

BLOCK PUNCHES

—CONFIGURABLE SIZE TYPE—

RoHS

Tip machining limit

Tip shape **D**

$W \leq P \leq W \times 20$

$R=0$ can be selected.

Tip shape **R**

$W \leq P \leq W \times 20$

$0.15 \leq R < W/2$

0.01mm increments

Tip shape **E**

$W \leq P \leq W \times 20$

Tip shape **G**

$W < P \leq W \times 20$

Even when $P=W$ and $W=H$, the tip tolerance is determined by the P and W tolerances.

Shank dimensions V-H	Catalog No.	Type	Tip shape	Normal			
				Tip shape	Tip shape	Tip shape	Tip shape
(H3.0 ~ 5.0) Equivalent to SKH51 61 ~ 64HRC (H5.1 ~ 30.0) Equivalent to SKD11 60 ~ 63HRC	V3.0 ~ 50 H3.0 ~ 30	FHP	D				
Equivalent to SKH51 61 ~ 64HRC	V5.1 ~ 30 H5.1 ~ 30	FHSP	E				
Powdered high speed steel 64 ~ 67HRC	V3.0 ~ 30 H3.0 ~ 30	FPHP	G				
Shank dimensions V-H	Catalog No.	Type	Tip shape	Tapped			
				Tip shape	Tip shape	Tip shape	Tip shape
Equivalent to SKD11 60 ~ 63HRC	V5.1 ~ 50 H5.1 ~ 30	FHM	D				
Equivalent to SKH51 61 ~ 64HRC	V5.1 ~ 30 H5.1 ~ 30	FHSM	E				
Powdered high speed steel 64 ~ 67HRC	V5.1 ~ 30 H5.1 ~ 30	FPHM	G				
Shank dimensions V-H	Catalog No.	Type	Tip shape	With key groove			
				Tip shape	Tip shape	Tip shape	Tip shape
(H3.0 ~ 5.0) Equivalent to SKH51 61 ~ 64HRC (H5.1 ~ 30.0) Equivalent to SKD11 60 ~ 63HRC	V3.0 ~ 50 H3.0 ~ 30	FHK	D				
Equivalent to SKH51 61 ~ 64HRC	V5.1 ~ 30 H5.1 ~ 30	FHSK	E				
Powdered high speed steel 64 ~ 67HRC	V3.0 ~ 30 H3.0 ~ 30	FPHK	G				
Shank dimensions V-H	Catalog No.	Type	Tip shape	Single flange			
				Tip shape	Tip shape	Tip shape	Tip shape
(H3.0 ~ 5.0) Equivalent to SKH51 61 ~ 64HRC (H5.1 ~ 30.0) Equivalent to SKD11 60 ~ 63HRC	V3.0 ~ 50 H3.0 ~ 30	FHF	D				
Equivalent to SKH51 61 ~ 64HRC	V5.1 ~ 30 H5.1 ~ 30	FHSF	E				
Powdered high speed steel 64 ~ 67HRC	V3.0 ~ 30 H3.0 ~ 30	FPHF	G				
Shank dimensions V-H	Catalog No.	Type	Tip shape	Double flanges			
				Tip shape	Tip shape	Tip shape	Tip shape
(H3.0 ~ 5.0) Equivalent to SKH51 61 ~ 64HRC (H5.1 ~ 30.0) Equivalent to SKD11 60 ~ 63HRC	V3.0 ~ 50 H3.0 ~ 30	FHW	D				
Equivalent to SKH51 61 ~ 64HRC	V5.1 ~ 30 H5.1 ~ 30	FHSW	E				
Powdered high speed steel 64 ~ 67HRC	V3.0 ~ 30 H3.0 ~ 30	FPHW	G				

■ Key groove position change

■ Flange position change

● With key groove

KO K90 K180 K270

● Single flange

F0 F90 F180 F270

● Double flanges

WFO WF90

Catalog No.	Type	Tip shape	H	V	V																L	T	B	M	U
					3.0	4.1	5.1	6.1	8.1	10.1	13.1	16.1	20.1	25.1	30.1	40.1									
Normal	FHP	FHSP	(3.0 ~ 4.0)	1.0	4.0	5.0	6.0	8.0	10.0	13.0	16.0	20.0	25.0	30.0	40.0	50.0	(40)	8	—	—	1.0				
Tapped	FHM	FHSM	5.1 ~ 6.0	1.5	2.0	2.5	3.0	3.0	4.0	5.0	7.0	8.0	10.0	12.0	16.0	20.0	(50)	13	3	—					
With key groove	FHK	FHSK	6.1 ~ 8.0	2.0	—	—	—	—	—	—	—	—	—	—	—	—	60	4	4	—					
Single flange	FHF	FHSF	8.1 ~ 10.0	2.5	—	—	—	—	—	—	—	—	—	—	—	—	70	19	5	—					
	FPHF	FHSF	10.1 ~ 13.0	3.0	—	—	—	—	—	—	—	—	—	—	—	—	80	6	6	1.5					
	FPHF	FHSF	13.1 ~ 16.0	4.0	—	—	—	—	—	—	—	—	—	—	—	—	90	—	—	—					
Double flanges	FPHW	FHSW	16.1 ~ 20.0	5.0	—	—	—	—	—	—	—	—	—	—	—	—	100	25	8	—					
			20.1 ~ 25.0	6.5	—	—	—	—	—	—	—	—	—	—	—	—									
			25.1 ~ 30.0	7.5	—	—	—	—	—	—	—	—	—	—	—	—									

(1) L(40)·H8.1 ~ 30→B=13 If full length is (40) and H dimension is 8.1 ~ 30, tip length is 13mm in all cases. (For tapped types, the tip length is 10mm in all cases.)
 (2) L(50)·H13.1 ~ 30→B=19 If full length is (50) and H dimension is 13.1 ~ 30, tip length is 19mm in all cases.
 (3) H(3.0 ~ 4.0)→L40 ~ 70 If H dimension is (3.0 ~ 4.0), full length L is within a range of 40 ~ 70.
 (4) V30.1 ~ 50.0→If V is 30.1 ~ 50.0, two taps are provided at the pitch shown in the figure at right.

