10 Nomenclature

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

UC P 207 J L3

Bearing No.:	UC207L3
Housing No.:	P207J

UK P 209 J CD + H2309X

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

UC F 209 J L3 FD D1K2 G6 A1

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

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

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

Table 10.1 Bearing model code

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

Table 10.2 Housing model code

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

Table 10.2 Housing model code (continued)

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

Table 10.2 Housing model code (continued)

Housing model code	Details
C	Cartridge type
HA	Hanger type

Table 10.3 Diameter series code

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

Table 10.4 Bore dia. code

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

Table 10.5 Fitting code

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

Table 10.6 Accessory code

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

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

Table 10.7 Bearing special code

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

Table 10.8 Housing special code

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

11 Accuracy and Internal Clearance

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

11.1 Accuracy of Bearings

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

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

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

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

Unit: μm

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

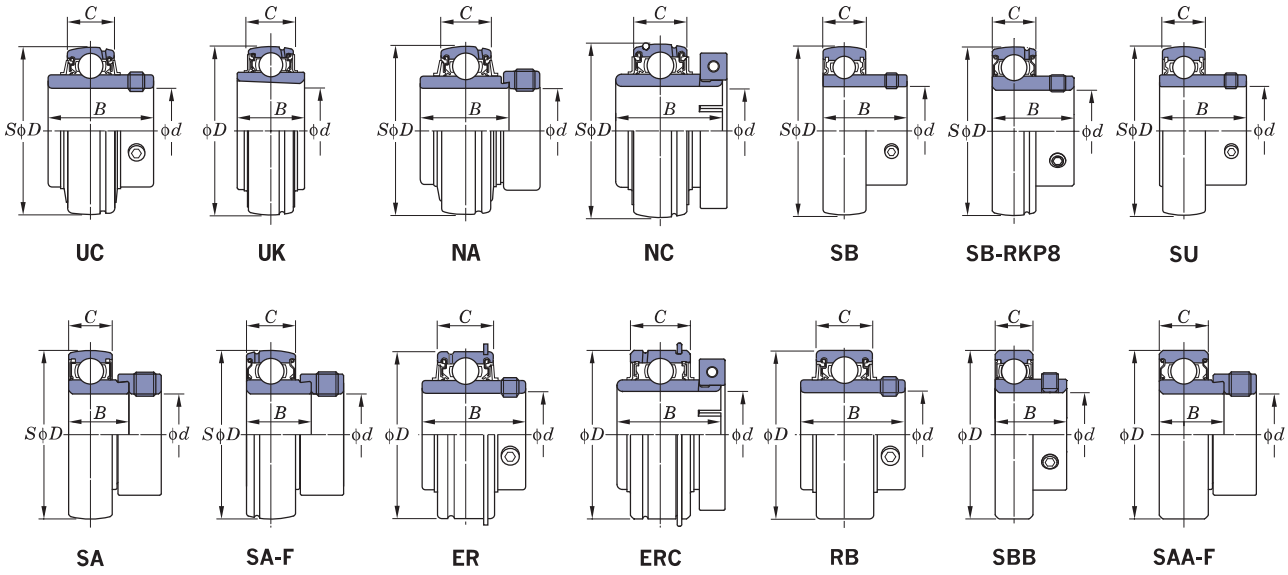


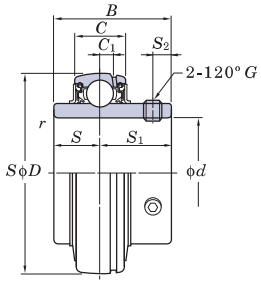
Table 11.1 Tolerances and tolerance values of inner rings of ball bearings for ball bearing units

Unit: μm

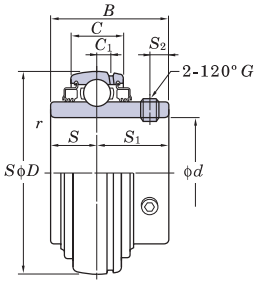
Nominal bearing bore dia. d (mm)		Variation of tolerance of average bore dia. in plane Δ_{dmp}		Unequal bore dia. in plane V_{dsp}	Variation of tolerance of eccentricity on eccentric surface of inner ring and eccentric locking collar Δ_{Hs}		Variation of tolerance of inner ring width Δ_{Bs}		Radial runout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

