

# CARBIDE BLOCK PUNCHES

## CARBIDE BLOCK PUNCHES



Product name	CARBIDE BLOCK PUNCHES	CARBIDE BLOCK PUNCHES WITH AIR HOLES	CARBIDE BLOCK PUNCHES — Configurable size type —
Catalog No.	ZP□BL ZP□ML ZP□KL ZP□FL ZP□WL	ZJ□BL ZJ□KL ZJ□FL ZJ□WL	FZP□BL FZP□ML FZP□KL FZP□FL FZP□WL
Page	597	599	601



Product name	CARBIDE STRAIGHT PUNCHES	CARBIDE STRAIGHT PUNCHES WITH AIR HOLES	CARBIDE BLOCK PUNCH TIP BLANKS	CARBIDE BLOCK PUNCH BLANKS
Catalog No.	ZPC□ ZMC□ ZKC□ ZFC□ ZWC□	ZJC□ ZJK□ ZJFC□ ZJWC□	ZPDB ZPDM ZPDK ZPDF ZPDW	ZPB B—ZPB ZPM ZPK B—ZPK ZPF ZPW
Page	603	605	607	609



Product name	CARBIDE BLOCK PUNCH BLANKS WITH AIR HOLES	CARBIDE BLOCKS
Catalog No.	ZJB ZJK ZJF ZJW	Z
Page	611	613

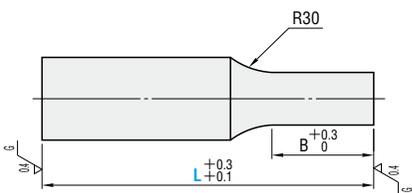
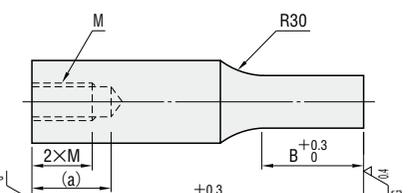
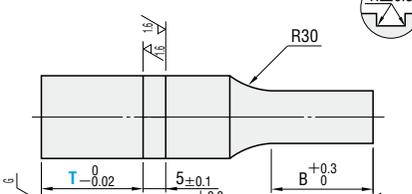
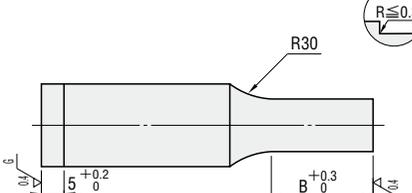
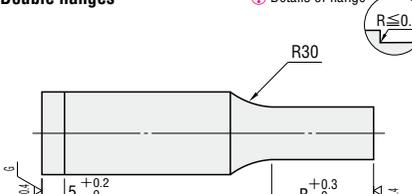
# CARBIDE BLOCK PUNCHES LIST

Shank type	M	Standard		Configurable size type	
		Standard	Standard	Configurable size type	Configurable size type
Carbide normal punches	V30 (HIP)	ZP□BL	P.597	FZP□BL	P.601
Carbide punches with air holes	V30 (HIP)	ZJ□BL	P.599		
Carbide tapped punches	V30 (HIP)	ZP□ML	P.597	FZP□ML	P.601
Carbide punches with key grooves	V30 (HIP)	ZP□KL	P.597	FZP□KL	P.601
Carbide punches with key grooves and air holes	V30 (HIP)	ZJ□KL	P.599		
Carbide punches with single flanges	V30 (HIP)	ZP□FL	P.597	FZP□FL	P.601
Carbide punches with single flanges and air holes	V30 (HIP)	ZJ□FL	P.599		
Carbide punches with double flanges	V30 (HIP)	ZP□WL	P.597	FZP□WL	P.601
Carbide punches with double flanges and air holes	V30 (HIP)	ZJ□WL	P.599		
Carbide straight punches	V30 (HIP)	ZPC□	P.603		
Carbide straight punches with air holes	V30 (HIP)	ZJC□	P.605		
Carbide tapped straight punches	V30 (HIP)	ZMC□	P.603		
Carbide straight punches with key grooves	V30 (HIP)	ZKC□	P.603		
Carbide straight punches with key groove and air holes	V30 (HIP)	ZJK□	P.605		
Carbide straight punches with single flanges	V30 (HIP)	ZFC□	P.603		
Carbide straight punches with single flanges and air holes	V30 (HIP)	ZJFC□	P.605		
Carbide straight punches with double flanges	V30 (HIP)	ZWC□	P.603		
Carbide straight punches with double flanges and air holes	V30 (HIP)	ZJWC□	P.605		

## Carbide block punch accuracy standards

Accuracy standards		Accuracy standards	
Perpendicularity	$a \leq 0.005$	Warpage	$c \leq 0.005$
Parallelism	$b \leq 0.005$	Bending of tip	$d \leq 0.005$

# CARBIDE BLOCK PUNCHES

		●Tip machining limit			RoHS
		Tip shape	Tip shape	Tip shape	
		D	R	E	
		P ≥ W	P ≥ W 0.15 ≤ R < W/2	P > W	
					
