

JIS

JAPANESE INDUSTRIAL STANDARD

**Tool Holders for
Indexable Inserts**

JIS B 4126—1990

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In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

JAPANESE INDUSTRIAL STANDARD

J I S

Tool Holders for Indexable Inserts

B 4126-1990

1. Scope

This Japanese Industrial Standard specifies tool holders for indexable inserts to hold insert (¹) (hereinafter referred to as insert).

Note (¹) Refer to JIS B 4121 and JIS B 4123.

2. Definitions

For the purposes of this Standard, main definitions are in accordance with JIS B 0107, and to others following definitions apply.

- (1) back face The shank face which is vertical to reference surface (bottom surface) and contacts the holding face of machine.
- (2) nose distance (f) The distance from shank back face to the corner(²).
- (3) head length (l_1) The length from front end of shank to top end of cutting edge(²).

Note (²) The length is as shown in Fig. 1 and Annex Fig. 2.

Applicable Standards:

JIS B 0107-Glossary of Terms for Single Point Tools

JIS B 4120-Indexable Inserts for Cutting Tools-Designation

JIS B 4121-Indexable Inserts without Fixing Hole, with 0° Normal Clearance

JIS B 4123-Indexable Inserts with Cylindrical Fixing Hole, with 0° Normal Clearance

JIS B 4125-Tool Holders for Indexable Inserts - Designation

JIS B 7153-Toolmakers' Microscopes

JIS B 7507-Vernier Callipers

JIS B 7513-Precision Surface Plates

JIS B 7514-Steel Straightedges

JIS B 7517-Height Gauges

JIS B 7726-Rockwell and Rockwell Superficial Hardness Testing Machines

JIS G 4105-Chromium Molybdenum Steels

JIS G 4401-Carbon Tool Steels

JIS Z 2245-Method of Rockwell and Rockwell Superficial Hardness Test

Corresponding International Standard:

ISO 5610-Single point tool holders for turning and copying, for indexable inserts-Dimensions

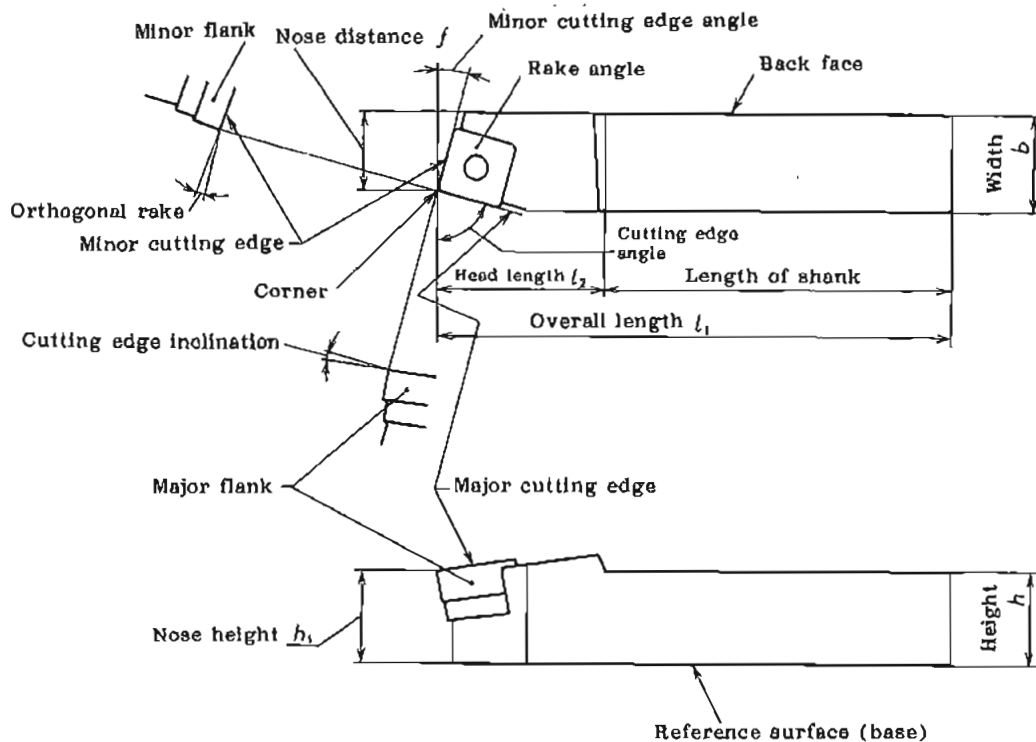
Reference Standard:

JIS B 4122-Indexable Inserts without Fixing Hole with 11° Normal Clearance

3. Name of Each Part

The name of each part of holder shall be as shown in Fig. 1.

Fig. 1. Name of Each Part



4. Classification

Holders shall be classified according to clamp method of tip into three classes as given in Table 1, and the shapes, be three types of Attached Figs. 1 to 3. However, relating to the shape and materials of clamp parts, these are not specified.

Table 1. Classification

Symbol expressing clamp method	Clamp method	Attached figure number
C	Clamp-on class	1
E	Pin lock class one face restriction type	2
P	Pin lock class two face restriction type	3

5. Quality

5.1 Appearance The appearance of holder shall be free from harmful defects such as flaws, burrs, strains, cracks, rust, etc. detrimental to use and the shank face (specially shank base), be as flat as possible. The condition when insert is clamped shall be good.

5.2 Hardness The hardness of holder shall be not less than HRC 35.

6. Shape and Dimensions

The shapes and dimensions of holders shall be in accordance with Attached Tables 1.1 to 1.16, 2.1 to 2.10 and 3.1 to 3.14.

7. Material

Materials of holders shall be SCM 435 to 445 of JIS G 4105 or SK 5 to 7 of JIS G 4401 or those having performance equal or superior thereto for use.

