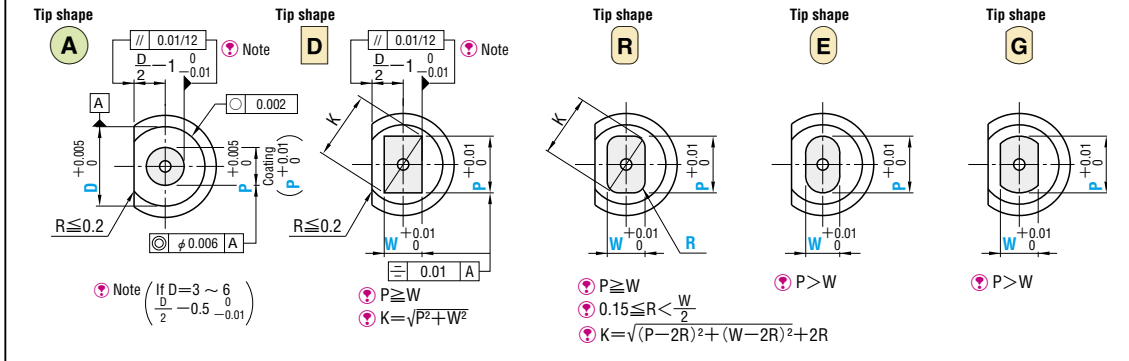
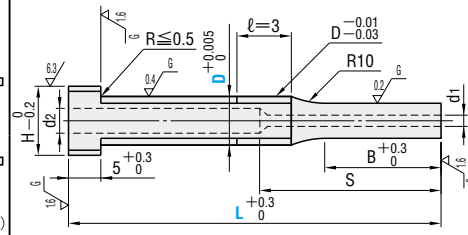


# CARBIDE KEY FLAT SHANK SHOULDER PUNCHES WITH AIR HOLES

—NORMAL·TiCN COATING—



Type	Shank diameter D Tolerance	Material V30 (HIP) 88 ~ 89HRA	Catalog No.		The tip shape can be selected from tip shapes A ~ G in the figure below.
			Type	Tip shape Tip length	
 RoHS	D +0.005 0	V30 (HIP) 88 ~ 89HRA	G—WJ TiCN coating GH—WJ	A	S L Tip length (B) L > S
				D	
				R	
				E	
				G	



Type	Tip shape	Tip length	Catalog No.		L	0.001mm increments					B	d1	S	d2	H		
			Type	Tip length		A		D R E G								R	
						min.	P max.	P-Kmax.	W max.	P-Wmin.						R	
G—WJ —TiCN coating— GH—WJ	S		A	3	40	50	60	70	1.000	~	1.800	—	—	—	—	—	—
				4	40	50	60	70	1.500	~	2.800	3.97	2.80	1.50	—	—	—
				5	40	50	60	70	2.000	~	3.800	4.97	3.80	2.00	—	—	—
				6	40	50	60	70	2.000	~	4.800	5.97	4.80	2.00	—	—	—
				8	40	50	60	70	80	3.000	~	5.800	7.97	5.80	3.00	—	—
				10	40	50	60	70	80	3.000	~	7.800	9.97	7.80	3.00	—	—
				13	40	50	60	70	80	6.000	~	10.800	12.97	10.80	6.00	—	—
				16	40	50	60	70	80	10.000	~	13.800	15.97	13.80	6.00	—	—
	L		D	3	40	50	60	70	1.000	~	1.800	—	—	—	—	—	
				4	50	60	70	1.500	~	2.800	3.97	2.80	2.00	—	—		
				5	50	60	70	2.000	~	3.800	4.97	3.80	2.00	—	—		
				6	50	60	70	2.000	~	4.800	5.97	4.80	2.00	—	—		
				8	50	60	70	80	3.000	~	5.800	7.97	5.80	3.00	—		
				10	50	60	70	80	3.000	~	7.800	9.97	7.80	3.00	—		
				13	50	60	70	80	6.000	~	10.800	12.97	10.80	6.00	—		
				16	60	70	80	10.000	~	13.800	15.97	13.80	6.00	—			

L(40)→B=8 If full length is (40), tip length is 8mm in all cases.  
 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.  
 D=3 ~ 6 → a=0.5 If D dimension is 3 ~ 6, a is 0.5mm.  
 D=8 ~ 16 → a=1 When D dimension is 8 ~ 16, a is 1mm.  
 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 — W — R (R only)  
 G—WJDS 10 — 60 — P8.00 — W3.00

