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Rolling bearings — Insert bearing units

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by The Japan Bearing Industrial Association (JBIA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently **JIS B 1557** : 1995 is replaced with this Standard.

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Rolling bearings — Insert bearing units

Introduction

This Japanese Industrial Standard specifies the combination of insert bearings specified in **JIS B 1558** and cast housings and pressed housings for insert bearings specified in **JIS B 1559**. This Standard was established in 1965 and to this day has gone through only one revision, which took place in 1995 and it has been revised this time to correspond to the revision of **JIS B 1558** and the revision of **JIS B 1559**.

1 Scope

This Standard specifies insert bearing units ¹⁾ (hereafter referred to as “units”).

Note ¹⁾ Means the combination of insert bearings specified in **JIS B 1558** (hereafter referred to as “bearings”) and cast housings and pressed housings for insert bearings specified in **JIS B 1559** (hereafter referred to as “housings”).

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS B 0104 *Rolling bearings — Vocabulary*

JIS B 1552 *Rolling bearings — Adapter assemblies, Adapter sleeves and withdrawal sleeves*

JIS B 1558 *Rolling bearings — Insert bearings and eccentric locking collars*

JIS B 1559 *Rolling bearings — Cast and pressed housings for insert bearings*

3 Terms and definitions

For the purpose of this Standard, the main terms and definitions shall be in accordance with **JIS B 0104** and **JIS B 1558**.

4 Quantity symbols

For the purpose of this Standard, the quantity symbols shall be as follows :

Further, the quantity symbols other than designation of screw thread of mounting

bolt (G) and limit diameter of flat surface of flanged unit housing (H_2) are nominal dimensions.

4.1 Pillow block unit (see tables 2.1 to 5)

A	: mounting base width
B	: inner ring width
B_1	: overall inner ring width including eccentric locking collar or width of adapter
d	: bore diameter of bearing and bore diameter of eccentric locking collar
d_1	: bore diameter of adapter
G	: designation of screw thread of mounting bolt
H	: distance from mounting base to bearing centre
H_1	: height of mounting seat
H_2	: overall height (oiling device is not included)
J	: centre distance between mounting bolt holes
L	: length of mounting base
S	: distance from raceway centre to inner ring side face on side opposite the locking device

4.2 Flanged unit (see tables 6.1 to 18)

A	: overall width of bearing housing
A_0	: overall width of unit
A_1	: width of mounting seat
A_2	: distance from mounting face to centre of bearing
A_3	: width of spigot joint
B	: inner ring width
B_1	: overall inner ring width including eccentric locking collar or width of adapter
d	: bearing bore diameter and bore diameter of eccentric locking collar
d_1	: bore diameter of adapter
G	: designation of screw thread of mounting bolt
H	: height of rhombic flange or outside diameters of round flange and triangular flange
H_1	: distance from centre of bearing to side of bearing box
H_2	: limit diameter of flat surface of bearing box
H_3	: outside diameter of spigot joint
J	: centre distance between mounting bolt holes or pitch circle diameter of bolt hole centres
L	: length of flange
S	: distance from raceway centre to inner ring side face on side opposite the locking device

4.3 Take-up unit (see tables 19.1 to 21)

A	: width of mounting part
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A_1	: raceway groove width
A_2	: width of groove flange
B	: inner ring width
B_1	: overall inner ring width including eccentric locking collar or width of adapter
d	: inside diameter of bearing and inside diameter of eccentric locking collar
d_1	: bore diameter of adapter
H	: overall height
H_1	: distance between both groove bottoms
H_2	: height of mounting part
L	: overall length
L_1	: distance from side face of mounting part to bearing centre
L_2	: thickness of mounting part
L_3	: groove length
N	: mounting hole diameter
N_1	: length of mounting window
N_2	: height of mounting window
S	: distance from raceway centre to inner ring side face on side opposite the locking device

4.4 Cartridge unit (see tables 22.1 to 23.2)

A	: width of bearing housing
B	: inner ring width
B_1	: width of adapter
d	: inside diameter of bearing and inside diameter of eccentric locking collar
d_1	: bore diameter of adapter
H	: outside diameter of bearing housing
S	: distance from raceway centre to inner ring side face on side opposite the locking device

5 Types

The main combinations of bearing and bearing housing are shown in table 1.

