

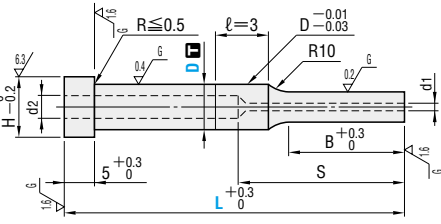


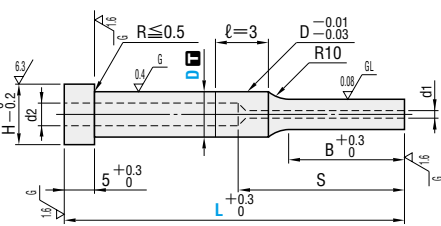
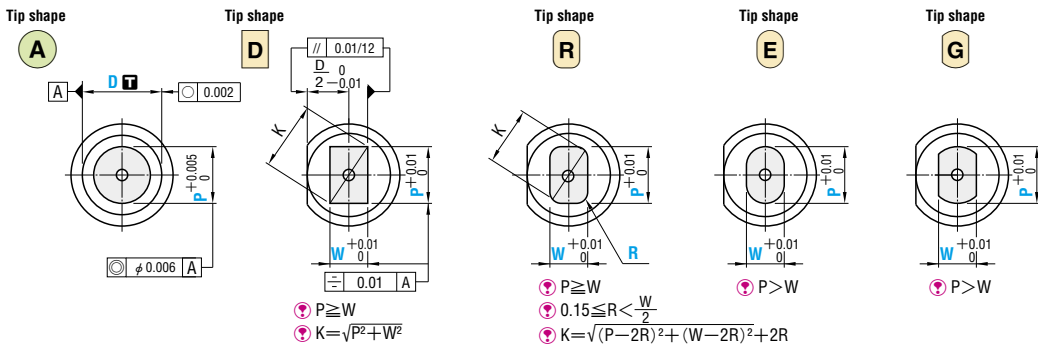


CARBIDE SHOULDER PUNCHES WITH AIR HOLES

—NORMAL · LAPPING—

Type	Shank diameter D Tolerance	M G	Catalog No.		The tip shape can be selected from [tip shapes] A ~ G in the figure below.
			Type	Tip shape B Tip length	
  For shank diameter tolerance D T, select either m5 or +0.005.	Dm5	V30 (HIP) 88 ~ 89HRA	WJ	S	
			Super fine grain (HIP) 90 ~ 92HRA		
	D+0.005	V30 (HIP) 88 ~ 89HRA	A-WJ	L	
			Super fine grain (HIP) 90 ~ 92HRA		
—Lapping—   For shank diameter tolerance D T, select either m5 or +0.005.	Dm5	V30 (HIP) 88 ~ 89HRA	L-WJ	X	
			Super fine grain (HIP) 90 ~ 92HRA		
	D+0.005	V30 (HIP) 88 ~ 89HRA	AL-WJ	G	
			Super fine grain (HIP) 90 ~ 92HRA		



Catalog No.		Type	Tip shape	B Tip length	D	L					0.001mm increments		0.01mm increments		B	d1	S	d2	H
Type	Tip shape					(A)	(D)	(R)	(E)	(G)	min.	P max.	P · Kmax.	P · Wmin.					
(Dm5) WJ, (D+0.005) A-WJ, (D4 ~ 6) WXJ, (D4 ~ 6) A-WXJ, —Lapping— L-WJ, AL-WJ, L-WXJ, AL-WXJ (D4 ~ 6)	A, D, R, E, G	S	L	3	40	50	60	70	1.000	~ 2.990	—	—	0.15 ≤ R < W/2 (R only)	8	0.3	—	0.3	5	
				4	40	50	60	70	1.500	~ 3.990	3.97	1.50							
				5	40	50	60	70	2.000	~ 4.990	4.97	2.00							
				6	40	50	60	70	2.000	~ 5.990	5.97	2.00							
				8	(40)	50	60	70	80	3.000	~ 7.990	7.97							3.00
				10	(40)	50	60	70	80	3.000	~ 9.990	9.97							3.00
				13	(40)	50	60	70	80	6.000	~ 12.990	12.97							6.00
				16	(40)	(50)	60	70	80	10.000	~ 15.990	15.97							6.00
				3	40	50	60	70	1.000	~ 2.990	—	—							
				4	50	60	70	1.500	~ 3.990	3.97	2.00								
				5	50	60	70	2.000	~ 4.990	4.97	2.00								
				6	50	60	70	2.000	~ 5.990	5.97	2.00								
				8	50	60	70	80	3.000	~ 7.990	7.97	3.00							
				10	50	60	70	80	3.000	~ 9.990	9.97	3.00							
				13	50	60	70	80	6.000	~ 12.990	12.97	6.00							
				16	60	70	80	10.000	~ 15.990	15.97	6.00								
(Dm5) WJ, (D+0.005) A-WJ, —Lapping— L-WJ, AL-WJ	A	X	A	4	50	60	70	2.000	~ 3.990	—	—	—	19	0.5	26	1.2	7		
				5	50	60	70	3.000	~ 4.990	—	—								
				6	50	60	70	3.000	~ 5.990	—	—								
				8	60	70	80	3.000	~ 7.990	—	—								
				10	60	70	80	3.000	~ 9.990	—	—								
				13	60	70	80	6.000	~ 12.990	—	—								
				16	70	80	10.000	~ 15.990	—	—									
				19	0.5	26	1.2	7											
				25	0.8	32	2.1	8											
				30	1.2	40	3.4	11											
40	1.9	50	4.4	16															
25	2.9	36	4.4	16															
19	1.6	28	4.4	16															
19	1.9	28	4.4	16															
25	2.9	36	4.4	16															
40	2.9	50	4.4	16															