	Shank dimensions V·H	—Normal—			
		D ZPDBL	R ZPRBL	E ZPEBL	
V30 (HIP) 88~89HRA	V·H 3~20				
	Shank dimensions V·H	—Tapped—			
		D ZPDML	R ZPRML	E ZPEML	
V30 (HIP) 88~89HRA	V·H 8~20				
	Shank dimensions V·H	—With key groove—			
		D ZPDKL	R ZPRKL	E ZPEKL	
V30 (HIP) 88~89HRA	V·H 3~20				
	Shank dimensions V·H	—Single flange—			
		D ZPDFL	R ZPRFL	E ZPEFL	
V30 (HIP) 88~89HRA	V·H 3~16				
	Shank dimensions V·H	—Double flanges—			
		D ZPDWL	R ZPRWL	E ZPEWL	
V30 (HIP) 88~89HRA	V·H 3~16				

Catalog No.		Shank / tip dimensions (mm)										L	B			M	(a)	U							
Type	Tip shape	Type	3	4	5	6	8	10	13	16	20		T	40	50				60-70						
ZP	D	BL	3	1.0								40	T ≥ 2.0	13	13	—	—	1.0							
		KL	4	1.0																					
		FL	5	2.0																					
		WL	6	2.0																					
		BL	8	2.0																					
		WL	20	5.0																					
	R	BL	10	2.5								50	13	19	19	4	12	1.5							
		KL	13	3.0																					
		FL	16	4.0																					
		WL	20	5.0																					
		E	BL	13	3.0															60	19	25	8	20	1.5
			KL	16	4.0																				
FL	19		5.0																						
WL	25		6.0																						



(1) If tip is at center of shank

Catalog No.	V	H	L	0.01mm increments			0.1mm increments	0.1mm increments	K·F·WF
				P	W	R (R only)	T		
ZPEML	20	10	70	P16.00	W9.00		T25.5	K0	
ZPEKL	10	06	60	P8.00	W5.00			F90	
ZPEFL	16	13	60	P15.00	W12.00			WF90	
ZPEWL	13	10	40	P8.00	W5.00				
ZPRBL	10	10	60	P5.00	W4.00	R0.15			

(2) If tip is not at center of shank

Catalog No.	V	H	L	0.01mm increments			0.1mm increments	K·F·WF	0.01mm increments
				P	W	R (R only)	T		X-Y
ZPEFL	16	13	50	P15.00	W12.00			F0	X0.00-Y0.55

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

■ Key groove position and flange position change (KEY POSITION Rs0)

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



Days to Ship **Quotation**



Price **Quotation**



Alterations Catalog No. V H L(LC) P(PC)·W(WC)·R T K·F·WF (BC·HC·TC, etc.)  
ZPEBL 20 08 60 P18.00-WC1.50 VKC

Alteration	Code	Spec.	1Code
Alterations to tip	PC	Tip dimension change PC ≥ V × 0.3 ≥ 1.00 0.50~0.99 8 1.00~1.99 13 2.00~2.99 20 3.00~4.99 30 5.00~ 35	
	WC	WC ≥ H × 0.15 ≥ 0.50 0.01mm increments	
	BC	Tip length change 2 ≤ BC ≤ Bmax. 0.1mm increments Full length (L must be at least 30mm longer than tip length (BC)).	
Full length	PKC	Tip tolerance change P·W +0.01 ±0.005	
	PKV	Tip tolerance change P·W +0.01 ±0.005	
	LC	Full length change 30+B(BC) ≤ 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).	
Alterations to 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 TKC·TKM, 0.01mm increments can be selected.) * Full length L is shortened by (5-TC). If combined with LC, full length is equal to LC.	
Tap	TKC	Flange thickness tolerance change T +0.2 ±0.02	
	TKM	Flange thickness tolerance change T +0.2 ±0.02	
	FK	Relief chamfering to flange top edge Flange edge is chamfered to prevent flange breakage. * Cannot be used for normal, tapped, and key groove types.	
Tap	MC	Tap diameter change	

Alteration	Code	Spec.	1Code
Key groove	RTC	Key groove position tolerance change T 0 -0.02 ±0.05 * Can be used for key groove types.	
	WK	Addition of key groove at symmetrical opposite position 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 symmetrical opposite to the specified key groove. * Can be combined with UK. * Can be used for key groove types.	
	UK	Key groove depth change 0.1mm increments 0.5 ≤ UK ≤ U + 0.2 H(V) - UK ≥ 2.0 * Can be combined with WK. * Can be used for key groove types.	
Others	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 Tip corner Tip corner * Selection of chamfering position CCP0 CCP90 CCP180 CCP270 * Can be used for normal and tapped types only.	
	VKC	Shank tolerance change V·H +0.005 ±0.003	
Tap	VKM	Shank tolerance change V·H +0.005 ±0.003	
	VHM	Shank tolerance change V·H +0.005 ±0.005	
Tap	DC	Addition of press-in lead 3mm (V·H -0.01 -0.03)	
		* Cannot be used for flanged types.	

