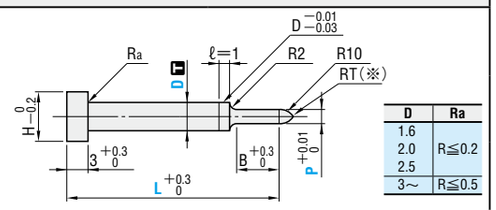
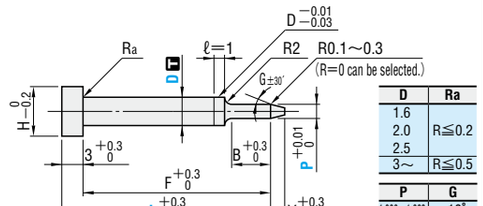
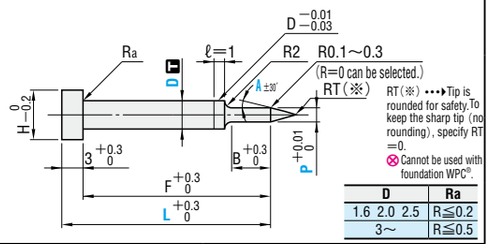
PILOT PUNCHES FOR FIXING TO STRIPPER PLATES
—DLC COATING—

PRODUCTS DATA P.1609

Type	Shank diameter D T tolerance	M H	Catalog No.	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 $^{+0.005}_{0}$.	Dm5	Equivalent to SKH51 61～64HRC Surface hardness 3000HV～	N—HTFPR NW—HTFPR	 RT(※)…If P<8, tip is rounded for safety.To keep the sharp tip (no rounding), specify RT=0. Cannot be used with foundation WPC®. (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
		Powdered high-speed steel 64～67HRC Surface hardness 3000HV～	N—PTFPR NW—PTFPR	
	D$^{+0.005}_{0}$	Equivalent to SKH51 61～64HRC Surface hardness 3000HV～	AN—HTFPR ANW—HTFPR	
		Powdered high-speed steel 64～67HRC Surface hardness 3000HV～	AN—PTFPR ANW—PTFPR	
—Tapered tip type— RoHS  For shank diameter tolerance D T, select either m5 or $^{+0.005}_{0}$.	Dm5	Equivalent to SKH51 61～64HRC Surface hardness 3000HV～	N—HTFPT NW—HTFPT	 RT(※)…If P<8, tip is rounded for safety.To keep the sharp tip (no rounding), specify RT=0. Cannot be used with foundation WPC®. (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
		Powdered high-speed steel 64～67HRC Surface hardness 3000HV～	N—PTFPT NW—PTFPT	
	D$^{+0.005}_{0}$	Equivalent to SKH51 61～64HRC Surface hardness 3000HV～	AN—HTFPT ANW—HTFPT	
		Powdered high-speed steel 64～67HRC Surface hardness 3000HV～	AN—PTFPT ANW—PTFPT	
—Sharp tip angle type— RoHS  For shank diameter tolerance D T, select either m5 or $^{+0.005}_{0}$.	Dm5	Equivalent to SKH51 61～64HRC Surface hardness 3000HV～	N—HTFPA NW—HTFPA	 RT(※) •••▸Tip is rounded for safety.To keep the sharp tip (no rounding), specify RT=0. Cannot be used with foundation WPC®.
		Powdered high-speed steel 64～67HRC Surface hardness 3000HV～	N—PTFPA NW—PTFPA	
	D$^{+0.005}_{0}$	Equivalent to SKH51 61～64HRC Surface hardness 3000HV～	AN—HTFPA ANW—HTFPA	
		Powdered high-speed steel 64～67HRC Surface hardness 3000HV～	AN—PTFPA ANW—PTFPA	

