

CARBIDE PILOT PUNCHES

CARBIDE PILOT PUNCHES



Product name Catalog No.	CARBIDE PILOT PUNCHES			CARBIDE PILOT PUNCHES WITH KEY GROOVES	
	—NORMAL—	—LAPPING—	—TiCN COATING—	—NORMAL—	—MINUS D TOLERANCE—
Page	461			465	467



CARBIDE STRAIGHT PILOT PUNCHES			CARBIDE STRAIGHT PILOT PUNCHES WITH KEY GROOVES	CARBIDE PILOT PUNCHES FOR FIXING TO STRIPPER PLATES		
—NORMAL—	—LAPPING—	—TiCN COATING—	—NORMAL—	—NORMAL—	—LAPPING—	—TiCN COATING—
469			470	471		

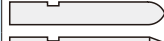
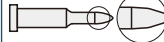
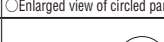
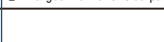


CARBIDE STRAIGHT PILOT PUNCHES FOR FIXING TO STRIPPER PLATES			CARBIDE STRAIGHT PILOT PUNCHES FOR FIXING TO STRIPPER PLATES — TIP R AND TAPER COMBINED TYPE, MINUS HEAD TOLERANCE —		
—NORMAL—	—LAPPING—	—TiCN COATING—	—NORMAL—	—LAPPING—	—TiCN COATING—
473			475		



CARBIDE STRAIGHT PILOT PUNCHES FOR FIXING TO STRIPPER PLATES — TIP R AND TAPER COMBINED TYPE, MINUS HEAD TOLERANCE —			MOVABLE CARBIDE PILOT PUNCHES		
—NORMAL—	—LAPPING—	—TiCN COATING—	—NORMAL—	—LAPPING—	—TiCN COATING—
476			477		

CARBIDE PILOT PUNCHES LIST

Shank type		M	Tip shape	Shank diameter tolerance	Standard		Lapping		TiCN coating				
Carbide standard punches		V30 (HIP)	R	Dm5	WSTA□	P.461	L—WSTA□	P.461	H—WSTA□	P.463			
	D+0.005 0			A—WSTA□	AL—WSTA□		AH—WSTA□						
			Taper	Dm5	WTPA□		L—WTPA□		H—WTPA□				
				D+0.005 0	A—WTPA□		AL—WTPA□		AH—WTPA□				
Carbide punches with key grooves	 	V30 (HIP)	R	Dm5	WKSTA□	P.465	Alteration SC	P.466 P.468					
				D+0.005 0	A—WKSTA□						P.467		
				D-0.001 -0.006	B—WKSTA□						P.465		
			Taper	Dm5	WKTPA□						P.465		
				D+0.005 0	A—WKTPA□							P.467	
				D-0.001 -0.006	B—WKTPA□							P.467	
Carbide straight punches	 	V30 (HIP)	R	—	WSTC	P.469	L—WSTC	P.469	H—WSTC	P.469			
			Taper	—	WTTC		L—WTTC		H—WTTC				
Carbide straight punches with key grooves	 	V30 (HIP)	R	—	WKSTC	P.470	Alteration SC	P.470					
			Taper	—	WK TTC								
Carbide punches for fixing to stripper plate	  	V30 (HIP)	R	Dm5	WSPTP	P.471	L—WSPTP	P.471	H—WSPTP	P.472			
				D+0.005 0	A—WSPTP		AL—WSPTP		AH—WSPTP				
			Taper	Dm5	WTPTP		L—WTPTP		H—WTPTP				
				D+0.005 0	A—WTPTP		AL—WTPTP		AH—WTPTP				
			Sharp angle	Dm5	WAPTP		L—WAPTP		H—WAPTP				
				D+0.005 0	A—WAPTP		AL—WAPTP		AH—WAPTP				
Carbide straight punches for fixing to stripper plate	  	V30 (HIP)	R	—	WSPT	P.473	L—WSPT	P.473	H—WSPT	P.474			
			Taper	—	WTPT		L—WTPT		H—WTPT				
			Sharp angle	—	WAPT		L—WAPT		H—WAPT				
Carbide punches for fixing to stripper plates, tip R and taper combined type, minus head tolerance	 ○Enlarged view of circled part	V30 (HIP)	R & Taper	Dm5	WSPTPF	P.475	L—WSPTPF	P.475	H—WSPTPF	P.475			
Carbide straight punches for fixing to stripper plates Tip R and taper combined type, minus head tolerance	 ○Enlarged view of circled part	V30 (HIP)	R & Taper	—	WSPTF	P.476	L—WSPTF	P.476	H—WSPTF	P.476			
Movable carbide punches	  	V30 (HIP)	R	Dg6	WSUPT	P.477	L—WSUPT	P.477	H—WSUPT	P.477			
				D-0.005 -0.010	A—WSUPT		AL—WSUPT		AH—WSUPT				
			Taper	Dg6	WTUPT		L—WTUPT		H—WTUPT				
				D-0.005 -0.010	A—WTUPT		AL—WTUPT		AH—WTUPT				
			Sharp angle	Dg6	WUPT		L—WUPT		H—WUPT				
				D-0.005 -0.010	A—WUPT		AL—WUPT		AH—WUPT				

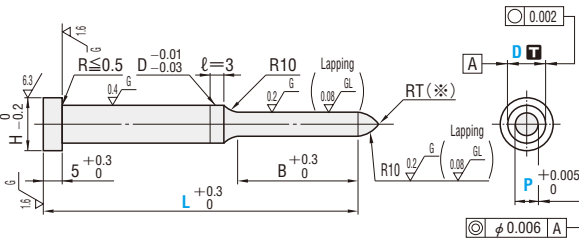
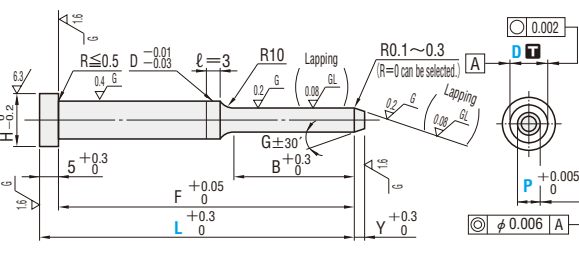
Shank diameter tolerance D_{m5}

D	Tolerance (Units: mm)
1.6	
2.0	+0.006
2.5	+0.002
3	
4	
5	+0.009
6	+0.004
8	+0.012
10	+0.006
13	+0.015
16	+0.007

Shank diameter tolerance D_{g6}

D	Tolerance (Unit:mm)
1.6	
2.0	−0.002
2.5	−0.008
3	
4	
5	−0.004
6	−0.012
8	−0.005
10	−0.014
13	−0.006
16	−0.017

CARBIDE PILOT PUNCHES

Type	Shank diameter D Tolerance	M H	Catalog No.	Shape						
— Tip R type — RoHS 	Dm5		WSTAS WSTAL Lapping L—WSTAS L—WSTAL	 Tip length (B) L > S ⚠ RT (※) → If P < 8, tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0. (However if P ≥ 8, tip end is flat. P.1082) ⚠ For the length of tip R, refer to the products data "Punch R length". P.1082 ⚠ RT=0 with lapping cannot be selected.						
— Tip R · lapping —  For shank diameter tolerance D T, select either m5 or $\begin{smallmatrix} +0.005 \\ 0 \end{smallmatrix}$.	D $\begin{smallmatrix} +0.005 \\ 0 \end{smallmatrix}$	V30 (HIP) 88 ~ 89HRA	A—WSTAS A—WSTAL Lapping AL—WSTAS AL—WSTAL							
— Tapered tip type — RoHS 	Dm5		WTPAS WTPAL Lapping L—WTPAS L—WTPAL	 Tip length (B) L > S ⚠ RT=0 with lapping cannot be selected.						
— Tapered tip · lapping —  For shank diameter tolerance D T, select either m5 or $\begin{smallmatrix} +0.005 \\ 0 \end{smallmatrix}$.	D $\begin{smallmatrix} +0.005 \\ 0 \end{smallmatrix}$	V30 (HIP) 88 ~ 89HRA	A—WTPAS A—WTPAL Lapping AL—WTPAS AL—WTPAL	<table border="1"> <thead> <tr> <th>P</th> <th>G</th> </tr> </thead> <tbody> <tr> <td>1.000 ~ 1.999</td> <td>10°</td> </tr> <tr> <td>2.000 ~</td> <td>15°</td> </tr> </tbody> </table>	P	G	1.000 ~ 1.999	10°	2.000 ~	15°
P	G									
1.000 ~ 1.999	10°									
2.000 ~	15°									

Catalog No.		L					0.001mm increments		B	H	Y
Type	D						min.	P max.			
 (Dm5) $\begin{smallmatrix} +0.005 \\ 0 \end{smallmatrix}$ WSTAS A—WSTAS WTPAS A—WTPAS —Lapping— L—WSTAS AL—WSTAS L—WTPAS AL—WTPAS	3	42	52	62			1.000	~ 2.990	10	5	2
	4	42	52	62	72		1.000	~ 3.990		7	
	5	42	52	62	72		2.000	~ 4.990		8	3
	6	42	52	62	72		2.000	~ 5.990		9	
	8	(42)	52	62	72	82	3.000	~ 7.990	15	11	5
	10	(42)	52	62	72	82	3.000	~ 9.990		13	
	13	(42)	52	62	72	82	6.000	~ 12.990	21	16	8
	16	(42)	52	62	72	82	10.000	~ 15.990		19	
 (Dm5) $\begin{smallmatrix} +0.005 \\ 0 \end{smallmatrix}$ WSTAL A—WSTAL WTPAL A—WTPAL —Lapping— L—WSTAL AL—WSTAL L—WTPAL AL—WTPAL	3		52	62			1.000	~ 2.990	15	5	2
	4		52	62	72		1.000	~ 3.990		7	
	5		52	62	72		2.000	~ 4.990		8	3
	6		52	62	72		2.000	~ 5.990		9	
	8		52	62	72	82	3.000	~ 7.990	21	11	5
	10		52	62	72	82	3.000	~ 9.990		13	
	13		52	62	72	82	6.000	~ 12.990		16	8
	16		62	72	82	82	10.000	~ 15.990		19	

⚠ L (42) → B=10 If full length is (42), tip length is 10mm in all cases.
 ⚠ 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 — (RT=0
 WSTAL 6 — 62 — P4.500 — RT0
 WTPAS 6 — 52 — P3.850

⚠ RT=0 only can be selected: Can be used for tip R types with P < 8 (except lapping).
 ⚠ R=0 only can be selected for tapered tip types (except lapping).



Days to Ship

Quotation



Alterations

Catalog No. — L (LC·LCT·LMT) — P(PC) — $\left(\begin{smallmatrix} RT=0 \\ R=0 \end{smallmatrix}\right)$ — (BC·HC·TC, etc.)