In addition, lubricating equipment (such as grease nipple and so on) may be installed if necessary.

Table 1 Types of unit

Type of unit		Type of combined bearings and bearing housing		Shape figure and dimension table	
Name of type	Type symbol	Bearing	Bearing housing	Diameter series 2	Diameter series 3
Pillow block unit	UCP	Bearing with set screw	Casting pillow bearing housing	Table 2.1	Table 2.2
	UKP	Tapered hole bearing		Table 3.1	Table 3.2
	UWEP	Bearing with extended eccentric locking collar		Table 4	—
	UNEPP	Bearing with narrow extended eccentric locking collar	Steel plate pillow bearing housing	Table 5	—
Flanged unit	UCF	Bearing with set screw	Casting square flanged bearing housing	Table 6.1	Table 6.2
	UKF	Tapered hole bearing		Table 7.1	Table 7.2
	UWEF	Bearing with extended eccentric locking collar		Table 8	—
	UCFL	Bearing with set screw	Casting phombic flanged bearing housing	Table 9.1	Table 9.2
	UKFL	Tapered hole bearing		Table 10.1	Table 10.2
	UWEFL	Bearing with extended eccentric locking collar		Table 11	—
	UNEPF	Bearing with narrow extended eccentric locking collar	Steel plate round flanged bearing housing	Table 12	—
	UNEPFT		Steel plate triangle flanged bearing housing	Table 13	—
	UNEPFL		Casting phombic flanged bearing housing	Table 14	—
	UCFC	Bearing with set screw	Casting round flanged with spigot joint bearing housing	Table 15	—
	UKFC	Tapered hole bearing		Table 16	—
	UCFS	Bearing with set screw	Casting square flanged with spigot joint bearing housing	—	Table 17
	UKFS	Tapered hole bearing		—	Table 18
Take-up unit	UCT	Bearing with set screw	Casting take-up bearing housing	Table 19.1	Table 19.2
	UKT	Tapered hole bearing		Table 20.1	Table 20.2
	UWET	Bearing with extended eccentric locking collar		Table 21	—
Cartridge unit	UCC	Bearing with set screw	Casting cartridge bearing housing	Table 22.1	Table 22.2
	UKC	Tapered hole bearing		Table 23.1	Table 23.2

NOTE : The tapered hole bearings shall be attached to the shaft using an adapter.

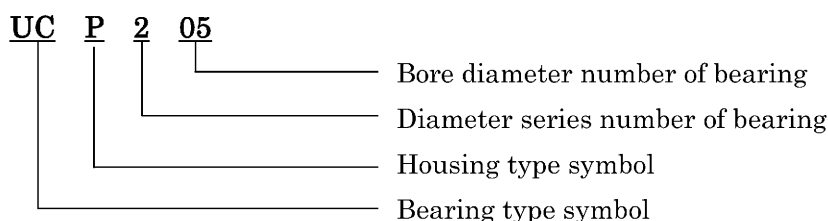
6 Designation

The designation of units shall consist of the combination of bearing and housing as shown in the following example 1 and example 2, and shall be in accordance with table 2.1 to table 23.2.

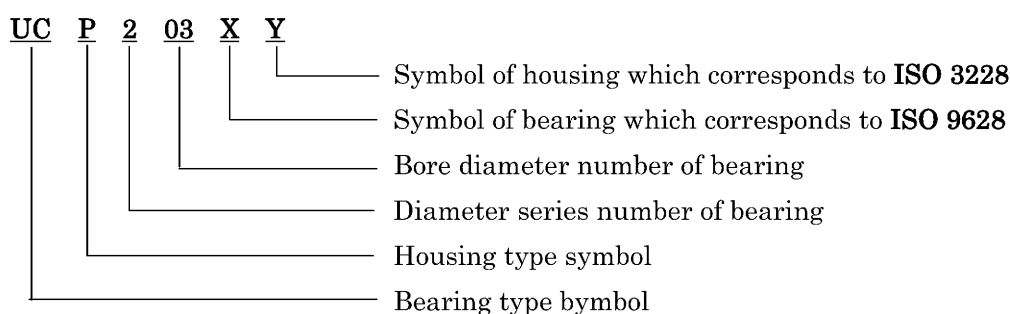
However, for the designation of the unit of bearing with extended eccentric locking collar (UWE type bearing) in combination with bearing with narrow eccentric locking collar (UNE type bearing), another designation may be used.