# CARBIDE BLOCK PUNCHES WITH AIR HOLES

**RoHS**

**• Tip machining limit**

Tip shape	Tip shape	Tip shape
<b>D</b>	<b>R</b>	<b>E</b>
$P \geq W$	$P \geq W$	$P > W$
	$0.15 \leq R < \frac{W}{2}$	

Shank dimensions V·H	Type	Normal			With key groove			Single flange			Double flanges		
		D	R	E	D	R	E	D	R	E	D	R	E
V30 (HIP) 88~89HRA V·H 5~20	BL KL FL WL	ZJDBL	ZJRBL	ZJEBL	ZJDKL	ZJRKL	ZJEKL	ZJDFL	ZJRFL	ZJEFL	ZJDWL	ZJRWL	ZJEWL
V30 (HIP) 88~89HRA V·H 5~20													
V30 (HIP) 88~89HRA V·H 5~16													
V30 (HIP) 88~89HRA V·H 5~16													

Cannot be used for products marked with ● in the specification table.

Catalog No.	Shank / tip dimensions (mm)								L	T	B			d1×S			d2	U				
	Type	Tip shape	Type	V	H	L	P	W			R	L	L	L	L	L			L			
ZJ	D R E	BL KL FL WL	5	2.5	5	5	5	5	5	40 50 60 70	≥2.0	13	13	13	0.8×17	0.8×20	2.1	1.0				
			6	2.5	6	6	6	6	6				6	6	1.2×17	1.2×27	2.6					
			8	2.5	8	8	8	8	8				8	8	8	8	8	8	1.6×17	1.6×28	3.4	1.5
			10	3.0	10	10	10	10	10				10	10	10	10	10	10	1.9×17	1.9×28	4.4	
			13	3.5	13	13	13	13	13				13	13	13	13	13	13	2.9×17	2.9×24		
			16	4.5	16	16	16	16	16				16	16	16	16	16	16	2.9×24	2.9×36		
			20	5.0	20	20	20	20	20				20	20	20	20	20	20	20	20	20	

**Order**

(1) If tip is at center of shank

Catalog No.	V	H	L	P	W	R	T	K·F·WF
ZJEBL	20	08	60	P18.00	W4.00		≥2.0	K0
ZJEKL	10	06	60	P8.00	W5.00		≥2.0	F90
ZJEFL	16	13	60	P15.00	W12.00		≥2.0	WF90
ZJEWL	13	10	40	P8.00	W5.00		≥2.0	
ZJRBL	08	08	50	P5.00	W3.00		≥2.0	R0.15

(2) If tip is not at center of shank: Cannot be changed. (Cannot be manufactured.)

Key groove position specified: K0, K90  
Flange position specified: F0, F90, WF0, WF90

Tip shape E can be selected for F0, WF0 only.  
For F90-WF90, H dimension is as shown below.  
Tip shape D:  $2 \leq W$      $H=W$   
Tip shape R:  $2 \leq W-2R-1$      $H=W-2R-1$

**Days to Ship** Quotation

**Price** Quotation

**Alterations** Catalog No. V H L(LC) P·W·R T K·F·WF (BC·HC·TC, etc.)

ZJEBL 20 08 60 P18.00-W3.00 - VKC

Alteration	Code	Spec.	1Code
Alterations to tip	BC	Tip length change (shorter than standard) $2 \leq BC < B$ 0.1mm increments	
	PKC PKV	Tip tolerance change $P \cdot W +0.01 \rightarrow +0.005$ $P \cdot W +0.01 \rightarrow \pm 0.005$	
Alterations to full length	LC	Full length change $LC < L$ 0.1mm increments (If combined with LKC·LKZ, 0.01mm increments can be selected.) Tip length B is shortened by (L-LC).	
	LCX	Full length change with no change to tip length $30+B(BC) \leq LCX < L$ 0.1mm increments (If combined with LKC or LKZ, 0.01mm increments can be selected. Cannot be used for Flanged types)	
	LKC	Full length tolerance change $L +0.3 \rightarrow +0.05$ $L +0.1 \rightarrow 0$	
	LKZ	Full length tolerance change $L +0.3 \rightarrow +0.01$ $L +0.1 \rightarrow 0$	
Alterations to flange	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·TKM, 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 $T +0.2 \rightarrow +0.02$ $T +0.2 \rightarrow 0$	
	TKM	Flange thickness tolerance change $T +0.2 \rightarrow 0$ $T +0.2 \rightarrow -0.02$	
	FK	Relief chamfering to flange top edge Flange edge is chamfered to prevent flange breakage.	
	RTC	Key groove position tolerance change $T -0.02 \rightarrow +0.05$ $T -0.02 \rightarrow 0$	
Key groove	UK	Key groove depth change 0.1mm increments $0.5 \leq UK \leq U+0.2$ $H(V) - UK \geq 2.0$ Can be used for key groove types.	

