

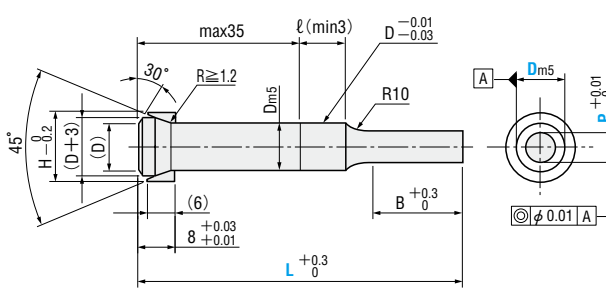




TAPERED HEAD PUNCHES

—RW COATING—



Type	Material	Catalog No.	Shape
 RoHS punch Equivalent to SKH51 61~64HRC Surface 3100HV Taper ring NAK80 37~43HRC	 punch Powdered high-speed steel 64~67HRC Surface 3100HV Taper ring NAK80 37~43HRC	RW-TSSHAS RW-TSSHAL	 <p>The tip edges are very slightly rounded.</p>
		RW-TSPHAS RW-TSPHAL	

Type	D	Catalog No.					0.01mm increments min. P max.	B	H	
		60	70	80	90	100				
 RW-TSSHAS RW-TSPHAS	8	60	70	80	90	100	3.00 ~ 7.99	13	13	
	10	60	70	80	90	100	3.00 ~ 9.99		15	
	13	60	70	80	90	100	6.00 ~ 12.99		18	
	 RW-TSSHAL RW-TSPHAL	16	60	70	80	90	100	10.00 ~ 15.99	19	21
		20	60	70	80	90	100	13.00 ~ 19.99		25
		25	60	70	80	90	100	18.00 ~ 24.99	25	30
8		60	70	80	90	100	3.00 ~ 7.99	13		
10		60	70	80	90	100	3.00 ~ 9.99	15		

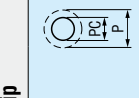
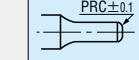
Ⓢ P>D-0.03...ℓ=0 If P>D-0.03 for a round punch, D $\frac{-0.01}{-0.03}$ (press-in lead) is not included.

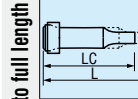
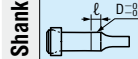
Order **Catalog No.** — **L** — **P**
 RW-TSSHAS 20 — 80 — P15.00

Days to Ship **Quotation**

Price **Quotation**

Alterations **Catalog No.** — **L(LC)** — **P(PC)** — **(BC-SC...etc.)**
 RW-TSSHAS 20 — LC82 — PC12.00 — BC13

Alterations	Code	Spec.	1Code
 Alterations to tip	PC	Tip dimension change $PC \geq \frac{P_{min}}{2}$ 0.01mm increments	Quotation
	BC	Tip length change $2 \leq BC \leq B_{max}$ 0.1mm increments Full length L must be at least 35mm longer than tip length BC.	
 Alterations to tip side edge	PRC	Rounding of tip side edge $0.3 \leq PRC \leq 1$ 0.1mm increments $PRC \leq (P-0.2)/2$	

Alterations	Code	Spec.	1Code
 Alterations to full length	LC	Full length change $35+B(BC) \leq LC < L$ 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.) If difference between full length and tip length is 35mm or less, tip length is adjusted to (Full length-35mm).	Quotation
	LKC	Full length tolerance change $L +0.3 \begin{matrix} \rightarrow \\ \leftarrow \end{matrix} +0.05$ $0 \quad \quad \quad 0$	
 Shank	NDC	No press-in lead $\ell \geq 3 \rightarrow \ell = 0$	

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**

Example

Features

- Tapered head punches relieve stress concentration, providing greater head strength than conventional heavyload punches.
- These products were developed for heavy-load applications, such as punching of high-tensile steel sheets with tensile strength of 980MPa (100kgf/mm²) or higher, spring steel, and hardened steel.
- When used with the accessory taper rings, the tapered head punches eliminate the need for machining of tapered holes in the punch plates and for machining to align the thickness of the plate and punch head.
- Because the head of a tapered head punch is interchangeable with that of a heavy-load punch, the retainer for a heavy-load punch can be used.
- Guide to tapered head punches **P.1611**

Note

- The head thickness tolerance of a tapered head punch, $8 +0.03$
 $+0.01$, is achieved by machining a match between the actual individual punch and its taper ring. Be sure to use a taper ring that has the same ID number as the punch. If the punch is combined with a tapered ring that has a different ID number, the head thickness may deviate from the tolerance listed in the catalog.
- When a punch is replaced, replace both punch and taper ring as a set.
 (The punch and taper ring are not sold individually.)