Further, the designations may be appended with the supplementary symbols, as required. The supplementary symbol expresses the special specification of bearing or housing, and shall be agreed between the manufacturer and the purchaser.

Example 1 Construction of designation of UCP205



Example 2 Construction of designation of UCP203XY



NOTE 1 : There are two types of bearings with set screw of diameter series 2 of bore designations 01 to 03 and 13 ; those which correspond to **ISO 9628** and those do not correspond to it. Bearings suffixed with “X” to the designation means to correspond to **ISO 9628**.

NOTE 2 : There are two types for casting pillow type housing of diameter series 2, casting square flanged type housing of diameter series 2, casting rhombic flanged type housing of diameter series 2 and casting take-up type housing of diameter series 2 ; those which correspond to **ISO 3228** and those which do not correspond to it. Housings suffixed with “Y” to the designation means to correspond to **ISO 3228**.

7 Dimensions

The dimensions ²⁾ of units shall be in accordance with table 2.1 to table 23.2.

In the tables, the dimensions specified by “min.” or “max.” indicate the minimum values or the maximum values of the permissible actual dimensions.

NOTE : Figures in each table are structural examples.

Note ²⁾ See **JIS B 1559** for the dimension of mounting bolt holes.

8 Inspection

The inspection of units shall be performed for dimensions, tolerance, tolerance value and appearance and the units shall satisfy the specifications of **JIS B 1558** and **JIS B 1559**.

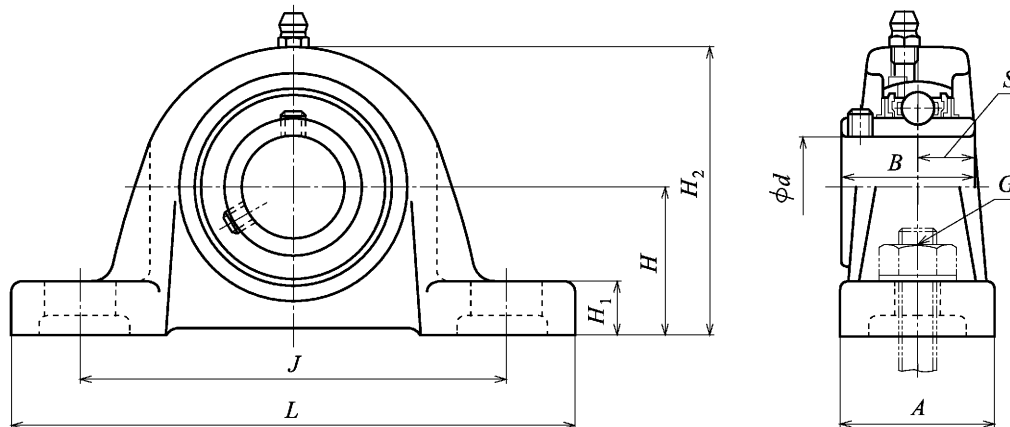
9 Packaging

The units shall be packaged in assembly after the bearing and housing have been rust preventive treated separately if necessary with grease additionally.

10 Marking

The units shall be marked with the designation, quantity, manufacturer's name (or its abbreviation) and year and month of manufacture (or their abbreviation) on the package. However, in the case of one unit package, the quantity may be omitted.

