
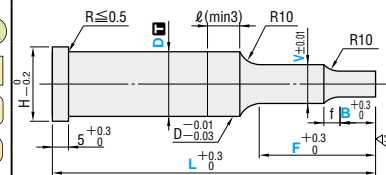





DOUBLE-STEPPED SHOULDER PUNCHES

— RW COATING · DLC COATING —



Type	Shank diameter D tolerance	M H	Catalog No.		Tip shape	The tip shape can be selected from Tip shape A~G in the figure below.
			RW coating surface 3100HV	DLC coating surface 3000HV		
— RW coating — 	Dm5	Equivalent to SKH51 61 ~ 64HRC	— RW-SHTW	— N-SHTW Foundation WPC®	A	 <p>The tip end is ground before the coating is applied. The tip edge of a RW coating or DLC foundation WPC® are slightly rounded.</p>
— DLC coating — 			— RW-PHTW	— N-PHTW Foundation WPC®		
	D +0.005/0	Equivalent to SKH51 61 ~ 64HRC	— ARW-SHTW	— AN-SHTW Foundation WPC®	R	
			— ARW-PHTW	— AN-PHTW Foundation WPC®	E	
	D +0.005/0	Equivalent to SKH51 61 ~ 64HRC	— ARW-SHTW	— AN-SHTW Foundation WPC®	G	
			— ARW-PHTW	— AN-PHTW Foundation WPC®		

Type	Tip shape	D	L (Selection)	0.01mm increments 0.1mm increments		Diagonal Kmax.	0.01mm increments		V	F	H	
				P	B		P-W	R				
— RW coating — RW-SHTW	A	3	40-50-60-70-80	0.50 ~ 0.999	2.0 ~ 10.0	2.96	1.00 ~ 1.49	2.0 ~ 8.0	B + 1 + 2 < F ≤ Fmax & A : F ≤ L - 25 DREG : F ≤ L - 30	V	F	5
				1.00 ~ 1.999	2.0 ~ 20.0		1.50 ~ 1.99	2.0 ~ 13.0				
— RW coating — RW-PHTW	D	4	40-50-60-70-80	0.50 ~ 0.999	2.0 ~ 10.0	3.96	1.00 ~ 1.49	2.0 ~ 8.0	A : D > V > P + 0.01 DREG : D > V > (P, K) + 0.03	V	F	7
				1.00 ~ 1.999	2.0 ~ 20.0		1.50 ~ 1.99	2.0 ~ 13.0				
— DLC coating — N-SHTW	R	5	40-50-60-70-80	0.50 ~ 0.999	2.0 ~ 10.0	4.96	1.00 ~ 1.49	2.0 ~ 8.0	A : D > V > P + 0.01 DREG : D > V > (P, K) + 0.03	V	F	8
				1.00 ~ 1.999	2.0 ~ 20.0		1.50 ~ 1.99	2.0 ~ 13.0				
— DLC coating — N-PHTW	E	6	40-50-60-70-80	0.50 ~ 0.999	2.0 ~ 10.0	5.96	1.00 ~ 1.49	2.0 ~ 8.0	A : D > V > P + 0.01 DREG : D > V > (P, K) + 0.03	V	F	9
				1.00 ~ 1.999	2.0 ~ 20.0		1.50 ~ 1.99	2.0 ~ 13.0				
— DLC coating — Foundation WPC® NW-SHTW	G	8	40-50-60-70-80 90-100	0.50 ~ 0.999	2.0 ~ 10.0	7.96	1.00 ~ 1.49	2.0 ~ 8.0	A : D > V > P + 0.01 DREG : D > V > (P, K) + 0.03	V	F	11
				1.00 ~ 1.999	2.0 ~ 20.0		1.50 ~ 1.99	2.0 ~ 13.0				
— RW coating — ARW-SHTW	A	10	40-50-60-70-80 90-100	0.50 ~ 0.999	2.0 ~ 10.0	9.96	1.00 ~ 1.49	2.0 ~ 8.0	A : D > V > P + 0.01 DREG : D > V > (P, K) + 0.03	V	F	13
				1.00 ~ 1.999	2.0 ~ 20.0		1.50 ~ 1.99	2.0 ~ 13.0				
— RW coating — ARW-PHTW	D	13	40-50-60-70-80 90-100	0.50 ~ 0.999	2.0 ~ 10.0	12.96	1.00 ~ 1.49	2.0 ~ 8.0	A : D > V > P + 0.01 DREG : D > V > (P, K) + 0.03	V	F	16
				1.00 ~ 1.999	2.0 ~ 20.0		1.50 ~ 1.99	2.0 ~ 13.0				
— DLC coating — AN-SHTW	R	16	40-50-60-70-80 90-100	0.50 ~ 0.999	2.0 ~ 10.0	15.96	1.00 ~ 1.49	2.0 ~ 8.0	A : D > V > P + 0.01 DREG : D > V > (P, K) + 0.03	V	F	19
				1.00 ~ 1.999	2.0 ~ 20.0		1.50 ~ 1.99	2.0 ~ 13.0				
— DLC coating — AN-PHTW	E	20	40-50-60-70-80 90-100	0.50 ~ 0.999	2.0 ~ 10.0	19.96	1.00 ~ 1.49	2.0 ~ 8.0	A : D > V > P + 0.01 DREG : D > V > (P, K) + 0.03	V	F	23
				1.00 ~ 1.999	2.0 ~ 20.0		1.50 ~ 1.99	2.0 ~ 13.0				
— DLC coating — Foundation WPC® ANW-SHTW	G	25	40-50-60-70-80 90-100	0.50 ~ 0.999	2.0 ~ 10.0	24.96	1.00 ~ 1.49	2.0 ~ 8.0	A : D > V > P + 0.01 DREG : D > V > (P, K) + 0.03	V	F	28
				1.00 ~ 1.999	2.0 ~ 20.0		1.50 ~ 1.99	2.0 ~ 13.0				