8. Test Methods

8.1 Shape and Dimensions Shapes and dimensions of holders shall be measured according to Table 2.

Table 2. Shapes and Dimensions

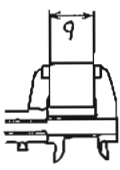
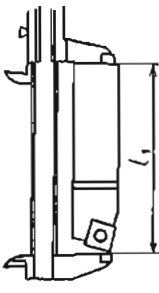
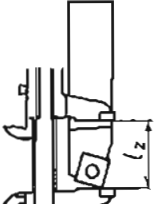
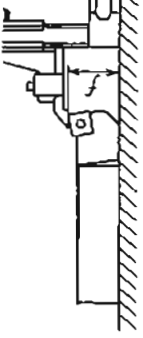
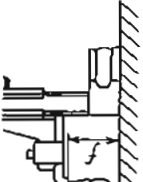
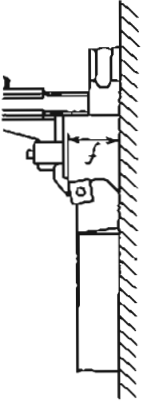
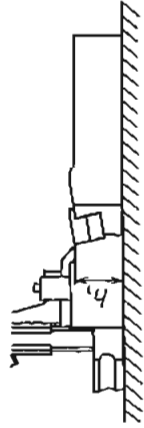
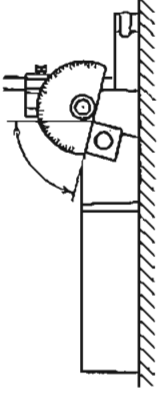
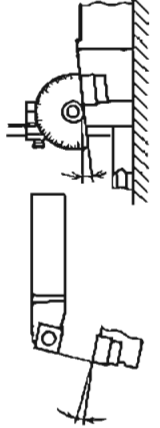
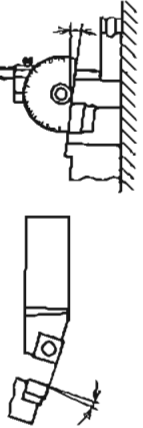
No.	Item	Symbol of attached table	Measuring method	Measuring method figure	Measuring device
1	Shank width	b	Measure by vernier callipers.		Grade 1 specified in JIS B 7507.
					
2	Shank height	h			Grade 1 specified in JIS B 7507.
					
3	Overall length	l_1	Attach the master insert ⁽³⁾ to the holder and measure by vernier callipers.		Grade 1 specified in JIS B 7507.
					
4	Head length	l_2			Grade 1 specified in JIS B 7513. Height gauge specified in JIS B 7517. The toolmaker's microscope specified in JIS B 7153.
					
5	Nose distance	f	Attach the master insert ⁽³⁾ to the holder, place on a precision surface plate and measure by height gauge or toolmaker's microscope.		

Table 2. (Continued)

No.	Item	Symbol of attached table	Measuring method	Measuring method figure	Measuring device
6	Nose height	h_n	Attach the master insert ⁽³⁾ to the holder place on a precision surface plate, and measure by height gauge.		Grade 1 specified in JIS B 7513. Height gauge specified in JIS B 7517.
7	Cutting edge angle				
8	Cutting edge inclination		Attach the master insert ⁽³⁾ to the holder place on a precision surface plate, and measure by Bevel protractor.		Grade 1 specified in JIS B 7513. Bevel protractor.
9	Orthogonal rake				

Note (3) The master insert shall be the same shape as the insert specified in JIS B 4121 or JIS B 4123 to be attached to holder and be in accordance with H grade of 4.3 Precision Symbols of JIS B 4120.

Remark: The measuring method and measuring device indicate the general example.

8.2 Appearance The appearance of holders shall be measured according to Table 3.

Table 3. Appearance

No.	Item	Measuring method	Measuring device
1	Flaw, burr, rust	Observe visually	—
2	Strain	Measure visually or by steel straightedge.	A steel straightedge of B grade specified in JIS B 7514.
3	Crack	Observe visually or by magnifier glass.	10 multiple magnifier glass.
4	Finishing of base	Place the tool base on a precision surface plate, and observe its seating state when pressed by finger from upper surface.	Grade 1 of precision surface plate specified in JIS B 7513.
5	Clamp condition of insert	Observe visually.	—

8.3 Hardness The hardness of holder shall be measured by using a testing machine specified in JIS B 7726 according to JIS Z 2245.

9. Inspection

The inspection of holder shall be carried out relating to quality, shape and dimensions and comply with the specifications of 5. and 6. respectively.

10. Designation of Products

Holders shall be designated by Standard number or Standard title and nominal symbol⁽⁴⁾.

Example: JIS B 4126 PSBNR 1616 H 09

Tool holders for indexable insert PSBNR 1616 H 09

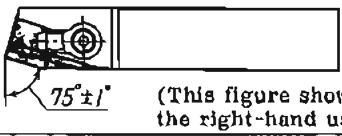
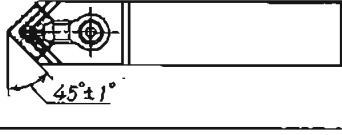
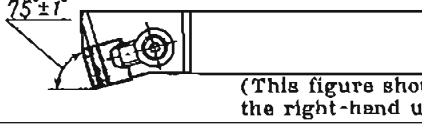
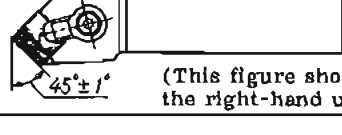
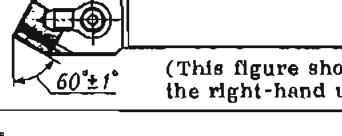
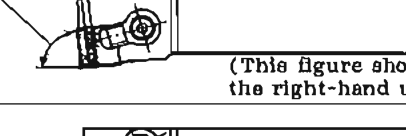
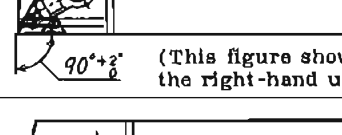
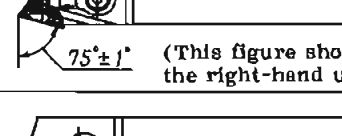
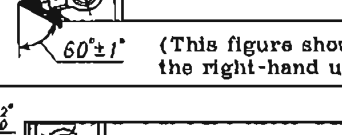
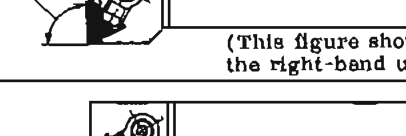
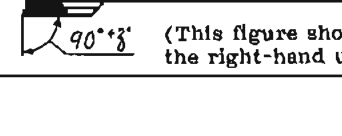
Note (4) The nominal symbol shall be in accordance with JIS B 4125.

