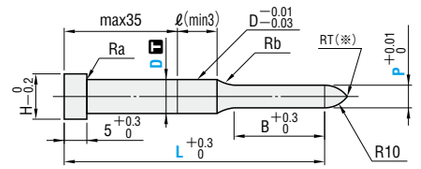
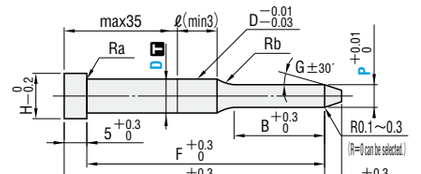
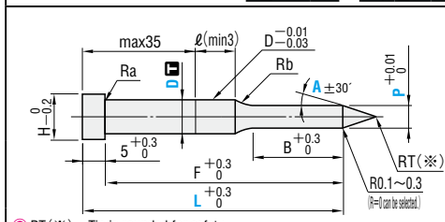
PILOT PUNCHES
—DLC COATING—

PRODUCTS DATA P.1609

Type	Shank diameter D T tolerance	M H	Catalog No. Type	Catalog No. 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}	Equivalent to SKH51 61～64HRC Surface3000HV～	N—HSTA NW—HSTA	S L X	
		Powdered high-speed steel 64～67HRC Surface3000HV～	N—PSTA NW—PSTA		
	$D^{+0.005}_{0}$	Equivalent to SKH51 61～64HRC Surface3000HV～	AN—HSTA ANW—HSTA		
		Powdered high-speed steel 64～67HRC Surface3000HV～	AN—PSTA ANW—PSTA		
—Tapered tip type— RoHS  For shank diameter tolerance D T, select either m5 or $^{+0.005}_{0}$	D_{m5}	Equivalent to SKH51 61～64HRC Surface3000HV～	N—HTPA NW—HTPA		
		Powdered high-speed steel 64～67HRC Surface3000HV～	N—PTPA NW—PTPA		
	$D^{+0.005}_{0}$	Equivalent to SKH51 61～64HRC Surface3000HV～	AN—HTPA ANW—HTPA		
		Powdered high-speed steel 64～67HRC Surface3000HV～	AN—PTPA ANW—PTPA		
—Sharp tip angle type— RoHS  For shank diameter tolerance D T, select either m5 or $^{+0.005}_{0}$	D_{m5}	Equivalent to SKH51 61～64HRC Surface3000HV～	N—HATA NW—HATA	Tip length (B) X>L>S	
		Powdered high-speed steel 64～67HRC Surface3000HV～	N—PATA NW—PATA		
	$D^{+0.005}_{0}$	Equivalent to SKH51 61～64HRC Surface3000HV～	AN—HATA ANW—HATA		
		Powdered high-speed steel 64～67HRC Surface3000HV～	AN—PATA ANW—PATA		

- 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 foundation WPC®.) (If P≧8, tip end is flat. P.1592)
- For the length of tip R, refer to the products data "Punch R length". P.1592

D	Ra	Rb
D≧3	≦0.5	10
D<3	≦0.2	2

P	G
P≦1.999	10°
P≧2.000	15°

- RT(※)…Tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0. (RT=0 cannot be selected with foundation WPC®.)