Order

(1) If tip is at center of shank

(2) If tip is not at center of shank

X and Y must be set either to 0 or to 0.02 or more. Tolerance ±0.01

Catalog No.	0.1mm increments	L	0.01mm increments	L	0.1mm increments	K	F	WF
FHPD	V23.5 - H12.0 - 60	P18.00	W 4.00	—	—	—	—	—
FHMD	V17.0 - H10.0 - 100	P16.00	W 9.00	—	—	—	—	—
FPHKD	V 9.0 - H 5.5 - 60	P 8.00	W 5.00	—	—	—	—	—
FPHFD	V17.0 - H14.0 - 60	P15.00	W12.00	—	—	—	—	—
FPHWD	V 9.5 - H 6.0 - 40	P 8.00	W 5.00	—	—	—	—	—

Catalog No.	0.1mm increments	L	0.01mm increments	L	0.1mm increments	K	F	WF
FHFE	V16.5 - H14.0 - 50	P15.00	W12.00	—	—	—	—	—

Alteration	Code	Spec.	1Code
Key groove	TKC	Key groove position tolerance change $T \begin{matrix} 0 \\ -0.05 \end{matrix} \rightarrow \begin{matrix} 0 \\ -0.02 \end{matrix}$	
	RTC	Key groove position tolerance change $T \begin{matrix} 0 \\ -0.05 \end{matrix} \rightarrow \begin{matrix} 0 \\ +0.05 \end{matrix}$	
	WK	Addition of key groove at symmetrically opposite position $H - (2 \times U(UK)) \geq 2.0 (K90, K270)$ $V - (2 \times U(UK)) \geq 2.0 (K90, K270)$ An additional key groove is added in a position symmetrically opposite to the specified key groove. Can be used for key groove types. Can be combined with UK.	
	UK	Key groove depth change $0.5 \leq UK \leq U + 0.2$ $(H \cdot V) - UK \geq 2.0$ 0.1mm increments Can be used for key groove types. Can be combined with WK.	
Tap	MC	Tap diameter change H dimension $\begin{matrix} H \\ H \end{matrix}$ selection 6.1 ~ 8.0 M4 M3 8.1 ~ 10.0 M5 M4-M6 10.1 ~ 13.0 M6 M4(V10.1 ~ 16.0) M5-M10 13.1 ~ 16.0 M8 M5(V13.1 ~ 20.0) M6-M10 16.1 ~ 30.0 M8 M6-M10 Specify number following MC to select tap diameter. (Refer to order example.)	
	CC	Chamfering to four corners of shank The four corners of shank are chamfered to C0.5. The distance between shank corners and the tip must be 0.5mm or more.	
Alterations to tip	PC	Tip dimension change $PC \geq V \times 0.3 \geq 1.00$ $WC \geq H \times 0.15 \geq 0.50$ 0.01mm increments	
	WC	Tip length change $2 \leq BC \leq B_{max}$ 0.1mm increments Full length (L) must be at least 30mm longer than tip length (BC).	
	BC	Tip length change $2 \leq BC \leq B_{max}$ 0.1mm increments	
	SC	Lapping of tip $W \geq 2.00$ P dimension tolerance and increment remain the same. R=0 cannot be selected for the tip corner.	
Alterations to full length	PKC	Tip tolerance change $P \cdot W \pm 0.01 \rightarrow \begin{matrix} +0.01 \\ 0 \end{matrix}$	
	PKV	Tip tolerance change $P \cdot W \pm 0.01 \rightarrow \pm 0.005$	
	LC	Full length change $30 + B(BC) \leq LC < L$ 0.1mm increments (if combined with LKC-LKZ, 0.01mm increments can be selected.) If difference between full length (LC) and tip length (B) is 30mm or less, tip length is adjusted to (Full length - 30).	
	LKC	Full length tolerance change $L \begin{matrix} +0.2 \\ 0 \end{matrix} \rightarrow \begin{matrix} +0.05 \\ 0 \end{matrix}$	
Alterations to flange	LKZ	Full length tolerance change $L \begin{matrix} +0.2 \\ 0 \end{matrix} \rightarrow \begin{matrix} +0.01 \\ 0 \end{matrix}$	
	HC	Flange width change $0 \leq HC < 1.5$ 0.1mm increments	
	TC	Flange thickness change $2 \leq TC < 5$ 0.1mm increments (if combined with TKC, 0.01mm increments can be selected.) Full length L is shortened by (5 - TC). If combined with LC, full length is equal to LC.	
	TKC	Flange tolerance change $T \begin{matrix} +0.2 \\ 0 \end{matrix} \rightarrow \begin{matrix} +0.02 \\ 0 \end{matrix}$	
Alterations to shape	TKM	Flange tolerance change $T \begin{matrix} +0.2 \\ 0 \end{matrix} \rightarrow \begin{matrix} 0 \\ -0.02 \end{matrix}$	
	FK	Relief chamfering to flange top edge Flange edge is chamfered to prevent flange breakage.	
	DC	Addition of press-in lead Press-in lead of 3mm ($V \cdot H - 0.03$) is added. Can be used for normal, tapped, and key groove types.	