
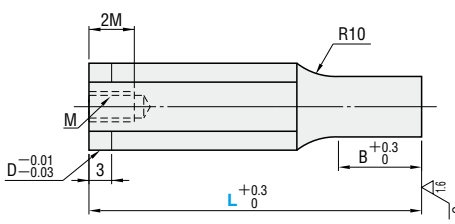
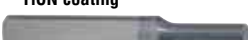
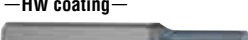

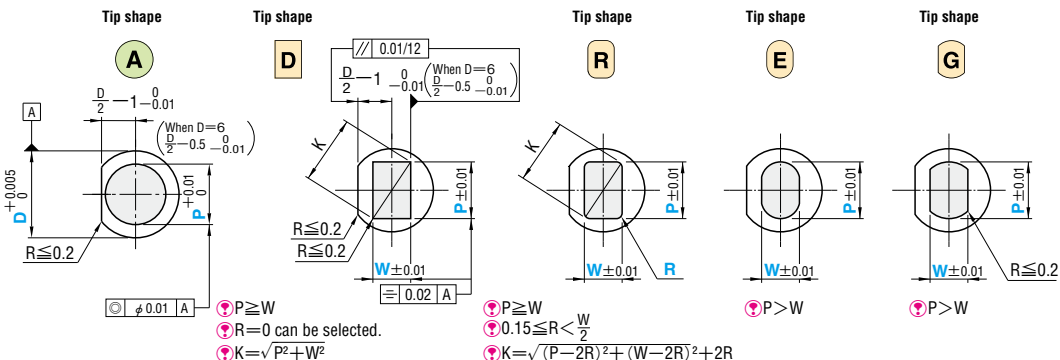


KEY FLAT SHANK TAPPED PUNCHES

—NORMAL · TiCN COATING · HW COATING · DLC COATING—



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		
—Normal— 	D ^{+0.005} ₀	Equivalent to SKD11 60~63HRC	G—MP	S L X		The tip end is ground before the coating is applied. The tip edges of a HW coating or DLC foundation WPC® type are very slightly rounded.
—TiCN coating— 			G—MPH TICN coating GH—MPH			
—HW coating— 			HW coating Surface 3000HV GHW—MPH			
—DLC coating— 			DLC coating Surface 3000HV GN—MPH DLC foundation WPC® GNW—MPH			



Type	Tip shape	Tip length	D	L					0.01mm increments				B	M			
				6	8	10	13	16	min. P max.	P·Kmax.	Wmax.	P·Wmin.					
G—MP G—MPH	S		6	40	50	60	70	80	2.00~	3.80	5.97	3.80	1.50	8	3		
			8	(40)	50	60	70	80	90	100	3.00~	5.80	7.97			5.80	2.00
			10	(40)	50	60	70	80	90	100	3.00~	7.80	9.97			7.80	2.50
			13	(40)	50	60	70	80	90	100	6.00~	10.80	12.97			10.80	3.00
			16	(40)	50	60	70	80	90	100	10.00~	13.80	15.97			13.80	4.00
—TiCN coating— GH—MPH	A		6	(40)	50	60	70	80	90	100	13.00~	17.80	19.97	17.80	5.00	13	5
			8	(40)	50	60	70	80	90	100	18.00~	22.80	24.97	22.80	6.00		
			10	(40)	50	60	70	80	90	100	2.00~	3.80	5.97	3.80	2.00		
			13	(40)	50	60	70	80	90	100	3.00~	5.80	7.97	5.80	2.50		
			16	(40)	50	60	70	80	90	100	3.00~	7.80	9.97	7.80	2.50		
—HW coating— GHW—MPH	D		6	(40)	50	60	70	80	90	100	6.00~	10.80	12.97	10.80	3.00	19	5
			8	(40)	50	60	70	80	90	100	10.00~	13.80	15.97	13.80	4.00		
			10	(40)	50	60	70	80	90	100	10.00~	13.80	15.97	13.80	4.00		
			13	(40)	50	60	70	80	90	100	13.00~	17.80	19.97	17.80	5.00		
			16	(40)	50	60	70	80	90	100	18.00~	22.80	24.97	22.80	6.00		
—DLC coating— GN—MPH	R		6	(40)	50	60	70	80	90	100	2.00~	3.80	5.97	4.80	3.50	25	3
			8	(40)	50	60	70	80	90	100	3.00~	5.80	7.97	5.80	5.00		
			10	(40)	50	60	70	80	90	100	3.00~	7.80	9.97	7.80	5.00		
			13	(40)	50	60	70	80	90	100	6.00~	10.80	12.97	10.80	5.00		
			16	(40)	50	60	70	80	90	100	10.00~	13.80	15.97	13.80	5.00		
—DLC foundation WPC® GNW—MPH	E		6	(40)	50	60	70	80	90	100	2.00~	3.80	5.97	4.80	3.50	30	4
			8	(40)	50	60	70	80	90	100	3.00~	5.80	7.97	5.80	5.00		
			10	(40)	50	60	70	80	90	100	3.00~	7.80	9.97	7.80	5.00		
			13	(40)	50	60	70	80	90	100	6.00~	10.80	12.97	10.80	5.00		
			16	(40)	50	60	70	80	90	100	10.00~	13.80	15.97	13.80	5.00		
	G		6	(40)	50	60	70	80	90	100	2.00~	3.80	5.97	4.80	3.50	45	6
			8	(40)	50	60	70	80	90	100	3.00~	5.80	7.97	5.80	5.00		
			10	(40)	50	60	70	80	90	100	3.00~	7.80	9.97	7.80	5.00		
			13	(40)	50	60	70	80	90	100	6.00~	10.80	12.97	10.80	5.00		
			16	(40)	50	60	70	80	90	100	10.00~	13.80	15.97	13.80	5.00		