Table 2.1 Designations and dimensions of UCP2 type unit



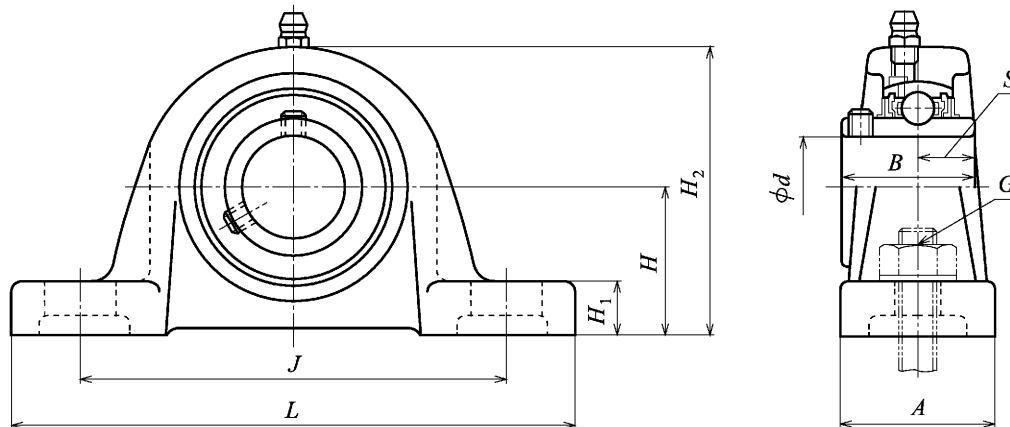
Unit : mm

Designation	Dimensions										Designations of parts to be assembled	
	d	L	A	J	H	H_1	H_2	B	S (Infor- mative)	G (Infor- mative)	Bearing	Housing
		Max.	Max.			Max.	Max.					
UCP201XY	12	129	39	96	30.2	17	63	27.4	11.5	M10	UC201X	P203Y
UCP201	12	129	40	95	30.2	17	63	31	12.7	M10	UC201	P203
UCP202XY	15	129	39	96	30.2	17	63	27.4	11.5	M10	UC202X	P203Y
UCP202	15	129	40	95	30.2	17	63	31	12.7	M10	UC202	P203
UCP203XY	17	129	39	96	30.2	17	63	27.4	11.5	M10	UC203X	P203Y
UCP203	17	129	40	95	30.2	17	63	31	12.7	M10	UC203	P203
UCP204Y	20	134	39	96	33.3	17	66	31	12.7	M10	UC204	P204Y
UCP204	20	129	40	95	33.3	17	66	31	12.7	M10	UC204	P204
UCP205Y	25	142	39	105	36.5	17	73	34.1	14.3	M10	UC205	P205Y
UCP205	25	142	40	105	36.5	18	73	34.1	14.3	M10	UC205	P205
UCP206Y	30	167	48	121	42.9	20	87	38.1	15.9	M12	UC206	P206Y
UCP206	30	167	50	121	42.9	20	87	38.1	15.9	M14	UC206	P206
UCP207Y	35	172	48	126	47.6	20	96	42.9	17.5	M12	UC207	P207Y
UCP207	35	169	50	127	47.6	21	96	42.9	17.5	M14	UC207	P207
UCP208Y	40	186	55	136	49.2	20	101	49.2	19	M12	UC208	P208Y
UCP208	40	186	56	137	49.2	21	101	49.2	19	M14	UC208	P208
UCP209Y	45	192	55	146	54	22	109	49.2	19	M12	UC209	P209Y
UCP209	45	192	56	146	54	23	109	49.2	19	M14	UC209	P209
UCP210Y	50	208	61	159	57.2	23	117	51.6	19	M16	UC210	P210Y
UCP210	50	208	62	159	57.2	24	117	51.6	19	M16	UC210	P210
UCP211Y	55	233	61	172	63.5	25	128	55.6	22.2	M16	UC211	P211Y
UCP211	55	221	62	171	63.5	26	128	55.6	22.2	M16	UC211	P211

Table 2.1 (concluded)