WSTAL 6

LC6.50

— P4.500

PKC

Alterations to tip

Alteration	Code			1Code																																		
 RLC $\begin{smallmatrix} +0.3 \\ 0 \end{smallmatrix}$	RLC	Tip R is cut flat. Allowable range of change $2 \leq RLC < \sqrt{P(10-P/4)}$ 0.1mm increments ☛ Can be used for $P < 8$.																																				
 PC	PC	Tip diameter change $PC \geq P_{min}/2$ 0.001mm increments <table border="1" data-bbox="338 529 433 637"><thead><tr><th>P</th><th>Bmax</th></tr></thead><tbody><tr><td>0.500~0.999</td><td>6</td></tr><tr><td>1.000~1.999</td><td>15</td></tr><tr><td>2.000~2.999</td><td>21</td></tr><tr><td>3.000~3.999</td><td>32</td></tr><tr><td>4.000~5.999</td><td>42</td></tr><tr><td>6.000~</td><td>47</td></tr></tbody></table>	P	Bmax	0.500~0.999	6	1.000~1.999	15	2.000~2.999	21	3.000~3.999	32	4.000~5.999	42	6.000~	47	Tip diameter change $PC \geq P_{min}/2 \geq 1.000$ 0.001mm increments <table border="1" data-bbox="471 529 577 666"><thead><tr><th>P</th><th>Bmax</th></tr></thead><tbody><tr><td>1.000~1.499</td><td>15</td></tr><tr><td>1.500~1.999</td><td>15</td></tr><tr><td>2.000~2.499</td><td>21</td></tr><tr><td>2.500~2.999</td><td>21</td></tr><tr><td>3.000~3.499</td><td>32</td></tr><tr><td>3.500~3.999</td><td>32</td></tr><tr><td>4.000~4.999</td><td>42</td></tr><tr><td>5.000~5.999</td><td>42</td></tr><tr><td>6.000~</td><td>47</td></tr></tbody></table>	P	Bmax	1.000~1.499	15	1.500~1.999	15	2.000~2.499	21	2.500~2.999	21	3.000~3.499	32	3.500~3.999	32	4.000~4.999	42	5.000~5.999	42	6.000~	47	
P	Bmax																																					
0.500~0.999	6																																					
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5.000~5.999	42																																					
6.000~	47																																					
 BC	BC	Tip length change $2 \leq BC \leq B_{max}$. ☛ Full length L must be at least 25mm longer than tip length BC.	0.1mm increments																																			
 YC $\begin{smallmatrix} +0.3 \\ 0 \end{smallmatrix}$	YC		Tip taper length change • If $P < 2.0$, $1 \leq YC \leq P \times 2.83 - 0.3$ • If $P \geq 2.0$, $1 \leq YC \leq P \times 1.86 - 0.3 \leq 12$ $L(LC) + YC \leq L_{max} + 8$ 0.1mm increments																																			
 PKC	PKC	Tip diameter tolerance change $P \begin{smallmatrix} +0.005 \\ 0 \end{smallmatrix} \Rightarrow \begin{smallmatrix} +0.003 \\ 0 \end{smallmatrix}$																																				
 PKV	PKV	Tip diameter tolerance change $P \begin{smallmatrix} +0.005 \\ 0 \end{smallmatrix} \Rightarrow \pm 0.002$																																				

Quotation

Quotation



Price

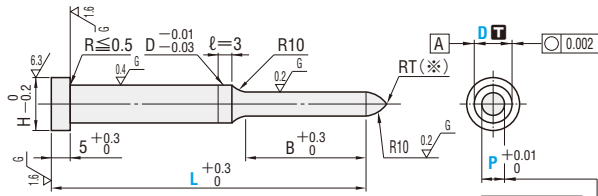
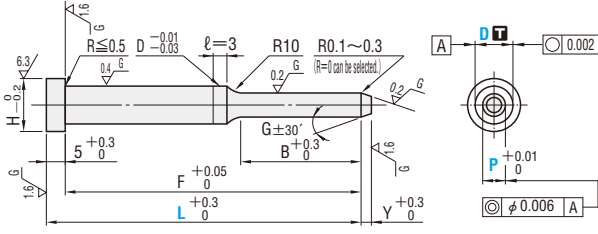
Quotation

Alteration	Code			1Code
Alterations to full length	 LC	LC Full length change $25 + B(BC) \leq LC < L$ 0.1mm increments ☛ If difference between full length and tip length is 25mm or less, tip length is adjusted to (Full length—25mm).		
	 LCT TKC	LCT Changes to head thickness tolerance and full length are processed using a single code. The allowable range of change, increment, ordering process, and notes (☛) are the same as for LC. TKC Head thickness tolerance change $T \begin{smallmatrix} +0.3 \\ 0 \end{smallmatrix} \Rightarrow +0.02$	 LC Full length change	
	 LMT TKM	LMT Changes to head thickness tolerance and full length are processed using a single code. The allowable range of change, increment, ordering process, and notes (☛) are the same as for LC. TKM Head thickness tolerance change $T \begin{smallmatrix} +0.3 \\ 0 \end{smallmatrix} \Rightarrow \begin{smallmatrix} 0 \\ -0.02 \end{smallmatrix}$	 LC Full length change	
Alterations to head	 KC	KC Addition of single key flat to head		
	 WKC	WKC Addition of double key flats in parallel		
	 HC	HC Head diameter change $D \leq HC < H$ 0.1mm increments		
	 TC	TC Head thickness change $2 \leq TC < 5$ 0.1mm increments (If combined with TKC·TKM·LCT·LMT, 0.01mm increments can be selected.) ☛ Full length L is shortened by $(5-TC)$. If combined with LC·LCT·LMT, full length remains as specified.		
	 TKC TKM	TKC Head thickness tolerance change $T \begin{smallmatrix} +0.3 \\ 0 \end{smallmatrix} \Rightarrow \begin{smallmatrix} +0.02 \\ 0 \end{smallmatrix}$ TKM Head thickness tolerance change $T \begin{smallmatrix} +0.3 \\ 0 \end{smallmatrix} \Rightarrow \begin{smallmatrix} 0 \\ -0.02 \end{smallmatrix}$		
Shank	 NDC	NDC No press-in lead $\ell = 3 \Rightarrow \ell = 0$		

Quotation

CARBIDE PILOT PUNCHES

—TiCN COATING—

Type	Shank diameter D Tolerance	M H	Catalog No.	Shape						
—Tip R type— RoHS 	Dm5 V30 (HIP) 88~89HRA Surface 3000HV		H—WSTAS H—WSTAL	 Tip length (B) $L > S$ ◆ RT (※) → If $P < 8$, tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0. (However if $P \geq 8$, tip end is flat. P.1082) ◆ For the length of tip R, refer to the products data “Punch R length”. P.1082						
For shank diameter tolerance D T , select either m5 or $\frac{+0.005}{0}$.	D $\frac{+0.005}{0}$		AH—WSTAS AH—WSTAL							
—Tapered tip type— RoHS 	Dm5 V30 (HIP) 88~89HRA Surface 3000HV		H—WTPAS H—WTPAL	 Tip length (B) $L > S$ <table><thead><tr><th>P</th><th>G</th></tr></thead><tbody><tr><td>1.00~1.99</td><td>10*</td></tr><tr><td>2.00~</td><td>15*</td></tr></tbody></table>	P	G	1.00~1.99	10*	2.00~	15*
P	G									
1.00~1.99	10*									
2.00~	15*									
For shank diameter tolerance D T , select either m5 or $\frac{+0.005}{0}$.	D $\frac{+0.005}{0}$		AH—WTPAS AH—WTPAL							

Catalog No.		L		0.01mm increments		B	H	Y
Type	D			min.	P max.			
 (Dm5) (D $\frac{+0.005}{0}$) H—WSTAS AH—WSTAS H—WTPAS AH—WTPAS	3	42	52	62	1.00 ~ 2.99	10	5	2
	4	42	52	62	72		7	
	5	42	52	62	72		8	3
	6	42	52	62	72		9	
	8	(42)	52	62	72	82	11	5
	10	(42)	52	62	72	82	13	
	13	(42)	52	62	72	82	16	8
	16	(42)	52	62	72	82	19	
 (Dm5) (D $\frac{+0.005}{0}$) H—WSTAL AH—WSTAL H—WTPAL AH—WTPAL	3		52	62	1.00 ~ 2.99	15	5	2
	4		52	62	72		7	
	5		52	62	72		8	3
	6		52	62	72		9	
	8		52	62	72	82	11	5
	10		52	62	72	82	13	
	13		52	62	72	82	16	8
	16		52	62	72	82	19	

⚡ L (42) → B=10 If full length is (42), tip length is 10mm in all cases.

⚡ $P > D - 0.03 \rightarrow \ell = 0$ If $P > D - 0.03$, D $\frac{-0.01}{-0.03}$ (press-in lead) is not included.

⚡ If used with PKC alteration, P dimension can be selected in 0.001mm increments.



Order

Catalog No. — L — P — (RT=0
R=0)

H—WSTAS 5 — 42 — P2.50

H—WSTAL 8 — 62 — P4.50 — RT0

AH—WTPAS 10 — 72 — P4.20 — R0

⚡ RT=0 only can be selected for tip R types with $P < 8$ (except lapping).

⚡ R=0 only can be selected for tapered tip types (except lapping).



Days to Ship

Quotation



Alterations



Catalog No. — (L·LC·LCT·LMT) — (P·PC) — (RT=8) — (BC·HC·TC, etc.)
H—WSTAL 6 — LC65.0 — P4.50 — RT0 — TKC

Alteration	Code			1Code
Alterations to tip	RLC		Tip R is cut flat. Allowable range of change $2 \leq RLC < \sqrt{P(10-P/4)}$ 0.1mm increments ⚡ Can be used for P<8.	
	PC		Tip diameter change $PC \geq P_{min}/2 \geq 1.00$ 0.01mm increments (If combined with PKG, 0.001mm increments can be selected.) ⚡ Cannot be used for D3-4.	Tip diameter change $PC \geq P_{min}/2 \geq 1.00$ 0.01mm increments (If combined with PKG, 0.001mm increments can be selected.) ⚡ Cannot be used for D3-4.
	BC		Tip length change $2 \leq BC \leq B_{max} \leq L/2$ ⚡ Full length L must be at least 25mm longer than tip length BC.	0.1mm increments ⚡ Cannot be used for D3-4.
	YC		Tip taper length change • If $P < 2.0$, $1 \leq YC \leq P \times 2.83 - 0.3$ • If $P \geq 2.0$, $1 \leq YC \leq P \times 1.86 - 0.3 \leq 12$ L(LC) + YC ≤ Lmax. +8 0.1mm increments	
	PKC		Tip diameter tolerance change $P + 0.01 \Rightarrow +0.005$ ⚡ P dimension can be selected in 0.001mm increments. ⚡ Cannot be used for D>13.	
	PKV		Tip diameter tolerance change $P + 0.01 \Rightarrow \pm 0.005$ ⚡ P dimension increment remains the same.	
	SC		Tip roughness change $0.2 \sqrt{6} \Rightarrow 0.06 \sqrt{6}$ The base material is finished before the coating is applied. ⚡ RT=0 and R=0 cannot be selected.	

