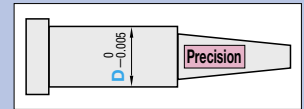


PRECISION ONE-STEP CORE PINS

—SHAFT DIAMETER (D) SELECTION TYPE—



Ⓜ Non JIS material definition is listed on P.1351 - 1352

Ⓜ When exceeds the working limit of tip (ℓ) dimension (Refer to the step drawing lower right) → Details of the tip (ℓ) short type Ⓜ P.453

RoHS	M H	Part Number		
		Type	Step	Shape
SKD61 equivalent 48~52HRC		CPZ-	1A	Not processed
			1B	C
			1C	G
SKH51 equivalent 58~60HRC		CPV-	1D	T
				R
			1E	B

Step type selected from 1A~1E below

1A

Shape Select a tip shape from the drawings on the right.

Ⓜ ℓ ≥ 0.5 + α

1B

Shape

Ⓜ ℓ ≥ 0.7 + α

1C

Shape

Ⓜ ℓ ≥ D-A/2 + 0.5 + α

When AC code is used
ℓ ≥ (D-A)/(2tanAC) + 0.5 + α

1D

Shape

Ⓜ ℓ ≥ C + 0.5 + α

C = D-A/2 → [Step] 1C

1E

Shape

Ⓜ ℓ ≥ R + 0.5 + α

Shape (Tip shape: V is dimension before tip processing.)

(Not processed)

Ⓜ Designation of the shape is unnecessary when tip processing is not required.
α = 0

C (C chamfered)

0.1 ≤ G < V/2
0.05mm increments
α = G θ < 45°

G (Cone)

20 < K ≤ 60
1° increments
α = V/(2tanK) θ < K

T (Tapered)

0.1 ≤ S < V/(2tanK)
0.05mm increments
10 ≤ K ≤ 45
1° increments
α = S θ < K

R (R chamfered)

0.2 ≤ Q < V/2
0.1mm increments
α = Q

B (Spherical processed)

α = V/2

(Calculation of tip gradient θ Ⓜ P.1315)

H	Part Number			0.01mm increments				0.1mm increments		ℓmax.			
	Type	Step	Shape	L		F		A	Vmin.		C	R	
3	CPZ-	1A	Designation is unnecessary when tip processing is not required.	1	14.00	100.00	12.00	L-ℓmin. Ⓜ ℓmin. Refer to the [Step] drawing	D > A ≥ V [Step] 1A D > V	0.50	only [Step] 1D designated	only [Step] 1E designated	A × 6 (D × 6 for [Step] 1A) and 50.00
4				1.5									
5				2									
6				2.5									
7				3									
8				3.5									
9	CPV-	1D		4	120.00	12.00			1.00	C < D-A/2 and Ⓜ 0.1 ≤ C ≤ 4.0	R ≤ D-A/2 and R ≥ 0.2		
10				4.5									
11				5									
15				5.5									
18				6									
21				6.5									
25	7	Only CPV- 150.00	28.00	5.00	Ⓜ When CVC code is used 0.10 ≤ CVC ≤ 1.00								

Order **Part Number** - **L** - **F** - **A** - **V** - **C · R** - **Tip size (K · S · G · Q)**

CPV-1BR6 - 46.00 - F38.00 - A5.00 - V3.00 - Q1.0
 CPV-1DG6 - 50.00 - F40.00 - A5.10 - V3.00 - C0.3 - K40
 CPZ-1ET4 - 42.00 - F35.00 - A3.20 - V3.10 - R0.4 - K35 - S1.0

Days to Ship **Quotation** **P** Price **Quotation**

Alterations **Part Number** - **L** - **F(FC)** - **A** - **V(VC)** - **C(CVC) · R** - **Tip size (K · S · G · Q)** - **(K · WKC · etc.)**

CPZ-1DC6 - 50.00 - F40.00 - A5.00 - V3.10 - CVC0.10 - G1.0 - HC8.0
 CPV-1A 5 - 58.00 - F50.00 - V4.00 - NHC-23 Alteration details Ⓜ P.441

Alterations	Code	Spec.	1Code	Alterations	Code	Spec.	1Code
	KC	Single flat cutting D/2 ≤ KC < H/2			TRN	Relief under the head (No need for plate chamfering)	
	WKC	Two flats cutting D/2 ≤ WKC < H/2	About Designation Unit for Key Flat Cutting		NHC	Numbering on the head How to order Ⓜ P.442 Ⓜ Available when H ≥ 2 Ⓜ Combination with SKC not available.	
	KAC KBC	Varied width parallel flats cutting D/2 ≤ KAC < H/2 KBC = 0.1mm increments only KAC < KBC < H/2	(1) To align the key flat with the shaft diameter [Unit of designation] 0.05mm increments possible		AC	Changes the standard angle (Ks=45°) AC=1° increments Ⓜ Available for [Step] 1C/1D Ⓜ 30 ≤ AC ≤ 60 Ⓜ Combination with CVC not available. Ⓜ When [Step] 1D, C ≤ 1.0A + 2(C × tanAC) < D	
	RKC	Two flats (right angled) cutting D/2 ≤ RKC < H/2			CVC	C dimension can be designated at 0.01mm increments. 0.10 ≤ CVC ≤ 1.00 Ⓜ Available for [Step] 1D Ⓜ CVC < (D-A)/2 Ⓜ Combination with AC not available.	
	DKC	Three flats cutting D/2 ≤ DKC < H/2			VC	Vmin. is enlarged. VC = 0.01mm increments Ⓜ ℓ ≤ A × 5, ℓ ≤ 50 Ⓜ (D × 5 for [Step] 1A) Ⓜ Regarding D=2, 3, 4, 5 and 13~16, Vmin. is the machining limit, and VC cannot be used.	
	SKC	Four flats cutting D/2 ≤ SKC < H/2			FC	F dimension becomes shorter than Fmin. Makes L dimension shorter than L min. too. FC ≤ 5mm Ⓜ It can be designated up to Lmin. = 6.5mm.	
	KGC	Two flats (angled) cutting D/2 ≤ KGC < H/2 0 < AG < 360 AG = 1° increments	[Unit of designation] 0.1mm		GVC	Gas vent machining GS · GB = 1mm increments Ⓜ Available when D ≥ 2 Ⓜ 2 ≤ GS ≤ 10 GS + 2 ≤ GB ≤ 30 Fmin. ≤ F - GB How to order Ⓜ P.442	
	KTC	Three flats cutting at 120° D/2 ≤ KTC < H/2					
	HC	Head diameter change HC = 0.1mm increments D ≤ HC < H Ⓜ In relation to the diameter tolerance, alteration may create a straight piece with little diameter difference between the head and shaft.					
	HCC	Head diameter change (precision) HCC = 0.1mm increments D + 0.5 ≤ HCC < H - 0.3					
	TC	Head thickness change TC = 0.1mm increments 1.5 ≤ TC < 4 (Dimensions L and F remain unchanged.) 4 - TC ≤ Lmax. - L					

Ⓜ For details of a Gas Release Core Pin, which is a product similar to alteration GVC, Ⓜ P.471