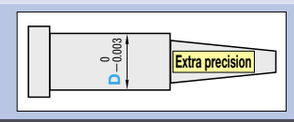
EXTRA PRECISION ONE-STEP CORE PINS

—SHAFT DIAMETER (D) SELECTION TYPE—



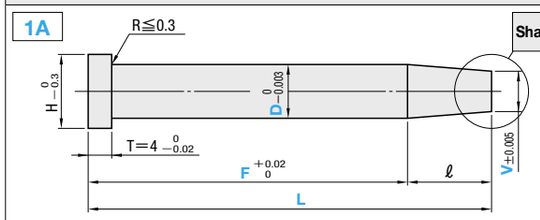
When exceeds the working limit of tip (ℓ) dimension (Refer to the step drawing lower right)··· Details of the tip (ℓ) short type P.459

RoHS

M H	Part Number		
	Type	Step	Shape
SKH51 equivalent 58～60HRC	CPM—	1A	Not processed
		1B	C
		1C	G
		1D	T
		1E	R
			B

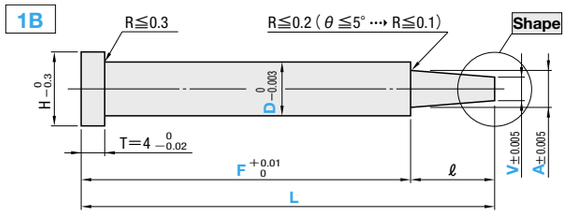
Step type selected from 1A～1E below

1A



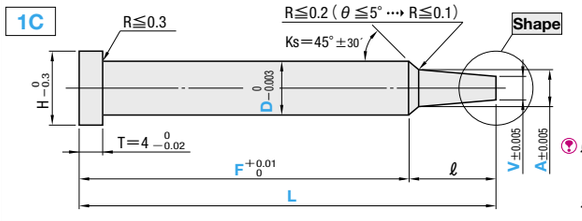
ℓ ≧0.5+ α

1B



ℓ ≧0.7+ α

1C

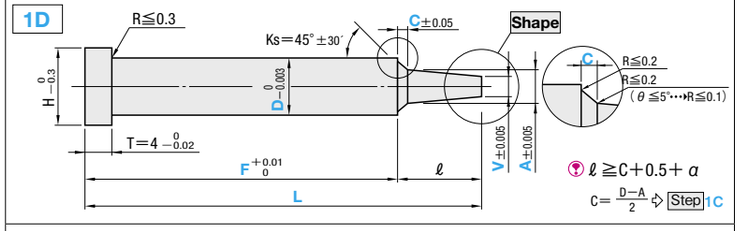


ℓ ≧ $\frac{D-A}{2}$ +0.5+ α

When AC code is used

ℓ ≧ $\frac{D-A}{2\tan AC}$ +0.5+ α

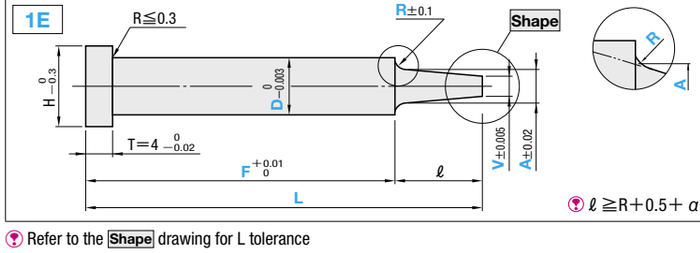
1D



ℓ ≧C+0.5+ α

C= $\frac{D-A}{2}$ ⇨ Step 1C

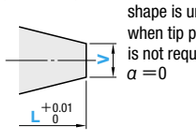
1E



ℓ ≧R+0.5+ α

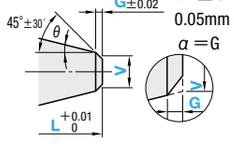
Shape (Tip shape: V is dimension before tip processing.)

(Not processed)



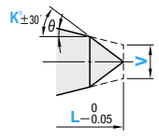
Designation of the shape is unnecessary when tip processing is not required.
α =0

C (C chamfered)



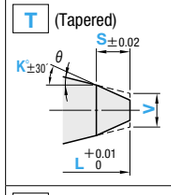
0.1≦G<V/2
0.05mm increments
α =G θ <45°

G (Cone)



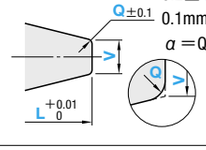
20<K≦60
1° increments
α = $\frac{V}{2\tan K}$ θ <K

T (Tapered)



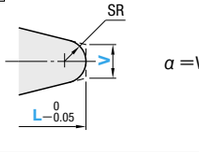
0.1≦S< $\frac{V}{2\tan K}$
0.05mm increments
10≦K≦45
1° increments
α =S θ <K

