

# BLOCK PUNCHES

— WPC® TREATMENT —

PRODUCTS DATA

P.1605

— WPC® Treatment —

**WPC® treatment**  
 1000~1100HV  
 Although the effective range of the treatment is part B, a WPC® treatment layer may be formed also on the shank up to a length of approximately 10mm.

**Tip machining limit**

Tip shape **D** Tip shape **R** Tip shape **E** Tip shape **G**

W ≤ P ≤ W × 20    P ≤ W ≤ W × 20    W ≤ P ≤ W × 20    W < P ≤ W × 20  
 0.15 ≤ R < W/2  
 0.01mm increments

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

**RoHS**

M	Catalog No.			Normal V·H=3~30	Tip shape	Tip shape	Tip shape	Tip shape
	Type	Tip shape	B Tip length					
(H3~5) Equivalent to SKH51 61~64HRC (H6~30) Equivalent to SKD11 60~63HRC	W-HP	D	S		D	R	E	G
Equivalent to SKH51 61~64HRC (H6~30) Powdered high-speed steel 64~67HRC	W-HSP W-PHP	R G	L					
(H5) Equivalent to SKH51 61~64HRC (H6~30) Equivalent to SKD11 60~63HRC	W-HM	D	S		D	R	E	G
Equivalent to SKH51 61~64HRC (H6~30) Powdered high-speed steel 64~67HRC	W-HSM W-PHM	R G	L					
(H3~5) Equivalent to SKH51 61~64HRC (H6~30) Equivalent to SKD11 60~63HRC	W-HK	D	S		D	R	E	G
Equivalent to SKH51 61~64HRC (H6~30) Powdered high-speed steel 64~67HRC	W-HSK W-PHK	R G	L					
(H3~5) Equivalent to SKH51 61~64HRC (H6~30) Equivalent to SKD11 60~63HRC	W-HF	D	S		D	R	E	G
Equivalent to SKH51 61~64HRC (H6~30) Powdered high-speed steel 64~67HRC	W-HSF W-PHF	R G	L					
(H3~5) Equivalent to SKH51 61~64HRC (H6~30) Equivalent to SKD11 60~63HRC	W-HW	D	S		D	R	E	G
Equivalent to SKH51 61~64HRC (H6~30) Powdered high-speed steel 64~67HRC	W-HSW W-PHW	R G	L					

Key groove position change: Flange position change (KO, K90, K180, K270) Single flange (FO, F90, F180, F270) Double flanges (WFO, WF90)

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

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), the full length L is within a range of 40 ~ 70.

Order (1) If tip is at center of shank

Catalog No.	V	H	L	0.01mm increments	0.1mm increments	K-F-WF
W-HSMRL	20	10	70	P16.00	W9.00	R0.20
W-PHRES	10	06	60	P8.00	W5.00	T25.5

Order (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.	V	H	L	0.01mm increments	0.1mm increments	K-F-WF	X-Y
W-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	P(PC)·W(WC)·R	T≥2	K-F-WF	X-Y	(BC·HC·TC, etc.)
W-HSKDS	20	08	60	P18.00	W1.50	T25.5	—	LKC

Alteration	Code	Spec.	1Code
Alterations to tip	PC	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
	WC	Tip length change 2 ≤ BC ≤ Bmax. 0.1mm increments	—
	BC	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 LC, 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 +0.2 0 → +0.05 0	—
Tap	MC	Tap diameter change Equivalent to SKD11 6 8 10 13 16 20 22 25 28 30 M4 → M3 M6 → M5 M8 → M7 M10 → M9 M12 → M11 M16 → M15 M20 → M19 M25 → M24 M30 → M29 For change from M6 to M4 Select MMC For change from M8 to M5 Select MMC	—
	MMC	SKH51-Powdered high-speed steel 6 8 10 13 16 20 22 M4 → M3 M6 → M5 M8 → M7 M10 → M9 M12 → M11	—
Key groove	TKC	Key groove position tolerance change T -0.05 0 → -0.02 0	—
	RTC	Key groove position tolerance change T -0.05 0 → -0.02 0	—
	WK	Addition of key groove at symmetrical opposite position K0-180 K90-270 An additional key groove is added at a position symmetrical 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 H(V) - UK ≥ 2.0 0.1mm increments 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	—
	TC	Flange thickness change 2 ≤ TC < 5 0.1mm increments. (If combined with TC, 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 → -0.02 0	—
Alterations to shape	FK	Relief chamfering to flange top edge Flange edge is chamfered to prevent flange breakage.	—
	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 shape	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 Tip corner Tip corner	—
	VKC	Shank tolerance change V·H +0.01 0 → +0.005 0	—
	VKM	Shank tolerance change V·H +0.01 0 → -0.005 0	—
	VHM	Shank tolerance change V·H +0.01 0 → -0.01 0	—
	VHZ	Shank tolerance change V·H +0.01 0 → ±0.005 0	—
DC	Addition of press-in lead Press-in lead of 3mm (V·H = 0.01) is added. Can be used for normal, tapped, and key groove types	—	