PRECISION PUNCHES & DIES

PRECISION
PUNCHES & DIES

Product name Catalog No.	PRECISION SHOULDER PUNCHES —Normal— —Lapping—	PRECISION SHOULDER PUNCHES WITH AIR HOLES —Normal— —Lapping—	PRECISION CARBIDE SHOULDER PUNCHES —Normal— —Lapping—	PRECISION CARBIDE SHOULDER PUNCHES WITH AIR HOLES —Normal— —Lapping—
Page	391	392	393	394

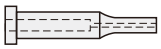
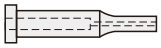
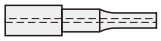
PRECISION CARBIDE SHOULDER QUILL PUNCHES —Normal— —Lapping—	PRECISION PUNCHES WITH KEY GROOVES —Normal— —Lapping—	PRECISION PUNCHES WITH KEY GROOVES AND AIR HOLES —Normal— —Lapping—	PRECISION CARBIDE PUNCHES WITH KEY GROOVES —Normal— —Lapping—	PRECISION CARBIDE PUNCHES WITH KEY GROOVES AND AIR HOLES —Normal— —Lapping—
395	397	398	399	400

PRECISION FLANGE STOPPER PUNCHES —Normal— —Lapping—	PRECISION CARBIDE FLANGE STOPPER PUNCHES —Normal— —Lapping—	PRECISION CARBIDE BLOCK PUNCHES	PRECISION CARBIDE BLOCK PUNCHES WITH AIR HOLES	PRECISION CARBIDE STRAIGHT PUNCHES
401	402	403	405	407

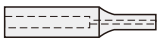
PRECISION CARBIDE STRAIGHT PUNCHES WITH AIR HOLES	PRECISION CARBIDE PILOT PUNCHES —Normal— —Lapping—	PRECISION CARBIDE PILOT PUNCHES FOR FIXING TO STRIPPER PLATES —Normal— —Lapping—	PRECISION CARBIDE STRAIGHT PILOT PUNCHES FOR FIXING TO STRIPPER PLATES —Normal— —Lapping—
409	411	412	412

PRECISION ANGULAR BUTTON DIES —Fully tapered type—	PRECISION CARBIDE ANGULAR BUTTON DIES	PRECISION SCRAP RETENTION CARBIDE ANGULAR BUTTON DIES	PRECISION CARBIDE ANGULAR BUTTON DIES, NON-CLOGGING TYPE
413	414	415	416

■List of precision punches

Shank type		M	Shank dia. tolerance	Standard type		Lapping	
Precision shoulder punches		Equivalent to SKD11 Powdered high-speed steel	$D^{+0.005}_{0}$	VSPA□ VPHA□	P.391	L—VSPA□ L—VPHA□	P.391
Precision shoulder punches with air holes		SKH51 Powdered high-speed steel	$D^{+0.005}_{0}$	VSJA□ VPJA□	P.392	L—VSJA□ L—VPJA□	P.392
Precision carbide shoulder punches		V30 (HIP) Super fine grain (HIP)	$D^{+0.002}_{0}$	VPA□ VXPA□	P.393	L—VPA□ L—VXPA□	P.393
Precision carbide shoulder punches with air holes		V30 (HIP) Super fine grain (HIP)	$D^{+0.002}_{0}$	VJA□ VXJA□	P.394	L—VJA□ L—VXJA□	P.394
Precision carbide quill shoulder punches		V30 (HIP) Super fine grain (HIP)	L20~30 $D^{+0.002}_{0}$ L35~50 $D^{+0.003}_{0}$	VPA□ VXPA□	P.395	L—VPA□ L—VXPA□	P.395
Precision punches with key grooves		Equivalent to SKD11 Powdered high-speed steel	$D^{+0.005}_{0}$	VSKA□ VPKA□	P.397	L—VSKA□ L—VPKA□	P.397
Precision punches with key grooves and air holes		SKH51 Powdered high-speed steel	$D^{+0.005}_{0}$	VSKJA□ VPKJA□	P.398	L—VSKJA□ L—VPKJA□	P.398
Precision carbide punches with key grooves		V30 (HIP) Super fine grain (HIP)	$D^{+0.002}_{0}$	VKA□ VXKA□	P.399	L—VKA□ L—VXKA□	P.399
Precision carbide punches with key grooves and air holes		V30 (HIP) Super fine grain (HIP)	$D^{+0.002}_{0}$	VJKA□ VXJKA□	P.400	L—VJKA□ L—VXJKA□	P.400
Precision flange stopper punches		Equivalent to SKD11 Powdered high-speed steel	$D^{+0.005}_{0}$	VSPTAL VPHTAL	P.401	L—VSPTAL□ L—VPHTAL□	P.401
Precision carbide punches with flange stoppers		Super fine grain (HIP)	$D^{+0.002}_{0}$	VXPHAL	P.402	L—VXPHAL	P.402
Precision carbide punches with flange stoppers and air holes		Super fine grain (HIP)	$D^{+0.002}_{0}$	VXJHAL	P.402	L—VXJHAL	P.402

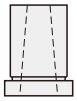
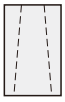
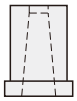
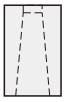
■List of precision carbide block punches

Shank type		M	Type	Standard	
Precision carbide block punches		V30 (HIP)	Normal	VZP□BL	P.403
			Tapped	VZP□ML	
			With key groove	VZP□KL	
			Single flange	VZP□FL	
			Double flanges	VZP□WL	
Precision carbide block punches with air holes		V30 (HIP)	Normal	VZJ□BL	P.405
			With key groove	VZJ□KL	
			Single flange	VZJ□FL	
			Double flanges	VZJ□WL	
Precision carbide straight punches		V30 (HIP)	Normal	VZPC□	P.407
			Tapped	VZMC□	
			With key groove	VZKC□	
			Single flange	VZFC□	
			Double flanges	VZWC□	
Precision carbide straight punches with air holes		V30 (HIP)	Normal	VZJC□	P.409
			With key groove	VZJKC□	
			Single flange	VZJFC□	
			Double flanges	VZJWC□	

■List of precision carbide pilot punches

Shank type		M	Tip shape	Shank dia. tolerance	Standard		Lapping	
Precision carbide pilot punches		V30 (HIP) Super fine grain (HIP)	Taper	$D^{+0.002}_{0}$	VTPA□ VXTPA□	P.411	L—VTPA□ L—VXTPA□	P.411
Precision carbide straight pilot punches for fixing to stripper plate		V30 (HIP) Super fine grain (HIP)		$D^{+0.002}_{0}$	VTPTP VXTPTP	P.412	L—VTPTP L—VXTPTP	P.412
Precision carbide straight pilot punches for fixing to stripper plate		V30 (HIP) Super fine grain (HIP)		—	VTPT VXTPT	P.412	L—VTPT L—VXTPT	P.412

■List of precision angular button dies

Button die type		M	Outer diameter tolerance	Scrap retention: Without scrap retention	Page	With scrap retention	Page	Non-clogging	Page
Precision Angular Fully tapered Headed		D3～5 SKH51	D $^{+0.005}_{0}$	VSAHD	P.413				
		D6・8 Equivalent to SKD11							
		Powdered high-speed steel		VPAHD					
		V40 (HIP)		VWAHD					
Precision Angular Fully tapered Straight		D3～5 SKH51	D $^{+0.005}_{0}$	VSASD	P.413				
		D6・8 Equivalent to SKD11							
		Powdered high-speed steel		VPASD					
		V40 (HIP)		VWASD					
Precision carbide Angular Headed		V40 (HIP)	D $^{+0.002}_{0}$	VAHD	P.414	SR—VAHD	P.415	SV—VAHD	P. 416
		Super fine grain (HIP)		VXAHD		SR—VXAHD		SV—VXAHD	
Precision carbide Angular Straight		V40 (HIP)		VASD	P.414	SR—VASD	P.415	SV—VASD	P. 416
		Super fine grain (HIP)		VXASD		SR—VXASD		SV—VXASD	

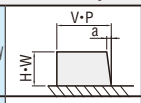
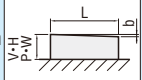
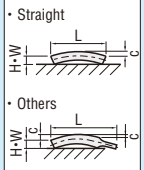
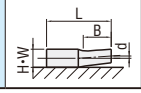
■Precision carbide punches

Accuracy standards		
Roundness		D (shank) a≦0.0015 P (Tip) P<1.000 a≦0.0020 P≧1.000 a≦0.0015
Concentricity of shank and tip		b≦0.003

■Precision carbide pilot punches

Accuracy standards		
Roundness		D (shank) a≦0.0015 P (Tip) P<1.000 a≦0.0020 P≧1.000 a≦0.0015
Concentricity of shank and tip		b≦0.003

■Precision carbide block punches

Accuracy standards		
Perpendicularity		a≦0.003
Parallelism		b≦0.003
Warpage		c≦0.003
Bending of tip		d≦0.003

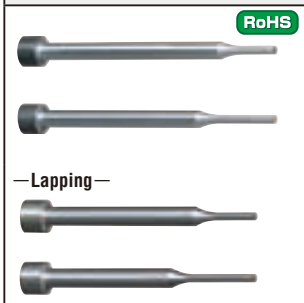
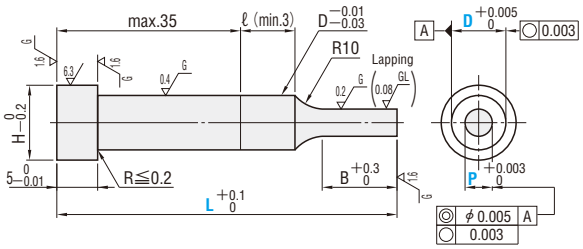
■Accuracy guarantee

PRECISION In order to ensure reliable use of our carbide punches by the customers, each and every product is measured both at the time of manufacture and also again after being left in a thermostatic chamber for a certain period of time after manufacture. These measurements are listed in the Quality Guarantee Certificate which is attached to the product.

■Quality Guarantee Certificate

※The Quality Guarantee Certificate is attached to carbide products only.
The accuracy standards for steel products differ from the above. For further details, refer to the relevant pages.

PRECISION SHOULDER PUNCHES

Type	M H	Catalog No.	Shape
 RoHS —Lapping—	Equivalent to SKD11 60～63HRC	VSPAS VSPAL Lapping L—VSPAS L—VSPAL	
	Powdered high-speed steel 64～67HRC	VPHAS VPHAL Lapping L—VPHAS L—VPHAL	

Catalog No. Type	D	L							0.001mm increments min. P max.	B	H
S VSPAS VPHAS Lapping L—VSPAS L—VPHAS	3	40	45	50	55	60			1.000 ～ 2.990	8	5
	4	40	45	50	55	60	65	70	1.000 ～ 3.990		7
	5	40	45	50	55	60	65	70	2.000 ～ 4.990		8
	6	40	45	50	55	60	65	70	2.000 ～ 5.990		9
L VSPAL VPHAL Lapping L—VSPAL L—VPHAL	3			50	55	60			1.000 ～ 2.990	13	5
	4			50	55	60	65	70	1.000 ～ 3.990		7
	5			50	55	60	65	70	2.000 ～ 4.990		8
	6			50	55	60	65	70	2.000 ～ 5.990		9

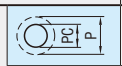
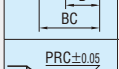
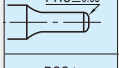
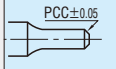
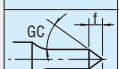
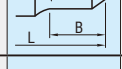
P>D−0.03 ⇢ ℓ=0 If P>D−0.03, $D^{-0.01}_{-0.03}$ (press-in lead) is not included.

Order Catalog No. — L — P
VSPAS 4 — 50 — P2.000

Price Quotation

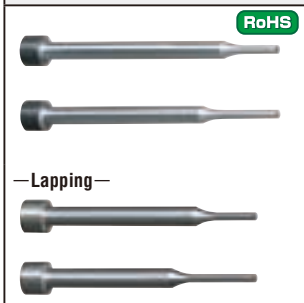
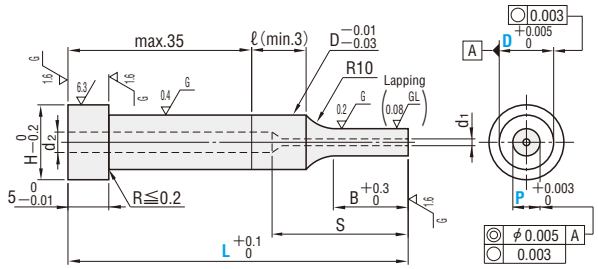
Days to Ship Quotation

Alterations Catalog No. — L(LC) — P(PC) — (BC・HC・TC, etc.)
VSPAS 4 — 50 — P2.000 — TC4—LKC—KFC150

Alteration	Code	Spec.	1Code
Alterations to tip			
	PC	Tip dimension change PC≧Pmin./2 0.001mm increments (P: 0.500～0.799 Bmax. 6; 0.800～0.999 8; 1.000～1.999 13; 2.000～ 19)	Quotation
	BC	Tip length change 2≦BC≦Bmax 0.1mm increments ℙ Full length L must be at least 25mm longer than tip length BC.	
	PRC	Rounding of tip side edge 0.3≦PRC≦1 0.1mm increments ℙ PRC≦(P−0.2)/2 ⊗ Cannot be combined with PCC・GC.	
	PCC	Chamfering to tip side edge 0.3≦PCC≦1 0.1mm increments ℙ PCC≦(P−0.2)/2 ⊗ Cannot be combined with PRC・GC.	
	GC	20°≦GC<90° 1° increments Tip length B≧f+2 f=P/2×tan(90°−GC°) ⊗ Cannot be used for P≦1.000. ⊗ Cannot be combined with LKC・PRC・PCC. ℙ Punches with lapping are rounded at the edges.	
Alterations to full length			
	LC	Full length change 25+B(C)≦LC<L 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.) ℙ If difference between full length and tip length is 25mm or less, tip length is adjusted to (Full length−25).	
	LKC	Full length tolerance change $L^{+0.1}_{0}$ ⇨ $^{+0.01}_{0}$	

Alteration	Code	Spec.	1Code
Alterations to head			
	KC	Addition of single key flat to head	
	WKC	Addition of double key flats in parallel	
	KFC	Double key flats at 0° and a selected angle 1° increments ⊗ Cannot be combined with KC・WKC.	
	HC	Head diameter change D≦HC<H 0.1mm increments	Quotation
	TC	Head thickness change 2≦TC<T 0.1mm increments ℙ Full length L is shortened by (T−TC). If combined with LC, full length is equal to LC.	
	TCC	Chamfering of head This improves the strength of the punch head. P.1097 0.5≦TCC≦(H−D)/2 0.1mm increments ℙ If H≦5, then TCC is 0.5.	
Alterations to shank			
	SKC	Single key shaft on shank P≦D−1.2 (Machining width 0.5) ⊗ Cannot be combined with KC・WKC・KFC.	
	NDC	No press-in lead ℓ≧3 ⇨ ℓ=0	

PRECISION SHOULDER PUNCHES WITH AIR HOLES

Type	M H	Catalog No.	Shape
RoHS  —Lapping—	SKH51 61～64HRC	VSJAS VSJAL Lapping L—VSJAS L—VSJAL	
	Powdered high-speed steel 64～67HRC	VPJAS VPJAL Lapping L—VPJAS L—VPJAL	

Catalog No. Type		D	L							0.001mm increments min. P max.	B	d1	S	d2	H
S VSJAS VPJAS	Lapping L—VSJAS L—VPJAS	4	40	45	50	55	60			1.500 ～ 3.990	8	0.5	20	1.2	7
		5	(40)	45	50	55	60	65	70	2.000 ～ 4.990		0.8		2.1	8
		6	(40)	45	50	55	60	65	70	2.000 ～ 5.990				2.6	9
L VSJAL VPJAL	Lapping L—VSJAL L—VPJAL	4			50	55	60			1.500 ～ 3.990	13	0.5	20	1.2	7
		5			50	55	60	65	70	2.000 ～ 4.990		0.8		2.1	8
		6			50	55	60	65	70	2.000 ～ 5.990				2.6	9

L(40) ···› S=17 If full length is (40), dimension S is 17mm. P>D−0.03 ···›ℓ=0 If P>D−0.03, $D^{-0.01}_{-0.03}$ (press-in lead) is not included.

