4-28UNF	0.28	0.27
	1	52	34.1	19	1	0.5					ER205	RB205	14.3	19.8	5.5	5	2.38	1.07	57.7	M6×0.75	—	0.27	0.26
											ER205-16	RB205-16								—	1/4-28UNF	0.27	0.26
30	1 1/8	2.441	1.500	0.866	0.039	0.020	19.5	11.3	0.514	13.9	ER206-18	RB206-18								—	1/4-28UNF	0.41	0.4
	1 3/16										ER206	RB206	0.626	0.874	0.236	0.217	0.125	0.065	2.657	M6×0.75	—	0.39	0.38
	1 1/4	62	38.1	22	1	0.5					ER206-19	RB206-19	15.9	22.2	6	5.5	3.18	1.65	67.5	—	1/4-28UNF	0.39	0.38
											ER206-20	RB206-20								—	1/4-28UNF	0.37	0.36
35	1 1/4	2.835	1.689	0.945	0.043	0.020	25.7	15.4	0.700	13.9	ER207-20	RB207-20								—	5/16-24UNF	0.69	0.68
	1 5/16										ER207-21	RB207-21	0.689	1.000	0.256	0.217	0.125	0.065	3.087	—	5/16-24UNF	0.66	0.65
	1 3/8	72	42.9	24	1.1	0.5					ER207-22	RB207-22	17.5	25.4	6.5	5.5	3.18	1.65	78.4	—	5/16-24UNF	0.64	0.63
											ER207	RB207								M8×1	—	0.63	0.62
	1 7/16										ER207-23	RB207-23								—	5/16-24UNF	0.61	0.6
40	1 1/2	3.150	1.937	1.102	0.043	0.020	29.1	17.8	0.809	14.0	ER208-24	RB208-24	0.748	1.189	0.315	0.236	0.125	0.065	3.402	—	5/16-24UNF	0.85	0.84
	1 9/16	80	49.2	28	1.1	0.5					ER208-25	RB208-25	19	30.2	8	6	3.18	1.65	86.4	—	5/16-24UNF	0.82	0.81
											ER208	RB208								M8×1	—	0.81	0.78
45	1 5/8	3.346	1.937	1.102	0.043	0.020	34.1	21.3	0.968	14.0	ER209-26	—								—	5/16-24UNF	1.0	—
	1 11/16										ER209-27	—	0.748	1.189	0.315	0.236	0.125	0.065	3.598	—	5/16-24UNF	0.96	—
	1 3/4	85	49.2	28	1.1	0.5					ER209-28	—	19	30.2	8	6	3.18	1.65	91.4	—	5/16-24UNF	0.92	—
											ER209	—								M8×1	—	0.90	—
50	1 7/8	3.543	2.031	1.102	0.043	0.020	35.1	23.3	1.06	14.4	ER210-30	—								—	3/8-24UNF	1.05	—
	1 15/16										ER210-31	—	0.748	1.283	0.354	0.295	0.125	0.095	3.791	—	3/8-24UNF	1.0	—
	2	90	51.6	28	1.1	0.5					ER210	—	19	32.6	9	7.5	3.18	2.41	96.3	M10×1.25	—	0.98	—
											ER210-32	—								—	3/8-24UNF	0.96	—
55	2	3.937	2.189	1.181	0.059	0.020	43.4	29.4	1.34	14.4	ER211-32	—								—	3/8-24UNF	1.56	—
	2 1/8										ER211-34	—	0.874	1.315	0.354	0.295	0.125	0.095	4.185	—	3/8-24UNF	1.45	—
		100	55.6	30	1.5	0.5					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	2 3/8	4.331	2.563	1.260	0.059	0.020	52.4	36.2	1.65	14.4	ER212	—	1.000	1.563	0.413	0.295	0.125	0.095	4.583	M10×1.25	—	1.89	—
	2 7/16	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	—
											ER212-39	—								—	3/8-24UNF	1.8	—

H2300X
d₁ 20 ~ 110 mm



mm	Shaft Dia. d_1 inch				Dimensions inch mm			Adapter Assembly No.					Sleeve No.				Lock Nut No.	Washer No.	Mass kg				
	(H)	(HE)	(HS)	(HA)	B_1	B_2	d_2	(H)	(HE)	(HS)	(HA)		(H)	(HE)	(HS)	(HA)			(H)	(HE)	(HS)	(HA)	
20	—	—	—	—	1.378	0.315	1.496	H2305X	—	—	—		A2305X	—	—	—	AN05	AW05X	0.095	—	—	—	
	$\frac{3}{4}$	—	—	—	35	8	38	—	HE2305X	—	—		—	—	AE2305X	—	—	AN05	AW05X	—	0.085	—	—
25	—	—	—	—	1.496	0.315	1.772	H2306X	—	—	—		A2306X	—	—	—	AN06	AW06X	0.13	—	—	—	
	1	—	—	—	38	8	45	—	HE2306X	—	—		—	—	AE2306X	—	—	AN06	AW06X	—	0.12	—	—
	—	—	$\frac{7}{8}$	—	—	—	—	—	—	HS2306X	—		—	—	—	AS2306X	—	—	—	—	0.16	—	—
	—	—	—	$\frac{15}{16}$	—	—	—	—	—	—	HA2306X		—	—	—	AA2306X	—	—	—	—	—	0.14	—
30	—	—	—	—	1.693	0.354	2.047	H2307X	—	—	—		A2307X	—	—	—	AN07	AW07X	0.17	—	—	—	
	—	—	—	$1\frac{3}{16}$	43	9	52	—	—	—	HA2307X		—	—	—	AA2307X	—	—	—	—	—	0.17	—
35	—	—	—	—	1.811	0.394	2.283	H2308X	—	—	—		A2308X	—	—	—	AN08	AW08X	0.22	—	—	—	
	$1\frac{1}{4}$	—	—	—	46	10	58	—	HE2308X	—	—		—	—	AE2308X	—	—	AN08	AW08X	—	0.28	—	—
40	—	—	—	—	1.969	0.433	2.559	H2309X	—	—	—		A2309X	—	—	—	AN09	AW09X	0.28	—	—	—	
	$1\frac{1}{2}$	—	—	—	50	11	65	—	HE2309X	—	—		—	—	AE2309X	—	—	AN09	AW09X	—	0.32	—	—
	—	—	—	$1\frac{7}{16}$	—	—	—	—	—	—	HA2309X		—	—	—	AA2309X	—	—	—	—	—	0.35	—
45	—	—	—	—	2.165	0.472	2.756	H2310X	—	—	—		A2310X	—	—	—	AN10	AW10X	0.36	—	—	—	
	$1\frac{3}{4}$	—	—	—	55	12	70	—	HE2310X	—	—		—	—	AE2310X	—	—	AN10	AW10X	—	0.37	—	—
	—	—	$1\frac{5}{8}$	—	—	—	—	—	—	HS2310X	—		—	—	—	AS2310X	—	—	—	—	0.46	—	—
	—	—	—	$1\frac{11}{16}$	—	—	—	—	—	—	HA2310X		—	—	—	AA2310X	—	—	—	—	—	0.42	—
50	—	—	—	—	2.323	0.472	2.953	H2311X	—	—	—		A2311X	—	—	—	AN11	AW11X	0.42	—	—	—	
	2	—	—	—	59	12	75	—	HE2311X	—	—		—	—	AE2311X	—	—	AN11	AW11X	—	0.40	—	—
	—	—	$1\frac{7}{8}$	—	—	—	—	—	—	HS2311X	—		—	—	—	AS2311X	—	AN11	AW11X	—	—	0.50	—
	—	—	—	$1\frac{15}{16}$	—	—	—	—	—	—	HA2311X		—	—	—	AA2311X	—	—	—	—	—	0.45	—
55	—	—	—	—	2.441	0.512	3.150	H2312X	—	—	—		A2312X	—	—	—	AN12	AW12X	0.48	—	—	—	
	—	—	$2\frac{1}{8}$	—	62	13	80	—	—	HS2312X	—		—	—	—	AS2312X	—	AN12	AW12X	—	—	0.52	—
60	—	—	—	—	2.559	0.551	3.346	H2313X	—	—	—		A2313X	—	—	—	AN13	AW13X	0.56	—	—	—	
	$2\frac{1}{4}$	—	—	—	65	14	85	—	HE2313X	—	—		—	—	AE2313X	—	—	AN13	AW13X	—	0.69	—	—
	—	—	$2\frac{3}{8}$	—	—	—	—	—	—	HS2313X	—		—	—	—	AS2313X	—	AN13	AW13X	—	—	0.55	—
	—	—	—	$2\frac{3}{16}$	—	—	—	—	—	—	HA2313X		—	—	—	AA2313X	—	—	—	—	—	0.76	—
65	—	—	—	—	2.874	0.591	3.858	H2315X	—	—	—		A2315X	—	—	—	AN15	AW15X	1.05	—	—	—	
	$2\frac{1}{2}$	—	—	—	73	15	98	—	HE2315X	—	—		—	—	AE2315X	—	—	AN15	AW15X	—	1.15	—	—
	—	—	—	$2\frac{7}{16}$	—	—	—	—	—	—	HA2315X		—	—	—	AA2315X	—	—	—	—	—	1.15	—
	—	—	$2\frac{5}{8}$	—	—	—	—	—	—	HS2315X	—		—	—	—	AS2315X	—	—	—	—	0.9	—	—
70	—	—	—	—	3.071	0.669	4.134	H2316X	—	—	—		A2316X	—	—	—	AN16	AW16X	1.3	—	—	—	
	$2\frac{3}{4}$	—	—	—	78	17	105	—	HE2316X	—	—		—	—	AE2316X	—	—	AN16	AW16X	—	1.3	—	—
	—	—	—	$2\frac{11}{16}$	—	—	—	—	—	—	HA2316X		—	—	—	AA2316X	—	—	—	—	—	1.41	—
75	—	—	—	—	3.228	0.709	4.331	H2317X	—	—	—		A2317X	—	—	—	AN17	AW17X	1.45	—	—	—	
	3	—	—	—	82	18	110	—	HE2317X	—	—		—	—	AE2317X	—	—	AN17	AW17X	—	1.35	—	—
	—	—	—	$2\frac{15}{16}$	—	—	—	—	—	—	HA2317X		—	—	—	HA2317X	—	—	—	—	—	1.48	—
80	—	—	—	—	3.386	0.709	4.724	H2318X	—	—	—		A2318X	—	—	—	AN18	AW18X	1.7	—	—	—	
	$3\frac{1}{4}$	—	—	—	86	18	120	—	HE2318X	—	—		—	—	AE2318X	—	—	—	—	—	1.49	—	—
	—	—	—	$3\frac{3}{16}$	—	—	—	—	—	—	HA2318X		—	—	—	AA2318X	—	—	—	—	—	1.62	—
85	—	—	—	—	3.543	0.748	4.921	H2319X	—	—	—		A2319X	—	—	—	AN19	AW19X	1.95	—	—	—	
	$3\frac{1}{4}$	—	—	—	90	19	125	—	HE2319X	—	—		—	—	AE2319X	—	—	AN19	AW19X	—	2.15	—	—
90	—	—	—	—	3.819	0.787	5.118	H2320X	—	—	—		A2320X	—	—	—	AN20	AW20X	2.2	—	—	—	
	$3\frac{1}{2}$	—	—	—	97	20	130	—	HE2320X	—	—		—	—	AE2320X	—	—	AN20	AW20X	—	2.3	—	—
	—	—	—	$3\frac{7}{16}$	—	—	—	—	—	—	HA2320X		—	—	—	AA2320X	—	—	—	—	—	2.47	—
100	—	—	—	—	4.134	0.827	5.709	H2322X	—	—	—		A2322X	—	—	—	AN22	AW22X	2.75	—	—	—	
	4	—	—	—	105	21	145	—	HE2322X	—	—		—	—	AE2322X	—	—	AN22	AW22X	—	2.55	—	—
110	—	—	—	—	4.409	0.866	6.102	H2324	—	—	—		A2324	—	—	—	AN24	AW24	3.2	—	—	—	
	$4\frac{1}{4}$	—	—	—	112	22	155	—	HE2324	—	—		—	—	AE2324	—	—	—	—	—	3.5	—	—
	—	—	—	$4\frac{3}{16}$	—	—	—	—	—	—	HA2324		—	—	—	AA2324	—	—	—	—	—	—	3.79

H2300X
d₁ 115 ~ 125 mm



mm	Shaft Dia. d_1				Dimensions			Adapter Assembly No.					Sleeve No.				Lock Nut No.	Washer No.	Mass kg			
	inch				inch mm																	
(H)	(HE)	(HS)	(HA)	B_1	B_2	d_2	(H)	(HE)	(HS)	(HA)		(H)	(HE)	(HS)	(HA)			(H)	(HE)	(HS)	(HA)	
115	—	—	—	4.764	0.906	6.496	H2326	—	—	—		A2326	—	—	—	AN26	AW26	4.6	—	—	—	
	4 1/2	—	—	121	23	165	—	HE2326	—	—		—	AE2326	—	—	AN26	AW26	—	4.7	—	—	
	—	—	4 7/16	—	—	—	—	—	—	HA2326		—	—	—	AA2326	—	—	—	—	—	4.23	
125	—	—	—	5.157	0.945	7.087	H2328	—	—	—		A2328	—	—	—	AN28	AW28	5.5	—	—	—	
	5	—	—	131	24	180	—	HE2328	—	—		—	AE2328	—	—	—	—	—	5.1	—	—	
	—	—	4 15/16	—	—	—	—	—	—	HA2328		—	—	—	AA2328	—	—	—	—	—	5.42	

16 Parts and accessories

16.1 Part No. of pressed steel covers

Table 16.1 Part No. of pressed steel covers for UC type bearings

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

Table 16.2 Part No. of pressed steel covers for UK type bearings

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

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.

16.2 Part No. of cast iron covers

Table 16.3 Part No. of cast iron covers for UC type bearings

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 covers for UK type bearings

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	

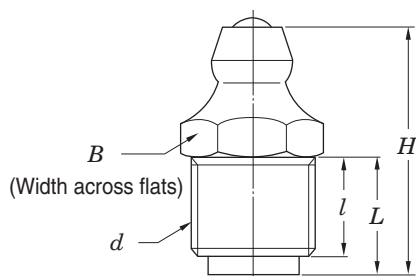
Note 1) Items in parentheses are applicable to the pillow block type (P), square-flanged type (F), rhombic-flanged type (FL), and the take-up type (T) bearings, and can be mounted to housings with three hexagon socket head cap screws (use four to mount other items).

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 covers for a shaft with 60 mm diameter for UC210 is 210FC×60.

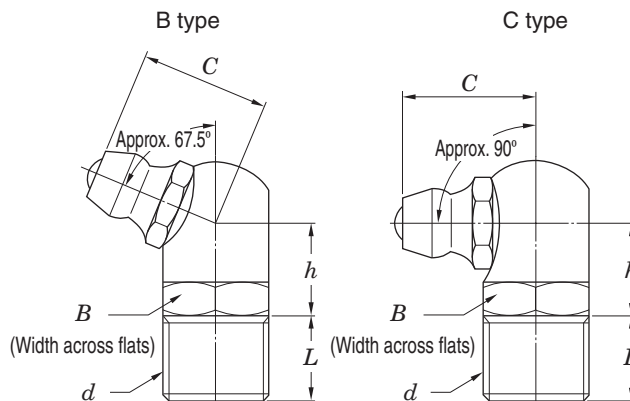
16.3 Nominal number and dimensions of grease nipples and reducing socket

Table 16.5 Nominal number and dimensions of grease nipple

(1) Nominal number and dimensions of
A type grease nipple

Unit : mm

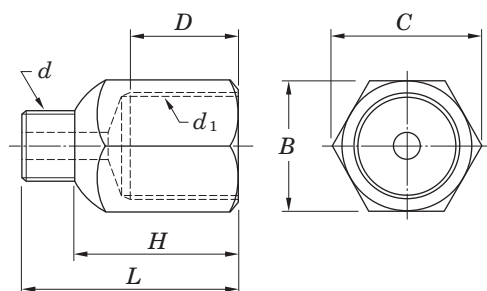
Nominal grease nipple No.	Nominal screw code d	B	H	L	l
A-1/4-28UNF	1/4-28UNF	7	13.5	5.4	4
A-PT1/8	PT1/8	10	20	9.5	8

(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



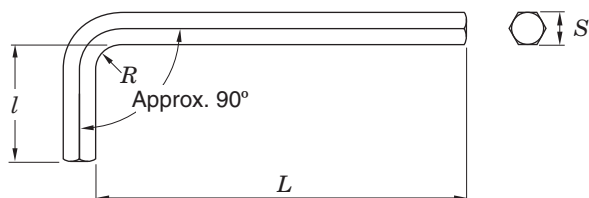
Unit : mm

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 application

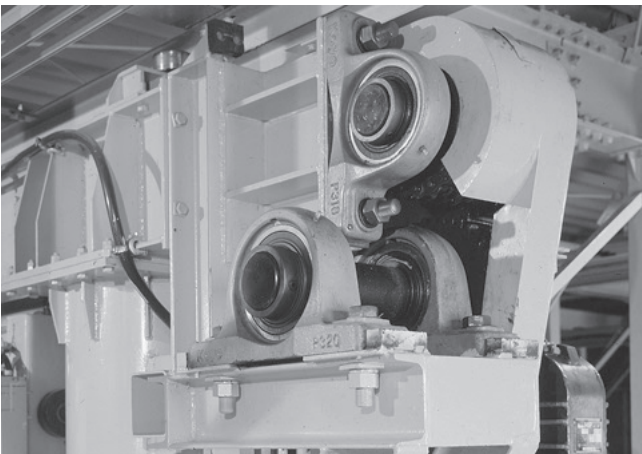
Koyo Ball Bearing units are used in varied equipment, and their performance contributes to technical advantages, automation, and energy-saving of equipment.

Automatic warehouse system

Many ball bearings are used in automatic warehouse systems for automation and energy-saving of the systems.



Automatic warehouse system



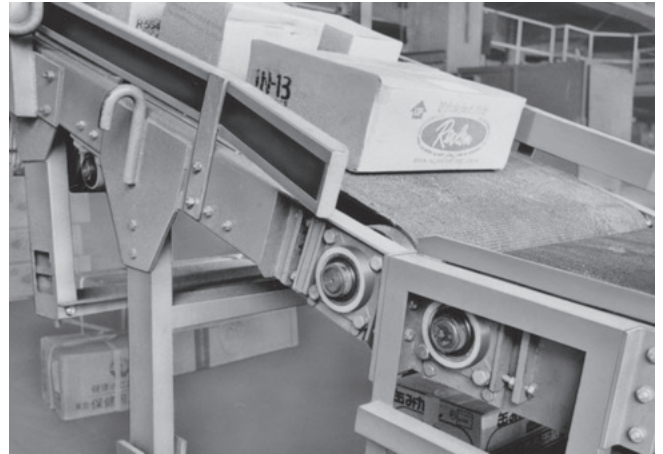
Mast driving system



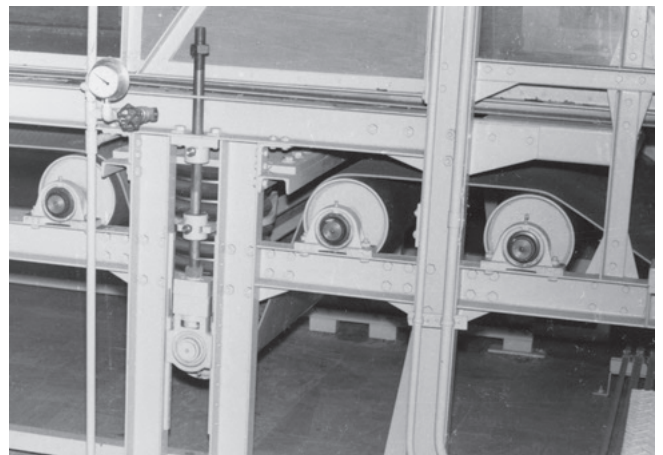
Conveyor

Delivery center

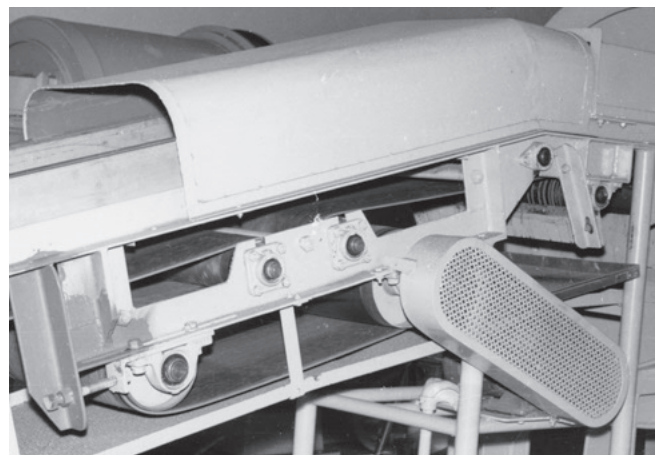
Koyo Ball bearings of various types including pillow block type, flange type, take-up type are used in conveyors of delivery centers.



Belt conveyor



Belt conveyor driving system



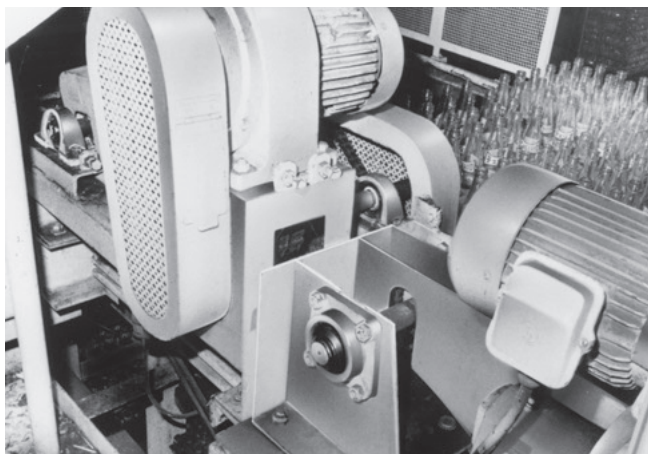
Belt conveyor driving system

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.



