

SCRAPLESS BURRING PUNCHES

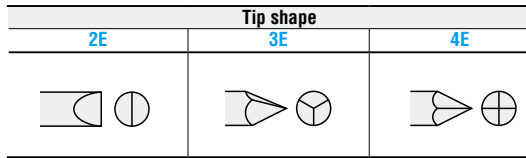
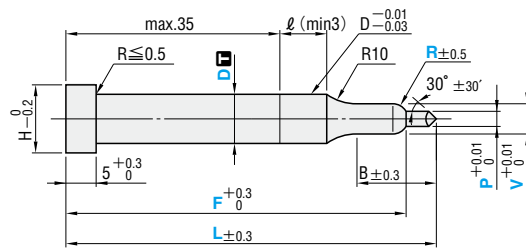


RoHS



Type				M	S	H
Dm5		D ^{+0.005} ₀				
Short tip	Long tip	Short tip	Long tip			
SP	SPL	A-SP	A-SPL	Equivalent to SKD11	—	60 ~ 63HRC
SH	SHL	A-SH	A-SHL	Equivalent to SKD11	—	61 ~ 64HRC
H-SH	H-SHL	AH-SH	AH-SHL	Equivalent to SKH51	TiCN coating	64 ~ 67HRC
N-SH	N-SHL	AN-SH	AN-SHL		DLC coating	Surface 3000HV
NW-SH	NW-SHL	ANW-SH	ANW-SHL	DLC coating	Foundation WPC®	
PH	PHL	A-PH	A-PHL	Powdered high-speed steel	—	64 ~ 67HRC
H-PH	H-PHL	AH-PH	AH-PHL	TiCN coating	—	64 ~ 67HRC
N-PH	N-PHL	AN-PH	AN-PHL	DLC coating	Surface 3000HV	
NW-PH	NW-PHL	ANW-PH	ANW-PHL	DLC coating	Foundation WPC®	

For shank diameter tolerance D \square , select either (m5) or ($^{+0.005}$ ₀).



Alterations Catalog No. — L — V — P — R — F — (BC·HC·TC...etc.)
SH2E 6 — 51.0 — V4.70 — P2.50 — R0.5 — F35 — BC18.5

Alterations	Code	Spec.	1Code
Alterations to tip	BC	Tip length change (L-F) + R + 2 ≤ BC ≤ BCmax. 0.1mm increments Full length must be 30 mm longer than tip length. For coating punches, (L-F) + R + 2 ≤ BC ≤ BCmax. ≤ L/2	Quotation
Alterations to head	VKC	V dimension tolerance change V + 0.01 ⇔ + 0.005 0 ⇔ 0 Cannot be used for coating punches.	
Alterations to head	RKC	R tolerance change R ± 0.5 ⇔ ± 0.05	
Alterations to head	HC	Head diameter change D ≤ HC < H 0.1mm increments	
Alterations to head	TC	Head thickness change 2 ≤ TC < 5 0.1mm increments (If combined with TKC, 0.01mm increments can be selected.) The full length remains as specified.	
Alterations to head	RC	Head thickness is machined to a tolerance of -0.04 ~ -0 relative to the retainer surface. Can be used for D10 only. Cannot be used for D ^{+0.005} ₀ types.	

Alterations	Code	Spec.	1Code
Alterations to head	TCC	Chamfering of head This improves the strength of the punch head. P.1611 0.1 mm increments 0.5 ≤ TCC ≤ (H-D)/2 If H ≤ 5, then TCC is 0.5.	
Alterations to head	KC	Addition of single key flat to head	Quotation
Alterations to head	WKC	Addition of double key flats in parallel	
Alterations to head	TKC	Head thickness tolerance change T + 0.3 ⇔ + 0.02 0 ⇔ 0	
Alterations to head	TKM	Head thickness tolerance change T + 0.3 ⇔ 0 0 ⇔ - 0.02	
Others	FKC	F dimension tolerance change F + 0.3 ⇔ + 0.05 0 ⇔ 0	
Others	NDC	No press-in lead $l \geq 3 \Rightarrow l = 0$	

Price Quotation

B	H	Catalog No.		Tip shape	D	0.1mm increments		0.01mm increments		0.1mm increments	
		Type	D			L	min. V max.	P min.	R	F	
8	8	— Short tip — (Dm5) (D ^{+0.005} ₀)		2E	5	40.0 ~ 80.0	1.80 ~ 4.99	1.2	0.5 ≤ R ≤ V - P	F ≤ L - (P × 0.866) - 1	
		SP	A-SP								
		SH	A-SH								
13	11	— TiCN coating —		3E	6	43.0 ~ 100.0	1.80 ~ 5.99	1.5	0.5 ≤ R ≤ V - P	F ≤ L - (P × 0.866) - 1	
		H-SH	AH-SH								
		H-PH	AH-PH								
13	13	— DLC coating —		4E	8	3.00 ~ 9.99	2.5				
		N-SH	AN-SH								
		N-PH	AN-PH								
15	8	— Long tip — (Dm5) (D ^{+0.005} ₀)		2E	5	50.0 ~ 80.0	1.80 ~ 4.99	1.2	0.5 ≤ R ≤ V - P	F ≤ L - (P × 0.866) - 1	
		SPL	A-SPL								
		SHL	A-SHL								
21	9	— TiCN coating —		3E	6	50.0 ~ 100.0	1.80 ~ 5.99	1.5	0.5 ≤ R ≤ V - P	F ≤ L - (P × 0.866) - 1	
		H-SHL	AH-SHL								
		H-PHL	AH-PHL								
21	11	— DLC coating —		4E	8	3.00 ~ 9.99	2.5				
		N-SHL	AN-SHL								
		N-PHL	AN-PHL								
21	13	— DLC coating — Foundation WPC®			10						
		NW-SHL	ANW-SHL								
		NW-PHL	ANW-PHL								

V - P ≥ 0.3, B ≥ L - F + R + 2

Order Catalog No. — L — V · P · R · F
SH2E 6 — 51.0 — V4.70 — P2.50 — R0.5 — F47
SHL2E 6 — 51.0 — V4.70 — P2.50 — R0.5 — F47

Days to Ship Quotation