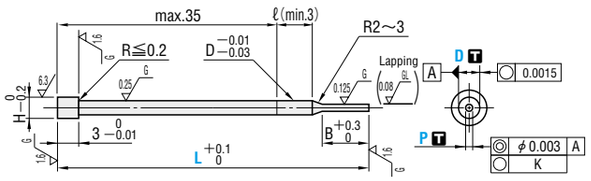
PRECISION CARBIDE SHOULDER QUILL PUNCHES

Type	M H	Catalog No.	Shape
RoHS  —Lapping— 	V30 (HIP) 88～89HRA	VPAS VPAL Lapping L—VPAS L—VPAL	
	Super fine grain (HIP) 90～92HRA	VXPAS VXPAL Lapping L—VXPAS L—VXPAL	

L	D T
20～	+0.002 0
35～	+0.003 0

D	P T
～1.5	+0.005 0
1.6～	+0.002 0

P＜1.000 ⋯› K≦0.0020
P≧1.000 ⋯› K≦0.0015

B	H	Catalog No. Type	D	L	0.001mm increments min. P max.	Base unit price 1～4 pieces VPAS VPAL	VXPAS VXPAL	L—VPAS L—VPAL	L—VXPAS L—VXPAL
(4)	2.0	S Lapping	1.0	20 25 30 35 40	0.150 ～ 0.990				
			1.1	20 25 30 35 40	0.150 ～ 1.090				
	2.6	VPAS L—VPAS (D≧1.6)	1.2	20 25 30 35 40	0.150 ～ 1.190				
			1.3	20 25 30 35 40	0.150 ～ 1.290				
			1.4	20 25 30 35 40	0.150 ～ 1.390				
		VXPAS L—VXPAS (D≧1.6)	1.5	20 25 30 35 40	0.150 ～ 1.490				
4			1.6	20 25 30 35 40 45 50 60	0.300 ～ 1.590				
6	3.0		2.0	20 25 30 35 40 45 50 60	0.500 ～ 1.990				
8	3.5		2.5	20 25 30 35 40 45 50 60	1.000 ～ 2.490				
(6)	2.0	L Lapping	1.0	20 25 30 35 40	0.250 ～ 0.990	Quotation			
			1.1	20 25 30 35 40	0.250 ～ 1.090				
	2.6	VPAL L—VPAL (D≧1.6)	1.2	20 25 30 35 40	0.250 ～ 1.190				
			1.3	20 25 30 35 40	0.250 ～ 1.290				
			1.4	20 25 30 35 40	0.250 ～ 1.390				
		VXPAL L—VXPAL (D≧1.6)	1.5	20 25 30 35 40	0.250 ～ 1.490				
6			1.6	30 35 40 45 50 60	0.500 ～ 1.590				
8	3.0		2.0	30 35 40 45 50 60	0.800 ～ 1.990				
13	3.5		2.5	30 35 40 45 50 60	1.000 ～ 2.490				

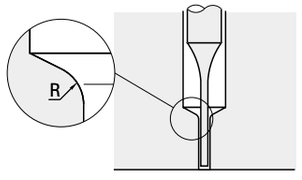
Tip length B varies depending on P dimension. P＞D—0.03 ⋯› ℓ=0 If P＞D—0.03, $D^{-0.01}_{-0.03}$ (press-in lead) is not included.
If P dimension is 0.150～0.249 for a tip S type, B dimension (4) is 3mm.
If P dimension is 0.250～0.399 for a tip L type, B dimension (6) is 5mm.

Order Catalog No. — L — P
VPAS 1.0 — 20 — P0.200

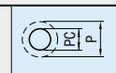
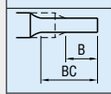
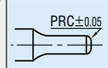
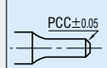
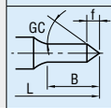
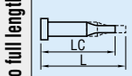
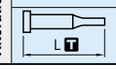
Days to Ship Quotation

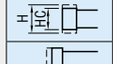
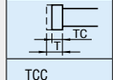
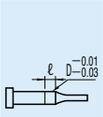
Price Quotation

If P is 0.3 or less, pay particular attention to possible tip breakage.
(1) Take special care when measuring a punch with a micrometer.
(2) Be sure to place the punch on a soft surface.
(3) Always keep the punch tip joined to the punch guide when the punch is in use.
(4) Be sure that the punch guide corners are rounded.



Alterations Catalog No. — L(LC) — P(PC) — (BC・HC・TC, etc.)
VPAS 1.0 — 20 — P0.200 — TC2—LKC

Alteration		Code	Spec.	1Code
Alterations to tip		PC	Tip dimension change D≧1.6 PC≧Pmin./2≧0.300 0.001mm increments ⊗ Cannot be used for D＜1.6. P: 0.300～0.499 Bmax. 4; 0.500～0.799 6; 0.800～0.999 8	
		BC	Tip length change 2≦BC＜B 0.1mm increments	
		PRC	Rounding of tip side edge 0.3≦PRC≦1 0.1 mm increments PRC≦(P—0.2)/2 ⊗ Cannot be combined with PCC・GC.	
		PCC	Chamfering to tip side edge 0.3≦PCC≦1 0.1mm increments PCC≦(P—0.2)/2 ⊗ Cannot be combined with PRC・GC.	Quotation
		GC	20°≦GC＜90° 1° increments Tip length B≧f+2 f=P/2×tan(90°—GC°) ⊗ Cannot be used for P≦1.00. ⊗ Cannot be combined with LKC・PRC・PCC. Punches with lapping are rounded at the edges.	
Alterations to full length		LC	Full length change Lmin.＜LC＜L 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.) For LC30.1～LC34.9 (if combined with LKC, LC30.01～LC34.99), then D T is $^{+0.003}_{0}$.	
		LKC	Full length tolerance change L $^{+0.1}_{0}$ ⇨ $^{+0.01}_{0}$	

Alteration		Code	Spec.	1Code
Alterations to head		KC	Addition of single key flat to head ⊗ Cannot be combined with KFC.	
		WKC	Addition of double key flats in parallel ⊗ Cannot be combined with KFC.	
		KFC	90° 0° 180° 270° Double key flats at 0° and a selected angle 1° increments ⊗ Cannot be combined with KC・WKC.	
		HC	Head diameter change D≦HC＜H 0.1mm increments	Quotation
		TC	Head thickness change 2≦TC＜T 0.1mm increments Full length L is shortened by (T—TC). If combined with LC, full length is equal to LC.	
		TCC	Chamfering of head This improves the strength of the punch head. P.1611 Ordering method TCC0.5 ⊗ Cannot be used for H＜2.6.	
Alterations to shank		NDC	No press-in lead ℓ≧3 ⇨ ℓ=0