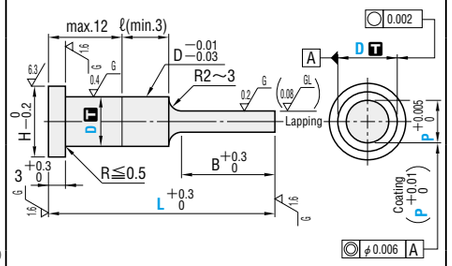
CARBIDE SHOULDER PUNCHES

—SHORT TYPE, NORMAL・LAPPING・TiCN COATING—

PRODUCTS DATA P.1604

Type	Shank diameter D T tolerance	M / H	Catalog No. Type	Tip shape	B Tip length	Shape
RoHS —Lapping— —TiCN coating—	D_{m5}	V30 (HIP) 88 ~ 89HRA	WS Lapping L—WS TiCN coating H—WS	A	S / L / Tip length (B) L>S	
		Super fine grain (HIP) 90 ~ 92HRA (D3 ~ 6)	WXS Lapping L—WXS TiCN coating H—WXS			
	$D^{+0.005}_{0}$	V30 (HIP) 88 ~ 89HRA	A—WS Lapping AL—WS TiCN coating AH—WS			
		Super fine grain (HIP) 90 ~ 92HRA (D3 ~ 6)	A—WXS Lapping AL—WXS TiCN coating AH—WXS			

For shank diameter tolerance D T, select either m5 or $^{+0.005}_{0}$.

The tip end of a TiCN coating punch is ground before the coating is applied.
Although the marks of processing may remain in the center of a flange end face, it is satisfactory on a function.

Catalog No. Type		D	L	0.001mm increments Ⓐ min. P max.	B	H
S	(D_{m5}) WSAS WXSAS (D3 ~ 6)	3	25 30 35	1.000 ~ 2.990	8	5
	($D^{+0.005}_{0}$) A—WSAS A—WXSAS (D3 ~ 6)	4		2.000 ~ 3.990		7
	—Lapping— L—WSAS L—WXSAS (D3 ~ 6)	5		2.000 ~ 4.990		8
	AL—WSAS AL—WXSAS (D3 ~ 6)	6		2.500 ~ 5.990		9
	—TiCN coating— H—WSAS H—WXSAS (D3 ~ 6)	8		5.000 ~ 7.990		11
	AH—WSAS AH—WXSAS (D3 ~ 6)	10		7.000 ~ 9.990		13
L	(D_{m5}) WSAL WXSAL (D3 ~ 6)	3	30 35 40	1.000 ~ 2.990	13	5
	($D^{+0.005}_{0}$) A—WSAL A—WXSAL (D3 ~ 6)	4		2.000 ~ 3.990		7
	—Lapping— L—WSAL L—WXSAL (D3 ~ 6)	5		2.000 ~ 4.990		8
	AL—WSAL AL—WXSAL (D3 ~ 6)	6		2.500 ~ 5.990		9
	—TiCN coating— H—WSAL H—WXSAL (D3 ~ 6)	8		5.000 ~ 7.990		11
	AH—WSAL AH—WXSAL (D3 ~ 6)	10		7.000 ~ 9.990		13

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

Order

Catalog No.	—	L	—	P
WSAS 4	—	30	—	P2.000

Days to Ship Quotation

Alterations

Catalog No.	—	L (LC・LCT・LMT)	—	P	— (BC・HC・TC, etc.)
WSAS 4	—	LC28	—	P3.020	— BC10—KFC150

	Alteration	Code	Spec.	1Code
Alterations to tip		BC	Tip length change 2≦BC<Bmax. 0.1mm increments (P: 1.000 ~ 1.199 → Bmax. 15; 1.200 ~ → Bmax. 20) Full length L must be at least 15mm longer than tip length BC.	
		SC	Tip roughness change 0.2 ⇨ 0.08 The base material is finished before the coating is applied. Can be used for coating types only.	
		PRC	Rounding of tip side edge 0.3≦PRC≦1 0.1mm increments PRC≦(P−0.2)/2 Cannot be combined with PCC・GC.	
		PCC	Chamfering to tip side edge 0.3≦PCC≦1 0.1mm increments PCC≦(P−0.2)/2 Cannot be combined with PRC・GC.	
		GC	20°≦GC<90° 1° increments Tip length B≧f+2 f=P/2×tan(90°−GC°) Cannot be used for P≦1.000 With lapping, tip edges are rounded. Cannot be combined with LKC・LKZ・LCT・LMT・PRC・PCC.	
		PKC	Tip tolerance change ・Normal P +0.005/0 ⇨ +0.003/0 ・Lapping ・Coating P +0.01/0 ⇨ +0.005/0 (P dimension can be selected in 0.001mm increments.)	Quotation
		PKV	Tip tolerance change ・Normal P +0.005/0 ⇨ ±0.002 ・Lapping ・Coating P +0.01/0 ⇨ ±0.005 P dimension increment remains the same.	
Alterations to full length		LC	Full length change 15+B(BC)≦LC<L 0.1mm increments If difference between full length and tip length is 15mm or less, tip length is adjusted to (Full length−15mm). (If combined with LKC・LKZ, 0.01mm increments can be selected.)	
		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 ⇨ +0.02/0 + Full length change LC + Full length tolerance change L +0.3/0 ⇨ +0.1/0	
		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 ⇨ 0/−0.02 + Full length change LC + Full length tolerance change L +0.3/0 ⇨ +0.1/0	
		LKC	Full length tolerance change L +0.3/0 ⇨ +0.05/0	
		LKZ	Full length tolerance change L +0.3/0 ⇨ +0.01/0 Cannot be used with TiCN coating.	

	Alteration	Code	Spec.	1Code
Alterations to head		KC	Addition of single key flat to head	
		WKC	Addition of double key flats in parallel	
		KFC	Double key flats at 0° and a selected angle 1° increments (0°, 90°, 180°, 270°) Cannot be combined with KC・WKC.	
		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・LCT・LMT, 0.01mm increments can be selected.) Full length L is shortened by (3−TC). If combined with LC・LCT・LMT, full length remains as specified.	Quotation
		TKC	Head thickness tolerance change T +0.3/0 ⇨ +0.02/0	
		TKM	Head thickness tolerance change T +0.3/0 ⇨ 0/−0.02	
		TCC	Chamfering of head This improves the strength of the punch head. P.1611 0.1mm increments 0.5≦TCC≦(H−D)/2 If H≦5, then TCC is 0.5.	
Alterations to shank		SKC	Single key flat on shank Ⓐ ・D3 ~ 6 P≦D−1.2 (Machining width 0.5) ・D8 ~ P≦D−2.2 (Machining width 1) Cannot be combined with KC・WKC・KFC.	
		NDC	No press-in lead ℓ≧3⇨ℓ=0	

Price Quotation