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)

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

H	Part Number				0.01mm increments L min.	0.01mm increments L max.	0.01mm increments F min.	0.01mm increments F max.	0.005mm increments A	0.005mm increments Vmin.	0.1mm increments C	0.1mm increments R	ℓmax.
	Type	Step	Shape	D									
3	CPM—	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 No designation necessary for A	0.500	Only Step 1D designated C< $\frac{D-A}{2}$ and ※0.1≦C≦4.0 ※When CVC code is used 0.10≦CVC≦1.00	Only Step 1E designated R≦ $\frac{D-A}{2}$ and R≧0.2	A×6 (D×6 for Step 1A) and 50.00
4				1.5									
5				2									
6		1B		2.5						0.700			
7				3									
8			C	3.5						1.000			
9		1C	G	4									
10			T	4.5						1.500			
11		1D		5									
15			R	5.5						2.000			
18		1E	B	6									
				6.5									
				7									
				8									
				10									
				13									

Order

Part Number	L	F	A	V	C・R	Tip size (K・S・G・Q)
CPM—1A 5	58.00	F40.00		V4.500		
CPM—1CC6.5	54.50	F48.35	A5.500	V5.300		G0.5
CPM—1ET 4	42.00	F35.00	A3.200	V3.100	R0.4	K35 — S1.0

Days to Ship: Quotation

Price: Quotation

Alterations

Part Number	L	F(FC)	A	V(VC)	C(CVC)・R	Tip size (K・S・G・Q)	(KC・WKC···etc.)
CPM—1DC6	50.00	F40.00	A5.000	V3.100	CVC0.10	G1.0	HC8.0
CPM—1A 5	58.00	F50.00		V4.000			NHC—23

Alteration details P.441

Alterations	Code	Spec.	1Code
KC 0 −0.01	KC	Single flat cutting D/2≦KC<H/2	Quotation
WKC 0 −0.01	WKC	Two flats cutting D/2≦WKC<H/2	
KAC KBC 0 −0.01	KAC KBC	Varied width parallel flats cutting D/2≦KAC<H/2 KBC=0.1mm increments only KAC<KBC<H/2	
RKC 0 −0.01	RKC	Two flats (right angled) cutting D/2≦RKC<H/2	
DKC DKC 0 −0.01	DKC	Three flats cutting D/2≦DKC<H/2	
SKC SKC 0 −0.01	SKC	Four flats cutting D/2≦SKC<H/2	
AG° ±0.5 0° KGC KGC 0 −0.01	KGC	Two flats (angled) cutting D/2≦KGC<H/2 0<AG<360 AG=1° increments	
120° 120° KTC 0 −0.01	KTC	Three flats cutting at 120° D/2≦KTC<H/2	
H HC 0 −0.3	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.)	
H HCC 0 −0.02	HCC	Head diameter change (precision) HCC=0.1mm increments D+0.5≦HCC<H−0.3	
TC 0 −0.02 4	TC	Head thickness change TC=0.1mm increments 1.5≦TC<4 (Dimensions L and F remain unchanged.) 4−TC≦Lmax.−L	

About Designation Unit for Key Flat Cutting

(1)To align the key flat with the shaft diameter
Unit of designation
0.05mm increments possible

(2)To designate arbitrary key flat dimensions
Unit of designation 0.1mm

Alterations	Code	Spec.	1Code
	TRN	Relief under the head (No need for plate chamfering)	
A15 8	NHC	Numbering on the head How to order P.442 Ⓟ Available when H≧2 Ⓧ Combination with SKC not available.	
AC°	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≦1.0,A+2(C×tanAC)<D	
45° CVC±0.02	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.	Quotation
VC	VC	Vmin. is enlarged. VC=0.005mm increments Ⓟ ℓ≦A×5, ℓ≦50 (D×5 for Step 1A) Ⓟ D>A≧VC Ⓧ Regarding D=2～3, 4.5, 5 and 13, Vmin. is the machining limit, and VC cannot be used.	
FC F	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.	
L T	LKC	Changes L dimension tolerance $L^{+0.01}_{0}$ ⇨ $L^{+0.005}_{0}$ (L designation in 0.005mm increments possible) Ⓟ Available when 1.5≦D≦5 Ⓧ Combination with FC not available Ⓟ No Shape machining Available for C/T/R	
GS F GB	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	

D	Vmin.	VCmin.
1～1.5	0.500	0.400
3.5～4	1.000	0.700
5.5	1.500	1.000
6～10	2.000	1.500

Ⓟ For details of a Gas Release Core Pin, which is a product similar to alteration GVC, P.473

Refer to the Shape drawing for L tolerance