11. Marking

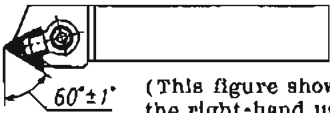
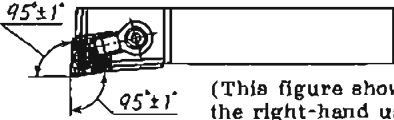
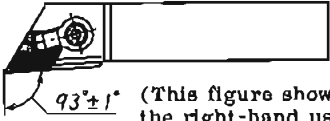
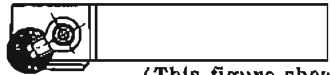
11.1 Marking of Products Holders shall be marked with manufacturer's name or its abbreviation and nominal symbol.

11.2 Marking of Packagings Packages shall be marked with Standard title and matters specified in 11.1.

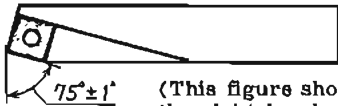
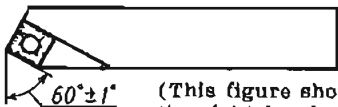
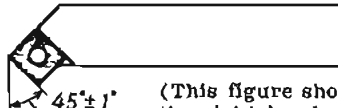
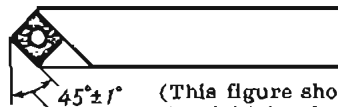
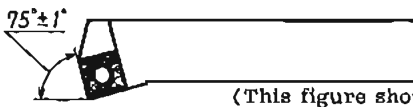
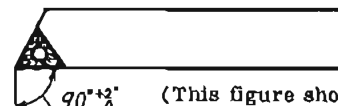
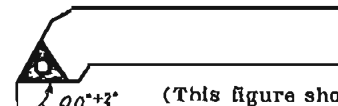
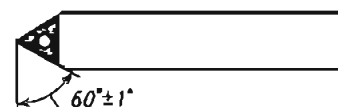
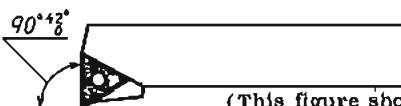
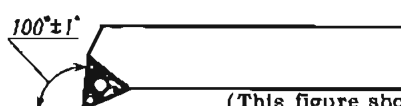
Attached Fig. 1. C Type

Shape	Symbol	Hand	Attached table No.
 $75^\circ \pm 1^\circ$ (This figure shows the right-hand use)	CSBNR	Right	Attached Table 1.1
	CSBNL	Left	
 $45^\circ \pm 1^\circ$ (This figure shows the right-hand use)	CSDNN	No	Attached Table 1.2
 $75^\circ \pm 1^\circ$ (This figure shows the right-hand use)	CSKNR	Right	Attached Table 1.3
	CSKNL	Left	
 $45^\circ \pm 1^\circ$ (This figure shows the right-hand use)	CSSNR	Right	Attached Table 1.4
	CSSNL	Left	
 $60^\circ \pm 1^\circ$ (This figure shows the right-hand use)	CSTNR	Right	Attached Table 1.5
	CSTNL	Left	
 $85^\circ \pm 1^\circ$ (This figure shows the right-hand use)	CSYNR	Right	Attached Table 1.6
	CSYNL	Left	
 $90^\circ \pm 2^\circ$ (This figure shows the right-hand use)	CTANR	Right	Attached Table 1.7
	CTANL	Left	
 $75^\circ \pm 1^\circ$ (This figure shows the right-hand use)	CTBNR	Right	Attached Table 1.8
	CTBNL	Left	
 $60^\circ \pm 1^\circ$ (This figure shows the right-hand use)	CTENR	Right	Attached Table 1.9
	CTENL	Left	
 $90^\circ \pm 2^\circ$ (This figure shows the right-hand use)	CTFNR	Right	Attached Table 1.10
	CTFNL	Left	
 $90^\circ \pm 2^\circ$ (This figure shows the right-hand use)	CTGNR	Right	Attached Table 1.11
	CTGNL	Left	

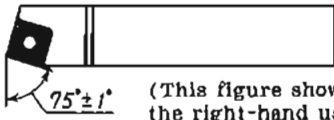
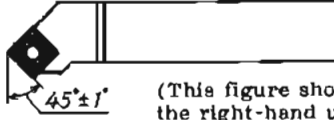
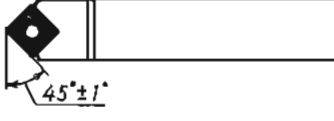
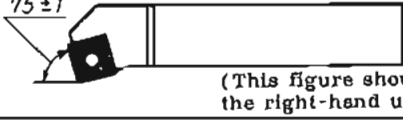
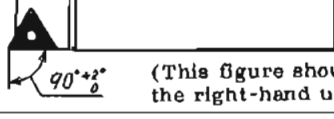
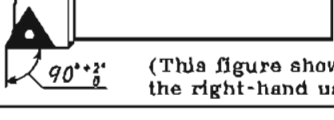
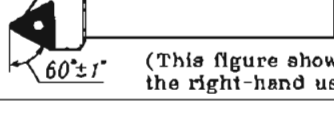
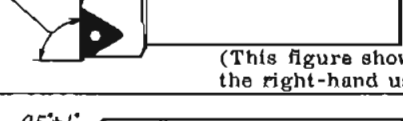
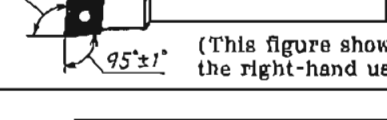
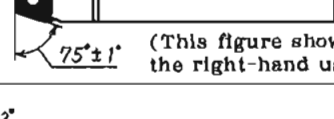
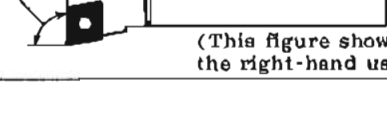
Attached Fig. 1. (Continued)