Designation	Dimensions										Designations of parts to be assembled	
	<i>d</i>	<i>L</i>	<i>A</i>	<i>J</i>	<i>H</i>	<i>H</i> ₁	<i>H</i> ₂	<i>B</i>	<i>S</i> (Informative)	<i>G</i> (Informative)	Bearing	Housing
		Max.	Max.			Max.	Max.					
UCP212Y	60	243	71	186	69.9	27	144	65.1	25.4	M16	UC212	P212Y
UCP212	60	243	72	184	69.8	28	142	65.1	25.4	M16	UC212	P212
UCP213XY	65	268	73	203	76.2	34	157	68.3	25.4	M20	UC213X	P213Y
UCP213	65	268	72	203	76.2	31	155	65.1	25.4	M20	UC213	P213
UCP214Y	70	274	74	210	79.4	34	162	74.6	30.2	M20	UC214	P214Y
UCP214	70	269	74	210	79.4	31	160	74.6	30.2	M20	UC214	P214
UCP215Y	75	300	83	217	82.6	35	168	77.8	33.3	M20	UC215	P215Y
UCP215	75	278	76	217	82.6	32	166	77.8	33.3	M20	UC215	P215
UCP216Y	80	305	84	232	88.9	38	181	82.6	33.3	M20	UC216	P216Y
UCP216	80	295	80	232	88.9	34	179	82.6	33.3	M20	UC216	P216
UCP217Y	85	330	95	247	95.2	41	193	85.7	34.1	M20	UC217	P217Y
UCP217	85	313	85	247	95.2	36	191	85.7	34.1	M20	UC217	P217
UCP218Y	90	356	100	262	101.6	44	206	96	39.7	M24	UC218	P218Y
UCP218	90	330	90	262	101.6	38	204	96	39.7	M22	UC218	P218
UCP220Y	100	390	111	308	115	46	233	108	42	M24	UC220	P220Y

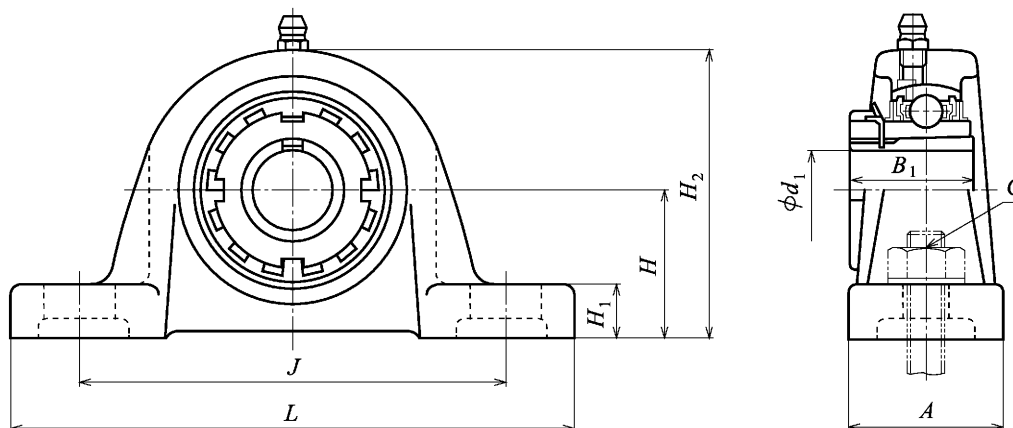
Table 2.2 Designations and dimensions of UCP3 type unit



Unit : mm

Designation	Dimensions										Designations of parts to be assembled	
	d	L	A	J	H	H_1	H_2	B	S (Informative)	G (Informative)	Bearing	Housing
		Max.	Max.			Max.	Max.					
UCP305	25	177	47	132	45	18	91	38	15	M14	UC305	P305
UCP306	30	182	52	140	50	21	102	43	17	M14	UC306	P306
UCP307	35	212	58	160	56	23	114	48	19	M14	UC307	P307
UCP308	40	222	62	170	60	25	122	52	19	M14	UC308	P308
UCP309	45	247	69	190	67	27	136	57	22	M16	UC309	P309
UCP310	50	278	77	212	75	30	152	61	22	M16	UC310	P310
UCP311	55	313	82	236	80	33	162	66	25	M16	UC311	P311
UCP312	60	333	87	250	85	35	172	71	26	M20	UC312	P312
UCP313	65	343	92	260	90	38	182	75	30	M20	UC313	P313
UCP314	70	363	92	280	95	42	192	78	33	M22	UC314	P314
UCP315	75	383	102	290	100	42	202	82	32	M22	UC315	P315
UCP316	80	403	112	300	106	47	215	86	34	M22	UC316	P316
UCP317	85	424	112	320	112	47	227	96	40	M27	UC317	P317
UCP318	90	434	112	330	118	52	239	96	40	M27	UC318	P318
UCP319	95	474	122	360	125	52	253	103	41	M30	UC319	P319
UCP320	100	494	122	380	140	57	283	108	42	M30	UC320	P320
UCP321	105	494	122	380	140	57	283	112	44	M30	UC321	P321
UCP322	110	524	142	400	150	62	303	117	46	M33	UC322	P322
UCP324	120	574	142	450	160	72	323	126	51	M33	UC324	P324
UCP326	130	604	142	480	180	82	363	135	54	M33	UC326	P326
UCP328	140	624	142	500	200	82	403	145	59	M33	UC328	P328