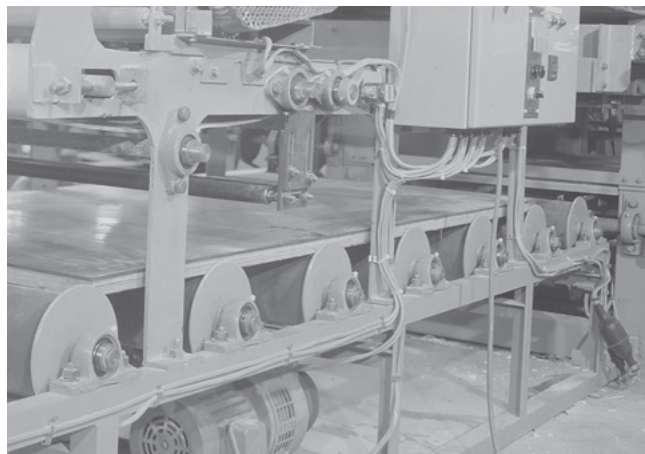
Bottle filling line conveyor



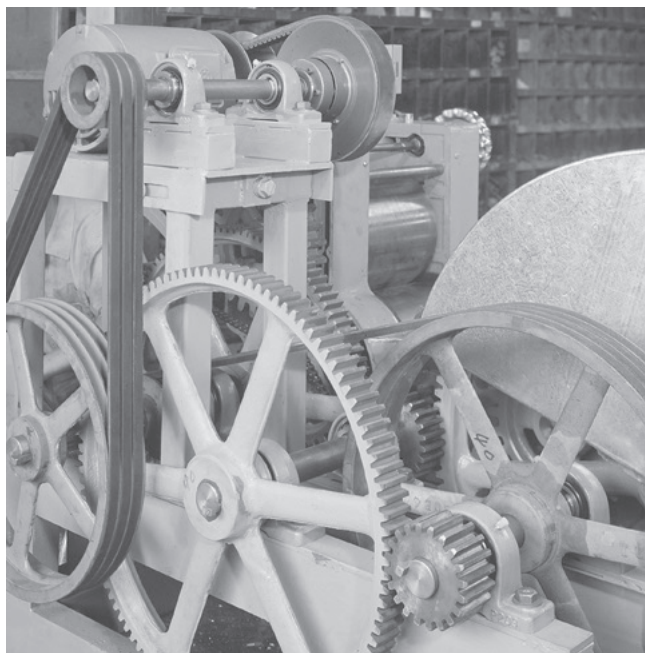
Pallet driving system

Noodle manufacturing plant

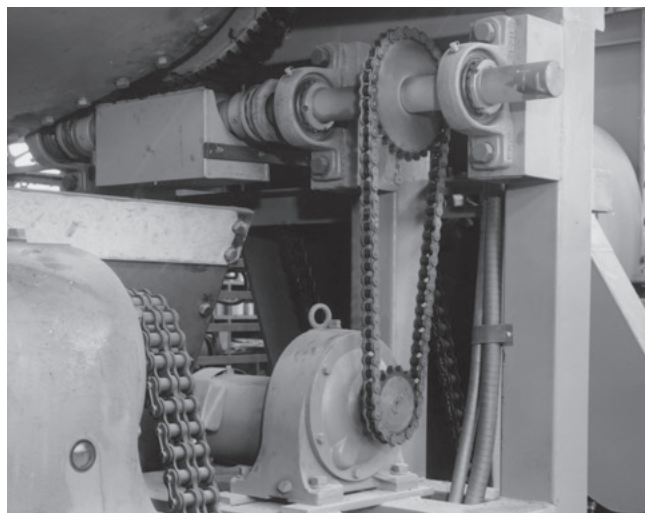
Triple-lip seal units or covered units are suitable for locations dusted with a great deal of noodle flour.



Feeding system



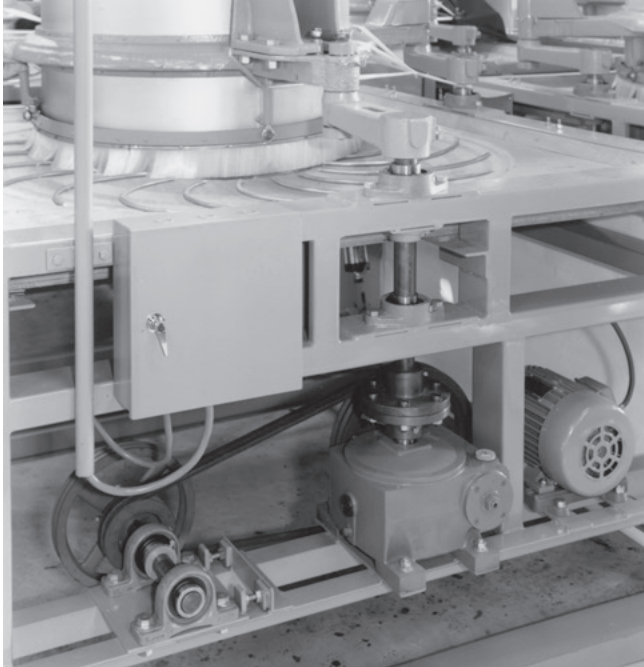
Noodle manufacturing machine driving system



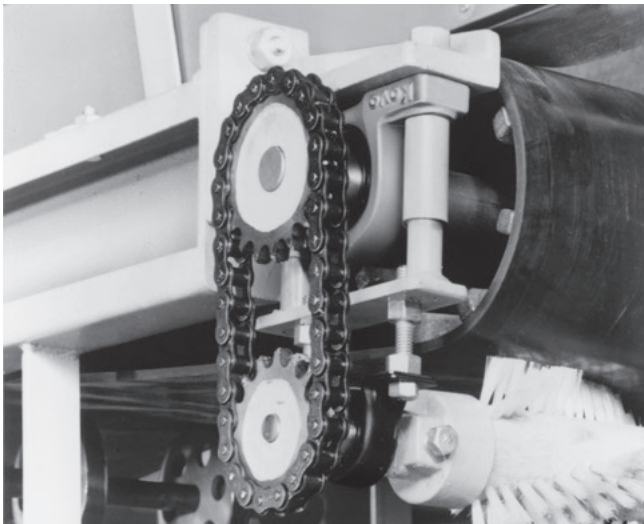
Mixer driving system

Tea manufacturing plant

Koyo Ball Bearings contribute to the automation of tea manufacturing lines and downsizing of tea manufacturing machines.



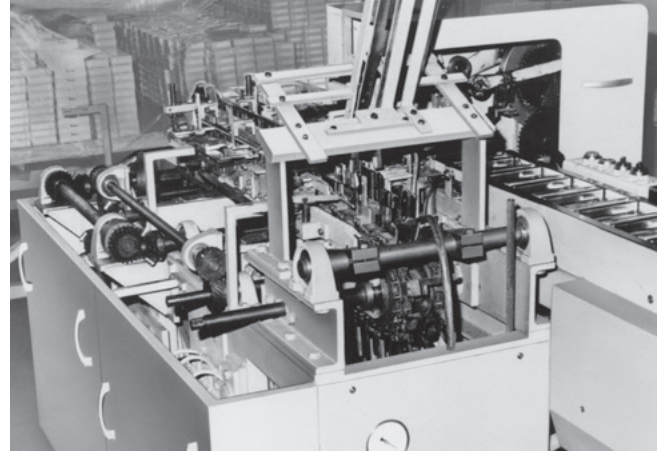
Tea processor driving system



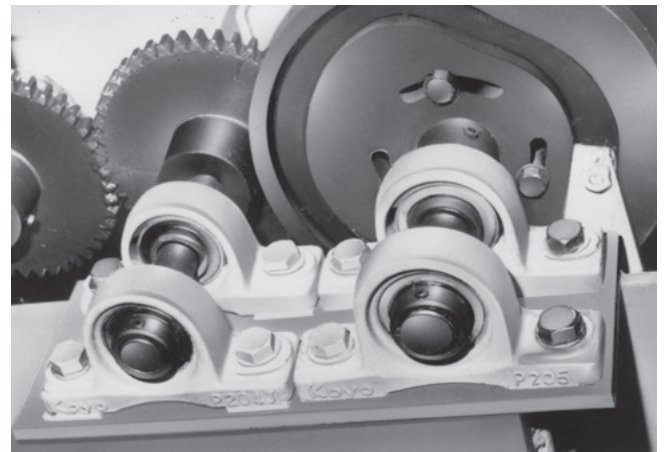
Conveyor driving system

Packing machine

Koyo Ball Bearings, used in transmission units, cam shafts, and conveyors, contribute to high-efficiency and automation of packing lines.



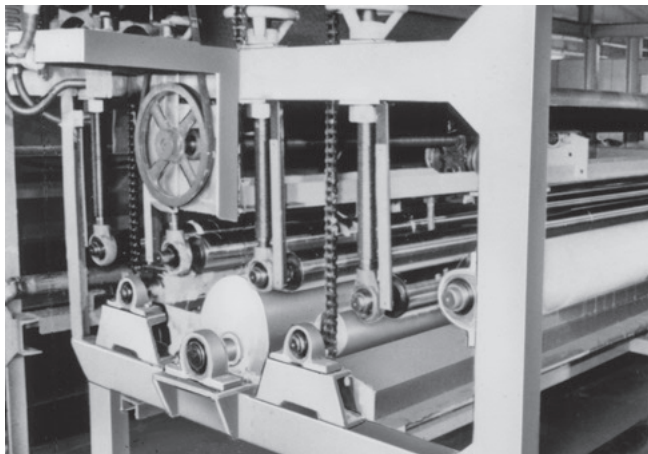
Packing machine



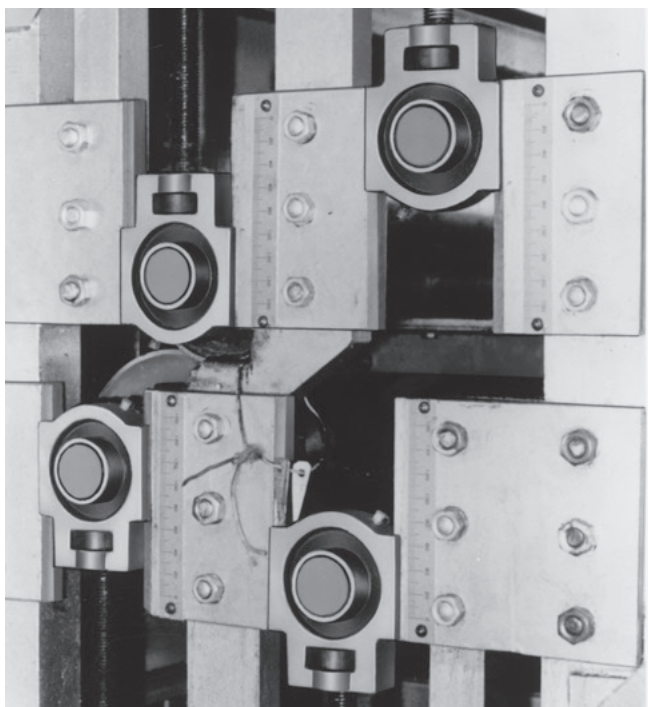
Cam shaft

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



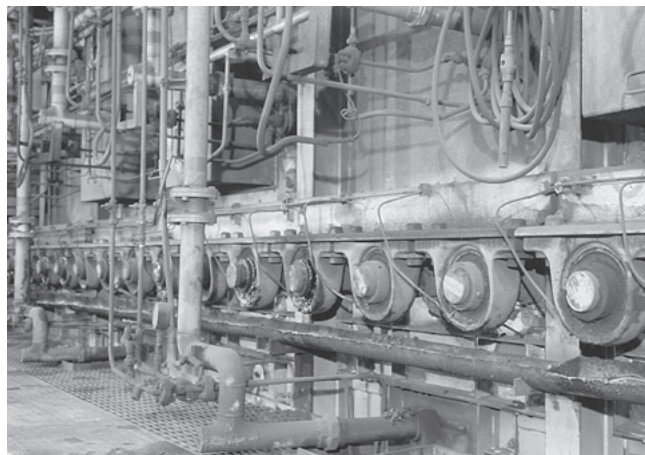
Carpet feeding shaft

Heat treatment system

The heat resistant unit is used for applications at a high temperature.



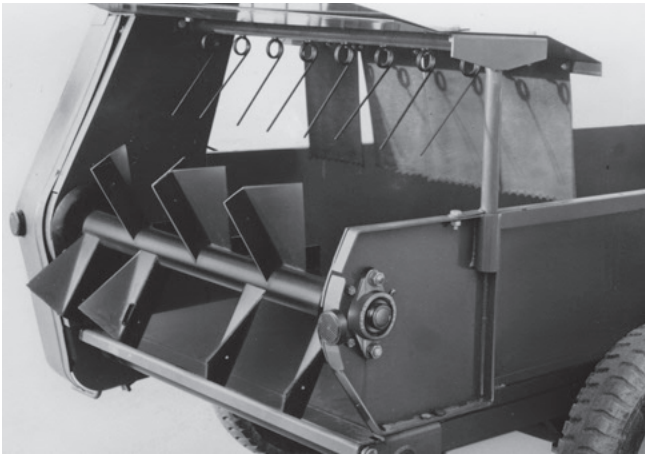
Carburizing furnace



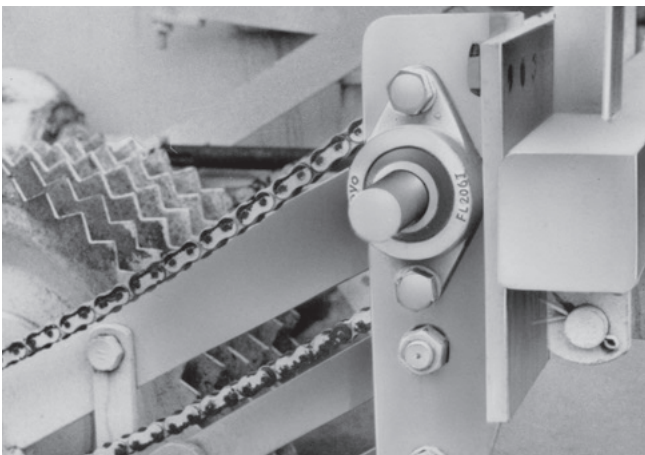
Heat treatment furnace

Agricultural machine

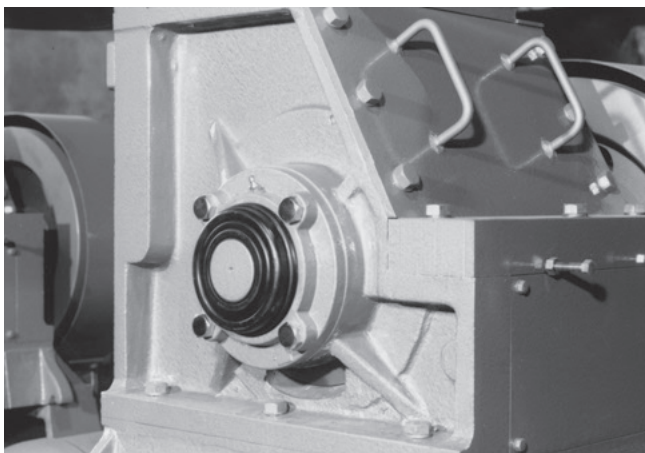
Koyo Ball Bearings contribute to downsizing and high-performance of agricultural machines. Triple-lip seal units or covered units are suitable for locations where are subject to a great deal of mud water and dusts.



Small wagon



Beat harvester power transmission system



Grain mill

Construction machinery

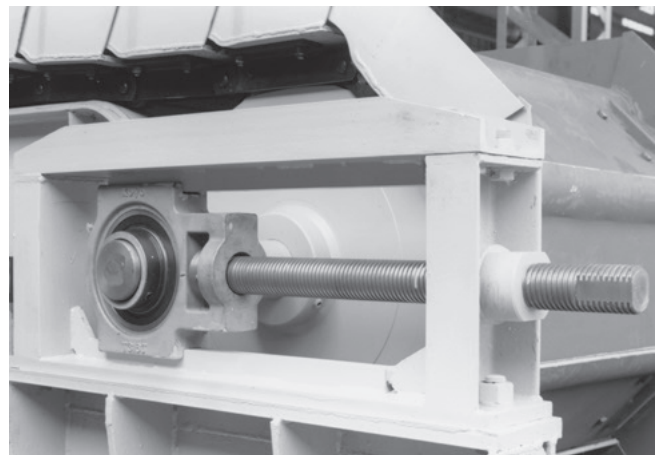
Koyo Ball Bearings contribute to high-performance and longer service life of construction machinery used under severe environment.



Concrete mixer



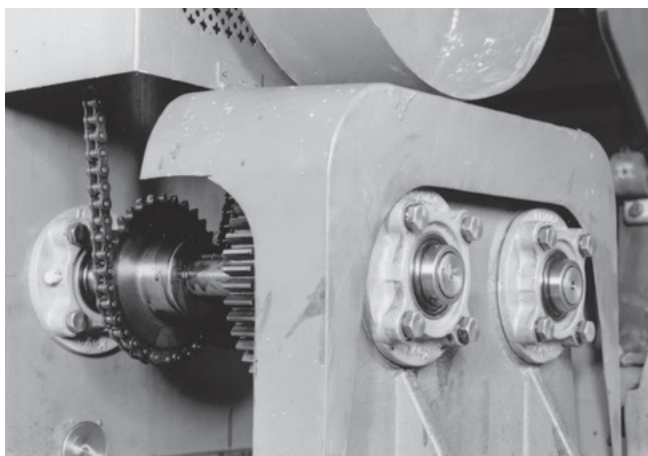
Conveyor



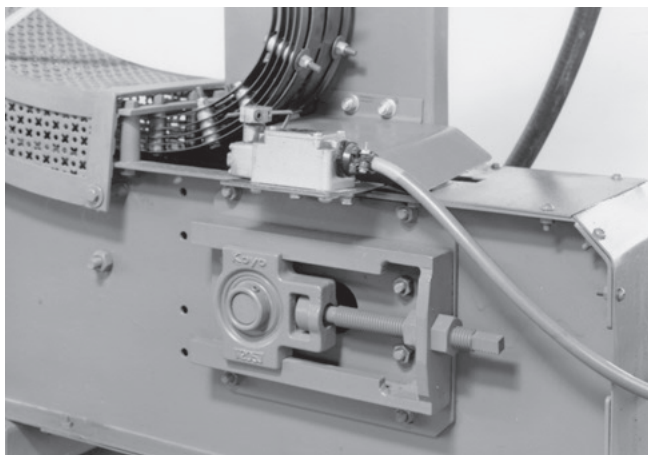
Conveyor

Other applications

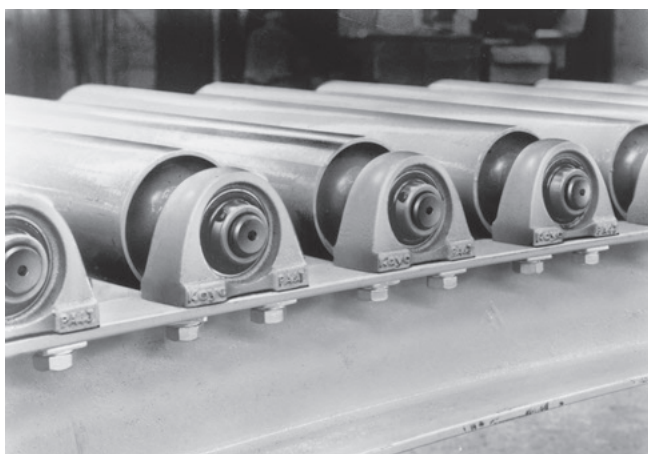
Ball Bearings of various types appropriate for applications and specifications are used.