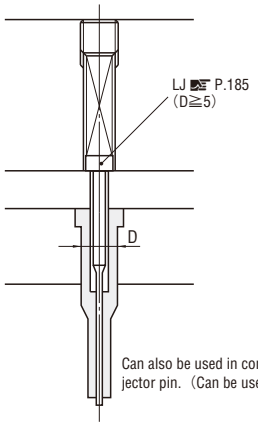
Order

Catalog No.	—	L	—	P
VSJAL 6	—	50	—	P5.105

Days to Ship Quotation

Price Quotation

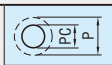
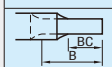
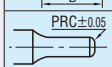
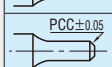
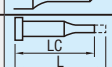
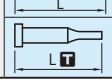
Example



Can also be used in combination with a long jector pin. (Can be used for D≧5.)

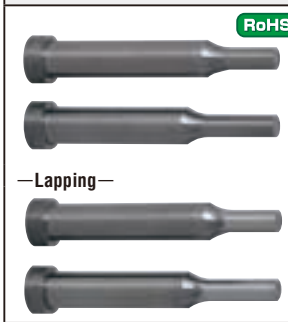
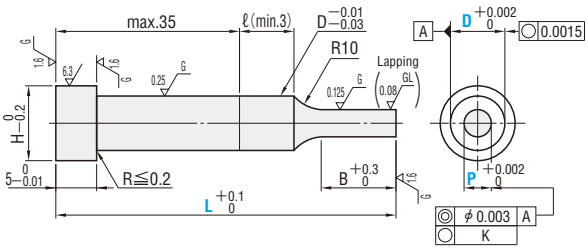
Alterations

Catalog No.	—	L(LC)	—	P(PC)	—	(BC·HC·TC, etc.)
VSJAL 6	—	50	—	P5.105	—	TC4—LKC

	Alteration	Code	Spec.	1Code
Alterations to tip		PC	Tip dimension change PC≧PCmin. 0.001mm increments (D / PCmin.: 5 / 1.800; 6 / 1.800) ⊗ Cannot be used for D4.	Quotation
		BC	Tip length change 2≦BC<B 0.1mm increments	
		PRC	Rounding of tip side edge 0.3≦PRC≦1 0.1mm increments (PRC≦(P−d1−0.5)/2 ⊗ Cannot be combined with PCC.	
		PCC	Chamfering to tip side edge 0.3≦PCC≦1 0.1mm increments (PRC≦(P−d1−0.5)/2 ⊗ Cannot be combined with PRC.	
Alterations to full length		LC	Full length change LC<L 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.) B and S dimensions are shortened by (L−LC).	
		LKC	Full length tolerance change $L^{+0.1}_{0}$ ⇨ $^{+0.01}_{0}$	

	Alteration	Code	Spec.	1Code
Alterations to head		KC	Addition of single key flat to head	Quotation
		WKC	Addition of double key flats in parallel	
		KFC	Double key flats at 0° and a selected angle 1° increments ⊗ Cannot be combined with KC·WKC.	
		HC	Head diameter change D≦HC<H 0.1mm increments	
		TC	Head thickness change 2≦TC<5 0.1mm increments Full length L is shortened by (5−TC). If combined with LC, full length is equal to LC.	
		TCC	Chamfering of head This improves the strength of the punch head. P.1097 0.5≦TCC≦(H−D)/2 0.1mm increments If H≦5, then TCC is 0.5.	
Shank		NDC	No press-in lead ℓ≧3 ⇨ ℓ=0	

PRECISION CARBIDE SHOULDER PUNCHES

Type	M H	Catalog No.	Shape
 RoHS —Lapping—	V30 (HIP) 88～89HRA	VPAS VPAL Lapping L—VPAS L—VPAL	
	Super fine grain (HIP) 90～92HRA	VXPAS VXPAL Lapping L—VXPAS L—VXPAL	P<1.000 ⋯ K≦0.0020 P≧1.000 ⋯ K≦0.0015

Catalog No. Type		D	L							0.001mm increments min. P max.	B	H
S VPAS VXPAS	Lapping L—VPAS L—VXPAS	3	40	45	50	55	60			1.000 ～ 2.990	8	5
		4	40	45	50	55	60	65	70	1.000 ～ 3.990		7
		5	40	45	50	55	60	65	70	2.000 ～ 4.990		8
		6	40	45	50	55	60	65	70	2.000 ～ 5.990		9
L VPAL VXPAL	Lapping L—VPAL L—VXPAL	3			50	55	60			1.000 ～ 2.990	13	5
		4			50	55	60	65	70	1.000 ～ 3.990		7
		5			50	55	60	65	70	2.000 ～ 4.990		8
		6			50	55	60	65	70	2.000 ～ 5.990		9

P>D—0.03 ⋯ ℓ=0 If P>D—0.03, $D^{-0.01}_{-0.03}$ (press-in lead) is not included.

Order Catalog No. — L — P
VPAS 4 — 50 — P2.000

Price Quotation

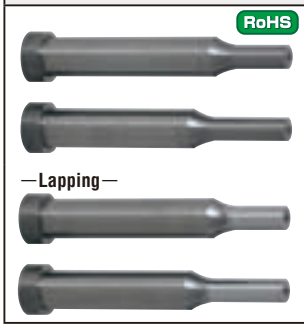
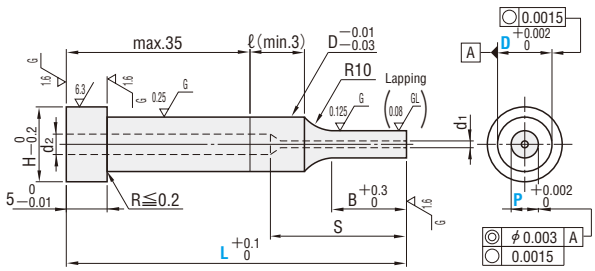
Days to Ship Quotation

Alterations Catalog No. — L(LC) — P(PC) — (BC・HC・TC, etc.)
VPAS 4 — 50 — P2.000 — TC4—LKC

Alteration	Code	Spec.	1Code
Alterations to tip	PC	Tip dimension change PC≧Pmin./2 0.001mm increments P: 0.500～0.799 → Bmax. 6; 0.800～0.999 → 8; 1.000～1.999 → 13; 2.000～ → 19	Quotation
	BC	Tip length change 2≦BC≦Bmax. 0.1mm increments Full length L must be at least 25 mm longer than tip length BC.	
	PRC	Rounding of tip side edge 0.3≦PRC≦1 0.1mm increments PRC≦(P—0.2)/2 Cannot be combined with PCC・GC.	
	PCC	Chamfering to tip side edge 0.3≦PCC≦1 0.1mm increments PCC≦(P—0.2)/2 Cannot be combined with PRC・GC.	
	GC	20°≦GC<90° 1° increments Tip length B≧f+2 f=P/2×tan(90°—GC°) Cannot be used for P≦1.00. Cannot be combined with LKC・PRC・PCC. Punches with lapping are rounded at the edges.	
Alterations to full length	LC	Full length change 25+B(C)≦LC<L 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.) If difference between full length and tip length is 25mm or less, tip length is adjusted to (Full length—25mm). LC30.1～LC34.9 (when combined with LKC, LC30.01～LC34.99), then D T is $^{+0.003}_{0}$.	
	LKC	Full length tolerance change $L^{+0.1}_{0}$ ⇨ $^{+0.01}_{0}$	

Alteration	Code	Spec.	1Code
Alterations to head	KC	Addition of single key flat to head Cannot be combined with KFC.	
	WKC	Addition of double key flats in parallel Cannot be combined with KFC.	
	KFC	Double key flats at 0° and a selected angle 1° increments Cannot be combined with KC・WKC.	
	HC	Head diameter change D≦HC<H 0.1mm increments	Quotation
	TC	Head thickness change 2≦TC<T 0.1mm increments Full length L is shortened by (T—TC). If combined with LC, full length is equal to LC.	
	TCC	Chamfering of head. This improves the strength of the punch head. P.1097 0.5≦TCC≦(H—D)/2 0.1mm increments If H≦5, then TCC is 0.5.	
Alterations to shank	SKC	Single key flat on shank P≦D—1.2 (Machining width 0.5) Cannot be combined with KC・WKC・KFC.	
	NDC	No press-in lead ℓ≧3 ⇨ ℓ=0	

PRECISION CARBIDE SHOULDER PUNCHES WITH AIR HOLES

Type	M H	Catalog No.	Shape
 RoHS —Lapping—	V30 (HIP) 88～89HRA	VJAS VJAL Lapping L—VJAS L—VJAL	
	Super fine grain (HIP) 90～92HRA	VXJAS VXJAL Lapping L—VXJAS L—VXJAL	

Air hole of super fine grain type is straight. S and d2 dimensions do not exist.

Catalog No. Type		D	L							0.001mm increments min. P max.	B	d1	S	d2	H
S	Lapping	4	40	45	50	55	60			1.500 ～ 3.990	8	0.5	20	1.2	7
VJAS	L—VJAS	5	(40)	45	50	55	60	65	70	2.000 ～ 4.990		0.8		2.1	8
VXJAS	L—VXJAS	6	(40)	45	50	55	60	65	70	2.000 ～ 5.990				2.6	9
L	Lapping	4			50	55	60			1.500 ～ 3.990	13	0.5	20	1.2	7
VJAL	L—VJAL	5			50	55	60	65	70	2.000 ～ 4.990		0.8		2.1	8
VXJAL	L—VXJAL	6			50	55	60	65	70	2.000 ～ 5.990				2.6	9

L(40) ⋯→ S=17 If full length is (40), dimension S is 17mm.
P>D−0.03 ⋯→ ℓ=0 If P>D−0.03, $D^{-0.01}_{-0.03}$ (press-in lead) is not included.
Air hole of super fine grain type is straight. S and d2 dimensions do not exist.

(VXJA□·L—VXJA□)

Order

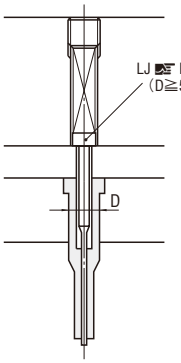
Catalog No.	—	L	—	P
VJAL 6	—	50	—	P5.105

Days to Ship Quotation

Price Quotation

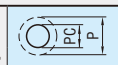
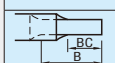
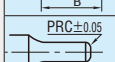
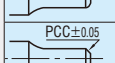
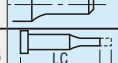
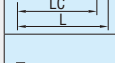
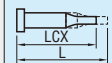
Example

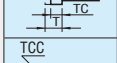
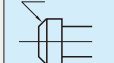
Can also be used in combination with a long jector pin. (Can be used for D≧5.) Cannot be used for super fine grain types.



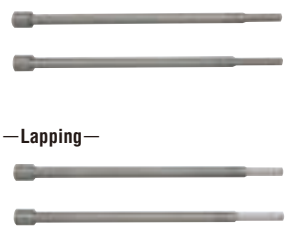
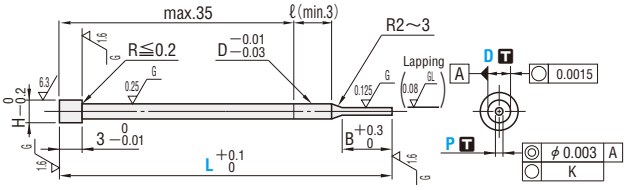
Alterations

Catalog No.	—	L(LC·LCX)	—	P(PC)	—	(BC·HC·TC, etc.)
VJAL 6	—	50	—	P5.105	—	TC4—LKC

	Alteration	Code	Spec.	1Code
Alterations to tip		PC	Tip dimension change PC≧PCmin. 0.001mm increments (D: 5 PCmin. 1.800; 6 1.800) ⊗ Cannot be used for D4.	Quotation
		BC	Tip length change 2≦BC<B 0.1mm increments	
		PRC	Rounding of tip side edge 0.3≦PRC≦1 0.1mm increments PRC≦(P−d1−0.5)/2 ⊗ Cannot be combined with PCC.	
		PCC	Chamfering to tip side edge 0.3≦PCC≦1 0.1mm increments PCC≦(P−d1−0.5)/2 ⊗ Cannot be combined with PRC.	
Alterations to full length		LC	Full length change LC<L 0.1 mm increments (If combined with LKC, 0.01mm increments can be selected.) B dimension and S dimension are shortened by (L−LC).	
		LCX	Full length change with no change to tip length B 25+B(BC)≦LCX<L 0.1mm increments If difference between full length and tip length is 25mm or less, tip length is adjusted to (Full length−25mm). (If combined with LKC, 0.01mm increments can be selected.) ⊗ Cannot be used with V30.	
		LKC	Full length tolerance change $L^{+0.1}_{0}$ ⇨ $^{+0.01}_{0}$	

	Alteration	Code	Spec.	1Code
Alterations to head		KC	Addition of single key flat to head ⊗ Cannot be combined with KFC.	Quotation
		WKC	Addition of double key flats in parallel ⊗ Cannot be combined with KFC.	
		KFC	Double key flats at 0° and a selected angle 1° increments ⊗ Cannot be combined with KC·WKC.	
		HC	Head diameter change D≦HC<H 0.1mm increments	
		TC	Head thickness change 2≦TC<5 0.1mm increments Full length L is shortened by (5−TC). If combined with LC, full length is equal to LC.	
		TCC	Chamfering of head. This improves the strength of the punch head. P.1097 0.5≦TCC≦(H−D)/2 0.1mm increments If H≦5, then TCC is 0.5.	
Alterations to shank		SKC	Single key flat on shank P≦D−1.2 (Machining width 0.5) ⊗ Cannot be combined with KC·WKC·KFC. ⊗ Cannot be used with V30.	
		NDC	No press-in lead ℓ≧3 ⇨ ℓ=0	

PRECISION CARBIDE SHOULDER QUILL PUNCHES

Type	M H	Catalog No.	Shape
RoHS  —Lapping—	V30 (HIP) 88～89HRA	VPAS VPAL Lapping L—VPAS L—VPAL	
	Super fine grain (HIP) 90～92HRA	VXPAS VXPAL Lapping L—VXPAS L—VXPAL	

L	D T
20～	+0.002 0
35～	+0.003 0

D	P T
～1.5	+0.005 0
1.6～	+0.002 0

P＜1.000 ··· K≦0.0020
P≧1.000 ··· K≦0.0015

B	H	Catalog No. Type		D	L								0.001mm increments min. P max.	Base unit price 1～4 pieces VPAS VPAL	VXPAS VXPAL	L—VPAS L—VPAL	L—VXPAS L—VXPAL
(4)	2.0	S Lapping		1.0	20	25	30	35	40				0.150 ～ 0.990				
	2.6			1.1	20	25	30	35	40				0.150 ～ 1.090				
				1.2	20	25	30	35	40				0.150 ～ 1.190				
		VPAS	L—VPAS (D≧1.6)	1.3	20	25	30	35	40				0.150 ～ 1.290				
				1.4	20	25	30	35	40				0.150 ～ 1.390				
		VXPAS	L—VXPAS (D≧1.6)	1.5	20	25	30	35	40				0.150 ～ 1.490				
4				1.6	20	25	30	35	40	45	50	60	0.300 ～ 1.590				
6	3.0			2.0	20	25	30	35	40	45	50	60	0.500 ～ 1.990				
8	3.5			2.5	20	25	30	35	40	45	50	60	1.000 ～ 2.490	Quotation			
(6)	2.0	L Lapping		1.0	20	25	30	35	40				0.250 ～ 0.990				
	2.6			1.1	20	25	30	35	40				0.250 ～ 1.090				
				1.2	20	25	30	35	40				0.250 ～ 1.190				
		VPAL	L—VPAL (D≧1.6)	1.3	20	25	30	35	40				0.250 ～ 1.290				
				1.4	20	25	30	35	40				0.250 ～ 1.390				
		VXPAL	L—VXPAL (D≧1.6)	1.5	20	25	30	35	40				0.250 ～ 1.490				
6				1.6			30	35	40	45	50	60	0.500 ～ 1.590				
8	3.0			2.0			30	35	40	45	50	60	0.800 ～ 1.990				
13	3.5			2.5			30	35	40	45	50	60	1.000 ～ 2.490				

Tip length B varies depending on P dimension. P＞D−0.03 ··· ℓ=0 If P＞D−0.03, $D^{-0.01}_{-0.03}$ (press-in lead) is not included.
If P dimension is 0.150～0.249 for a tip S type, B dimension (4) is 3mm.
If P dimension is 0.250～0.399 for a tip L type, B dimension (6) is 5mm.

