BLOCK PUNCHES
—HW COATING—

PRODUCTS DATA P.1605

—HW coating—

S HW coating
H 3000HV
Ⓨ Although the effective range of the coating is part B, an extremely thin coating film is formed also on the shank up to a length of approximately 10mm.

●Tip machining limit

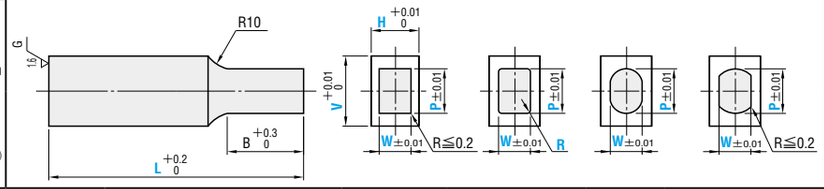
RoHS

Tip shape D	Tip shape R	Tip shape E	Tip shape G
Ⓨ W≦P≦W×20	Ⓨ W≦P≦W×20 Ⓨ 0.15≦R<W/2 0.01mm increments	Ⓨ W≦P≦W×20	Ⓨ W<P≦W×20

Ⓨ Even when P=V and W=H, the tip tolerance is determined by the P and W tolerances.
Ⓨ The tip edges are very slightly rounded.

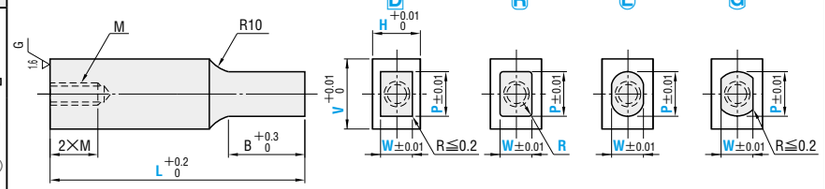
Normal V·H=3～30

M H	Type	Tip shape	B Tip length
Equivalent to SKH51 61～64HRC	HW—HSP	D R E G	S L
Powdered high-speed steel 64～67HRC	HW—PHP		Tip length(B) L>S



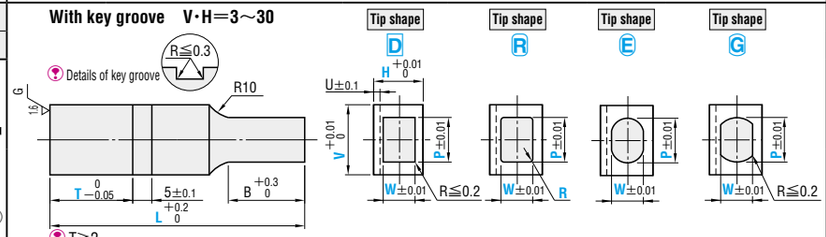
Tapped V·H=5～30

M H	Type	Tip shape	B Tip length
Equivalent to SKH51 61～64HRC	HW—HSM	D R E G	S L
Powdered high-speed steel 64～67HRC	HW—PHM		Tip length(B) L>S



With key groove V·H=3～30

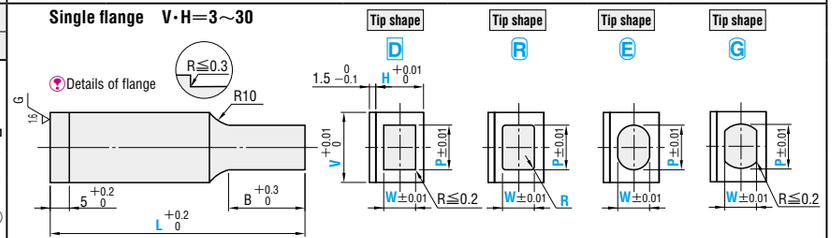
M H	Type	Tip shape	B Tip length
Equivalent to SKH51 61～64HRC	HW—HSK	D R E G	S L
Powdered high-speed steel 64～67HRC	HW—PHK		Tip length(B) L>S



Ⓨ T≧2

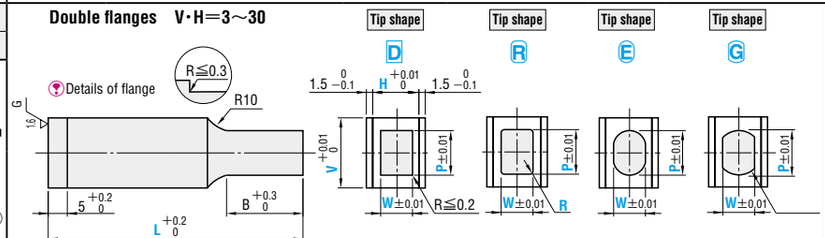
Single flange V·H=3～30

M H	Type	Tip shape	B Tip length
Equivalent to SKH51 61～64HRC	HW—HSF	D R E G	S L
Powdered high-speed steel 64～67HRC	HW—PHF		Tip length(B) L>S



Double flanges V·H=3～30

M H	Type	Tip shape	B Tip length
Equivalent to SKH51 61～64HRC	HW—HSW	D R E G	S L
Powdered high-speed steel 64～67HRC	HW—PHW		Tip length(B) L>S



■Key groove position change
Flange position change

●With key groove: K0 K90 K180 K270
●Single flange: F0 F90 F180 F270
●Double flanges: WF0 WF90