(Round-flanged type with spigot joint)



(Take-up type unit)



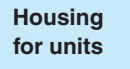
(Pillow block type unit)

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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	UCP200	UCPX00	UCP300		UKP200	UKPX00	UKP300	
	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	
Rhombic-flanged 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	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	Rhombic-flanged 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)

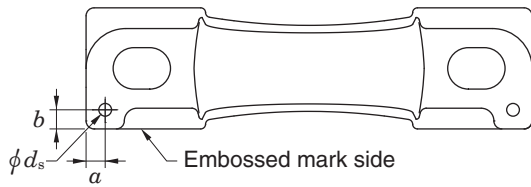
Nominal size of screws	Tightening torques, N · m	Part No. of applicable bearings		
		UC200, ER200, RB200	UCX00	SB200
10-32UNF	3	—	—	201, 202
1/4-28UNF	4	201–206	X05	204–207
5/16-24UNF	8.5	207–209	X06–X08	208
3/8-24UNF	17.5	210–212	X09–X11	—
1/2-20UNF	28	213–218	X12–X18	
5/8-18UNF	56	—	X20	

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

Bore code	Tightening torques, N · m			Bore code	Tightening torques, N · m		
	UK200	UKX00	UK300		UK200	UKX00	UK300
05	24.5	34	29	16	196	255	441
06	29	39	44	17	225	294	530
07	39	49	59	18	265	343	608
08	49	73	78	19	—	—	706
09	59	78	117	20		490	883
10	73	108	147	22		—	1 220
11	98	137	177	24			1 470
12	127	167	225	26			1 770
13	147	196	265	28			2 150
15	167	215	373				

Supplementary table 5 Machining dimensions of holes for housing dowel pins

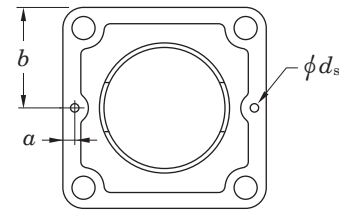
(1) Machining dimensions of holes for pillow block type housing (P) dowel pins (recommended)



Unit : mm

Nominal No.	a	b	d _s (reference)	Pin seat thickness
P203	6	6	4	16
P204	6	6	4	16
P205	6	6	4	16
P206	6	6	4	17
P207	8	8	5	18
P208	8	8	5	18
P209	8	8	5	20
P210	10	10	5	21
P211	10	10	6	23
P212	10	10	6	25
P213	10	10	6	27
P214	10	10	8	27
P215	12.5	12.5	8	28
P216	12	12	8	30
P217	12	12	8	32
P218	14	14	8	33
PX05	7	7	5	16
PX06	8	8	5	17
PX07	8	8	5	19
PX08	8	8	5	21
PX09	8	8	5	21
PX10	9	9	6	22
PX11	9	9	6	28
PX12	9	9	6	28
PX13	10	10	8	28
PX14	10	10	8	32
PX15	10	10	8	32
PX16	12	12	8	34
PX17	12	12	8	34
PX18	15	15	10	38
PX20	19	19	10	45
P305	8	8	5	16
P306	10	10	5	17
P307	10	10	5	19
P308	11	11	6	19
P309	11	11	6	21
P310	11	11	6	24
P311	12	12	8	27
P312	12	12	8	29
P313	12	12	8	32
P314	12	12	10	35
P315	14	14	10	35
P316	15	15	10	35
P317	15	15	10	40
P318	15	15	10	40
P319	15	15	10	46
P320	17	17	13	46
P321	17	17	13	46
P322	17	17	13	50
P324	17	17	13	50
P326	20	20	13	50
P328	20	20	13	60

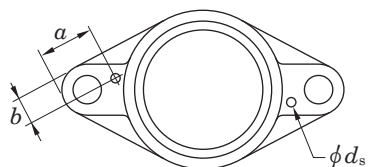
(2) Machining dimensions of holes for square-flanged type housing (F) dowel pins (recommended)



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

(3) Machining dimensions of holes for Rombic-flanged type housing (FL) dowel pins (recommended)



Unit : mm

Nominal No.	<i>a</i>	<i>b</i>	<i>d_s</i> (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

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 (Reference)

												Nominal shaft dia. (mm)		Δ_{dmp}^* of bearing (class 0)
	k 5	k 6	k 7	m 5	m 6	m 7	n 5	n 6	p 6	r 6	r 7	Over	Up to	
	+ 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 (Reference)

													Nominal Bore dia. (mm)		Δ_{Dmp}^* of bearing (class 0)
	K 5	K 6	K 7	M 5	M 6	M 7	N 5	N 6	N 7	P 6	P 7	R 7	Over	Up to	
	+ 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)]	* $1^\circ = \pi / 180 \text{ rad}$	1 rad = 57.295 78°
		' [minute(s)]	* $1' = \pi / 10\,800 \text{ rad}$	
		" [second(s)]	* $1'' = \pi / 648\,000 \text{ rad}$	
Length	m [meter(s)]	Å [Angstrom unit]	$1 \text{ Å} = 10^{-10} \text{ m} = 0.1 \text{ nm} = 100 \text{ pm}$	$1 \text{ m} = 10^{10} \text{ Å}$
		μ [micron(s)]	$1 \mu = 1 \mu\text{m}$	
		in [inch(es)]	$1 \text{ in} = 25.4 \text{ mm}$	$1 \text{ m} = 39.37 \text{ in}$
		ft [foot(feet)]	$1 \text{ ft} = 12 \text{ in} = 0.304\,8 \text{ m}$	$1 \text{ m} = 3.280\,8 \text{ ft}$
		yd [yard(s)]	$1 \text{ yd} = 3 \text{ ft} = 0.914\,4 \text{ m}$	$1 \text{ m} = 1.093\,6 \text{ yd}$
		mile [mile(s)]	$1 \text{ mile} = 5\,280 \text{ ft} = 1\,609.344 \text{ m}$	$1 \text{ km} = 0.621\,4 \text{ mile}$
Area	m ²	a [are(s)]	$1 \text{ a} = 100 \text{ m}^2$	$1 \text{ km}^2 = 247.1 \text{ acre}$
		ha [hectare(s)]	$1 \text{ ha} = 10^4 \text{ m}^2$	
		acre [acre(s)]	$1 \text{ acre} = 4\,840 \text{ yd}^2 = 4\,046.86 \text{ m}^2$	
Volume	m ³	ℓ, L [liter(s)]	* $1 \ell = 1 \text{ dm}^3 = 10^{-3} \text{ m}^3$	$1 \text{ m}^3 = 10^3 \ell$
		cc [cubic centimeters]	$1 \text{ cc} = 1 \text{ cm}^3 = 10^{-6} \text{ m}^3$	$1 \text{ m}^3 = 10^6 \text{ cc}$
		gal (US) [gallon(s)]	$1 \text{ gal (US)} = 231 \text{ in}^3 = 3.785\,41 \text{ dm}^3$	$1 \text{ m}^3 = 264.17 \text{ gal}$
		floz (US) [fluid ounce(s)]	$1 \text{ floz (US)} = 29.573\,5 \text{ cm}^3$	$1 \text{ m}^3 = 33\,814 \text{ floz}$
		barrel (US) [barrels(US)]	$1 \text{ barrel (US)} = 158.987 \text{ dm}^3$	$1 \text{ m}^3 = 6.289\,8 \text{ barrel}$
Time	s [second(s)]	min [minute(s)]	*	
		h [hour(s)]	*	
		d [day(s)]	*	
Angular velocity	rad/s			
Velocity	m/s	kn [knot(s)]	$1 \text{ kn} = 1\,852 \text{ m/h}$	$1 \text{ km/h} = 0.539\,96 \text{ kn}$
		m/h	*	
Acceleration	m/s ²	G	$1 \text{ G} = 9.806\,65 \text{ m/s}^2$	$1 \text{ m/s}^2 = 0.101\,97 \text{ G}$
Frequency	Hz [hertz]	c/s [cycle(s)/second]	$1 \text{ c/s} = 1 \text{ s}^{-1} = 1 \text{ Hz}$	
Rotational frequency	s ⁻¹	rpm [revolutions per minute] min ⁻¹ r/min	$1 \text{ rpm} = 1/60 \text{ s}^{-1}$	$1 \text{ s}^{-1} = 60 \text{ rpm}$
Mass	kg [kilogram(s)]	t [ton(s)]	* $1 \text{ t} = 10^3 \text{ kg}$	$1 \text{ kg} = 2.204\,6 \text{ lb}$ $1 \text{ g} = 15.432\,4 \text{ gr}$ $1 \text{ kg} = 35.274\,0 \text{ oz}$ $1 \text{ t} = 0.984\,2 \text{ ton (UK)}$ $1 \text{ t} = 1.102\,3 \text{ ton (US)}$ $1 \text{ g} = 5 \text{ car}$
		lb [pound(s)]	$1 \text{ lb} = 0.453\,592\,37 \text{ kg}$	
		gr [grain(s)]	$1 \text{ gr} = 64.798\,91 \text{ mg}$	
		oz [ounce(s)]	$1 \text{ oz} = 1/16 \text{ lb} = 28.349\,5 \text{ g}$	
		ton (UK) [ton(s) (UK)]	$1 \text{ ton (UK)} = 1\,016.05 \text{ kg}$	
		ton (US) [ton(s) (US)]	$1 \text{ ton (US)} = 907.185 \text{ kg}$	
		car [carat(s)]	$1 \text{ car} = 200 \text{ mg}$	

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 ₂ O, 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 ₂ O = 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 · s/m ²	10 ⁻² P = 1 cP = 1 mPa · s 1 kgf · s/m ² = 9.806 65 Pa · s	1 Pa · s = 0.101 97 kgf · 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)] * erg [erg(s)] kgf · m lbf · ft	1 eV = (1.602 189 2 ± 0.000 004 6) × 10 ⁻¹⁹ J 1 erg = 10 ⁻⁷ J 1 kgf · m = 9.806 65 J 1 lbf · ft = 1.355 82 J	1 J = 10 ⁷ erg 1 J = 0.101 97 kgf · m 1 J = 0.737 56 lbf · ft
Power	W [watt(s)]	erg/s [ergs per second] kgf · m/s PS [French horse-power] HP [horse-power (British)] lbf · ft/s	1 erg/s = 10 ⁻⁷ W 1 kgf · m/s = 9.806 65 W 1 PS = 75 kgf · m/s = 735.5 W 1 HP = 550 lbf · ft/s = 745.7 W 1 lbf · ft/s = 1.355 82 W	1 W = 0.101 97 kgf · m/s 1 W = 0.001 36 PS 1 W = 0.001 34 HP
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)] kgf · m cal _{IT} [l. T. calories]	1 erg = 10 ⁻⁷ J 1 cal _{IT} = 4.186 8 J 1 Mcal _{IT} = 1.163 kW · h	1 J = 10 ⁷ erg 1 J = 0.238 85 cal _{IT} 1 kW · h = 0.86 × 10 ⁶ cal _{IT}
Thermal conductivity	W/ (m · K)	W/ (m · °C) cal/ (s · m · °C)	1 W/ (m · °C) = 1 W/ (m · K) 1 cal/ (s · m · °C) = 4.186 05 W/ (m · K)	
Coefficient of heat transfer	W/ (m ² · K)	W/ (m ² · °C) cal/ (s · m ² · °C)	1 W/ (m ² · °C) = 1 W/ (m ² · K) 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)]	$1 \text{ Oe} = \frac{10^3}{4\pi} \text{ A/m}$	$1 \text{ A/m} = 4\pi \times 10^{-3} \text{ Oe}$
Magnetic flux density	T [tesla(s)] $\left\{ \begin{array}{l} 1 \text{ T} = 1 \text{ N}/(\text{A} \cdot \text{m}) \\ = 1 \text{ Wb}/\text{m}^2 \\ = 1 \text{ V} \cdot \text{s}/\text{m}^2 \end{array} \right\}$	Gs [gauss(es)] γ [gamma(s)]	$1 \text{ Gs} = 10^{-4} \text{ T}$ $1 \gamma = 10^{-9} \text{ T}$	$1 \text{ T} = 10^4 \text{ Gs}$ $1 \text{ T} = 10^9 \gamma$
Magnetic flux	Wb [weber(s)] {1 Wb = 1 V · s}	Mx [maxwell(s)]	$1 \text{ Mx} = 10^{-8} \text{ Wb}$	$1 \text{ Wb} = 10^8 \text{ Mx}$
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 $\left\{ \begin{array}{l} 1 \text{ W} = 1 \text{ J/s} \\ = 1 \text{ A} \cdot \text{V} \end{array} \right\}$			

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 °C	7.8	206	343	590		461
Tool steel	C 0.60–1.50% hardening	7.8	216	441	660		820
Cast steel	General	7.8–7.9	206–211	176–245	343– 600	343–600	284–382
Cast steel (mild)	C 0.15–0.22%	7.8–7.9	206	196	363– 431	363–431	284
Cast steel (middle hard)	C 0.22–0.30%	7.8–7.9	211	225	392– 490	392–490	333
Cast steel (hard)	C 0.30–0.40%	7.9	211	245	490– 590	490–590	382
Nickel steel	C 0.25–0.35% Ni 2–5%	7.85	206–216	333	640– 830	640	401
Chrome steel	C 0.13–0.48% Cr 0.9–1.2%	7.85	206–216	–	780– 980	–	–
Nickel chrome steel	C, Ni, Cr included	7.85	206–216	–	740– 980	–	382–500
Chromium molybdenum steel	C, Cr, Mo included	7.85	206–216	–	830– 980	–	–
Manganese steel	C 0.2–0.46% Mn 1–1.4%	7.85	206–216	–	440–1 080	–	–
Spring steel		7.86	216	735	1 080–1 670	1 670	–
Stainless steel	C, Cr, Ni included	7.75	206–216	–	620	–	410
Brass casting	Cu 60% Zn 40%	8.5	69	–	176– 216	108	147
Brass (forged plate)	Cu 60% Zn 40%	8.4	78– 98	–	274– 392	314	206
Brass (forged rod)	Cu 60% Zn 40%	8.4	82	–	520	314	314
Phosphor bronze casting	Cu 90% Sn 10% P 0.1%	8.8	93–103	–	196– 294	137	176
Phosphor bronze (forging)	Cu 90% Sn 10% P 0.1%	8.8	132	–	294– 980	206	382
Tin		7.28	39– 54	–	27	–	–
Lead		11.34	15– 17	–	20	–	–
Zinc		7.1	78–127	–	78– 176	–	–

(2) Allowable stress

Unit : MPa

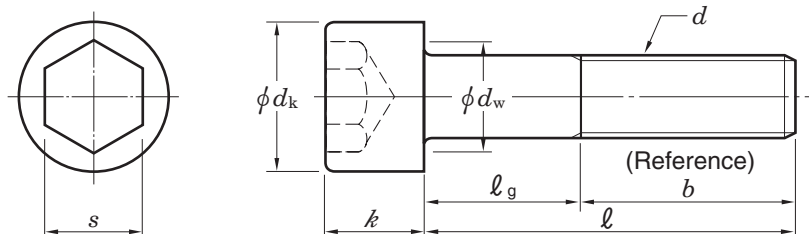
Material	Tensile K_t			Compression K_c		Bending K_b			Shear K_s			Torsion K_d		
	<i>a</i>	<i>b</i>	<i>c</i>	<i>a</i>	<i>b</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>a</i>	<i>b</i>	<i>c</i>
Cast iron (cast)	29– 34	20– 23	10–12	88– 98	59– 65	45– 59	30– 39	15–20	29– 34	20–23	10–12	26– 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 (2) Hexagon socket head cap screws (abstract from JIS B 1176 (ISO 4762))

M 27 – 52



Allowance of bolt length (ℓ)

Unit : mm

Bolt length (ℓ)		Allowance of length
Over	Up to	
–	3	±0.2
3	6	±0.24
6	10	±0.29
10	16	±0.35
16	30	±0.42
30	50	±0.5
50	80	±0.6
80	120	±0.7
120	180	±0.8
180	240	±0.95
240	300	±1.05

(2) Parts class A M 27–52

Unit : mm

Nominal size of screw d	Coarse screw thread pitch	(M 27)	M 30	(M 33)	M 36	(M 39)	M 42	(M 45)	M 48	(M 52)
Head dia. d_k		40	45	50	54	58	63	68	72	78
Head height k		27	30	33	36	39	42	45	48	52
Bearing surface dia. d_w (min.)		38.61	43.61	48.61	52.54	56.34	61.34	66.34	70.34	76.34
Nominal size of hexagon socket s		19	22	24	27	27	32	32	36	36
Thread length b (reference)		66	72	78	84	90	96	102	108	116

Nominal length ℓ	(M 27)	M 30	Body length ℓ_g (max.)							
45										
50										
55										
60										
65										
70										
80										
90										
100										
110										
120										
130										
140										
150										
160										
180										
200										
220										
240										
260										
280										
300										

- 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

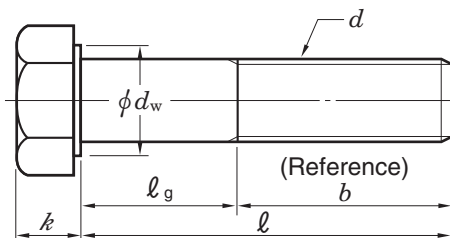
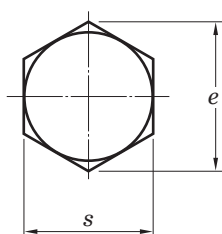
(abstract from JIS B 1180 (ISO 4014~4018, 8676, 8765))

Parts class A M 1.6 – 24

Allowance of bolt length (ℓ)

Unit : mm

Bolt length (ℓ)		Allowance of length
Over	Up to	
–	20	± 0.35
20	30	± 0.42
30	50	± 0.5
50	80	± 0.6
80	120	± 0.7
120	150	± 0.8



(1) Parts class A M 1.6–24

Unit : mm

Nominal size of screw d	Coarse screw thread pitch	M 1.6	M 2	M 2.5	M 3	(M 3.5)	M 4	M 5	M 6	M 8	M 10	M 12	(M 14)	M 16	(M 18)	M 20	(M 22)	M 24
	Fine thread	–	–	–	–	–	–	–	–	M 8 x 1	M 10 x 1	M 12 x 1.5	–	M 16 x 1.5	–	M 20 x 1.5	–	M 24 x 2
		–	–	–	–	–	–	–	–	–	(M 10 x 1.25)	(M 12 x 1.25)	(M 14 x 1.5)	–	(M 18 x 1.5)	(M 20 x 2)	(M 22 x 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.

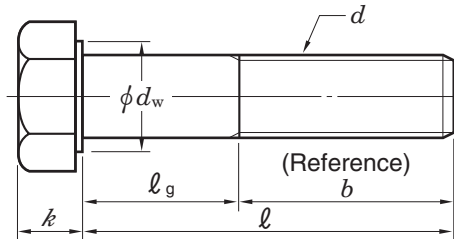
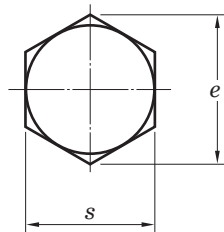
3. Body length ℓ_g (maximum) should be found by the following equation : ℓ_g (maximum) = Nominal length (ℓ) – Thread length (b)

Supplementary table 12 (2) Hexagon head bolts
(abstract from JIS B 1180 (ISO 4014~4018, 8676, 8765))

Parts class B M 16 – 64

Allowance of bolt length (ℓ)

Unit : mm



Bolt length (ℓ)		Allowance of length
Over	Up to	
–	80	± 1.5
80	90	± 1.7
90	120	± 1.75
120	180	± 2
180	240	± 2.3
240	300	± 2.6
300	400	± 2.85
400	500	± 3.15

(2) Parts class B M 16–64

Unit : mm

Nominal size of screw d	Coarse screw thread pitch	M 16	(M 18)	M 20	(M 22)	M 24	(M 27)	M 30	(M 33)	M 36	(M 39)	M 42	(M 45)	M 48	(M 52)	M 56	(M 60)	M 64
	Fine thread	M 16 $\times 1.5$	–	M 20 $\times 1.5$	–	M 24 $\times 2$	–	M 30 $\times 2$	–	M 36 $\times 3$	–	M 42 $\times 3$	–	M 48 $\times 3$	–	M 56 $\times 4$	–	M 64 $\times 4$
		–	(M 18 $\times 1.5$)	(M 20 $\times 2$)	(M 22 $\times 1.5$)	–	(M 27 $\times 2$)	–	(M 33 $\times 2$)	–	(M 39 $\times 3$)	–	(M 45 $\times 3$)	–	(M 52 $\times 4$)	–	(M 60 $\times 4$)	–
Bearing surface dia. d_w (min.)		22	24.85	27.7	31.35	33.25	38	42.75	46.55	51.11	55.86	59.95	64.7	69.45	74.2	78.66	83.41	88.16
Width across flats s (max.)		24	27	30	34	36	41	46	50	55	60	65	70	75	80	85	90	95
Width across corners e (min.)		26.17	29.56	32.95	37.29	39.55	45.2	50.85	55.37	60.79	66.44	71.3	76.95	82.6	88.25	93.56	99.21	104.86
Head height k (basic)		10	11.5	12.5	14	15	17	18.7	21	22.5	25	26	28	30	33	35	38	40
Thread length b (reference)	$\ell \leq 125$	38	42	46	50	54	60	66	–	–	–	–	–	–	–	–	–	–
	$125 < \ell \leq 200$	44	48	52	56	60	66	72	78	84	90	96	102	108	116	–	–	–
	$200 < \ell \leq 500$	–	–	–	69	73	79	85	91	97	103	109	115	121	129	137	145	153

Nominal length ℓ	Body length ℓ_g (max.)																																		
65	(M 18)																																		
70	M 20																																		
80	(M 22) M 24																																		
90	(M 27)																																		
100	As for the bolts with nominal length within this area, standards of (1) parts class A should be observed.																		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																																			
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																																			
220																																			
240																																			
260																																			
280																																			
300																																			
320																																			
340																																			
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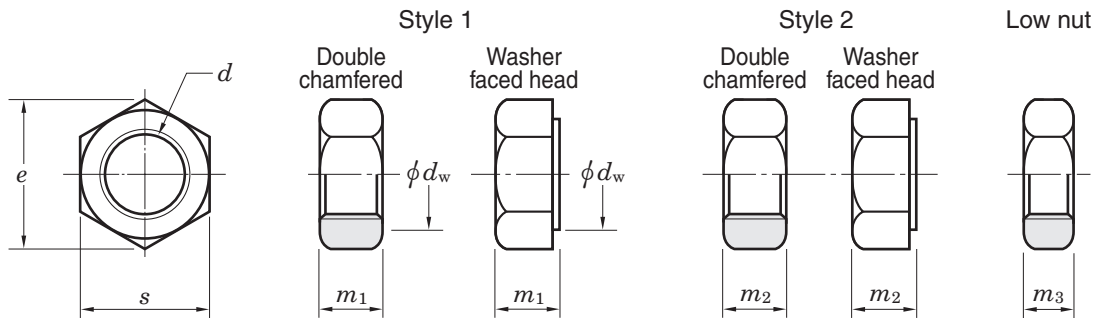
- Remarks 1. Priority is given to the nominal sizes of screws without parentheses.
2. Nominal lengths (ℓ) to be recommended for the nominal sizes of screw are within the range enclosed by bold lines.
3. Body length ℓ_g (maximum) should be found by the following equation : ℓ_g (maximum) = Nominal length (ℓ) – Thread length (b)

Supplementary table 13 Hexagon head nuts

(abstract from JIS B 1181 (ISO 4032, 4033, 8673, 8674))

Parts class A M 1.6 – 16

Parts class B M 18 – 64



(1) Parts class A M 1.6–16

Unit : mm

Nominal size of screw d	Coarse screw thread pitch	M 1.6	M 2	M 2.5	M 3	(M 3.5)	M 4	M 5	M 6	M 8	M 10	M 12	(M 14)	M 16
	Fine thread	—	—	—	—	—	—	—	—	M 8 × 1	M 10 × 1	M 12 × 1.5	—	M 16 × 1.5
		—	—	—	—	—	—	—	—	—	(M 10 × 1.25)	(M 12 × 1.25)	(M 14 × 1.5)	—
Bearing surface dia. d_w (min.)		2.27	3.07	4.07	4.57	5.07	5.88	6.88	8.88	11.63	14.63	16.63	19.64	22.49
Width across flats s (max.)		3.2	4	5	5.5	6	7	8	10	13	16	18	21	24
Width across corners e (min.)		3.41	4.32	5.45	6.01	6.58	7.66	8.79	11.05	14.38	17.77	20.03	23.36	26.75
Height	m_1 (max.)	1.3	1.6	2	2.4	2.8	3.2	4.7	5.2	6.8	8.4	10.8	12.8	14.8
	m_2 (max.)	—	—	—	—	—	—	5.1	5.7	7.5	9.3	12	14.1	16.4
	m_3 (max.)	1	1.2	1.6	1.8	2	2.2	2.7	3.2	4	5	6	7	8

Remark Priority is given to the nominal sizes of screws without parentheses.