Quotation

Alteration	Code			1Code
Alterations to full length	LC		Full length change $25 + B(BC) \leq LC < L$ 0.1mm increments ⚡ If difference between full length and tip length is 25mm or less, tip length is adjusted to (Full length—25mm).	
	LCT		Changes to head thickness tolerance and full length are processed using a single code. The allowable range of change, increment, ordering process, 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, increment, ordering process, and notes (⚡) are the same as for LC.	
Alterations to head	KC		Addition of single key flat to head	
	WKC		Addition of double key flats in parallel	
	HC		Head diameter change $D \leq HC < H$ 0.1mm increments	
	TC		Head thickness change $2 \leq TC < 5$ 0.1mm increments (If combined with TKC·TKM·LCT·LMT, 0.01mm increments can be selected.) ⚡ Full length L is shortened by (5—TC). If combined with LC·LCT·LMT, full length remains as specified.	
	TKC		Head thickness tolerance change $T + 0.3 \Rightarrow +0.02$ 0 0	
	TKM		Head thickness tolerance change $T + 0.3 \Rightarrow 0$ 0 -0.02	
Shank	NDC		No press-in lead $\ell = 3 \Rightarrow \ell = 0$	

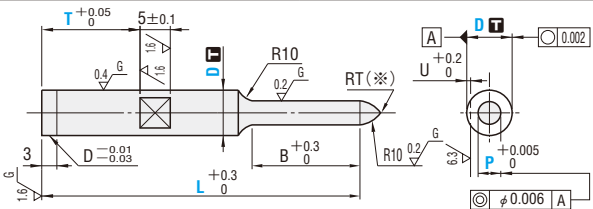
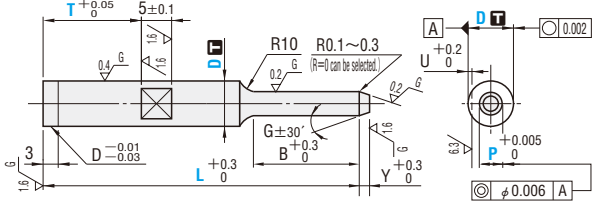
Quotation



Price

Quotation

CARBIDE PILOT PUNCHES WITH KEY GROOVES

Type	Shank diameter D  tolerance	 	Catalog No.	Shape						
— Tip R type —  For shank diameter tolerance D  , select either m5 or $\frac{+0.005}{0}$.	RoHS Dm5	V30 (HIP) 88~89HRA	WKSTAS WKSTAL	 Tip length (B) L > S ⚠ RT (※) → If P < 8, tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0. (However if P ≥ 8, tip end is flat.  P.1082) ⚠ For the length of tip R, refer to the products data “Punch R length”.  P.1082						
	D $\frac{+0.005}{0}$		A—WKSTAS A—WKSTAL							
— Tapered tip type —  For shank diameter tolerance D  , select either m5 or $\frac{+0.005}{0}$.	RoHS Dm5	V30 (HIP) 88~89HRA	WKTPAS WKTPAL	 Tip length (B) L > S <table border="1"><thead><tr><th>P</th><th>G</th></tr></thead><tbody><tr><td>1.000~1.999</td><td>10°</td></tr><tr><td>2.000~</td><td>15°</td></tr></tbody></table>	P	G	1.000~1.999	10°	2.000~	15°
	P		G							
1.000~1.999	10°									
2.000~	15°									
D $\frac{+0.005}{0}$	A—WKTPAS A—WKTPAL									

Catalog No.		L						0.001mm increments	0.1mm increments	B	Y	U
Type	D							min. P max.	T			
 (Dm5) (D $\frac{+0.005}{0}$) WKSTAS A—WKSTAS WKTPAS A—WKTPAS	3	42	52	62				1.000 ~ 2.990	T > 5.0	10	2	0.5
	4	42	52	62	72			1.000 ~ 3.990			3	1.0
	5	42	52	62	72			2.000 ~ 4.990				
	6	42	52	62	72			2.000 ~ 5.990				
	8	(42)	52	62	72	82		3.000 ~ 7.990		15	5	1.5
	10	(42)	52	62	72	82		3.000 ~ 9.990				
	13	(42)	52	62	72	82		6.000 ~ 12.990			8	
	16	(42)	52	62	72	82		10.000 ~ 15.990			21	
 (Dm5) (D $\frac{+0.005}{0}$) WKSTAL A—WKSTAL WKTPAL A—WKTPAL	3		52	62				1.000 ~ 2.990	T > 5.0	15	2	0.5
	4		52	62	72			1.000 ~ 3.990			3	1.0
	5		52	62	72			2.000 ~ 4.990				
	6		52	62	72			2.000 ~ 5.990				
	8		52	62	72	82		3.000 ~ 7.990		21	5	1.5
	10		52	62	72	82		3.000 ~ 9.990				
	13		52	62	72	82		6.000 ~ 12.990			8	
	16		62	72	82			10.000 ~ 15.990			27	

⚠ L (42) → B = 10 If full length L is (42), tip length B is 10mm in all cases.



Order

Catalog No.	L	P	T	(RT=0 R=0)
WKSTAL 6	62	P4.500	T10	
WKTPAS 5	52	P2.015	T8	R0

⚠ If no key groove is required, select T = L.

⚠ RT = 0 only can be selected: Can be used for tip R types with P < 8 (except lapping).

⚠ R = 0 only can be selected: Can be used for tapered tip types (except lapping).



Days to Ship

Quotation



Alterations



Catalog No. — **L (LC·LCT)** — **P(PC)** — **T** — **(RT=0)** — (BC·YC·WKD...etc.)
WKSTAL 6 — **LC65.0** — **P4.500** — **T8** — **PKC**

Alteration	Code			1Code
Alterations to tip	RLC			
	PC	Tip diameter change PC ≥ Pmin./2 0.001mm increments	Tip diameter change PC ≥ Pmin./2 ≥ 1.000 0.001mm increments	
	BC	Tip length change 2 ≤ BC ≤ Bmax. Full length L must be at least 25mm longer than tip length BC.	Tip taper length change • If P < 2.0, 1 ≤ YC ≤ P × 2.83 - 0.3 • If P ≥ 2.0, 1 ≤ YC ≤ P × 1.86 - 0.3 ≤ 12 L(LC) + YC ≤ Lmax. + 8 0.1mm increments	
	YC			
	PKC	Tip diameter tolerance change P + 0.005 / 0 → + 0.003 / 0		
	PKV	Tip diameter tolerance change P + 0.005 / 0 → ± 0.002		
	SC	Tip roughness change 0.2 / √G → 0.08 / √GL		

Quotation

Alteration	Code			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).		
	LCT	Changes to head thickness tolerance and full length are processed using a single code. The allowable range of change, increment, ordering process, and notes (♥) are the same as for LC.		
Alterations to key groove	TKC	T dimension tolerance change T + 0.05 / 0 → 0 / -0.02	Full length change	
	WKD	Addition of double key grooves in parallel		
	UK	Key groove depth change Cannot be used for D3.		
	TKC	T dimension tolerance change T + 0.05 / 0 → 0 / -0.02		

Quotation



Price

Quotation

Fixing keys for punches with key grooves
 P.189

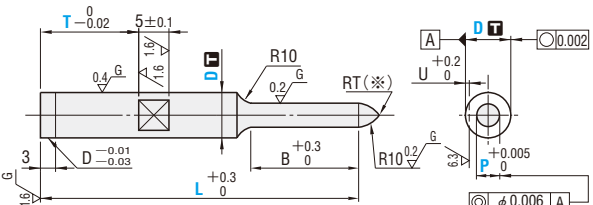
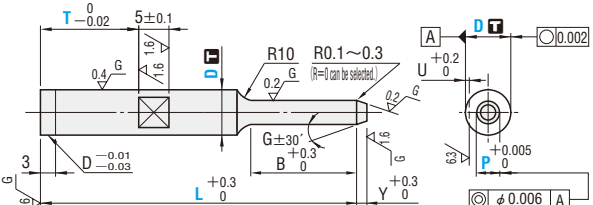
PSKB
PSKBHPSKS
PSKJPSK
PSKP
PSKH

PSKW



CARBIDE PILOT PUNCHES WITH KEY GROOVES

—MINUS D TOLERANCE—

Type	Shank diameter D Tolerance	M H	Catalog No.	Shape						
—Tip R type— RoHS 	D _{-0.001 -0.006}	V30 (HIP) 88~89HRA	B—WKSTAS B—WKSTAL	 Tip length (B) L>S ⦿ RT (※) → If P<8, tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0. (However if P≥8, tip end is flat. P.1082) ⦿ For the length of tip R, refer to the products data “Punch R length”. P.1082						
—Tapered tip type— RoHS 	D _{-0.001 -0.006}	V30 (HIP) 88~89HRA	B—WKTPAS B—WKTPAL	 Tip length (B) L>S <table><tr><th>P</th><th>G</th></tr><tr><td>1.000~1.999</td><td>10°</td></tr><tr><td>2.000~</td><td>15°</td></tr></table>	P	G	1.000~1.999	10°	2.000~	15°
P	G									
1.000~1.999	10°									
2.000~	15°									

Catalog No.		L						0.001mm increments		0.1mm increments	B	Y	U
Type	D							min.		P			
 B—WKSTAS B—WKTPAS	3	42	52	62				1.000 ~ 2.990	T>5.0	10	2	0.5	
	4	42	52	62	72	1.000 ~ 3.990					3		1.0
	5	42	52	62	72	2.000 ~ 4.990						15	
	6	42	52	62	72	2.000 ~ 5.990					8		
	8	(42)	52	62	72	82	3.000 ~ 7.990			21			
	10	(42)	52	62	72	82	3.000 ~ 9.990						
	13	(42)	52	62	72	82	6.000 ~ 12.990						
	16	(42)	52	62	72	82	10.000 ~ 15.990						
 B—WKSTAL B—WKTPAL	3		52	62				1.000 ~ 2.990	T>5.0	15	2	0.5	
	4		52	62	72	1.000 ~ 3.990					3		1.0
	5		52	62	72	2.000 ~ 4.990						21	
	6		52	62	72	2.000 ~ 5.990					8		
	8		52	62	72	82	3.000 ~ 7.990			27			
	10		52	62	72	82	3.000 ~ 9.990						
	13		52	62	72	82	6.000 ~ 12.990						
	16			62	72	82	10.000 ~ 15.990						

⊙ L (42) → B=10 If full length L is (42), tip length B is 10mm in all cases.