Order **Catalog No.** — L — P — W — B — V — F — R (R only)

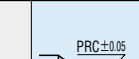
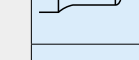
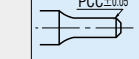
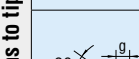
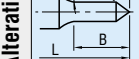
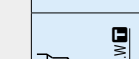
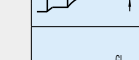

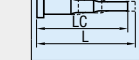
RW-SHTWA10 — 80 — P9.50 — B30 — V9.80 — F45





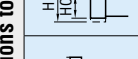
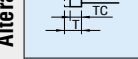
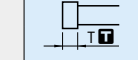
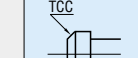

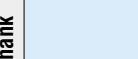

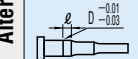
AN-PHTWR13 — 80 — P10.50 — W7.34 — B25 — V12.00 — F45 — R0.5

Days to Ship **Quotation**

Alterations **Catalog No.** — L(LC-LCT-LMT) — P — W — B — V — F — R (R only) — (HC-TC-KC...etc.)

RW-SHTWA10 — LC72 — P4.80 — B10 — V6.80 — F40 — HC12

Alterations	Code	A	DREG	1Code
	PRC	Rounding of tip side edge 0.3 ≤ PRC ≤ 1 0.1 mm increments PRC ≤ (P-0.2)/2 For RW coating-DLC foundation WPC®, the tolerance is PRC ± 0.1 Cannot be combined with PCC-GC.		
	PCC	Chamfering to tip side edge 0.3 ≤ PCC ≤ 1 0.1 mm increments PCC ≤ (P-0.2)/2 For RW coating-DLC foundation WPC®, the tolerance is PCC ± 0.1 Cannot be combined with PRC-GC.		
	GC	20° ≤ GC < 90° 1° increments Tip length B ≥ g + 2 g = P/2 × tan(90° - GC) When combined with SC, tip edges are rounded. Cannot be used for P < 1.0. Cannot be combined with LCT-LMT-LMT-PRC-PCC. Cannot be used with RW coating-DLC foundation WPC®.		
	PKC	Tip tolerance change P + 0.01 → +0.005 P dimension can be selected in 0.01 mm increments. cannot be used with RE coating.	Tip tolerance change P-W ± 0.01 → +0.01	
	SC	Lapping of tip P dimension tolerance and increment are the same. With coating, the base material is finished before coating is applied. R=0 cannot be selected for tip shape D corners. Cannot be used with RW coating-DLC foundation WPC®.		
	LC	Full length change 25 + F ≤ LC < L 0.1 mm increments Full length change 30 + F ≤ LC < L 0.1 mm increments (If combined with LKC 0.01 mm increments can be selected.)		
	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 LC Full length tolerance change T + 0.3 → +0.02 + Full length 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 LC Full length tolerance change T + 0.3 → -0.02 + Full length change + L + 0.3 → +0.1	
	LKC	Full length tolerance change L + 0.3 → +0.05		

Alterations	Code	A	DREG	1Code
	KC	Addition of single key flat to head 0° 180° 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 a selected angle 1° increments 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 0.1 mm increments		
	TC	Head thickness change 2 ≤ TC < 5 0.1 mm increments (If combined with TKC-TKM-LCT-LMT, 0.01 mm 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		
	TKM	Head thickness tolerance change T + 0.3 → 0		
	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 types.		
	SKC	Single key flat on shank D3 ~ 6 V ≤ D - 1.2 (Machining width 0.5) D8 ~ V ≤ D - 2.2 (Machining width 1) Cannot be combined with KC-WKC-KFC.		
	NDC	No press-in lead ℓ ≥ 3 ⇒ ℓ = 0		

Effects of RW coating
Effective for press processing of ultra-high-tensile material and thick plate high-tensile material thanks to its superior wear resistance, peeling resistance and heat resistance. See the product data for details. **P.1607**

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**

Price **Quotation**