Shape	Symbol	Hand	Attached table No.
 (This figure shows the right-hand use)	CTTNR	Right	Attached Table 1.12
	CTTNL	Left	
 (This figure shows the right-hand use)	CCLNR	Right	Attached Table 1.13
	CCLNL	Left	
 (This figure shows the right-hand use)	CDJNR	Right	Attached Table 1.14
	CDJNL	Left	
	CRDNN	No	Attached Table 1.15
 (This figure shows the right-hand use)	CRGNR	Right	Attached Table 1.18
	CRGNL	Left	

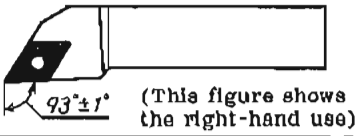
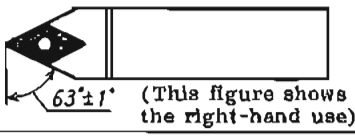
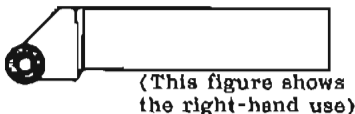
Attached Fig. 2. E Type

Shape	Symbol	Hand	Attached table No.
 75°±1° (This figure shows the right-hand use)	ESBNR	Right	Attached Table 2.1
	ESBNL	Left	
 60°±1° (This figure shows the right-hand use)	ESENr	Right	Attached Table 2.2
	ESENL	Left	
 45°±1° (This figure shows the right-hand use)	ESSNR	Right	Attached Table 2.3
	ESSNL	Left	
 45°±1° (This figure shows the right-hand use)	ESDNR	Right	Attached Table 2.4
	ESDNL	Left	
 75°±1° (This figure shows the right-hand use)	ESKNR	Right	Attached Table 2.5
	ESKNL	Left	
 90°±2° (This figure shows the right-hand use)	ETANR	Right	Attached Table 2.6
	ETANL	Left	
 90°±2° (This figure shows the right-hand use)	ETGnr	Right	Attached Table 2.7
	ETGNL	Left	
 60°±1°	ETENN	No	Attached Table 2.8
 90°±2° (This figure shows the right-hand use)	ETFNR	Right	Attached Table 2.9
	ETFNL	Left	
 100°±1° (This figure shows the right-hand use)	ETXNR	Right	Attached Table 2.10
	ETXNL	Left	

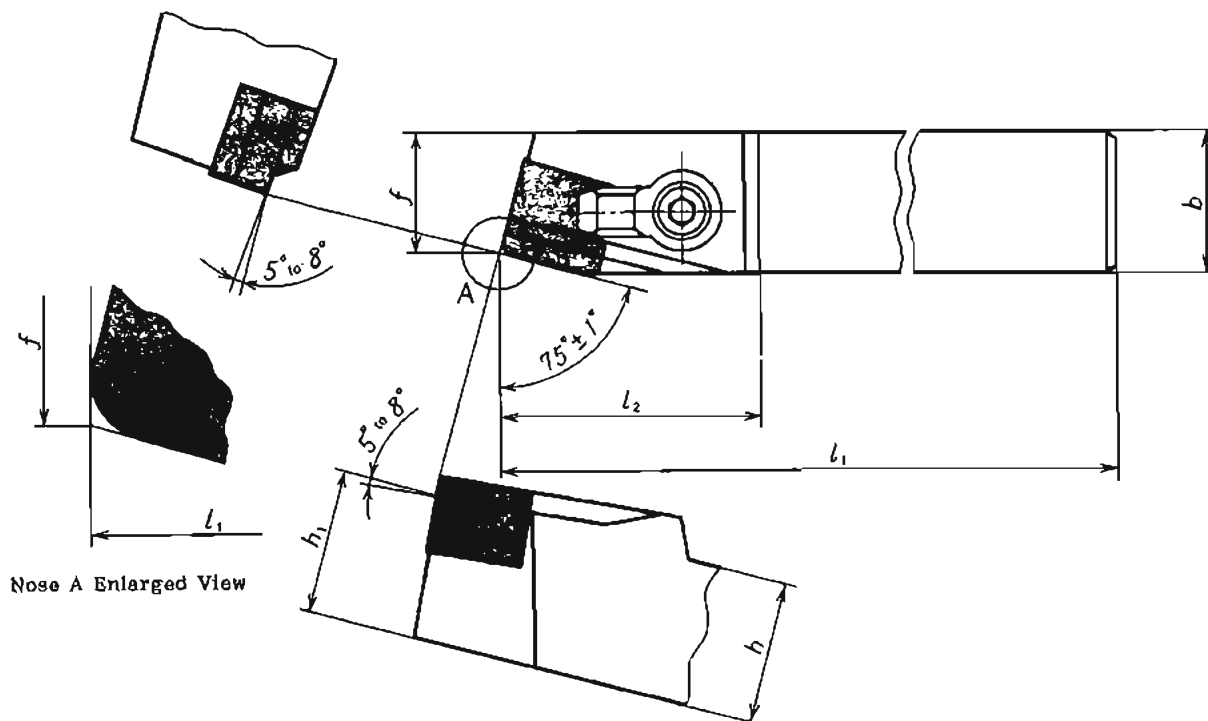
Attached Fig. 3. P Type

Shape	Symbol	Hand	Attached table No.
 $75^\circ \pm 1^\circ$ (This figure shows the right-hand use)	PSBNR	Right	Attached Table 3.1
	PSBNL	Left	
 $45^\circ \pm 1^\circ$ (This figure shows the right-hand use)	PSSNR	Right	Attached Table 3.2
	PSSNL	Left	
 $45^\circ \pm 1^\circ$ (This figure shows the right-hand use)	PSDNN	No	Attached Table 3.3
 $75^\circ \pm 1^\circ$ (This figure shows the right-hand use)	PSKNR	Right	Attached Table 3.4
	PSKNL	Left	
 $90^\circ \pm 2^\circ$ (This figure shows the right-hand use)	PTANR	Right	Attached Table 3.5
	PTANL	Left	
 $90^\circ \pm 2^\circ$ (This figure shows the right-hand use)	PTGNR	Right	Attached Table 3.6
	PTGNL	Left	
 $60^\circ \pm 1^\circ$ (This figure shows the right-hand use)	PTTNR	Right	Attached Table 3.7
	PTTNL	Left	
 $90^\circ \pm 2^\circ$ (This figure shows the right-hand use)	PTFNR	Right	Attached Table 3.8
	PTFNL	Left	
 $95^\circ \pm 1^\circ$ (This figure shows the right-hand use)	PCLNR	Right	Attached Table 3.9
	PCLNL	Left	
 $75^\circ \pm 1^\circ$ (This figure shows the right-hand use)	PCBNR	Right	Attached Table 3.10
	PCBNL	Left	
 $90^\circ \pm 2^\circ$ (This figure shows the right-hand use)	PCFNR	Right	Attached Table 3.11
	PCFNL	Left	