Order

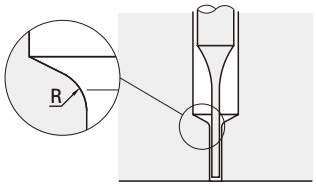
Catalog No.	—	L	—	P
VPAS 1.0	—	20	—	P0.200

Days to Ship Quotation

Price Quotation

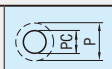
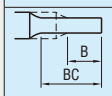
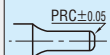
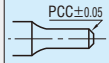
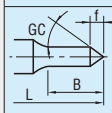
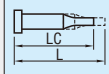
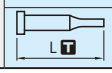
If P is 0.3 or less, pay particular attention to possible tip breakage.

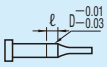
(1) Take special care when measuring a punch with a micrometer.
(2) Be sure to place the punch on a soft surface.
(3) Always keep the punch tip joined to the punch guide when the punch is in use.
(4) Be sure that the punch guide corners are rounded.



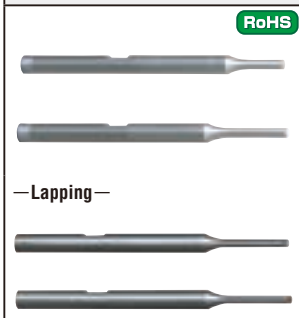
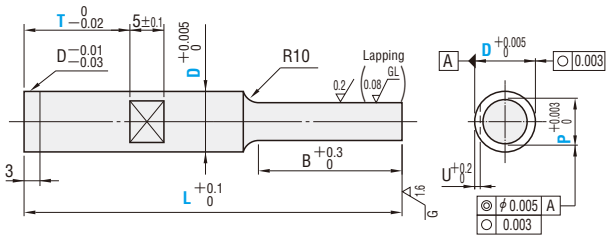
Alterations

Catalog No.	—	L(LC)	—	P(PC)	— (BC・HC・TC, etc.)
VPAS 1.0	—	20	—	P0.200	— TC2 LKC

	Alteration	Code	Spec.	1Code
Alterations to tip		PC	Tip dimension change D≧1.6 PC≧Pmin./2≧0.300 0.001mm increments ⊗ Cannot be used for D<1.6. P: 0.300～0.499 / 0.500～0.799 / 0.800～0.999; 8max.: 4 / 6 / 8	
		BC	Tip length change 2≦BC<B 0.1mm increments	
		PRC	Rounding of tip side edge 0.3≦PRC≦1 0.1 mm increments PRC≦(P−0.2)/2 ⊗ Cannot be combined with PCC・GC.	Quotation
		PCC	Chamfering to tip side edge 0.3≦PCC≦1 0.1mm increments PCC≦(P−0.2)/2 ⊗ Cannot be combined with PRC・GC.	
		GC	20°≦GC<90° 1° increments Tip length B≧f+2 f=P/2×tan(90°−GC°) ⊗ Cannot be used for P≦1.00. ⊗ Cannot be combined with LKC・PRC・PCC. Punches with lapping are rounded at the edges.	
Alterations to full length		LC	Full length change Lmin.<LC<L 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.) For LC30.1～LC34.9 (if combined with LKC, LC30.01～LC34.99), then D T is $^{+0.003}_{0}$.	
		LKC	Full length tolerance change L $^{+0.1}_{0}$ ⇨ $^{+0.01}_{0}$	

	Alteration	Code	Spec.	1Code
Alterations to head		KC	Addition of single key flat to head ⊗ Cannot be combined with KFC.	
		WKC	Addition of double key flats in parallel ⊗ Cannot be combined with KFC.	
		KFC	90° 0° 180° 270° Double key flats at 0° and a selected angle 1° increments ⊗ Cannot be combined with KC・WKC.	
		HC	Head diameter change D≦HC<H 0.1mm increments	Quotation
		TC	Head thickness change 2≦TC<T 0.1mm increments Full length L is shortened by (T−TC). If combined with LC, full length is equal to LC.	
		TCC	Chamfering of head This improves the strength of the punch head. P.1097 Ordering method TCC0.5 ⊗ Cannot be used for H<2.6.	
Alterations to shank		NDC	No press-in lead ℓ≧3 ⇨ ℓ=0	

PRECISION PUNCHES WITH KEY GROOVES

Type	M H	Catalog No.	Shape
RoHS  —Lapping—	Equivalent to SKD11 60～63HRC	VSKAS VSKAL Lapping L—VSKAS L—VSKAL	
	Powdered high-speed steel 64～67HRC	VPKAS VPKAL Lapping L—VPKAS L—VPKAL	

Catalog No. Type		D	L							0.001mm increments min. P max.	0.1mm increments T	B	U
S VSKAS VPKAS	Lapping	3	40	45	50	55	60			1.000～2.990	T≧2.0	8	0.5
	L—VSKAS L—VPKAS	4	40	45	50	55	60	65	70	1.000～3.990			
		5	40	45	50	55	60	65	70	2.000～4.990			
		6	40	45	50	55	60	65	70	2.000～5.990			1.0
L VSKAL VPKAL	Lapping	3			50	55	60			1.000～2.990		13	0.5
	L—VSKAL L—VPKAL	4			50	55	60	65	70	1.000～3.990			
		5			50	55	60	65	70	2.000～4.990			
		6			50	55	60	65	70	2.000～5.990			1.0

If no key groove is required, select T=L.

Order

Catalog No.	—	L	—	P	—	T
VPKAS 4	—	50	—	P2.500	—	T15.1

If no key groove is required, select T=L.

Price Quotation

Days to Ship Quotation

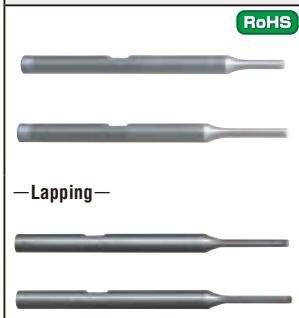
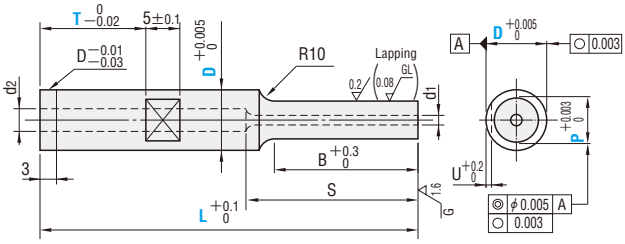
Alterations

Catalog No.	—	L(LC)	—	P(PC)	—	T	— (BC・LKC・UK, etc.)
VSKAS 3	—	40.0	—	PC0.800	—	T13.0	

Alteration	Code	Spec.	1Code
Alterations to tip: PC	PC	Tip dimension change Pmin./2≦PC＜P 0.001mm increments P: 0.500～0.799 / Bmax. 6; 0.800～0.999 / 8; 1.000～1.999 / 13; 2.000～ / 19	Quotation
BC	BC	Tip length change 2≦BC≦Bmax. 0.1mm increments Full length L must be at least 25mm longer than tip length BC.	
PRC	PRC	Rounding of tip side edge 0.3≦PRC≦1 0.1mm increments PRC≦(P−0.2)/2 Cannot be combined with PCC・GC.	
PCC	PCC	Chamfering to tip side edge 0.3≦PCC≦1 0.1mm increments PCC≦(P−0.2)/2 Cannot be combined with PRC・GC.	
GC	GC	20°≦GC＜90° 1° increments Tip length B≧f+2 f=P/2×tan(90°−GC°) Cannot be used for P≦1.000. Cannot be combined with LKC・PRC・PCC. Punches with lapping are rounded at the edges.	

Alteration	Code	Spec.	1Code
Alterations to full length: LC	LC	Full length change 25+B(C)≦LC＜L 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.) If difference between full length and tip length is 25mm or less, tip length is adjusted to (Full length−25mm).	Quotation
LKC	LKC	Full length tolerance change $L^{+0.1}_{0}$ ⇨ $^{+0.01}_{0}$	
Alteration to key groove: UK	UK	Key groove depth change D: 4・5 / UK 0.7; 6 / 1.2 Cannot be used for D3.	
Alterations to shank: SKC	SKC	Single key flat on shank P≦D−1.2 (Machining width 0.5) SKC alteration is added at a position symmetrically opposite to the key groove.	
NDC	NDC	No press-in lead ℓ=3 ⇨ ℓ=0	

PRECISION PUNCHES WITH KEY GROOVES AND AIR HOLES

Type	M H	Catalog No.	Shape
RoHS  —Lapping—	SKH51 61～64HRC	VSKJAS VSKJAL Lapping L—VSKJAS L—VSKJAL	
	Powdered high-speed steel 64～67HRC	VPKJAS VPKJAL Lapping L—VPKJAL L—VPKJAL	

Catalog No. Type		D	L	0.001mm increments min. P max.	0.1mm increments T	B	d1	S	d2	U
S Lapping VSKJAS	L—VSKJAS	4	40 45 50 55 60	1.500～3.990	T≧2.0	8	0.5	20	1.2	0.5
VPKJAS	L—VPKJAL	5	(40) 45 50 55 60 65 70	2.000～4.990			0.8		2.1	
		6	(40) 45 50 55 60 65 70	2.000～5.990					2.6	1.0
L Lapping VSKJAL	L—VSKJAL	4	50 55 60	1.500～3.990		13	0.5	20	1.2	0.5
VPKJAL	L—VPKJAL	5	50 55 60 65 70	2.000～4.990			0.8		2.1	
		6	50 55 60 65 70	2.000～5.990					2.6	1.0

If no key groove is required, select T=L.
L(40) ⇢ S=17 If full length is (40), S dimension is 17mm.

Order

Catalog No.	L	P	T
VPKJAL 4	60	P2.013	T13.0

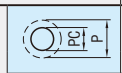
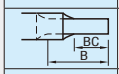
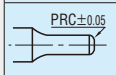
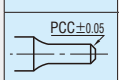
If no key groove is required, select T=L.

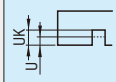
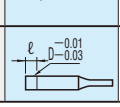
Price Quotation

Days to Ship Quotation

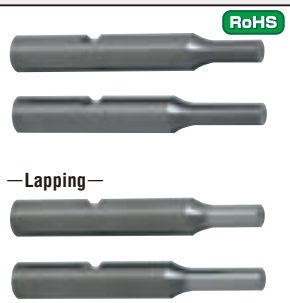
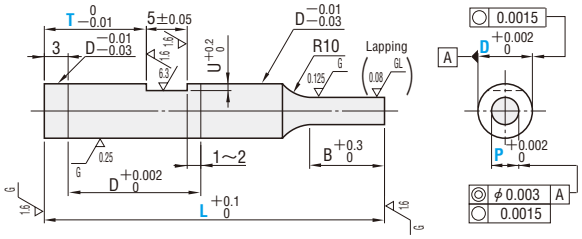
Alterations

Catalog No.	L(LC)	P(PC)	T	(BC・LKC・UK, etc.)
VPKJAS 5	50.0	PC1.800	T16.0	

Alteration	Code	Spec.	1Code
Alterations to tip 	PC	Tip dimension change PC≧PCmin. (D 5: PCmin. 1.800; D 6: 1.800) 0.001mm increments ⊗ Cannot be used for D4.	Quotation
	BC	Tip length change 2≦BC<B 0.1mm increments	
	PRC	Rounding of tip side edge 0.3≦PRC≦1 0.1mm increments PRC≦(P−d1−0.5)/2 ⊗ Cannot be combined with PCC.	
	PCC	Chamfering to tip side edge 0.3≦PCC≦1 0.1mm increments PCC≦(P−d1−0.5)/2 ⊗ Cannot be combined with PRC.	
Alterations to full length	LC	Full length change LC<L 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.) B and S dimensions are shortened by (L−LC).	
	LKC	Full length tolerance change L +0.1 0 ⇨ +0.01 0	

Alteration	Code	Spec.	1Code
Alteration to key groove 	UK	Key groove depth change (D 4・5: UK 0.7; D 6: 1.2)	Quotation
Shank 	NDC	No press-in lead ℓ=3 ⇨ ℓ=0	

PRECISION CARBIDE PUNCHES WITH KEY GROOVES

Type	M H	Catalog No.	Shape
 RoHS —Lapping—	V30 (HIP) 88～89HRA	VKAS VKAL Lapping L—VKAS L—VKAL	
	Super fine grain (HIP) 90～92HRA	VXKAS VXKAL Lapping L—VXKAS L—VXKAL	

T≧2.0

Catalog No. Type		D	L							0.001mm increments min. P max.	0.1mm increments T	B	U
S VKAS VXKAS	Lapping L—VKAS L—VXKAS	3	40	45	50	55	60			1.000～2.990	T≧2.0	8	0.5
		4	40	45	50	55	60	65	70	1.000～3.990			
		5	40	45	50	55	60	65	70	2.000～4.990			
		6	40	45	50	55	60	65	70	2.000～5.990			1.0
L VKAL VXKAL	Lapping L—VKAL L—VXKAL	3			50	55	60			1.000～2.990		13	0.5
		4			50	55	60	65	70	1.000～3.990			
		5			50	55	60	65	70	2.000～4.990			
		6			50	55	60	65	70	2.000～5.990			1.0

If P>D—0.03, $D^{-0.01}_{-0.03}$ on tip side (press-in lead) is not included.

Order

Catalog No.	—	L	—	P	—	T
VKAS 4	—	50	—	P1.002	—	T15.0

If no key groove is required, select T=L.

