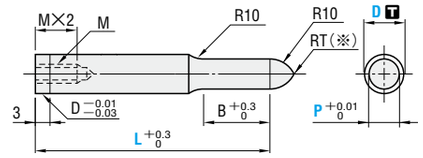
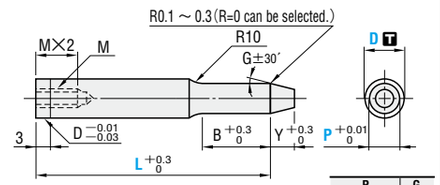
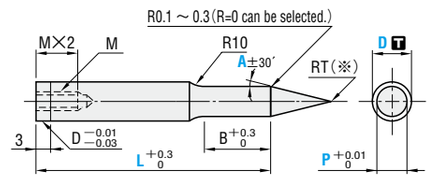
TAPPED PILOT PUNCHES
—TiCN COATING・HW COATING・DLC COATING—

PRODUCTS DATA
P.1604・1605・1609

Type	Shank diameter D T tolerance	M H	Catalog No. Type: DLC coating DLC foundation WPC® Surface 3,000HV ～	Catalog No. Type: TiCN coating HW coating Surface 3,000HV	B tip length	Shape
—Tip R type— RoHS  Shape of tip changes depending on P dimension. P.250 For shank diameter tolerance D T, select either m5 or $^{+0.005}_{0}$.	D_{m5}	Powdered high-speed steel 64～67HRC	N—PSTMA NW—PSTMA	H—PSTMA HW—PSTMA		
	$D^{+0.005}_{0}$	Powdered high-speed steel 64～67HRC	AN—PSTMA ANW—PSTMA	AH—PSTMA AHW—PSTMA		
						(?) RT(※)…If P＜8, tip is rounded for safety. To keep the sharp tip(no rounding), specify RT=0.(RT=0 cannot be selected with HW coating foundation WPC®.) (If P≧8, the tip end is flat. P.1592) (?) For the length of tip R, refer to the products data "Punch R length". P.1592
—Tapered tip type— RoHS  For shank diameter tolerance D T, select either m5 or $^{+0.005}_{0}$.	D_{m5}	Powdered high-speed steel 64～67HRC	N—PTPMA NW—PTPMA	H—PTPMA HW—PTPMA	S L X	 P: P≦1.999 G: 10°; P≧2.000 G: 15°
	$D^{+0.005}_{0}$	Powdered high-speed steel 64～67HRC	AN—PTPMA ANW—PTPMA	AH—PTPMA AHW—PTPMA		
—Sharp tip angle type— RoHS  For shank diameter tolerance D T, select either m5 or $^{+0.005}_{0}$.	D_{m5}	Powdered high-speed steel 64～67HRC	N—PATMA NW—PATMA	H—PATMA HW—PATMA	Tip length(B) X＞L＞S	
	$D^{+0.005}_{0}$	Powdered high-speed steel 64～67HRC	AN—PATMA ANW—PATMA	AH—PATMA AHW—PATMA		(?) RT(※)…Tip is rounded for safety. To keep the sharp tip(no rounding), specify RT=0.(RT=0 cannot be selected with HW coating foundation WPC®.)

Catalog No. Type	B tip length	D	L	0.01mm increments min. P max.	A	B	Y	M Standard type
(D_{m5}) ($D^{+0.005}_{0}$)	S	5	42 52 62 (72)	2.00 ～ 4.99	(10) (15) (20) 25 30	10	3	3
—DLC coating—		6	42 52 62 (72)	2.50 ～ 5.99				
M Powdered high-speed steel N—PSTMA AN—PSTMA		8	(42) 52 62 72 82 (92)	3.00 ～ 7.99		15	5	4
N—PTPMA AN—PTPMA		10	(42) 52 62 72 82 (92) (102)	3.00 ～ 9.99				5
N—PATMA AN—PATMA		13	(42) 52 62 72 82 (92) (102)	6.00 ～ 12.99			8	6
—DLC foundatin WPC®—		16	(42) 52 62 72 82 (92) (102)	10.00 ～ 15.99		21		
NW—PSTMA ANW—PSTMA		20	(42) 52 62 72 82 (92) (102)	13.00 ～ 19.99				
NW—PTPMA ANW—PTPMA		25	(42) 52 62 72 82 (92) (102)	18.00 ～ 24.99				
NW—PATMA ANW—PATMA	L	5	52 62 (72)	2.00 ～ 4.99	(10) (15) (20) 25 30	15	3	3
—TiCN coating—		6	52 62 (72)	2.50 ～ 5.99				
H—PSTMA AH—PSTMA		8	52 62 72 82 (92)	3.00 ～ 7.99		21	5	4
H—PTPMA AH—PTPMA		10	52 62 72 82 (92) (102)	3.00 ～ 9.99				5
H—PATMA AH—PATMA		13	52 62 72 82 (92) (102)	6.00 ～ 12.99			8	6
—HW coating—		16	62 72 82 (92) (102)	10.00 ～ 15.99		27		
HW—PSTMA AHW—PSTMA		20	62 72 82 (92) (102)	13.00 ～ 19.99				
HW—PTPMA AHW—PTPMA		25	62 72 82 (92) (102)	18.00 ～ 24.99				
HW—PATMA AHW—PATMA	X	5	52 62 (72)	2.00 ～ 4.99	(10) (15) (20) 25 30	27	3	3
		6	52 62 (72)	2.50 ～ 5.99				
		8	62 72 82 (92)	3.00 ～ 7.99		32	5	4
		10	62 72 82 (92) (102)	3.00 ～ 9.99				5
		13	62 72 82 (92) (102)	6.00 ～ 12.99			8	6
		16	72 82 (92) (102)	10.00 ～ 15.99		42		
		20	72 82 (92) (102)	13.00 ～ 19.99				
		25	72 82 (92) (102)	18.00 ～ 24.99				