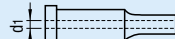
⊕ If L is (40) or (50), tip length B and S dimension are as follows.

L	(40)	(50)	D	L	(40)	D	L	(50)
B	8	13	8	16	S=17	16	24	S=24

⊕ A: P > D - 0.03 → ℓ = 0 If P > D - 0.03 for a round punch, D - 0.01 (press-in lead) is not included.

⊕ D R E G: P · K > D - 0.05 → ℓ = 0 If P · K > D - 0.05 for a shaped punch, D - 0.01 (press-in lead) is not included.

⊕ Air hole of super fine grain type is straight. S and d2 dimensions do not exist.



Order  Catalog No. — L — P — W — R (R only)
WJDS 10 — 60 — P8.00 — W3.00

Days to Ship  Quotation

Price  Quotation

Alterations  Catalog No. — L (LC-LCX-LCT-LMT) — P (PC) — W (WC) — R — (BC-HC-TC, etc.)
WJDS 10 — 60 — P8.00 — W3.00 — BC10

Alteration	Code	A	D R E G	1Code	
Alterations to tip	PC WC	Tip dimension change PC ≥ PCmin. 0.001mm increments ⊕ Cannot be used for D3-4. ⊗ Cannot be used for tip X.	Tip dimension change PC ≥ PC · WCmin. 0.01mm increments (If combined with PC, 0.01mm increments can be selected.) ⊗ Cannot be used for D4.		
	BC	Tip length change 2 ≤ BC < B 0.1mm increments ⊕ If combined with LC, B dimension is shortened by (L-LC).			
	PRC	Rounding of tip side edge 0.3 ≤ PRC ≤ 1 0.1mm increments ⊕ PRC ≤ (P-d1-0.5)/2 ⊗ Cannot be combined with PCC.			
	PCC	Chamfering to tip side edge 0.3 ≤ PCC ≤ 1 0.1mm increments ⊕ PCC ≤ (P-d1-0.5)/2 ⊗ Cannot be combined with PRC.			
	PKC PKV	Tip tolerance change P+0.005 → +0.003 P-0.005 → ±0.002 ⊕ P dimension increment remains the same.	Tip tolerance change P · W+0.01 → +0.005 P · W-0.01 → ±0.005 ⊕ P dimension increment remains the same.		Quotation
	LC LCX	Full length change 25+B(BC) ≤ LC < L 0.1mm increments ⊕ B and S dimensions are shortened by L-(LC). (If combined with LKC-LKZ, 0.01mm increments can be selected.)	Full length change with the same tip length B 30+B(BC) ≤ LCX < L 0.1mm increments ⊕ If difference between full length and tip length is 25mm or less, tip length is adjusted to (Full length-25mm). (If combined with LKC-LKZ, 0.01mm increments can be selected.) ⊗ Cannot be used for V30.		
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 LC Full length tolerance change T+0.3 → +0.02 + Full length change + L+0.3 → +0.1		

Alteration	Code	A	D R E G	1Code
Alterations to full length	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 LC Head thickness tolerance change T+0.3 → 0 + Full length change + L+0.3 → +0.1	
	LKC LKZ	Full length tolerance change L+0.3 → +0.05 Full length tolerance change L+0.3 → +0.01		
	KC WKC	Addition of single key flat to head ⊗ Cannot be combined with KFC. Addition of double key flats in parallel ⊗ Cannot be combined with KFC.	90° position change 180° 1° increments ⊗ Cannot be combined with KFC. Double key flats in parallel ⊗ Cannot be combined with KC.	
	KFC	Double key flats at 0° and a 1° increments ⊗ Cannot be combined with KC-WKC.	90° position change 180° selected angle 270° 1° increments ⊗ Cannot be combined with KC-WKC.	
Alterations to head	NKC	No key flat		Quotation
	HC TC	Head diameter change D ≤ HC < H 0.1mm increments 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 TKM	Head thickness tolerance change T+0.3 → +0.02 Head thickness tolerance change T+0.3 → 0 -0.02		
	TCC	Chamfering of head This improves the strength of the punch head. P.1611 0.5 ≤ TCC ≤ (H-D)/2 ⊕ If H ≤ 5, then TCC is 0.5.		
Shank	NDC	No press-in lead ℓ = 3 → ℓ = 0		