(2) Parts class B M 18–64

Unit : mm

Nominal size of screw d	Coarse screw thread pitch	(M 18)	M 20	(M 22)	M 24	(M 27)	M 30	(M 33)	M 36	(M 39)	M 42	(M 45)	M 48	(M 52)	M 56	(M 60)	M 64
	Fine thread	—	M 20 × 1.5	—	M 24 × 2	—	M 30 × 2	—	M 36 × 3	—	M 42 × 3	—	M 48 × 3	—	M 56 × 4	—	M 64 × 4
		(M 18 × 1.5)	(M 20 × 2)	(M 22 × 1.5)	—	(M 27 × 2)	—	(M 33 × 2)	—	(M 39 × 3)	—	(M 45 × 3)	—	(M 52 × 4)	—	(M 60 × 4)	—
Bearing surface dia. d_w (min.)		24.85	27.7	31.35	33.25	38	42.75	46.55	51.11	55.86	59.95	64.7	69.45	74.2	78.66	83.41	88.16
Width across flats s (max.)		27	30	34	36	41	46	50	55	60	65	70	75	80	85	90	95
Width across corners e (min.)		29.56	32.95	37.29	39.55	45.2	50.85	55.37	60.79	66.44	71.3	76.95	82.6	88.25	93.56	99.21	104.86
Height	m_1 (max.)	15.8	18	19.4	21.5	23.8	25.6	28.7	31	33.4	34	36	38	42	45	48	51
	m_2 (max.)	17.6	20.3	21.8	23.9	26.7	28.6	32.5	34.7	—	—	—	—	—	—	—	—
	m_3 (max.)	9	10	11	12	13.5	15	16.5	18	19.5	21	22.5	24	26	28	30	32

Remark Priority is given to the nominal sizes of screws without parentheses.

Supplementary table 14 Steel hardness conversion

Rockwell C scale 1 471.0 N (150 kgf)	Vickers	Brinell		Rockwell		Shore
		Standard steel ball	Tungsten carbide steel ball	A scale 588.4 N (60 kgf)	B scale 980.7 N (100 kgf)	
68	940			85.6		97
67	900			85.0		95
66	865			84.5		92
65	832		739	83.9		91
64	800		722	83.4		88
63	772		705	82.8		87
62	746		688	82.3		85
61	720		670	81.8		83
60	697		654	81.2		81
59	674		634	80.7		80
58	653		615	80.1		78
57	633		595	79.6		76
56	613		577	79.0		75
55	595	—	560	78.5		74
54	577	—	543	78.0		72
53	560	—	525	77.4		71
52	544	500	512	76.8		69
51	528	487	496	76.3		68
50	513	475	481	75.9		67
49	498	464	469	75.2		66
48	484	451	455	74.7		64
47	471	442	443	74.1		63
46	458	432	432	73.6		62
45	446		421	73.1		60
44	434		409	72.5		58
43	423		400	72.0		57
42	412		390	71.5		56
41	402		381	70.9		55
40	392		371	70.4	—	54
39	382		362	69.9	—	52
38	372		353	69.4	—	51
37	363		344	68.9	—	50
36	354		336	68.4	(109.0)	49
35	345		327	67.9	(108.5)	48
34	336		319	67.4	(108.0)	47
33	327		311	66.8	(107.5)	46
32	318		301	66.3	(107.0)	44
31	310		294	65.8	(106.0)	43
30	302		286	65.3	(105.5)	42
29	294		279	64.7	(104.5)	41
28	286		271	64.3	(104.0)	41
27	279		264	63.8	(103.0)	40
26	272		258	63.3	(102.5)	38
25	266		253	62.8	(101.5)	38
24	260		247	62.4	(101.0)	37
23	254		243	62.0	100.0	36
22	248		237	61.5	99.0	35
21	243		231	61.0	98.5	35
20	238		226	60.5	97.8	34
(18)	230		219	—	96.7	33
(16)	222		212	—	95.5	32
(14)	213		203	—	93.9	31
(12)	204		194	—	92.3	29
(10)	196		187		90.7	28
(8)	188		179		89.5	27
(6)	180		171		87.1	26
(4)	173		165		85.5	25
(2)	166		158		83.5	24
(0)	160		152		81.7	24

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 mm²/s = 1 cSt (centistokes)

Ball bearing units

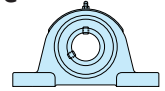
Ball bearing units consist of pre-lubricated sealed ball bearings and a housing which varies in shape.

They are capable of aligning themselves efficiently using the spherical fitting surface between the bearing and housing, effectively preventing overloads due to misalignment.

Koyo ball bearing units are highly accurate and feature excellent load resistance. They are completely sealed, and provided with a relubrication feature.

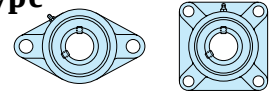
Ball bearing units without a relubrication feature are also available.

Pillow block type



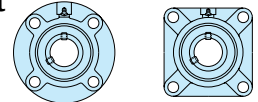
Bore diameter 12 – 140 mm

Flanged type



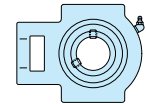
Bore diameter 12 – 140 mm

Flanged type with spigot joint



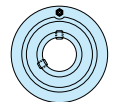
Bore diameter 12 – 140 mm

Take-up type



Bore diameter 12 – 140 mm

Cartridge type



Bore diameter 12 – 65 mm

Light duty units



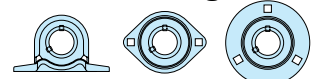
Bore diameter 12 – 40 mm

"Clean" series (made from light alloy)



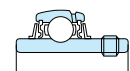
Bore diameter 10 – 30 mm

Pressed steel housing units



Bore diameter 12 – 35 mm

Ball bearings for units



Bore diameter 10 – 140 mm

Ball bearing units

Major ball bearing unit types

(1) Cast iron units

	Pillow block type ● UCP 2·X·3 ▲ UKP 2·X·3
	Rhombic-flanged type ● UCFL 2·X·3 ▲ UKFL 2·X·3
	Square-flanged type ● UCF 2·X·3 ▲ UKF 2·X·3
	Round-flanged type with spigot joint ● UCFC 2·X ▲ UKFC 2·X
	Square-flanged type with spigot joint ● UCFS 3 ▲ UKFS 3
	Take-up type ● UCT 2·X·3 ▲ UKT 2·X·3
	Cartridge type ● UCC 2 ▲ UKC 2

Special pillow block type



Thick section pillow block type



Flanged type variations



Hanger type



(2) Light duty units (cast iron)

Pillow block type	Rhombic-flanged type
	
● BLP 2	● BLF 2

(3) "Clean" series units (special light alloy)

Pillow block type	Rhombic-flanged type
	
● UP 0	● UFL 0

(4) Pressed steel housing units

		
● SBPP 2	● SBPFL 2	● SBPF 2

(5) Take-up units with frame

	
● UCTH 2	● UCTL 2 ● UCTU 2·3

(6) Ball bearings for units

	Cylindrical bore type (set screw locking) ● UC 2·X·3 ● SU 0 ● SB 2
	Tapered bore type (adapter locking) ● UK 2·X·3

Notes) This catalogue includes the specifications of major units and bearings which are boxed in the table.

Marks ● : set screw locking, ▲ : adapter locking

Tolerances	• Ball bearings as specified in JIS B 1558 (Tables 1 and 2). • Housings as specified in JIS B 1559. the internal spherical diameter tolerance is given in Table 3.
Bearing radial internal clearance	As specified in JIS B 1520 (Table 2-1 on p. A 11). Koyo provides cylindrical bore bearings with normal radial internal clearance. Tapered bore bearings are provided with a C3 radial internal clearance in consideration of possible inner ring expansion caused by tightening of an adapter.
Recommended fits of inner ring and shaft (indicated by the tolerance class)	• Cylindrical bore bearings h6, h7, h8, j6 (k6, k7 and m6 when heavy or impact load is to be supported.) • Tapered bore bearings h8, h9 • High-speed blower bearings (S5) h5, j5
Rotation speed limits	See Table 4.
Allowable aligning angle	• 0.052 rad (3°)

Ball bearing units

Table 1 Ball bearings for units : inner ring tolerance

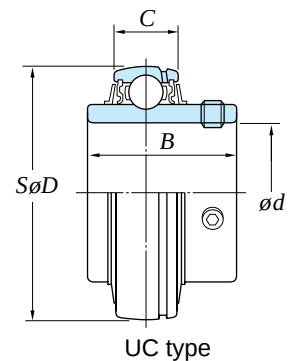
Unit μm

Nominal bore diameter d (mm)		Bore diameter						Single inner (outer) ring width deviation		Radial runout of assembled bearing inner ring
		UC, SU and SB types			Bearings for blower (S5)					
		Single plane mean bore diameter deviation Δd_{mp}	Single radial plane bore diameter variation Vd_p	Single plane mean bore diameter deviation Δd_{mp}	Single radial plane bore diameter variation Vd_p	ΔB_s (ΔC_s)	K_{ia}			
over	up to	upper	lower	max.	upper	lower	max.	upper	lower	max.
10 more	18	+15	0	10	+13	0	6	0	−120	15
18	31.75	+18	0	12	+13	0	6	0	−120	18
31.75	50.8	+21	0	14	+13	0	10	0	−120	20
50.8	80	+24	0	16	+15	0	10	0	−150	25
80	120	+28	0	19	+18	0	14	0	−200	30
120	180	+33	0	22	+23	0	14	0	−250	35

Table 2 Ball bearings for units : outer ring tolerance

Unit μm

Nominal outside diameter D (mm)		Mean outside diameter deviation ΔD_m		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

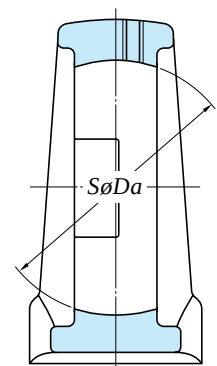


Note) The lower value of mean outside diameter deviation does not apply to the sides of outer rings up to the extent of a quarter of the outer ring width from the side faces.

Table 3 Housing spherical bore diameter tolerance

Unit μm

Nominal spherical bore diameter D_a (mm)		Tolerance class H7		Tolerance class J7		Tolerance class K7		All tolerance classes
		Single plane mean spherical bore diameter deviation ΔD_{amp}		Single plane mean spherical bore diameter deviation ΔD_{amp}		Single plane mean spherical bore diameter deviation ΔD_{amp}		Single radial plane spherical bore diameter variation Vd_p
		upper	lower	upper	lower	upper	lower	max.
over	up to							
18	30	+21	0	+12	-9	+6	-15	8
30	50	+25	0	+14	-11	+7	-18	10
50	80	+30	0	+18	-12	+9	-21	12
80	120	+35	0	+22	-13	+10	-25	14
120	180	+40	0	+26	-14	+12	-28	16
180	250	+46	0	+30	-16	+13	-33	18
250	315	+52	0	+36	-16	+16	-36	20



Remark) Koyo generally applies class J to housing designs.

Class H and class K and also be applied depending on the application.

Table 4 Rotation speed limits of ball bearing units

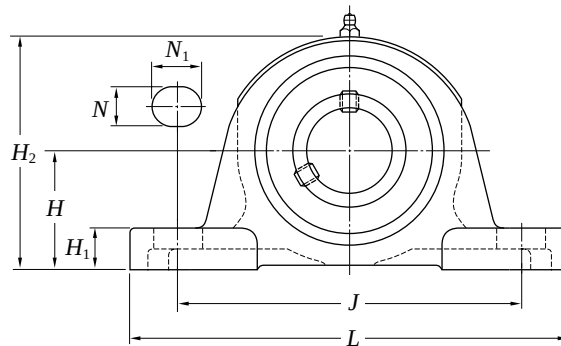
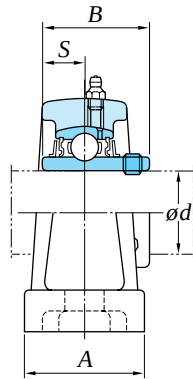
Unit μm

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

- Remarks) 1. Cold-resistant types (D2K2) and heat-resistant types A (D3K2) feature the same level of rotation speed limits as the standard type.
2. Refer to a separate catalog for details of triple lip sealed bearings, high-speed bearings (K3 and S5) and heat-resistant bearings (D1K2 and D3K2).
3. When bearings are fit loosely, rotation speed limits should be compensated for by the fitting coefficient given below.

Bearing type	Fitting coefficient					
	Shaft tolerance class					
	h 5, js 5	h 6	h 7	h 8	h 9	j 6
Standard	—	1	0.8	0.5	0.2	1
Triple lip sealed (L3)	—	—	1	1	0.9	—
For high speed rotation (K3)	—	0.8	0.6	—	—	1
For blower (S5)	1	0.8	0.6	—	—	—
Heat-resistant type B (D1K2)	—	—	1	1	0.7	—

Ball bearing units
pillow block type
UCP (set screw locking)
d 12 – 55 mm



Shaft dia. (mm)	Dimensions (mm)										Bolt size	Unit No.	Housing No.	Applicable bearing			(Refer.) Unit Mass (kg)	
	<i>d</i>	<i>H</i>	<i>J</i>	<i>L</i>	<i>A</i>	<i>H</i> ₁	<i>H</i> ₂	<i>N</i>	<i>N</i> ₁	<i>B</i>				<i>S</i>	No.	Basic load ratings (kN)		
																<i>C</i> _r		<i>C</i> _{0r}
12	30.2	95	127	38	12	60	13	18	31	12.7	M10	UCP201	P203	UC201	12.8	6.65	0.63	
15	30.2	95	127	38	12	60	13	18	31	12.7	M10	UCP202	P203	UC202	12.8	6.65	0.61	
17	30.2	95	127	38	12	60	13	18	31	12.7	M10	UCP203	P203	UC203	12.8	6.65	0.60	
20	33.3	95	127	38	13	64	13	18	31	12.7	M10	UCP204	P204	UC204	12.8	6.65	0.66	
25	36.5	105	140	38	13	71	13	18	34.1	14.3	M10	UCP205	P205	UC205	14.0	7.85	0.80	
	44.4	119	159	51	16	86	17	25	38.1	15.9	M14	UCPX05	PX05	UCX05	19.5	11.3	1.5	
	45	132	175	45	16	85	17	20	38	15	M14	UCP305	P305	UC305	20.6	11.3	1.7	
30	42.9	121	165	48	15	84	17	21	38.1	15.9	M14	UCP206	P206	UC206	19.5	11.3	1.3	
	47.6	127	175	57	17	93	17	25	42.9	17.5	M14	UCPX06	PX06	UCX06	25.7	15.4	2.1	
	50	140	180	50	17	95	17	20	43	17	M14	UCP306	P306	UC306	26.7	15.0	2.2	
35	47.6	127	167	48	16	93	17	21	42.9	17.5	M14	UCP207	P207	UC207	25.7	15.4	1.6	
	54	144	203	57	19	105	17	30	49.2	19	M14	UCPX07	PX07	UCX07	29.1	17.8	2.7	
	56	160	210	56	19	107	17	25	48	19	M14	UCP307	P307	UC307	33.4	19.3	3.0	
40	49.2	137	184	54	17	98	17	21	49.2	19	M14	UCP208	P208	UC208	29.1	17.8	2.0	
	58.7	156	222	67	21	114	20	32	49.2	19	M16	UCPX08	PX08	UCX08	32.7	20.3	3.5	
	60	170	220	60	19	118	17	27	52	19	M14	UCP308	P308	UC308	40.7	24.0	3.8	
45	54	146	190	54	17	106	17	21	49.2	19	M14	UCP209	P209	UC209	32.7	20.3	2.2	
	58.7	156	222	67	21	116	20	33	51.6	19	M16	UCPX09	PX09	UCX09	35.1	23.3	3.7	
	67	190	245	67	21	132	20	30	57	22	M16	UCP309	P309	UC309	48.9	29.5	4.9	
50	57.2	159	206	60	19	113	20	22	51.6	19	M16	UCP210	P210	UC210	35.1	23.3	2.9	
	63.5	171	241	73	22	126	20	36	55.6	22.2	M16	UCPX10	PX10	UCX10	43.4	29.4	4.6	
	75	212	275	75	24	148	20	35	61	22	M16	UCP310	P310	UC310	62.0	38.3	6.6	
55	63.5	171	219	60	19	125	20	22	55.6	22.2	M16	UCP211	P211	UC211	43.4	29.4	3.6	
	69.8	184	260	79	28	139	25	36	65.1	25.4	M20	UCPX11	PX11	UCX11	52.4	36.2	6.5	
	80	236	310	80	27	158	20	38	66	25	M16	UCP311	P311	UC311	71.6	45.0	7.9	

Remarks 1) Applicable sizes of grease nipples are shown below.

1/4-28UNF 201 – 210, X05 – X09, 305 – 308
 PT 1/8 211 – 218, X10 – X20, 309 – 328

2) For bearings with double- or triple-lip seals, unit and bearing number are suffixed by L2 or L3.
 (For more detailed information, refer to ball bearing for unit specification tables.)

d 60 – 140 mm

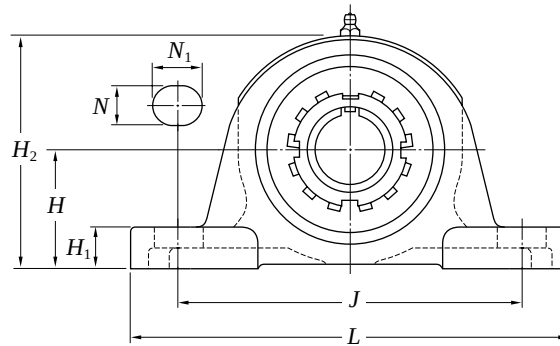
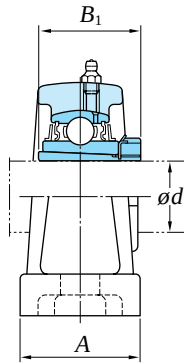
Shaft dia. (mm)	Dimensions (mm)										Bolt size	Unit No.	Housing No.	Applicable bearing			(Refer.) Unit Mass (kg)
														No.	Basic load ratings (kN)		
	H	J	L	A	H ₁	H ₂	N	N ₁	B	S					C _r	C _{0r}	
d	H	J	L	A	H ₁	H ₂	N	N ₁	B	S							
60	69.8	184	241	70	22	138	20	25	65.1	25.4	M16	UCP212	P212	UC212	52.4	36.2	4.9
	76.2	203	286	83	28	152	25	40	65.1	25.4	M20	UCPX12	PX12	UCX12	57.2	40.1	7.7
	85	250	330	85	29	167	25	38	71	26	M20	UCP312	P312	UC312	81.9	52.2	9.5
65	76.2	203	265	70	25	150	25	30	65.1	25.4	M20	UCP213	P213	UC213	57.2	40.1	5.9
	76.2	203	286	83	28	155	25	40	74.6	30.2	M20	UCPX13	PX13	UCX13	62.2	44.1	8.1
	90	260	340	90	32	176	25	38	75	30	M20	UCP313	P313	UC313	92.7	59.9	10.7
70	79.4	210	266	72	28	156	25	30	74.6	30.2	M20	UCP214	P214	UC214	62.2	44.1	6.8
	88.9	229	330	89	32	171	27	50	77.8	33.3	M22	UCPX14	PX14	UCX14	67.4	48.3	10.2
	95	280	360	90	35	186	27	40	78	33	M22	UCP314	P314	UC314	104	68.2	12.4
75	82.6	217	275	74	28	162	25	30	77.8	33.3	M20	UCP215	P215	UC215	67.4	48.3	7.4
	88.9	229	330	89	32	175	27	50	82.6	33.3	M22	UCPX15	PX15	UCX15	72.7	53.0	10.8
	100	290	380	100	35	198	27	40	82	32	M22	UCP315	P315	UC315	113	77.2	14.8
80	88.9	232	292	78	32	174	25	35	82.6	33.3	M20	UCP216	P216	UC216	72.7	53.0	9.0
	101.6	283	381	102	34	195	27	58	85.7	34.1	M22	UCPX16	PX16	UCX16	84.0	61.9	15.3
	106	300	400	110	35	209	27	40	86	34	M22	UCP316	P316	UC316	123	86.7	18.5
85	95.2	247	310	83	32	185	25	40	85.7	34.1	M20	UCP217	P217	UC217	84.0	61.9	10.8
	101.6	283	381	102	34	200	27	60	96	39.7	M22	UCPX17	PX17	UCX17	96.1	71.5	16.1
	112	320	420	110	40	220	33	45	96	40	M27	UCP317	P317	UC317	133	96.8	20.3
90	101.6	262	327	88	34	198	27	45	96	39.7	M22	UCP218	P218	UC218	96.1	71.5	13.9
	101.6	283	381	111	38	204	27	60	104	42.9	M22	UCPX18	PX18	UCX18	109	81.9	19.1
	118	330	430	110	40	234	33	45	96	40	M27	UCP318	P318	UC318	143	107	22.8
95	125	360	470	120	46	248	36	50	103	41	M30	UCP319	P319	UC319	153	119	29.0
100	127	337	432	121	45	245	33	65	117.5	49.2	M27	UCPX20	PX20	UCX20	133	105	30.4
	140	380	490	120	46	273	36	50	108	42	M30	UCP320	P320	UC320	173	141	35.1
105	140	380	490	120	46	278	36	50	112	44	M30	UCP321	P321	UC321	184	153	37.6
110	150	400	520	140	50	296	40	55	117	46	M33	UCP322	P322	UC322	205	180	44.0
120	160	450	570	140	50	316	40	55	126	51	M33	UCP324	P324	UC324	207	185	55.4
130	180	480	600	140	50	355	40	55	135	54	M33	UCP326	P326	UC326	229	214	72.1
140	200	500	620	140	60	393	40	55	145	59	M33	UCP328	P328	UC328	253	246	92.5

Remarks 1) Applicable sizes of grease nipples are shown below.