Order

Catalog No. — L — P — T — $\left(\begin{smallmatrix} RT=0 \\ R=0 \end{smallmatrix} \right)$
 B—WKSTAL 6 — 62 — P4.500 — T10 — RT0
 B—WKTPAS 6 — 42 — P2.105 — T8

⊙ If no key groove is required, select $T=L$.

⊙ $RT=0$ only can be selected: Can be used for tip R types with $P < 8$ (except lapping).

⊙ $R=0$ only can be selected: Can be used for tapered tip types (except lapping).



Days to Ship

Quotation



Alterations



Catalog No. — **L (LC·LCT)** — **P (PC)** — **T** — **(RT=8)** — (BC·YC·WKD...etc.)
B—WKSTAL 6 — LC65.5 — P4.500 — T10 — PKC

Alteration	Code			1Code
	RLC	Tip R is cut flat. Allowable range of change $2 \leq RLC < \sqrt{P(10-P/4)}$ 0.1mm increments ⚡ Can be used for $P < 8$.		
	PC	Tip diameter change $PC \geq P_{min}/2$ 0.001mm increments	Tip diameter change $PC \geq P_{min}/2 \geq 1.000$ 0.001mm increments	
	BC	Tip length change $2 \leq BC \leq B_{max}$ ⚡ Full length L must be at least 25mm longer than tip length BC.	Tip taper length change • If $P < 2.0$, $1 \leq YC \leq P \times 2.83 - 0.3$ • If $P \geq 2.0$, $1 \leq YC \leq P \times 1.86 - 0.3 \leq 12$ $L(LC) + YC \leq L_{max} + 8$ 0.1mm increments	
	YC			
	PKC	Tip diameter tolerance change $P + 0.005 \Rightarrow +0.003$		
	PKV	Tip diameter tolerance change $P + 0.005 \Rightarrow \pm 0.002$		
	SC	Tip roughness change $0.2 \sqrt{6} \Rightarrow 0.08 \sqrt{GL}$ ⚡ RT=0 and R=0 cannot be selected.		



Price

Quotation

Alteration	Code			1Code
	LC	Full length change $25 + B(BC) \leq LC < L$ 0.1mm increments ⚡ If difference between full length and tip length is 25mm or less, tip length is adjusted to (Full length—25mm).		
	LCT	Changes to head thickness tolerance and full length are processed using a single code. The allowable range of change, increment, ordering process, and notes (⚡) are the same as for LC.	RTC T dimension tolerance change $0 \Rightarrow T + 0.05$ $-0.02 \Rightarrow T + 0.05$	LC Full length change
	WKD	⊙ Addition of double key grooves in parallel		
	UK	Key groove depth change ⚡ Cannot be used for D3.		
	RTC	T dimension tolerance change $T - 0.02 \Rightarrow +0.05$ $0 \Rightarrow +0.05$		

Quotation

■ Fixing keys for punches with key grooves
 ■ P.189

**PSKB
PSKBH****PSKS
PSKJ****PSK
PSKP
PSKH****PSKW**

CARBIDE STRAIGHT PILOT PUNCHES

PRODUCTS DATA

P.1094

Type	M H	Catalog No.	Shape
—Tip R type— RoHS	V30 (HIP) 88~89HRA	WSTC Lapping L—WSTC	RT (※) → If $P < 8$, tip is rounded for safety. To keep the sharp tip (no rounding), specify $RT=0$. (However if $P \geq 8$, tip end is flat. P.1082) For the length of tip R, refer to the products data "Punch R length". P.1082 RT=0 with lapping cannot be selected.
—Tip R·lapping—			
—TiCN coating—	V30 (HIP) 88~89HRA Surface 3000HV	TiCN coating H—WSTC	
—Tapered tip type— RoHS	V30 (HIP) 88~89HRA	WTTC Lapping L—WTTC	RT=0 with lapping cannot be selected.
—Tapered tip·lapping—			
—TiCN coating—	V30 (HIP) 88~89HRA Surface 3000HV	TiCN coating H—WTTC	

Catalog No.		L					0.001mm increments (With coating, 0.01mm increments)		Y	H
Type	No.						min.	P max.		
(Tip R type) WSTC	3	42	52	62			2.000	~ 3.000	2	5
(Tapered tip type) WTTC	4	42	52	62	72		3.000	~ 4.000		7
—Lapping—	5	42	52	62	72		4.000	~ 5.000	3	8
L—WSTC L—WTTC	6	42	52	62	72		5.000	~ 6.000		9
—TiCN coating—	8	42	52	62	72		6.000	~ 8.000	5	11
H—WSTC H—WTTC	10	42	52	62	72		8.000	~ 10.000		13

⚠ P dimension increments → For TiCN coating, increments are 0.01mm. (If used with PKC alteration, 0.001mm increments can be selected.)



Order

Catalog No.	L	P	(RT=0) (R=0)
WSTC 3	— 42 —	— P2.490 —	— R0 —
WTTC 3	— 42 —	— P2.490 —	— R0 —

- ⚠ RT=0 only can be selected: Can be used for tip R types (except lapping).
⚠ R=0 only can be selected: Can be used for tapered tip types (except lapping).



Price

Quotation



Days to Ship

Quotation



Alterations

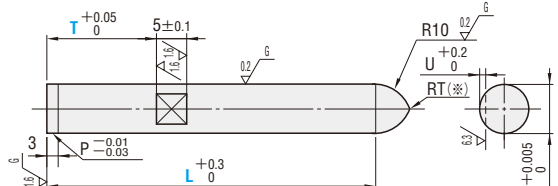
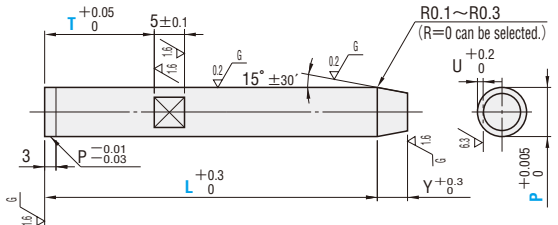


Catalog No.	(L·LC·LCT·LMT)	P	(RT=0) (R=0)	(HC·TC, etc.)
WTTC 3	— LC45.0 —	— P2.490 —	— R0 —	— YC3 —

Alteration	Code		1Code
Alterations to tip	RLC	Tip R is cut flat. Allowable range of change $2 \leq RLC < \sqrt{P(10-P/4)}$ 0.1mm increments ⚠ Can be used for $P < 8$.	
	PKC	Tip diameter tolerance change ⚠ P dimension can be selected in 0.001mm increments. • Normal $P +0.005/0 \Rightarrow +0.003/0$ • Lapping $P +0.01/0 \Rightarrow +0.005/0$ • TiCN coating	
	PKV	Tip diameter tolerance change ⚠ P dimension increment remains the same. • Normal $P +0.005/0 \Rightarrow \pm 0.002$ • Lapping $P +0.01/0 \Rightarrow \pm 0.005$ • TiCN coating	
	YC	Tip taper length change $1 \leq YC \leq P \times 1.86 - 0.3 \leq 12$ L (LC) + YC $\leq L_{max} + 8$ 0.1mm increments	
Full length	LC	Full length change $32 \leq LC < L$ 0.1mm increments	

Alteration	Code		1Code
Alterations to full length	LCT	Changes to head thickness tolerance and full length are processed using a single code. The allowable range of change, increment, ordering process, and notes (⚠) are the same as for LC. TKC Head thickness tolerance change $T +0.3/0 \Rightarrow +0.02/0$ + Full length change	LC
	LMT	Changes to head thickness tolerance and full length are processed using a single code. The allowable range of change, increment, ordering process, and notes (⚠) are the same as for LC. TKM Head thickness tolerance change $T +0.3/0 \Rightarrow -0.02/0$ + Full length change	LC
Alterations to head	KC	Addition of single key flat to head	
	WKC	Addition of double key flats in parallel	
	HC	Head diameter change $P \leq HC < H$ 0.1mm increments	
	TC	Head thickness change $2 \leq TC < 5$ TiCN coating $4 \leq TC < 5$ 0.1mm increments (If combined with TKC·TKM·LCT·LMT, 0.01mm increments can be selected.) ⚠ Full length L is shortened by (5-TC). If combined with LC·LCT·LMT, full length remains as specified.	
	TKC	Head thickness tolerance change $T +0.3/0 \Rightarrow +0.02/0$	
	TKM	Head thickness tolerance change $T +0.3/0 \Rightarrow -0.02/0$	

CARBIDE STRAIGHT PILOT PUNCHES WITH KEY GROOVES

Type	M H	Catalog No.	Shape
— Tip R type — 	RoHS	V30 (HIP) 88~89HRA WKSTC	 $T \begin{smallmatrix} +0.05 \\ 0 \end{smallmatrix}$ 5 ± 0.1 0.2 G $R10 \begin{smallmatrix} 0.2 \\ 0 \end{smallmatrix}$ $U \begin{smallmatrix} +0.2 \\ 0 \end{smallmatrix}$ $RT(\text{※})$ $+0.005$ 0 $P \begin{smallmatrix} -0.01 \\ -0.03 \end{smallmatrix}$ $L \begin{smallmatrix} +0.3 \\ 0 \end{smallmatrix}$ (※) If $P < 8$, tip is rounded for safety. To keep the sharp tip (no rounding), specify $RT=0$. (However if $P \geq 8$, tip end is flat. P.1082) For the length of tip R, refer to the products data "Punch R length". P.1082
— Tapered tip type — 	RoHS	V30 (HIP) 88~89HRA WK TTC	 $T \begin{smallmatrix} +0.05 \\ 0 \end{smallmatrix}$ 5 ± 0.1 0.2 G $R0.1 \sim R0.3$ $(R=0 \text{ can be selected.})$ $U \begin{smallmatrix} +0.2 \\ 0 \end{smallmatrix}$ $Y \begin{smallmatrix} +0.3 \\ 0 \end{smallmatrix}$ $P \begin{smallmatrix} -0.01 \\ -0.03 \end{smallmatrix}$ $L \begin{smallmatrix} +0.3 \\ 0 \end{smallmatrix}$

Catalog No.	No.	L				0.001mm increments		0.1mm increments	Y	U
Type						min.	P	max.	T	
WKSTC WK TTC	3	42	52	62		2.000		3.000	$T \geq 5.0$	2
	4	42	52	62	72	3.000		4.000		
	5	42	52	62	72	4.000		5.000		3
	6	42	52	62	72	5.000		6.000		
	8	42	52	62	72	6.000		8.000		5
	10	42	52	62	72	8.000		10.000		



Order

Catalog No.	L	P	T	(RT=0) R=0
WKSTC 3	42	P2.490	T10.0	RT0
WK TTC 3	42	P2.490	T10.0	



Price

Quotation

- (※) If no key groove is required, select $T=L$.
 (※) $RT=0$ only can be selected: Can be used for tip R types (except lapping).
 (※) $R=0$ only can be selected: Can be used for tapered tip types (except lapping).