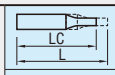
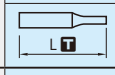
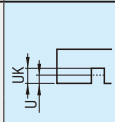
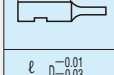
Price Quotation

Days to Ship Quotation

Alterations

Catalog No.	—	L (LC)	—	P (PC)	—	T	—	(BC・LKC・UK, etc.)
VKAS 4	—	LC43	—	P1.002	—	T15.0	—	LKC

Alteration	Code	Spec.	1Code
Alterations to tip:	PC	Tip dimension change PC≧Pmin./2≧0.500 0.001mm increments P / Bmax.: 0.500～0.799: 6; 0.800～0.999: 8; 1.000～1.999: 13; 2.000～: 19	Quotation
	BC	Tip length change 2≦BC≦Bmax. 0.1mm Full length L must be at least 25mm longer than tip length BC.	
	PRC	Rounding of tip side edge 0.3≦PRC≦1 0.1 mm increments PRC≦(P—0.2)/2 Cannot be combined with PCC・GC.	
	PCC	Chamfering to tip side edge 0.3≦PCC≦1 0.1mm increments PCC≦(P—0.2)/2 Cannot be combined with PRC・GC.	
	GC	20°≦GC<90° 1° increments Tip length B≧f+2 f=P/2×tan(90°—GC°) Cannot be used for P≦1.00. Cannot be combined with LKC・PRC・PCC. Punches with lapping are rounded at the edges.	

Alteration	Code	Spec.	1Code
Alterations to full length: 	LC	Full length change 25+B(C)≦LC<L 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.) If difference between full length and tip length is 25mm or less, tip length is adjusted to (Full length—25mm).	
	LKC	Full length tolerance change L $^{+0.1}_{0}$ ⇨ $^{+0.01}_{0}$	
Alteration to key groove: 	UK	Key groove depth change D / UK: 4・5: 0.7; 6: 1.2 Cannot be used for D3.	Quotation
Shank:	SKC	Single key flat on shank P≦D—1.2 (Machining width 0.5)	
	NDC	No press-in lead ℓ=3 ⇨ ℓ=0	

■Fixing keys for punches with key grooves P.189

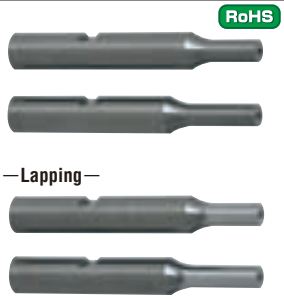
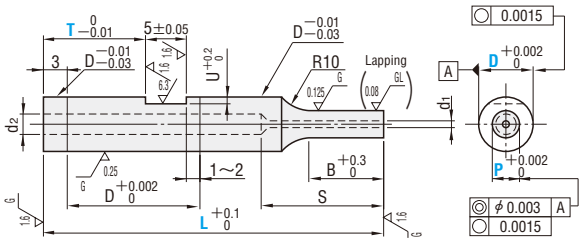
PSKB PSKBH

PSKS PSKJ

PSK PSKP PSKH

PSKW

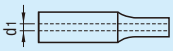
PRECISION CARBIDE PUNCHES WITH KEY GROOVES AND AIR HOLES

Type	M H	Catalog No.	Shape
 RoHS —Lapping—	V30 (HIP) 88～89HRA	VJKAS VJKAL Lapping L—VJKAS L—VJKAL	
	Super fine grain (HIP) 90～92HRA	VXJKAS VXJKAL Lapping L—VXJKAS L—VXJKAL	

T≧2 Air hole of super fine grain type is straight. Dimensions S and d_2 do not exist.

Catalog No. Type		D	L	0.001mm increments min. P max.	0.1mm increments T	B	d_1	S	d_2	U
S	Lapping	4	40 45 50 55 60	1.500～3.990	T≧2.0	8	0.5	20	1.2	0.5
VJKAS	L—VJKAS	5	(40) 45 50 55 60 65 70	2.000～4.990			0.8		2.1	
VXJKAS	L—VXJKAS	6	(40) 45 50 55 60 65 70	2.000～5.990					2.6	1.0
L	Lapping	4	50 55 60	1.500～3.990		13	0.5	20	1.2	0.5
VJKAL	L—VJKAL	5	50 55 60 65 70	2.000～4.990			0.8		2.1	
VXJKAL	L—VXJKAL	6	50 55 60 65 70	2.000～5.990					2.6	1.0

L(40) ⇢ S=17 If full length is (40), dimension S is 17mm.
If P>D−0.03, $D^{-0.01}_{-0.03}$ on tip side (press-in lead) is not included.
Air hole of super fine grain type is straight. Dimensions S and d_2 do not exist.



(VXJKA□·L—VXJKA□)

Order

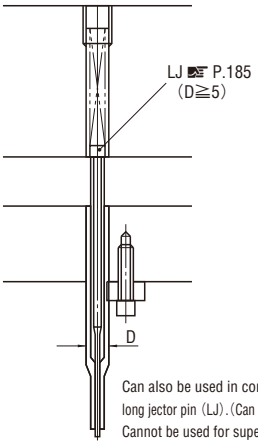
Catalog No.	L	P	T
VJKAL 5	55	P2.500	T20.0

If no key groove is required, select T=L.

Days to Ship Quotation

Price Quotation

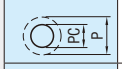
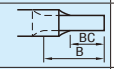
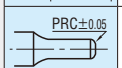
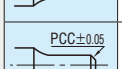
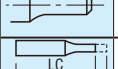
Example

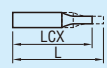
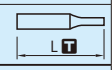
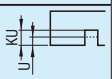
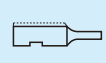
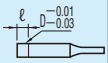


Can also be used in combination with a long jector pin (LJ). (Can be used for D≧5.)
Cannot be used for super fine grain types.

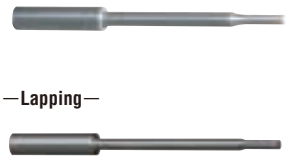
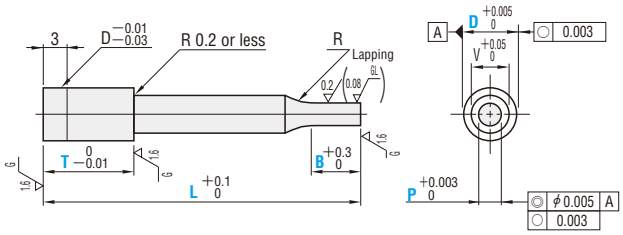
Alterations

Catalog No.	L(LC·LC)	P(PC)	T	(BC·LKC·UK, etc.)
VJKAL 5	55	P2.500	T20.0	BC10

Alteration		Code	Spec.	1Code
Alterations to tip		PC	Tip dimension change PC≧PCmin. 0.001mm increments (D 5: PCmin. 1.800; D 6: PCmin. 1.800) ⊗ Cannot be used for D4.	Quotation
		BC	Tip length change 2≦BC<B 0.1mm increments	
		PRC	Rounding of tip side edge 0.3≦PRC≦1 0.1mm increments PRC≦(P−d1−0.5)/2 ⊗ Cannot be combined with PCC.	
		PCC	Chamfering to tip side edge 0.3≦PCC≦1 0.1mm increments PCC≦(P−d1−0.5)/2 ⊗ Cannot be combined with PRC.	
Length		LC	Full length change LC<L 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.) B and S dimensions are shortened by (L−LC).	

Alteration		Code	Spec.	1Code
Alterations to full length		LCX	Full length change with the same tip length B 25+B(BC)≦LCX<L 0.1mm increments If difference between full length and tip length is 25mm or less, tip length is adjusted to (Full length−25mm). (If combined with LKC, 0.01mm increments can be selected.) ⊗ Cannot be used for V30.	Quotation
		LKC	Full length tolerance $L^{+0.1}_{0}$ ⇨ $^{+0.01}_{0}$ change	
Alterations to key groove		UK	Key groove depth change ⊗ Cannot be used for V30. (D 4·5: UK 0.7; D 6: UK 1.2)	
Shank		SKC	Single key flat on shank P≦D−1.2 (Machining width 0.5) ⊗ Cannot be used with V30.	
		NDC	No press-in lead ℓ=3 ⇨ ℓ=0	

PRECISION FLANGE STOPPER PUNCHES

Type	M H	Catalog No.	Shape
RoHS  —Lapping—	Equivalent to SKD11 60～63HRC	VSPTAL Lapping L—VSPTAL	
	Powdered high-speed steel 60～63HRC	VPHTAL Lapping L—VPHTAL	

Catalog No. Type	D	L	0.001mm increments min. P max.	T	1mm increments B	V	R
Lapping VSPTAL L—VSPTAL VPHTAL L—VPHTAL	4	40 / 50	0.500 ～2.000	13 16 20 / 13 16 20 25	2 ～ 6	2	2 ～ 3
	5	40 / 50 60	1.000 ～3.000	13 16 20 / 13 16 20 25	2 ～ 8	3	10
	6	40 / 50 60 70	1.500 ～4.000	13 16 20 / 13 16 20 25	2 ～10 / 2 ～13	4	
	8	40 / 50 60 70	2.000 ～6.000	13 16 20 / 13 16 20 25	2 ～10 / 2 ～13	6	

Order

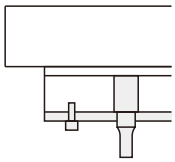
Catalog No.	L	P	T	B
VPHTAL 5	60	P3.000	T20	B5

Days to Ship Quotation

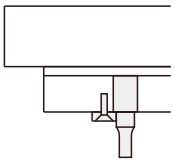
Price Quotation

Example

Example of use for punch holder plate

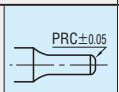
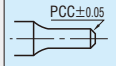
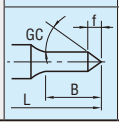


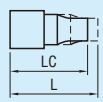
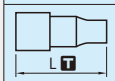
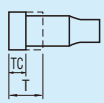
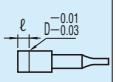
Example of use for punch fixing key



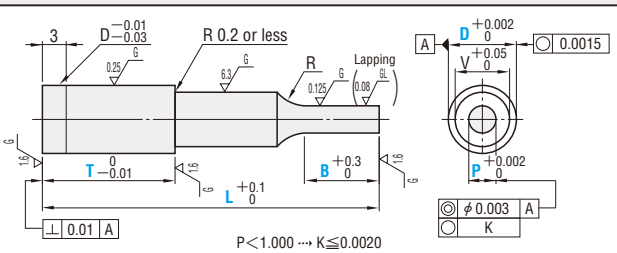
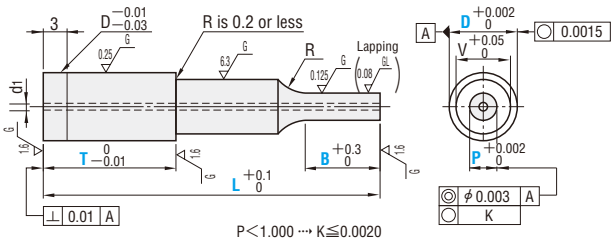
Alterations

Catalog No.	L (LC)	P	T (TC)	B	(LKC, etc.)
VPHTAL 5	60	P3.000	TC15.0	B5	

Alteration		Code	Spec.	1Code
Alterations to tip		PRC	Rounding of tip side edge 0.3≦PRC≦1 0.1 mm increments PRC≦(P−0.2)/2 Cannot be combined with PCC・GC.	Quotation
		PCC	Chamfering to tip side edge 0.3≦PCC≦1 0.1mm increments PCC≦(P−0.2)/2 Cannot be combined with PRC・GC.	
		GC	20°≦GC<90° 1° increments Tip length B≧f+2 f=P/2×tan(90°−GC°) Cannot be used for P≦1.000. Cannot be used for LKC・PRC・PCC. Punches with lapping are rounded at the edges.	

Alteration		Code	Spec.	1Code
Alterations to full length		LC	Full length change 40<LC<L 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.) If LC<50, T and TC are 20 or less. If LC<50 with D6・8, the allowable range of change for B is 2～10.	Quotation
		LKC	Full length tolerance change L +0.1 0 ⇨ +0.01 0	
Head		TC	T dimension change 13<TC<25 0.1mm increments If L<50, the allowable range of change is 13<TC<20. The full length L remains the same.	
Shank		NDC	No press-in lead ℓ=3 ⇨ ℓ=0	

PRECISION CARBIDE FLANGE STOPPER PUNCHES

Type	M H	Catalog No.	Shape
RoHS	Super fine grain (HIP) 90～92HRA	VXPHAL Lapping L—VXPHAL	 P<1.000 ··· K≦0.0020 P≧1.000 ··· K≦0.0015
—Air hole type— RoHS	Super fine grain (HIP) 90～92HRA	VXJHAL Lapping L—VXJHAL	 P<1.000 ··· K≦0.0020 P≧1.000 ··· K≦0.0015

Catalog No. Type	D	L	0.001mm increments min. P max.	T	1mm increments B	V	d1	R	Base unit price 1～4 pieces VXPHAL VXJHAL	L—VXPHAL L—VXJHAL
VXPHAL Lapping L—VXPHAL	4	40 50	0.500～2.000	13 16 20 13 16 20 25	2 ～ 6	2	—	2 ～ 3	Quotation	
	5	40 50 60	1.000～3.000	13 16 20 13 16 20 25	2 ～ 8	3		10		
	6	40 50 60 70	1.500～4.000	13 16 20 13 16 20 25	2 ～10 2 ～13	4				
	8	40 50 60 70	2.000～6.000	13 16 20 13 16 20 25	2 ～10 2 ～13	6				
With air hole VXJHAL Lapping L—VXJHAL	5	40 50 60	1.000～3.000	13 16 20 13 16 20 25	2 ～ 8	3	0.4	10		
	6	40 50 60 70	1.500～4.000	13 16 20 13 16 20 25	2 ～10 2 ～13	4	0.5			
	8	40 50 60 70	2.000～6.000	13 16 20 13 16 20 25	2 ～10 2 ～13	6	0.8			

Order

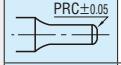
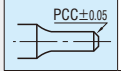
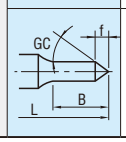
Catalog No.	L	P	T	B
VXPHAL 5	60	P3.000	T20	B6

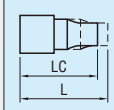
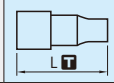
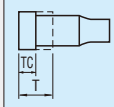
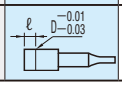
Days to Ship Quotation

Price Quotation

Alterations

Catalog No.	L(LC)	P	T(TC)	B	(LKC, etc.)
VXPHAL 5	LC55	P3.000	TC15.5	B6	LKC

Alteration		Code	Spec.	1Code
Alterations to tip		PRC	Rounding of tip side edge 0.3≦PRC≦1 0.1mm increments PRC≦(P−0.2)/2 ⊗ Cannot be combined with PCC・GC. With air hole, PRC≦(P−d1−0.5)/2	Quotation
		PCC	Chamfering to tip side edge 0.3≦PCC≦1 0.1mm increments PCC≦(P−0.2)/2 ⊗ Cannot be combined with PRC・GC. With air hole, PCC≦(P−d1−0.5)/2	
		GC	20°≦GC<90° 1° increments Tip length B≧f+2 f=P/2×tan(90°−GC°) ⊗ Cannot be used for P≦1,000. ⊗ Cannot be combined with LKC・PRC・PCC. ⊗ Cannot be used for punches with air hole. Punches with lapping are rounded at the edges.	