(?) L(42)…B=10 If full length L is(42), tip length B is 10mm in all cases.
(?) L(72) (92) (102)…L72 of D5・6 and L92・102 of D8～25 can be used for tip R types and tapered tip types only.
⊗ A(10)…If P≧6.0, A10 cannot be selected. ⊗ A(15)…If P≧15.0, A15 cannot be selected. ⊗ A(20)…If P≧20.0, A20 cannot be selected.

Order

Catalog No.	L	P	A	(RT=0 R=0)
AN—PSTMAS 6	72	P5.02		RT0
N—PTPMAS 6	52	P4.97		
AN—PATMAL 10	52	P3.40	A15	R0

(?) A Can be used for sharp tip angle types only.
(?) RT=0 only can be selected.(Can be used for tip R types with P＜8 and sharp tip angle types.)
(?) R=0 only can be selected.(Can be used for tapered tip types and sharp tip angle types.)

Days to Ship Quotation

Alterations

Catalog No.	L(LC)	P(PC)	A	(RT=0 R=0)	(BC・YC…etc.)
N—PTPMAS 13	82	P8.24			KC

Alteration	Code	Tip R type	Tapered tip and sharp tip angle types	1Code
Alterations to tip	PC	Tip diameter change PC≧ Pmin./2 0.01mm increments (If combined with PKC, 0.001mm increments can be selected.) P(PC) / Bmax.: 1.000～1.999 / 20; 2.000～3.999 / 35; 4.000～5.999 / 45; 6.000～ / (60)	Tip diameter change PC≧ Pmin./2 0.01mm increments (If combined with PKC, 0.001mm increments can be selected.) (?) Ymax.=YCmax. P(PC) / Bmax.: 1.000～1.199 / 15; 1.200～1.999 / 20; 2.000～2.999 / 30; 3.000～3.999 / 35; 4.000～5.999 / 45; 6.000～ / (60)	Quotation
	BC	Tip length change 2≦BC≦Bmax. 0.1mm increments (?) Full length L must be at least+30mm longer than tip length BC.		
	RLC	Tip R is cut flat. 2≦RLC＜Y＜8 Y=√P(10—P/4) 0.1mm increments	—	
	YC	—	Tip taper length change ・P＜2.0 1≦YC≦P×2.83—0.3 ・P≧2.0 1≦YC≦P×1.86—0.3≦18 L(LC)+YC≦Lmax.+8 0.1mm increments ⊗ Cannot be used for sharp tip angle types.	

P Price Quotation

Alteration	Code	Tip R type	Tapered tip and sharp tip angle types	1Code
Alterations to tip	PKC	Tip diameter tolerance change P +0.01 0 ⇨ +0.005 0 (?) P dimension can be selected in 0.001mm increments. ⊗ TiCN coating HW coating cannot be used for D＞13.		Quotation
	SC	Lapping of tip (?) P dimension tolerance remains the same. ⊗ R=0 and RT=0 cannot be selected. (?) The base material is finished before coating is applied. ⊗ Cannot be used with HW coating・foundation WPC®.		
Alterations to full length	LC	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).		
Alterations to head	KC	Addition of single key flat ⊗ Cannot be used for D5.		
	WKC	Addition of double key flats in parallel ⊗ Cannot be used for D5.		
Shank	SKC	Single key flat on shank P≦D—2.2 ⊗ Cannot be combined with KC・WKC. ⊗ Cannot be used for D5・6.		

■Effects of DLC coating
Effective for preventing adhesion during aluminum or copper blanking thanks to its low affinity for nonferrous metal.See the product data for details. P.1609

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