


PUNCHES WITH LOCATING DOWEL HOLES

— DLC COATING —

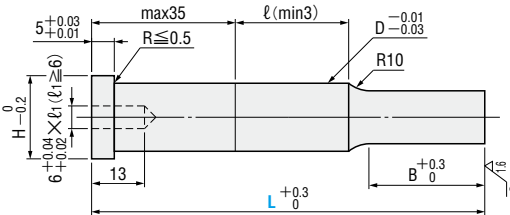


Type	A	Shank diameter D tolerance	M	Catalog No.			The tip shape can be selected from Tip shape A~G in the figure below.
				Type	Shape Tip shape	B Tip length	
With locating dowel hole DLC coating	Dowel pin MS6-25	Dm5	Equivalent to SKD11 60~63HRC Surface 3000HV and above	N-SP NW-SP	A D R E G	S L X	-C

RoHS

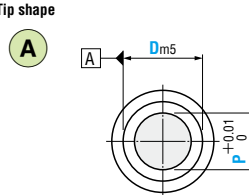


The tip shape can be selected from Tip shape A~G in the figure below.



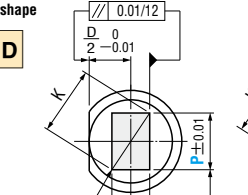
The tip end is ground before the coating is applied.
 Tip length (B) X>L>S
 The tip edges of foundation WPC® are slightly rounded.

Tip shape A



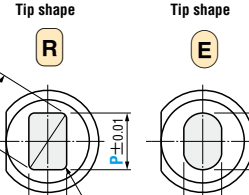
$P \geq W$
 $R=0$ can be selected (However, foundation WPC® cannot be used.)
 $K = \sqrt{P^2 + W^2}$

Tip shape D



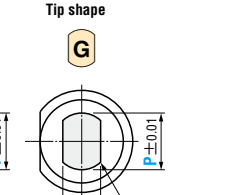
$P \geq W$
 $R \leq 0.2$
 $W \pm 0.01$
 $K = \sqrt{(P-2R)^2 + (W-2R)^2} + 2R$

Tip shape R




$P \geq W$
 $0.15 \leq R < \frac{W}{2}$

Tip shape E



$P > W$

Tip shape G



$P > W$
 $R \leq 0.2$

Catalog No.	Type	D	L												0.01mm increments				B	H					
			L												A	D R E G	R								
			min.	P max.	P-Kmax.	P-Wmin.	R																		
S	N-SP□S-C	10	(40)	50	60	70	80	90	100	110	120	130	140	150	3.00	~	9.99	9.97	2.50	13	13				
		13	(40)	50	60	70	80	90	100	110	120	130	140	150	6.00	~	12.99	12.97	3.00			19	16		
		16	(40)	50	60	70	80	90	100	110	120	130	140	150	10.00	~	15.99	15.97	4.00					19	19
		20	(40)	50	60	70	80	90	100	110	120	130	140	150	13.00	~	19.99	19.97	5.00						
-Foundation WPC®- NW-SP□S-C	25	(40)	50	60	70	80	90	100	110	120	130	140	150	18.00	~	24.99	24.97	6.00	19	28					
	10	50	60	70	80	90	100	110	120	130	140	150	3.00	~	9.99	9.97	2.50	19			13				
	13	50	60	70	80	90	100	110	120	130	140	150	6.00	~	12.99	12.97	3.00					25	16		
	16	60	70	80	90	100	110	120	130	140	150	10.00	~	15.99	15.97	4.00	25							19	
-Foundation WPC®- NW-SP□L-C	20	60	70	80	90	100	110	120	130	140	150	13.00	~	19.99	19.97	5.00			30	23					
	25	60	70	80	90	100	110	120	130	140	150	18.00	~	24.99	24.97	6.00		40			28				
	10	70	80	90	100	110	120	130	140	150	6.00	~	9.99	9.97	5.00	40						13			
	13	70	80	90	100	110	120	130	140	150	6.00	~	12.99	12.97	5.00		40						16		
-Foundation WPC®- NW-SP□X-C	16	80	90	100	110	120	130	140	150	10.00	~	15.99	15.97	5.00	40				19						
	20	80	90	100	110	120	130	140	150	13.00	~	19.99	19.97	5.00				40		23					
	25	80	90	100	110	120	130	140	150	18.00	~	24.99	24.97	6.00		40					28				

$0.15 \leq R < \frac{W}{2}$ (R only)

(L(40)→B=8 If full length is (40) and D dimension is 10~25, tip length is 8mm in all cases.
 (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.