Alteration	Code	Spec.	1Code
Others	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. $a+b \geq 1.3$	
	VKC VKM VHM	Shank tolerance change $V \cdot H +0.005 \rightarrow +0.003$ $V \cdot H +0.005 \rightarrow 0$ $V \cdot H +0.005 \rightarrow -0.003$ $V \cdot H +0.005 \rightarrow 0$ $V \cdot H +0.005 \rightarrow -0.005$	
	DC	Addition of press-in lead 3mm ( $V \cdot H -0.01$ $V \cdot H -0.03$ ) Cannot be used for flanged types.	



# CARBIDE STRAIGHT PUNCHES

●Tip machining limit RoHS

Tip shape	Tip shape	Tip shape	
<b>D</b>	<b>R</b>	<b>E</b>	
Ⓢ P ≥ W	Ⓢ P ≥ W Ⓢ 0.15 ≤ R < W/2	Ⓢ P > W	
<b>Normal</b>	<b>ZPCD</b>	<b>ZPCR</b>	<b>ZPCE</b>
V30 (HIP) 88~89HRA P-W 2.00~20.00			
<b>Tapped</b>	<b>ZMCD</b>	<b>ZMCR</b>	<b>ZMCE</b>
V30 (HIP) 88~89HRA P-W 12.00~20.00			
<b>With key groove</b>	<b>ZKCD</b>	<b>ZKCR</b>	<b>ZKCE</b>
V30 (HIP) 88~89HRA P-W 2.00~20.00			
<b>Single flange</b>	<b>ZFCD</b>	<b>ZFCR</b>	<b>ZFCE</b>
V30 (HIP) 88~89HRA P-W 2.0~16.0 Cannot be used for products marked with ● in the specification table.			
<b>Double flanges</b>	<b>ZWCD</b>	<b>ZWCR</b>	<b>ZWCE</b>
V30 (HIP) 88~89HRA P-W 2.0~16.0 Cannot be used for products marked with ● in the specification table.			

Ⓢ Although the tap hole has performed tap processing to steel inlaw until now, as soon as stock of a factory is lost, tap processing is directly given to the quality of super-hard material.

Catalog No.	Type	Tip shape	L	P	W	2.00 5.00	5.01 10.00	10.01 16.00	16.01 20.00	0.1mm T	U
ZPC	D	R	40	P	2.00~3.00	○	○	○	○	T ≥ 2	1.0
ZKC					3.01~4.00	○	○	○	●		
ZFC					4.01~5.00	○	○	○	●		
ZWC					5.01~6.00	○	○	○	●		
					6.01~8.00	○	○	○	●		
					8.01~10.00	○	○	○	●		
					10.01~16.00	○	○	○	●		
					16.01~20.00	○	○	○	●		

Catalog No.	Type	Tip shape	L	P	W	12.00 16.00	16.01 20.00	M	(a)	
ZMC	D	R	40	P	12.00~13.00	○	○	8	20	
					50	13.01~16.00	○			○
					60	16.01~20.00	○			○
					70					

Order Catalog No. - L - **0.01mm increments** - P - W - R (R only) - T ≥ 2 - K-F-WF

ZPCD - 60 - P14.28 - W9.28

ZMCR - 60 - P15.00 - W12.00 - R0.15

ZKCR - 60 - P14.28 - W9.28 - R0.5 - T25.5 - K0

ZFCE - 60 - P10.00 - W5.50 - F0

ZWCE - 60 - P12.01 - W8.05 - WF0

Days to Ship **Quotation** Price **Quotation**

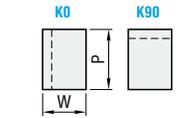
Alterations Catalog No. - L(LC) - P - W - R - T - K-F-WF - (PKC, etc.)

ZPCD - LC65.5 - P5.80 - W5.20 - PKC

Alteration	Code	Spec.	1Code
Tip	PKC	Tip tolerance change P·W +0.01 0 → +0.005 0	
	PKM	Tip tolerance change P·W +0.01 0 → -0.005 0	
	PKV	Tip tolerance change P·W +0.01 0 → ±0.005 0	
Alterations to full length	LC	Full length change 20 ≤ LC < L 0.1mm increments (If combined with LKC·LKZ, 0.01mm increments can be selected.)	
	LKC	Full length tolerance change L +0.3 0 → +0.05 0	
	LKZ	Full length tolerance change L +0.3 0 → +0.01 0	
Alterations to flange	HC	Flange width change 0 ≤ HC < 1.5 0.1mm increments	<b>Quotation</b>
	TC	Flange thickness change 2 ≤ TC < 5 0.1mm increments (If combined with TKC·TKM, 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	
	FK	Relief chamfering to flange top edge Flange edge is chamfered to prevent flange breakage. Ⓢ Cannot be used for normal, tapped, and key groove types.	

