JECTOR PUNCHES FOR HEAVY LOAD WITH DOWEL HOLES
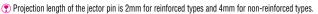## —FINISHED FOR RETAINERS・TiCN COATING・SPRING AND PIN REINFORCED TYPE—

- Projection length of the jector pin is 2mm for reinforced types and 4mm for non-reinforced types.

- For details of jector holes, refer to Jector Punch Blanks. **P.238**
- For details of jector pins, refer to Jector Pin Sets. **P.241**

Type	**A** Shank diameter D T tolerance	**M** **H**	Catalog No.				The tip shape can be selected from Tip shape A~G in the figure below.
			Type	Tip shape	**B** Tip length	With dowel hole	
TiCN coating with locating dowel hole	Dowel pin MS6—25 **D**m5	Equivalent to SKH51 61~64HRC Surface 3000HV	H—AHJ Spring and pin reinforced type H—AHJV	Ⓐ Ⓓ Ⓡ Ⓔ Ⓖ	S L	—C	

max35　ℓ(min3)　D −0.01/−0.03
11
10°
Dm5
R10
R1.2~1.5
B +0.3/0
L +0.3/0

- The tip end is ground before the coating is applied.
- Tip length (B)　L>S

RoHS

Tip shapes

Tip shape A

A　D m5
P±0.01
Ⓞ φ0.01 A
- P≧W

Tip shape D

// 0.01/12
D/2 −0.01
P±0.01
K
R≦0.2
= 0.02 A
W±0.01
- P≧W
- R=0 can be selected.
- $K=\sqrt{P^2+W^2}$

Tip shape R

D/2 −0.01
K
P±0.01
W±0.01　R
- P≧W
- $0.15≦R<\frac{W}{2}$
- $K=\sqrt{(P-2R)^2+(W-2R)^2}+2R$

Tip shape E

P±0.01
W±0.01
- P>W

Tip shape G

P±0.01
W±0.01　R≦0.2
- P>W

Catalog No.				L								0.01mm increments			B	H
Type	Tip shape	**B** Tip length	With dowel hole	D									Ⓐ min. P max.	Ⓓ Ⓡ Ⓔ Ⓖ P・Kmax.	Ⓡ P・Wmin.	Ⓡ R	
H—AHJ Spring and pin reinforced type H—AHJV	Ⓐ Ⓓ Ⓡ Ⓔ Ⓖ	S L	—C	10	(60)	70 80 90 100	(110)	(120)	(130)			5.00~ 9.99	9.97	5.00		13	15
				13	(60)	70 80 90 100	(110)	(120)	(130)			6.00~12.99	12.97	6.00			18
				16	(60)	70 80 90 100	(110)	(120)	(130)			10.00~15.99	15.97	6.00			21
				20	(60)	70 80 90 100	(110)	(120)	(130)			13.00~19.99	19.97	6.00	0.15≦R<W/2 (Ⓡ only)	19	25
				25	(60)	70 80 90 100	(110)	(120)	(130)			18.00~24.99	24.97	6.00			30
				10	(60)	70 80 90 100	(110)	(120)	(130)			5.00~ 9.99	9.97	5.00			15
				13	(60)	70 80 90 100	(110)	(120)	(130)			6.00~12.99	12.97	6.00		19	18
				16		70 80 90 100	(110)	(120)	(130)			10.00~15.99	15.97	6.00			21
				20		70 80 90 100	(110)	(120)	(130)			13.00~19.99	19.97	6.00		25	25
				25		70 80 90 100	(110)	(120)	(130)			18.00~24.99	24.97	6.00			30

- L(60)…B=8　If the full length is (60), the tip length is 8mm in all cases.
- Ⓐ: P>D−0.03…ℓ=0　If P>D−0.03 for a round punch, D −0.01/−0.03 (press-in lead) is not included.
- Ⓓ Ⓡ Ⓔ Ⓖ: P・K>D−0.05…ℓ=0　If P・K>D−0.05 for a shaped punch, D −0.01/−0.03 (press-in lead) is not included.
- L(110), (120) and (130) cannot be used for spring and pin reinforced types.

