

PILOT PUNCHES

—TiCN COATING · HW COATING—



Type	Shank diameter D Tolerance	M H	Catalog No.		Shape
			Type	tip length B	
—Tip R type— RoHS	D _{m5}	Equivalent to SKH51 61~64HRC Surface 3000HV	H—HSTA HW—HSTA		
			H—PSTA HW—PSTA		
	D _{+0.005}	Equivalent to SKH51 61~64HRC Surface 3000HV	AH—HSTA AHW—HSTA		
		Powdered high-speed steel 64~67HRC Surface 3000HV	AH—PSTA AHW—PSTA		
—Tapered tip type— RoHS	D _{m5}	Equivalent to SKH51 61~64HRC Surface 3000HV	H—HTPA HW—HTPA		
			H—PTPA HW—PTPA		
	D _{+0.005}	Equivalent to SKH51 61~64HRC Surface 3000HV	AH—HTPA AHW—HTPA		
		Powdered high-speed steel 64~67HRC Surface 3000HV	AH—PTPA AHW—PTPA		
—Sharp tip angle type— RoHS	D _{m5}	Equivalent to SKH51 61~64HRC Surface 3000HV	H—HATA HW—HATA		
			H—PATA HW—PATA		
	D _{+0.005}	Equivalent to SKH51 61~64HRC Surface 3000HV	AH—HATA AHW—HATA		
		Powdered high-speed steel 64~67HRC Surface 3000HV	AH—PATA AHW—PATA		

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

(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 = 0.03 (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)
 H—HSTAS 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.)

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

Alteration	Code	Tip R type	Tapered tip and sharp tip angle types	1Code								
Alterations to tip	PC	Tip diameter change PC ≥ P _{min} ≥ 1.00 0.01mm increments (If combined with PKC, 0.001mm increments can be selected.)	Tip diameter change PC ≥ P _{min} ≥ 1.00 0.01mm increments (If combined with PKC, 0.001mm increments can be selected.) Y _{max} = Y _{Cmax} .	Quotation								
	BC	Tip length change 2 ≤ BC ≤ B _{max} . 0.1mm increments Full length L must be at least 25mm longer than tip length BC.	<table border="1"> <tr><th>P(PC)</th><th>Bmax.</th></tr> <tr><td>1.000~1.999</td><td>20</td></tr> <tr><td>2.000~3.999</td><td>35</td></tr> <tr><td>4.000~5.999</td><td>45</td></tr> <tr><td>6.000~</td><td>50</td></tr> </table>		P(PC)	Bmax.	1.000~1.999	20	2.000~3.999	35	4.000~5.999	45
P(PC)	Bmax.											
1.000~1.999	20											
2.000~3.999	35											
4.000~5.999	45											
6.000~	50											
Alterations to tip	RLC	Tip R is cut flat. 2 ≤ RLC < Y < 8 Y = √P(10 - P/4) 0.1mm increments		Quotation								
	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 ≤ L _{max} + 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 HW coating.										
	PKC	Tip diameter tolerance change P + 0.01 → +0.005 0 → 0	(P dimension can be selected in 0.001mm increments.) Cannot be used for D > 13.									

Price **Quotation**
 Alterations to full length: LC, LCT, LMT, TKC, TKM
 Alterations to head: KC, WKC, RC, HC, TC, TKC, TKM
 Shank: NDC

Alteration	Code	Tip R type	Tapered tip and sharp tip angle types	1Code
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 Head thickness tolerance change T + 0.3 → +0.02 0 → 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 Head thickness tolerance change T + 0.3 → 0 0 → -0.02	Full length change	
Alterations to head	KC	Addition of single key flat to head		Quotation
	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 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 → +0.02 0 → 0		
Shank	NDC	No press-in lead ℓ ≥ 3 → ℓ = 0		