

# BALL-LOCK JECTOR PUNCHES

—LIGHT LOAD TYPE (ECONOMY)—

# BALL-LOCK JECTOR PUNCHES

—HEAVY LOAD TYPE (ECONOMY)—

Shank type **RoHS** Equivalent to SKD11 60 ~ 63HRC

Catalog No. Type **ELJ**

The tip shape can be selected from Tip shape A ~ G in the figure below.

Tip shape A, D, R, E, G

Tip shape A:  $D_{g5}$ ,  $P \pm 0.01$ ,  $\phi 0.01 | A$

Tip shape D:  $R \leq 0.2$ ,  $W \pm 0.01$ ,  $P \pm 0.01$ ,  $\phi 0.02 | A$

Tip shape R:  $P \geq W$ ,  $0.15 \leq R < \frac{W}{2}$ ,  $K = \sqrt{P^2 + W^2}$

Tip shape E:  $P > W$

Tip shape G:  $P > W$

Shank type **RoHS** Equivalent to SKH51 61 ~ 64HRC

Catalog No. Type **EBJ**

The tip shape can be selected from Tip shape A ~ G in the figure below.

Tip shape A, D, R, E, G

Tip shape A:  $D_{g5}$ ,  $P \pm 0.01$ ,  $\phi 0.01 | A$

Tip shape D:  $R \leq 0.2$ ,  $W \pm 0.01$ ,  $P \pm 0.01$ ,  $\phi 0.02 | A$

Tip shape R:  $P \geq W$ ,  $0.15 \leq R < \frac{W}{2}$ ,  $K = \sqrt{P^2 + W^2}$

Tip shape E:  $P > W$

Tip shape G:  $P > W$

Catalog No. Type	D	L	0.01mm increments				B	d (Hole diameter)	
			min. P max.	D	R	E			G
ELJAS	10	63 71 74 80 90	3.00 ~ 9.97	9.90	3.00	13	1.5		
ELJDS	13		6.00 ~ 12.97	12.90	6.00		1.8		
ELJJS	16		10.00 ~ 15.97	15.90	6.00		19	2.8	
ELJRS	20		13.00 ~ 19.97	19.90	6.00			25	2.8
ELJES	25		18.00 ~ 24.97	24.90	6.00				
ELJGS	32	22.00 ~ 31.97	31.90	6.00	19	1.5			
ELJAL	10	71 74 80 90	3.00 ~ 9.97	9.90		3.00	1.8		
ELJDL	13		6.00 ~ 12.97	12.90		6.00	25	2.8	
ELJDL	16		10.00 ~ 15.97	15.90		6.00			
ELJDL	20		13.00 ~ 19.97	19.90		6.00			
ELJEL	25		18.00 ~ 24.97	24.90	6.00	32	6.00		
ELJGL	32	22.00 ~ 31.97	31.90	6.00					

**P** Price **Quotation**

Order **Catalog No.** — **L** — **P** — **W** — **R** (R only)  
**ELJEL 25** — **80** — **P21.00** — **W12.40**

Days to Ship **Quotation**

Alterations **Catalog No.** — **L(LC)** — **P(PC)** — **W(WC)** — **R** — (BC·KC, etc.)  
**ELJEL 25** — **80** — **P21.00** — **W12.40** — **PKC**

Alteration	Code	A	D R E G	1Code
Alterations to tip	PC	Tip diameter change $PC \geq PCmin.$ 0.01mm increments (If combined with PKC, 0.001mm increments can be selected.)	Tip diameter change $PC \cdot WC \geq PC \cdot WCmin.$ 0.01mm increments	<b>Quotation</b>
	WC			
Alterations to full length	BC	Tip length change $2 \leq BC < B$ 0.1mm increments		<b>Quotation</b>
	PKC	Tip tolerance change $P \pm 0.01 \rightarrow \pm 0.005$ 0	Tip tolerance change $P \cdot W \pm 0.01 \rightarrow \pm 0.01$ 0	
Others	SC	Lapping of tip P dimension tolerance and increment are the same. R=0 cannot be selected for the tip shape D corners.		