Alteration		Code	Spec.	1Code
Alterations to full length		LC	Full length change 40<LC<L 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.) If LC<50, T and TC are 20 or less. If LC<50 with D6・8, the allowable range of B is 2～10.	Quotation
		LKC	Full length tolerance change $L^{+0.1}_{0}$ ⇨ $^{+0.01}_{0}$	
Head		TC	T dimension change 13<TC<25 0.1mm increments If L<50, the allowable range of change is 13<TC<20. The full length L remains the same.	
Others		NDC	No press-in lead ℓ=3 ⇨ ℓ=0	

■ **Fixing keys for punches with key grooves** P.189

PSKB PSKBH

PSKS PSKJ

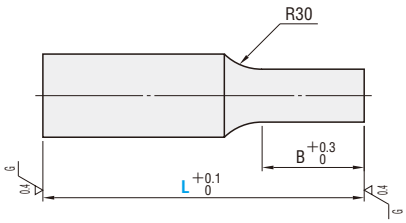
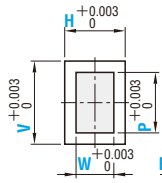
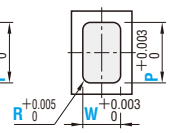
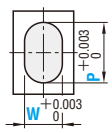
PSK PSKP PSKH

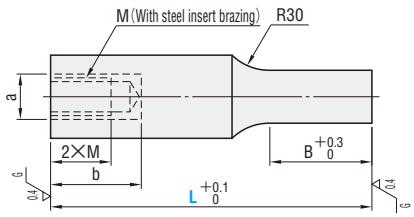
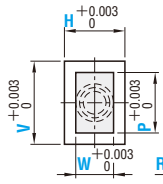
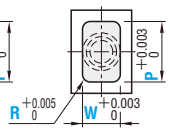
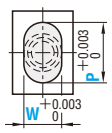
PSKW

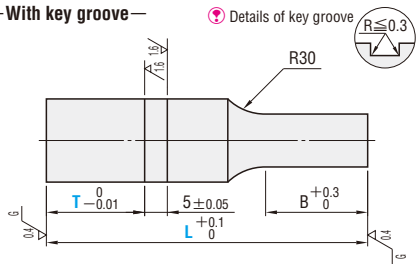
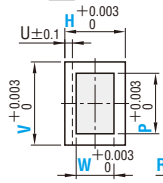
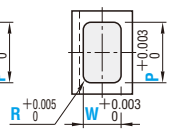
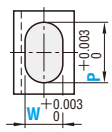
RoHS

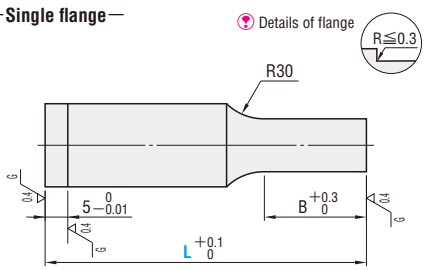
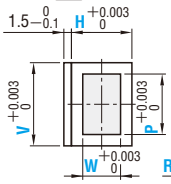
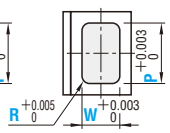
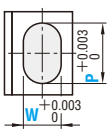
•Tip machining limit

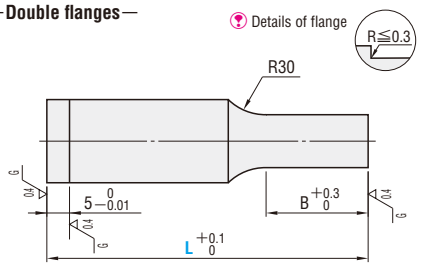
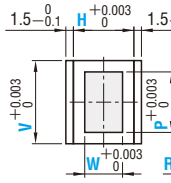
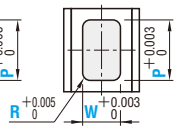
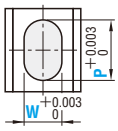
Tip shape D	Tip shape R	Tip shape E
P≧W	P≧W 0.15≦R<$\frac{W}{2}$	P>W

M H	Shank dimensions V·H	—Normal—	D VZPDBL	R VZPRBL	E VZPEBL
V30 (HIP) 88～89HRA	V·H 3～20				

M H	Shank dimensions V·H	—Tapped—	D VZPDML	R VZPRML	E VZPEML
V30 (HIP) 88～89HRA	V·H 8～20				

M H	Shank dimensions V·H	—With key groove—	D VZPDKL	R VZPRKL	E VZPEKL
V30 (HIP) 88～89HRA	V·H 3～20				

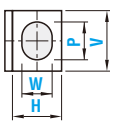
M H	Shank dimensions V·H	—Single flange—	D VZPDFL	R VZPRFL	E VZPEFL
V30 (HIP) 88～89HRA	V·H 3～16 Cannot be used for products marked with ● in the specification table.				

M H	Shank dimensions V·H	—Double flanges—	D VZPDWL	R VZPRWL	E VZPEWL
V30 (HIP) 88～89HRA	V·H 3～16 Cannot be used for products marked with ● in the specification table.				

Catalog No.			Shank and tip dimensions (mm)											L	0.1mm	B			M	a	b	U
Type	Tip shape	Type	H \ V	W min.	V 3	4	5	6	8	10	13	16	20		T	L 40	L 50	L 60·70				
				P min.	1.5	2.0	2.5	3.0	3.0	4.0	5.0	7.0	8.0									
VZP	D R E	BL KL FL WL	3	1.0	○	○	○	○	○	○	○	○	●	40 50 60 70	T≧2	13	13	13	—	—	—	1.0
			4	1.0		○	○	○	○	○	○	○	●									
			5	2.0			○	○	○	○	○	○	●									
			6	2.0				○	○	○	○	○	●									
		BL ML KL FL WL	8	2.0					○	○	○	○	●			19	19	19	4	6	12	1.5
			10	2.5						○	○	○	●						6	8	16	
			13	3.0							○	○	●						8	10	20	
			16	4.0								○	●					25				
			20	5.0									●									

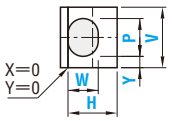
Order

(1) If tip is at center of shank



Catalog No.	V	H	L	P	W	R (R only)	T	K·F·WF
				0.001mm increments			0.1mm increments	
VZPEBL	20	08	60	P18.000	W 4.000			
VZPEML	20	10	70	P16.000	W 9.000			
VZPEKL	10	06	60	P 8.000	W 5.000		T25.5	K0
VZPEFL	16	13	60	P15.000	W12.000			F90
VZPEWL	13	10	40	P 8.000	W 5.000			WF90

(2) If tip is not at center of shank



Catalog No.	V	H	L	P	W	R (R only)	T	K·F·WF	X—Y
				0.001mm increments			0.1mm increments		0.001mm increments
VZPEFL	16	13	50	P15.000	W12.000			F0	X0.000—Y0.500

■Key groove position·flange position change (KEY POSITION ¥0)

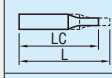
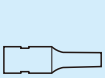
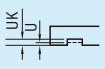
With key groove	Single flange	Double flanges
K0 K90 K180 K270	F0 F90 F180 F270	WF0 WF90

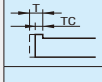
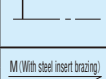
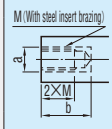
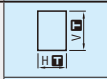
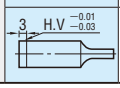
Days to Ship Quotation

Price Quotation

Alterations

Catalog No.	V	H	L (LC)	P (PC)·W (WC)·R	T	K·F·WF	(BC·HC·TC, etc.)
VZPEBL	20	08	60.0	P18.000—WC1.500			LKC—WK

Alteration		Code	Spec.	1Code
Alterations to tip		PC WC	Tip dimension change PC≧V×0.3≧1.000 WC≧H×0.15≧0.500 0.001mm increments P·W / Bmax.: 0.500～0.999 / 8; 1.000～1.999 / 13; 2.000～2.999 / 20; 3.000～4.999 / 30; 5.000～ / 35	Quotation
		BC	Tip length change 2≦BC≦Bmax. 0.1mm increments L≧BC+30 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).	
		LKC	Full length tolerance change L $^{+0.1}_{0}$ ⇨ $^{+0.01}_{0}$	
Alteration to key groove		WK	Addition of key groove at symmetrically opposite position An additional key groove is added at a position symmetrically opposite to the specified key groove. H—{2×U (UK)}≧2 (K0,K180) V—{2×U (UK)}≧2 (K90,K270) Can be combined with UK.	
		UK	Key groove depth change 0.5≦UK≦U+0.2 0.1mm increments H (V)—UK≧2 Can be combined with WK.	

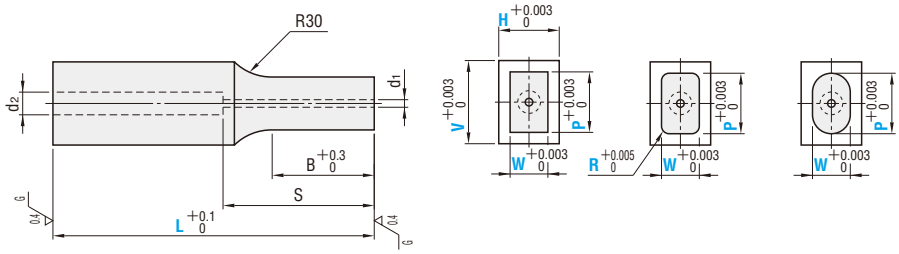
Alteration		Code	Spec.	1Code
Alterations to flange		HC	Flange width change 0≦HC<1.5 0.1mm increments	Quotation
		TC	Flange thickness change 2≦TC<5 0.1mm increments Full length L is shortened by (5—TC). If combined with LC, full length is equal to LC.	
		FK	Relief chamfering to flange top edge Flange edge is chamfered to prevent flange breakage. Cannot be used for normal, tapped, and types with key grooves.	
Alterations to tap		MC	Tap diameter change H \ V: 8 / 10 / 13 / 16 / 20 8: M4→M3 10: — / M6→M5 13: — / — / M8→M6 16: — / — / — / M8→M6 20: — / — / — / — / M8→M6 Dimensions a and b remain the same.	
Others		VHM	Shank tolerance change V·H $^{+0.003}_{0}$ ⇨ V·H $^{0}_{-0.003}$	
		DC	Addition of press-in lead Press-in lead 3mm (H.V $^{-0.01}_{-0.03}$) is added. Cannot be used for flanged types.	

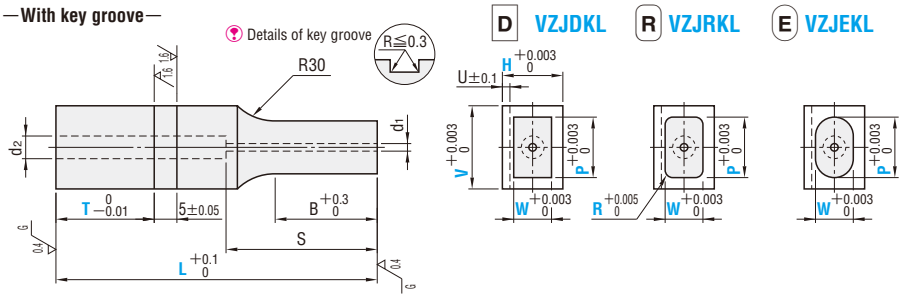
PRECISION CARBIDE BLOCK PUNCHES WITH AIR HOLES

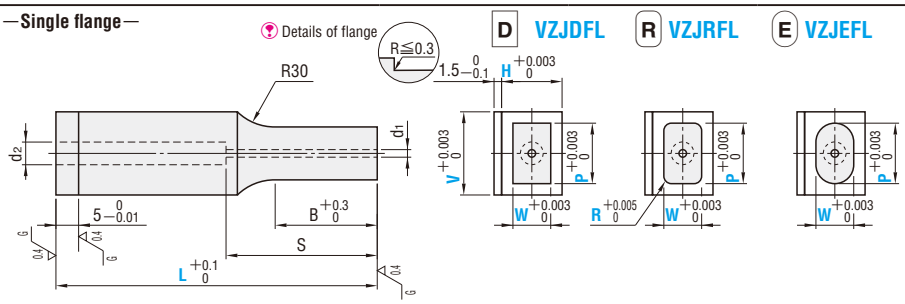
RoHS

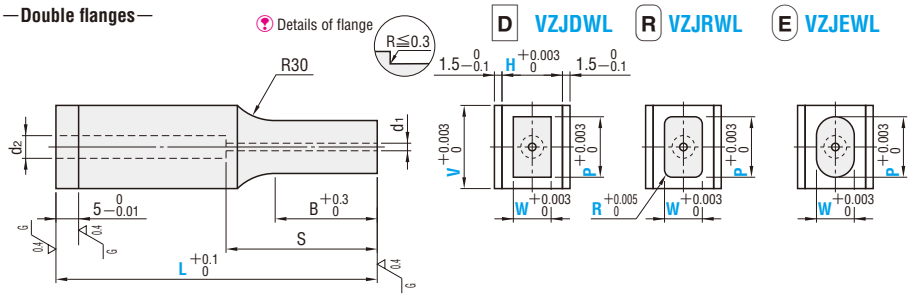
•Tip machining limit

Tip shape	Tip shape	Tip shape
D	R	E
P≧W	P≧W 0.15≦R<$\frac{W}{2}$	P>W

M H	Shank dimensions V·H	—Normal—	D VZJDBL	R VZJRBL	E VZJEBL
V30 (HIP) 88～89HRA	V·H 4～20				

M H	Shank dimensions V·H	—With key groove—	D VZJDKL	R VZJRKL	E VZJEKL
V30 (HIP) 88～89HRA	V·H 4～20				

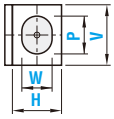
M H	Shank dimensions V·H	—Single flange—	D VZJDFL	R VZJRFL	E VZJEFL
V30 (HIP) 88～89HRA	V·H 4～16 Cannot be used for products marked with ● in the specification table.				

M H	Shank dimensions V·H	—Double flanges—	D VZJDWL	R VZJRWL	E VZJEWL
V30 (HIP) 88～89HRA	V·H 4～16 Cannot be used for products marked with ● in the specification table.				

Catalog No.			Shank and tip dimensions (mm)										L	0.1mm	B			d1×S			d2	U
Type	Tip shape	Type	V	P min.	4	5	6	8	10	13	16	20		T	L 40	L 50	L 60·70	L 40	L 50	L 60·70		
			H	W min.	2.0	2.5	3.0	3.0	4.0	5.0	7.0	8.0										
VZJ	D R E	BL KL FL WL	4	1.5	○	○	○	○	○	○	○	●	40 50 60 70	T≧2	13	13	13	0.5×17			1.2	1.0
			5	2.0		○	○	○	○	○	○	●						0.8×17	0.8×20		2.1	
			6	2.0			○	○	○	○	○	●									2.6	
			8	2.5				○	○	○	○	●			19	19	19	1.2×17	1.2×27		3.4	1.5
			10	3.0					○	○	○	●						1.6×17	1.6×28		4.4	
			13	3.0						○	○	●						1.9×17	1.9×28			
			16	4.0							○	●					25	2.9×17	2.9×24	2.9×36		
			20	5.0								●										

Order

(1) **If tip is at center of shank**



Catalog No.	V	H	—	L	—	0.001mm increments P	—	W	—	R (Ⓡ only)	—	0.1mm increments T	—	K·F·WF
VZJEBL	20	08	—	60	—	P18.000	—	W 4.000						
VZJEKL	10	06	—	60	—	P 8.000	—	W 5.000			—	T25.5	—	K0
VZJEFL	16	13	—	60	—	P15.000	—	W12.000					—	F90
VZJEWL	13	10	—	40	—	P 8.000	—	W 5.000					—	WF90

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

■Key groove position·flange position change (KEY POSITION ￥0)

With key groove	K0 K90	Single flange	F0 F90	Double flanges	WF0 WF90

Days to Ship Quotation

Price Quotation

Alterations

Catalog No.	V	H	—	L (LC·LCX)	—	P·W·R	—	T	—	K·F·WF	—	(BC·HC·TC, etc.)
VZJEBL	20	08	—	60.0	—	P18.000—W3.000					—	LKC—DC

Alteration		Code	Spec.	1Code
Alterations to tip		BC	Tip length change 2≦BC<B 0.1mm increments	Quotation
Alterations to full length		LC	Full length change LC<L 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.) Tip length B is shortened by (L—LC).	
		LCX	Full length change with the same tip length B 30+B (BC)≦LCX<L 0.1mm increments If difference between full length and tip length is 30mm or less, tip length is adjusted to (Full length — 30mm). If combined with LKC, 0.01mm increments can be selected. Cannot be used for flanged types.	
		LKC	Full length tolerance change L $^{+0.1}_{0}$ ⇨ $^{+0.01}_{0}$	
Alteration to key groove		UK	Key groove depth change 0.5≦UK≦U+0.2 0.1mm increments H (V) — (UK+d2) ≧2 Can be used for types with key grooves.	