Table 3.1 Designations and dimensions of UKP2 type unit



Unit : mm

Designation ^{a)}	Dimensions								Designations of parts to be assembled		Applicable adapters ^{b)}			
	d_1	L	A	J	H	H_1	H_2	G	Bearing	Housing	Series H3		Series H23	
		Max.	Max.			Max.	Max.	(Informative)			Designation	B_1	Designation	B_1
UKP205Y	20	142	39	105	36.5	17	73	M10	UK205	P205Y	H305X	29	H2305X	35
UKP205	20	142	40	105	36.5	18	73	M10	UK205	P205	H305X	29	H2305X	35
UKP206Y	25	167	48	121	42.9	20	87	M12	UK206	P206Y	H306X	31	H2306X	38
UKP206	25	167	50	121	42.9	20	87	M14	UK206	P206	H306X	31	H2306X	38
UKP207Y	30	172	48	126	47.6	20	96	M12	UK207	P207Y	H307X	35	H2307X	43
UKP207	30	169	50	127	47.6	21	96	M14	UK207	P207	H307X	35	H2307X	43
UKP208Y	35	186	55	136	49.2	20	101	M12	UK208	P208Y	H308X	36	H2308X	46
UKP208	35	186	56	137	49.2	21	101	M14	UK208	P208	H308X	36	H2308X	46
UKP209Y	40	192	55	146	54	22	109	M12	UK209	P209Y	H309X	39	H2309X	50
UKP209	40	192	56	146	54	23	109	M14	UK209	P209	H309X	39	H2309X	50
UKP210Y	45	208	61	159	57.2	23	117	M16	UK210	P210Y	H310X	42	H2310X	55
UKP210	45	208	62	159	57.2	24	117	M16	UK210	P210	H310X	42	H2310X	55
UKP211Y	50	233	61	172	63.5	25	128	M16	UK211	P211Y	H311X	45	H2311X	59
UKP211	50	221	62	171	63.5	26	128	M16	UK211	P211	H311X	45	H2311X	59
UKP212Y	55	243	71	186	69.9	27	144	M16	UK212	P212Y	H312X	47	H2312X	62
UKP212	55	243	72	184	69.8	28	142	M16	UK212	P212	H312X	47	H2312X	62
UKP213Y	60	268	73	203	76.2	34	157	M20	UK213	P213Y	H313X	50	H2313X	65
UKP213	60	268	72	203	76.2	31	155	M20	UK213	P213	H313X	50	H2313X	65
UKP215Y	65	300	83	217	82.6	35	168	M20	UK215	P215Y	H315X	55	H2315X	73
UKP215	65	278	76	217	82.6	32	166	M20	UK215	P215	H315X	55	H2315X	73
UKP216Y	70	305	84	232	88.9	38	181	M20	UK216	P216Y	H316X	59	H2316X	78
UKP216	70	295	80	232	88.9	34	179	M20	UK216	P216	H316X	59	H2316X	78
UKP217Y	75	330	95	247	95.2	41	193	M20	UK217	P217Y	H317X	63	H2317X	82
UKP217	75	313	85	247	95.2	36	191	M20	UK217	P217	H317X	63	H2317X	82
UKP218Y	80	356	100	262	101.6	44	206	M24	UK218	P218Y	H318X	65	H2318X	86
UKP218	80	330	90	262	101.6	38	204	M22	UK218	P218	H318X	65	H2318X	86

Notes ^{a)} It is for the one unit and does not cover the adapter.

^{b)} Refer to JIS B 1552. The selecting methods thereof are determined according to the inner ring widths of the bearing to be assembled respectively.