

BALL-LOCK JECTOR PUNCHES

—LIGHT LOAD TYPE WITH WRENCH FLAT—

BALL-LOCK JECTOR PUNCHES

—HEAVY LOAD TYPE WITH WRENCH FLAT—

Shank type —With wrench flat— **RoHS** Equivalent to SKD11 60~63HRC **KLJ**

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

Tip shape options: A, D, R, E, G. Dimensions: Dg5, P±0.01, F, K, W±0.01, R, R≤0.2.

Formulas: $P \geq W$, $R=0$ can be selected, $K = \sqrt{P^2 + W^2}$, $0.15 \leq R < \frac{W}{2}$, $K = \sqrt{(P-2R)^2 + (W-2R)^2 + 2R}$, $P > W$.

Shank type —With wrench flat— **RoHS** Equivalent to SKH51 61~64HRC **KBJ**

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

Tip shape options: A, D, R, E, G. Dimensions: Dg5, P±0.01, F, K, W±0.01, R, R≤0.2.

Formulas: $P \geq W$, $R=0$ can be selected, $K = \sqrt{P^2 + W^2}$, $0.15 \leq R < \frac{W}{2}$, $K = \sqrt{(P-2R)^2 + (W-2R)^2 + 2R}$, $P > W$.

Type	D	L	0.01mm increments					B	F	d (Hole diameter)	
			A	D	R	E	G				
S	10	63 71 74 80 90	3.00 ~ 9.97	9.90	3.00			13	8	1.5	
A	13		6.00 ~ 12.97	12.90	6.00			10	1.8		
D	16		10.00 ~ 15.97	15.90	6.00			13			
R	20		13.00 ~ 19.97	19.90	6.00			17			
E	25		18.00 ~ 24.97	24.90	6.00			22	2.8		
G	32		22.00 ~ 31.97	31.90	6.00			29			
S	10		71 74 80 90	3.00 ~ 9.97	9.90	3.00			19	8	1.5
A	13			6.00 ~ 12.97	12.90	6.00			10	1.8	
D	16			10.00 ~ 15.97	15.90	6.00			13		
R	20			13.00 ~ 19.97	19.90	6.00			17		
E	25	18.00 ~ 24.97		24.90	6.00			22	2.8		
G	32	22.00 ~ 31.97		31.90	6.00			29			

P Price **Quotation**

Order **Catalog No.** — **L** — **P** — **W** — **R (R only)**
KLJDS 20 — **71** — **P16.00** — **W10.00**

Days to Ship **Quotation**

Alterations **Catalog No.** — **L(LC)** — **P(PC)** — **W(WC)** — **R** — (BC-KC, etc.)
KLJDS 20 — **71** — **P16.00** — **W10.00** — **PKC**

Alteration	Code	A	D	R	E	G	1Code
Alterations to tip	PC WC	Tip diameter change $PC \geq PC_{min}$. 0.01mm increments (If combined with PKC, 0.001mm increments can be selected.)	Tip diameter change $PC \cdot WC \geq PC \cdot WC_{min}$. 0.01mm increments				Quotation
		D PCmin	D PC·WCmin				
Alterations to tip	BC	Tip length change $2 \leq BC < B$. 0.1mm increments					Quotation
		D					
Alterations to tip	PKC	Tip tolerance change $P +0.01 \rightarrow +0.005$	Tip tolerance change $P \cdot W \pm 0.01 \rightarrow +0.01$				Quotation
Alterations to tip	SC	Lapping of tip					Quotation
		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					Quotation
		$PRC \leq (P-d-0.5)/2$. Cannot be combined with PCC.					
Alterations to tip	PCC	Chamfering to tip side edge $0.3 \leq PCC \leq 1$. 0.1mm increments					Quotation
		$PCC \leq (P-d-0.5)/2$. 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.)					Quotation
		Tip length B is shortened by $(L-LC)$.					
Others	LKC	Full length tolerance change $L +0.3 \rightarrow +0.05$					Quotation
Others	KC	Ball position change 1° increments					Quotation

Type	D	L	0.01mm increments					B	F	d (Hole diameter)	
			A	D	R	E	G				
S	10	71 80 90 100	3.00 ~ 9.97	9.90	3.00			13	8	1.5	
A	13		6.00 ~ 12.97	12.90	6.00			10	1.8		
D	16		10.00 ~ 15.97	15.90	6.00			13			
R	20		13.00 ~ 19.97	19.90	6.00			17			
E	25		18.00 ~ 24.97	24.90	6.00			22	2.8		
G	32		22.00 ~ 31.97	31.90	6.00			29			
S	10		80 90 100	3.00 ~ 9.97	9.90	3.00			19	8	1.5
A	13			6.00 ~ 12.97	12.90	6.00			10	1.8	
D	16			10.00 ~ 15.97	15.90	6.00			13		
R	20			13.00 ~ 19.97	19.90	6.00			17		
E	25	18.00 ~ 24.97		24.90	6.00			22	2.8		
G	32	22.00 ~ 31.97		31.90	6.00			29			

P Price **Quotation**

Order **Catalog No.** — **L** — **P** — **W** — **R (R only)**
KBJDL 20 — **80** — **P16.00** — **W10.00**

Days to Ship **Quotation**

Alterations **Catalog No.** — **L(LC)** — **P(PC)** — **W(WC)** — **R** — (BC-KC, etc.)
KBJDL 20 — **80** — **P16.00** — **W10.00** — **LKC**

Alteration	Code	A	D	R	E	G	1Code
Alterations to tip	PC WC	Tip diameter change $PC \geq PC_{min}$. 0.01mm increments (If combined with PKC, 0.001mm increments can be selected.)	Tip diameter change $PC \cdot WC \geq PC \cdot WC_{min}$. 0.01mm increments				Quotation
		D PCmin	D PC·WCmin				
Alterations to tip	BC	Tip length change $2 \leq BC < B$. 0.1mm increments					Quotation
		D					
Alterations to tip	PKC	Tip tolerance change $P +0.01 \rightarrow +0.005$	Tip tolerance change $P \cdot W \pm 0.01 \rightarrow +0.01$				Quotation
Alterations to tip	SC	Lapping of tip					Quotation
		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					Quotation
		$PRC \leq (P-d-0.5)/2$. Cannot be combined with PCC.					
Alterations to tip	PCC	Chamfering to tip side edge $0.3 \leq PCC \leq 1$. 0.1mm increments					Quotation
		$PCC \leq (P-d-0.5)/2$. 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.)					Quotation
		Tip length B is shortened by $(L-LC)$.					
Others	LKC	Full length tolerance change $L +0.3 \rightarrow +0.05$					Quotation
Others	KC	Ball position change 1° increments					Quotation

BALL-LOCK PUNCHES & DIES/RETAINERS