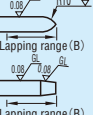
Days to Ship

Quotation



Alterations

Catalog No.	L (LC-LCT)	P	T	(RT=0) R=0	(YC, etc.)
WK TTC 3	LC45.0	P2.490	T10.0		YC3

Alteration	Code			1Code							
Alterations to tip		RLC	Tip R is cut flat. Allowable range of change $2 \leq RLC < \sqrt{P(10-P/4)}$ 0.1mm increments ⚡ Can be used for $P < 8$.								
		PKC	Tip diameter tolerance change $P \begin{smallmatrix} +0.005 \\ 0 \end{smallmatrix} \Rightarrow \begin{smallmatrix} +0.003 \\ 0 \end{smallmatrix}$		Quotation						
		PKV	Tip diameter tolerance change $P \begin{smallmatrix} +0.005 \\ 0 \end{smallmatrix} \Rightarrow \pm 0.002$								
		SC	Lapping of tip ⚡ P dimension tolerance remains the same. Lapping range (B) <table><thead><tr><th>P</th><th>(B)</th></tr></thead><tbody><tr><td>2.00 ~ 2.99</td><td>13</td></tr><tr><td>3.00 ~ 9.99</td><td>19</td></tr><tr><td>10.00</td><td>25</td></tr></tbody></table> ⚡ If $L < (B) + 20$, (B) is adjusted to $(L - 20)$. ⚡ $RT=0$ cannot be selected for tip R types. ⚡ $R=0$ cannot be selected for tapered tip types.	P		(B)	2.00 ~ 2.99	13	3.00 ~ 9.99	19	10.00
P	(B)										
2.00 ~ 2.99	13										
3.00 ~ 9.99	19										
10.00	25										

Alteration	Code			1Code								
Alterations to tip	YC			 Tip taper length change $1 \leq YC \leq P \times 1.86 - 0.3 \leq 12$ $L(LC) + YC \leq L_{max} + 8$ 0.1mm increments								
Alterations to full length	LC		Full length change $32 \leq LC < L$ 0.1mm increments									
	LCT		T dimension tolerance and full length changes are processed using a single code. The allowable range of change, increment, ordering process, and notes (※) are the same as for LC. TKC LC T dimension tolerance change $T \begin{smallmatrix} +0.05 \\ 0 \end{smallmatrix} \Rightarrow \begin{smallmatrix} 0 \\ -0.02 \end{smallmatrix}$ + Full length change									
Alterations to key groove	WKD		 Addition of double key grooves in parallel	 Addition of double key grooves in parallel								
	TKC		T dimension tolerance change $T \begin{smallmatrix} +0.05 \\ 0 \end{smallmatrix} \Rightarrow \begin{smallmatrix} 0 \\ -0.02 \end{smallmatrix}$									
Alterations to key groove	UK		Key groove depth change ※ Cannot be used for No.3 <table><tr><td>No.</td><td>UK</td></tr><tr><td>4-5</td><td>0.7</td></tr><tr><td>6</td><td>1.2</td></tr><tr><td>8~10</td><td>1.7</td></tr></table>		No.	UK	4-5	0.7	6	1.2	8~10	1.7
No.	UK											
4-5	0.7											
6	1.2											
8~10	1.7											

■ Fixing keys for punches with key grooves
P.189

PSKB
PSKBH



PSKS
PSKJ



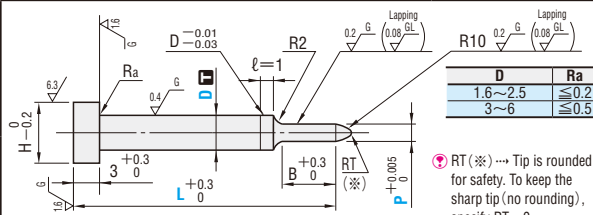
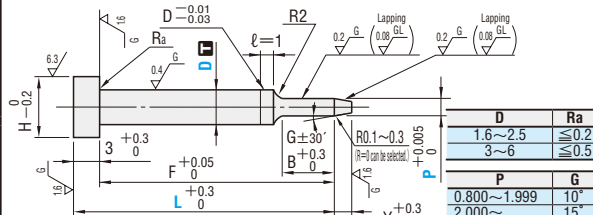
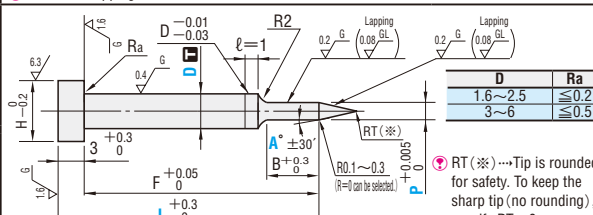
PSK
PSKPK
PSKH



PSKW



CARBIDE PILOT PUNCHES FOR FIXING TO STRIPPER PLATES

Type	Shank diameter D Tolerance	M H	Catalog No.	Shape
—Tip R type— RoHS 	Dm5	V30 (HIP) 88~89HRA	WSPTP Lapping L—WSPTP	 RT (※) → Tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0.
—Tip R-lapping— 	D ^{+0.005} ₀			
For shank diameter tolerance D _T , select either m5 or ^{+0.005} ₀ .				
—Tapered tip type— RoHS 	Dm5	V30 (HIP) 88~89HRA	WTPTP Lapping L—WTPTP	 RT (※) → Tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0.
—Tapered tip-lapping— 	D ^{+0.005} ₀			
For shank diameter tolerance D _T , select either m5 or ^{+0.005} ₀ .				
—Sharp tip angle type— RoHS 	Dm5	V30 (HIP) 88~89HRA	WAPTP Lapping L—WAPTP	 RT (※) → Tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0.
—Sharp tip angle-lapping— 	D ^{+0.005} ₀			
For shank diameter tolerance D _T , select either m5 or ^{+0.005} ₀ .				

Catalog No.	Type	D	L	0.1mm increments	0.001mm increments	A	B	Y	H
(Dm5)	(D ^{+0.005} ₀)	1.6			0.800~1.599				2.6
WSPTP A—WSPTP		2.0	10.0 ~ 32.0		1.000~1.990	(10)			3
WTPTP A—WTPTP		2.5			1.000~2.490	15			3.5
WAPTP A—WAPTP		3			1.000~2.990	20			5
—Lapping—									
L—WSPTP AL—WSPTP		4	10.0 ~ 40.0		2.000~3.990	25			7
L—WTPTP AL—WTPTP		5			2.000~4.990	30			8
L—WAPTP AL—WAPTP		6			2.500~5.990	35			9

⚠ P>D-0.03 → ℓ=0 If P>D-0.03, D^{-0.01}₀ (press-in lead) is not included.
 ⚠ A(10) → P<2.000 If P≥2.000, A=10 cannot be selected.

P Price **Quotation**

	Order	Catalog No.	L	P	A	(RT=0) (R=0)
		WAPTP 6	— 29.0 —	P4.071	— A15	
		WTPTP 6	— 20.0 —	P5.020	— R0	

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

	Days to Ship	Quotation

⚠ Catalog No. L P A (AC) (RT=0) (HC-TC, etc.)
 WAPTP 6 — 20.0 — P5.020 — AC18 — HC6—PKC

Alteration	Code	Tip R type	Tapered tip and sharp tip angle types	1Code						
Alterations to tip	RLC	Tip R is cut flat. Allowable range of change $2 \leq RLC < \sqrt{P}(10 - P/4)$ 0.1mm increments	_____	Quotation						
	BC	Tip length change $2 \leq BC \leq B_{max}$ 0.1mm increments ⚠ Full length L must be at least 8mm longer than tip length BC.	<table><tr><th>P</th><th>Bmax.</th></tr><tr><td>0.800~1.999</td><td>15</td></tr><tr><td>2.000~</td><td>21</td></tr></table>		P	Bmax.	0.800~1.999	15	2.000~	21
	P	Bmax.								
0.800~1.999	15									
2.000~	21									
AC	_____	Tip angle change $15^\circ < AC \leq 45^\circ$ 1° increments ⚠ Cannot be used for tapered tip types.								

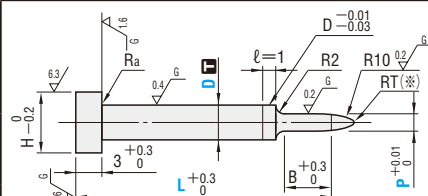
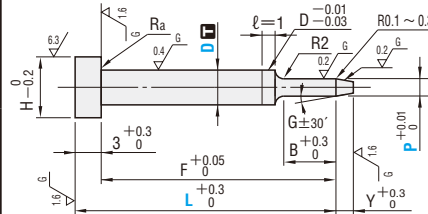
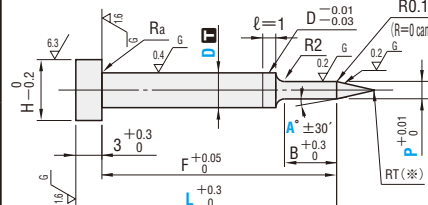
Alteration	Code	Tip R type	Tapered tip and sharp tip angle types	1Code
Alterations to tip 	PKC	Tip diameter tolerance change P±0.005 0 → ±0.003 0		
	PKV	Tip diameter tolerance change P±0.005 0 → ±0.002		
	YC		Tip taper length change • If P<2.0, 1≤YC≤P×2.83-0.3 • If P≥2.0, 1≤YC≤P×1.86-0.3 L(LC)+YC≤Lmax.+8 0.1mm increments ⚠ Cannot be used for sharp tip angle types.	
Alterations to head 	HC	Head diameter change D≤HC<H 0.1mm increments		
	KC	Addition of single key flat to head		
	WKC	Addition of double key flats in parallel		
	TC	Head thickness change 2≤TC<3 0.01mm increments (if combined with TKC-TKM, 0.01mm increments can be selected.) ⚠ The full length remains as specified.		
	TKC	Head thickness tolerance change T±0.3 0 → ±0.02 0		
Others 	TKM	Head thickness tolerance change T±0.3 0 → -0.02		
	NDC	No press-in lead ℓ=1 → ℓ=0		

