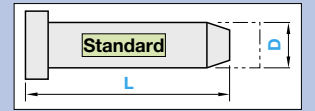


STRAIGHT CORE PINS WITH TIP PROCESS

—SHAFT DIAMETER (D) SELECTION TYPE—



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

Material	Part Number		Shape
	Type		
	□ D - 0.01	□ D - 0.005	
NAK80 37~43HRC	CPNL	CPKL	C
DH2F 38~42HRC	CPFL	CPGL	G
SKD61 equivalent 48~52HRC	CPDL	CPPL	T
SKH51 equivalent 58~60HRC	CPXL	CPHL	R
SUS440C 56~60HRC	—	CPWL	B
MAS1C 50~54HRC	CPAL	CPYL	B

Ⓜ For SKH51 equivalent, the other shapes have been standardized as well. P.419

MAS1C will be discontinued when stocked materials are finished.

Shape (Tip shape)

Shape C
(C chamfered)

When no C specified
C=0.4±0.1
C...0.1mm increments
 $0.1 \leq C \leq \frac{D-0.2}{2}$
and
L-C ≥ 9.5

When CKC code is used
CKC=0.05mm increments

Ⓜ When GVC code is used ℓ=C (When CKC code is used: ℓ=CKC)

Shape G
(Cone)

K...0.5° increments
20 ≤ K ≤ 60
and
(L-ℓ) ≥ 10

Ⓜ Calculation formula
 $\ell = \frac{D}{2 \tan K}$

Shape T
(Tapered)

F...0.01mm increments K...1° increments
F ≥ 10.00 1 ≤ K ≤ 45
and
 $0.3 \leq (L-F) \leq \frac{L}{2}$ Ⓜ When GVC code is used ℓ=L-F
and
 $\frac{D}{2} - (L-F) \tan K \geq 0.1$

Shape R
(R chamfered)

When no R specified
R=0.4±0.1
R...0.1mm increments
 $0.2 \leq R \leq \frac{D-0.2}{2}$
and
L-R ≥ 10

Ⓜ When GVC code is used ℓ=R (When RTC code is used: ℓ=RTC)

Shape B
(Spherical processed)

When RC code is used
RC=0.1mm increments
 $\frac{D}{2} \leq RC \leq (1.5 \times D)$
{D ≥ 4 ... D/2 ≤ RC ≤ (3 × D)}
Ⓜ However, RC ≤ 32
and
L-ℓ ≥ 10
Ⓜ Calculation formula
 $\ell = RC - \sqrt{RC^2 - \frac{D^2}{4}}$

Fixed dimension for R
Spherical processed (SR)

H	Part Number		Shape	D	L	Shape (Tip size)								
	Type													
	Shaft diameter tolerance D - 0.01	Shaft diameter tolerance D - 0.005												
3	CPNL	CPKL	C	0.8	10.00~100.00	Shape C C...0.1mm increments Ⓜ When no C specified C=0.4±0.1								
							0.9							
							1							
							1.1							
							1.2							
							1.3							
							1.4							
							1.5							
							1.6							
							1.7							
4	CPFL	CPGL	G	1.8	10.00~120.00	Shape G K...0.5° increments								
							1.9							
							2							
							2.5							
							3							
							3.5							
							4							
							4.5							
							5							
							5.5							
5	CPDL	CPPL	T	6	10.00~120.00	Shape T F...0.01mm increments K...1° increments								
							7							
							8							
							9							
							10							
							11							
							15							
							18							
							21							
							25							
6	CPXL	CPHL	R	6.5	10.00~120.00	Shape R R...0.1mm increments Ⓜ When no R specified R=0.4±0.1								
							7							
							8							
							10							
							13							
							16							
							20							
							7	CPAL (D ≤ 4)	CPYL (D ≤ 4)	B	7	10.00~120.00	Refer to the working limits shown in the drawing.	
														8
														9
10														
11														
15														
18														
21														
25														

Order Part Number — L — Tip size (C · F · K · R) Days to Ship **Quotation**

CPKLG13 — 21.80 — K45

CPHLB10 — 40.00

Alterations Part Number — L — Tip size (CKC) · F · K · R(RTC) — (KC · WKC...etc.) Price **Quotation**

CPWLB0.8 — 13.00 — HCC2.5

CPHLT1 — 40.00 — F39.00 — K10 — WKCO.5—TC2.0

Alterations	Code	Spec.	1Code	Alterations	Code	Spec.	1Code
	KC	Single flat cutting D/2 ≤ KC < H/2			HCC	Head diameter change (precision) HCC=0.1mm increments D+0.5 ≤ HCC < H-0.3	
	WKC	Two flats cutting D/2 ≤ WKC < H/2	About Designation Unit for Key Flat Cutting		TC	Head thickness change TC=0.1mm increments 1.5 ≤ TC < 4 (Dimension L remains unchanged.) 4 - TC ≤ Lmax. - L	
	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		TRN	Relief under the head (No need for plate chamfering)	
	RKC	Two flats (right angled) cutting D/2 ≤ RKC < H/2	Unit of designation 0.05mm increments possible		NHC	Numbering on the head How to order P.396 Ⓜ Available when H ≥ 2 Ⓜ Combination with SKC not available.	Quotation
	DKC	Three flats cutting D/2 ≤ DKC < H/2			GVC	Gas vent machining GS · GB=1mm increments Ⓜ Available when D ≥ 2 Ⓜ 2+ℓ ≤ GS ≤ 12 GS+2 ≤ GB ≤ 30 L-GB ≥ 10 How to order P.396	
	SKC	Four flats cutting D/2 ≤ SKC < H/2			CKC	Improves C chamfering tolerance C ± 0.05 ... ± 0.02 Ⓜ 0.1 ≤ CKC ≤ (D-0.2)/2 Ⓜ L-CKC ≥ 9.5 Ⓜ Available for [Shape] C only CKC=0.05mm increments	
	KGC	Two flats (angled) cutting D/2 ≤ KGC < H/2 0 < AG < 360 AG=1° increments	(2) To designate arbitrary key flat dimensions Unit of designation 0.1mm		RTC	Improves tip R tolerance R ± 0.1 ... ± 0.05 Ⓜ 0.2 ≤ RTC ≤ (D-0.2)/2 Ⓜ L-RTC ≥ 10 Ⓜ Available for [Shape] R only RTC=0.1mm increments	
	KTC	Three flats cutting at 120° D/2 ≤ KTC < H/2			RC	Tip R alteration RC=0.1mm increments Ⓜ D/2 ≤ RC ≤ RCmax. and L-ℓ ≥ 10 Ⓜ Shaft diameter D < 4 ... RCmax.=1.5 × D Ⓜ Shaft diameter D ≥ 4 ... RCmax.=3 × D Ⓜ However, RC ≤ 32 Ⓜ Available for [Shape] B only	
	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.					