Attached Fig. 3. (Continued)

Shape	Symbol	Hand	Attached table No.
	PDJNR	Right	Attached Table 3.12
	PDJNL	Left	
	PDNNR	Right	Attached Table 3.13
	PDNNL	Left	
	PRGNR	Right	Attached Table 3.14
	PRGNL	Left	

Attached Table 1.1 Shape and Dimensions of CSBN Type

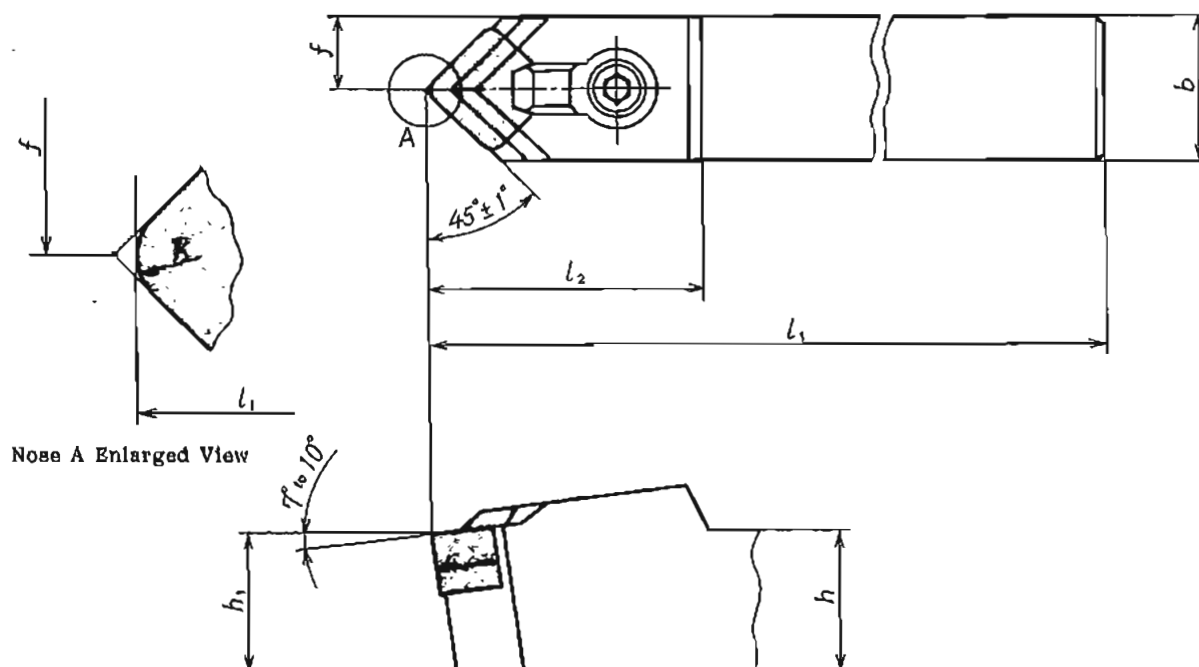


Remark: This figure shows the right-hand use.

Unit: mm

Nominal symbol	Height of shank h		Width of shank b		Overall length l_1		Head length l_2 (max.)	Nose distance f		Nose height h_1		Corresponding insert size		
	Reference dimension	Tolerance h 13	Reference dimension	Tolerance h 13	Reference dimension	Tolerance k 16		Reference dimension	Tolerance	Reference dimension	Tolerance js 14	Inscribed circle	Thickness	Reference corner radius R
CSBNR 2020 K 1204	20	0 -0.33	20	0 -0.33	125	+2.5 0	36	17	+0.5 0	20	± 0.26	12.70	4.76	0.8
CSBNL 2020 K 1204														
CSBNR 2525 M 1204	25	0 -0.33	25	0 -0.33	150	+2.5 0	36	22	+0.5 0	25	± 0.26	12.70	7.94	0.8
CSBNL 2525 M 1204														
CSBNR 2525 M 1207	25	0 -0.33	25	0 -0.33	150	+2.5 0	36	22	+0.5 0	25	± 0.26	12.70	7.94	0.8
CSBNL 2525 M 1207														
CSBNR 3225 P 1204	32	0 -0.39	32	0 -0.39	170	+2.5 0	36	22	+0.5 0	32	± 0.31	12.70	4.76	0.8
CSBNL 3225 P 1204														
CSBNR 3225 P 1207	32	0 -0.39	32	0 -0.39	170	+2.5 0	36	22	+0.5 0	32	± 0.31	12.70	7.94	0.8
CSBNL 3225 P 1207														

