



JECTOR PUNCHES

— DLC COATING —



Calculating the projection length of the jector pin (reference value) **P.241**

For details of jector holes, refer to Jector Punch Blanks. **P.236**
 For details of jector pins, refer to Jector Pin Sets. **P.241**

Type	Shank diameter D Tolerance	M	Catalog No.		Shape Tip shape	B Tip length	The tip shape can be selected from figure below. Tip shape A~G in the figure below.
			Type Without foundation	Foundation WPC®			
<p>RoHS WPC® treatment</p>	D _{m5}	Powdered highspeed steel 64~67HRC Surface 3000HV and above	N-PJ	NW-PJ	A	S	
			N-PJV	NW-PJV	D		
	D _{+0.005/0}	Powdered highspeed steel 64~67HRC Surface 3000HV and above	AN-PJ	ANW-PJ	R	L	<p>Ⓢ The tip end is ground before the coating is applied. Ⓢ The tip edges of foundation WPC® are slightly rounded.</p>
			AN-PJV	ANW-PJV	E		
Tip shape		Tip shape		Tip shape		Tip shape	
A		D		R		E	
<p>Ⓢ P ≥ W Ⓢ R = 0 can be selected (However, not for foundation WPC®) Ⓢ K = √(P² + W²)</p>		<p>Ⓢ P ≥ W Ⓢ R = 0.15 ≤ R < W/2 Ⓢ K = √(P - 2R)² + (W - 2R)² + 2R</p>		<p>Ⓢ P ≥ W Ⓢ P > W</p>		<p>Ⓢ P > W</p>	

Type	Shape Tip shape	B Tip length	D	0.01mm increments								B	H			
				L				D R E G								
				min.	P max.	P · Kmax.	P · Wmin.	R								
(D _{m5}) Spring reinforced type (D8~25) N-PJ (D _{+0.005/0}) AN-PJ Spring reinforced type (D8~25) AN-PJV Foundation WPC® (D _{m5}) NW-PJ Spring reinforced type (D _{+0.005/0}) NW-PJV Spring reinforced type (D _{+0.005/0}) ANW-PJ Spring reinforced type ANW-PJV	A D R E G	S L	(4)	40	50	60	70	80	1.00	3.99	3.97	1.00	8 13 19 25 13 19 25	7 8 9 11 13 16 19 23 28		
			(5)	40	50	60	70	80	2.00	4.99	4.97	2.00				
			(6)	40	50	60	70	80	2.00	5.99	5.97	2.00				
			8	(40)	50	60	70	80	90	100	3.00	7.99			7.97	3.00
			10	(40)	50	60	70	80	90	100	3.00	9.99			9.97	3.00
			13	(40)	50	60	70	80	90	100	6.00	12.99			12.97	6.00
			16	(40)	(50)	60	70	80	90	100	10.00	15.99			15.97	6.00
			20	(40)	(50)	60	70	80	90	100	13.00	19.99			19.97	6.00
			25	(40)	(50)	60	70	80	90	100	18.00	24.99			24.97	6.00
			0.15 ≤ R < W/2 (R only)												13 19 25 13 19 25	7 8 9 11 13 16 19 23 28
(4)	50	60	70	80	1.00	3.99	3.97	2.00								
(5)	50	60	70	80	2.00	4.99	4.97	2.00								
(6)	50	60	70	80	2.00	5.99	5.97	2.00								
8	50	60	70	80	90	100	3.00	7.99	7.97	3.00						
10	50	60	70	80	90	100	3.00	9.99	9.97	3.00						
13	50	60	70	80	90	100	6.00	12.99	12.97	6.00						
16	60	70	80	90	100	10.00	15.99	15.97	6.00							
20	60	70	80	90	100	13.00	19.99	19.97	6.00							
25	60	70	80	90	100	18.00	24.99	24.97	6.00							

Ⓢ The spring constants of N-PJV, NW-PJV, AN-PJV, ANW-PJV are twice those of N-PJ, NW-PJ, AN-PJ, ANW-PJ respectively.
 Ⓢ L(40)→B=6 If full length is (40), tip length is 6mm in all cases.
 Ⓢ L(50)→B=13 If full length is (50), tip length is 13mm in all cases.
 Ⓢ A: P > D - 0.03 → ℓ = 0 If P > D - 0.03 for a round punch, D_{-0.01/-0.03} (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/-0.03} (press-in lead) is not included.
 Ⓢ D(4), (5), and (6) are specifications available for N-PJ, NW-PJ, AN-PJ, ANW-PJ only. Spring reinforced types are available for D8~25 only.