1/4-28UNF 201 – 210, X05 – X09, 305 – 308
PT 1/8 211 – 218, X10 – X20, 309 – 328

2) For bearings with double- or triple-lip seals, unit and bearing number are suffixed by L2 or L3.
(For more detailed information, refer to ball bearing for unit specification tables.)

Ball bearing units
pillow block type
UKP (adapter locking)
d 20 – 60 mm



Shaft dia. (mm) <i>d</i>	Dimensions (mm)									Bolt size	Unit No.	Housing No.	Applicable bearing Basic load ratings (kN)				(Refer.) Unit Mass (kg)
	<i>H</i>	<i>J</i>	<i>L</i>	<i>A</i>	<i>H</i> ₁	<i>H</i> ₂	<i>N</i>	<i>N</i> ₁	<i>B</i> ₁				No.	<i>C</i> _r	<i>C</i> _{0r}		
20	36.5	105	140	38	13	71	13	18	29	M10	UKP205	P205	UK205	14.0	7.85	0.84	
	44.4	119	159	51	16	86	17	25	35	M14	UKPX05	PX05	UKX05	19.5	11.3	1.5	
	45	132	175	45	16	85	17	20	35	M14	UKP305	P305	UK305	20.6	11.3	1.7	
25	42.9	121	165	48	15	84	17	21	31	M14	UKP206	P206	UK206	19.5	11.3	1.4	
	47.6	127	175	57	17	93	17	25	38	M14	UKPX06	PX06	UKX06	25.7	15.4	2.1	
	50	140	180	50	17	95	17	20	38	M14	UKP306	P306	UK306	26.7	15.0	2.3	
30	47.6	127	167	48	16	93	17	21	35	M14	UKP207	P207	UK207	25.7	15.4	1.7	
	54	144	203	57	19	105	17	30	43	M14	UKPX07	PX07	UKX07	29.1	17.8	2.7	
	56	160	210	56	19	107	17	25	43	M14	UKP307	P307	UK307	33.4	19.3	3.0	
35	49.2	137	184	54	17	98	17	21	36	M14	UKP208	P208	UK208	29.1	17.8	2.0	
	58.7	156	222	67	21	114	20	32	46	M16	UKPX08	PX08	UKX08	32.7	20.3	3.5	
	60	170	220	60	19	118	17	27	46	M14	UKP308	P308	UK308	40.7	24.0	3.8	
40	54	146	190	54	17	106	17	21	39	M14	UKP209	P209	UK209	32.7	20.3	2.3	
	58.7	156	222	67	21	116	20	33	50	M16	UKPX09	PX09	UKX09	35.1	23.3	3.7	
	67	190	245	67	21	132	20	30	50	M16	UKP309	P309	UK309	48.9	29.5	5.0	
45	57.2	159	206	60	19	113	20	22	42	M16	UKP210	P210	UK210	35.1	23.3	3.0	
	63.5	171	241	73	22	126	20	36	55	M16	UKPX10	PX10	UKX10	43.4	29.4	4.6	
	75	212	275	75	24	148	20	35	55	M16	UKP310	P310	UK310	62.0	38.3	6.7	
50	63.5	171	219	60	19	125	20	22	45	M16	UKP211	P211	UK211	43.4	29.4	3.7	
	69.8	184	260	79	28	139	25	36	59	M20	UKPX11	PX11	UKX11	52.4	36.2	6.2	
	80	236	310	80	27	158	20	38	59	M16	UKP311	P311	UK311	71.6	45.0	8.1	
55	69.8	184	241	70	22	138	20	25	47	M16	UKP212	P212	UK212	52.4	36.2	4.8	
	76.2	203	286	83	28	152	25	40	62	M20	UKPX12	PX12	UKX12	57.2	40.1	7.5	
	85	250	330	85	29	167	25	38	62	M20	UKP312	P312	UK312	81.9	52.2	9.4	
60	76.2	203	265	70	25	150	25	30	50	M20	UKP213	P213	UK213	57.2	40.1	5.8	
	76.2	203	286	83	28	155	25	40	65	M20	UKPX13	PX13	UKX13	62.2	44.1	7.8	
	90	260	340	90	32	176	25	38	65	M20	UKP313	P313	UK313	92.7	59.9	10.8	

Remark) Applicable sizes of grease nipples are shown below.

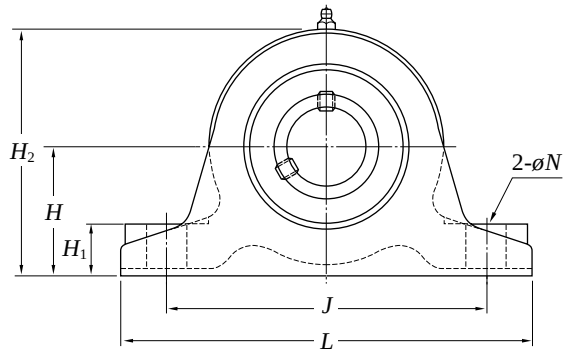
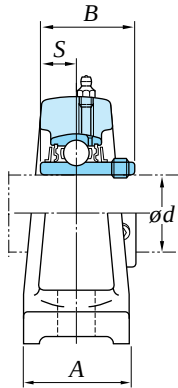
1/4-28UNF	205 – 210, X05 – X09, 305 – 308
PT 1/8	211 – 218, X10 – X20, 309 – 328

d 65 – 125 mm

Shaft dia. (mm)	Dimensions (mm)									Bolt size	Unit No.	Housing No.	Applicable bearing				(Refer.) Unit Mass (kg)
	<i>H</i>	<i>J</i>	<i>L</i>	<i>A</i>	<i>H</i> ₁	<i>H</i> ₂	<i>N</i>	<i>N</i> ₁	<i>B</i> ₁				No.	Basic load ratings (kN)			
														<i>C</i> _r	<i>C</i> _{0r}		
65	82.6	217	275	74	28	162	25	30	55	M20	UKP215	P215	UK215	67.4	48.3	7.5	
	88.9	229	330	89	32	175	27	50	73	M22	UKPX15	PX15	UKX15	72.7	53.0	10.5	
	100	290	380	100	35	198	27	40	73	M22	UKP315	P315	UK315	113	77.2	14.9	
70	88.9	232	292	78	32	174	25	35	59	M20	UKP216	P216	UK216	72.7	53.0	9.2	
	101.6	283	381	102	34	195	27	58	78	M22	UKPX16	PX16	UKX16	84.0	61.9	15.4	
	106	300	400	110	35	209	27	40	78	M22	UKP316	P316	UK316	123	86.7	18.6	
75	95.2	247	310	83	32	185	25	40	63	M20	UKP217	P217	UK217	84.0	61.9	11.0	
	101.6	283	381	102	34	200	27	60	82	M22	UKPX17	PX17	UKX17	96.1	71.5	15.8	
	112	320	420	110	40	220	33	45	82	M27	UKP317	P317	UK317	133	96.8	20.2	
80	101.6	262	327	88	34	198	27	45	65	M22	UKP218	P218	UK218	96.1	71.5	13.8	
	101.6	283	381	111	38	204	27	60	86	M22	UKPX18	PX18	UKX18	109	81.9	18.6	
	118	330	430	110	40	234	33	45	86	M27	UKP318	P318	UK318	143	107	22.8	
85	125	360	470	120	46	248	36	50	90	M30	UKP319	P319	UK319	153	119	29.3	
90	127	337	432	121	45	245	33	65	97	M27	UKPX20	PX20	UKX20	133	105	29.3	
	140	380	490	120	46	273	36	50	97	M30	UKP320	P320	UK320	173	141	34.8	
100	150	400	520	140	50	296	40	55	105	M33	UKP322	P322	UK322	205	180	43.9	
110	160	450	570	140	50	316	40	55	112	M33	UKP324	P324	UK324	207	185	55.7	
115	180	480	600	140	50	355	40	55	121	M33	UKP326	P326	UK326	229	214	71.9	
125	200	500	620	140	60	393	40	55	131	M33	UKP328	P328	UK328	253	246	92.5	

Remark) Applicable sizes of grease nipples are shown below.
 [1/4-28UNF 205 – 210, X05 – X09, 305 – 308]
 [PT 1/8 211 – 218, X10 – X20, 309 – 328]

Ball bearing units
thick section pillow block type
UCIP (set screw locking)
d 40 – 140 mm



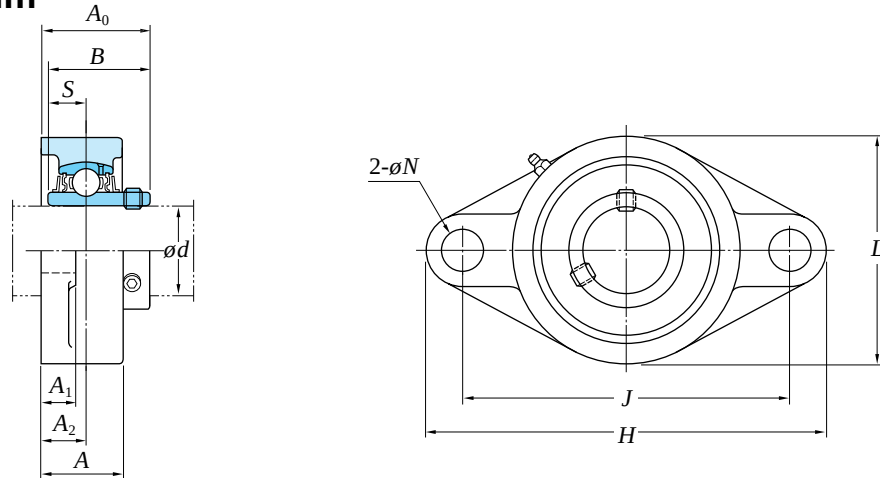
Shaft dia. (mm) <i>d</i>	Dimensions (mm)									Bolt size	Unit No.	Housing No.	Applicable bearing			(Refer.) Unit Mass (kg)
	<i>H</i>	<i>J</i>	<i>L</i>	<i>A</i>	<i>H</i> ₁	<i>H</i> ₂	<i>N</i>	<i>B</i>	<i>S</i>				No.	Basic load ratings (kN)		
														<i>C</i> _r	<i>C</i> _{0r}	
40	60	150	200	60	25	115	19	49.2	19	M16	UCIP208	IP208	UC208	29.1	17.8	3.4
45	70	160	210	60	25	128	19	49.2	19	M16	UCIP209	IP209	UC209	32.7	20.3	3.9
50	70	170	220	60	28	132	19	51.6	19	M16	UCIP210	IP210	UC210	35.1	23.3	4.8
55	80	180	230	60	28	148	19	55.6	22.2	M16	UCIP211	IP211	UC211	43.4	29.4	5.3
60	80	200	260	70	30	155	22	65.1	25.4	M20	UCIP212	IP212	UC212	52.4	36.2	7.2
65	90	220	280	70	30	172	22	65.1	25.4	M20	UCIP213	IP213	UC213	57.2	40.1	8.8
	110	250	310	70	30	208	22	75	30	M20	UCIP313	IP313	UC313	92.7	59.9	13.4
70	110	270	330	75	35	215	25	78	33	M22	UCIP314	IP314	UC314	104	68.2	15.3
75	120	280	340	75	35	230	25	82	32	M22	UCIP315	IP315	UC315	113	77.2	17.6
80	120	290	350	85	40	235	25	86	34	M22	UCIP316	IP316	UC316	123	86.7	20.3
85	130	310	370	85	40	255	25	96	40	M22	UCIP317	IP317	UC317	133	96.8	25.9
90	130	330	400	85	45	260	29	96	40	M27	UCIP318	IP318	UC318	143	107	28.6
95	150	340	410	85	45	285	29	103	41	M27	UCIP319	IP319	UC319	153	119	31.7
100	150	360	430	85	45	295	29	108	42	M27	UCIP320	IP320	UC320	173	141	36.9
110	170	410	490	100	50	335	32	117	46	M30	UCIP322	IP322	UC322	205	180	52.4
120	170	430	510	100	50	345	32	126	51	M30	UCIP324	IP324	UC324	207	185	58.7
130	200	470	550	110	50	390	32	135	54	M30	UCIP326	IP326	UC326	229	214	76.2
140	200	500	590	110	55	400	35	145	59	M33	UCIP328	IP328	UC328	253	246	87.0

Remarks 1) Applicable sizes of grease nipples are shown below.

1/4-28UNF 208 – 210
PT 1/8 211 – 213, 313 – 328

2) Bearings with triple-lip seals are indicated by L3 after the bearing and unit number.
(For more detailed information, refer to ball bearing for unit specification tables.)

Ball bearing units
rhombic-flanged type
UCFL (set screw locking)
d 12 – 60 mm



Shaft dia. (mm)	Dimensions (mm)										Bolt size	Unit No.	Housing No.	Applicable bearing			(Refer.) Unit Mass (kg)	
	<i>d</i>	<i>H</i>	<i>J</i>	<i>L</i>	<i>A</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>N</i>	<i>B</i>				<i>S</i>	No.	Basic load ratings (kN)		
																<i>C</i> _r		<i>C</i> _{0r}
12	113	90	60	25.5	11	15	33.3	12	31	12.7	M10	UCFL201	FL204	UC201	12.8	6.65	0.50	
15	113	90	60	25.5	11	15	33.3	12	31	12.7	M10	UCFL202	FL204	UC202	12.8	6.65	0.48	
17	113	90	60	25.5	11	15	33.3	12	31	12.7	M10	UCFL203	FL204	UC203	12.8	6.65	0.47	
20	113	90	60	25.5	11	15	33.3	12	31	12.7	M10	UCFL204	FL204	UC204	12.8	6.65	0.45	
25	130	99	68	27	13	16	35.8	16	34.1	14.3	M14	UCFL205	FL205	UC205	14.0	7.85	0.64	
	141	117	83	30	13	18	40.2	12	38.1	15.9	M10	UCFLX05	FLX05	UCX05	19.5	11.3	1.1	
	150	113	80	29	13	16	39	19	38	15	M16	UCFL305	FL305	UC305	20.6	11.3	1.1	
30	148	117	80	31	13	18	40.2	16	38.1	15.9	M14	UCFL206	FL206	UC206	19.5	11.3	0.93	
	156	130	95	34	14	19	44.4	16	42.9	17.5	M14	UCFLX06	FLX06	UCX06	25.7	15.4	1.5	
	180	134	90	32	15	18	44	23	43	17	M20	UCFL306	FL306	UC306	26.7	15.0	1.5	
35	161	130	90	34	14	19	44.4	16	42.9	17.5	M14	UCFL207	FL207	UC207	25.7	15.4	1.2	
	171	144	105	38	14	21	51.2	16	49.2	19	M14	UCFLX07	FLX07	UCX07	29.1	17.8	1.9	
	185	141	100	36	16	20	49	23	48	19	M20	UCFL307	FL307	UC307	33.4	19.3	1.8	
40	175	144	100	36	14	21	51.2	16	49.2	19	M14	UCFL208	FL208	UC208	29.1	17.8	1.6	
	179	148	111	40	14	22	52.2	16	49.2	19	M14	UCFLX08	FLX08	UCX08	32.7	20.3	2.1	
	200	158	112	40	17	23	56	23	52	19	M20	UCFL308	FL308	UC308	40.7	24.0	2.5	
45	188	148	108	38	15	22	52.2	19	49.2	19	M16	UCFL209	FL209	UC209	32.7	20.3	1.9	
	189	157	116	40	14	23	55.6	16	51.6	19	M14	UCFLX09	FLX09	UCX09	35.1	23.3	2.4	
	230	177	125	44	18	25	60	25	57	22	M22	UCFL309	FL309	UC309	48.9	29.5	3.5	
50	197	157	115	40	15	22	54.6	19	51.6	19	M16	UCFL210	FL210	UC210	35.1	23.3	2.2	
	216	184	133	44	20	26	59.4	19	55.6	22.2	M16	UCFLX10	FLX10	UCX10	43.4	29.4	3.8	
	240	187	140	48	19	28	67	25	61	22	M22	UCFL310	FL310	UC310	62.0	38.3	4.4	
55	224	184	130	43	18	25	58.4	19	55.6	22.2	M16	UCFL211	FL211	UC211	43.4	29.4	3.3	
	250	198	150	52	20	30	71	25	66	25	M22	UCFL311	FL311	UC311	71.6	45.0	5.3	
60	250	202	140	48	18	29	68.7	23	65.1	25.4	M20	UCFL212	FL212	UC212	52.4	36.2	4.2	
	270	212	160	56	22	33	78	31	71	26	M27	UCFL312	FL312	UC312	81.9	52.2	6.5	

Remarks 1) Applicable sizes of grease nipples are shown below.

1/4-28UNF	201 – 210, X05 – X09, 305 – 308
PT 1/8	211 – 218, X10, 309 – 318

2) For bearings with double- or triple-lip seals, unit and bearing number are suffixed by L2 or L3.
 (For more detailed information, refer to ball bearing for unit specification tables.)

d 65 – 90 mm

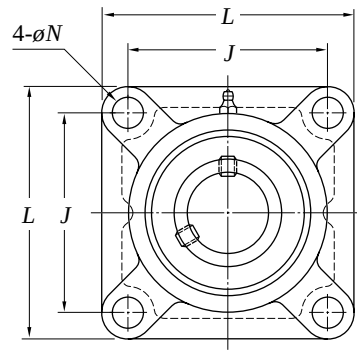
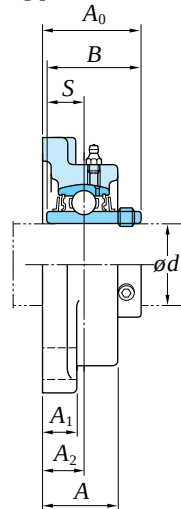
Shaft dia. (mm)	Dimensions (mm)										Bolt size	Unit No.	Housing No.	Applicable bearing No.	Basic load ratings (kN)		(Refer.) Unit Mass (kg)
<i>d</i>	<i>H</i>	<i>J</i>	<i>L</i>	<i>A</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>N</i>	<i>B</i>	<i>S</i>					<i>C</i> _r	<i>C</i> _{0r}	
65	258	210	155	50	20	30	69.7	23	65.1	25.4	M20	UCFL213 UCFL313	FL213	UC213	57.2	40.1	5.1
	295	240	175	58	25	33	78	31	75	30	M27		FL313	UC313	92.7	59.9	8.5
70	265	216	160	54	20	31	75.4	23	74.6	30.2	M20	UCFL214 UCFL314	FL214	UC214	62.2	44.1	5.7
	315	250	185	61	28	36	81	35	78	33	M30		FL314	UC314	104	68.2	9.7
75	275	225	165	56	20	34	78.5	23	77.8	33.3	M20	UCFL215 UCFL315	FL215	UC215	67.4	48.3	6.4
	320	260	195	66	30	39	89	35	82	32	M30		FL315	UC315	113	77.2	11.3
80	290	233	180	58	20	34	83.3	25	82.6	33.3	M22	UCFL216 UCFL316	FL216	UC216	72.7	53.0	7.8
	355	285	210	68	32	38	90	38	86	34	M33		FL316	UC316	123	86.7	14.4
85	305	248	190	63	22	36	87.6	25	85.7	34.1	M22	UCFL217 UCFL317	FL217	UC217	84.0	61.9	9.8
	370	300	220	74	32	44	100	38	96	40	M33		FL317	UC317	133	96.8	16.0
90	320	265	205	68	23	40	96.3	25	96	39.7	M22	UCFL218 UCFL318	FL218	UC218	96.1	71.5	12.3
	385	315	235	76	36	44	100	38	96	40	M33		FL318	UC318	143	107	19.0

Remarks 1) Applicable sizes of grease nipples are shown below.

1/4-28UNF 201 – 210, X05 – X09, 305 – 308
 PT 1/8 211 – 218, X10, 309 – 318

2) For bearings with double- or triple-lip seals, unit and bearing number are suffixed by L2 or L3.
 (For more detailed information, refer to ball bearing for unit specification tables.)