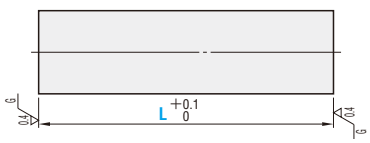
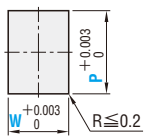
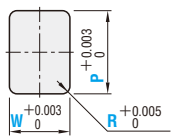
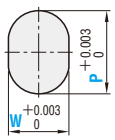
Alteration		Code	Spec.	1Code
Alterations to flange		TC	Flange thickness change 2≦TC<5 0.1mm increments Full length L is shortened by (5—TC). If combined with LC, full length is equal to LC.	Quotation
		HC	Flange width change 0≦HC<1.5 0.1mm increments	
		FK	Relief chamfering to flange top edge Flange edge is chamfered to prevent flange breakage. Cannot be used for normal types and types with key grooves.	
Others		VHM	Shank tolerance change V·H $^{+0.003}_{0}$ ⇨ $^{0}_{-0.003}$	
		DC	Addition of press-in lead Press-in lead 3mm (H.V $^{-0.01}_{-0.03}$) is added. Cannot be used for flanged types.	

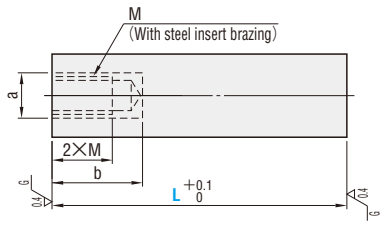
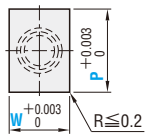
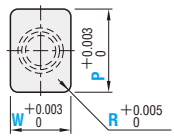
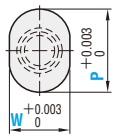
CARBIDE STRAIGHT PUNCHES

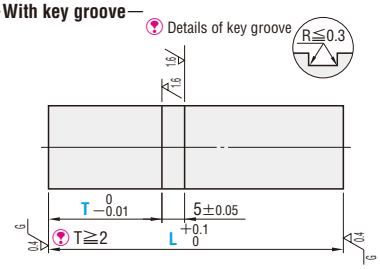
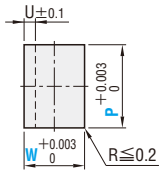
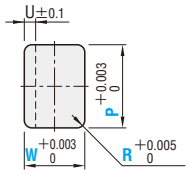
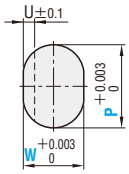
RoHS

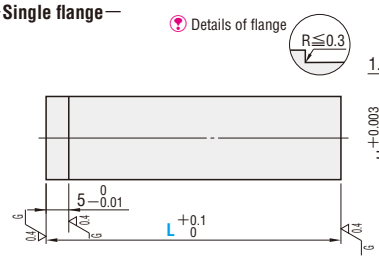
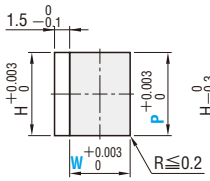
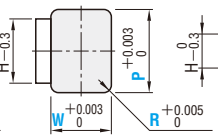
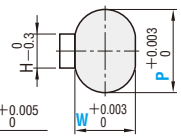
•Tip machining limit

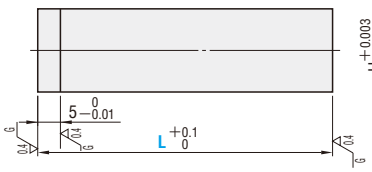
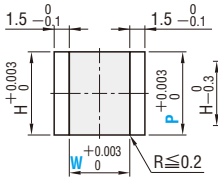
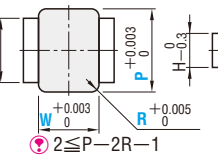
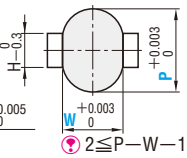
Tip shape D	Tip shape R	Tip shape E
P≧W	P≧W 0.15≦R<$\frac{W}{2}$	P>W

M H	Tip dimension P·W	—Normal—	D VZPCD	R VZPCR	E VZPCE
V30(HIP) 88～89HRA	P·W 2.000～20.000				

M H	Tip dimension P·W	—Tapped—	D VZMCD	R VZMCR	E VZMCE
V30(HIP) 88～89HRA	P·W 12.000～20.000				

M H	Tip dimension P·W	—With key groove—	D VZKCD	R VZKCR	E VZKCE
V30(HIP) 88～89HRA	P·W 2.000～20.000				

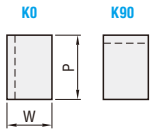
M H	Tip dimension P·W	—Single flange—	D VZFCD	R VZFCR	E VZFCE
V30(HIP) 88～89HRA	P·W 2.000～16.000 Cannot be used for products marked with ● in the specification table.		 H=P	 2≦P−2R−1 H=P−2R−1	 2≦P−W−1 H=P−W−1

M H	Tip dimension P·W	—Double flanges—	D VZWCD	R VZWCR	E VZWCE
V30(HIP) 88～89HRA	P·W 2.000～16.000 Cannot be used for products marked with ● in the specification table.		 H=P	 2≦P−2R−1 H=P−2R−1	 2≦P−W−1 H=P−W−1

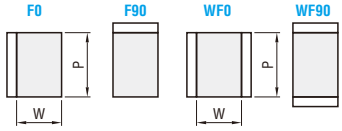
Catalog No. Type	Tip shape	L	W \ P	2.000 ~ 5.000	5.001 ~ 10.000	10.001 ~ 16.000	16.001 ~ 20.000	0.1mm increments T	U
VZPC VZKC VZFC VZWC	D R E	40 50 60 70	2.000~ 3.000	○	○	○		T≧2	1.0
			3.001~ 4.000	○	○	○	●		
			4.001~ 5.000	○	○	○	●		
			5.001~ 6.000		○	○	●		
			6.001~ 8.000		○	○	●		1.5
			8.001~ 10.000		○	○	●		
			10.001~ 16.000			○	●		
			16.001~ 20.000				●		

Catalog No. Type	Tip shape	L	W \ P	12.000 ~ 16.000	16.001 ~ 20.000	M	a	b
VZMC	D R E	40 50 60 70	12.000~13.000	○	○	8	10	20
			13.001~16.000	○	○			
			16.001~20.000		○			

■Key groove position specified



■Flange position specified



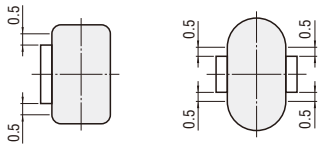
Tip shape E Can be selected for F0・WF0 only.

For F90 or WF90, H dimension is as shown below.

Tip shape D : 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 are provided with 0.5 mm straight parts on each of the flange sides.



Order

Catalog No. — L — 0.001mm increments P — W — R (R only) — 0.1mm increments T≧2 — K・F・WF

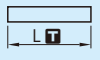
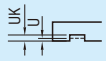
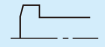
VZPCD — 60 — P14.280 — W9.280
VZMCR — 60 — P15.000 — W12.000 — R0.300
VZKCR — 60 — P14.280 — W9.280 — R0.500 — T25.5 — K0
VZFCE — 60 — P10.000 — W5.500 — F0
VZWCE — 60 — P12.010 — W8.050 — WF0

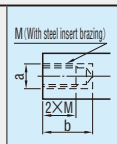
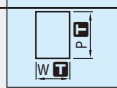
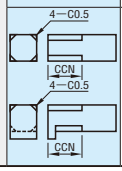
Days to Ship Quotation

Price Quotation

Alterations Catalog No. — L(LC) — P — W — R — T — K・F・WF — (HC・TC・LKC, etc.)

VZPCD — LC65.5 — P5.80 — W5.20 — LKC

Alteration		Code	Spec.	1Code
Alterations to full length		LC	Full length change 20≦LC<L 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.)	
		LKC	Full length tolerance change $L^{+0.1}_{0}$ ⇨ $^{+0.01}_{0}$	
Alteration to key groove		WK	Addition of key groove at symmetrically opposite position An additional key groove is added at a position symmetrically opposite to the specified key groove. W−{2×U(UK)}≧2(K0) P−{2×U(UK)}≧2(K90) Can be combined with UK.	Quotation
		UK	Key groove depth change 0.5≦UK≦U+0.2 0.1mm increments W(P)−UK≧2 Can be combined with WK.	
Alterations to flange		HC	Flange width change 0≦HC<1.5 0.1mm increments	
		TC	Flange thickness change 2≦TC<5 0.1mm increments Full length L is shortened by (5−TC). If combined with LC, full length is equal to LC.	
		FK	Relief chamfering to flange top edge Flange edge is chamfered to prevent flange breakage. Cannot be used for normal, tapped, and types with key grooves.	

Alteration		Code	Spec.	1Code
Alterations to tap diameter		MC	Tap diameter change For change from M8 to M6 Dimensions a and b remain the same.	Quotation
Others		PHM	Shank diameter tolerance $P・W^{+0.003}_{0}$ ⇨ $P・W^{0}_{-0.003}$	
		CCN	Chamfering to shank (4 positions) 5≦CCN≦L(LC) 1mm increments Can be used for tip shape D only. Flange side of flanged punch becomes CCN−T(TC).	

PRECISION CARBIDE STRAIGHT PUNCHES WITH AIR HOLES

RoHS

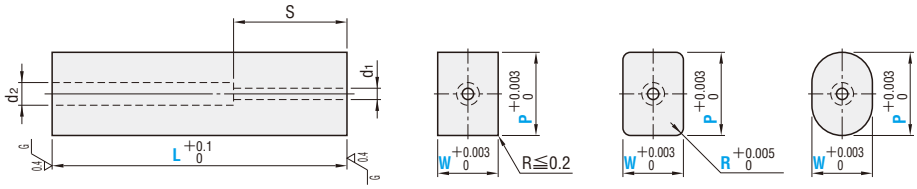
•Tip machining limit

Tip shape D	Tip shape R	Tip shape E
P≧W	P≧W 0.15≦R<$\frac{W}{2}$	P>W

M H	Tip dimension P·W
V30 (HIP) 88～89HRA	P·W 4.000～20.000

—Normal—

D VZJCD R VZJCR E VZJCE

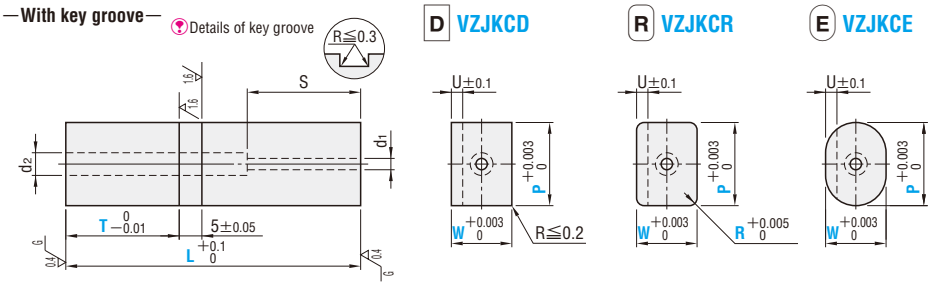


M H	Tip dimension P·W
V30 (HIP) 88～89HRA	P·W 4.000～20.000

—With key groove—

Details of key groove

D VZJKCD R VZJKCR E VZJKCE

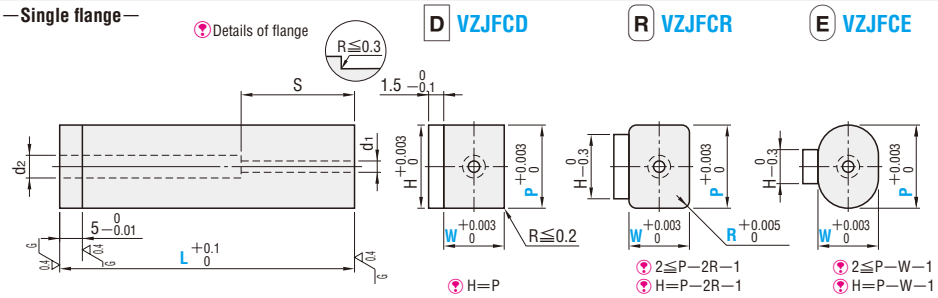


M H	Tip dimension P·W
V30 (HIP) 88～89HRA	P·W 4.000～16.000 Cannot be used for products marked with ● in the specification table.

—Single flange—

Details of flange

D VZJFCD R VZJFCR E VZJFCE



H=P

2≦P−2R−1
H=P−2R−1

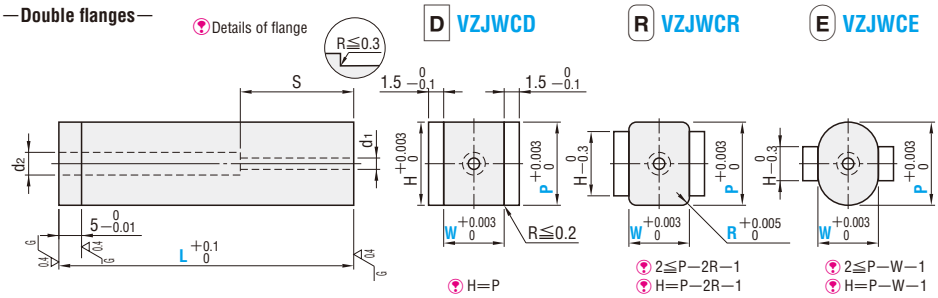
2≦P−W−1
H=P−W−1

M H	Tip dimension P·W
V30 (HIP) 88～89HRA	P·W 4.000～16.000 Cannot be used for products marked with ● in the specification table.

—Double flanges—

Details of flange

D VZJWCD R VZJWCR E VZJWCE



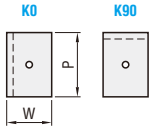
H=P

2≦P−2R−1
H=P−2R−1

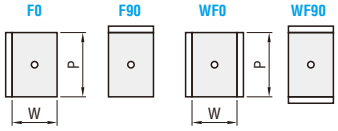
2≦P−W−1
H=P−W−1

Catalog No. Type	Tip shape	L	W \ P	4.000～5.000	5.001～6.000	6.001～8.000	8.001～10.000	10.001～13.000	13.001～16.000	16.001～20.000	0.1mm increments T	d1×S L=40	L=50	L=60・70	d2	U
VZJC VZJKC VZJFC VZJWC	D R E	40 50 60 70	4.000～5.000	○	○	○	○	○	○	●	T≧2	0.5×17			1.2	1.0
			5.001～6.000		○	○	○	○	○	●		0.8×17	0.8×20		2.6	
			6.001～8.000			○	○	○	○	●		1.2×17	1.2×27		3.4	
			8.001～10.000				○	○	○	●		1.6×17	1.6×28		4.4	1.5
			10.001～13.000					○	○	●		1.9×17	1.9×28			
			13.001～16.000						○	●		2.9×17	2.9×24	2.9×36		
			16.001～20.000							●						

■Key groove position specified



■Flange position specified



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

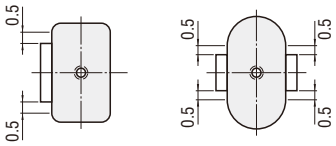
  Tip shape D: H=W

  Tip shape R: 2≦W−2R−1 H=W−2R−1
- Flanged types (both single flange and double flanges) with shapes R・E are provided with 0.5 mm straight parts on each of the flange sides.