Order **Catalog No.** - L - P - W - R (R only)
 NW-PJEL 10 - 70 - P8.50 - W4.25

Effects of DLC coating
 Effective for preventing adhesion during aluminum or copper blanking thanks to its low affinity for nonferrous metal. See the product data for details. **P.1609**

Days to Ship **Quotation**

Alterations **Catalog No.** - (L)LC·LCT·LMT - (P)PC - (W)WC - R - (BC·HC·TC...etc.)
 N-PJDS 6 - LC58 - P3.00 - W2.80 - HC8-KC45

Alterations	Code	A	D R E G	1Code																		
Alterations to tip	PC WC	Tip dimension change PC ≥ PCmin 0.01mm increments (If combined with PKC, 0.001mm increments can be selected.)	Tip dimension change PC·WC ≥ PC·WCmin 0.01mm increments Ⓢ 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>2.500</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> <tr><td>20</td><td>9.000</td></tr> <tr><td>25</td><td>9.000</td></tr> </table>	D	PCmin	5	1.800	6	1.800	8	2.500	10	2.800	13	5.000	16	8.000	20	9.000	25	9.000
	D	PCmin																				
	5	1.800																				
	6	1.800																				
	8	2.500																				
	10	2.800																				
	13	5.000																				
	16	8.000																				
	20	9.000																				
	25	9.000																				
BC	Tip length change (shorter than standard) 2 ≤ BC < B 0.1mm increments	<table border="1"> <tr><th>PC·WC</th><th>Bmax</th></tr> <tr><td>1.80 ~ 1.99</td><td>20</td></tr> </table>	PC·WC	Bmax	1.80 ~ 1.99	20																
PC·WC	Bmax																					
1.80 ~ 1.99	20																					
PRC	Rounding of tip side edge 0.3 ≤ PRC ≤ 1 0.1mm increments Ⓢ PRC ≤ (P - d ₁ - 0.5) / 2 d ₁ dimension P.236 Ⓢ Cannot be combined with PCC. Ⓢ It is PRC ± 0.1 for foundation WPC®																					
PCC	Chamfering to tip side edge 0.3 ≤ PCC ≤ 1 0.1mm increments Ⓢ PCC ≤ (P - d ₁ - 0.5) / 2 d ₁ dimension P.236 Ⓢ Cannot be combined with PRC. Ⓢ Cannot be used for foundation WPC®																					
PKC	Tip tolerance change P + 0.01 0 → +0.005 Ⓢ (P dimension can be selected in 0.001mm increments.)	Tip tolerance change P·W ± 0.01 0 → +0.01 0																				
SC	Tip lapping Ⓢ P dimension tolerance & increments remain unchanged. Raw material before coating is treated. Ⓢ Tip shape corner R=0 cannot be selected Ⓢ Cannot be combined with foundation WPC®																					
LC	Full length change (reduction in tip length) LC < L 0.1mm increments Ⓢ Tip length B is reduced by (L - LC). (If combined with LKC, 0.01mm increments can be selected.) Ⓢ Projection length of jector pin is 2mm.																					
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.	<table border="1"> <tr><th>TKC</th><th>LC</th><th>Full length tolerance change</th></tr> <tr><td>Head thickness tolerance change +0.3 0 → +0.02</td><td>Full length change L + 0.3 0 → +0.1</td><td>Full length tolerance change L + 0.3 0 → +0.1</td></tr> </table>	TKC	LC	Full length tolerance change	Head thickness tolerance change +0.3 0 → +0.02	Full length change L + 0.3 0 → +0.1	Full length tolerance change L + 0.3 0 → +0.1														
TKC	LC	Full length tolerance change																				
Head thickness tolerance change +0.3 0 → +0.02	Full length change L + 0.3 0 → +0.1	Full length tolerance change L + 0.3 0 → +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.	<table border="1"> <tr><th>TKM</th><th>LC</th><th>Full length tolerance change</th></tr> <tr><td>Head thickness tolerance change +0.3 0 → -0.02</td><td>Full length change L + 0.3 0 → +0.1</td><td>Full length tolerance change L + 0.3 0 → +0.1</td></tr> </table>	TKM	LC	Full length tolerance change	Head thickness tolerance change +0.3 0 → -0.02	Full length change L + 0.3 0 → +0.1	Full length tolerance change L + 0.3 0 → +0.1														
TKM	LC	Full length tolerance change																				
Head thickness tolerance change +0.3 0 → -0.02	Full length change L + 0.3 0 → +0.1	Full length tolerance change L + 0.3 0 → +0.1																				

Alterations	Code	A	D R E G	1Code	
Full length	LKC	Full length tolerance change L + 0.3 0 → +0.05			
Alterations to head	KC	Addition of single key flat to head Ⓢ Key flat position change 1° increments			
	WKC	Addition of double key flats in parallel Ⓢ Can be combined with KC.			
	KFC	Double key flats at 0° and a selected angle 1° increments Ⓢ Cannot be combined with KC·WKC.			
	NKC	No key flat			
	HC	Head diameter change D ≤ HC < H 0.1mm increments Ⓢ Cannot be used for retainer set products			
	TC	Head thickness change 3.5 ≤ 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.) Ⓢ Cannot be used for retainer set products			
	TKC	Head thickness tolerance change +0.3 0 → +0.02			
	TKM	Head thickness tolerance change +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.			
	RC	Head thickness is machined to a tolerance of -0.04 ~ 0 relative to the retainer surface. Ⓢ Cannot be used for D _{+0.005/0}			
Alterations to shank	AC	The jector pin is removed to create an air path and the side vent hole is plugged from the inside by inserting a resin (ABS) ring.			
	NC	The jector pin is removed. Ⓢ Cannot be combined with AC.			
	NDC	No press-in lead ℓ ≥ 3 → ℓ = 0			

Price **Quotation**