Ball bearing units
square-flanged type
UCF (set screw locking)
d 12 – 55 mm



Shaft dia. (mm) <i>d</i>	Dimensions (mm)									Bolt size	Unit No.	Housing No.	Applicable bearing			(Refer.) Unit Mass (kg)
	<i>J</i>	<i>L</i>	<i>A</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>N</i>	<i>B</i>	<i>S</i>				No.	Basic load ratings (kN)		
														<i>C</i> _r	<i>C</i> _{0r}	
12	64	86	25.5	11	15	33.3	12	31	12.7	M10	UCF201	F204	UC201	12.8	6.65	0.64
15	64	86	25.5	11	15	33.3	12	31	12.7	M10	UCF202	F204	UC202	12.8	6.65	0.62
17	64	86	25.5	11	15	33.3	12	31	12.7	M10	UCF203	F204	UC203	12.8	6.65	0.61
20	64	86	25.5	11	15	33.3	12	31	12.7	M10	UCF204	F204	UC204	12.8	6.65	0.59
25	70	95	27	13	16	35.8	12	34.1	14.3	M10	UCF205	F205	UC205	14.0	7.85	0.83
	83	108	30	13	18	40.2	12	38.1	15.9	M10	UCFX05	FX05	UCX05	19.5	11.3	1.2
	80	110	29	13	16	39	16	38	15	M14	UCF305	F305	UC305	20.6	11.3	1.3
30	83	108	31	13	18	40.2	12	38.1	15.9	M10	UCF206	F206	UC206	19.5	11.3	1.1
	92	117	34	14	19	44.4	16	42.9	17.5	M14	UCFX06	FX06	UCX06	25.7	15.4	1.6
	95	125	32	15	18	44	16	43	17	M14	UCF306	F306	UC306	26.7	15.0	1.9
35	92	117	34	15	19	44.4	14	42.9	17.5	M12	UCF207	F207	UC207	25.7	15.4	1.5
	102	130	38	14	21	51.2	16	49.2	19	M14	UCFX07	FX07	UCX07	29.1	17.8	2.0
	100	135	36	16	20	49	19	48	19	M16	UCF307	F307	UC307	33.4	19.3	2.3
40	102	130	36	15	21	51.2	16	49.2	19	M14	UCF208	F208	UC208	29.1	17.8	1.9
	105	137	40	14	22	52.2	19	49.2	19	M16	UCFX08	FX08	UCX08	32.7	20.3	2.4
	112	150	40	17	23	56	19	52	19	M16	UCF308	F308	UC308	40.7	24.0	3.1
45	105	137	38	16	22	52.2	16	49.2	19	M14	UCF209	F209	UC209	32.7	20.3	2.2
	111	143	40	14	23	55.6	19	51.6	19	M16	UCFX09	FX09	UCX09	35.1	23.3	2.7
	125	160	44	18	25	60	19	57	22	M16	UCF309	F309	UC309	48.9	29.5	4.0
50	111	143	40	16	22	54.6	16	51.6	19	M14	UCF210	F210	UC210	35.1	23.3	2.5
	130	162	44	20	26	59.4	19	55.6	22.2	M16	UCFX10	FX10	UCX10	43.4	29.4	3.7
	132	175	48	19	28	67	23	61	22	M20	UCF310	F310	UC310	62.0	38.3	5.1
55	130	162	43	18	25	58.4	19	55.6	22.2	M16	UCF211	F211	UC211	43.4	29.4	3.4
	143	175	49	20	29	68.7	19	65.1	25.4	M16	UCFX11	FX11	UCX11	52.4	36.2	4.9
	140	185	52	20	30	71	23	66	25	M20	UCF311	F311	UC311	71.6	45.0	5.6

Remarks 1) Applicable sizes of grease nipples are shown below.

1/4-28UNF	201 – 210, X05 – X09, 305 – 308
PT 1/8	211 – 218, X10 – X20, 309 – 328

- 2) For bearings with double- or triple-lip seals, unit and bearing number are suffixed by L2 or L3.
 (For more detailed information, refer to ball bearing for unit specification tables.)

d 60 – 140 mm

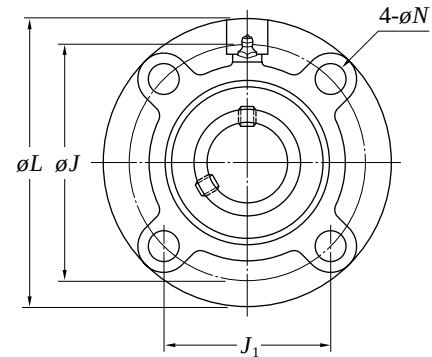
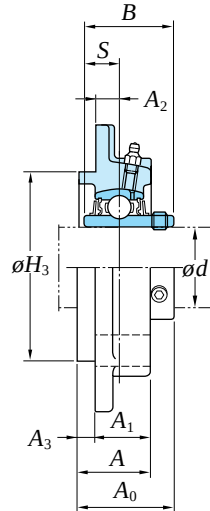
Shaft dia. (mm) <i>d</i>	Dimensions (mm)									Bolt size	Unit No.	Housing No.	Applicable bearing			(Refer.) Unit Mass (kg)
	<i>J</i>	<i>L</i>	<i>A</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>N</i>	<i>B</i>	<i>S</i>				No.	Basic load ratings (kN)		
														<i>C</i> _r	<i>C</i> _{0r}	
60	143	175	48	18	29	68.7	19	65.1	25.4	M16	UCF212	F212	UC212	52.4	36.2	4.2
	149	187	59	21	34	73.7	19	65.1	25.4	M16	UCFX12	FX12	UCX12	57.2	40.1	5.7
	150	195	56	22	33	78	23	71	26	M20	UCF312	F312	UC312	81.9	52.2	6.9
65	149	187	50	22	30	69.7	19	65.1	25.4	M16	UCF213	F213	UC213	57.2	40.1	5.2
	149	187	59	21	34	78.4	19	74.6	30.2	M16	UCFX13	FX13	UCX13	62.2	44.1	6.3
	166	208	58	22	33	78	23	75	30	M20	UCF313	F313	UC313	92.7	59.9	7.8
70	152	193	54	22	31	75.4	19	74.6	30.2	M16	UCF214	F214	UC214	62.2	44.1	5.9
	152	197	60	22	37	81.5	23	77.8	33.3	M20	UCFX14	FX14	UCX14	67.4	48.3	7.0
	178	226	61	25	36	81	25	78	33	M22	UCF314	F314	UC314	104	68.2	10.1
75	159	200	56	22	34	78.5	19	77.8	33.3	M16	UCF215	F215	UC215	67.4	48.3	6.4
	152	197	68	24	40	89.3	23	82.6	33.3	M20	UCFX15	FX15	UCX15	72.7	53.0	8.4
	184	236	66	25	39	89	25	82	32	M22	UCF315	F315	UC315	113	77.2	11.6
80	165	208	58	22	34	83.3	23	82.6	33.3	M20	UCF216	F216	UC216	72.7	53.0	7.3
	171	214	70	24	40	91.6	23	85.7	34.1	M20	UCFX16	FX16	UCX16	84.0	61.9	9.4
	196	250	68	27	38	90	31	86	34	M27	UCF316	F316	UC316	123	86.7	12.8
85	175	220	63	24	36	87.6	23	85.7	34.1	M20	UCF217	F217	UC217	84.0	61.9	8.9
	171	214	70	24	40	96.3	23	96	39.7	M20	UCFX17	FX17	UCX17	96.1	71.5	10.8
	204	260	74	27	44	100	31	96	40	M27	UCF317	F317	UC317	133	96.8	15.3
90	187	235	68	25	40	96.3	23	96	39.7	M20	UCF218	F218	UC218	96.1	71.5	11.4
	171	214	76	24	45	106.1	23	104	42.9	M20	UCFX18	FX18	UCX18	109	81.9	11.9
	216	280	76	30	44	100	35	96	40	M30	UCF318	F318	UC318	143	107	18.9
95	228	290	94	30	59	121	35	103	41	M30	UCF319	F319	UC319	153	119	21.6
100	211	268	97	28	59	127.3	31	117.5	49.2	M27	UCFX20	FX20	UCX20	133	105	19.4
	242	310	94	32	59	125	38	108	42	M33	UCF320	F320	UC320	173	141	25.8
105	242	310	94	32	59	127	38	112	44	M33	UCF321	F321	UC321	184	153	30.2
110	266	340	96	35	60	131	41	117	46	M36	UCF322	F322	UC322	205	180	35.3
120	290	370	110	40	65	140	41	126	51	M36	UCF324	F324	UC324	207	185	47.3
130	320	410	115	45	65	146	41	135	54	M36	UCF326	F326	UC326	229	214	65.5
140	350	450	125	55	75	161	41	145	59	M36	UCF328	F328	UC328	253	246	93.4

Remarks 1) Applicable sizes of grease nipples are shown below.

1/4-28UNF 201 – 210, X05 – X09, 305 – 308
 PT 1/8 211 – 218, X10 – X20, 309 – 328

2) For bearings with double- or triple-lip seals, unit and bearing number are suffixed by L2 or L3.
 (For more detailed information, refer to ball bearing for unit specification tables.)

Ball bearing units **round-falnged type with spigot joint** **UCFC (set screw locking)** **d 12 – 70 mm**



Shaft dia. (mm) <i>d</i>	Dimensions (mm)												Bolt size	Unit No.	Housing No.	Applicable bearing Basic load ratings (kN)		(Refer.) Unit Mass (kg)
	<i>L</i>	<i>J</i>	<i>J</i> ₁	<i>H</i> ₃	<i>A</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₃	<i>A</i> ₀	<i>N</i>	<i>B</i>	<i>S</i>				<i>C</i> _r	<i>C</i> _{0r}	
12	100	78	55.1	62	25.5	20.5	10	5	33.3	12	31	12.7	M10	UCFC201	FC204	UC201	12.8 6.65	0.78
15	100	78	55.1	62	25.5	20.5	10	5	33.3	12	31	12.7	M10	UCFC202	FC204	UC202	12.8 6.65	0.76
17	100	78	55.1	62	25.5	20.5	10	5	33.3	12	31	12.7	M10	UCFC203	FC204	UC203	12.8 6.65	0.75
20	100	78	55.1	62	25.5	20.5	10	5	33.3	12	31	12.7	M10	UCFC204	FC204	UC204	12.8 6.65	0.73
25	115	90	63.6	70	27	21	10	6	35.8	12	34.1	14.3	M10	UCFC205	FC205	UC205	14.0 7.85	0.95
	111	92	65	76	30	24	10	6	38.2	9.5	38.1	15.9	M8	UCFCX05	FCX05	UCX05	19.5 11.3	1.2
30	125	100	70.7	80	31	23	10	8	40.2	12	38.1	15.9	M10	UCFC206	FC206	UC206	19.5 11.3	1.3
	127	105	74.2	85	32	22.5	8	9.5	42.9	12	42.9	17.5	M10	UCFCX06	FCX06	UCX06	25.7 15.4	1.5
35	135	110	77.8	90	34	26	11	8	44.4	14	42.9	17.5	M12	UCFC207	FC207	UC207	25.7 15.4	1.7
	133	111	78.5	92	37	26	9	11	50.2	12	49.2	19	M10	UCFCX07	FCX07	UCX07	29.1 17.8	1.9
40	145	120	84.8	100	36	26	11	10	51.2	14	49.2	19	M12	UCFC208	FC208	UC208	29.1 17.8	2.0
	133	111	78.5	92	37	26	9	11	50.2	12	49.2	19	M10	UCFCX08	FCX08	UCX08	32.7 20.3	2.0
45	160	132	93.3	105	38	26	10	12	52.2	16	49.2	19	M14	UCFC209	FC209	UC209	32.7 20.3	2.6
	155	130	91.9	108	37	25	8	12	52.6	14	51.6	19	M12	UCFCX09	FCX09	UCX09	35.1 23.3	2.6
50	165	138	97.6	110	40	28	10	12	54.6	16	51.6	19	M14	UCFC210	FC210	UC210	35.1 23.3	2.9
	162	136	96.2	118	41	25	7	16	56.4	14	55.6	22.2	M12	UCFCX10	FCX10	UCX10	43.4 29.4	3.2
55	185	150	106.1	125	43	31	13	12	58.4	19	55.6	22.2	M16	UCFC211	FC211	UC211	43.4 29.4	4.2
	180	152	107.5	127	48	26	4	22	65.7	16	65.1	25.4	M14	UCFCX11	FCX11	UCX11	52.4 36.2	4.3
60	195	160	113.1	135	48	36	17	12	68.7	19	65.1	25.4	M16	UCFC212	FC212	UC212	52.4 36.2	5.0
	194	165	116.7	140	53	33	11	20	70.7	16	65.1	25.4	M14	UCFCX12	FCX12	UCX12	57.2 40.1	5.3
65	205	170	120.2	145	50	36	16	14	69.7	19	65.1	25.4	M16	UCFC213	FC213	UC213	57.2 40.1	5.6
	194	165	116.7	140	53	33	11	20	75.4	16	74.6	30.2	M14	UCFCX13	FCX13	UCX13	62.2 44.1	5.7
70	215	177	125.1	150	54	40	17	14	75.4	19	74.6	30.2	M16	UCFC214	FC214	UC214	62.2 44.1	6.8
	222	190	134.3	164	56	36	14	20	78.5	19	77.8	33.3	M16	UCFCX14	FCX14	UCX14	67.4 48.3	7.3

Remarks 1) Applicable sizes of grease nipples are shown below.

1/4-28UNF 201 – 210, X05 – X09
PT 1/8 211 – 218, X10 – X20

2) For bearings with double- or triple-lip seals, unit and bearing number are suffixed by L2 or L3.
(Fore more detailed information, refer to ball bearing for unit specification tables.)

d 75 – 100 mm

Shaft dia. (mm)	Dimensions (mm)												Bolt size	Unit No.	Housing No.	Applicable bearing			(Refer.) Unit Mass (kg)
																No.	Basic load ratings (kN)		
	<i>d</i>	<i>L</i>	<i>J</i>	<i>J</i> ₁	<i>H</i> ₃	<i>A</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₃	<i>A</i> ₀	<i>N</i>	<i>B</i>					<i>S</i>	<i>C</i> _r	
75	220	184	130.1	160	56	40	18	16	78.5	19	77.8	33.3	M16	UCFC215 UCFCX15	FC215	UC215	67.4	48.3	7.2
	222	190	134.3	164	57	35	12	22	83.3	19	82.6	33.3	M16		FCX15	UCX15	72.7	53.0	8.0
80	240	200	141.4	170	58	42	18	16	83.3	23	82.6	33.3	M20	UCFC216 UCFCX16	FC216	UC216	72.7	53.0	8.7
	260	219	154.8	186	61	36	10	25	86.6	23	85.7	34.1	M20		FCX16	UCX16	84.0	61.9	11.3
85	250	208	147.1	180	63	45	18	18	87.6	23	85.7	34.1	M20	UCFC217 UCFCX17	FC217	UC217	84.0	61.9	10.3
	260	219	154.8	186	61	36	10	25	91.3	23	96	39.7	M20		FCX17	UCX17	96.1	71.5	12.9
90	265	220	155.5	190	68	50	22	18	96.3	23	96	39.7	M20	UCFC218 UCFCX18	FC218	UC218	96.1	71.5	13.3
	260	219	154.8	186	71	43	12	28	101.1	23	104	42.9	M20		FCX18	UCX18	109	81.9	13.5
100	276	238	168.3	206	94	66	22	28	118.3	23	117.5	49.2	M20	UCFCX20	FCX20	UCX20	133	105	18.2

Remarks 1) Applicable sizes of grease nipples are shown below.

1/4-28UNF 201 – 210, X05 – X09
 PT 1/8 211 – 218, X10 – X20

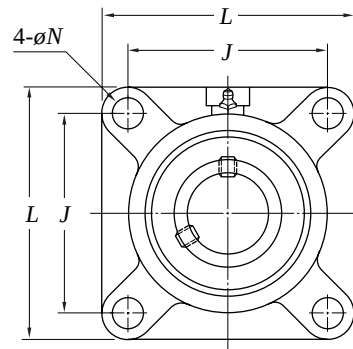
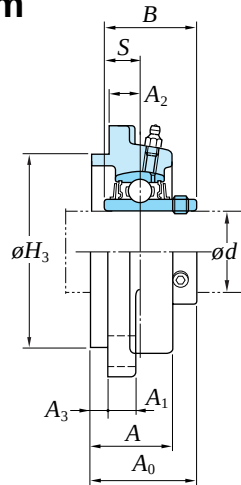
2) For bearings with double- or triple-lip seals, unit and bearing number are suffixed by L2 or L3.
 (For more detailed information, refer to ball bearing for unit specification tables.)

Ball bearing units

square-flanged type with spigot joint

UCFS (set screw locking)

d 25 – 140 mm



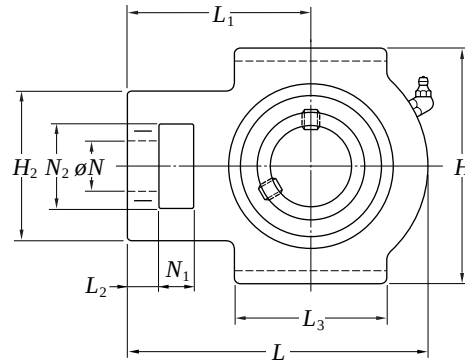
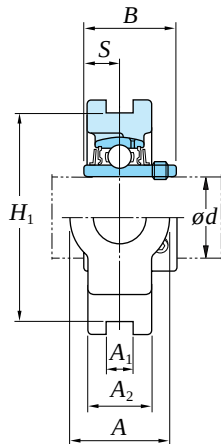
Shaft dia. (mm) <i>d</i>	Dimensions (mm)											Bolt size	Unit No.	Housing No.	Applicable bearing			(Refer.) Unit Mass (kg)
	<i>J</i>	<i>L</i>	<i>H</i> ₃	<i>A</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₃	<i>A</i> ₀	<i>N</i>	<i>B</i>	<i>S</i>				No.	Basic load ratings (kN)		
																<i>C</i> _r	<i>C</i> _{0r}	
25	80	110	80	29	13	9	7	39	16	38	15	M14	UCFS305	FS305	UC305	20.6	11.3	1.4
30	95	125	90	32	15	10	8	44	16	43	17	M14	UCFS306	FS306	UC306	26.7	15.0	1.9
35	100	135	100	36	16	11	9	49	19	48	19	M16	UCFS307	FS307	UC307	33.4	19.3	2.3
40	112	150	115	40	17	13	10	56	19	52	19	M16	UCFS308	FS308	UC308	40.7	24.0	3.4
45	125	160	125	44	18	14	11	60	19	57	22	M16	UCFS309	FS309	UC309	48.9	29.5	4.4
50	132	175	140	48	19	16	12	67	23	61	22	M20	UCFS310	FS310	UC310	62.0	38.3	5.3
55	140	185	150	52	20	17	13	71	23	66	25	M20	UCFS311	FS311	UC311	71.6	45.0	6.1
60	150	195	160	56	22	19	14	78	23	71	26	M20	UCFS312	FS312	UC312	81.9	52.2	7.4
65	166	208	175	58	22	15	18	78	23	75	30	M20	UCFS313	FS313	UC313	92.7	59.9	8.8
70	178	226	185	61	25	18	18	81	25	78	33	M22	UCFS314	FS314	UC314	104	68.2	11.2
75	184	236	200	66	25	21	18	89	25	82	32	M22	UCFS315	FS315	UC315	113	77.2	13.7
80	196	250	210	68	27	18	20	90	31	86	34	M27	UCFS316	FS316	UC316	123	86.7	15.1
85	204	260	220	74	27	24	20	100	31	96	40	M27	UCFS317	FS317	UC317	133	96.8	17.3
90	216	280	240	76	30	24	20	100	35	96	40	M30	UCFS318	FS318	UC318	143	107	21.3
95	228	290	250	94	30	39	20	121	35	103	41	M30	UCFS319	FS319	UC319	153	119	24.5
100	242	310	260	94	32	39	20	125	38	108	42	M33	UCFS320	FS320	UC320	173	141	29.5
105	242	310	260	94	32	39	20	127	38	112	44	M33	UCFS321	FS321	UC321	184	153	32.7
110	266	340	300	96	35	35	25	131	41	117	46	M36	UCFS322	FS322	UC322	205	180	39.0
120	290	370	330	110	40	35	30	140	41	126	51	M36	UCFS324	FS324	UC324	207	185	50.6
130	320	410	360	115	45	35	30	146	41	135	54	M36	UCFS326	FS326	UC326	229	214	67.7
140	350	450	400	125	55	45	30	161	41	145	59	M36	UCFS328	FS328	UC328	253	246	94.0

Remarks 1) Applicable sizes of grease nipples are shown below.

1/4-28UNF	305 – 308
PT 1/8	309 – 328

2) Bearings with triple-lip seals are indicated by L3 after the bearing and unit number.
(For more detailed information, refer to ball bearing for unit specification tables.)

