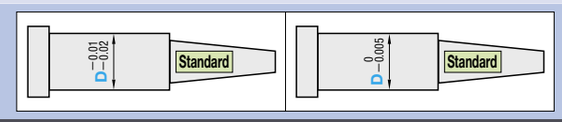
ONE-STEP CORE PINS

— SHAFT DIAMETER (D) SELECTION • SHAFT DIAMETER TOLERANCE $^{-0.01}_{-0.02}$ / $^{0}_{-0.005}$ TYPE —



When exceeds the working limit of tip (ℓ) dimension (Refer to the step drawing lower right) ··· "Details of the tip (ℓ) short type "Details P.447

RoHS

STAVAX ESR® is a registered trademark of UDDEHOLM TOOL CO.

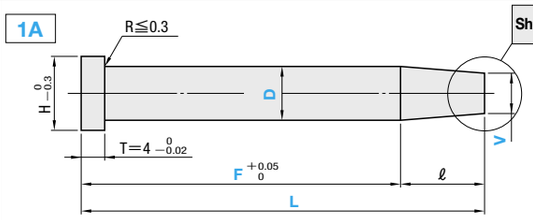
PROVA400 is equivalent to SUS420J2 upgrading steel from Fujikoshi. Features P.405

M	H	Type: Shaft diameter tolerance D −0.01 −0.02 / V・A tolerance ±0.015	Type: Shaft diameter tolerance D 0 −0.005 / V・A tolerance ±0.01	Step	Shape
NAK80	37～43HRC	CPN—	CPK—	1A	Not processed
DH2F	38～42HRC	CPF—	CPG—	1B	C
SKD61 equivalent	48～52HRC	CPD—	CPP—	1C	G
SKH51 equivalent	58～60HRC	CPX—	CPH—	1D	T
SUS440C	56～60HRC	—	CPW—	1E	R
MAS1C	50～54HRC	CPA—	CPY—		B
STAVAX ESR®	50～54HRC	CPTH—	CPEH—		
PROVA400	50～54HRC	CPQH—	CPRH—		

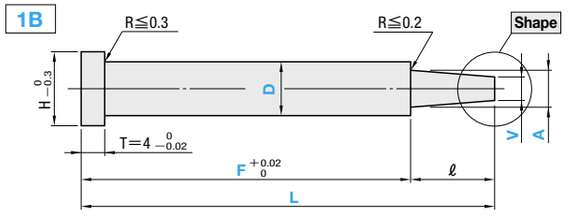
When Step 1E, A tolerance is±0.02.

Step type selected from 1A～1E below

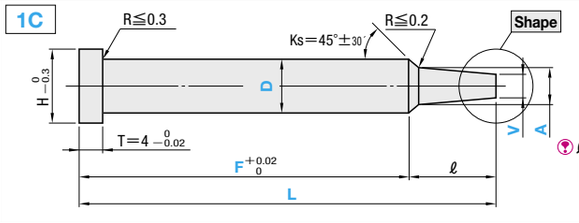
1A Shape: Select a tip shape from the drawings on the right.



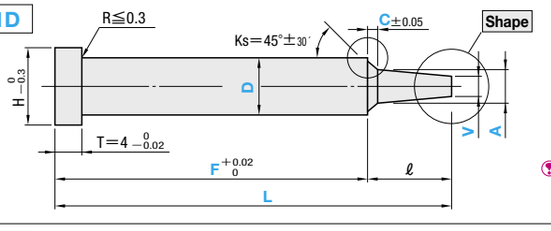
1B



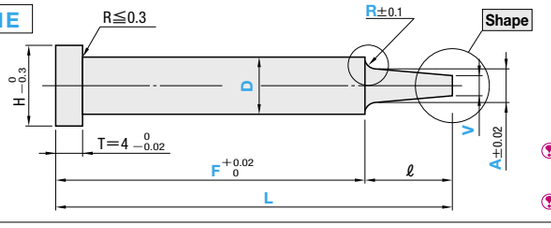
1C



1D

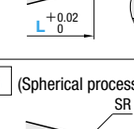


1E



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)

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

G (Cone)

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

T (Tapered)

0.1≦S< V/2tanK
0.1mm 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)

Refer to the Shape drawing for L tolerance

"PROVA400" and "MAS1C" will be discontinued when stocked materials are finished.