UC, SB, SB-RKP8, SU
Cylindrical bore (with set screws)
d (75) ~ 140 mm

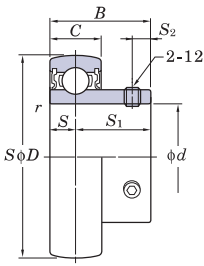
UC SB SB-RKP8 SU



UC



UC-L3



SB

Shaft Dia. mm	Shaft Dia. inch	Dimensions d		D		B		C		r (min.)		Basic Load Ratings kN C_r	Basic Load Ratings kN C_{0r}	Factor f_0	Bearing No. Standard	Bearing No. L3 Type	Dimensi C_1		S		
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch						mm	inch	mm	inch	r
–	3 1/8	140	5.512	82.6	3.252	33	1.299	2	0.079	72.7	53.0	14.6	**UC216-50**	**UC216-50L3**	9	0.354	33.3	1.311	4
		140	5.512	82.6	3.252	33	1.299	2	0.079	72.7	53.0	14.6	**UC216**	**UC216L3**	9	0.354	33.3	1.311	4
80	–	150	5.906	85.7	3.374	35	1.378	2	0.079	84.0	61.9	14.5	**UCX16**	**UCX16L3**	10	0.394	34.1	1.343	5
		170	6.693	86	3.386	44	1.732	2.1	0.083	123	86.7	13.3	**UC316**	**UC316L3**	15	0.591	34	1.339	5
–	3 1/4	150	5.906	85.7	3.374	35	1.378	2	0.079	84.0	61.9	14.5	**UC217-52**	**UC217-52L3**	10	0.394	34.1	1.343	5
		150	5.906	85.7	3.374	35	1.378	2	0.079	84.0	61.9	14.5	**UC217**	**UC217L3**	10	0.394	34.1	1.343	5
85	–	160	6.299	96	3.780	38	1.496	2	0.079	96.1	71.5	14.5	**UCX17**	**UCX17L3**	11	0.433	39.7	1.563	5
		180	7.087	96	3.780	46	1.811	3	0.118	133	96.8	13.3	**UC317**	**UC317L3**	15	0.591	40	1.575	5
–	3 7/16	160	6.299	96	3.780	38	1.496	2	0.079	96.1	71.5	14.5	**UCX17-55**	**UCX17-55L3**	11	0.433	39.7	1.563	5
–	3 1/2	160	6.299	96	3.780	38	1.496	2	0.079	96.1	71.5	14.5	**UC218-56**	**UC218-56L3**	11	0.433	39.7	1.563	5
		190	7.480	96	3.780	48	1.890	3	0.118	143	107	13.3	**UC318-56**	**UC318-56L3**	15.5	0.610	40	1.575	5
		160	6.299	96	3.780	38	1.496	2	0.079	96.1	71.5	14.5	**UC218**	**UC218L3**	11	0.433	39.7	1.563	5
90	–	170	6.693	104	4.094	40	1.575	2	0.079	109	81.9	14.4	**UCX18**	–	11.5	0.453	42.9	1.689	6
		190	7.480	96	3.780	48	1.890	3	0.118	143	107	13.3	**UC318**	**UC318L3**	15.5	0.610	40	1.575	5
95	–	200	7.874	103	4.055	50	1.969	3	0.118	153	119	13.3	**UC319**	**UC319L3**	16.5	0.650	41	1.614	6
100	–	190	7.480	117.5	4.626	43	1.693	2.1	0.083	133	105	14.4	**UCX20**	–	13	0.512	49.2	1.937	6
		215	8.465	108	4.252	54	2.126	3	0.118	173	141	13.2	**UC320**	**UC320L3**	18	0.709	42	1.654	6
–	3 15/16	190	7.480	117.5	4.626	43	1.693	2.1	0.083	133	105	14.4	**UCX20-63**	–	13	0.512	49.2	1.937	6
		215	8.465	108	4.252	54	2.126	3	0.118	173	141	13.2	**UC320-63**	**UC320-63L3**	18	0.709	42	1.654	6
–	4	190	7.480	117.5	4.626	43	1.693	2.1	0.083	133	105	14.4	**UCX20-64**	–	13	0.512	49.2	1.937	6
		215	8.465	108	4.252	54	2.126	3	0.118	173	141	13.2	**UC320-64**	**UC320-64L3**	18	0.709	42	1.654	6
105		225	8.858	112	4.409	56	2.205	3	0.118	184	153	13.2	**UC321**	–	19	0.748	44	1.732	6
110		240	9.449	117	4.606	60	2.362	3	0.118	205	180	13.2	**UC322**	**UC322L3**	20	0.787	46	1.811	7
120	–	260	10.236	126	4.961	64	2.520	3	0.118	207	185	13.5	**UC324**	**UC324L3**	21	0.827	51	2.008	7
130		280	11.024	135	5.315	68	2.677	4	0.157	229	214	13.6	**UC326**	**UC326L3**	22	0.866	54	2.126	8
140		300	11.811	145	5.709	72	2.835	4	0.157	253	246	13.6	**UC328**	**UC328L3**	23	0.906	59	2.323	8

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