Catalog No. Type	B tip length	D	L	0.01mm increments min. P max.	A	B	H	Y
(D_{m5}) —Foundation WPC®—	S	1.6	42 52 62	1.00～ 1.59		6	2.6	1
M Equivalent to SKH51 N—HSTA NW—HSTA		2.0	42 52 62	1.00～ 1.99		8	3	
N—HTPA NW—HTPA		2.5	42 52 62	1.00～ 2.49			3.5	2
N—HATA NW—HATA		3	42 52 62 72 82 (92)	1.00～ 2.99	(10)	10	5	
M Powdered high-speed steel N—PSTA NW—PSTA		4	42 52 62 72 82 (92)	1.00～ 3.99	(15)		7	
N—PTPA NW—PTPA		5	42 52 62 72 82 (92)	2.00～ 4.99	(20)		8	3
N—PATA NW—PATA		6	42 52 62 72 82 (92)	2.50～ 5.99			9	
		8	(42) 52 62 72 82 (92)	3.00～ 7.99	25	15	11	5
		10	(42) 52 62 72 82 (92) (102)	3.00～ 9.99			13	
		13	(42) 52 62 72 82 (92) (102)	6.00～ 12.99	30		16	8
		16	(42) 52 62 72 82 (92) (102)	10.00～ 15.99		21	19	
		20	(42) 52 62 72 82 (92) (102)	13.00～ 19.99			23	
		25	(42) 52 62 72 82 (92) (102)	18.00～ 24.99			28	
($D^{+0.005}_{0}$) —Foundation WPC®—	L	1.6	42 52 62	1.00～ 1.59		8	2.6	1
M Equivalent to SKH51 AN—HSTA ANW—HSTA		2.0	42 52 62	1.00～ 1.99		10	3	
AN—HTPA ANW—HTPA		2.5	42 52 62	1.00～ 2.49		13	3.5	2
AN—HATA ANW—HATA		3	52 62 72 82 (92)	1.00～ 2.99	(10)	15	5	
M Powdered high-speed steel AN—PSTA ANW—PSTA		4	52 62 72 82 (92)	1.00～ 3.99	(15)		7	
AN—PTPA ANW—PTPA		5	52 62 72 82 (92)	2.00～ 4.99	(20)		8	3
AN—PATA ANW—PATA		6	52 62 72 82 (92)	2.50～ 5.99			9	
		8	52 62 72 82 (92)	3.00～ 7.99	25	21	11	5
		10	52 62 72 82 (92) (102)	3.00～ 9.99			13	
		13	52 62 72 82 (92) (102)	6.00～ 12.99	30		16	8
		16	62 72 82 (92) (102)	10.00～ 15.99		27	19	
		20	62 72 82 (92) (102)	13.00～ 19.99			23	
		25	62 72 82 (92) (102)	18.00～ 24.99			28	
	X	3	52 62 72 82 (92)	1.20～ 2.99		21	5	2
		4	52 62 72 82 (92)	1.20～ 3.99	(10)		7	
		5	62 72 82 (92)	2.00～ 4.99	(15)	27	8	3
		6	62 72 82 (92)	2.50～ 5.99			9	
		8	62 72 82 (92)	3.00～ 7.99	(20)	32	11	5
		10	62 72 82 (92) (102)	3.00～ 9.99			13	
		13	62 72 82 (92) (102)	6.00～ 12.99	25		16	8
		16	72 82 (92) (102)	10.00～ 15.99		42	19	
		20	72 82 (92) (102)	13.00～ 19.99	30		23	
		25	72 82 (92) (102)	18.00～ 24.99			28	

- L(42)…If full length L is (42), tip length B is 10mm in all cases.
- L(92) (102)…L92 and 102 can be used for tip R types and tapered tip types only.
- P>D−0.03…ℓ=0 If P>D−0.03, $D^{-0.01}_{-0.03}$ (press-in lead) is not included.
- 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)
N—PSTAS 6 —	72 —	P5.02 —		RT0

Days to Ship Quotation

- 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.)

■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

Alterations

Catalog No.	L(LC·LCT·LMT)	P(PC)	A	(RT=0 R=0)	(BC·HC·TC…etc.)
N—PSTAS 8 —	LMT76 —	PC1.50 —			HC10.0

Alterations	Code	Tip R type	Tapered tip and sharp tip angle types	1Code
Alterations to tip	PC	Tip diameter change PC≧ Pmin./2 ≧1.00 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～ 50	Tip diameter change PC≧ Pmin./2 ≧1.00 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～ 50	Quotation
	BC	Tip length change 2≦BC≦Bmax. 0.1mm increments Full length L must be at least 25mm 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≦18 ·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.	
	SC	Lapping of tip Ⓡ P dimension tolerance remains the same. The base material is finished before the coating is applied. ⊗R=0 and RT=0 cannot be selected. ⊗Cannot be used with foundation WPC®.		
	PKC	Tip diameter tolerance change $P^{+0.01}_{0}$ ⇨ $^{+0.005}_{0}$ Ⓡ (P dimension can be selected in 0.001mm increments.)		
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).		Quotation
	LCT	Changes to head thickness tolerance and full length are processed using a single code. The allowable range of change, increments, and notes (Ⓡ) are the same as for LC. TKC + LC: Head thickness tolerance $T^{+0.3}_{0}$ ⇨ $^{+0.02}_{0}$ + Full length change		
	LMT	Changes to head thickness tolerance and full length are processed using a single code. The allowable range of change, increments, and notes (Ⓡ) are the same as for LC. TKM + LC: Head thickness tolerance $T^{+0.3}_{0}$ ⇨ $^{0}_{-0.02}$ + Full length change		
Alterations to head	KC	Addition of single key flat to head		
	WKC	Addition of double key flats in parallel		
	RC	Head thickness is machined to a tolerance of −0.04～0 relative to the retainer surface. ⊗Cannot be used for $D^{+0.005}_{0}$ types.		
	HC	Head diameter change D≦HC<H 0.1mm increments		
	TC	Head thickness change 2≦TC<5 0.1mm increments (If combined with LCT, LMT, TKC, and TKM, 0.01mm increments can be selected.) Ⓡ Full length L is shortened by (5−TC). If combined with LC, full length is equal to LC.		
	TKC	Head thickness tolerance change $T^{+0.3}_{0}$ ⇨ $^{+0.02}_{0}$		
	TKM	Head thickness tolerance change $T^{+0.3}_{0}$ ⇨ $^{0}_{-0.02}$		
Shank	NDC	No press-in lead ℓ≧3 ⇨ ℓ=0		

Price Quotation