Order **Catalog No.** - L - P - W - R(R only)
 N-SPAS-C 25 - 100 - P18.05

Days to Ship **Quotation**

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

Alterations **Catalog No.** - L(LC) - P(PC) - W(WC) - R - (BC-HC-TC...etc.)
 N-SPAS-C 25 - LC95 - P18.05 - BC30

Alterations	Code	A	D R E G	1Code
Alterations to tip	PC WC	Tip dimension change $PC \geq \frac{P_{min}}{2}$ 0.01mm increments (If combined with PKC, 0.001mm increments can be selected.)	Tip dimension change $PC \geq \frac{P-W_{min}}{2}$ 0.01mm increments ⊗ Cannot be used for tip X.	
	BC	Tip length change $2 \leq BC \leq B_{max}$ 0.1mm increments ⊗ Full length L must be at least 25mm longer than tip length BC.	Tip length change $2 \leq BC \leq B_{max}$ 0.1mm increments ⊗ Full length L must be at least 30mm longer than tip length BC.	
	PRC	Rounding of tip side edge $0.3 \leq PRC \leq 1$ 0.1mm increments ⊗ $PRC \leq (P-0.2)/2$ ⊗ Cannot be combined with PCC. ⊗ It is $PRC \pm 0.1$ for foundation WPC®.		
	PCC	Chamfering to tip side edge $0.3 \leq PCC \leq 1$ 0.1mm increments ⊗ $PCC \leq (P-0.2)/2$ ⊗ Cannot be combined with PRC. ⊗ Can not be used for foundation WPC®.		
	PKC	Tip tolerance change $P+0.01 \rightarrow +0.005$ 0 ⊗ (P dimension can be selected in 0.001mm increments.)	Tip tolerance change $P-W \pm 0.01 \rightarrow +0.01$ 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 for foundation WPC®.		
Alterations to full length	LC	Full length change $25+B(BC) \leq LC < L$ 0.1mm increments ⊗ If difference between full length and tip length is 25mm or less, tip length is adjusted to (Full length-25mm). (If combined with LKC, 0.01mm increments can be selected.)	Full length change $30+B(BC) \leq LC < L$ 0.1mm increments ⊗ If difference between full length and tip length is 30mm or less, tip length is adjusted to (Full length-30mm). (If combined with LKC, 0.01mm increments can be selected.)	
	LKC	Full length tolerance change $L+0.3 \rightarrow +0.05$ 0		

P Price **Quotation**

Alterations	Code	A	D R E G	1Code
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	Double key flats in parallel Can be combined with KC.	
	KFC	Double key flats at 0° and 180° a selected angle 1° increments ⊗ Cannot be combined with KC-WKC.	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 $D \leq HC < H$ 0.1mm increments ⊗ Cannot be used for retainer set products		
	TC	Head thickness change $2 \leq TC < 5$ 0.1mm increments ⊗ Full length L is shortened by (5-TC). ⊗ Cannot be used for retainer set products		
Alterations to shank	TCC	Chamfering of head This improves the strength of the punch head. P.1611 0.1mm increments $0.5 \leq TCC \leq (H-D)/2$		
	UC	Modification for urethane stripper (USN) installation		
	TPC	Dowel pin change MS6-25 that comes with the product is changed to MSTP6-25 (tapped type).		
	NDC	No press-in lead $\ell \geq 3 \rightarrow \ell = 0$		

Quotation

PUNCHES