
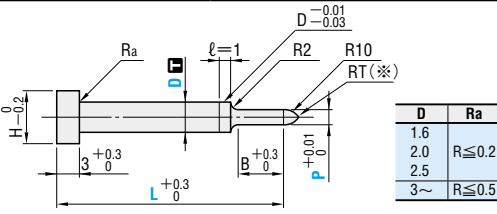

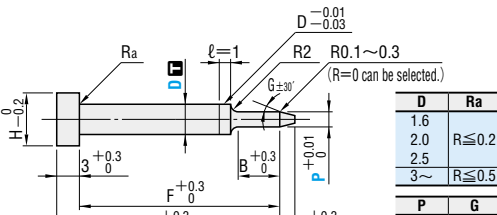

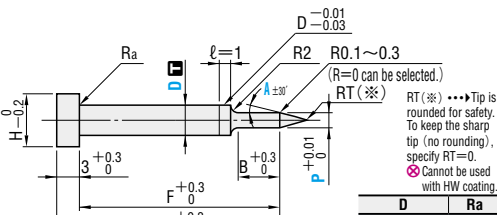


PILOT PUNCHES FOR FIXING TO STRIPPER PLATES

—TiCN COATING · HW COATING—

PRODUCTS DATA

P.1604-1605

Type	Shank diameter D tolerance	Material	Catalog No.		Shape										
			TiCN coating	HW coating											
—Tip R type—  Shape of tip changes depending on P dimension. P.250 For shank diameter tolerance D, select either m5 or +0.005.	Dm5	Equivalent to SKH51 61~64HRC Surface hardness 3000HV	H—HTFPR	HW—HTFPR	 <p>RT (※) → If P < 8, tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0. * Cannot be used with HW coating. (If P ≥ 8 for tip R type, 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></tr> <tr><td>1.6</td><td>R ≤ 0.2</td></tr> <tr><td>2.0</td><td>R ≤ 0.2</td></tr> <tr><td>2.5</td><td>R ≤ 0.5</td></tr> <tr><td>3~</td><td>R ≤ 0.5</td></tr> </table>	D	Ra	1.6	R ≤ 0.2	2.0	R ≤ 0.2	2.5	R ≤ 0.5	3~	R ≤ 0.5
			D	Ra											
	1.6	R ≤ 0.2													
	2.0	R ≤ 0.2													
2.5	R ≤ 0.5														
3~	R ≤ 0.5														
H—PTFPR	HW—PTFPR														
D+0.005/0	Equivalent to SKH51 61~64HRC Surface hardness 3000HV	AH—HTFPR	AHW—HTFPR												
		AH—PTFPR	AHW—PTFPR												
—Tapered tip type—  For shank diameter tolerance D, select either m5 or +0.005.	Dm5	Equivalent to SKH51 61~64HRC Surface hardness 3000HV	H—HTFPT	HW—HTFPT	 <p>RT (※) → If P < 8, tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0. * Cannot be used with HW coating. (If P ≥ 8 for tip R type, 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></tr> <tr><td>1.6</td><td>R ≤ 0.2</td></tr> <tr><td>2.0</td><td>R ≤ 0.2</td></tr> <tr><td>2.5</td><td>R ≤ 0.5</td></tr> <tr><td>3~</td><td>R ≤ 0.5</td></tr> </table>	D	Ra	1.6	R ≤ 0.2	2.0	R ≤ 0.2	2.5	R ≤ 0.5	3~	R ≤ 0.5
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	1.6	R ≤ 0.2													
	2.0	R ≤ 0.2													
2.5	R ≤ 0.5														
3~	R ≤ 0.5														
H—PTFPT	HW—PTFPT														
D+0.005/0	Equivalent to SKH51 61~64HRC Surface hardness 3000HV	AH—HTFPT	AHW—HTFPT												
		AH—PTFPT	AHW—PTFPT												
—Sharp tip angle type—  For shank diameter tolerance D, select either m5 or +0.005.	Dm5	Equivalent to SKH51 61~64HRC Surface hardness 3000HV	H—HTFPA	HW—HTFPA	 <p>RT (※) → If P < 8, tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0. * Cannot be used with HW coating. * 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></tr> <tr><td>1.6</td><td>R ≤ 0.2</td></tr> <tr><td>2.0</td><td>R ≤ 0.2</td></tr> <tr><td>2.5</td><td>R ≤ 0.5</td></tr> <tr><td>3~</td><td>R ≤ 0.5</td></tr> </table>	D	Ra	1.6	R ≤ 0.2	2.0	R ≤ 0.2	2.5	R ≤ 0.5	3~	R ≤ 0.5
			D	Ra											
	1.6	R ≤ 0.2													
	2.0	R ≤ 0.2													
2.5	R ≤ 0.5														
3~	R ≤ 0.5														
H—PTFPA	HW—PTFPA														
D+0.005/0	Equivalent to SKH51 61~64HRC Surface hardness 3000HV	AH—HTFPA	AHW—HTFPA												
		AH—PTFPA	AHW—PTFPA												