Alteration	Code	Spec.	1Code
Alterations to key groove	RTC	Key groove position tolerance change T 0 0 → +0.05 0	
	WK	Addition of key groove at W - (2×U(UK)) ≥ 2.0 (K0) symmetrically opposite position P - (2×U(UK)) ≥ 2.0 (K90) Ⓢ An additional key groove is added at a position symmetrically opposite to the specified key groove. Ⓢ Can be combined with UK. Ⓢ Can be used for key groove types.	
Alterations to tap	UK	Key groove depth change 0.5 ≤ UK ≤ U + 0.2 P(W) - UK ≥ 2.0 Ⓢ Can be combined with WK. Ⓢ Can be used for key groove types.	
Alterations to shape	MC	Tap diameter change For change from M8 to M6 Ⓢ (a) size is M×2+4mm (reference value).	<b>Quotation</b>
	CCN	Chamfering to shank (4 locations) 5 ≤ CCN ≤ 1 1mm increments Ⓢ Can be used for tip shape D only. Ⓢ Flange side of flanged punch becomes CCN - T(TC).	

## Key groove position specified



## Flange position specified

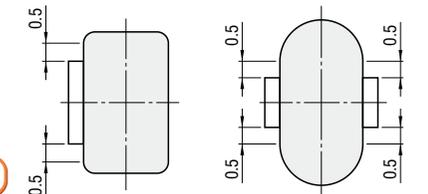


Ⓢ Tip shape **E** can be selected for F0-WF0 only.

Ⓢ For F90-WF90, dimension H is as shown below.

Tip shape **D**: 2 ≤ W H=W  
Tip shape **R**: 2 ≤ W-2R-1 H=W-2R-1

Ⓢ Flanged types (both single flange and double flanges) with shapes **R**·**E** include 0.5mm straight parts on each of the flange sides.



# CARBIDE STRAIGHT PUNCHES WITH AIR HOLES

**RoHS**

●Tip machining limit

Tip shape **D**

$P \geq W$

Tip shape **R**

$P \geq W$

$0.15 \leq R < \frac{W}{2}$

Tip shape **E**

$P > W$

Material	Tip dimension P-W	Normal	With key groove	Single flange	Double flanges
V30 (HIP) 88~89HRA	5.00~20.00	<b>D ZJCD</b> , <b>R ZJCR</b> , <b>E ZJCE</b>	<b>D ZJKCD</b> , <b>R ZJKCR</b> , <b>E ZJKCE</b>	<b>D ZJFCD</b> , <b>R ZJFCR</b> , <b>E ZJFCE</b>	<b>D ZJWCD</b> , <b>R ZJWCR</b> , <b>E ZJWCE</b>
V30 (HIP) 88~89HRA	5.00~20.00				
V30 (HIP) 88~89HRA	5.00~16.00				
V30 (HIP) 88~89HRA	5.00~16.00				

Catalog No.		L	P	P					0.1mm T	d <sub>1</sub> × S			d <sub>2</sub>	U
Type	Tip shape			5.00	6.01	8.01	10.01	16.01		L=40	L=50	L=60-70		
ZJC ZJKC ZJFC ZJWC	D R E	40 50 60 70	5.00~6.00 6.01~8.00 8.01~10.00 10.01~13.00 13.01~16.00 16.01~20.00	5.00	6.01	8.01	10.01	16.01	T ≥ 2.0	0.8×17	0.8×20	2.6	1.0	
				6.00	8.00	10.00	16.00	20.00		1.2×17	1.2×27	3.4		
										1.6×17	1.6×28	4.4		
										1.9×17	1.9×28			
										2.9×17	2.9×24			2.9×36

■Key groove position specified

■Flange position specified

K0 K90

F0 F90

WF0 WF90

Tip shape **E** can be selected for F0-WF0 only.  
 For F90-WF90, H dimension is shown below.

Tip shape **D**:  $2 \leq W$  H=W  
 Tip shape **R**:  $2 \leq W-2R-1$  H=W-2R-1

Flanged types (both single flange and double flanges) with shapes **R** and **E** include 0.5mm straight parts on each of the flange sides.

Order

Catalog No.	L	0.01mm increments	0.1mm increments	K-F-WF
ZJCD	60	P14.28 - W9.28		
ZJKCR	60	P14.28 - W9.28	R0.15 - T25.5 - K0	
ZJFCE	60	P13.18 - W6.50	F0	
ZJWCD	60	P14.28 - W14.28	WF90	

Days to Ship **Quotation**

Price **Quotation**

Alterations

Catalog No. - L(LC) - P - W - R - T - K-F-WF - (PKC, etc.)