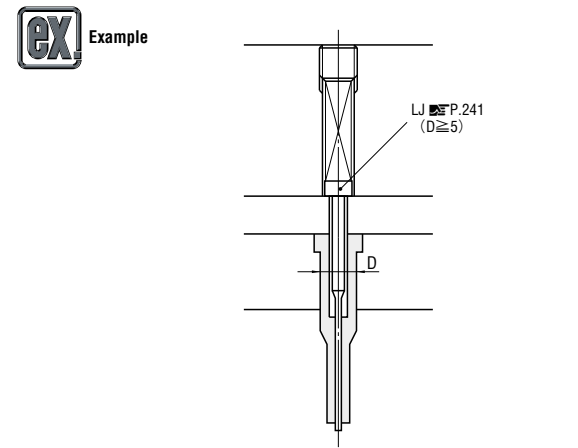
**Days to Ship** **Quotation**

Alterations Catalog No. — L(LC-LCT-LMT) — P(PC) — W(WC) — R — (BC-HC-TC, etc.)  
 G—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 When coating is selected, the increments are 0.01mm. Cannot be used for D3-4.	Tip dimension change WC ≥ PC·WCmin. 0.01mm increments (If combined with PKC, 0.001mm increments can be selected.) Cannot be used for D4.	<table border="1"> <tr><th>D</th><th>PCmin.</th></tr> <tr><td>5</td><td>1.800</td></tr> <tr><td>6</td><td>1.800</td></tr> <tr><td>8</td><td>2.300</td></tr> <tr><td>10</td><td>2.800</td></tr> <tr><td>13</td><td>5.000</td></tr> <tr><td>16</td><td>8.000</td></tr> </table> <table border="1"> <tr><th>D</th><th>PC·WCmin.</th></tr> <tr><td>5</td><td>1.80</td></tr> <tr><td>6</td><td>1.80</td></tr> <tr><td>8</td><td>2.50</td></tr> <tr><td>10</td><td>2.80</td></tr> <tr><td>13</td><td>5.00</td></tr> <tr><td>16</td><td>5.00</td></tr> </table>	D	PCmin.	5	1.800	6	1.800	8	2.300	10	2.800	13	5.000	16	8.000	D	PC·WCmin.	5	1.80	6	1.80	8	2.50	10	2.80	13	5.00	16	5.00
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13	5.00																															
16	5.00																															
BC	Tip length change 2 ≤ BC < B 0.1mm increments																															
SC	Tip roughness change With TiCN coating, the base material is finished before the coating is applied.																															
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.																															
Alterations to full length	PKC	Tip tolerance change Normal P + 0.005 → +0.003 Coating P + 0.01 → +0.005 Coating cannot be used for D16.	Tip tolerance change (P·W dimensions can be selected in 0.001mm increments.) P·W + 0.01 → +0.005 Cannot be used with coating.																													
	PKV	Tip tolerance change Normal P + 0.005 → ±0.002 Coating P + 0.01 → ±0.005 P dimension increment remains the same.	Tip tolerance change P·W + 0.01 → ±0.005 Cannot be used with coating. P dimension increment remains the same.																													
	LC	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 30 + B (BC) ≤ LC < L 0.1mm increments B and S dimensions are shortened by L - (LC).																													

**Price** **Quotation**

Alteration	Code	A	D R E G	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 → +0.02 Full length change L + 0.3 → +0.1	LC Full length tolerance change L + 0.3 → +0.1
	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 → -0.02 Full length change L + 0.3 → +0.1	LC Full length tolerance change L + 0.3 → +0.1
	LKC	Full length tolerance change L + 0.3 → +0.05		
	LKZ	Full length tolerance change L + 0.3 → +0.01 Cannot be used with TiCN coating.		
Alterations to head	WKC	Addition of double key flats in parallel		
	HC	Head diameter change D ≤ HC < H 0.1mm increments		
	TC	Head tolerance 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 → +0.02 0		
	TKM	Head thickness tolerance change T + 0.3 → -0.02 0		
Alterations to shank	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.		
	SKF	Single key flat on shank, configurable size SKF - 0.01 P ≥ 2 (SKF - 0.1) W ≤ 2 (SKF - 0.1) 0.1mm increments 0.1mm increments D3 ~ 6 D/2 - 0.5 ≤ SKF ≤ D/2 - 0.1 D8 ~ 16 D/2 - 1.0 ≤ SKF ≤ D/2 - 0.1 Cannot be combined with WKC.		
	NDC	No press-in lead ℓ = 3 → ℓ = 0		



Can also be used in combination with a long jector pin. (Can be used for D ≥ 5.)