Ball bearing units
take-up type
UCT (set screw locking)
d 12 – 55 mm



Shaft dia. (mm) <i>d</i>	Dimensions (mm)															Unit No.	Housing No.	Applicable bearing		(Refer.) Unit Mass (kg)
	<i>A</i>	<i>A</i> ₁	<i>A</i> ₂	<i>H</i>	<i>H</i> ₁	<i>H</i> ₂	<i>L</i>	<i>L</i> ₁	<i>L</i> ₂	<i>L</i> ₃	<i>N</i>	<i>N</i> ₁	<i>N</i> ₂	<i>B</i>	<i>S</i>			No.	Basic load ratings (kN) <i>C</i> _r <i>C</i> _{0r}	
12	32	12	21	89	76	51	94	61	10	51	19	16	32	31	12.7	UCT201	T204	UC201	12.8 6.65	0.81
15	32	12	21	89	76	51	94	61	10	51	19	16	32	31	12.7	UCT202	T204	UC202	12.8 6.65	0.79
17	32	12	21	89	76	51	94	61	10	51	19	16	32	31	12.7	UCT203	T204	UC203	12.8 6.65	0.78
20	32	12	21	89	76	51	94	61	10	51	19	16	32	31	12.7	UCT204	T204	UC204	12.8 6.65	0.76
25	32	12	24	89	76	51	97	62	10	51	19	16	32	34.1	14.3	UCT205	T205	UC205	14.0 7.85	0.84
	37	12	28	102	89	56	113	70	10	57	22	16	37	38.1	15.9	UCTX05	TX05	UCX05	19.5 11.3	1.4
	36	12	26	89	80	62	122	76	12	65	26	16	36	38	15	UCT305	T305	UC305	20.6 11.3	1.4
30	37	12	28	102	89	56	113	70	10	57	22	16	37	38.1	15.9	UCT206	T206	UC206	19.5 11.3	1.3
	37	12	30	102	89	64	129	78	13	64	22	16	37	42.9	17.5	UCTX06	TX06	UCX06	25.7 15.4	1.7
	41	16	28	100	90	70	137	85	14	74	28	18	41	43	17	UCT306	T306	UC306	26.7 15.0	1.8
35	37	12	30	102	89	64	129	78	13	64	22	16	37	42.9	17.5	UCT207	T207	UC207	25.7 15.4	1.6
	49	16	36	114	102	83	144	88	15	83	29	19	49	49.2	19	UCTX07	TX07	UCX07	29.1 17.8	2.7
	45	16	32	111	100	75	150	94	15	80	30	20	45	48	19	UCT307	T307	UC307	33.4 19.3	2.3
40	49	16	33	114	102	83	144	88	16	83	29	19	49	49.2	19	UCT208	T208	UC208	29.1 17.8	2.5
	49	16	36	117	102	83	144	87	15	83	29	19	49	49.2	19	UCTX08	TX08	UCX08	32.7 20.3	2.6
	50	18	34	124	112	83	162	100	17	89	32	22	50	52	19	UCT308	T308	UC308	40.7 24.0	3.0
45	49	16	35	117	102	83	144	87	16	83	29	19	49	49.2	19	UCT209	T209	UC209	32.7 20.3	2.4
	49	16	38	117	102	83	149	90	16	86	29	19	49	51.6	19	UCTX09	TX09	UCX09	35.1 23.3	2.9
	55	18	38	138	125	90	178	110	18	97	34	24	55	57	22	UCT309	T309	UC309	48.9 29.5	4.1
50	49	16	37	117	102	83	149	90	16	86	29	19	49	51.6	19	UCT210	T210	UC210	35.1 23.3	2.6
	64	22	42	146	130	102	171	106	19	95	35	25	64	55.6	22.2	UCTX10	TX10	UCX10	43.4 29.4	4.4
	61	20	40	151	140	98	191	117	20	106	37	27	61	61	22	UCT310	T310	UC310	62.0 38.3	4.9
55	64	22	38	146	130	102	171	106	19	95	35	25	64	55.6	22.2	UCT211	T211	UC211	43.4 29.4	4.0
	64	22	44	146	130	102	194	119	19	102	35	32	64	65.1	25.4	UCTX11	TX11	UCX11	52.4 36.2	5.3
	66	22	44	163	150	105	207	127	21	115	39	29	66	66	25	UCT311	T311	UC311	71.6 45.0	6.1

Remarks 1) Applicable sizes of grease nipples are shown below.

1/4-28UNF	201 – 210, X05 – X09, 305 – 308
PT 1/8	211 – 217, X10 – X17, 309 – 328

- 2) For bearings with double- or triple-lip seals, unit and bearing number are suffixed by L2 or L3.
 (For more detailed information, refer to ball bearing for unit specification tables.)

d 60 – 140 mm

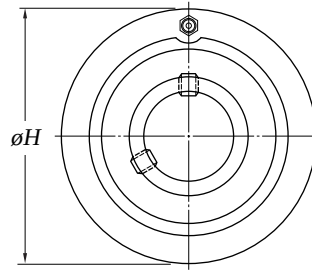
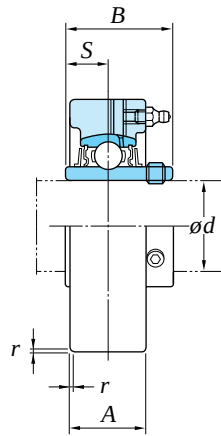
Shaft dia. (mm)	Dimensions (mm)															Unit No.	Housing No.	Applicable bearing Basic load ratings (kN) No. C_r C_{0r}	(Refer.) Unit Mass (kg)
<i>d</i>	<i>A</i>	<i>A</i> ₁	<i>A</i> ₂	<i>H</i>	<i>H</i> ₁	<i>H</i> ₂	<i>L</i>	<i>L</i> ₁	<i>L</i> ₂	<i>L</i> ₃	<i>N</i>	<i>N</i> ₁	<i>N</i> ₂	<i>B</i>	<i>S</i>				
60	64	22	42	146	130	102	194	119	19	102	35	32	64	65.1	25.4	UCT212	T212	UC212 52.4 36.2	4.9
	70	26	48	167	151	111	224	137	21	121	41	32	70	65.1	25.4	UCTX12	TX12	UCX12 57.2 40.1	7.4
	71	22	46	178	160	113	220	135	23	123	41	31	71	71	26	UCT312	T312	UC312 81.9 52.2	7.6
65	70	26	44	167	151	111	224	137	21	121	41	32	70	65.1	25.4	UCT213	T213	UC213 57.2 40.1	6.9
	70	26	48	167	151	111	224	137	21	121	41	32	70	74.6	30.2	UCTX13	TX13	UCX13 62.2 44.1	7.6
	80	26	50	190	170	116	238	146	25	134	43	32	70	75	30	UCT313	T313	UC313 92.7 59.9	9.3
70	70	26	46	167	151	111	224	137	21	121	41	32	70	74.6	30.2	UCT214	T214	UC214 62.2 44.1	7.0
	70	26	48	167	151	111	232	140	21	121	41	32	70	77.8	33.3	UCTX14	TX14	UCX14 67.4 48.3	7.9
	90	26	52	202	180	130	252	155	25	140	46	36	85	78	33	UCT314	T314	UC314 104 68.2	11.1
75	70	26	48	167	151	111	232	140	21	121	41	32	70	77.8	33.3	UCT215	T215	UC215 67.4 48.3	7.3
	70	28	48	184	165	111	235	140	21	121	41	32	70	82.6	33.3	UCTX15	TX15	UCX15 72.7 53.0	8.7
	90	26	55	216	192	132	262	160	25	150	46	36	85	82	32	UCT315	T315	UC315 113 77.2	13.0
80	70	26	51	184	165	111	235	140	21	121	41	32	70	82.6	33.3	UCT216	T216	UC216 72.7 53.0	8.2
	73	28	54	198	173	124	260	162	28	157	48	38	73	85.7	34.1	UCTX16	TX16	UCX16 84.0 61.9	11.7
	102	30	60	230	204	150	282	174	28	160	53	42	98	86	34	UCT316	T316	UC316 123 86.7	16.2
85	73	30	54	198	173	124	260	162	29	157	48	38	73	85.7	34.1	UCT217	T217	UC217 84.0 61.9	11.0
	73	28	54	198	173	124	260	162	28	157	48	38	73	96	39.7	UCTX17	TX17	UCX17 96.1 71.5	11.7
	102	32	64	240	214	152	298	183	30	170	53	42	98	96	40	UCT317	T317	UC317 133 96.8	19.0
90	110	32	66	255	228	160	312	192	30	175	57	46	106	96	40	UCT318	T318	UC318 143 107	21.6
95	110	35	72	270	240	165	322	197	31	180	57	46	106	103	41	UCT319	T319	UC319 153 119	24.9
100	120	35	75	290	260	175	345	210	32	200	59	48	115	108	42	UCT320	T320	UC320 173 141	30.7
105	120	35	75	290	260	175	345	210	32	200	59	48	115	112	44	UCT321	T321	UC321 184 153	36.7
110	130	38	80	320	285	185	385	235	38	215	65	52	125	117	46	UCT322	T322	UC322 205 180	39.7
120	140	45	90	355	320	210	432	267	42	230	70	60	140	126	51	UCT324	T324	UC324 207 185	54.4
130	150	50	100	385	350	220	465	285	45	240	75	65	150	135	54	UCT326	T326	UC326 229 214	69.3
140	155	50	100	415	380	230	515	315	50	255	80	70	160	145	59	UCT328	T328	UC328 253 246	85.1

Remarks 1) Applicable sizes of grease nipples are shown below.

1/4-28UNF	201 – 210, X05 – X09, 305 – 308
PT 1/8	211 – 217, X10 – X17, 309 – 328

- 2) For bearings with double- or triple-lip seals, unit and bearing number are suffixed by L2 or L3.
(For more detailed information, refer to ball bearing for unit specification tables.)

Ball bearing units
cartridge type
UCC (set screw locking)
 d 12 – 65 mm



Shaft dia. (mm) d	Dimensions (mm)					Unit No.	Housing No.	Applicable bearing No.	Basic load ratings (kN)		(Refer.) Unit Mass (kg)
	H	A	r	B	S				C_r	C_{0r}	
12	72	20	1.5	31	12.7	UCC201	C204	UC201	12.8	6.65	0.52
15	72	20	1.5	31	12.7	UCC202	C204	UC202	12.8	6.65	0.50
17	72	20	1.5	31	12.7	UCC203	C204	UC203	12.8	6.65	0.49
20	72	20	1.5	31	12.7	UCC204	C204	UC204	12.8	6.65	0.47
25	80	22	1.5	34.1	14.3	UCC205	C205	UC205	14.0	7.85	0.64
30	85	27	1.5	38.1	15.9	UCC206	C206	UC206	19.5	11.3	0.81
35	90	28	2	42.9	17.5	UCC207	C207	UC207	25.7	15.4	0.93
40	100	30	2	49.2	19	UCC208	C208	UC208	29.1	17.8	1.2
45	110	31	2	49.2	19	UCC209	C209	UC209	32.7	20.3	1.5
50	120	33	2	51.6	19	UCC210	C210	UC210	35.1	23.3	2.0
55	125	35	2.5	55.6	22.2	UCC211	C211	UC211	43.4	29.4	2.2
60	130	38	2.5	65.1	25.4	UCC212	C212	UC212	52.4	36.2	2.6
65	140	40	2.5	65.1	25.4	UCC213	C213	UC213	57.2	40.1	3.0

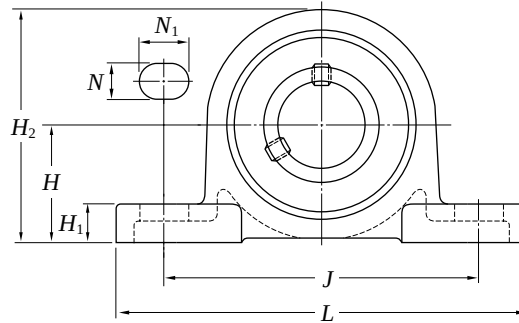
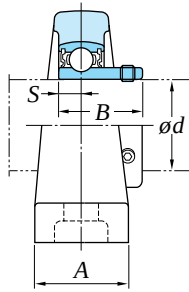
Remarks 1) Applicable sizes of grease nipples are shown below.

(1/4-28UNF 201 – 213)

2) For bearings with double- or triple-lip seals, unit and bearing number are suffixed by L2 or L3.

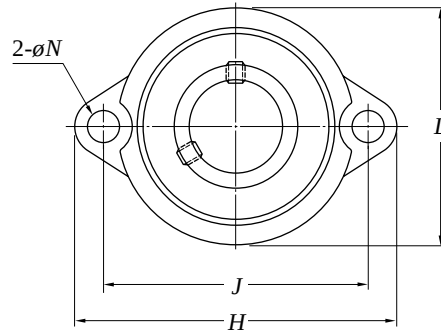
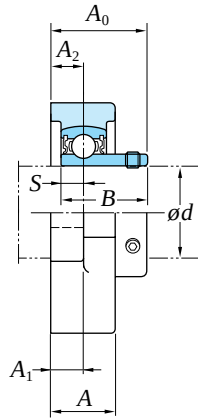
(For more detailed information, refer to ball bearing for unit specification tables.)

Ball bearing units light duty pillow block type BLP (set screw locking) d 12 – 40 mm



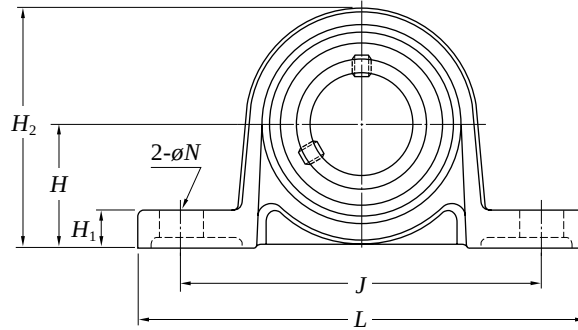
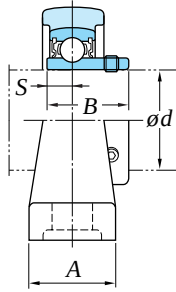
Shaft dia. (mm) <i>d</i>	Dimensions (mm)										Bolt size	Unit No.	Housing No.	Applicable bearing			(Refer.) Unit Mass (kg)
	<i>H</i>	<i>J</i>	<i>L</i>	<i>A</i>	<i>H</i> ₁	<i>H</i> ₂	<i>N</i>	<i>N</i> ₁	<i>B</i>	<i>S</i>				No.	Basic load ratings (kN)		
															<i>C</i> _r	<i>C</i> _{0r}	
12	30.2	87	114	25	12	57	11	16	22	6	M10	BLP201	LP203	SB201	9.55	4.80	0.36
15	30.2	87	114	25	12	57	11	16	22	6	M10	BLP202	LP203	SB202	9.55	4.80	0.36
17	30.2	87	114	25	12	57	11	16	22	6	M10	BLP203	LP203	SB203	9.55	4.80	0.36
20	33.3	97	125	27	13	65	11	16	25	7	M10	BLP204	LP204	SB204	12.8	6.65	0.51
25	36.5	100	130	29	13	71	11	16	27	7.5	M10	BLP205	LP205	SB205	14.0	7.85	0.57
30	42.9	120	156	33	14	83	14	21	30	8	M12	BLP206	LP206	SB206	19.5	11.3	0.69
35	47.6	127	165	35	16	93	14	21	32	8.5	M12	BLP207	LP207	SB207	25.7	15.4	0.94
40	50.8	140	184	37	18	102	14	22	34	9	M12	BLP208	LP208	SB208	29.1	17.8	1.8

Ball bearing units
light duty rhombic-flanged type
BLF (set screw locking)
 d 12 – 35 mm



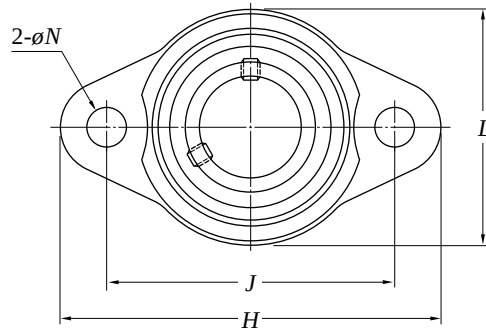
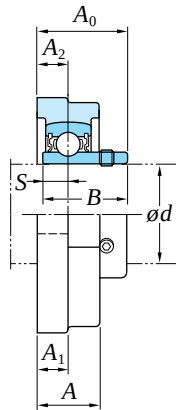
Shaft dia. (mm) d	Dimensions (mm)										Bolt size	Unit No.	Housing No.	Applicable bearing No.	Basic load ratings (kN)		(Refer.) Unit Mass (kg)
	H	J	L	A	A_1	A_2	A_0	N	B	S					C_r	C_{0r}	
12	81	63.5	52	18	9.5	9.5	25.5	8	22	6	M6	BLF201	LF203	SB201	9.55	4.80	0.25
15	81	63.5	52	18	9.5	9.5	25.5	8	22	6	M6	BLF202	LF203	SB202	9.55	4.80	0.25
17	81	63.5	52	18	9.5	9.5	25.5	8	22	6	M6	BLF203	LF203	SB203	9.55	4.80	0.25
20	90	71.5	60	20	11	11	29	10	25	7	M8	BLF204	LF204	SB204	12.8	6.65	0.33
25	95	76	64	20	11	11	30.5	10	27	7.5	M8	BLF205	LF205	SB205	14.0	7.85	0.38
30	113	90.5	76	22.5	12	12	34	12	30	8	M10	BLF206	LF206	SB206	19.5	11.3	0.57
35	122	100	89	24	13	13	36.5	12	32	8.5	M10	BLF207	LF207	SB207	25.7	15.4	0.77

Ball bearing units
"clean" series pillow block type
UP (set screw locking)
 d 10 – 30 mm



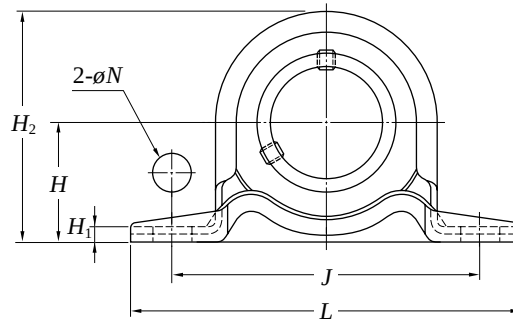
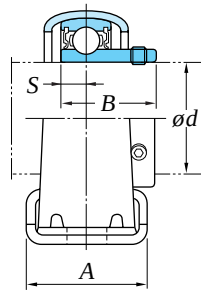
Shaft dia. (mm) <i>d</i>	Dimensions (mm)									Bolt size	Unit No.	Housing No.	Applicable bearing Basic load ratings (kN)				(Refer.) Unit Mass (kg)
	<i>H</i>	<i>J</i>	<i>L</i>	<i>A</i>	<i>H</i> ₁	<i>H</i> ₂	<i>N</i>	<i>B</i>	<i>S</i>				No.	<i>C</i> _r	<i>C</i> _{0r}		
10	18	53	67	16	6	35	7	15	5	M6	UP000	P000	SU000	4.55	1.95	0.070	
12	19	56	71	16	6	38	7	15	5	M6	UP001	P001	SU001	5.10	2.40	0.090	
15	22	63	80	16	7	43	7	16.5	5.5	M6	UP002	P002	SU002	5.60	2.85	0.110	
17	24	67	85	18	7	47	7	17.5	6	M6	UP003	P003	SU003	6.00	3.25	0.150	
20	28	80	100	20	9	55	10	21	7	M8	UP004	P004	SU004	9.40	5.05	0.230	
25	32	90	112	20	10	62	10	22	7	M8	UP005	P005	SU005	10.1	5.85	0.280	
30	36	106	132	26	11	70	13	24.5	7.5	M10	UP006	P006	SU006	13.2	8.25	0.420	

Ball bearing units
"clean" series rhombic-flanged type
UFL (set screw locking)
 d 10 – 30 mm



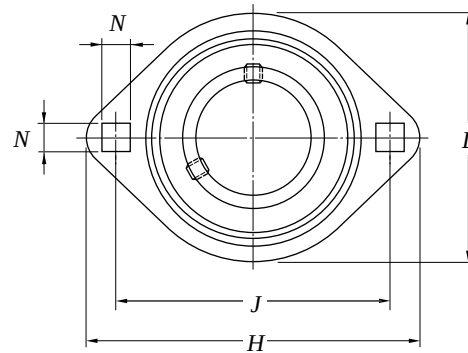
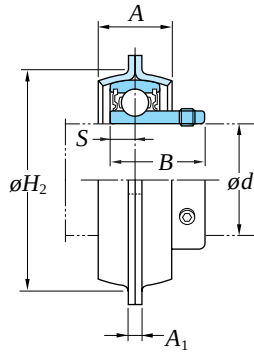
Shaft dia. (mm) <i>d</i>	Dimensions (mm)										Bolt size	Unit No.	Housing No.	Applicable bearing			(Refer.) Unit Mass (kg)
	<i>H</i>	<i>J</i>	<i>L</i>	<i>A</i>	<i>A</i> ₁	<i>A</i> ₂	<i>A</i> ₀	<i>N</i>	<i>B</i>	<i>S</i>				No.	Basic load ratings (kN)		
															<i>C</i> _r	<i>C</i> _{0r}	
10	60	45	36	12	6	6	16	7	15	5	M6	UFL000	FL000	SU000	4.55	1.95	0.050
12	63	48	38	12	6	6	16	7	15	5	M6	UFL001	FL001	SU001	5.10	2.40	0.065
15	67	53	42	13	6.5	6.5	17.5	7	16.5	5.5	M6	UFL002	FL002	SU002	5.60	2.85	0.085
17	71	56	46	14	7	7	18.5	7	17.5	6	M6	UFL003	FL003	SU003	6.00	3.25	0.110
20	90	71	55	16	8	8	22	10	21	7	M8	UFL004	FL004	SU004	9.40	5.05	0.180
25	95	75	60	16	8	8	23	10	22	7	M8	UFL005	FL005	SU005	10.1	5.85	0.230
30	112	85	70	18	9	9	26	13	24.5	7.5	M10	UFL006	FL006	SU006	13.2	8.25	0.310

Ball bearing units
pressed steel pillow block type
SBPP (set screw locking)
 d 12 – 35 mm



Shaft dia. (mm) d	Dimensions (mm)									Bolt size	Unit No.	Housing No.	Applicable bearing No.	Basic load ratings (kN)		(Refer.) Unit Mass (kg)
	H	J	L	A	H_1	H_2	N	B	S					C_r	C_{0r}	
12	22.2	68	86	25	3.2	43.8	9.5	22	6	M8	SBPP201F	PP203F	SB201	9.55	4.80	0.16
15	22.2	68	86	25	3.2	43.8	9.5	22	6	M8	SBPP202F	PP203F	SB202	9.55	4.80	0.16
17	22.2	68	86	25	3.2	43.8	9.5	22	6	M8	SBPP203F	PP203F	SB203	9.55	4.80	0.16
20	25.4	76	98	32	3.2	50.5	9.5	25	7	M8	SBPP204F	PP204F	SB204	12.8	6.65	0.23
25	28.6	86	108	32	4	56.6	11.5	27	7.5	M10	SBPP205F	PP205F	SB205	14.0	7.85	0.28
30	33.3	95	117	38	4	66.3	11.5	30	8	M10	SBPP206F	PP206F	SB206	19.5	11.3	0.47
35	39.7	106	129	41	4.6	78	11.5	32	8.5	M10	SBPP207F	PP207F	SB207	25.7	15.4	0.67

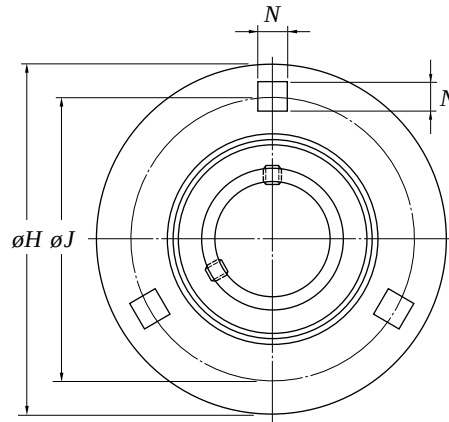
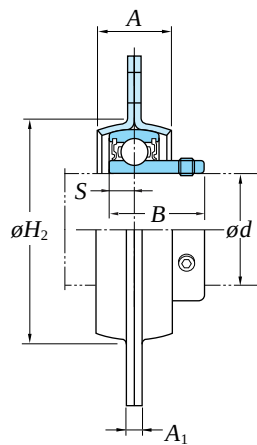
Ball bearing units
pressed steel rhombic-flanged type
SBPFL (set screw locking)
 d 12 – 35 mm



Shaft dia. (mm) d	Dimensions (mm)									Bolt size	Unit No.	Housing No.	Applicable bearing Basic load ratings (kN) No. C_r C_{0r}		(Refer.) Unit Mass (kg)
	H	J	L	A	A_1	N	$H_2^{1)}$	B	S						
12	81	63.5	59	14	4	7.1	49	22	6	M6	SBPFL201	PFL203	SB201	9.55 4.80	0.19
15	81	63.5	59	14	4	7.1	49	22	6	M6	SBPFL202	PFL203	SB202	9.55 4.80	0.19
17	81	63.5	59	14	4	7.1	49	22	6	M6	SBPFL203	PFL203	SB203	9.55 4.80	0.19
20	90	71.5	67	16	4	9	55	25	7	M8	SBPFL204	PFL204	SB204	12.8 6.65	0.24
25	95	76	71	18	4	9	60	27	7.5	M8	SBPFL205	PFL205	SB205	14.0 7.85	0.28
30	113	90.5	84	19	5.2	11	71	30	8	M10	SBPFL206	PFL206	SB206	19.5 11.3	0.38
35	122	100	94	22	5.2	11	81	32	8.5	M10	SBPFL207	PFL207	SB207	25.7 15.4	0.66

Note 1) H_2 shows minimum dimension of mounting hole.