ZJCD - LC65.5 - P5.80 - W5.20 - PKC

Alteration	Code	Spec.	1Code
Tip	PKC	Tip tolerance change P-W $+0.01 \rightarrow +0.005$	
	PKM	Tip tolerance change P-W $+0.01 \rightarrow -0.005$	
	PKV	Tip tolerance change P-W $+0.01 \rightarrow \pm 0.005$	
Alterations to full length	LC	Full length change $30 \leq LC < L$ 0.1mm increments (If combined with LKC-LKZ, 0.01mm increments can be selected.) Dimension S is shortened by (L-LC)	<b>Quotation</b>
	LCX	Full length change with the same tip length S $30 \leq LC < L$ 0.1mm increments If combined with LKC or LKZ, 0.01mm increments can be selected. Cannot be used for flanged types.	
	LKC	Full length tolerance change $L+0.3 \rightarrow +0.05$ $L+0.1 \rightarrow 0$	
	LKZ	Full length tolerance change $L+0.3 \rightarrow +0.01$ $L+0.1 \rightarrow 0$	
Alterations to key groove	RTC	Key groove position tolerance change $T_0 \rightarrow +0.05$ $T_{-0.02} \rightarrow 0$	
	UK	Key groove depth change $0.5 \leq UK \leq U+0.2$ 0.1mm increments $W(P) - \{UK + d_2(d_1)\} \geq 2.0$ Can be used for key groove types.	

Alteration	Code	Spec.	1Code
Alterations to flange	HC	Flange width change $0 \leq HC < 1.5$ 0.1mm increments	<b>Quotation</b>
	TC	Flange thickness change $2 \leq TC < 5$ 0.1mm increments (If combined with TKC-TKM, 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 $T+0.2 \rightarrow +0.02$ $T_0 \rightarrow 0$	
	TKM	Flange thickness tolerance change $T+0.2 \rightarrow 0$ $T_0 \rightarrow -0.02$	
Alterations to shape	FK	Relief chamfering to flange top edge Flange edge is chamfered to prevent flange breakage. Cannot be used for normal and key groove types.	
	CCN	Chamfering to shank (4 locations) $5 \leq CCN \leq L$ 1mm increments Can be used for tip shape D only. Flange side of flanged punch becomes CCN-T(TC).	

# CARBIDE BLOCK PUNCH TIP BLANKS

Shank dimensions V·H	Type	Diagram	RoHS
V30 (HIP) 88~89HRA V·H 3~20	ZPDB —Normal—		RoHS
V30 (HIP) 88~89HRA V·H 8~20	ZPDM —Tapped—		RoHS
V30 (HIP) 88~89HRA V·H 3~20	ZPDK —With key groove—		RoHS
V30 (HIP) 88~89HRA V·H 3~16	ZPDF —Single flange—		RoHS
V30 (HIP) 88~89HRA V·H 3~16	ZPDW —Double flanges—		RoHS

**P** Price **Quotation**

Additional machining cost will be required for the following types.

- Tapped (ZPDM)
- With key groove (ZPDK)
- Single flange (ZPDF)
- Double flanges (ZPDW)

**Quotation**

Catalog No.	Shank / tip dimensions (mm)										L	B			M	(a)	U		
	Type	H	V	3	4	5	6	8	10	13		16	20	T				L 40	L 50
ZPDB	3	1.0	1.5	2.0	2.5	3.0	3.0	4.0	5.0	7.0	8.0	40	T <sub>≥2</sub>	13	13	13	—	—	1.0
ZPDK	4	1.0																	
ZPDF	5	2.0																	
ZPDW	6	2.0																	
ZPDB	8	2.0																	
ZPDK	10	2.5																	
ZPDF	13	3.0																	
ZPDW	16	4.0																	
ZPDB	20	5.0																	

P<sub>≥</sub>V-0.05 ... P=V If P<sub>≥</sub>V-0.05, P dimension is equal to V dimension.  
W<sub>≥</sub>H-0.05 ... W=H If W<sub>≥</sub>H-0.05, W dimension is equal to H dimension.



(1) If tip is at center of shank

Catalog No.	V	H	L	0.01mm increments	0.1mm increments	K·F·WF
ZPDB	20	08	60	P18.00	W 4.00	
ZPDM	20	10	70	P16.00	W 9.00	
ZPDK	20	06	60	P 8.00	W 5.00	T25.0 KO
ZPDF	16	13	60	P15.00	W12.00	F90
ZPDW	16	10	40	P 8.00	W 5.00	WFO

(2) If tip is not at center of shank

Catalog No.	V	H	L	0.01mm increments	0.1mm increments	K·F·WF	0.01mm increments
ZPDF	16	13	50	P15.00	W12.00	F90	X0.00~Y0.15

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



Days to Ship **Quotation**



Alterations	Catalog No.	V	H	L(LC)	P(PC)·W(WC)·R·X·Y	T	K·F·WF	(BC·VKC...etc.)
	ZPDK	20	08	60	P18.00-WC1.50	T25	K·F·WF	LCZ

