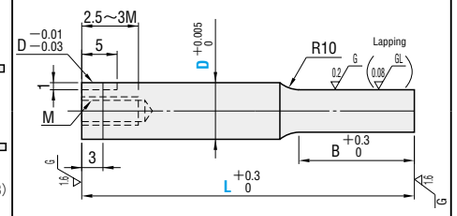
CARBIDE TAPPED PUNCHES
—NORMAL・LAPPING・TiCN COATING—

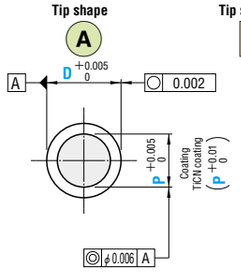
PRODUCTS DATA P.1604

Type	Shank diameter D T tolerance	M H	Catalog No. Type	Tip shape	B Tip length
RoHS 	$D\ ^{+0.005}_{0}$	V30(HIP) 88～89HRA	A—WMP	A D R E G	S L Tip length (B) L>S
		Super fine grain 90～92HRA	A—WXMP (D5～8)		
—Lapping— RoHS 		V30(HIP) 88～89HRA	AL—WMP		
		Super fine grain (HIP) 90～92HRA	AL—WXMP (D5～8)		
—TiCN coating— RoHS 		V30(HIP) 88～89HRA	AH—WMP		
		Super fine grain (HIP) 90～92HRA	AH—WXMP (D5～8)		

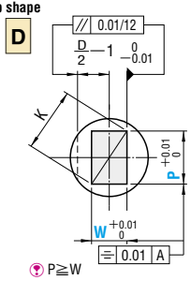


The tip end of a TiCN coating punch is ground before the coating is applied.

Tip shape A

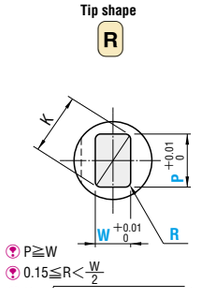


Tip shape D



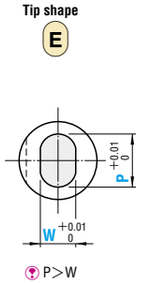
P≧W
K=$\sqrt{P^2+W^2}$

Tip shape R



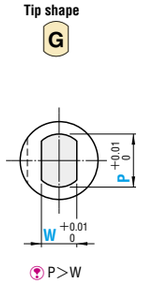
P≧W
0.15≦R<$\frac{W}{2}$
K=$\sqrt{(P-2R)^2+(W-2R)^2}+2R$

Tip shape E



P>W

Tip shape G



P>W

Catalog No. Type	Tip shape	B Tip length	D	L	0.001mm increments Ⓐ min. P max.	0.01mm increments DREG P・Kmax.	DREG P・Wmin.	R R	B	M
—Normal— A—WMP A—WXMP (D5～8) —Lapping— AL—WMP AL—WXMP (D5～8) —TiCN coating— AH—WMP AH—WXMP (D5～8)	A D R E G	S	5	40 50 60 70	2.000～4.999	—	—	0.15≦R<$\frac{W}{2}$ (R only)	8	3
			6	40 50 60 70	2.000～5.999	5.97	1.50			
			8	(40) 50 60 70 80	3.000～7.999	7.97	2.00		13	4
			10	(40) 50 60 70 80	3.000～9.999	9.97	2.50			5
			13	(40) 50 60 70 80	6.000～12.999	12.97	3.00		19	6
			16	(40) 50 60 70 80	10.000～15.999	15.97	4.00			
		L	5	50 60 70	2.000～4.999	—	—		13	3
			6	50 60 70	2.000～5.999	5.97	2.00			
			8	50 60 70 80	3.000～7.999	7.97	2.50		19	4
			10	50 60 70 80	3.000～9.999	9.97	2.50			5
			13	50 60 70 80	6.000～12.999	12.97	3.00			6
			16	60 70 80	10.000～15.999	15.97	4.00		25	

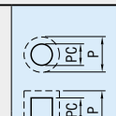
L(40)…B=8 If full length is (40), tip length is 8mm in all cases.
P dimension increments…With TiCN coating, increments are 0.01mm. (If used with PKC alteration, 0.001mm increments can be selected.)

■**Features**
- Because the edge threads are machined by direct tapping (tapping before sintering), these punches are interchangeable with steel-tapped punches.
- If there is concern of thread looseness, use KC・SKC alterations (punch key flats).