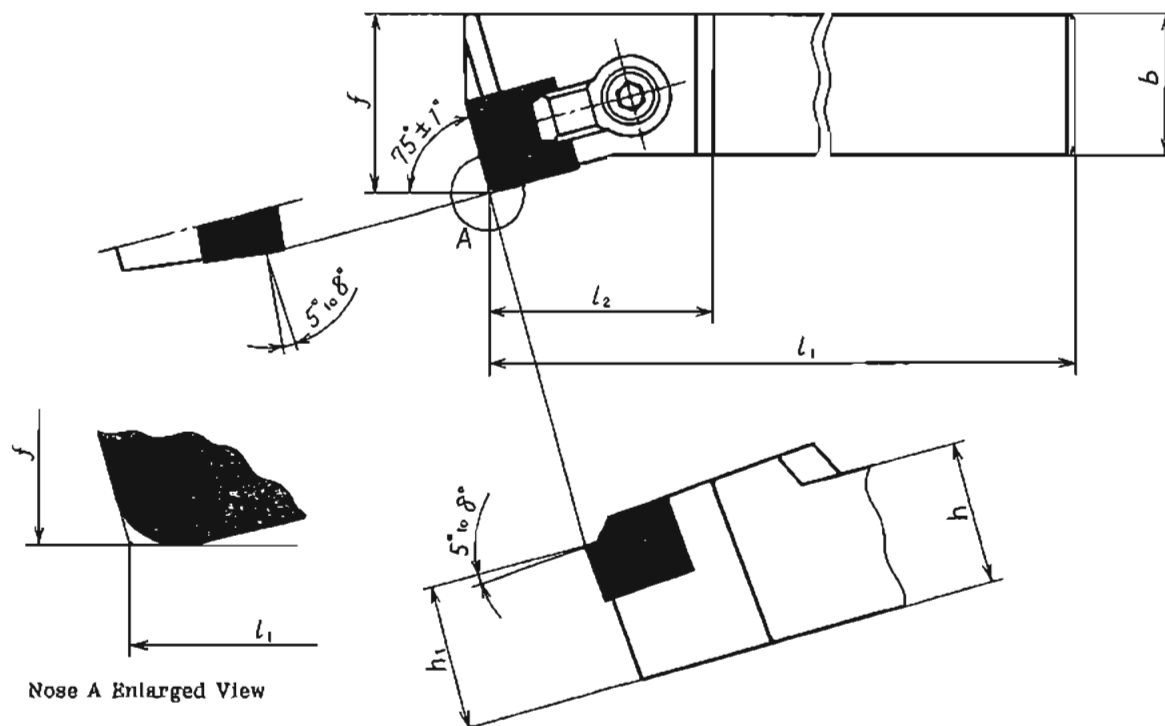
Attached Table 1.2. Shape and Dimensions of CSDN Type



Unit: mm

Nominal symbol	Height of shank h		Width of shank b		Overall length l_1		Head length l_2 (max.)	Nose distance f		Nose height h_1		Corresponding insert size		
	Reference dimension	Tolerance h 13	Reference dimension	Tolerance h 13	Reference dimension	Tolerance k 16		Reference dimension	Tolerance	Reference dimension	Tolerance js 14	Inscribed circle	Thickness	Reference corner radius R
CSDNN 1616 H 0903	16	0 -0.27	16	0 -0.27	100	+2.2 0	32	8		16	±0.22	9.525	3.18	0.8
CSDNN 2020 K 1204	20		20		125			10		20			4.76	
CSDNN 2525 M 1204	25	0 -0.33	25	0 -0.33	150	+2.5 0	36	±0.25	12.5	25	±0.26	12.70	7.94	
CSDNN 2525 M 1207					170								4.76	
CSDNN 3225 P 1204	32	0 -0.39								32	±0.31		7.94	
CSDNN 3225 P 1207														

Attached Table 1.3. Shape and Dimensions of CSKN

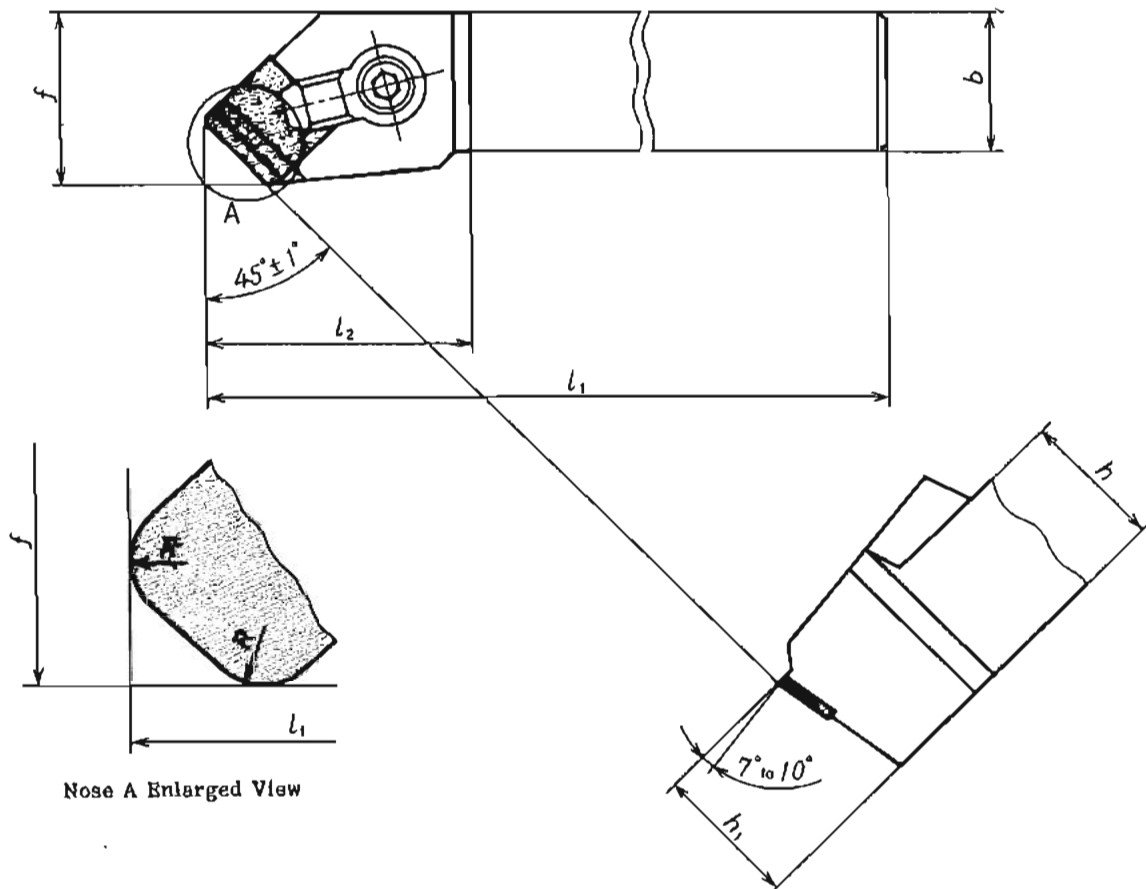


Remark: This figure shows the right-hand use.