Order

Catalog No.	L	P	W	R (R only)	T≧2	K・F・WF
		0.001mm increments			0.1mm increments	

VZJCD	60	P14.281	W9.281			
VZJKCR	60	P14.281	W9.281	R0.500	T25.5	K0
VZJFCE	60	P13.182	W6.502			F0
VZJWCD	60	P14.280	W14.280			WF90

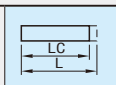
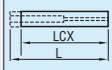


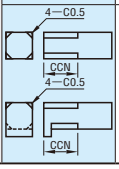
Days to Ship Quotation

Price Quotation

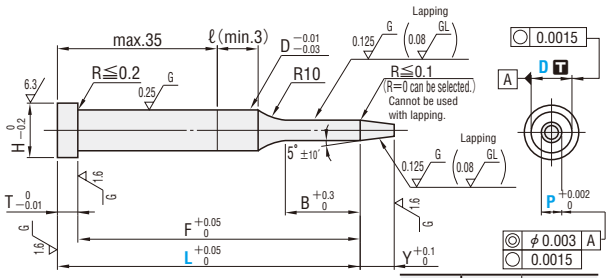
Alterations

Catalog No.	L (LC・LCX)	P	W	R	T	K・F・WF	(HC・TC・LKC, etc.)
VZJCD	LC65.5	P5.801	W5.201				LKC

Alteration		Code	Spec.	1Code
Alterations to full length		LC	Full length change LC<L 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.) S dimension is shortened by (L−LC).	Quotation
		LCX	Full length change with the same S dimension 30≦LCX<L 0.1mm increments If difference between full length and tip length is 30mm or less, tip length is adjusted to (Full length−30mm). If combined with LKC, 0.01mm increments can be selected. Cannot be used for flanged types.	
		LKC	Full length tolerance change L +0.1 0 ⇨ +0.01 0	
Alteration to key groove		UK	Key groove depth change 0.5≦UK≦U+0.2 0.1mm increments W (P) −d2 (d1) ≧2	

Alteration		Code	Spec.	1Code
Alterations to flange		TC	Flange thickness change 2≦TC<5 0.1mm increments Full length L is shortened by (5−TC). If combined with LC, full length is equal to LC.	Quotation
		HC	Flange width change 0≦HC<1.5 0.1mm increments	
		FK	Relief chamfering to flange top edge Flange edge is chamfered to prevent flange breakage. Cannot be used for normal, tapped, and types with key grooves.	
Others		PHM	Shank tolerance change P・W +0.003 0 ⇨ 0 −0.003	
		CCN	Chamfering to shank (4 positions) 5≦CCN≦L 1mm increments Can be used for tip shape D only. Flange side of flanged punch becomes CCN−T (TC).	

PRECISION CARBIDE PILOT PUNCHES

Type	M H	Catalog No.	Shape
RoHS —Lapping—	V30 (HIP) 88～89HRA	VTPAS VTPAL Lapping L—VTPAS L—VTPAL	
	Super fine grain (HIP) 90～92HRA	VXTPAS VXTPAL Lapping L—VXTPAS L—VXTPAL	

D	L	DT
D<3	22～32	+0.002 0
	37～52	+0.003 0
D≧3	42～72	+0.002 0

Catalog No. Type	D	L	0.001mm increments min. P max.	B	H	Y	T
S Lapping VTPAS L—VTPAS VXTPAS L—VXTPAS	2.0	22 27 32 37 42 47 52	1.000～1.990	8	3.0	4	3
	2.5	22 27 32 37 42 47 52	1.000～2.490	10	3.5		
	3	42 47 52 57 62	1.000～2.990		5		5
	4	42 47 52 57 62 67 72	1.000～3.990		7		
	5	42 47 52 57 62 67 72	2.000～4.990		8	5	
	6	42 47 52 57 62 67 72	2.000～5.990		9		
L Lapping VTPAL L—VTPAL VXTPAL L—VXTPAL	2.0	32 37 42 47 52	1.000～1.990	10	3.0	4	3
	2.5	32 37 42 47 52	1.000～2.490	15	3.5		
	3	52 57 62	1.000～2.990		5		5
	4	52 57 62 67 72	1.000～3.990		7		
	5	52 57 62 67 72	2.000～4.990		8	5	
	6	52 57 62 67 72	2.000～5.990		9		

P>D−0.03⋯ℓ=0 If P>D−0.03, $D^{-0.01}_{-0.03}$ (press-in lead) is not included.

Order

Catalog No.	—	L	—	P	—	(R)
VTPAS 4	—	42	—	P1.998		
VXTPAL 5	—	57	—	P2.301	—	R0

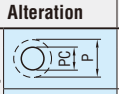
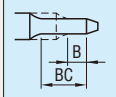
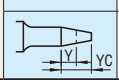
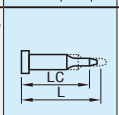
Only R=0 can be selected (except lapping).

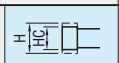
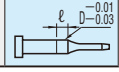
Price Quotation

Days to Ship Quotation

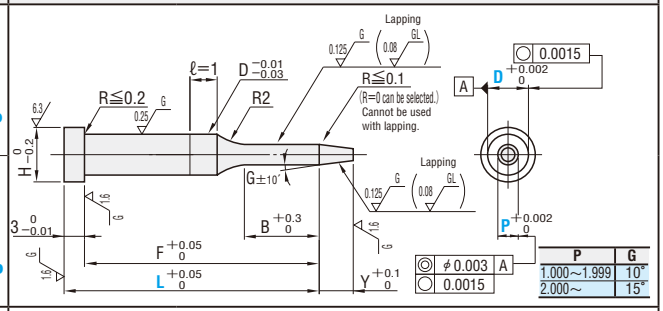
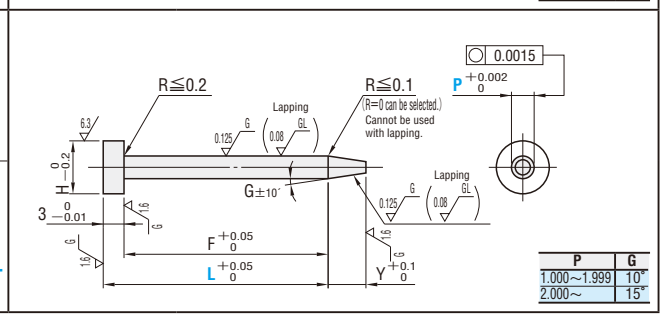
Alterations

Catalog No.	—	L(LC)	—	P(PC)	—	(R)	—	(BC·YC·HC·TC, etc.)
VTPAS 4	—	LC45.0	—	P1.998			—	YC3.0

	Alteration	Code	Spec.	1Code
Alterations to tip		PC	Tip diameter change PC≧Pmin./2≧1.000 0.001mm increments Y is Ymax. P: 1.000～1.999 Bmax. 15 Ymax. 4; 2.000～ 22 5	Quotation
		BC	Tip length change D≦2.5 2≦BC<B D≧3 2≦BC≦Bmax. Full length L must be 25mm longer than tip length BC. 0.1mm increments	
		YC	Tip taper length change 1≦YC≦Ymax. 0.1mm increments P: 1.000～1.999 Ymax. 4; 2.000～ 5	
Alterations to full length		LC	Full length change D≦2.5 22<LC<52 0.1mm increments D≧3 25+B(BC)≦LC<L 0.1mm increments If difference between full length and tip length is 25mm or less, tip length is adjusted to (Full length−25mm). For LC32.1～LC36.9, DT is $^{+0.003}_{0}$.	

	Alteration	Code	Spec.	1Code
Alterations to head		HC	Head diameter change D≦HC<H 0.1mm increments	Quotation
		TC	Head thickness change 2≦TC<T 0.1mm increments Full length L is shortened by (T−TC). If combined with LC, full length is equal to LC.	
		KC	Addition of single key flat to head	
		WKC	Addition of double key flats in parallel	
Shank		NDC	No press-in lead ℓ≧3 ⇨ ℓ=0	

PRECISION CARBIDE PILOT PUNCHES FOR FIXING TO STRIPPER PLATE

Type	M H	Catalog No.	Shape
RoHS —Lapping—	V30 (HIP) 88～89HRA	VTPTP Lapping L—VTPTP	
	Super fine grain (HIP) 90～92HRA	VXTPTP Lapping L—VXTPTP	
—Straight— RoHS —Straight・Lapping—	V30 (HIP) 88～89HRA	VTPT Lapping L—VTPT	
	Super fine grain (HIP) 90～92HRA	VXTPT Lapping L—VXTPT	

Catalog No. Type	D	0.1mm increments L	0.001mm increments min. P max.	B	Y	H
VTPTP VXTPTP	2.0	12.0 ～ 32.0	0.500 ～1.990	4	1	3
	2.5		1.000 ～2.490		2	3.5
	3		1.000 ～2.990			5
Lapping L—VTPTP	4		2.000 ～3.990			7
L—VXTPTP	5		2.000 ～4.990		3	8
	6		2.500 ～5.990			9

P>D—0.03⋯ ℓ=0 If P>D—0.03, $D^{-0.01}_{-0.03}$ (press-in lead) is not included.

■Straight

Catalog No. Type	No.	0.1mm increments L	0.001mm increments min. P max.	Y	H
VTPT VXTPT	2.0	12.0 ～ 23.0	1.000 ～2.000	2	3
	2.5		1.500 ～2.500		3.5
	3	12.0 ～ 32.0	2.000 ～3.000		5
Lapping L—VTPT	4		3.000 ～4.000		7
L—VXTPT	5		4.000 ～5.000	3	8
	6		5.000 ～6.000		9

Order

Catalog No.	—	L	—	P	—	(R)
VTPTP3	—	23.0	—	P1.998		
VTPT2.5	—	23.0	—	P1.998	—	R0

Only R=0 can be selected (except lapping).

Price Quotation

Days to Ship Quotation

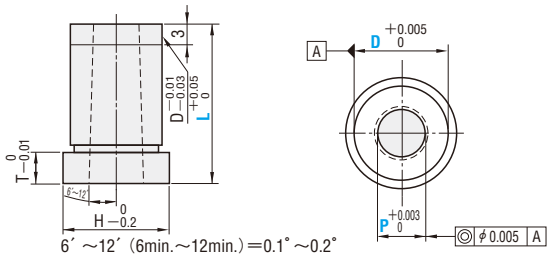
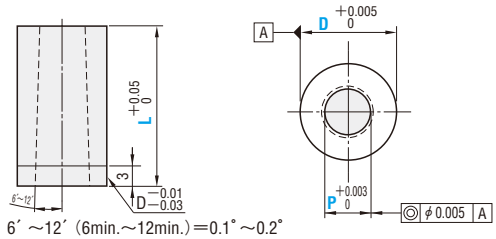
Alterations

Catalog No.	—	L	—	P (PC)	—	(R)	—	(BC・YC・HC・TC, etc.)
VTPTP 3	—	18	—	PC0.900			—	YC1.0

Alteration	Code	Spec.	1Code
Alterations to tip	PC	Tip diameter change PC≧Pmin./2≧0.5 0.001mm increments Cannot be used for straight types. Y is Ymax. P: 0.500～0.799 Bmax. 6 Ymax. 1 0.800～0.999 8 1 1.000～1.499 13 2 1.500～1.999 13 3 2.000～2.499 19 3 2.500～ 19 4	Quotation
	BC	Tip length change 2≦BC≦Bmax. 0.1mm increments Full length L must be at least 8mm longer than tip length BC. Cannot be used for straight types.	
	YC	Tip taper length change 1≦YC≦Ymax. 0.1mm increments P: 1.000～1.499 Ymax. 2 1.500～2.499 3 2.500～ 4	

Alteration	Code	Spec.	1Code
Alterations to head	HC	Head diameter change D・P≦HC<H 0.1mm increments	Quotation
	TC	Head thickness change 2≦TC<3 0.1mm increments The full length remains as specified.	
	KC	Addition of single key flat to head	
	WKC	Addition of double key flats in parallel	
Shank	NDC	No press-in lead ℓ=1 ⇨ ℓ=0 Cannot be used for straight types.	

PRECISION ANGULAR BUTTON DIES
—FULLY TAPERED TYPE—

Type	M H	Catalog No.	Shape
—Headed— RoHS	D3～5 SKH51 61～64HRC D6～10 Equivalent to SKD11 60～63HRC	VSAHD	 6′～12′（6min.～12min.）＝0.1°～0.2°
	Powdered high-speed steel 64～67HRC	VPAHD	
	Carbide V40（HIP） 87～88HRA	VWAHD	
—Straight— RoHS	D3～5 SKH51 61～64HRC D6・8 Equivalent to SKD11 60～63HRC	VSASD	 6′～12′（6min.～12min.）＝0.1°～0.2°
	Powdered high-speed steel 64～67HRC	VPASD	
	Carbide V40（HIP） 87～88HRA	VWASD	

Catalog No. Type		D	L	0.001mm increments min. P max.	H	T	Base unit price for headed type VSAHD	VPAHD	VWAHD	Base unit price for straight type VSASD	VPASD	VWASD
Headed	Straight	3	8 13 16 20 22 25 30	0.500～1.000	4	3						
VSAHD	VSASD	4		0.500～1.500	5							
VPAHD	VPASD	5		0.500～2.500	6			Quotation				
VWAHD	VWASD	6	13 16 20 22 25 30	1.000～3.000	9	5						
		8		1.000～4.000	11							
		10		2.000～6.000	13							

In some cases, a straight portion of up to 1 mm may be created at the shaped hole part.

Order Catalog No. — L — P
VSAHD 8 — 20 — P3.300

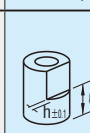
Days to Ship Quotation

- If L=8, press-in lead $D^{-0.01}_{-0.03}$ is not included.
- For VWAHD, press-in lead $D^{-0.01}_{-0.03}$ is not included.
- Relieve machining is not performed for VWAHD under-head. Instead, R≦0.2 in case of D3～5 and R≦0.5 in case of D6～10.

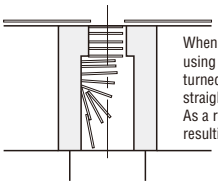
Alterations Catalog No. — L（LC） — P — （HC・TC, etc.）
VSAHD 6 — 16 — P2.475 — HC8.0

Price Quotation

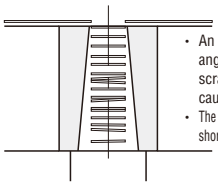
	Alteration	Code	Spec.	1Code
Alterations to full length		LC	Full length change 10≦LC＜L 0.01mm increments Press-in lead is shortened by（L−LC）.	Quotation
		LKC	Full length tolerance change $L^{+0.05}_{0}$ ⇨ $^{+0.01}_{0}$ ⊗ Cannot be used for L＜16.	
Alterations to head		KC	Addition of single key flat to head ⊗ Cannot be used for straight types.	
		WKC	Addition of double key flats in parallel ⊗ Cannot be used for straight types.	
		KFC	Double key flats at 0° and a selected angle1° increments ⊗ Cannot be combined with KC・WKC. ⊗ Cannot be used for L＜16. ⊗ Cannot be used for straight types.	

