

PILOT PUNCHES

—TiCN COATING · HW COATING—

PRODUCTS DATA
P.1604 · 1605

Type	Shank diameter D Tolerance	M H	Catalog No.		Shape															
			Type	B tip length																
— Tip R type — RoHS	D _{m5}	Equivalent to SKH51 61~64HRC Surface 3000HV	H—HSTA HW—HSTA	L	<p>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.) (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</p> <table border="1"> <tr><th>D</th><th>Ra</th><th>Rb</th></tr> <tr><td>D ≥ 3</td><td>≤ 0.5</td><td>10</td></tr> <tr><td>D < 3</td><td>≤ 0.2</td><td>2</td></tr> </table>	D	Ra	Rb	D ≥ 3	≤ 0.5	10	D < 3	≤ 0.2	2						
			D			Ra	Rb													
	D ≥ 3	≤ 0.5	10																	
	D < 3	≤ 0.2	2																	
Powdered high-speed steel 64~67HRC Surface 3000HV	H—PSTA HW—PSTA																			
D _{+0.005/0}	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	L	<p>RT (※) → Tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0. (RT=0 cannot be selected with HW coating.)</p> <table border="1"> <tr><th>P</th><th>G</th><th>D</th><th>Ra</th><th>Rb</th></tr> <tr><td>P ≤ 1.999</td><td>10°</td><td>D ≥ 3</td><td>≤ 0.5</td><td>10</td></tr> <tr><td>P ≥ 2.000</td><td>15°</td><td>D < 3</td><td>≤ 0.2</td><td>2</td></tr> </table>	P	G	D	Ra	Rb	P ≤ 1.999	10°	D ≥ 3	≤ 0.5	10	P ≥ 2.000	15°	D < 3	≤ 0.2	2
			P			G	D	Ra	Rb											
	P ≤ 1.999	10°	D ≥ 3			≤ 0.5	10													
	P ≥ 2.000	15°	D < 3			≤ 0.2	2													
Powdered high-speed steel 64~67HRC Surface 3000HV	H—PTPA HW—PTPA																			
D _{+0.005/0}	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	L	<p>RT (※) → Tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0. (RT=0 cannot be selected with HW coating.)</p> <table border="1"> <tr><th>D</th><th>Ra</th><th>Rb</th></tr> <tr><td>D ≥ 3</td><td>≤ 0.5</td><td>10</td></tr> <tr><td>D < 3</td><td>≤ 0.2</td><td>2</td></tr> </table>	D	Ra	Rb	D ≥ 3	≤ 0.5	10	D < 3	≤ 0.2	2						
			D			Ra	Rb													
	D ≥ 3	≤ 0.5	10																	
	D < 3	≤ 0.2	2																	
Powdered high-speed steel 64~67HRC Surface 3000HV	H—PATA HW—PATA																			
D _{+0.005/0}	Equivalent to SKH51 61~64HRC Surface 3000HV	AH—HATA AHW—HATA																		
	Powdered high-speed steel 64~67HRC Surface 3000HV	AH—PATA AHW—PATA																		

Type	Catalog No.	B tip length	D	L			A	B	H	Y				
				0.01mm increments										
				min. P max.										
(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	S	1.6	42	52	62	1.00~1.59	(10)	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		5	3.5	2				
		3	42	52	62	72		82	(92)	1.00~2.99	7	2		
		4	42	52	62	72		82	(92)	1.00~3.99	7	2		
		5	42	52	62	72		82	(92)	2.00~4.99	8	3		
		6	42	52	62	72		82	(92)	2.50~5.99	9	3		
		8	(42)	52	62	72		82	(92)	3.00~7.99	11	5		
		10	(42)	52	62	72		82	(92)	3.00~9.99	15	8		
		13	(42)	52	62	72		82	(92)	6.00~12.99	16	8		
		16	(42)	52	62	72		82	(92)	10.00~15.99	19	8		
		20	(42)	52	62	72		82	(92)	13.00~19.99	23	8		
		25	(42)	52	62	72		82	(92)	18.00~24.99	28	8		
		(D _{+0.005/0}) 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	L	1.6	42	52		62	1.00~1.59	(10)	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	5	2
				4	52	62		72	82		(92)	1.00~3.99	7	2
				5	52	62		72	82		(92)	2.00~4.99	8	3
				6	52	62		72	82		(92)	2.50~5.99	9	3
				8	52	62		72	82		(92)	3.00~7.99	11	5
				10	52	62		72	82		(92)	3.00~9.99	15	8
				13	52	62		72	82		(92)	6.00~12.99	16	8
				16	52	62		72	82		(92)	10.00~15.99	19	8
				20	62	72		82	(92)		13.00~19.99	27	23	8
25	62			72	82	(92)	18.00~24.99	28	28		8			
Powdered high-speed steel AH—PSTA AHW—PSTA AH—PTPA AHW—PTPA AH—PATA AHW—PATA	X			3	52	62	72	82	(92)		1.20~2.99	21	5	2
				4	52	62	72	82	(92)		1.20~3.99	7	2	
				5	62	72	82	(92)	2.00~4.99		27	8	3	
				6	62	72	82	(92)	2.50~5.99		9	3		
				8	62	72	82	(92)	3.00~7.99		11	5		
				10	62	72	82	(92)	3.00~9.99		32	13	5	
				13	62	72	82	(92)	6.00~12.99		25	16	8	
				16	72	82	(92)	10.00~15.99	19		8			
				20	72	82	(92)	13.00~19.99	23		8			
				25	72	82	(92)	18.00~24.99	28		8			

(L(42) → If full length L is (42), tip length B is 10mm in all cases. (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.
 (L(92) (102) → L92 and 102 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.
 P > D - 0.03 → ℓ = 0 If P > D - 0.03, D = 0.01 (press-in lead) is not included.



Order Catalog No. — L — P — A — (RT=0 R=0)
H—HSTA6 — 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—PSTA8 — 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} = YC _{max} .	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.	Tip length change 2 ≤ BC ≤ B _{max} . 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 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. 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.		
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).	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.	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.	
	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.	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.	
	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 types.		
Alterations to head	HC	Head diameter change D ≤ HC < H 0.1mm increments	Head diameter change D ≤ HC < H 0.1mm increments	Quotation
	TC	Head thickness change 2 ≤ TC < 5 0.1mm increments (If combined with LC, 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.	Head thickness change 2 ≤ TC < 5 0.1mm increments (If combined with LC, 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	Head thickness tolerance change T + 0.3 → +0.02 0 → 0	
	TKM	Head thickness tolerance change T + 0.3 → 0 0 → -0.02	Head thickness tolerance change T + 0.3 → 0 0 → -0.02	
Shank	NDC	No press-in lead ℓ ≥ 3 → ℓ = 0	No press-in lead ℓ ≥ 3 → ℓ = 0	



Price **Quotation**