Unit: mm

Nominal symbol	Height of shank h		Width of shank b		Overall length l_1		Head length l_2 (max.)	Nose distance f		Nose height h_1		Corresponding insert size		
	Reference dimension	Tolerance h 13	Reference dimension	Tolerance h 13	Reference dimension	Tolerance k 16		Reference dimension	Tolerance	Reference dimension	Tolerance js 14	Inscribed circle	Thickness	Reference corner radius R
CSKNR 2020 K 1204	20		20		125			25		20			4.76	
CSKNL 2020 K 1204														
CSKNR 2525 M 1204	25	0 -0.33			150	+2.5 0	36		+0.5 0	25	±0.26	12.70	7.94	0.8
CSKNL 2525 M 1204														
CSKNR 2525 M 1207														
CSKNL 2525 M 1207														
CSKNR 3225 P 1204	32	0 -0.39	25		170			32			±0.31		4.76	
CSKNL 3225 P 1204														
CSKNR 3225 P 1207														
CSKNL 3225 P 1207														

Attached Table 1.4. Shape and Dimensions of CSSN Type



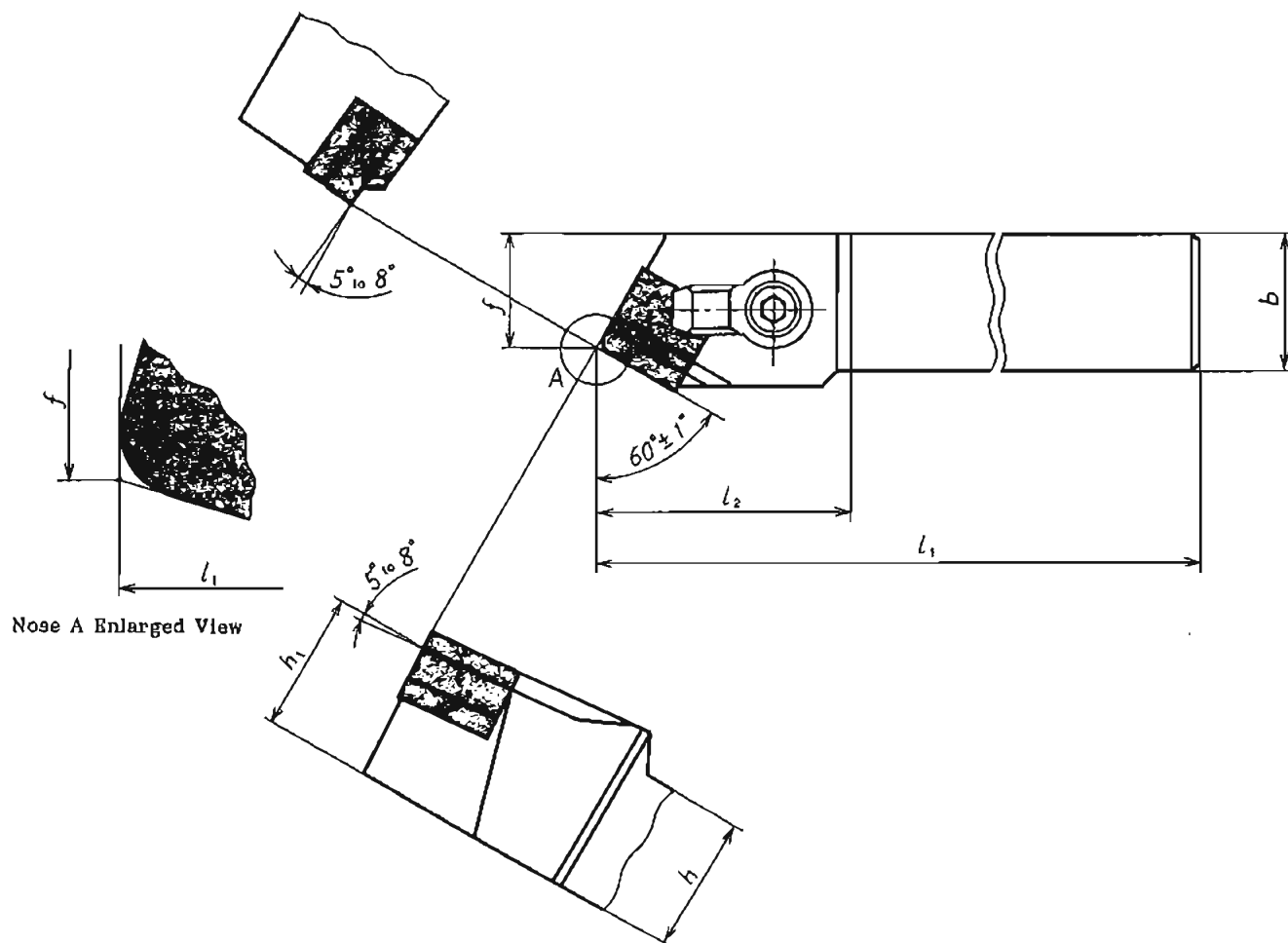
Nose A Enlarged View

Remark: This figure shows the right-hand use.

