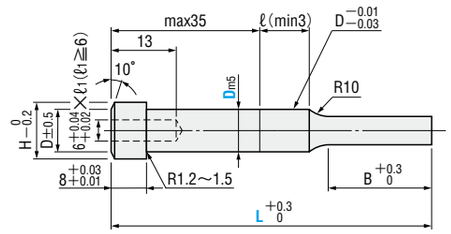
PUNCHES FOR HEAVY LOAD WITH DOWEL HOLES
—(FINISHED FOR RETAINERS) RW COATING—

PRODUCTS DATA P.1607

Type	A	Shank diameter D T tolerance	M H	Catalog No. Type	Tip Shape	B Tip length	with dowel hole
Locating with dowel hole RW coating	Dowel pin MS6—25	D_{m5}	Equivalent to SKH51 61～64HRC Surface 3100HV	RW—AP	A D R E G	S L	—C
			Powdered highspeed steel 64～67HRC Surface 3100HV	RW—APH			

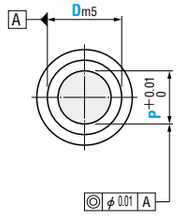
RoHS

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

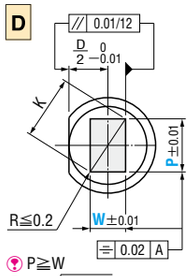


The tip edges are very slightly rounded.
Tip length (B) L>S

Tip shape A

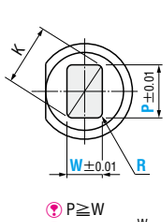


Tip shape D



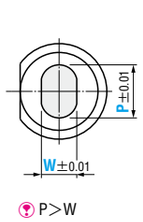
P≧W
K=√(P²+W²)

Tip shape R



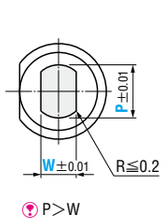
P≧W
0.15≦R<W/2
K=√((P−2R)²+(W−2R)²)+2R

Tip shape E



P>W

Tip shape G



P>W

Catalog No. Type	Tip Shape	B Tip length	with dowel hole	D	L	0.01mm increments Ⓐ min. P max.	0.01mm increments DREG P·Kmax.	0.01mm increments DREG P·Wmin.	0.01mm increments R R	B	H
(Equivalent to SKH51) RW—AP	A D R E G	S	—C	10	(50) 60 70 80 90 100 110 120 130 140 150	3.00～9.99	9.97	2.50	0.15≦R<W/2 (R only)	13	15
				13	(50) 60 70 80 90 100 110 120 130 140 150	6.00～12.99	12.97	3.00			18
				16	(50) 60 70 80 90 100 110 120 130 140 150	10.00～15.99	15.97	4.00		19	21
				20	(50) 60 70 80 90 100 110 120 130 140 150	13.00～19.99	19.97	5.00			25
				25	(50) 60 70 80 90 100 110 120 130 140 150	18.00～24.99	24.97	6.00			30
(Powdered highspeed steel) RW—APH		L		10	60 70 80 90 100 110 120 130 140 150	3.00～9.99	9.97	2.50		19	15
				13	60 70 80 90 100 110 120 130 140 150	6.00～12.99	12.97	3.00			18
				16	70 80 90 100 110 120 130 140 150	10.00～15.99	15.97	4.00		25	21
				20	70 80 90 100 110 120 130 140 150	13.00～19.99	19.97	5.00			25
				25	70 80 90 100 110 120 130 140 150	18.00～24.99	24.97	6.00			30

L(50)⋯B=8 If the full length is(50), the tip length is 8mm in all cases.
Ⓐ: P>D−0.03⋯ℓ=0 If P>D−0.03 for a round punch, $D^{-0.01}_{-0.03}$ (press-in lead) is not included.
DREG: P·K>D−0.05⋯ℓ=0 If P·K>D−0.05 for a shaped punch, $D^{-0.01}_{-0.03}$ (press-in lead) is not included.

Order Catalog No. — L — P — W — R(R only)
RW—APDS—C25 — 80 — P18.00 — W10.00

Days to Ship Quotation

Alterations Catalog No. — L(LC) — P(PC) — W(WC) — R — (BC·KC⋯etc.)
RW—APAS—C 20 — LC82 — PC12.00 — BC13

Alterations		Code	Ⓐ	DREG	1Code
Alterations to tip		PC WC	Tip dimension change PC≧Pmin/2 0.01mm increments	Tip dimension change PC≧P·Wmin/2 WC≧P·Wmin/2 0.01mm increments	Quotation
			P(PC) / Bmax: 1.500～1.999 / 20; 2.000～3.999 / 35; 4.000～5.999 / 45; 6.000～ / 60	P(PC)·W(WC) / Bmax: 1.25～1.49 / 8; 1.50～1.99 / 13; 2.00～3.49 / 19; 3.50～4.99 / 25; 5.00～ / 30	
		BC	Tip length change 2≦BC≦Bmax 0.1mm increments ? Full length L must be at least 35mm longer than tip length BC.	Tip length change 2≦BC≦Bmax 0.1mm increments ? Full length L must be at least 40mm longer than tip length BC.	
		PRC	Rounding of tip side edge 0.3≦PRC≦1 0.1mm increments ? PRC≦(P−0.2)/2	—	
Alterations to full length		LC	Full length change 35+B(BC)≦LC<L 0.1mm increments ? If difference between full length and tip length is 35mm or less, tip length is adjusted to (Full length−35mm). (If combined with LKC, 0.01mm increments can be selected.)	Full length change 40+B(BC)≦LC<L 0.1mm increments ? If difference between full length and tip length is 40mm or less, tip length is adjusted to (Full length−40mm).	
		LKC	Full length tolerance change	$L^{+0.3}_{0}$ ⇨ $^{+0.05}_{0}$	

Alterations		Code	Ⓐ	DREG	1Code
Alterations to head		KC	Addition of single key flat to head	Key flat position change 1° increments	Quotation
		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 ⊗ 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	
Shank		TPC	Dowel pin change MS6—25 that comes with the product is changed to MSTP6—25 (tapped type).		
		NDC	No press-in lead	ℓ≧3 ⇨ ℓ=0	

Example

■Uses of punches with locating dowel holes⋯⋯
This type of punch is mainly used with dies for parts such as automobile bodies, in combination with a retainer that holds the punch.
Rather than indirect positioning using the retainer dowel hole, these punches can be positioned directly using the dowel hole machined on the punch axis, improving die accuracy.
These punches are particularly effective when used for die machining with NC machines.
This type of punch can be also used with dies for the external panels of electrical appliances, either in combination with a retainer, or attached to the punch plate of an ordinary progressive die.

Price Quotation

■**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. For details, see the product data. P.1607