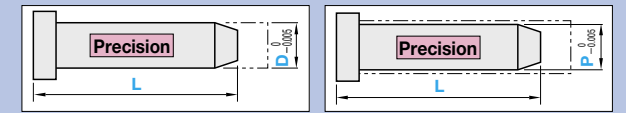


# PRECISION STRAIGHT CORE PINS WITH TIP PROCESS

—SHAFT DIAMETER (D) SELECTION TYPE / SHAFT DIAMETER (P) DESIGNATION (0.005mm INCREMENTS) TYPE—



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

RoHS	M H	Part Number		Shape	
		Type			
		Shaft diameter (D) selection	Shaft diameter (P) designation		
	SKD61 equivalent 48~52HRC	CPZL	CPZBL	C	
				G	
				T	
		SKH51 equivalent 58~60HRC	CPVL	CPVBL	R
					B

## Shape (Tip shape)

**Shape C**  
(C chamfered)

$C \dots 0.05\text{mm increments}$   
 $0.1 \leq C \leq \frac{(D \text{ or } P) - 0.2}{2}$   
 and  
 $L - C \geq 9.5$   
 ※When GVC code is used  $\ell = C$

**Shape G**  
(Cone)

$K \dots 0.5^\circ \text{ increments}$   
 $20 \leq K \leq 60$   
 and  
 $(L - \ell) \geq 10$   
 Ⓜ  $\ell$  calculation formula  
 $\ell = \frac{(D \text{ or } P)}{2 \tan K}$

**Shape T**  
(Tapered)

$F \dots 0.01\text{mm increments}$        $K \dots 1^\circ \text{ increments}$   
 $F \geq 10.00$        $1 \leq K \leq 45$   
 and  
 $0.3 \leq (L - F) \leq \frac{L}{2}$   
 and  
 $\frac{(D \text{ or } P)}{2} - (L - F) \tan K \geq 0.1$       ※When GVC code is used  $\ell = L - F$

**Shape R**  
(R chamfered)

$R \dots 0.1\text{mm increments}$   
 $0.2 \leq R \leq \frac{(D \text{ or } P) - 0.2}{2}$   
 and  
 $L - R \geq 10$   
 ※When GVC code is used  $\ell = R$

**Shape B**  
(Spherical processed)

$R(SR) \pm 0.1$   
 When  $R = (D \text{ or } P)/2$  designate **RQR**  
 When  $R > (D \text{ or } P)/2$   
 $R \dots 0.1\text{mm increments}$   
 $(D \text{ or } P)/2 < R \leq 1.5 \times (D \text{ or } P)$   
 $\{(D \text{ or } P) \geq 4 \dots (D \text{ or } P)/2 < R \leq 3 \times (D \text{ or } P)\}$   
 Ⓜ However,  $R \leq 32$  and  $L - \ell \geq 10$   
 Ⓜ  $\ell$  calculation formula  
 $\ell = R - \sqrt{R^2 - \frac{(D^2 \text{ or } P^2)}{4}}$

## Shaft diameter (D) selection type

H	Part Number		L	Shape (Tip size)
	Type	Shape		
3	CPVL	C	0.6	10.00~60.00
			0.8	10.00 100.00
			0.9	
			1	
			1.1	
			1.2	
			1.3	
			1.4	
			1.5	
			1.6	
			1.7	
			1.8	
			4	
2.5				
3				
3.5				
4				
4.5				
5				
5.5				
6				
6.5				
7				
8				
5	CPVL	R		8
			10	
			11	
			15	
			18	
			21	
			25	

**Shape C**  
C...0.05mm increments

**Shape G**  
K...0.5° increments

**Shape T**  
F...0.01mm increments  
K...1° increments

**Shape R**  
R...0.1mm increments

**Shape B**  
When R=D/2 designate **RQR**  
When R>D/2 R...0.1mm increments

Refer to the working limits shown in the drawing.

## Shaft diameter (P) designation type

H	Part Number		L	P	Shape (Tip size)
	Type	Shape			
3	CPVBL	C	0.8	0.600~0.795	10.00 100.00
			1	0.800~0.995	
			1.5	1.000~1.495	
			2	1.500~1.995	
			2.5	2.000~2.495	
			3	2.500~2.995	
			3.5	3.000~3.495	
			4	3.500~3.995	
			4.5	4.000~4.495	
			5	4.500~4.995	
			5.5	5.000~5.495	
			6	5.500~5.995	
			6.5	6.000~6.495	
4	CPZBL	G	7	6.500~6.995	10.00 120.00
			8	7.000~7.995	
			8	8.000~9.995	
			10	10.000~12.995	
			11	13.000~15.995	
			15	16.000~19.995	
			18		
			21		
			25		

**Shape C**  
C...0.05mm increments

**Shape G**  
K...0.5° increments

**Shape T**  
F...0.01mm increments  
K...1° increments

**Shape R**  
R...0.1mm increments

**Shape B**  
When R=P/2 designate **RQR**  
When R>P/2 R...0.1mm increments

Refer to the working limits shown in the drawing.

Order **Part Number** — **L** — **P** — **Tip size (C · F · K · R)**

CPZLC5 — 13.07 — — C0.3

CPVBLB7 — 67.00 — P6.600 — RQR

Price **Quotation**

Days to Ship **Quotation**

Alterations **Part Number** — **L** — **P** — **Tip size (C · F · K · R)** — (KC · WKC...etc.)

CPZLC2 — 10.00 — — C0.5 — HC3.0

CPVBLR10 — 17.00 — P8.620 — R1.5 — HC10.6 — KTC4.5

Alteration details P.395

Alterations	Code	Spec.	1Code
	KC	Single flat cutting (D or P)/2 ≤ KC < H/2	
	WKC	Two flats cutting (D or P)/2 ≤ WKC < H/2	
	KAC KBC	Varied width parallel flats cutting (D or P)/2 ≤ KAC < H/2 KBC=0.1mm increments only KAC < KBC < H/2	
	RKC	Two flats (right angled) cutting (D or P)/2 ≤ RKC < H/2	
	DKC	Three flats cutting (D or P)/2 ≤ DKC < H/2	
	SKC	Four flats cutting (D or P)/2 ≤ SKC < H/2	
	KGC	Two flats (angled) cutting (D or P)/2 ≤ KGC < H/2 0 < AG < 360 AG=1° increments	
	KTC	Three flats cutting at 120° (D or P)/2 ≤ KTC < H/2	

Unit of designation: Shaft diameter (D) selection 0.05mm increments possible, Shaft diameter (P) designation 0.0025mm increments possible.

(1) To align the key flat with the shaft diameter

(2) To designate arbitrary key flat dimensions

Unit of designation: 0.1mm

Alterations	Code	Spec.	1Code
	HC	Head diameter change HC=0.1mm increments (D or P) ≤ 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 or P) + 0.5 ≤ HCC < H - 0.3	
	TC	Head thickness change TC=0.1mm increments 1.5 ≤ TC < 4 (Dimension L remains unchanged.) 4 - TC ≤ Lmax. - L	
	TRN	Relief under the head (No need for plate chamfering)	
	NHC	Numbering on the head How to order P.396 Ⓜ Available when H ≥ 2 Ⓜ Combination with SKC not available.	
	GVC	Gas vent machining GS · GB=1mm increments Ⓜ Available when (D or P) ≥ 2 2 + ℓ ≤ GS ≤ 12 GS + 2 ≤ GB ≤ 30 L - GB ≥ 10 How to order P.396	