Unit: mm

Nominal symbol	Height of shank h		Width of shank b		Overall length l_1		Head length l_2 (max.)	Nose distance f		Nose height h_1		Corresponding insert size			
	Reference dimension	Tolerance h 13	Reference dimension	Tolerance h 13	Reference dimension	Tolerance k 16		Reference dimension	Tolerance	Reference dimension	Tolerance js 14	Inscribed circle	Thickness	Reference corner radius R	
CSSNR 1616 H 0903	16	0 -0.27	16	0 -0.27	100	+2.2 0	32	20	+0.5 0	16	± 0.22	9.525	3.18	0.8	
CSSNL 1616 H 0903															
CSSNR 2020 K 1204	20		20		125		25	20				4.76			
CSSNL 2020 K 1204															
CSSNR 2525 M 1204	25	0 -0.33			150	+2.5 0	36	32		25	± 0.26	12.70	7.94		
CSSNL 2525 M 1204															
CSSNR 2525 M 1207															
CSSNL 2525 M 1207															
CSSNR 3225 P 1204	32	0 -0.39	25	0 -0.33	170					32	32	± 0.31			4.76
CSSNL 3225 P 1204															
CSSNR 3225 P 1207															
CSSNL 3225 P 1207															

Attached Table 1.5. Shape and Dimensions of CSTN Type

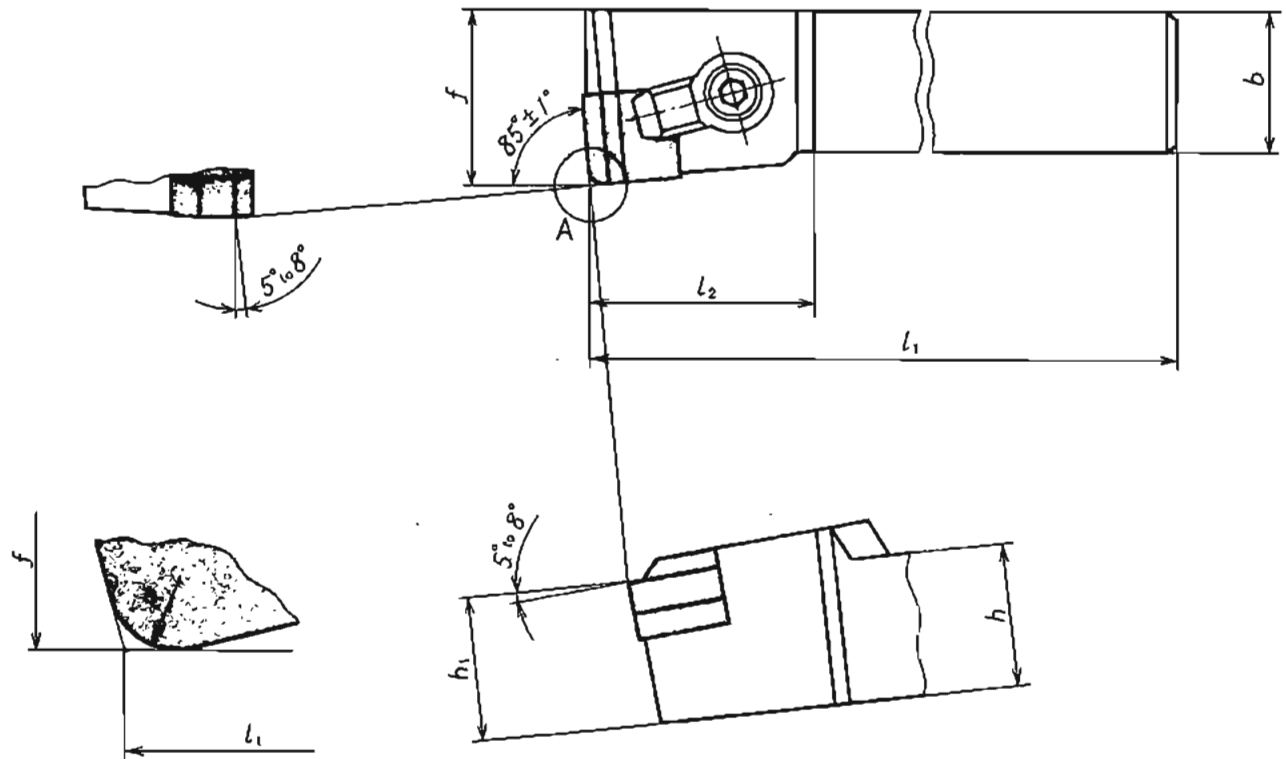


Remark: The figure shows the right-hand use.

Unit: mm

Nominal symbol	Height of shank h		Width of shank b		Overall length l_1		Head length l_2 (max.)	Nose distance f		Nose height h_1		Corresponding insert size		
	Reference dimension	Tolerance h 13	Reference dimension	Tolerance h 13	Reference dimension	Tolerance k 16		Reference dimension	Tolerance	Reference dimension	Tolerance js 14	Inscribed circle	Thickness	Reference corner radius R
CSTNR 2020 K 1204	20	0 -0.33	20	0 -0.33	125	+2.5 0	36	17	+0.5 0	20	± 0.26	12.70	4.76	0.8
CSTNL 2020 K 1204														
CSTNR 2525 M 1204	25	0 -0.33	25	0 -0.33	150	+2.5 0	36	22	+0.5 0	25	± 0.26	12.70	4.76	0.8
CSTNL 2525 M 1204														

Attached Table 1.6. Shape and Dimensions of CSYN Type



Nose A Enlarged View

Remark: The figure shows the right-hand use.

Unit: mm

Nominal symbol	Height of shank h		Width of shank b		Overall length l_1		Head length l_2 (max.)	Nose distance f		Nose height h_1		Corresponding insert size		
	Reference dimension	Tolerance h 13	Reference dimension	Tolerance h 13	Reference dimension	Tolerance k 16		Reference dimension	Tolerance	Reference dimension	Tolerance js 14	Inscribed circle	Thickness	Reference corner radius R
CSYNR 2020 K 1204	20	0 -0.33	20	0 -0.33	125	+2.5 0	36	25	+0.5 0	20	± 0.26	12.70	4.76	0.8
CSYNL 2020 K 1204														
CSYNR 2525 M 1204	25	0 -0.33	25	0 -0.33	150	+2.5 0	36	32	+0.5 0	25	± 0.26	12.70	7.94	0.8
CSYNL 2525 M 1204														
CSYNR 2525 M 1207														
CSYNL 2525 M 1207	32	0 -0.39	25	0 -0.33	170	+2.5 0	36	32	+0.5 0	32	± 0.31	12.70	4.76	0.8
CSYNR 3225 P 1204														
CSYNL 3225 P 1204														
CSYNR 3225 P 1207														
CSYNL 3225 P 1207														