D	Ra
1.6 2.0 2.5	R≦0.2
3～	R≦0.5

P	G
1.000～1.999	10°
2.000～	15°

D	Ra
1.6 2.0 2.5	R≦0.2
3～	R≦0.5

Catalog No. Type	D	0.1mm increments L	0.01mm increments min. P max.	A	B	Y	H
M Equivalent to SKH51 (Dm5) (D $^{+0.005}_{0}$) — Foundation WPC® — M 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				3
	2.5		1.00～ 2.49			2	3.5
N—HTFPR AN—HTFPR NW—HTFPR ANW—HTFPR	3		1.00～ 2.99				5
N—HTFPT AN—HTFPT NW—HTFPT ANW—HTFPT	4		2.00～ 3.99	15			7
N—HTFPA AN—HTFPA NW—HTFPA ANW—HTFPA	5		2.00～ 4.99	20		3	8
M Powdered high-speed steel (Dm5) (D $^{+0.005}_{0}$) M Powdered high-speed steel (Dm5) (D $^{+0.005}_{0}$)	6		2.50～ 5.99	25			9
	8		5.00～ 7.99	30		5	11
N—PTFPR AN—PTFPR NW—PTFPR ANW—PTFPR	10		7.00～ 9.99				13
N—PTFPT AN—PTFPT NW—PTFPT ANW—PTFPT	13		10.00～ 12.99			8	16
N—PTFPA AN—PTFPA NW—PTFPA ANW—PTFPA	16		13.00～ 15.99				19

P>D−0.03•••▸ℓ=0 if P>D−0.03, D$^{-0.01}_{-0.03}$ (press-in lead) is not included.
If L<12, tip length B is 2mm.
An extremely thin coating layer is also formed on the shank.
A(10)•••▸If P≧2.00, A10 cannot be selected.

Order

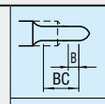
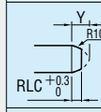
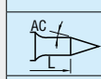
Catalog No.	L	P	A	RT=0 / R=0
AN—PTFPR 6	30.2	P4.50		RT0
N—PTFPA 4	32.0	P3.50	A15	
NW—PTFPA 4	32.0	P3.50	A15	

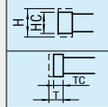
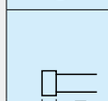
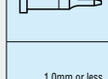
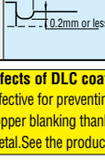
A Can be used for sharp tip angle types only.
RT=0 only can be selected. (Can be used for tip R types with P<8 and sharp tip angle types.)
R=0 only can be selected. (Can be used for tapered tip types and sharp tip angle types.)

Days to Ship Quotation

Alterations

Catalog No. — L — P — A(AC) — (R) — (RT) — (BC・YC・GC…etc.)
N—PTFPA 3 — 28.0 — P2.48 — AC18 — BC3.0

Alteration		Code	Tip R type	Tapered tip and sharp tip angle types	1Code
Alterations to tip		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.	P: 1.000～1.199 Bmax.: 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≦PX2.83−0.3 ・P≧2.0 1≦YC≦PX1.86−0.3≦18 0.1mm increments Cannot be used for sharp tip angle types.	Quotation
		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/2tanGC−0.3≦18 Cannot be used for sharp tip angle types. Cannot be used with foundation WPC®.	
		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 foundation WPC®.		
		PKC	Tip diameter tolerance change P $^{+0.01}_{0}$ ⇨ $^{+0.005}_{0}$ P dimension can be selected in 0.001mm increments.		

Alteration		Code	Tip R type	Tapered tip and sharp tip angle types	1Code
Alterations to head		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 $^{+0.3}_{0}$ ⇨ $^{+0.02}_{0}$	Head thickness tolerance change T $^{+0.3}_{0}$ ⇨ $^{+0.02}_{0}$ (F $^{+0.3}_{0}$ ⇨ $^{+0.1}_{0}$)	Quotation
		TKM	Head thickness tolerance change T $^{+0.3}_{0}$ ⇨ $^{0}_{-0.02}$	Head thickness tolerance change T $^{+0.3}_{0}$ ⇨ $^{0}_{-0.02}$ (F $^{+0.3}_{0}$ ⇨ $^{+0.1}_{0}$)	
Alterations to shank		NDC	No press-in lead ℓ=1 ⇨ℓ=0		
		TNK	Addition of undercut (Cut of 0.2 or less)		

■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

Price Quotation

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