



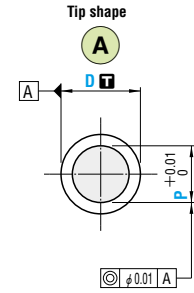
TAPPED PUNCHES

—TiCN COATING · DICOAT® TREATMENT—

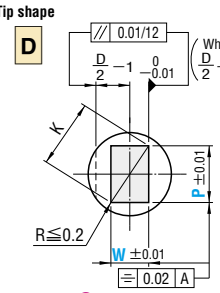


Type	Shank diameter D Tolerance	M H	Catalog No.			The tip shape can be selected from Tip shape A~G in the figure below.
			Type	Tip shape	Tip length B	
—TiCN coating—  RoHS	D _{m5}	Powdered high-speed steel 64~67HRC Surface 3000HV	H—MPH	A	S	
			AH—MPH	D		
—Dicoat® treatment—  RoHS	D _{m5}	Equivalent to SKD11 60~63HRC Surface 3000HV	T—MP	R	L	
			T—MPH	E		
			AT—MP	G		
			AT—MPH	X		

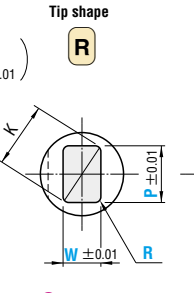
Tip shape A



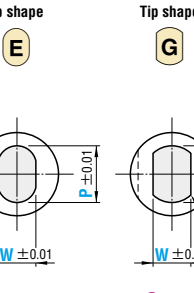
Tip shape D



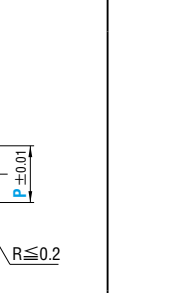
Tip shape R



Tip shape E



Tip shape G



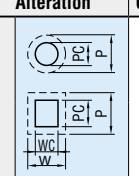
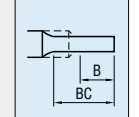
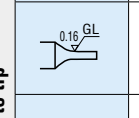
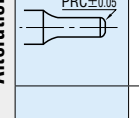
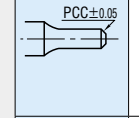
Type	Tip shape	Tip length B	Catalog No.										B	M							
			L																		
			0.01mm increments																		
(D _{m5}) H—MPH T—MP T—MPH	A	S	5	40	50	60	70	80	2.00	4.99	4.97	1.20	0.15 ≤ R < W/2	8	3						
			6	40	50	60	70	80	2.00	5.99	5.97	1.50									
			8	(40)	50	60	70	80	90	100	3.00	7.99				7.97	2.00				
			10	(40)	50	60	70	80	90	100	3.00	9.99				9.97	2.50				
			13	(40)	50	60	70	80	90	100	6.00	12.99				12.97	3.00				
			16	(40)	50	60	70	80	90	100	10.00	15.99				15.97	4.00				
			20	(40)	50	60	70	80	90	100	13.00	19.99				19.97	5.00				
			25	(40)	50	60	70	80	90	100	18.00	24.99				24.97	6.00				
			5	50	60	70	80	2.00	4.99	4.97	2.00	0.15 ≤ R < W/2				13	3				
			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	2.50		
			10	50	60	70	80	90	100	3.00	9.99							9.97	2.50		
			13	50	60	70	80	90	100	6.00	12.99							12.97	3.00		
			16	60	70	80	90	100	10.00	15.99	15.97							4.00			
			20	60	70	80	90	100	13.00	19.99	19.97							5.00			
25	60	70	80	90	100	18.00	24.99	24.97	6.00												
5	60	70	80	2.00	4.99	4.97	3.50	0.15 ≤ R < W/2	25	3											
6	60	70	80	2.00	5.99	5.97	3.50														
8	60	70	80	90	100	3.00	7.99				7.97		5.00								
10	60	70	80	90	100	3.00	9.99				9.97		5.00								
13	60	70	80	90	100	6.00	12.99				12.97		5.00								
16	70	80	90	100	10.00	15.99	—				—										
20	70	80	90	100	13.00	19.99	—				—										
25	70	80	90	100	18.00	24.99	—				—										
(D _{+0.005}) AH—MPH AT—MP AT—MPH	X	S	5	60	70	80	2.00				4.99	4.97	3.50	0.15 ≤ R < W/2	25	3					
			6	60	70	80	2.00				5.99	5.97	3.50								
			8	60	70	80	90				100	3.00	7.99				7.97	5.00			
			10	60	70	80	90				100	3.00	9.99				9.97	5.00			
			13	60	70	80	90				100	6.00	12.99				12.97	5.00			
			16	70	80	90	100				10.00	15.99	—				—				
			20	70	80	90	100				13.00	19.99	—				—				
			25	70	80	90	100	18.00	24.99	—	—										
			(D _{+0.005}) AH—MPH AT—MP AT—MPH	X	L	5	60	70	80	2.00	4.99	4.97	3.50				0.15 ≤ R < W/2	25	3		
						6	60	70	80	2.00	5.99	5.97	3.50								
						8	60	70	80	90	100	3.00	7.99							7.97	5.00
						10	60	70	80	90	100	3.00	9.99							9.97	5.00
						13	60	70	80	90	100	6.00	12.99							12.97	5.00
						16	70	80	90	100	10.00	15.99	—							—	
						20	70	80	90	100	13.00	19.99	—							—	
25	70	80				90	100	18.00	24.99	—	—										
(D _{+0.005}) AH—MPH AT—MP AT—MPH	X	L				5	60	70	80	2.00	4.99	4.97	3.50	0.15 ≤ R < W/2	30	4					
						6	60	70	80	2.00	5.99	5.97	3.50								
						8	60	70	80	90	100	3.00	7.99							7.97	5.00
						10	60	70	80	90	100	3.00	9.99							9.97	5.00
						13	60	70	80	90	100	6.00	12.99							12.97	5.00
						16	70	80	90	100	10.00	15.99	—							—	
						20	70	80	90	100	13.00	19.99	—							—	
			25	70	80	90	100	18.00	24.99	—	—										

Ⓛ(40)→B=8 If the full length is (40), the tip length is 8mm in all cases. Ⓜ The Dicoat® treatment tip-length X type is available for tip shape A only.