Alteration	Code	A	D R E G	1Code
Alterations to tip	PRC	Rounding of tip side edge $0.3 \leq PRC \leq 1$ 0.1mm increments $PRC \leq (P-d-0.5)/2$ Cannot be combined with PCC.		<b>Quotation</b>
	PCC	Chamfering to tip side edge $0.3 \leq PCC \leq 1$ 0.1mm increments $PCC \leq (P-d-0.5)/2$ Cannot be combined with PRC.		
Alterations to full length	LC	Full length change $L - (B-2) \leq LC < L$ 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.) Tip length B is shortened by (L-LC).		<b>Quotation</b>
	LKC	Full length tolerance change $L \pm 0.3 \rightarrow \pm 0.05$ 0		
Others	KC		Ball position change 1° increments	

Catalog No. Type	D	L	0.01mm increments				B	d (Hole diameter)	
			min. P max.	D	R	E			G
EBJAS	10	71 80 90 100	3.00 ~ 9.97	9.90	3.00	13	1.5		
EBJDS	13		6.00 ~ 12.97	12.90	6.00		1.8		
EBJJS	16		10.00 ~ 15.97	15.90	6.00		19	2.8	
EBJRS	20		13.00 ~ 19.97	19.90	6.00			25	2.8
EBJES	25		18.00 ~ 24.97	24.90	6.00				
EBJGS	32	22.00 ~ 31.97	31.90	6.00	19	1.5			
EBJAL	10	80 90 100	3.00 ~ 9.97	9.90		3.00	1.8		
EBJDL	13		6.00 ~ 12.97	12.90		6.00	25	2.8	
EBJDL	16		10.00 ~ 15.97	15.90		6.00			
EBJDL	20		13.00 ~ 19.97	19.90		6.00			
EBJEL	25		18.00 ~ 24.97	24.90	6.00	32	6.00		
EBJGL	32	22.00 ~ 31.97	31.90	6.00					

**P** Price **Quotation**

Order **Catalog No.** — **L** — **P** — **W** — **R** (R only)  
**EBJAS 13** — **71** — **P12.56**

Days to Ship **Quotation**

Alterations **Catalog No.** — **L(LC)** — **P(PC)** — **W(WC)** — **R** — (BC·KC, etc.)  
**EBJAS 13** — **LC78.5** — **P12.56**

Alteration	Code	A	D R E G	1Code
Alterations to tip	PC	Tip diameter change $PC \geq PCmin.$ 0.01mm increments (If combined with PKC, 0.001mm increments can be selected.)	Tip diameter change $PC \cdot WC \geq PC \cdot WCmin.$ 0.01mm increments	<b>Quotation</b>
	WC			
Alterations to full length	BC	Tip length change $2 \leq BC < B$ 0.1mm increments		<b>Quotation</b>
	PKC	Tip tolerance change $P \pm 0.01 \rightarrow \pm 0.005$ 0	Tip tolerance change $P \cdot W \pm 0.01 \rightarrow \pm 0.01$ 0	
Others	SC	Lapping of tip P dimension tolerance and increment are the same. R=0 cannot be selected for the tip shape D corners.		

Alteration	Code	A	D R E G	1Code
Alterations to tip	PRC	Rounding of tip side edge $0.3 \leq PRC \leq 1$ 0.1mm increments $PRC \leq (P-d-0.5)/2$ Cannot be combined with PCC.		<b>Quotation</b>
	PCC	Chamfering to tip side edge $0.3 \leq PCC \leq 1$ 0.1mm increments $PCC \leq (P-d-0.5)/2$ Cannot be combined with PRC.		
Alterations to full length	LC	Full length change $L - (B-2) \leq LC < L$ 0.1mm increments (If combined with LKC, 0.01mm increments can be selected.) Tip length B is shortened by (L-LC).		<b>Quotation</b>
	LKC	Full length tolerance change $L \pm 0.3 \rightarrow \pm 0.05$ 0		
Others	KC		Ball position change 1° increments	

BALL-LOCK PUNCHES & DIES/RETAINERS