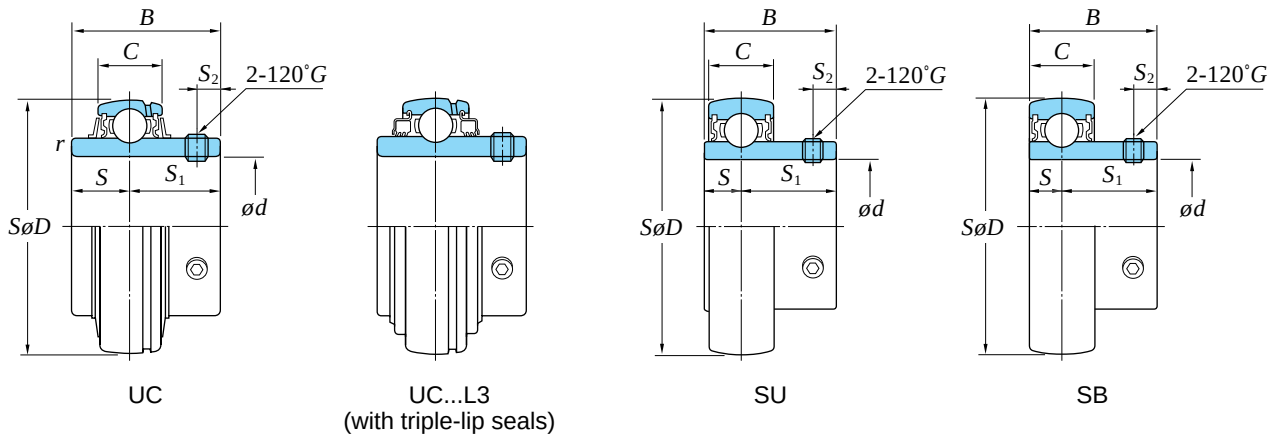
Ball bearing units
pressed steel round-flanged type
SBPF (set screw locking)
 d 12 – 35 mm



Shaft dia. (mm) <i>d</i>	Dimensions (mm)								Bolt size	Unit No.	Housing No.	Applicable bearing Basic load ratings (kN)				(Refer.) Unit Mass (kg)
	<i>H</i>	<i>J</i>	<i>A</i>	<i>A</i> ₁	<i>N</i>	<i>H</i> ₂ ¹⁾	<i>B</i>	<i>S</i>				No.	<i>C</i> _r	<i>C</i> _{0r}		
12	81	63.5	14	4	7.1	49	22	6	M6	SBPF201	PF203	SB201	9.55	4.80	0.27	
15	81	63.5	14	4	7.1	49	22	6	M6	SBPF202	PF203	SB202	9.55	4.80	0.27	
17	81	63.5	14	4	7.1	49	22	6	M6	SBPF203	PF203	SB203	9.55	4.80	0.27	
20	90	71.5	16	4	9	55	25	7	M8	SBPF204	PF204	SB204	12.8	6.65	0.33	
25	95	76	18	4	9	60	27	7.5	M8	SBPF205	PF205	SB205	14.0	7.85	0.38	
30	113	90.5	19	5.2	11	71	30	8	M10	SBPF206	PF206	SB206	19.5	11.3	0.62	
35	122	100	22	5.2	11	81	32	8.5	M10	SBPF207	PF207	SB207	25.7	15.4	0.82	

Note 1) H_2 shows minimum dimension of mounting hole.

Ball bearings for units **cylindrical bore type (set screw locking)** **d 10 – 40 mm**



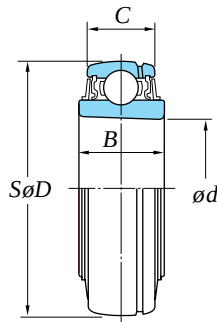
Shaft dia. (mm) d	Boundary dimensions (mm)				Basic load ratings (kN)		Bearing No.		Dimensions (mm)			Set screw size G	(Refer.) Mass (kg)
	D	B	C	r min.	C_r	C_{0r}	With standard seals	With triple-lip seals	S	S_1	S_2		
10	26	15	8	–	4.55	1.95	SU000	–	5	10	3	M3X0.35	0.024
12	28	15	8	–	5.10	2.40	SU001	–	5	10	3	M3X0.35	0.026
	40	22	12	–	9.55	4.80	SB201	–	6	16	4	M5X0.5	0.10
	47	31	16	0.6	12.8	6.65	UC201	UC201L2	12.7	18.3	5	M6X0.75	0.21
15	32	16.5	9	–	5.60	2.85	SU002	–	5.5	11	3.3	M4X0.5	0.038
	40	22	12	–	9.55	4.80	SB202	–	6	16	4	M5X0.5	0.10
	47	31	16	0.6	12.8	6.65	UC202	UC202L2	12.7	18.3	5	M6X0.75	0.19
17	35	17.5	10	–	6.00	3.25	SU003	–	6	11.5	3.3	M4X0.5	0.050
	40	22	12	–	9.55	4.80	SB203	–	6	16	4	M5X0.5	0.10
	47	31	16	0.6	12.8	6.65	UC203	UC203L2	12.7	18.3	5	M6X0.75	0.18
20	42	21	12	–	9.40	5.05	SU004	–	7	14	4	M5X0.5	0.080
	47	25	14	–	12.8	6.65	SB204	–	7	18	5	M6X0.75	0.15
	47	31	16	1	12.8	6.65	UC204	UC204L2	12.7	18.3	5	M6X0.75	0.16
25	47	22	12	–	10.1	5.85	SU005	–	7	15	4.5	M5X0.5	0.10
	52	27	15	–	14.0	7.85	SB205	–	7.5	19.5	5.5	M6X0.75	0.18
	52	34.1	17	1	14.0	7.85	UC205	UC205L2	14.3	19.8	5.5	M6X0.75	0.20
30	62	38	22	1.1	20.6	11.3	UC305	–	15	23	6	M6X0.75	0.45
	62	38.1	19	1	19.5	11.3	UCX05	UCX05L3	15.9	22.2	6	M6X0.75	0.39
	55	24.5	13	–	13.2	8.25	SU006	–	7.5	17	5.5	M5X0.5	0.15
35	62	30	16	–	19.5	11.3	SB206	–	8	22	6	M6X0.75	0.27
	62	38.1	19	1	19.5	11.3	UC206	UC206L3	15.9	22.2	6	M6X0.75	0.32
	72	42.9	20	1	25.7	15.4	UCX06	UCX06L3	17.5	25.4	6.5	M8X1	0.58
40	72	43	24	1.1	26.7	15.0	UC306	–	17	26	6	M6X0.75	0.56
	72	32	17	–	25.7	15.4	SB207	–	8.5	23.5	6	M6X0.75	0.42
	72	42.9	20	1.1	25.7	15.4	UC207	UC207L3	17.5	25.4	6.5	M8X1	0.48
40	80	48	26	1.5	33.4	19.3	UC307	UC307L3	19	29	8	M8X1	0.71
	80	49.2	21	1.1	29.1	17.8	UCX07	UCX07L3	19	30.2	8	M8X1	0.75
	80	34	18	–	29.1	17.8	SB208	–	9	25	8	M8X1	0.60
40	80	49.2	21	1.1	29.1	17.8	UC208	UC208L3	19	30.2	8	M8X1	0.64
	85	49.2	22	1.1	32.7	20.3	UCX08	UCX08L3	19	30.2	8	M8X1	0.83
	90	52	28	1.5	40.7	24.0	UC308	UC308L3	19	33	10	M10X1.25	1.00

Remark) Bearing in number range from UC201L2 to UC205L2 are double-lip sealed (L2) due to dimensional restriction.

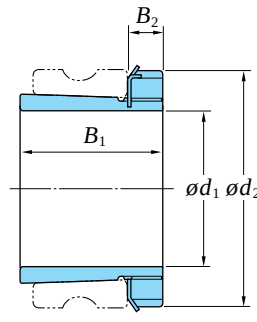
d 45 – 140 mm

Shaft dia. (mm) <i>d</i>	Boundary dimensions (mm)				Basic load ratings (kN)		Bearing No.		Dimensions (mm)			Set screw size	(Refer.) Mass (kg)
	<i>D</i>	<i>B</i>	<i>C</i>	<i>r</i> min.	<i>C_r</i>	<i>C_{0r}</i>	With standard seals	With triple-lip seals	<i>S</i>	<i>S₁</i>	<i>S₂</i>	<i>G</i>	
45	85	49.2	22	1.1	32.7	20.3	UC209	UC209L3	19	30.2	8	M8X1	0.68
	90	51.6	24	1.1	35.1	23.3	UCX09	UCX09L3	19	32.6	9	M10X1.25	0.95
	100	57	30	1.5	48.9	29.5	UC309	UC309L3	22	35	10	M10X1.25	1.33
50	90	51.6	24	1.1	35.1	23.3	UC210	UC210L3	19	32.6	9	M10X1.25	0.80
	100	55.6	25	1.1	43.4	29.4	UCX10	UCX10L3	22.2	33.4	9	M10X1.25	1.29
	110	61	32	2	62.0	38.3	UC310	UC310L3	22	39	12	M12X1.5	1.69
55	100	55.6	25	1.5	43.4	29.4	UC211	UC211L3	22.2	33.4	9	M10X1.25	1.11
	110	65.1	27	1.5	52.4	36.2	UCX11	UCX11L3	25.4	39.7	10.5	M10X1.25	1.80
	120	66	34	2	71.6	45.0	UC311	UC311L3	25	41	12	M12X1.5	1.90
60	110	65.1	27	1.5	52.4	36.2	UC212	UC212L3	25.4	39.7	10.5	M10X1.25	1.54
	120	65.1	28	1.5	57.2	40.1	UCX12	UCX12L3	25.4	39.7	12	M12X1.5	2.05
	130	71	36	2.1	81.9	52.2	UC312	UC312L3	26	45	12	M12X1.5	2.60
65	120	65.1	28	1.5	57.2	40.1	UC213	UC213L3	25.4	39.7	12	M12X1.5	1.86
	125	74.6	30	1.5	62.2	44.1	UCX13	UCX13L3	30.2	44.4	12	M12X1.5	2.52
	140	75	38	2.1	92.7	59.9	UC313	UC313L3	30	45	12	M12X1.5	3.16
70	125	74.6	30	1.5	62.2	44.1	UC214	UC214L3	30.2	44.4	12	M12X1.5	2.05
	130	77.8	32	1.5	67.4	48.3	UCX14	UCX14L3	33.3	44.5	12	M12X1.5	2.74
	150	78	40	2.1	104	68.2	UC314	UC314L3	33	45	12	M12X1.5	3.90
75	130	77.8	32	1.5	67.4	48.3	UC215	UC215L3	33.3	44.5	12	M12X1.5	2.21
	140	82.6	33	1.5	72.7	53.0	UCX15	UCX15L3	33.3	49.3	14	M12X1.5	3.41
	160	82	42	2.1	113	77.2	UC315	UC315L3	32	50	14	M14X1.5	4.70
80	140	82.6	33	2	72.7	53.0	UC216	UC216L3	33.3	49.3	14	M12X1.5	2.79
	150	85.7	35	2	84.0	61.9	UCX16	UCX16L3	34.1	51.6	14	M12X1.5	3.87
	170	86	44	2.1	123	86.7	UC316	UC316L3	34	52	14	M14X1.5	5.60
85	150	85.7	35	2	84.0	61.9	UC217	UC217L3	34.1	51.6	14	M12X1.5	3.45
	160	96	38	2	96.1	71.5	UCX17	UCX17L3	39.7	56.3	15	M12X1.5	5.05
	180	96	46	3	133	96.8	UC317	UC317L3	40	56	16	M16X1.5	6.90
90	160	96	38	2	96.1	71.5	UC218	UC218L3	39.7	56.3	15	M12X1.5	4.35
	170	104	40	2	109	81.9	UCX18	–	42.9	61.1	16	M14X1.5	6.00
	190	96	48	3	143	107	UC318	UC318L3	40	56	16	M16X1.5	7.87
95	200	103	50	3	153	119	UC319	UC319L3	41	62	18	M16X1.5	8.91
100	190	117.5	43	2.1	133	105	UCX20	–	49.2	68.3	18	M16X1.5	8.56
	215	108	54	3	173	141	UC320	UC320L3	42	66	20	M18X1.5	11.2
105	225	112	56	3	184	153	UC321	–	44	68	20	M18X1.5	12.7
110	240	117	60	3	205	180	UC322	UC322L3	46	71	20	M18X1.5	15.1
120	260	126	64	3	207	185	UC324	UC324L3	51	75	20	M18X1.5	19.0
130	280	135	68	4	229	214	UC326	UC326L3	54	81	20	M20X1.5	23.6
140	300	145	72	4	253	246	UC328	UC328L3	59	86	20	M20X1.5	29.4

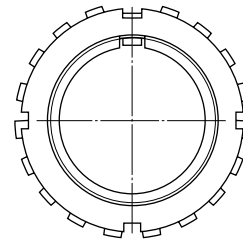
Ball bearings for units
tapered bore type (adapter locking)
 d_1 20 – 65 mm



UK



Adapter assembly



Shaft dia. (mm) d_1	Boundary dimensions (mm)				Basic load ratings (kN)		Bearing No.	(Refer.) Mass (kg)	Applicable adapter assembly					Sleeve No.
	d	D	B	C	C_r	C_{0r}			No.	B_1	B_2	d_2	Mass (kg)	
20	25	52	21	17	14.0	7.85	UK205	0.16	H305X	29	8	38	0.075	A305X
	25	62	23	19	19.5	11.3	UKX05	0.27	H2305X	35	8	38	0.095	A2305X
	25	62	27	22	20.6	11.3	UK305	0.40	H2305X	35	8	38	0.095	A2305X
25	30	62	23	19	19.5	11.3	UK206	0.25	H306X	31	8	45	0.11	A306X
	30	72	26	20	25.7	15.4	UKX06	0.43	H2306X	38	8	45	0.13	A2306X
	30	72	30	24	26.7	15.0	UK306	0.47	H2306X	38	8	45	0.13	A2306X
30	35	72	26	20	25.7	15.4	UK207	0.37	H307X	35	9	52	0.14	A307X
	35	80	27	21	29.1	17.8	UKX07	0.53	H2307X	43	9	52	0.17	A2307X
	35	80	33	26	33.4	19.3	UK307	0.60	H2307X	43	9	52	0.17	A2307X
35	40	80	27	21	29.1	17.8	UK208	0.47	H308X	36	10	58	0.19	A308X
	40	85	29	22	32.7	20.3	UKX08	0.58	H2308X	46	10	58	0.22	A2308X
	40	90	35	28	40.7	24.0	UK308	0.80	H2308X	46	10	58	0.22	A2308X
40	45	85	29	22	32.7	20.3	UK209	0.52	H309X	39	11	65	0.25	A309X
	45	90	29	24	35.1	23.3	UKX09	0.67	H2309X	50	11	65	0.28	A2309X
	45	100	38	30	48.9	29.5	UK309	1.08	H2309X	50	11	65	0.28	A2309X
45	50	90	29	24	35.1	23.3	UK210	0.59	H310X	42	12	70	0.30	A310X
	50	100	31	25	43.4	29.4	UKX10	0.89	H2310X	55	12	70	0.36	A2310X
	50	110	40	32	62.0	38.3	UK310	1.38	H2310X	55	12	70	0.36	A2310X
50	55	100	31	25	43.4	29.4	UK211	0.80	H311X	45	12	75	0.35	A311X
	55	110	33	27	52.4	36.2	UKX11	1.15	H2311X	59	12	75	0.42	A2311X
	55	120	43	34	71.6	45.0	UK311	1.78	H2311X	59	12	75	0.42	A2311X
55	60	110	33	27	52.4	36.2	UK212	1.02	H312X	47	13	80	0.43	A312X
	60	120	36	28	57.2	40.1	UKX12	1.45	H2312X	62	13	80	0.48	A2312X
	60	130	47	36	81.9	52.2	UK312	2.06	H2312X	62	13	80	0.48	A2312X
60	65	120	36	28	57.2	40.1	UK213	1.34	H313X	50	14	85	0.46	A313X
	65	125	40	30	62.2	44.1	UKX13	1.62	H2313X	65	14	85	0.56	A2313X
	65	140	49	38	92.7	59.9	UK313	2.71	H2313X	65	14	85	0.56	A2313X
65	75	130	40	32	67.4	48.3	UK215	1.50	H315X	55	15	98	0.83	A315X
	75	140	42	33	72.7	53.0	UKX15	2.10	H2315X	73	15	98	1.05	A2315X
	75	160	55	42	113	77.2	UK315	3.80	H2315X	73	15	98	1.05	A2315X

d_1 70 – 125 mm

Shaft dia. (mm)	Boundary dimensions (mm)				Basic load ratings (kN)		Bearing No.	(Refer.)	Applicable adapter assembly					
	d_1	d	D	B	C	C_r		C_{0r}	Mass	No.	B_1	B_2	d_2	Mass
70	80	140	42	33	72.7	53.0	UK216 UKX16 UK316	1.96	H316X	59	17	105	1.05	A316X
	80	150	44	35	84.0	61.9		2.64	H2316X	78	17	105	1.3	A2316X
	80	170	55	44	123	86.7		4.39	H2316X	78	17	105	1.3	A2316X
75	85	150	44	35	84.0	61.9	UK217 UKX17 UK317	2.42	H317X	63	18	110	1.2	A317X
	85	160	48	38	96.1	71.5		3.25	H2317X	82	18	110	1.45	A2317X
	85	180	60	46	133	96.8		5.30	H2317X	82	18	110	1.45	A2317X
80	90	160	48	38	96.1	71.5	UK218 UKX18 UK318	2.90	H318X	65	18	120	1.4	A318X
	90	170	50	40	109	81.9		3.80	H2318X	86	18	120	1.7	A2318X
	90	190	60	48	143	107		6.20	H2318X	86	18	120	1.7	A2318X
85	95	200	66	50	153	119	UK319	7.31	H2319X	90	19	125	1.95	A2319X
90	100	190	54	43	133	105	UKX20 UK320	5.36	H2320X	97	20	130	2.2	A2320X
	100	215	68	54	173	141		8.70	H2320X	97	20	130	2.2	A2320X
100	110	240	78	60	205	180	UK322	12.2	H2322X	105	21	145	2.75	A2322X
110	120	260	87	64	207	185	UK324	16.1	H2324	112	22	155	3.2	A2324
115	130	280	87	68	229	214	UK326	18.8	H2326	121	23	165	4.6	A2326
125	140	300	97	72	253	246	UK328	23.9	H2328	131	24	180	5.5	A2328

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