Alteration	Code	Spec.	1Code
Alterations to tip	PC	Tip dimension change PC <sub>≥</sub> V×0.3 <sub>≥</sub> 1.00 WC <sub>≥</sub> H×0.15 <sub>≥</sub> 0.50 0.01mm increments	P(PC)·W(WC)·B max. 0.50~0.99 8 1.00~1.99 13 2.00~2.99 20 3.00~4.99 30 5.00~ 35
	BC	Tip length change 2 <sub>≤</sub> BC <sub>≤</sub> Bmax. 0.1mm increments L <sub>≥</sub> BC+30 Full length (L) must be at least 30mm longer than tip length (BC).	
	LC	Full length change 30+B(BC) <sub>≤</sub> 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).	
Alterations to full length	LKC	Full length tolerance change	L +0.3 → +0.05 L +0.1 → 0
	LKZ	Full length tolerance change	L +0.3 → +0.01 L +0.1 → 0
	HC	Flange width change 0 <sub>≤</sub> HC<1.5 0.1mm increments	
Alterations to flange	TC	Flange thickness change 2 <sub>≤</sub> TC<5 0.1mm increments (if combined with TKC·TKM, 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 → +0.02 T 0 → 0
	TKM	Flange thickness tolerance change	T +0.2 → -0.02 T 0 → 0
Alterations to tap	FK	Relief chamfering to flange top edge Flange edge is chamfered to prevent flange breakage. Cannot be used for normal, tapped, and key groove types.	
	MC	Tap diameter change	H V 8 10 13 16 20 M4→M3 M6→M5 M8→M6 M8→M6 M8→M6

**Quotation**

Alteration	Code	Spec.	1Code
Key groove	RTC	Key groove position tolerance change T 0 → +0.05 0	
	WK	Addition of key groove at symmetrically opposite position H = (2×U(UK)) <sub>≥</sub> 2.0 (KO) V = (2×U(UK)) <sub>≥</sub> 2.0 (K90) An additional key groove is added at a position symmetrically opposite to the specified key groove. Can be combined with UK. Can be used for key groove types.	
	UK	Key groove depth change 0.5 <sub>≤</sub> UK <sub>≤</sub> U+0.2 0.1mm increments H(V) - UK <sub>≥</sub> 2.0 Can be combined with WK. Can be used for key groove types.	
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 <sub>≥</sub> 1.3 Tip corner Tip corner Selection of chamfering position Can be used for normal and tapped types only.	
	VKC	Shank tolerance change	V·H +0.005 → +0.003 0
VKM	Shank tolerance change	V·H +0.005 → -0.003 0	
VHM	Shank tolerance change	V·H +0.005 → -0.005 0	
DC	Addition of press-in lead 3mm (V·H <sub>≥</sub> 0.01) Cannot be used for flanged types.		

**Quotation**



# CARBIDE BLOCK PUNCH BLANKS WITH AIR HOLES

<b>ZJB</b> —Normal—	<b>ZJK</b> —With key groove—	<b>ZJF</b> —Single flange—	<b>ZJW</b> —Double flanges—
<b>V30 (HIP) 88~89HRA</b> V·H 5~20	<b>V30 (HIP) 88~89HRA</b> V·H 5~20	<b>V30 (HIP) 88~89HRA</b> V·H 5~16 Cannot be used for products marked with ● in the specification table.	<b>V30 (HIP) 88~89HRA</b> V·H 5~16 Cannot be used for products marked with ● in the specification table.

Catalog No.	H	V	L							L	0.1mm T	d <sub>1</sub> ×S			d <sub>2</sub>	U
			5	6	8	10	13	16	20			L=40	L=50	L=60-70		
ZJB	5		○	○	○	○	○	○	40	T≥2.0	0.8×17	0.8×20	2.1	1.0		
	6		○	○	○	○	○	1.2×17			1.2×27	2.6				
ZJK	8			○	○	○	○	50	T≥2.0	1.6×17	1.6×28	3.4	1.5			
	10			○	○	○	○			1.9×17	1.9×28	4.4				
ZJF	13				○	○	○	60	T≥2.0	2.9×17	2.9×24	2.9×36	1.5			
	16				○	○	○									
ZJW	16					○	○	70	T≥2.0				1.5			
	20					○	○									

Specifications marked with ● cannot be used for ZJF-ZJW.