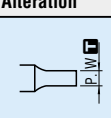
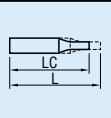
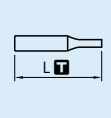

Order	Catalog No.	L	P	W	R (R only)
	AH—MPHRS 8	60	P6.50	W4.25	R0.50
	T—MPHAL 13	80	P8.24		

Days to Ship **Quotation**

Alterations	Catalog No.	L(LC)	P(PC)	W(WC)	R	(BC-KC-WKC, etc.)
	T—MPHAL 13	80	P8.24			KC—LKC

Alteration	Code	A	D R E G	1Code																			
	PC WC	Tip dimension change $PC \geq \frac{P_{min}}{2}$ 0.01 mm increments (Combined with PC, 0.01 mm increments can be selected.)	Tip dimension change $WC \geq \frac{P \cdot W_{min}}{2} \geq 1.00$ 0.01 mm increments Ⓧ Cannot be used for tip X.	—																			
		<table border="1"> <tr><th>P(PC)</th><th>Bmax.</th></tr> <tr><td>1.000~1.999</td><td>20</td></tr> <tr><td>2.000~3.999</td><td>35</td></tr> <tr><td>4.000~5.999</td><td>40(45)</td></tr> <tr><td>6.000~</td><td>45(60)</td></tr> </table>	P(PC)		Bmax.	1.000~1.999	20	2.000~3.999	35	4.000~5.999	40(45)	6.000~	45(60)	<table border="1"> <tr><th>P(PC)·W(WC)</th><th>Bmax.</th></tr> <tr><td>1.00~1.49</td><td>8</td></tr> <tr><td>1.50~1.99</td><td>13</td></tr> <tr><td>2.00~3.49</td><td>19</td></tr> <tr><td>3.50~4.99</td><td>25</td></tr> <tr><td>5.00~</td><td>30</td></tr> </table>	P(PC)·W(WC)	Bmax.	1.00~1.49	8	1.50~1.99	13	2.00~3.49	19	3.50~4.99
P(PC)	Bmax.																						
1.000~1.999	20																						
2.000~3.999	35																						
4.000~5.999	40(45)																						
6.000~	45(60)																						
P(PC)·W(WC)	Bmax.																						
1.00~1.49	8																						
1.50~1.99	13																						
2.00~3.49	19																						
3.50~4.99	25																						
5.00~	30																						
	BC	Tip length change $2 \leq BC \leq B_{max}$ 0.1 mm increments Ⓜ Full length L must be at least 25mm longer than tip length BC.	Tip length change $2 \leq BC \leq B_{max}$ 0.1 mm increments Ⓜ Full length L must be at least 30mm longer than tip length BC.	—																			
		Ⓜ Lapping of tip Ⓜ P dimension tolerance and increment are the same. The base material is finished before the coating is applied. Ⓧ R=0 cannot be selected for the tip shape D corners. Ⓜ Can be used for TiCN coating types only.	Quotation																				
	PRC±0.05	Rounding of tip side edge $0.3 \leq PRC \leq 1$ 0.1 mm increments Ⓜ $PRC \leq (P-0.2)/2$ Ⓧ Cannot be combined with PCC-GC.		—	Quotation																		
	PCC±0.05	Chamfering to tip side edge $0.3 \leq PCC \leq 1$ 0.1 mm increments Ⓜ $PCC \leq (P-0.2)/2$ Ⓜ Can be used with TiCN coating only. Ⓧ Cannot be combined with PRC-GC.	—	Quotation																			
	GC	$20^\circ \leq GC < 90^\circ$ 1° increments Tip length $B \geq f+2$ $f = P/2 \times \tan(90^\circ - GC)$ Ⓜ Can be combined with TiCN coating only. Ⓜ When used with SC, tip edges are rounded. Ⓧ Cannot be combined with LKC-PRC-PCC.	—		Quotation																		

P Price **Quotation**

Alteration	Code	A	D R E G	1Code
	PKC	Tip tolerance change $P \pm 0.01 \rightarrow +0.005$ 0 (P dimension can be selected in 0.001mm increments.) Ⓜ Can be used with TiCN coating only. Ⓧ Cannot be used for D>13.	Tip tolerance change $P \cdot W \pm 0.01 \rightarrow +0.01$ 0	—
			LC	
	LKC			Full length tolerance change $L \pm 0.3 \rightarrow +0.05$ 0
	KC WKC NKC SKC	Addition of single key slot Ⓧ Cannot be used for D5.	Key slot position 90° 0° change 1° increments	—
		Addition of double key slots in parallel Ⓧ Cannot be used for D5.	Double key slots in parallel Can be combined with KC.	
		Addition of single key flat on shank $\frac{D}{2} - 0.5 \leq \frac{D}{2} \cdot D5 \cdot 6$ $P \leq D - 1.2$ $W \leq D - 1.2$ (Machining width 0.5) $D8 \sim P \leq D - 2.2$ $W \leq D - 2.2$ (Machining width 1) Ⓧ Cannot be combined with KC-WKC.	—	