CARBIDE PILOT PUNCHES FOR FIXING TO STRIPPER PLATES

—TiCN COATING—

PRODUCTS DATA

P.1094

Type	Shank diameter D Tolerance	M H	Catalog No.	Shape												
—Tip R type— RoHS 	Dm5 V30 (HIP) 88~89HRA Surface 3000HV D +0.005 0		H—WSPTP AH—WSPTP	 <table><tr><th>D</th><th>Ra</th></tr><tr><td>1.6 ~ 2.5</td><td>≤0.2</td></tr><tr><td>3 ~ 6</td><td>≤0.5</td></tr></table> RT (※) → Tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0. For the length of tip R, refer to the products data “Punch R length”.  P.1082	D	Ra	1.6 ~ 2.5	≤0.2	3 ~ 6	≤0.5						
D	Ra															
1.6 ~ 2.5	≤0.2															
3 ~ 6	≤0.5															
—Tapered tip type— RoHS 	Dm5 V30 (HIP) 88~89HRA Surface 3000HV D +0.005 0		H—WTPTP AH—WTPTP	 <table><tr><th>D</th><th>Ra</th></tr><tr><td>1.6 ~ 2.5</td><td>≤0.2</td></tr><tr><td>3 ~ 6</td><td>≤0.5</td></tr></table> <table><tr><th>P</th><th>G</th></tr><tr><td>1.00 ~ 1.99</td><td>10°</td></tr><tr><td>2.00 ~</td><td>15°</td></tr></table>	D	Ra	1.6 ~ 2.5	≤0.2	3 ~ 6	≤0.5	P	G	1.00 ~ 1.99	10°	2.00 ~	15°
D	Ra															
1.6 ~ 2.5	≤0.2															
3 ~ 6	≤0.5															
P	G															
1.00 ~ 1.99	10°															
2.00 ~	15°															
—Sharp tip angle type— RoHS 	Dm5 V30 (HIP) 88~89HRA Surface 3000HV D +0.005 0		H—WAPTP AH—WAPTP	 <table><tr><th>D</th><th>Ra</th></tr><tr><td>1.6 ~ 2.5</td><td>≤0.2</td></tr><tr><td>3 ~ 6</td><td>≤0.5</td></tr></table> RT (※) → Tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0.	D	Ra	1.6 ~ 2.5	≤0.2	3 ~ 6	≤0.5						
D	Ra															
1.6 ~ 2.5	≤0.2															
3 ~ 6	≤0.5															

Catalog No.	Type	D	0.1mm increments	0.01mm increments	A	B	Y	H
	(Dm5)	(D $+0.005/0$)		min. P max.				
		1.6		1.00 ~ 1.59				2.6
		2.0	10.0 ~ 32.0	1.00 ~ 1.99	(10)			3
		2.5		1.00 ~ 2.49	15			3.5
	H—WSPTP AH—WSPTP	3		1.00 ~ 2.99	20	4		5
	H—WTPTP AH—WTPTP	4	10.0 ~ 40.0	2.00 ~ 3.99	25			7
	H—WAPTP AH—WAPTP	5		2.00 ~ 4.99	30			8
		6		2.50 ~ 5.99		3		9

P > D - 0.03 → ℓ = 0. If P > D - 0.03, D $-0.01/-0.03$ (press-in lead) is not included.
 An extremely thin coating layer is also formed on the shank.
 A(10) → P < 2.00. If P ≥ 2.00, A = 10 cannot be selected. If used with PKC alteration, P dimension can be selected in 0.001mm increments.

	Order	Catalog No.	L	P	A	(RT=0) (R=0)
		H—WAPTP 6	29.0	P4.00	A15	R0—RT0
		H—WSPTP 6	20.0	P5.02		

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

	Alterations	Catalog No.	L	P	A(AC)	(RT=0) (R=0)	(HC·TC, etc.)
		H—WAPTP 6	20.0	P5.02	AC18		HC7

Alterations to tip

Alteration	Code	Tip R type	Tapered tip and sharp tip angle types	1Code						
	RLC	Tip R is cut flat. Allowable range of change $2 \leq RLC < \sqrt{P(10-P/4)}$ 0.1mm increments	—							
	BC	Tip length change $2 \leq BC \leq B_{max} \leq L/2$ 0.1mm increments Full length L must be at least 8mm longer than tip length BC.	<table><tr><th>P</th><th>Bmax.</th></tr><tr><td>1.00 ~ 1.99</td><td>15</td></tr><tr><td>2.00 ~</td><td>16</td></tr></table>	P	Bmax.	1.00 ~ 1.99	15	2.00 ~	16	
P	Bmax.									
1.00 ~ 1.99	15									
2.00 ~	16									
	PKC	Tip diameter tolerance change $P + 0.01 \Rightarrow +0.005$ P dimension can be selected in 0.001mm increments.								
	PKV	Tip diameter tolerance change $P + 0.01 \Rightarrow \pm 0.005$ P dimension increment remains the same.								
	SC	Tip roughness change $0.2 \xrightarrow{G} 0.08 \xrightarrow{GL}$ The base material is finished before the coating is applied. R=0 and RT=0 cannot be selected.								
	AC	Tip angle change $15^\circ < AC \leq 45^\circ$ 1° increments Cannot be used for tapered tip types.								

Quotation

Quotation

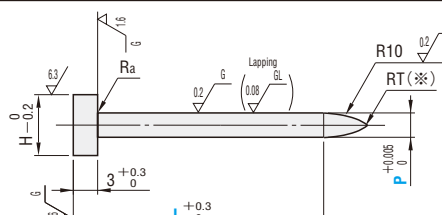
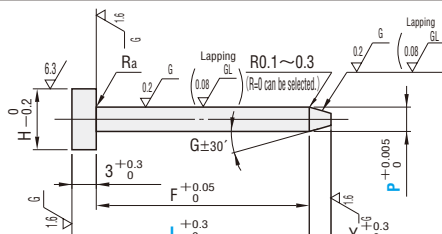
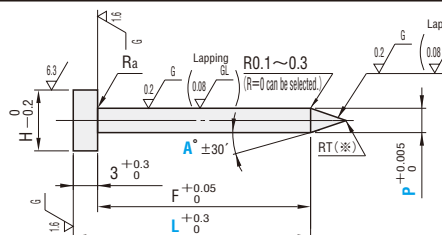
P Price Quotation

Days to Ship Quotation

Alteration	Code	Tip R type	Tapered tip and sharp tip angle types	1Code
 YC			Tip taper length change If P < 2.0, 1 ≤ YC ≤ P × 2.83 - 0.3 If P ≥ 2.0, 1 ≤ YC ≤ P × 1.86 - 0.3 L (LC) + YC ≤ Lmax. + 8 0.1mm increments Cannot be used for sharp tip angle types.	
 HC			Head diameter change D ≤ HC < H 0.1mm increments	
 KC			Addition of single key flat to head	
 WKC			Addition of double key flats in parallel	
 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.	
 TKC			Head thickness tolerance change T + 0.3 → +0.02 0	
 TKM			Head thickness tolerance change T + 0.3 → 0 0 -0.02	
 NDC			No press-in lead ℓ = 1 → ℓ = 0	

Quotation

CARBIDE STRAIGHT PILOT PUNCHES FOR FIXING TO STRIPPER PLATES

Type	M H	Catalog No.	Shape												
— Tip R type —  RoHS	V30 (HIP) 88~89HRA	WSPT Lapping L—WSPT	 <table><tr><th>No.</th><th>Ra</th></tr><tr><td>1.6 ~ 2.5</td><td>≦0.2</td></tr><tr><td>3 ~ 6</td><td>≦0.5</td></tr></table> ⚠ RT (※) → Tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0. ⚠ For the length of tip R, refer to the products data "Punch R length". P.1082 ⊗ RT=0 with lapping cannot be selected.	No.	Ra	1.6 ~ 2.5	≦0.2	3 ~ 6	≦0.5						
No.	Ra														
1.6 ~ 2.5	≦0.2														
3 ~ 6	≦0.5														
— Tapered tip type —  RoHS	V30 (HIP) 88~89HRA	WTPT Lapping L—WTPT	 <table><tr><th>No.</th><th>Ra</th></tr><tr><td>1.6 ~ 2.5</td><td>≦0.2</td></tr><tr><td>3 ~ 6</td><td>≦0.5</td></tr></table> <table><tr><th>P</th><th>G</th></tr><tr><td>0.800 ~ 1.999</td><td>10°</td></tr><tr><td>2.000 ~</td><td>15°</td></tr></table> ⊗ R=0 with lapping cannot be selected.	No.	Ra	1.6 ~ 2.5	≦0.2	3 ~ 6	≦0.5	P	G	0.800 ~ 1.999	10°	2.000 ~	15°
No.	Ra														
1.6 ~ 2.5	≦0.2														
3 ~ 6	≦0.5														
P	G														
0.800 ~ 1.999	10°														
2.000 ~	15°														
— Tapered tip, lapping — 															
— Sharp tip angle type —  RoHS	V30 (HIP) 88~89HRA	WAPT Lapping L—WAPT	 <table><tr><th>No.</th><th>Ra</th></tr><tr><td>1.6 ~ 2.5</td><td>≦0.2</td></tr><tr><td>3 ~ 6</td><td>≦0.5</td></tr></table> ⚠ RT (※) → Tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0. ⊗ R=0 and RT=0 with lapping cannot be selected.	No.	Ra	1.6 ~ 2.5	≦0.2	3 ~ 6	≦0.5						
No.	Ra														
1.6 ~ 2.5	≦0.2														
3 ~ 6	≦0.5														
— Sharp tip angle-lapping — 															

Catalog No.	No.	0.1mm increments	0.001mm increments	A	Y	H
Type		L	min. P max.			
(Sharp tip angle type)	1.6		0.600 ~ 1.600	(10)		2.6
(Tip R type)	2.0	10.0 ~ 32.0	1.000 ~ 2.000	15	(2)	3
(Tapered tip type)	2.5		1.500 ~ 2.500	20		3.5
	3		2.000 ~ 3.000	25		5
	4		3.000 ~ 4.000	30		7
— Lapping —	5	10.0 ~ 40.0	4.000 ~ 5.000		3	8
L—WSPT	6		5.000 ~ 6.000			9
L—WTPT						
L—WAPT						

⚠ A (10) → P < 2.000 If P ≥ 2.000, A=10 cannot be selected.

⚠ Y (2) → If P ≤ 0.8, Y dimension is 0.8mm.