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

H	Part Number: Type (Shaft diameter tolerance D −0.01 −0.02)	Part Number: Type (Shaft diameter tolerance D 0 −0.005)	Step	Shape	D	0.01mm increments: L min.	0.01mm increments: L max.	0.01mm increments: F min.	0.01mm increments: F max.	A	Vmin.	0.1mm increments: C	0.1mm increments: R	ℓmax.
3	CPN— (1≦D≦16)	CPK— (1≦D≦16)	1A	Designation is unnecessary when tip processing is not required.	1	12.00	100.00	10.00	L−ℓmin. ℓmin. Refer to the Step drawing	D>A≧V Step 1A D>V No designation necessary for A	0.50	Only Step 1D designated C< D−A/2 and ※0.1≦C≦4.0 ※When CVC code is used 0.50≦CVC≦1.00	Only Step 1E designated R≦ D−A/2 and R≧0.2	15.00
4					1.5									20.00
5					2									25.00
6	CPF— (1≦D≦16)	CPG— (1≦D≦16)	1B		2.5						0.70			30.00
7					3									35.00
8	CPD— (1≦D≦20)	CPP— (1≦D≦20)	1C	C	3.5		120.00				1.00			40.00
9	CPX— (1≦D≦20)	CPH— (1≦D≦20)		G	4									45.00
10		CPW— (1≦D≦16)		T	4.5						1.50			
11	CPA— (1≦D≦4)	CPY— (1≦D≦4)	1D		5		Only CPH— 150.00							50.00
15				R	5.5									
18	CPTH— (3≦D≦16)	CPEH— (3≦D≦16)	1E		6		120.00				2.00			
21	CPQH— (1≦D≦16)	CPRH— (1≦D≦16)		B	6.5									
25					7									
					8									
					10									
					13									
					16									
					20	30.00		28.00			5.00			

Order

Part Number	L	F	A	V	C・R	Tip size (K・S・G・Q)
CPF—1BR6	46.00	F38.00	A5.00	V3.00		Q1.0
CPX—1DG6	50.00	F40.00	A5.10	V3.00	C0.3	K40
CPW—1ET4	42.00	F35.00	A3.20	V3.10	R0.4	K35 — S1.0

Days to Ship: Quotation

Price: Quotation

Alterations

Part Number	L	F	A	V(VC)	C(CVC)	R(RE)	Tip size (K・S・G・Q)	(KC・WKC···etc.)
CPX—1EC6	50.00	F40.00	A5.00	V3.10		RE1.5	G1.0	HC8.0
CPP—1A 5	58.00	F50.00		V4.00				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 RKC 0 −0.01	RKC	Two flats (right angled) cutting D/2≦RKC<H/2	
DKC 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° 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	

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
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	Quotation
	TRN	Relief under the head (Makes plate chamfering unnecessary)	
A15 8	NHC	Numbering on the head How to order P.442 Available when H≧2 Combination with SKC not available.	
RR	RR	Changes R (normally 0.2 or less) to R0.3～0.5. (Strength has been improved) Designation method RR Step Available for 1B/1C/1D D—A≧1.0 Step When 1D,C≧0.5	
AC°	AC	Changes the standard angle (Ks=45°) AC=1° increments Available for Step 1C/1D 30≦AC≦60 Combination with CVC・RR 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. 0.50≦CVC≦1.00 Available for Step 1D CVC<(D—A)/2 Combination with AC not available.	
VC	VC	Vmin. is enlarged. VC=0.01mm increments ℓ≦A×5, ℓ≦50 (D×5 for Step 1A) D>A≧VC Regarding No.=2～3, 4.5, 5 and 13～16, Vmin. is the machining limit, and VC cannot be used.	
RE	RE	R shape alteration (enlargement) RE=0.5mm increments 0.5≦RE≦2.0 F tolerance is +0.05 0 Available for Step 1E	
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	0.50	0.40
3.5～4	1.00	0.70
5.5	1.50	1.00
6～10	2.00	1.50
20	5.00	4.00

For details of a Gas Release Core Pin, which is a product similar to alteration GVC, P.467