Catalog No. Type	Tip shape	B Tip length	H \ V	3	4	5	6	8	10	13	16	20	22	25	28	30	L	0.1mm T	B S	B L	M	U
			P min. W min.	1.5	2.0	2.5	3.0	3.0	4.0	5.0	7.0	8.0	9.0	10.0	12.0	12.0						
Normal HW—HSP HW—PHP	D R E G	S	(3) 1.0	○	○	○	○	○	○	○	○	○	○				(40)	T≧2	6	8	—	1.0
			(4) 1.0		○	○	○	○	○	○	○	○	○									
			5 1.2			○	○	○	○	○	○	○	○	○	○	○	(50)		8	13	3	
Tapped HW—HSM HW—PHM			6 1.5				○	○	○	○	○	○	○	○	○	○					4	
			8 2.0					○	○	○	○	○	○	○	○	○	60				5	1.5
With key groove HW—HSK HW—PHK		L	10 2.5						○	○	○	○	○	○	○	○	70		13	19	6	
			13 3.0							○	○	○	○	○	○	○						
			16 4.0								○	○	○	○	○	○	80					
Single flange HW—HSF HW—PHF			20 5.0									○	○	○	○	○			19	25	8	
			22 6.0										○	○	○	○	90					
			25 6.5											○	○	○						
Double flanges HW—HSW HW—PHW			28 7.0												○	○	100					
			30 7.5													○						

Ⓨ L(40)・H10～30⋯B=13 If full length is(40)and H dimension is 10～30, tip length is 13mm in all cases.(For tapped types, the tip length is 10mm in all cases.)
Ⓨ L(50)・H16～30⋯B=19 If full length is(50)and H dimension is 16～30, tip length is 19mm in all cases.
Ⓨ H(3)(4)⋯L40～70 If H dimension is(3)or(4), full length L is within a range of 40～70.

Order

(1) If tip is at center of shank

Catalog No.	V	H	L	P	W	R(Ⓡ only)	T≧2	K·F·WF	
				0.01mm increments			0.1mm increments		
HW—HSPDS	08	08	60	P 6.00	W 4.00				
HW—HSMRL	20	10	70	P16.00	W 9.00	R0.20			
HW—PHKES	10	06	60	P 8.00	W 5.00		T25.5	K0	
HW—HSFDL	16	13	60	P15.00	W12.00			F90	
HW—HSWEL	13	10	40	P 8.00	W 5.00			WF90	

(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. If X and Y are 0, an additional coating layer of 3～5 μ is added.)

Catalog No.	V	H	L	P	W	R(Ⓡ only)	T≧2	K·F·WF	X—Y
				0.01mm increments			0.1mm increments		0.01mm increments
HW—HSFDL	16	13	50	P15.00	W12.00			F90	X0.00—Y0.55

Days to Ship Quotation

Price Quotation

Alterations Catalog No. — V — H — L(LC) — P(PC)・W(WC)・R — T≧2 — K·F·WF — X—Y — (BC・HC・TC, etc.)
HW—HSKDS 20 08 — 60 — P18.00—WC1.50 — T25.5 — K0 — LKC

Alteration		Code	Spec.	1Code
Alterations to tip		PC WC	Tip dimension change PC≧V×0.3≧1.00 WC≧H×0.15≧0.50 0.01mm increments W(WC) / Bmax.: 0.50～0.99 / 4; 1.00～1.19 / 8; 1.20～1.99 / 13; 2.00～2.99 / 20; 3.00～4.99 / 30; 5.00～ / 35	
		BC	Tip length change 2≦BC≦Bmax. 0.1mm increments Ⓨ Full length(L)must be at least 30mm longer than tip length(BC).	
Alterations to full length		LC	Full length change 30+B(BC)≦LC<L 0.1mm increments (If combined with LKC, 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).	Quotation
		LKC	Full length tolerance change L +0.2 0 ⇨ +0.05 0	
Tap		MC	Tap diameter change H \ V: 6 8 10 13 16 20 22 6: M4 → M3 — 8: — M5 → M4 10: — — M6 → M5 13: — — — M8 → M6	
Key groove		TKC	Key groove position tolerance change T 0 −0.05 ⇨ 0 −0.02	
		RTC	Key groove position tolerance change T 0 −0.05 ⇨ +0.05 0	
		WK	Addition of key groove at symmetrically opposite position K0・180 (K90・270) H− (2×U(UK)) ≧2.0(K0,K180) V− (2×U(UK)) ≧2.0(K90,K270) An additional key groove is added at 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≦UK≦U+0.2 0.1mm increments H(V)—UK≧2.0 Ⓨ Can be used for key groove types. Ⓨ Can be combined with WK.	

Alteration		Code	Spec.	1Code
Flange		HC	Flange width change 0≦HC<1.5 0.1mm increments	Quotation
		TC	Flange thickness change 2≦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 thickness tolerance change T +0.2 0 ⇨ +0.02 0	
		TKM	Flange thickness tolerance change T +0.2 0 ⇨ 0 −0.02	
		FK	Relief chamfering to flange top edge Flange edge is chamfered to prevent flange breakage.	
Alterations to shape		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.	
		CCP	Chamfering to one corner of shank(for error prevention) One corner of shank is chamfered to C1.0. Can be used if distances a and b from tip corners to shank meet the following conditions. a+b≧1.3 ■Selection of chamfering position CCP0 CCP90 CCP180 CCP270 Ⓨ Can be used for normal and tapped types only.	
		VKC	Shank tolerance change V・H +0.01 0 ⇨ +0.005 0	
		VKM	Shank tolerance change V・H +0.01 0 ⇨ 0 −0.005	
		VHM	Shank tolerance change V・H +0.01 0 ⇨ 0 −0.01	
		VHZ	Shank tolerance change V・H +0.01 0 ⇨ ±0.005	
		DC	Addition of press-in lead Press-in lead of 3mm (V・H −0.01 −0.03) is added. Ⓨ Can be used for normal, tapped, and key groove types.	