Price **Quotation**



Order

Catalog No. — **L** — **P** — **A** — (RT=0)
WAPT 6 — 25.0 — P5.990 — A30 — RT0 — R0
WTPT 6 — 20.0 — P5.020

⚠ RT=0 only can be selected. Can be used for tip R types with P < 3 and sharp tip angle types. (Except lapping)

⚠ R=0 only can be selected. Can be used for tapered tip types and sharp tip angle types. (Except lapping)



Days to Ship

Quotation



Alterations

Catalog No. — **L** — **P** — **A/AC** — (R) — (RT) — (HC-TC, etc.)
WAPT 6 — 20.0 — P5.020 — AC18

Alteration	Code	Tip R type	Tapered tip and sharp tip angle types	1Code
Alterations to tip 	RLC	Tip R is cut flat. Allowable range of change 2 ≤ RLC < √P(10-P/4) 0.1mm increments		Quotation
	AC	Tip angle change 15° < AC ≤ 45° 1° increments ⚠ Cannot be used for tapered tip types.		
	PKC	Tip diameter tolerance change P +0.005 0 → +0.003 0		

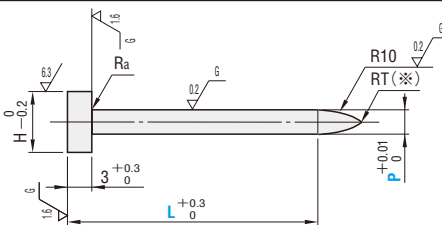
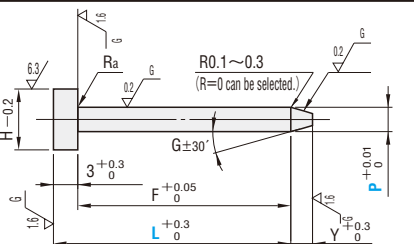
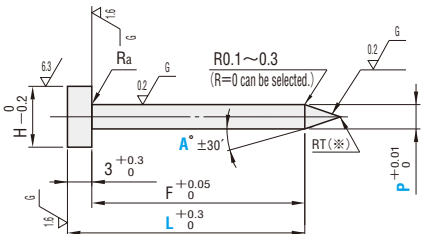
Alteration	Code	Tip R type	Tapered tip and sharp tip angle types	1Code
Alterations to tip 	PKV	Tip diameter tolerance change P +0.005 0 → ±0.002		
	YC		Tip taper length change • If P < 2.0, 1 ≤ YC ≤ P × 2.83 — 0.3 • If P ≥ 2.0, 1 ≤ YC ≤ P × 1.86 — 0.3 L (LC) + YC ≤ Lmax. + 8 0.1mm increments ⚠ Cannot be used for sharp tip angle types.	
Alterations to head 	HC	P ≤ HC < H 0.1mm increments		Quotation
	KC	Addition of single key flat to head		
	WKC	Addition of double key flats in parallel		
	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.		
	TKC	Head thickness tolerance change T +0.3 0 → +0.02 0		
	TKM	Head thickness tolerance change T +0.3 0 → -0.02 0		

CARBIDE STRAIGHT PILOT PUNCHES FOR FIXING TO STRIPPER PLATES

—TiCN COATING—

PRODUCTS DATA

P.1094

Type	M H	Catalog No.	Shape												
—Tip R type—  RoHS	V30 (HIP) 88~89HRA Surface 3000HV	H—WSPT	 <table><tr><th>No.</th><th>Ra</th></tr><tr><td>1.6 ~ 2.5</td><td>≤0.2</td></tr><tr><td>3 ~ 6</td><td>≤0.5</td></tr></table> RT(※) → Tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0. For the length of tip R, refer to the products data "Punch R length".  P.1082	No.	Ra	1.6 ~ 2.5	≤0.2	3 ~ 6	≤0.5						
No.	Ra														
1.6 ~ 2.5	≤0.2														
3 ~ 6	≤0.5														
—Tapered tip type—  RoHS	V30 (HIP) 88~89HRA Surface 3000HV	H—WTPT	 <table><tr><th>No.</th><th>Ra</th></tr><tr><td>1.6 ~ 2.5</td><td>≤0.2</td></tr><tr><td>3 ~ 6</td><td>≤0.5</td></tr></table><table><tr><th>P</th><th>G</th></tr><tr><td>0.800 ~ 1.999</td><td>10°</td></tr><tr><td>2.000 ~</td><td>15°</td></tr></table>	No.	Ra	1.6 ~ 2.5	≤0.2	3 ~ 6	≤0.5	P	G	0.800 ~ 1.999	10°	2.000 ~	15°
No.	Ra														
1.6 ~ 2.5	≤0.2														
3 ~ 6	≤0.5														
P	G														
0.800 ~ 1.999	10°														
2.000 ~	15°														
—Sharp tip angle type—  RoHS	V30 (HIP) 88~89HRA Surface 3000HV	H—WAPT	 <table><tr><th>No.</th><th>Ra</th></tr><tr><td>1.6 ~ 2.5</td><td>≤0.2</td></tr><tr><td>3 ~ 6</td><td>≤0.5</td></tr></table> RT(※) → Tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0.	No.	Ra	1.6 ~ 2.5	≤0.2	3 ~ 6	≤0.5						
No.	Ra														
1.6 ~ 2.5	≤0.2														
3 ~ 6	≤0.5														

Catalog No.	0.1mm increments	0.01mm increments	A	Y	H
Type	No.	L	min. P max.		
H—WSPT	1.6		1.00 ~ 1.60	(10)	2.6
	2.0	10.0 ~ 32.0	1.00 ~ 2.00	15	3
H—WTPT	2.5		1.50 ~ 2.50	20	3.5
	3		2.00 ~ 3.00	25	5
H—WAPT	4	10.0 ~ 40.0	3.00 ~ 4.00	30	7
	5		4.00 ~ 5.00		8
	6		5.00 ~ 6.00		9



Price

Quotation

⊗ A(10) → P<2.00 If P≥2.00, A=10 cannot be selected.

⊙ If used with PKC alteration, P dimension can be selected in 0.001mm increments.



Order

Catalog No. — L — P — A — (RT=0)
H—WAPT 6 — 25.0 — P5.99 — A30 — (RT=0)

H—WSPT 6 — 20.0 — P5.02 — RT0

⊙ (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) — (HC-TC, etc.)
H—WAPT6 — 20.0 — P5.02 — AC18

Alteration	Code	Tip R type	Tapered tip and sharp tip angle types	1Code
Alterations to tip 	RLC	Tip R is cut flat. Allowable range of change $2 \leq RLC < \sqrt{P(10-P/4)}$ 0.1mm increments		
	AC	Tip angle change $15^\circ < AC \leq 45^\circ$ 1° increments ⊗ Cannot be used for tapered tip types.		
	PKC	Tip diameter tolerance change $P + 0.01 \rightarrow \pm 0.005$ ⊙ P dimension can be selected in 0.001mm increments.		

Alteration	Code	Tip R type	Tapered tip and sharp tip angle types	1Code
Alterations to tip 	PKV	Tip diameter tolerance change $P + 0.01 \rightarrow \pm 0.005$ ⊙ P dimension increment remains the same.		
	YC	Tip taper length change • If $P < 2.0$, $1 \leq YC \leq P \times 2.83 - 0.3$ • If $P \geq 2.0$, $1 \leq YC \leq P \times 1.86 - 0.3$ L (LC) + YC ≤ Lmax + 8 0.1mm increments ⊗ Cannot be used for sharp tip angle types.		
Alterations to head 	HC	$P \leq HC < H$ 0.1mm increments		
	KC	Addition of single key flat to head		
	WKC	Addition of double key flats in parallel		
	TKC	Head thickness tolerance change $T + 0.3 \rightarrow \pm 0.02$ 0		
	TKM	Head thickness tolerance change $T + 0.3 \rightarrow 0$ -0.02		

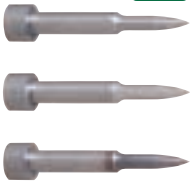
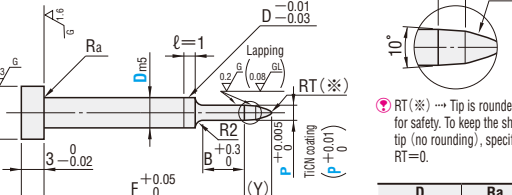
Quotation

CARBIDE PILOT PUNCHES FOR FIXING TO STRIPPER PLATES

— TIP R AND TAPER COMBINED TYPE · MINUS HEAD TOLERANCE · NORMAL · LAPPING · TiCN COATING —

PRODUCTS DATA

P.1094

Type		Catalog No.			Shape						
		Normal	Lapping	TiCN coating Surface hardness 3000HV							
 RoHS	V30 (HIP) 88~89HRA	WSPTPF	L-WSPTPF	H-WSPTPF	 Enlarged view RT (※) → Tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0. <table><tr><th>D</th><th>Ra</th></tr><tr><td>1.6 2.0 2.5</td><td>≤0.2</td></tr><tr><td>3</td><td>≤0.5</td></tr></table>	D	Ra	1.6 2.0 2.5	≤0.2	3	≤0.5
D	Ra										
1.6 2.0 2.5	≤0.2										
3	≤0.5										

Catalog No.		0.1mm increments		0.001mm increments (With coating, 0.01mm increments)		B	H
Type	D	L	min.	P	max.		
Normal WSPTPF	1.6	10.0 ~ 32.0				4	2.6
	2.0						3.0
	2.5						3.5
	3						5
Lapping L-WSPTPF							
TiCN coating H-WSPTPF							

⚠ P > D - 0.03 → ℓ = 0 If P > D - 0.03, D - 0.01 (press-in lead) is not included.

⚠ The coating process also forms an extremely thin coating layer on the shank.

⚠ (Y) → Tip Y length = $0.6 + \sqrt{(P - 0.2)(39.8 - P)/4}$

⚠ P (1.00) → For TiCN coating is Pmin 1.00.



Order

Catalog No. — L — P — (RT=0)

WSPTPF 2.0 — 28.0 — P1.900 — RT0

H-WSPTPF 2.5 — 30.0 — P2.20

⚠ [RT=0] only can be selected. (However, lapping cannot be used.)

Features

- These pilot punches for fixing to stripper plates were developed for use with press dies that are used with thin workpieces.
- The under-head dimension F is highly accurate and the tip is smoothly rounded.



Days to Ship

Quotation



Alterations

Catalog No. — L — P — (RT=0) — (BC·HC·TC, etc.)

WSPTPF3 — 28.0 — P2.500 — RT0 — HC4.0

Alteration	Code	Spec.	1Code
Alterations to tip 	BC	Tip length change $2 \leq BC \leq B_{max}$ 0.1mm increments ⚠ Full length L must be at least 8mm longer than tip length BC.	Quotation
	RLC	Tip R is cut flat. $3 \leq RLC < Y_{max}$ 0.1mm increments	
	PKC	Tip diameter tolerance change • Normal P +0.005 → +0.003 • Lapping P +0.01 → +0.005 • TiCN coating P +0.01 → +0.005 ⚠ P dimension can be selected in 0.001mm increments.	
	PKV	Tip diameter tolerance change • Normal P +0.005 → ±0.002 • Lapping P +0.01 → ±0.005 • TiCN coating P +0.01 → ±0.005 ⚠ P dimension increment remains the same.	

