EXTRA PRECISION GAS RELEASE ONE-STEP CORE PINS

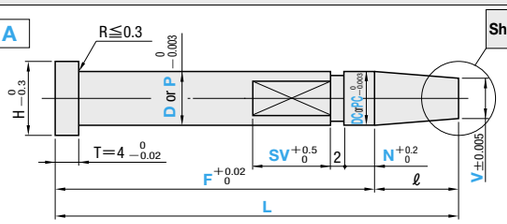
—SHAFT DIAMETER (D) SELECTION TYPE／SHAFT DIAMETER (P) DESIGNATION (0.001mm INCREMENTS) TYPE—

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

RoHS	M H	Part Number			
		Type		Step	Shape
		Shaft diameter (D) selection type	Shaft diameter (P) designation type		
	SKH51 equivalent 58～60HRC	GV—CPM—	GV—CPMB—	1A 1B 1C 1D	Not processed C G T R B

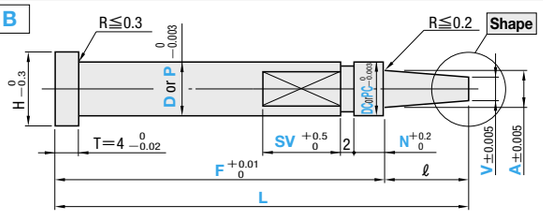
Step type selected from 1A～1D below

1A



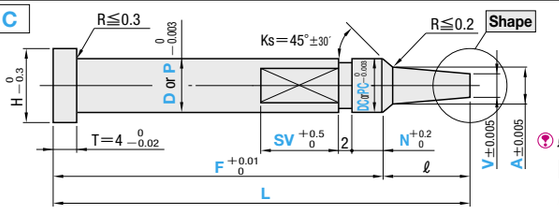
ℓ ≧0.5+ α

1B



ℓ ≧0.7+ α

1C

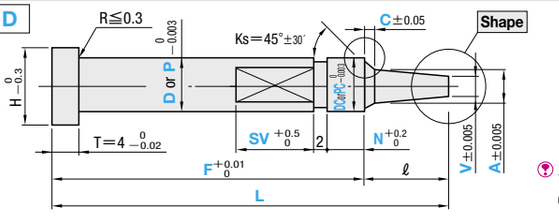


ℓ ≧ (D or P)−A / 2 +0.5+ α

When AC code is used

ℓ ≧ (D or P)−A / 2tanAC +0.5+ α

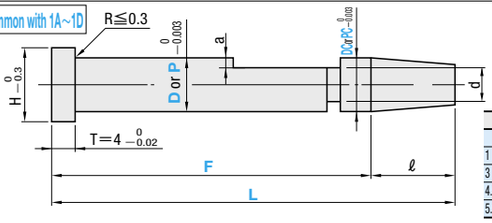
1D



ℓ ≧C+0.5+ α

C= (D or P)−A / 2 ⇨ Step 1C

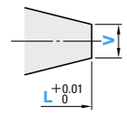
Common with 1A～1D



D	P	d	a
—	0.800～ 0.999	P−0.1	0.05
1 ～ 2.5	1.000～ 2.499	(D or P)−0.2	0.1
3 ～ 4	2.500～ 3.999	(D or P)−0.4	0.2
4.5～ 5	4.000～ 4.999	(D or P)−0.6	0.3
5.5～13	5.000～12.999	(D or P)−1.0	0.5

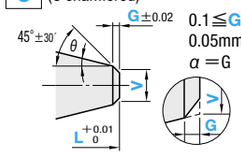
Shape (Tip shape: V is dimension before tip processing.)

(Not processed) Designation of the shape is unnecessary when tip processing is not required.



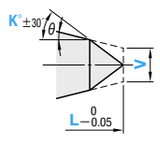
α =0

C (C chamfered)



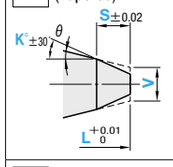
0.1≦G＜V/2
0.05mm increments
α =G θ ＜45°

G (Cone)



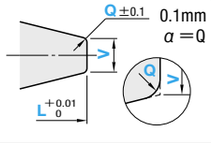
20＜K≦60
1 ° increments
α = V / 2tanK θ ＜K

T (Tapered)



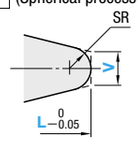
0.1≦S＜ V / 2tanK
0.05mm increments
10≦K≦45
1 ° increments
α =S θ ＜K

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)