**Order** **Example**

Catalog No. V H L  $\frac{0.1\text{mm increments}}{T \geq 2}$  K·F·WF

ZJB 08 06 - 40 — — —  
 ZJK 10 05 - 50 — T25.0 — K90  
 ZJF 13 10 - 70 — — — F0  
 ZJW 16 16 - 60 — — — WF90

**Days to Ship** **Quotation**

P.465

**Alterations** Catalog No. V H L(LC) T K·F·WF (TC·VKC...etc.)  
 ZJF 10 05 - 50 - F0 - TKC

Alteration	Code	Spec.	1Code
<b>Alterations to full length</b>	<b>LC</b>	Full length change 30 ≤ LC < L 0.1mm increments (If combined with LKC·LKZ, 0.01mm increments can be selected.)	
	<b>LCX</b>	Full length change with no change to tip length S 30 ≤ LCX < L 0.1mm increments ⊕ If combined with LKC or LKZ, 0.01mm increments can be selected. ⊗ Cannot be used for flanged types.	
	<b>LKC</b>	Full length tolerance change L +0.3 / +0.1 ↔ +0.05 / 0	
	<b>LKZ</b>	Full length tolerance change L +0.3 / +0.1 ↔ +0.01 / 0	
<b>Alterations to flange</b>	<b>HC</b>	Flange width change 0 ≤ HC < 1.5 0.1mm increments	<b>Quotation</b>
	<b>TC</b>	Flange thickness change 2 ≤ TC < 5 0.1mm increments (If combined with TKC-TKM, 0.01mm increments can be selected.) ⊕ Full length L is shortened by (5-TC). ⊗ If combined with LC, full length is equal to LC.	
	<b>TKC</b>	Flange thickness tolerance change T +0.2 / 0 ↔ +0.02 / 0	
	<b>TKM</b>	Flange thickness tolerance change T +0.2 / 0 ↔ 0 / -0.02	
<b>Alterations to key groove</b>	<b>RTC</b>	Key groove position tolerance change T -0.02 / 0 ↔ +0.05 / 0	
	<b>UK</b>	Key groove depth change 0.5 ≤ UK ≤ U + 0.2 0.1mm increments H(V) - {UK + d <sub>2</sub> (d <sub>1</sub> )} ≥ 2.0	
		⊕ Can be used for key groove types.	

Alteration	Code	Spec.	1Code
<b>Alterations to shape</b>	<b>CC</b>	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.	
	<b>CCP</b>	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	
	<b>VKC</b>	Shank tolerance change V·H +0.005 / 0 ↔ +0.003 / 0	
	<b>VKM</b>	Shank tolerance change V·H +0.005 / 0 ↔ -0.003 / 0	
	<b>VHM</b>	Shank tolerance change V·H +0.005 / 0 ↔ -0.005 / 0	

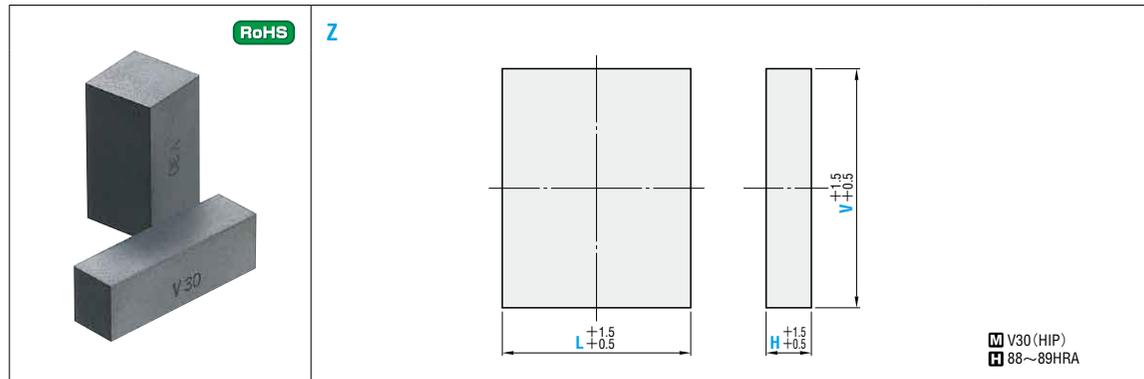
**Price** **Quotation**

Additional machining cost will be required for the following types:  
 ■ With key groove (ZJK)  
 ■ Single flange (ZJF)  
 ■ Double flanges (ZJW) **Quotation**

**Fixing keys for punches with key grooves** P.245

PSKB PSKBH PSKS PSKJ PSK PSKP PSKH PSKW

# CARBIDE BLOCKS



Catalog No.	H	V	3	4	5	6	8	10	13	16	20	100	L
Z	3		○	○	○	○	○	○	○	○	○	○	40 50 60 70
	4			○	○	○	○	○	○	○	○	○	
	5				○	○	○	○	○	○	○	○	
	6					○	○	○	○	○	○	○	
	8						○	○	○	○	○	○	
	10							○	○	○	○	○	
	13								○	○	○	○	
	16									○	○	○	
	20										○	○	
	22											○	
25											○		

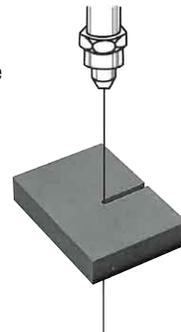
Order    -   
   -

Days to Ship **Quotation**

**CARBIDE BLOCKS** MISUMI has standardized the sintered materials used for carbide blocks in order to shorten the lead time and reduce the costs for carbide punches and dies.



• Blocks with V dimension of up to 20mm can be used for punches and dies without changing the standardized V and H dimensions.



• Blocks with V dimension of 100mm are suitable for WEDM.

**P** Price **Quotation**