
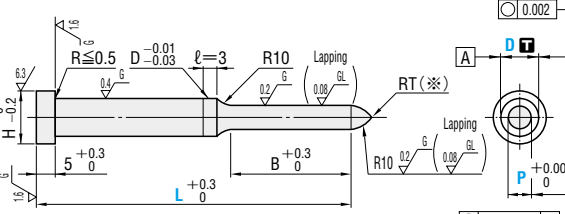







CARBIDE PILOT PUNCHES

Type	Shank diameter D Tolerance	Material	Catalog No.	Shape
Tip R type RoHS 	Dm5	V30 (HIP) 88 ~ 89HRA	WSTAS WSTAL Lapping L-WSTAS L-WSTAL	 <p>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.1592) * For the length of tip R, refer to the products data "Punch R length". P.1592 * Although the marks of processing may remain in the center of a flange end face, it is satisfactory on a function. * RT=0 with lapping cannot be selected.</p>
Tip R · lapping 	D+0.005 0		A-WSTAS A-WSTAL Lapping AL-WSTAS AL-WSTAL	
Tapered tip type RoHS 	Dm5	WTPAS WTPAL Lapping L-WTPAS L-WTPAL		
Tapered tip · lapping 	D+0.005 0	A-WTPAS A-WTPAL Lapping AL-WTPAS AL-WTPAL		

Catalog No.		D	L				0.001mm increments		B	H	Y
Type							min.	max.			
 (Dm5) (D+0.005) WSTAS A-WSTAS WTPAS A-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		
	-Lapping- L-WSTAS AL-WSTAS L-WTPAS AL-WTPAS		8	(42)	52	62	72	82	3.000 ~ 7.990	11	5
			10	(42)	52	62	72	82	3.000 ~ 9.990	15	13
			13	(42)	52	62	72	82	6.000 ~ 12.990	16	
			16	(42)	52	62	72	82	10.000 ~ 15.990	21	19
 (Dm5) (D+0.005) WSTAL A-WSTAL WTPAL A-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		
	-Lapping- L-WSTAL AL-WSTAL L-WTPAL AL-WTPAL		8		52	62	72	82	3.000 ~ 7.990	11	5
			10		52	62	72	82	3.000 ~ 9.990	21	13
			13		52	62	72	82	6.000 ~ 12.990	16	
			16		62	72	82	10.000 ~ 15.990	27	19	8

* 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 / R=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) - (RT=0 / R=0) - (BC·HC·TC, etc.)
 WSTAL 6 - LC65.0 - P4.500 - PKC

Alteration	Code	1Code
Alterations to tip	RLC	Tip R is cut flat. Allowable range of change 2 ≤ RLC < √P (10-P/4) 0.1mm increments * Can be used for P < 8.
	PC	Tip diameter change PC ≥ Pmin./2 0.001mm increments
	BC	Tip length change 2 ≤ BC ≤ Bmax. 0.1mm increments * Full length L must be at least 25mm longer than tip length BC.
	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 ≤ 12 L (LC) + YC ≤ Lmax. + 8 0.1mm increments
	PKC	Tip diameter tolerance change P+0.005 → +0.003 0
	PKV	Tip diameter tolerance change P+0.005 → ±0.002 0

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.
	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 ≤ HC < H 0.1mm increments
	TC	Head thickness change 2 ≤ 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 → +0.02 0
TKM	Head thickness tolerance change T+0.3 0 → 0 -0.02	
Shank	NDC	No press-in lead ℓ=3 → ℓ=0

Price **Quotation**