Alteration	Code	Spec.	1Code
Full length 	LKC	Full length tolerance change L ±0.05 → +0.05 ⚠ F dimension tolerance F +0.05 → ±0.05	Quotation
	HC	Head diameter change $D + 0.1 \leq HC < H$ 0.1mm increments	
Alterations to head 	TC	Head thickness change $2 \leq TC < 3$ 0.1mm increments ⚠ The full length remains as specified.	
	KC	Addition of single key flat to head	
	WKC	Addition of double key flats in parallel	
Others 	NDC	No press-in lead ℓ ≥ 1 → ℓ = 0	



Price

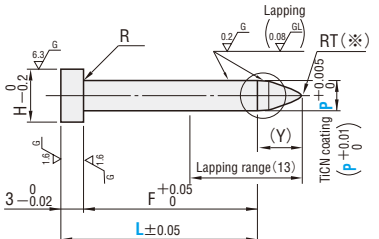
Quotation

CARBIDE STRAIGHT PILOT PUNCHES FOR FIXING TO STRIPPER PLATES

—TIP R AND TAPER COMBINED TYPE, MINUS HEAD TOLERANCE, NORMAL·LAPPING·TiCN COATING—

PRODUCTS DATA

P.1094

Type		Catalog No.			Shape						
		Normal	Lapping	TiCN coating Surface hardness 3000HV							
 RoHS	V30 (HIP) 88~89HRA	WSPTF	L-WSPTF	H-WSPTF	 Enlarged view 1.5 R10 10° RT (※) → Tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0. <table><tr><th>No.</th><th>Ra</th></tr><tr><td>1.6 2.0 2.5</td><td>≤0.2</td></tr><tr><td>3</td><td>≤0.5</td></tr></table>	No.	Ra	1.6 2.0 2.5	≤0.2	3	≤0.5
No.	Ra										
1.6 2.0 2.5	≤0.2										
3	≤0.5										

Catalog No.		0.1mm increments		0.001mm increments (With coating, 0.01mm increments)		H
Type	No.	L		min.	P max.	
Normal WSPTF Lapping L-WSPTF TiCN coating H-WSPTF	1.6	10.0 ~ 32.0		0.800 (1.00) ~ 1.600		2.6
	2.0			1.000 ~ 2.000		3.0
	2.5			1.500 ~ 2.500		3.5
	3	10.0 ~ 40.0		2.000 ~ 3.000		5

⚡ (Y) → Tip Y length = $0.6 + \sqrt{(P-0.2)(39.8-P)/4}$ ⚡ P (1.00) → For TiCN coating is Pmin 1.00.



Order

Catalog No. — L — P — (RT=0)

WSPTF2.0 — 28.0 — P1.900 — RT0

L-WSPTF2.5 — 30.0 — P2.205

⚡ RT=0 only can be selected. (However, lapping cannot be used.)

Features

- These pilot punches for fixing to stripper plates were developed for use with press dies that are used with thin workpieces.
- The under-head dimension F is highly accurate and the tip is smoothly rounded.



Days to Ship

Quotation



Alterations

Catalog No. — L — P — (RT=0) — (RSC·HC·TC...etc.)

WSPTF 3 — 28.0 — P2.480 — RT0 — HC4.0—PKC

Alteration	Code	Spec.	1Code								
	RLC	Tip R is cut flat. $3 \leq RLC < Y_{max}$. 0.1mm increments <table border="1" data-bbox="469 1143 592 1176"><thead><tr><th>P</th><th>Ymax.</th></tr></thead><tbody><tr><td>0.800~1.499</td><td>3</td></tr><tr><td>1.500~2.499</td><td>4</td></tr><tr><td>2.500~3.000</td><td>5</td></tr></tbody></table>	P	Ymax.	0.800~1.499	3	1.500~2.499	4	2.500~3.000	5	Quotation
P	Ymax.										
0.800~1.499	3										
1.500~2.499	4										
2.500~3.000	5										
	PKC	Tip diameter tolerance change • Normal P +0.005 ⇨ +0.003 • Lapping P +0.005 ⇨ 0 • TiCN coating P +0.01 ⇨ +0.005 ⚡ P dimension can be selected in 0.001mm increments.									
	PKV	Tip diameter tolerance change • Normal P +0.005 ⇨ ±0.002 • Lapping P +0.005 ⇨ ±0.002 • TiCN coating P +0.01 ⇨ ±0.005 ⚡ P dimension increment remains the same.									

Alteration	Code	Spec.	1Code
Full length 	LKC	Full length tolerance change L ±0.05 ⇨ +0.05 ⚡ F dimension tolerance F +0.05 ⇨ ±0.05	Quotation
	HC	Head diameter change $2.6 \leq P + 0.1 \leq HC < H$ 0.1mm increments	
Alterations to head 	TC	Head thickness change $2 \leq TC < 3$ 0.1mm increments ⚡ The full length remains as specified. ⊗ Cannot be used with TiCN coating.	
	KC	Addition of single key flat to head	
	WKC	Addition of double key flats in parallel	



Price

Quotation

MOVABLE CARBIDE PILOT PUNCHES

Type	Shank diameter D Tolerance	M H	Catalog No.	Shape
— Tip R type — RoHS	Dg6 D $\begin{smallmatrix} -0.005 \\ -0.010 \end{smallmatrix}$	V30 (HIP) 88~89HRA	WSUPT —Lapping— L—WSUPT —TiCN coating— H—WSUPT A—WSUPT —Lapping— AL—WSUPT —TiCN coating— AH—WSUPT	P G $\begin{smallmatrix} 0.800 \sim 1.999 & 10^\circ \\ 2.000 \sim & 15^\circ \end{smallmatrix}$ $\odot$ For the length of tip R, refer to the products data "Punch R length". $\otimes$ RT=0 with lapping cannot be selected. $\odot$ RT(*) $\rightarrow$ If R<8, tip is rounded for safety. To keep the sharp tip (no rounding), specify RT=0.
— Tapered tip type — RoHS	Dg6 D $\begin{smallmatrix} -0.005 \\ -0.010 \end{smallmatrix}$	V30 (HIP) 88~89HRA	WTUPT —Lapping— L—WTUPT —TiCN coating— H—WTUPT A—WTUPT —Lapping— AL—WTUPT —TiCN coating— AH—WTUPT	P G $\begin{smallmatrix} 0.800 \sim 1.999 & 10^\circ \\ 2.000 \sim & 15^\circ \end{smallmatrix}$ $\otimes$ RT=0 with lapping cannot be selected.
— Sharp tip angle type — RoHS	Dg6 D $\begin{smallmatrix} -0.005 \\ -0.010 \end{smallmatrix}$	V30 (HIP) 88~89HRA Surface 3000HV	WUPT —Lapping— L—WUPT —TiCN coating— H—WUPT A—WUPT —Lapping— AL—WUPT —TiCN coating— AH—WUPT	P G $\begin{smallmatrix} 0.800 \sim 1.999 & 10^\circ \\ 2.000 \sim & 15^\circ \end{smallmatrix}$

Catalog No.				0.1mm increments				0.001mm increments (With coating, 0.01mm increments)		0.1mm increments	Y
Type			D	L				min.	P	max.	
(Tip R)	(Tapered tip)	(Sharp tip angle)	3	42	52	62	1.000 ~ 2.500		5≤B≤23 TiCN coating 5≤B≤L/2≤23	2	
(Dg6) WSUPT	WTUPT	WUPT	4	42	52	62	72	1.500 ~ 3.500			
(D _{—0.005} —Lapping—	A—WSUPT	A—WTUPT	A—WUPT							3	
(Dg6) L—WSUPT	L—WTUPT	L—WUPT	5	42	52	62	72	2.000 ~ 4.500			
(D _{—0.005} —TiCN coating—	AL—WSUPT	AL—WTUPT	AL—WUPT								
(Dg6) H—WSUPT	H—WTUPT	H—WUPT	6	42	52	62	72	2.500 ~ 5.500		5	
(D _{—0.005} —Lapping—	AH—WSUPT	AH—WTUPT	AH—WUPT	8	42	52	62	72	82		3.000 ~ 7.500

$\odot$ P dimension increment $\rightarrow$ If coated, 0.001mm increments can be selected for alteration PKC.



Order

Catalog No. — **L** — **P** — **B**
WUPT 6 — 62 — P4.320 — B20



Days to Ship

Quotation



Alterations



Catalog No. **L (LC)** - **P (PC)** - **B** - (PKC, etc.)
WUPT 6 - LC60 - PC2.000 - B20 - PKC- GC30

Alteration	Code	Tip R type	Tapered tip and sharp tip angle types	1Code
Alterations to tip	PC	$PC \geq P_{min}/2$ 0.01mm increments * If PC is 0.500 ~ 0.999, Bmax. is 8mm. * Coating type— $P \geq P_{min}/2 \geq 1.00$ 0.01mm increments		
	PKC	Tip diameter tolerance change • Normal $P + 0.005 \Rightarrow +0.003$ 0 0 • Lapping $P + 0.01 \Rightarrow +0.005$ 0 0 • TiCN coating $P + 0.01 \Rightarrow +0.005$ 0 * P dimension can be selected in 0.001mm increments.		Quotation
	PKV	Tip diameter tolerance change • Normal $P + 0.005 \Rightarrow \pm 0.002$ 0 0 • Lapping $P + 0.01 \Rightarrow \pm 0.005$ 0 0 • TiCN coating $P + 0.01 \Rightarrow \pm 0.005$ 0 * P dimension increment remains the same.		
	RLC	Tip R is cut flat. Allowable range of change $2 \leq RLC < \sqrt{P(10-P/4)}$ 0.1mm increments		

Alteration	Code	Tip R type	Tapered tip and sharp tip angle types	1Code
Alterations to tip	BKC		Tip length tolerance change $B + 0.3 \Rightarrow +0.05$ 0 0	
	SC		Tip roughness change The base material is finished before the coating is applied. * Can be used for coating types only. * $R=0 \rightarrow R \leq 0.2$	
	GC		Tip angle change $15^\circ < GC \leq 45^\circ$ 1° increments * Cannot be used for tapered tip types.	Quotation
	YC		Tip taper length change • If $P < 2.0$, $1 \leq YC \leq P < 2.83 - 0.3$ • If $P \geq 2.0$, $1 \leq YC \leq P \times 1.86 - 0.3 \leq 12$ L (LC) + YC $\leq L_{max} + 8$ 0.1mm increments * Cannot be used for sharp tip angle types.	
Alterations to full length	LC		Full length change $B + 9 \leq LC < L$ 0.1mm increments	



Price

Quotation



Example

Features

- No height adjustment is required after regrinding.
- Because it is possible to remove the pilot punch without disassembling the die, the number of steps required for regrinding can be reduced.
- Even if a misfeed occurs, because the pilot punches themselves are moveable, it is possible to prevent the punch from biting into the workpiece or being broken.