Order

Catalog No. — L — P — W — R (Ⓡ only)
H—AHJAS—C 20 — 80 — P15.00
H—AHJVDS—C 25 — 80 — P18.00 — W10.00

■Effect of spring and pin reinforced type
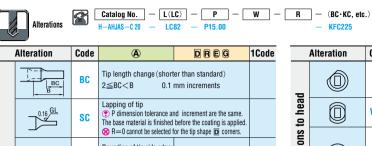The spring constant is twice that of the standard type, resulting in improved scrap removal. In addition, the improved strength under the pin head prevents breakage below the head.

Days to Ship　**Quotation**

Alterations

Catalog No. — L(LC) — P — W — R — (BC・KC, etc.)
H—AHJAS—C 20 — LC82 — P15.00 — KFC225

Alterations to tip

Alteration	Code	Ⓐ	Ⓓ Ⓡ Ⓔ Ⓖ	1Code
BC (B)	BC	Tip length change (shorter than standard) 2≦BC<B　0.1 mm increments		Quotation
0.16 GL	SC	Lapping of tip - P dimension tolerance and increment are the same. The base material is finished before the coating is applied. ⊗ R=0 cannot be selected for the tip shape Ⓓ corners.		
PRC±0.05	PRC	Rounding of tip side edge 0.3≦PRC≦1 0.1 mm increments - PRC≦(P−d₁−0.5)/2 d₁dimension details **P.238** ⊗ Cannot be combined with PCC.	—	
PCC±0.05	PCC	Chamfering to tip side edge 0.3≦PCC≦1 0.1 mm increments - PCC≦(P−d₁−0.5)/2 d₁dimension details **P.238** ⊗ Cannot be combined with PRC.	—	
P・W T	PKC	Tip tolerance change P +0.01/0 ⇨ +0.005/0 - (P dimension can be selected in 0.001 mm increments.) ⊗ Cannot be used for D>13.	Tip tolerance change P・W±0.01⇨ +0.01/0 ⊗ Cannot be used for D>13.	

Alterations to full length

Alteration	Code	Ⓐ	Ⓓ Ⓡ Ⓔ Ⓖ	1Code
LC L	LC	Full length change LC<L (reduction in tip length) 0.1 mm increments (If combined with LKC, 0.01 mm increments can be selected.) - Tip length B is shortened by (L−LC). - Projection length of the jector pin is 2mm for reinforced types and 4mm for non-reinforced types.		Quotation
L T	LKC	Full length tolerance change	L +0.3/0 ⇨ +0.05/0	

Alterations to head

Alteration	Code	Ⓐ	Ⓓ Ⓡ Ⓔ Ⓖ	1Code
	KC	Addition of single key flat to head	Key flat position change 0°90°180°270° 1° increments	Quotation
	WKC	Addition of double key flats in parallel	Double key flats in parallel Can be combined with KC.	
	KFC	Double key flats at 0° and a 180° selected angle 1° increments ⊗ Cannot be combined with KC・WKC.	Double key flats at 0° and a selected angle 1° increments ⊗ Cannot be combined with KC・WKC.	
	NKC	—	No key flat	

Alterations to shank

Alteration	Code	Ⓐ	Ⓓ Ⓡ Ⓔ Ⓖ	1Code
	AC	Addition of air path	The jector pin is removed to create an air path and the side vent hole is plugged from the inside by inserting a resin (ABS) ring.	
	NC		The jector pin is removed. ⊗ Cannot be combined with AC.	
	TPC		Dowel pin change MS6—25 that comes with the product is changed to MSTP6—25 (tapped type).	
ℓ −0.01/−0.03 D	NDC	No press-in lead	ℓ≧3 ⇨ ℓ=0	

Example
■Uses of punches with locating dowel holes
This type of punch is mainly used with dies for parts such as automobile bodies, in combination with a retainer that holds the punch. Rather than indirect positioning using the retainer dowel hole, these punches can be positioned directly using the dowel hole machined on the punch axis, improving die accuracy. These punches are particularly effective when used for die machining with NC machines.
This type of punch can be also used with dies for the external panels of electrical appliances, either in combination with a retainer, or attached to the punch plate of an ordinary progressive die.

Price
Quotation

PUNCHES