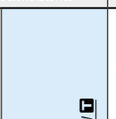
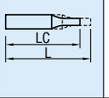
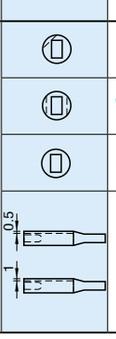
Order Catalog No. — L — P — W — R(Ⓡonly)
A—WMPAS 10 — 60 — P7.770

Days to Ship Quotation

Alterations Catalog No. — L(LC) — P(PC) — W(WC) — R — (BC・KC・WKC, etc.)
A—WMPAS 13 — 80 — P8.24 — KC—LKC

Alteration	Code	Ⓐ	DREG	1Code
Alterations to tip 	PC WC	Tip dimension change PC≧Pmin./2 0.001mm increments When coating is selected, increments are 0.01mm. PC≧Pmin./2≧1.00 P(PC) / Bmax.: 1.000～1.999 / 13; 2.000～2.999 / 19; 3.000～3.999 / 30; 4.000～5.999 / 40; 6.000～ / 45	Tip dimension change $\frac{PC}{WC}$≧Wmin.×$\frac{2}{3}$≧1.00 0.01mm increments (If combined with PKC, 0.001mm increments can be selected.) P(PC)・W(WC) / Bmax.: 1.000～1.999 / 8; 2.000～2.499 / 13; 2.500～3.999 / 19; 4.000～ / 25	Quotation
	BC	Tip length change 2≦BC≦Bmax. 0.1mm increments Full length L must be at least 25mm longer than tip length BC.	Tip length change 2≦BC≦Bmax. 0.1mm increments Full length L must be at least 30mm longer than tip length BC.	
	SC	Tip roughness change 0.2 G ⇨ 0.08 GL Can be used for coating types only. With TiCN coating, the base material is finished before the coating is applied.		
	PRC	Rounding of tip side edge 0.3≦PRC≦1 0.1mm 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.	—	
	GC	20°≦GC<90° 1° increments Tip length B≧f+2 f=P/2×tan(90°−GC°) If combined with SC, tip edges are rounded. Cannot be used for P≦1.000. Cannot be combined with LKC・LKZ・PRC・PCC.	—	

Price Quotation

Alteration	Code	Ⓐ	DREG	1Code
Alterations to tip 	PKC	Tip tolerance change Normal・lapping $P\ ^{+0.005}_{0}$ ⇨ $^{+0.003}_{0}$ Coating $P\ ^{+0.01}_{0}$ ⇨ $^{+0.005}_{0}$ Coating cannot be used for D16.	Tip tolerance change (P・W dimensions can be selected in 0.001mm increments.) $P・W\ ^{+0.01}_{0}$ ⇨ $^{+0.005}_{0}$ Cannot be used with coating.	Quotation
	PKV	Tip tolerance change Normal・lapping $P\ ^{+0.005}_{0}$ ⇨±0.002 Coating $P\ ^{+0.01}_{0}$ ⇨±0.005 P dimension increment remains the same.	Tip tolerance change $P・W\ ^{+0.01}_{0}$ ⇨±0.005 Cannot be used with coating. P dimension increment remains the same.	
Alterations to full length 	LC	Full length change 25+B(BC)≦LC<L 0.1mm increments If difference between full length and tip length is 25mm or less, tip length is adjusted to (Full length−25mm). (If combined with LKC・LKZ, 0.01mm increments can be selected.)	Full length change 30+B(BC)≦LC<L 0.1mm increments If difference between full length and tip length is 30mm or less, tip length is adjusted to (Full length−30mm).	
	LKC	Full length tolerance change $L\ ^{+0.3}_{0}$ ⇨ $^{+0.05}_{0}$		
	LKZ	Full length tolerance change $L\ ^{+0.3}_{0}$ ⇨ $^{+0.01}_{0}$		
Others 	KC	Addition of single key flat Cannot be used for D5.	90° 0° 180° 270° Key flat position change 1° increments	
	WKC	Addition of double key flats in parallel Cannot be used for D5.	Double key flats in parallel Can be combined with KC.	
	NKC	—	No key flat	
	SKC	Single key flat on shank Ⓐ DREG $\frac{D}{2}-0.5\ ^{0}_{-0.01}$・D6 P≦D−1.2 W≦D−1.2 (Machining width 0.5) ・D8～ P≦D−2.2 W≦D−2.2 (Machining width 1)	$\frac{D}{2}-1\ ^{0}_{-0.01}$ Cannot be combined with KC・WKC.	