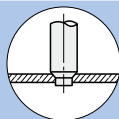


CHAMFERING PUNCHES

—STRAIGHT TIP—



Type	Shank diameter D tolerance	M H	Catalog No.	Shape	
—Shoulder— RoHS	D _{m5}		Equivalent to SKD11 60~63HRC		
			Equivalent to SKH51 61~64HRC		SPMUA
			Powdered high-speed steel 64~67HRC		SHMUA
—Key flat shank— RoHS	D ^{+0.005} ₀		Equivalent to SKD11 60~63HRC		
			Equivalent to SKH51 61~64HRC		G-SPMUA
			Powdered high-speed steel 64~67HRC		G-SHMUA
—Tapped— RoHS	D _{m5}		Equivalent to SKD11 60~63HRC		
					MPMUA
			Powdered high-speed steel 64~67HRC		MPHMUA

B	H	V	M	Catalog No.		0.1mm increments L	0.01mm increments min. P max.	0.1mm increments F
				Type	D			
—	5	—	—	Shoulder —Normal— SPMUA SHMUA PHMUA	3	30.0 ~ 90.0	1.00 ~ 2.00	28 ≤ F ≤ L - C - 2.0
	4				1.00 ~ 3.00			
	5				2.00 ~ 4.00			
	6				2.00 ~ 5.00			
	8				3.00 ~ 7.00			
	10				3.00 ~ 9.00			
	13				6.00 ~ 12.00			
	16				10.00 ~ 15.00			
	20				13.00 ~ 19.00			
	25				18.00 ~ 24.00			
8	7	2.8	—	Key flat shank —Normal— G-SPMUA G-SHMUA G-PHMUA	4	40.0 ~ 90.0	1.00 ~ 1.80	29 ≤ F ≤ L - C - 2.0 and B ≥ L - F + 2.0
	5				2.00 ~ 2.80			
	6				2.00 ~ 3.80			
	8				3.00 ~ 4.80			
	10				3.00 ~ 6.80			
	13				6.00 ~ 9.80			
	16				10.00 ~ 12.80			
13	11	5.8	—	Key flat shank —Normal— G-SPMUA G-SHMUA G-PHMUA	8	50.0 ~ 100.0	3.00 ~ 4.80	29 ≤ F ≤ L - C - 2.0 and B ≥ L - F + 2.0
	9				2.00 ~ 3.80			
	11				3.00 ~ 4.80			
	13				6.00 ~ 9.80			
	16				10.00 ~ 12.80			
19	19	13.8	—	Key flat shank —Normal— G-SPMUA G-SHMUA G-PHMUA	10	50.0 ~ 100.0	3.00 ~ 6.80	29 ≤ F ≤ L - C - 2.0 and B ≥ L - F + 2.0
	13				6.00 ~ 9.80			
	16				10.00 ~ 12.80			
	20				13.00 ~ 16.80			
—	—	—	3	Tapped —Normal— MPMUA MPHMUA	5	30.0 ~ 70.0	2.00 ~ 4.00	28 ≤ F ≤ L - C - 2.0
					4		2.00 ~ 5.00	
					6		3.00 ~ 7.00	
					10		3.00 ~ 9.00	
					13		6.00 ~ 12.00	
—	—	—	6	Tapped —Normal— MPMUA MPHMUA	8	30.0 ~ 90.0	3.00 ~ 7.00	28 ≤ F ≤ L - C - 2.0
					10		3.00 ~ 9.00	
					13		6.00 ~ 12.00	
					16		10.00 ~ 15.00	
					20		13.00 ~ 19.00	
25	18.00 ~ 24.00							



Order

Catalog No. — L — P — F
SPMUA 5 — 60.0 — P4.0 — F37.0
G-SHMUA 10 — 70.0 — P6.6 — F65.0



Days to Ship

Quotation



Alterations

Catalog No. — L — P — F — (PKC...etc.)
SPMUA 5 — 55.0 — P2.40 — F51.0 — PKC

Alterations	Code	Spec.	1Code
Alterations to tip	PC	Tip dimension change $PC \geq \frac{P_{min}}{2} \geq 1.00$ 0.01mm increments (If combined with PKC, 0.001mm increments can be selected.)	
	PKC	Tip tolerance change $P +0.01 \rightarrow +0.005$ (P dimension can be selected in 0.001mm increments.)	
Alterations to full length	LKC	Full length tolerance $L +0.3 \rightarrow +0.05$ change (L dimension can be selected in 0.01mm increments.)	Quotation
	LKZ	Full length tolerance $L +0.3 \rightarrow +0.01$ change (L dimension can be selected in 0.01mm increments.)	
Shank	FKC	F dimension tolerance change $F +0.3 \rightarrow +0.05$ $F +0.3 \rightarrow +0.05$	
	NDC	No press-in lead $l \geq 3 \rightarrow l=0$ Cannot be used for tapped types.	



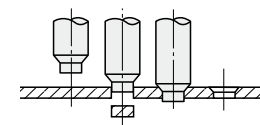
Price

Quotation

Alterations	Code	Spec.	1Code
Alterations to head	KC	Addition of single key flat Cannot be used for D5 tapped types. Cannot be used for key flat shank types.	
	WKC	Addition of double key flats in parallel Cannot be used for D5 tapped types. Cannot be used for key flat shank types.	
	HC	Head diameter change $D \leq HC < H$ 0.1mm increments Cannot be used for tapped types.	Quotation
	TC	Head thickness change $2 \leq TC < 5$ 0.1mm increments (If combined with TKC-TKM, 0.01mm increments can be selected.) The full length remains as specified. Cannot be used for tapped types.	
	TKC	Head thickness tolerance $T +0.3 \rightarrow +0.02$ change Cannot be used for tapped types.	
	TKM	Head thickness tolerance $T +0.3 \rightarrow 0$ change Cannot be used for tapped types.	
TCC	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. Cannot be used for tapped types.	



Example



Punching and chamfering are done simultaneously.
Chamfering can be done in one operation.