■Shaft diameter (D) selection type

H	Part Number				0.01mm increments	0.005mm increments		0.1mm increments	0.001mm increments	0.1mm increments	0.5mm increments	ℓmax.
	Type	Step	Shape	D	L	F	A	Vmin.	C	DC	N	SV	
3	GV—CPM—	1A 1B 1C 1D	Designation is unnecessary when tip processing is not required. C G T R B	1 1.5 2 2.5 3 3.5 4 4.5 5 5.5 6 7 8 10 13	16.50 ～ 60.00	14.50 ～ L−ℓmin. ℓmin. Refer to the Step drawing	DC＞A≧V Step 1A DC＞V No designation necessary for A	0.500 0.700 1.000 1.500 2.000	only Step 1D designated C＜ D−A / 2 and ※0.1≦C≦4.0 ※When CVC code is used 0.10≦CVC≦1.00	(D−0.08)≦DC≦D When DC=D, DCX is applied.	0.3～10.0 F−(2+SV+N)≧10 0.5～15.0 F−(2+SV+N)≧10	2.0～50.0 2.0～60.0	A×6 Step 1A D×6 and 50.00

■Shaft diameter (P) designation type

H	Part Number				0.01mm increments	0.001mm increments	0.01mm increments	0.005mm increments		0.1mm increments	0.001mm increments	0.1mm increments	0.5mm increments	ℓmax.
	Type	Step	Shape	No.	L	P	F	A	Vmin.	C	PC	N	SV	
3	GV—CPMB—	1A 1B 1C 1D	Designation is unnecessary when tip processing is not required. C G T R B	1 1.5 2 2.5 3 3.5 4 4.5 5 5.5 6 7 8 9 10 13	16.50 ～ 60.00	0.800～ 0.999 1.000～ 1.499 1.500～ 1.999 2.000～ 2.499 2.500～ 2.999 3.000～ 3.499 3.500～ 3.999 4.000～ 4.499 4.500～ 4.999 5.000～ 5.499 5.500～ 5.999 6.000～ 6.999 7.000～ 7.999 8.000～ 9.999 10.000～12.999	14.50 ～ L−ℓmin. ℓmin. Refer to the Step drawing	PC＞A≧V Step 1A PC＞V No designation necessary for A	0.500 0.700 1.000 1.500 2.000	Only Step 1D designated C＜ P−A / 2 and ※0.1≦C≦4.0 ※When CVC code is used 0.1≦CVC≦1.00	(P−0.08)≦PC≦P When PC=P, PCX is applied.	0.3 ～ 10.0 F−(2+SV+N)≧10 0.5 ～ 15.0 F−(2+SV+N)≧10	2.0 ～ 60.0 2.0 ～ 60.0	A×6 Step 1A =P×6 and 50.00

	Part Number	L	P	F	A	V	C	Tip size (K·S·G·Q)	DC(DCX) PC(PCX)	N	SV
Order	GV—CPM —1A 5	52.60		F44.00		V4.500			DC4.940	N2	SV20
	GV—CPMB—1BR4	45.00	P3.900	F35.00	A3.000	V2.600		Q0.2	PCX	N8	SV15
Days to Ship	Quotation										
Price	Quotation										

Alterations	Part Number	L	P	F(FC)	A	V(VC)	C(CVC)	(Tip size) (K·S·G·Q)	DC(DCX) PC(PCX)	N	SV(SVC)	(KC・WKC…etc.)
	GV—CPM —1BR4	45.00		F35.00	A3.000	V2.600		Q0.2	DCX	N8	SV15	HC6.5
	GV—CPMB—1CC5.5	45.00	P5.490	F30.50	A5.000	V4.500		G1.2	PC5.450	N10	SV8.5	NHC—23

Alteration details P.441

Alterations	Code	Spec.	1Code
KC—0.01	KC	Single flat cutting (D or P)/2≦KC＜H/2	Quotation
WKC—0.01	WKC	Two flats cutting (D or P)/2≦WKC＜H/2	
KAC KBC—0.01	KAC KBC	Varied width parallel flats cutting (D or P)/2≦KAC＜H/2 KBC=0.1mm increments only KAC＜KBC＜H/2	
H HC—0.3	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.	
H HCC—0.02	HCC	Head diameter change (precision) HCC=0.1mm increments (D or P)+0.5≦HCC＜H−0.3	
TC—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
Shaft diameter (D) selection type 0.05mm increments possible
Shaft diameter (P) designation type 0.0005mm 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)	Quotation
A15 8	NHC	Numbering on the head How to order P.442 Available when H≧2	
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 1D, C≦1.0,A+2(C×tanAC)＜(D or P)	
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 or P−A)]/2 Combination with AC not available.	
VC	VC	Vmin. is enlarged. VC=0.005mm increments ℓ≦A×5,ℓ≦50 (Step 1A, (D or P)×5) (DC or PC)＞A≧VC Regarding D or No.=2～3・4.5・5and 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.	
SVC	SVC	Extend the flat section SV to the bottom. When P＜1 ･･･▸Available for L=60 or less When used concurrently with key flat cutting, SVC processing is done perpendicularly to the key flat surface.	

D No.	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