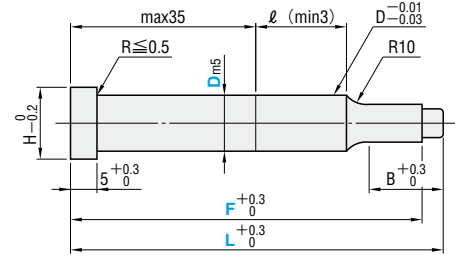


DRAWING PUNCHES

—DLC COATING—



Type	M	H	S	Shank diameter D	Catalog No.
Regular type 	RoHS Equivalent to SKH51	61 ~ 64HRC Over Surface 3000HV	DLC coating	3~25	N-SH NW-SH
Tapped punch 	RoHS Powdered high-speed steel	64 ~ 67HRC Over Surface 3000HV			N-PH NW-PH
				5~25	N-MPH NW-MPH



Shape
P.673

B	H	M	Catalog No.		Shape	D	0.1mm increments		0.01mm increments	
			Type	Foundation			L	min. P	max. V	
8	5	3	Regular type (D3~25)	No foundation	2A~4A·6A	3	40.0~80.0	2.00	2.99	1.00
	7			N-SH NW-SH		4		2.00	3.99	1.00
	8					N-PH NW-PH		5	2.00	4.99
	9			6				2.00	5.99	1.20
13	11	6	Tapped (D5~25)	N-MPH NW-MPH	2C~10C	8	(40.0~49.9)	3.00	7.99	1.50
	13					10		3.00	9.99	1.50
	16					13		6.00	12.99	2.00
19	19	6			2D~10D	16	50.0~100.0	10.00	15.99	3.00
	23					20		13.00	19.99	3.00
	28					25		18.00	24.99	4.00

L (40.0~49.9) → B=8 If full length L is (40.0~49.9), tip length B is 8mm in all cases.
P > D - 0.03 → ℓ = 0 If P > D - 0.03, D - 0.01 (press-in lead) is not included.

Order Catalog No. — L — P·E·V·R·Q·A·K·F·S
N-PH2C 16 — 70.0 — P12.00—V9.00—A30—F65.0—S3

Days to Ship **Quotation**

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

Alterations Catalog No. — L — P(·PC)·E·V·R·Q·A·K·F·S — (BC·HC...etc.)
N-PH2C 16 — 75.0 — P12.00—V9.00—A30—F65.0—S3 — LKC

Alterations	Code	Spec.	1Code
	PC	P dimension change PC ≥ $\frac{P_{min}}{2}$ ≥ Vmin. 0.01mm increments	
	BC	Tip length change 2 ≤ BC ≤ BCmax. ≤ L/2 0.1mm increments Full length L must be at least 30mm longer than tip length BC.	
	SC	Lapping of tip P dimension tolerance and increment remain the same. The base material is finished before the coating is applied. Cannot be used with foundation wpc. Cannot be used for shapes 2A·6A·8B·2C·3C·4C·6C·2D·3D·4D·5D·8D·9D·10D. Cannot be combined with AKC·KKC·RKC·QKC.	Quotation
	AKC	Angle A tolerance change A ± 30 → ± 10	
	KKC	Angle K tolerance change K ± 30 → ± 10	
	RKC	R dimension tolerance R ± 0.5 → ± 0.05 Can be used for 0.1 ≤ R ≤ 10. For foundation WPC®, R ± 0.1	
	QKC	Q dimension tolerance change Q ± 0.5 → ± 0.05 Can be used for 0.1 ≤ Q ≤ 10. For foundation WPC®, Q ± 0.1	
	HC	Head diameter change D ≤ HC < H 0.1mm increments	
	TC	Head thickness change 2 ≤ TC < 5 0.1mm increments (if combined with TNC·TKM, 0.01mm increments can be selected.) The full length remains as specified.	

Price **Quotation**

Alterations	Code	Spec.	1Code
	TCC	Chamfering of head This improves the strength of the punch head. P.1611 0.1mm increments 0.5 ≤ TCC ≤ (H-D)/2 If H ≤ 5, then TCC is 0.5.	
	KC	Addition of single key flat Cannot be used for tapped punches of D5.	
	WKC	Addition of double key flats in parallel Cannot be used for tapped punches of D5.	
	RC	Head thickness is machined to a tolerance of -0.04~0 relative to the retainer surface.	Quotation
	TKC	Head thickness tolerance change 5 +0.3 → +0.02 0 0	
	TKM	Head thickness tolerance change 5 +0.3 → -0.02 0 0	
	LKC	L dimension tolerance change L +0.3 → +0.05 0 0	
	FKC	F dimension tolerance change F +0.3 → +0.05 0 0	
	NDC	No press-in lead ℓ ≥ 3 → ℓ = 0 Cannot be used for tapped punches.	

PUNCHES & DIES FOR FORMING