Catalog No.		0.1mm increments		0.01mm increments		A	B	Y	H
Type	D	L	min. P max.						
—TiCN coating— Equivalent to SKH51 (Dm5) (D +0.005/0)	1.6	10.0~40.0	1.00~	1.59	(10)	4	1	2.6	
	2.0		1.00~	1.99					
2.5	1.00~		2.49						
H—HTFPR AH—HTFPR HW—HTFPR AHW—HTFPR	3		1.00~	2.99					
	4		2.00~	3.99					
H—HTFPT AH—HTFPT HW—HTFPT AHW—HTFPT	5		2.00~	4.99					
	6		2.50~	5.99					
Powdered high-speed steel (Dm5) (D +0.005/0)	8		5.00~	7.99					
	10		7.00~	9.99					
H—PTFPR AH—PTFPR HW—PTFPR AHW—PTFPR	13		10.00~	12.99					
	16		13.00~	15.99					

P > D - 0.03 → ℓ = 0 if P > D - 0.03, D - 0.01 (press-in lead) is not included. * A (10) → If P ≥ 2.00, A10 cannot be selected.
 * If L < 12, tip length B is 2mm.
 * An extremely thin coating layer is also formed on the shank.

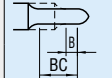
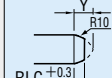
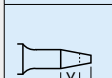
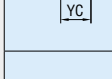

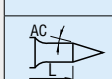
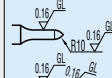
Order

Catalog No.	L	P	A	RT
AH—PTFPR 6	30.2	P4.50		RT0
H—PTFPA 4	32.0	P3.50	A15	
HW—PTFPA 4	32.0	P3.50	A15	

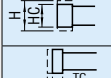

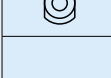
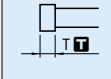
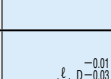
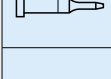
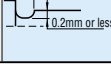

* A can be used for sharp tip angle types only.
 * RT=0 only can be selected. (Can be used for tip R types with P < 8 and sharp tip angle types.)
 * R=0 only can be selected. (Can be used for tapered tip types and sharp tip angle types.)

Days to Ship **Quotation**

Alterations  Catalog No. — L — P — A (AC) — (R) — (RT) — (BC-YC-GC, etc.)
 H—PTFPA 3 — 28.0 — P2.48 — AC18 — BC3.0

Alteration	Code	Tip R type	Tapered tip and sharp tip angle types	1Code						
	BC	Tip length change 2 ≤ BC ≤ Bmax. ≤ L/2 0.1mm increments * Full length L must be at least 8mm longer than tip length BC.	<table border="1"> <tr><th>P</th><th>Bmax.</th></tr> <tr><td>1.000~1.199</td><td>15</td></tr> <tr><td>1.200~</td><td>20</td></tr> </table>	P	Bmax.	1.000~1.199	15	1.200~	20	
P	Bmax.									
1.000~1.199	15									
1.200~	20									
	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 0.1mm increments * Cannot be used for sharp tip angle types.							
	GC		Tip angle change 1.000 ≤ P ≤ 1.999 → 5° ≤ GC < 10° 2.000 ≤ P ≤ 5.999 → 5° ≤ GC < 15° * Can be used for D2.5~ D6. YC ≤ P/2 tan GC - 0.3 ≤ 18 * Cannot be used for sharp tip angle types. * Cannot be used with HW coating.							
	AC		Tip angle change 15° < AC ≤ 45° 1° increments * Cannot be used for tapered tip 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 * P dimension can be selected in 0.001mm increments. * Cannot be used for D > 13.								

Alterations to tip **Quotation**

Alteration	Code	Tip R type	Tapered tip and sharp tip angle types	1Code
	HC	Head diameter change D ≤ HC < H 0.1mm increments		
	TC	Head thickness change 2 ≤ TC < 3 0.1mm increments (If combined with TKC/TKM, 0.01mm increments can be selected.) * The full length remains as specified.		
	KC	Addition of single key flat to head		
	WKC	Addition of double key flats in parallel		
	TKC	Head thickness tolerance change T + 0.3 → -0.02/0	Head thickness tolerance change T + 0.3 → +0.02/0 (F + 0.3 → +0.1)	Quotation
	TKM	Head thickness tolerance change T + 0.3 → -0.02/0	Head thickness tolerance change T + 0.3 → +0.02/0 (F + 0.3 → +0.1)	
	NDC	No press-in lead ℓ = 1 → ℓ = 0		
	TNK	Addition of undercut (Cut of 0.2 or less)		

Alterations to shank

PILOT PUNCHES