Ⓛ(40) CB=8 If the full length is (40), the tip length is 8mm in all cases.

Order
 GN—MPHDS 13 — 60 — P10.65 — W6.55

Days to Ship **Quotation**

Alterations Catalog No. — L(LC) — P(PC) — W(WC) — R(R only) — (BC·PKC·LKC...etc.)
 G—MPES 8 — LC65.5 — P7.00 — W4.00

Alterations	Code	(A)	D R E G	1Code
Alterations to tip	PC WC	Tip dimension change $PC \geq P_{min}$ 0.01 mm increments (If combined with PKC, 0.001 mm increments can be selected.)	Tip dimension change $PC \geq P \cdot W_{min} \geq 0.80$ $WC = \frac{P \cdot W_{min}}{2} \geq 0.01$ ⊗ Cannot be used for tip X. ⊗ For TiCN coating; HW coating·DLC coating $PC \geq \frac{P \cdot W_{min}}{2} \geq 1.00$ $WC \geq \frac{P \cdot W_{min}}{2}$	
	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.	
	SC	Lapping of tip ⊗ P dimension tolerance and increment are the same. ⊗ With TiCN coating, the base material is finished before the coating is applied. ⊗ HW coating and DLC foundation WPC® cannot be used. ⊗ R=0 cannot be selected for the tip D corner.		
	PRC	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. ⊗ It is $PRC \pm 0.1$ for HW coating and DLC foundation WPC®.		
	PCC	Chamfering to tip side edge $0.3 \leq PCC \leq 1$ 0.1 mm increments ⊗ $PCC \leq (P-0.2)/2$ ⊗ Cannot be combined with PRC·GC. ⊗ HW coating and DLC foundation WPC® cannot be used.		

P Price **Quotation**

Alterations	Code	(A)	D R E G	1Code
Alterations to tip	GC	$20^\circ \leq GC < 90^\circ$ 1° increments Tip length $B \geq f+2$ $f = P/2 \times \tan(90^\circ - GC^\circ)$ ⊗ If combined with SC, tip edges are rounded. ⊗ Cannot be combined with LKC·LKZ·PRC· PCC. ⊗ HW coating and DLC foundation WPC® cannot be used.		
	PKC	Tip tolerance change $P \pm 0.01$ ⊗ (P dimension can be selected in 0.001 mm increments.) ⊗ TiCN coating cannot be used for $D > 13$. ⊗ Cannot be used for $D > 13$ with HW coating.	Tip tolerance change $P \cdot W \pm 0.01$ ± 0.01	
Alterations to full length	LC	Full length change $25 + B(BC) \leq LC < L$ 0.1 mm 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.)	Full length change $30 + B(BC) \leq LC < L$ 0.1 mm increments ⊗ If difference between full length and tip length is 30mm or less, tip length is adjusted to (Full length-30mm).	
	LKC LKZ	Full length tolerancechange $L \pm 0.3$ ± 0.05 ± 0.01 ⊗ Cannot be used with TiCN coating, HW coating and DLC foundation WPC®.		

PUNCHES