	Alteration	Code	Spec.	1Code
Alterations to head		HC	Head diameter change D≦HC＜H 0.1mm increments ⊗ Cannot be used for straight types.	
		TC	Head thickness change 2≦TC＜T 0.01mm increments Full length L is shortened by（T−TC）. If combined with LC, full length is equal to LC. ⊗ Cannot be used for straight types.	Quotation
Alterations to shank		KM	Addition of key groove to prevent lifting ⊗ Cannot be used for headed types. ⊗ Cannot be used for D＜6. D / h / ℓ: 6 / 1 / 5≦ℓ＜L; 8 / 1.5 / 0.1mm increments; 10 / 1.5 / 0.1mm increments	

Example

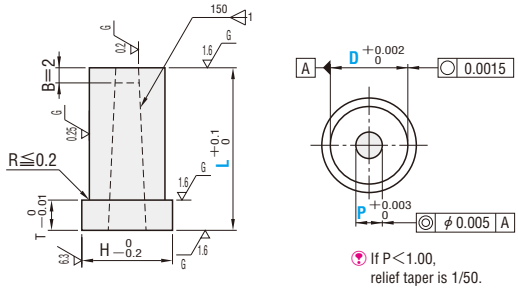
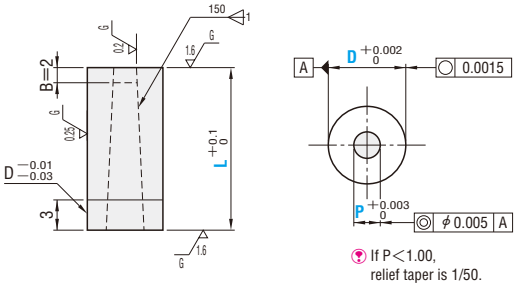


When a thin sheet of 0.5mm or less is punched using a button die with rear relief, scrap may be turned due to the level difference between the straight portion of shaped hole and the relief hole. As a result, the scrap may adhere to the die wall, resulting in scrap clogging.



- An angular relief hole tapered at a very slight angle from the end of the shaped hole prevents scraps from being turned, reducing trouble caused by scrap clogging.
- The effects of this non-clogging effect improves with shorter full length of button die relative to the P dimension.

PRECISION CARBIDE ANGULAR BUTTON DIES

Type	M H	Catalog No.	Shape
—Headed— RoHS	V40 (HIP) 87～88HRA	VAHD	
	Super fine grain (HIP) 90～92HRA	VXAHD	
—Straight— RoHS	V40 (HIP) 87～88HRA	VASD	
	Super fine grain (HIP) 90～92HRA	VXASD	

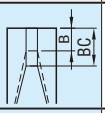
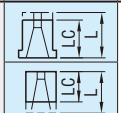
Catalog No. Type		D	L	0.001mm increments min. P max.	H	T
Headed	Straight	3	13	0.500 ～ 1.000	4	3
VAHD	VASD	4	16	0.500 ～ 1.500	5	
VXAHD	VXASD	5	20	0.500 ～ 2.500	6	
		6	22	1.000 ～ 3.000	9	5
		8	25	1.000 ～ 4.000	11	
		10		2.000 ～ 6.000	13	

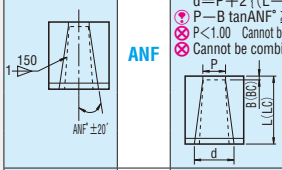
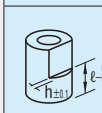
Order Catalog No. — L — P
VAHD 6 — 20 — P2.500

Price Quotation

Days to Ship Quotation

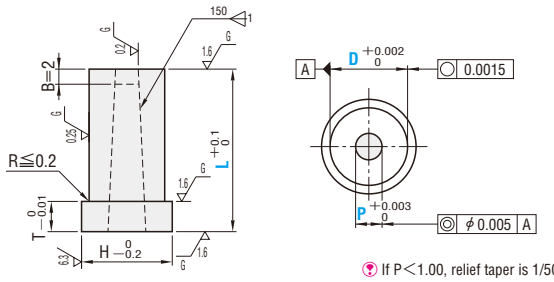
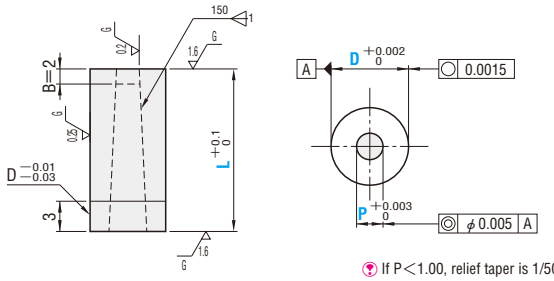
Alterations Catalog No. — L(LC) — P — (BC・HC・TC, etc.)
VAHD 6 — LC18 — P2.500 — LKC

Alteration	Code	Spec.	1Code
Shaped hole 	BC	Shaped hole depth change 1≦BC≦Bmax. 0.1mm increments. P: 0.500～0.899 Bmax. 2; 0.900～1.199 Bmax. 3; 1.200～ Bmax. 4	Quotation
Alterations to full length 	LC	Full length change for headed types L−3≦LC<L. 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.)	
		Full length change for straight types 8≦LC<L. 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.)	
	LKC	Full length tolerance change L +0.1 0 ⇨ +0.01 0. ⊗ Cannot be used for L<16.	
Alterations to head	KC	Addition of single key flat to head. ⊗ Cannot be used for straight types.	
	WKC	Addition of double key flats in parallel. ⊗ Cannot be used for straight types.	
	KFC	Double key flats at 0° and a selected angle 1° increments. ⊗ Cannot be combined with KC・WKC. ⊗ Cannot be used for L<16. ⊗ Cannot be used for straight types.	

Alteration	Code	Spec.	1Code
Head	HC	Head diameter change D≦HC<H. 0.1mm increments. ⊗ Cannot be used for straight types.	
	TC	Head thickness change 2≦TC<T 0.1mm increments. Full length is shortened by (T−TC). If combined with LC, full length is equal to LC. ⊗ Cannot be used for straight types.	
Alterations to shank 	ANF	Angular angle change 0.4≦ANF≦1.2 0.2° increments. d≦d max. d=P+2{(L−B)×tanANF°}. P−B tanANF°≧0.6. ⊗ P<1.00 Cannot be used for D<4. ⊗ Cannot be combined with KM. D: 4 d max. 2.4; 5 2.9; 6 3.4; 8 4.4; 10 6.4. Taper 1/150; Angle (one side) 0.191°	Quotation
	KM	Addition of key groove to prevent lifting. ⊗ Cannot be used for D<6. ⊗ Cannot be used for headed types. D: 6, 8, 10; h: 1, 1.5; ℓ: 5≦ℓ<L 0.1mm increments. ⊗ Cannot be combined with ANF.	

PRECISION SCRAP RETENTION PRECISION CARBIDE ANGULAR BUTTON DIES

PRODUCTS DATA P.1103

Type	M H	Catalog No.	Shape
—Headed— RoHS	V40 (HIP) 87～88HRA	SR—VAHD	 If P<1.00, relief taper is 1/50.
	Super fine grain (HIP) 90～92HRA	SR—VXAHD	
—Straight— RoHS	V40 (HIP) 87～88HRA	SR—VASD	 If P<1.00, relief taper is 1/50.
	Super fine grain (HIP) 90～92HRA	SR—VXASD	

Catalog No. Type	D	L	0.001mm increments min. P max.	MT (workpiece material thickness) 0.01mm increments	C (clearance) 0.001mm increments	H	T
Headed SR—VAHD SR—VXAHD / Straight SR—VASD SR—VXASD	3	13	0.800 ～ 1.000	MT≧0.10 Select a workpiece material thickness of 0.10mm or more.	C≧0.005 Select a clearance of 0.005mm or more.	4	3
	4	16	0.800 ～ 1.500			5	
	5	20	0.800 ～ 2.500			6	
	6	22	1.000 ～ 3.000			9	5
	8		1.000 ～ 4.000			11	
	10	25	2.000 ～ 6.000			13	

Can be used only for workpiece materials with tensile strengths up to 1177 N/mm² (120kgf/mm²).
Workpiece material thickness and clearance are used as machining data for the scrap retention.Specify the shaped hole dimension (P) when selecting the button die finishing dimensions.

Order

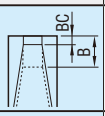
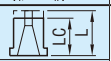
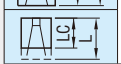
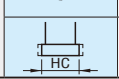
Catalog No.	L	P	MT	C
SR—VAHD 6	20	P2.500	MT1.50	C0.105

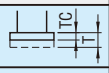
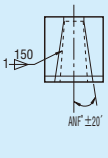
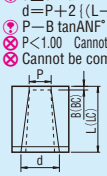
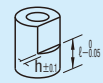
Price Quotation

Days to Ship Quotation

Alterations

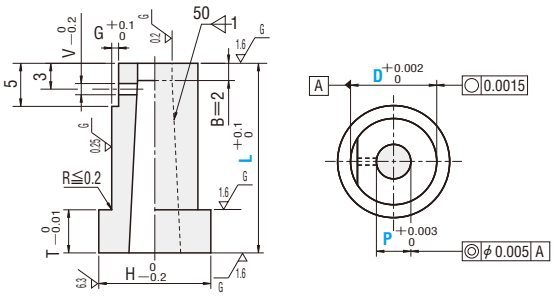
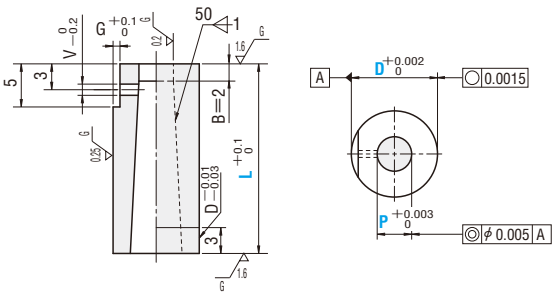
Catalog No.	L(LC)	P	MT	C	(BC·HC·TC, etc.)
SR—VAHD 6	LC18.5	P2.500	MT1.50	C0.105	LKC

Alteration		Code	Spec.	1Code
Shaped hole		BC	Shaped hole depth change 1≦BC≦2 0.1mm increments	Quotation
Alterations to full length		LC	Full length change for headed types 10≦LC<L 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.) Full length change for straight types 8≦LC<L 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.)	
				
		LKC	Full length tolerance change L +0.1 0 ⇨ +0.01 0 ⊗ Cannot be used for L<16.	
Alterations to head		KC	Addition of single key flat to head ⊗ Cannot be used for straight types ⊗ Cannot be combined with KFC.	
		WKC	Addition of double key flats in parallel ⊗ Cannot be used for straight types. ⊗ Cannot be combined with KFC.	
		KFC	Double key flats at 0° and a selected angle1° increments ⊗ Cannot be combined with KC·WKC. ⊗ Cannot be used for L<16. ⊗ Cannot be used for straight types.	
		HC	Head diameter change D≦HC<H 0.1mm increments ⊗ Cannot be used for straight types.	

Alteration		Code	Spec.	1Code
Head		TC	Head thickness change 2≦TC<T 0.1mm increments Full length is shortened by (T—TC). If combined with LC, full length is equal to LC. ⊗ Cannot be used for straight types.	
Alterations to shank		ANF	Angular angle change 0.4≦ANF≦1.2 0.2° increments d≦d max. d=P+2{(L—B)×tanANF°} P—B tanANF°≧0.6 ⊗ P<1.00 Cannot be used for D<4. ⊗ Cannot be combined with KM.  D / d max.: 4 / 2.4; 5 / 2.9; 6 / 3.4; 8 / 4.4; 10 / 6.4 Taper / Angle (one side): 1/150 / 0.191°	Quotation
		KM	Addition of key groove to prevent lifting ⊗ Cannot be used for D<6. ⊗ Cannot be used for headed types. D / h: 6 / 1; 8 / 1.5; 10 / 1.5 ℓ: 5≦ℓ<L 0.1mm increments ⊗ Cannot be combined with ANF.	

PRECISION CARBIDE ANGULAR BUTTON DIES, NON-CLOGGING TYPE

PRODUCTS DATA P.1105

Type	M H	Catalog No.	Shape
—Headed— RoHS	V40 (HIP) 87～88HRA	SV—VAHD	
	Super fine grain (HIP) 90～92HRA	SV—VXAHD	
—Straight— RoHS	V40 (HIP) 87～88HRA	SV—VASD	
	Super fine grain (HIP) 90～92HRA	SV—VXASD	

Catalog No. Type	D	L	0.001mm increments min. P max.	V	G	H	T	Base unit price 1 ～ 4 pieces SV—VAHD	SV—VXAHD	SV—VASD	SV—VXASD
Headed / Straight	3	13	0.500 ～ 1.000	0.4	0.2	4	3	Quotation			
SV—VAHD / SV—VASD	4	16	0.500 ～ 1.500			5					
SV—VXAHD / SV—VXASD	5	20	0.500 ～ 2.500			6					
	6	22	1.000 ～ 3.000	0.8	0.3	9	5				
	8	25	1.000 ～ 4.000			11					
	10		2.000 ～ 6.000			13					

Order

Catalog No.	L	P
SV—VAHD 6	20	P2.500

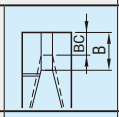
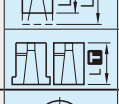
Price Quotation

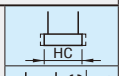
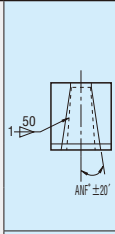
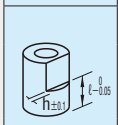
Days to Ship Quotation

Alterations

Catalog No.	L(LC)	P	(BC·HC·TC, etc.)
SV—VASD 6	LC18	P2.500	LKC

■Features
- These non-clogging button dies are intended to be used in combination with a vacuum device such as a vacuum pump. A scrap vacuum unit (P.299) can be used as the vacuum device.
- When the vacuum device is operating, the air inlet hole near the shaped hole creates an airflow inside the button die. As a result, the scrap removal effect is higher than in button dies without air inlet holes.
- Non-clogging button dies [Products Data] P.1105

Alteration		Code	Spec.	1Code
Shaped hole		BC	Shaped hole depth change 1≦BC<2 0.1mm increments	Quotation
Alterations to full length		LC	Full length change for headed types 13≦LC<L 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.) Full length change for straight types 8≦LC<L 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.)	
		LKC	Full length tolerance change L $^{+0.1}_{0}$ ⇨ $^{+0.01}_{0}$ ⊗ Cannot be used for L<16.	
Alterations to head		KC	Addition of single key flat to head ⊗ Cannot be used for straight types ⊗ Cannot be combined with KFC.	
		WKC	Addition of double key flats in parallel ⊗ Cannot be used for straight types. ⊗ Cannot be combined with KFC.	
		KFC	Double key flats at 0° and a selected angle1° increments ⊗ Cannot be combined with KC·WKC. ⊗ Cannot be used for L<16. ⊗ Cannot be used for straight types.	

Alteration		Code	Spec.	1Code
Head		HC	Head diameter change D≦HC<H 0.1mm increments	Quotation
		TC	Head thickness change 2≦TC<T 0.1mm increments Full length is shortened by (T—TC). If combined with LC, full length is equal to LC.	
Alterations to shank		ANF	Angular angle change 0.2≦ANF≦1.2 0.2° increments d≦d max. d=P+2{(L—B)×tanANF°} P—B tanANF°≧0.6 ⊗ P<1.00 Cannot be used for D<4. ⊗ Cannot be combined with KM. D / d max.: 4 / 2.4; 5 / 2.9; 6 / 3.4; 8 / 4.4; 10 / 6.4 Taper 1/50; Angle (one side) 0.573°	
		KM	Addition of key groove to prevent lifting ⊗ Cannot be used for D<6. ⊗ Cannot be used for headed types. D / h: 6 / 1; 8 / 1.5; 10 / 1.5; ℓ: 5≦ℓ<L 0.1mm increments KM is machined in a position symmetrically opposite to the air inlet. ⊗ Cannot be combined with ANF.	