JECTOR PUNCHES
—LAPPING—

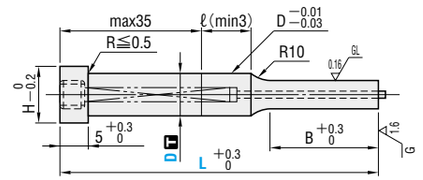
Calculating the projection length of the jector pin (reference value) P.241

- For details of jector holes, refer to Jector Punch Blanks. P.236
- For details of jector pins, refer to Jector Pin Sets. P.241

Type	Shank diameter D T tolerance	M / H	Catalog No. Type	Tip shape	B Tip length
RoHS	D_{m5}	D4–6 Equivalent to SKH51 61–64HRC	L—SJ L—SJV	A D R E G	S
		D8–25 Equivalent to SKD11 60–63HRC			
		Powdered high-speed steel 64–67 HRC	L—PJ L—PJV		
	$D^{+0.005}_{0}$	D4–6 Equivalent to SKH51 61–64HRC	AL—SJ AL—SJV		L
		D8–25 Equivalent to SKD11 60–63HRC			
		Powdered high-speed steel 64–67 HRC	AL—PJ AL—PJV		X

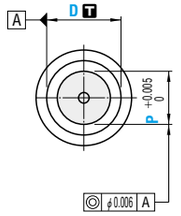
For shank diameter tolerance D, select either T m5 or $^{+0.005}_{0}$ T.

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

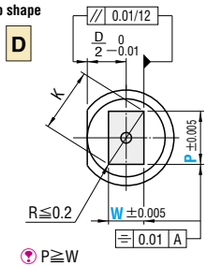


Tip length (B) X>L>S

Tip shape A



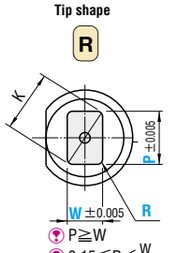
Tip shape D



P≧W

K=√(P²+W²)

Tip shape R

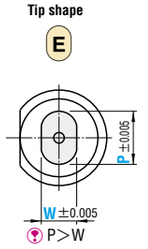


P≧W

0.15≦R<W/2

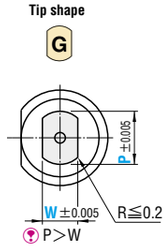
K=√((P−2R)²+(W−2R)²+2R

Tip shape E



P>W

Tip shape G



P>W

Catalog No. Type	Tip shape	B Tip length	D	L	0.001 mm increments Ⓐ min. P max.	0.001 mm increments DREG P·Kmax.	0.001 mm increments DREG P·Wmin.	0.01 mm R	B	H
(D_{m5}) L—SJ L—PJ Spring reinforced type (D8 ~ 25) L—SJV L—PJV	A D R E G	S	(4)	40 50 60 70 80	1.000~ 3.990	3.970	1.000	0.15≦R<W/2 (R only)	8	7
			(5)	40 50 60 70 80	2.000~ 4.990	4.970	2.000			8
			(6)	40 50 60 70 80	2.000~ 5.990	5.970	2.000			9
			8	(40) 50 60 70 80 90 100	3.000~ 7.990	7.970	3.000		13	11
			10	(40) 50 60 70 80 90 100	3.000~ 9.990	9.970	3.000			13
			13	(40) 50 60 70 80 90 100	6.000~ 12.990	12.970	6.000			16
			16	(40) (50) 60 70 80 90 100	10.000~ 15.990	15.970	6.000		19	19
			20	(40) (50) 60 70 80 90 100	13.000~ 19.990	19.970	6.000			23
			25	(40) (50) 60 70 80 90 100	18.000~ 24.990	24.970	6.000			28
($D^{+0.005}_{0}$) AL—SJ AL—PJ Spring reinforced type (D8 ~ 25) AL—SJV AL—PJV		L	(4)	50 60 70 80	1.000~ 3.990	3.970	2.000		13	7
			(5)	50 60 70 80	2.000~ 4.990	4.970	2.000			8
			(6)	50 60 70 80	2.000~ 5.990	5.970	2.000			9
			8	50 60 70 80 90 100	3.000~ 7.990	7.970	3.000		19	11
			10	50 60 70 80 90 100	3.000~ 9.990	9.970	3.000			13
			13	50 60 70 80 90 100	6.000~ 12.990	12.970	6.000			16
			16	60 70 80 90 100	10.000~ 15.990	15.970	6.000		25	19
			20	60 70 80 90 100	13.000~ 19.990	19.970	6.000			23
			25	60 70 80 90 100	18.000~ 24.990	24.970	6.000			28
(D_{m5}) L—SJ Spring reinforced type (D8 ~ 25) L—SJV ($D^{+0.005}_{0}$) AL—SJ Spring reinforced type (D8 ~ 25) AL—SJV		X	(5)	60 70 80	2.000~ 4.990	4.970	3.500		25	8
			(6)	60 70 80	2.000~ 5.990	5.970	3.500			9
			8	70 80 90 100	3.000~ 7.990	7.970	5.000		30	11
			10	70 80 90 100	3.000~ 9.990	9.970	6.000			13
			13	70 80 90 100	6.000~ 12.990	12.970	6.000			16
			16	80 90 100	10.000~ 15.990	—	—		40	19
			20	80 90 100	13.000~ 19.990					23
			25	80 90 100	18.000~ 24.990					28

The spring constants of L—SJV, L—PJV, AL—SJV, and AL—PJV are twice those of L—SJ, L—PJ, AL—SJ, and AL—PJ respectively.
L(40)···B= 6 If full length is (40), tip length is 6 mm in all cases.
L(50)···B=13 If full length is (50), tip length is 13mm 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.
DREG: 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.
D(4), (5), and (6) are specifications available for L—SJ, L—PJ, AL—SJ, and AL—PJ only. Spring reinforced types are available for D8 ~ 25 only.

Order

Catalog No.	—	L	—	P	—	W	—	R (R only)
L—SJDS16	—	60	—	P9.000	—	W6.800		
AL—SJEL10	—	70	—	P8.500	—	W4.250		

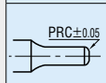
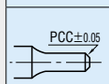
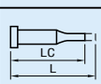
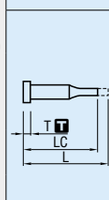
Days to Ship Quotation

■Effect of spring reinforced type
The spring constant is twice that of a standard type jector punch. The large spring load results in more effective scrap removal.

Alterations

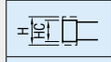
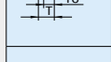
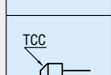
Catalog No.	—	L(LC·LCT·LMT)	—	P(PC)	—	W(WC)	—	R	— (BC·HC·TC, etc.)
L—SJDS 6	—	LC58	—	P3.000	—	W2.800	—	HC8	

Alterations to tip

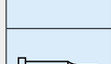
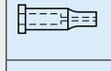
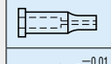
Alteration	Code	Ⓐ	DREG	1Code
	PC WC	Tip dimension change PC≧PCmin. 0.001mm increments D / PCmin.: 4 0.900; 5 1.800; 6 1.800; 8 2.500; 10 2.800; 13 5.000; 16 8.000; 20 9.000; 25 9.000	Tip dimension change PC·WC≧PC·WCmin. 0.001mm increments ⊗ Cannot be used for D4. ⊗ Cannot be used for tip X. D / PC·WCmin.: 5 1.800; 6 1.800; 8 2.500; 10 2.800; 13 5.000; 16 5.000; 20 5.000; 25 5.000	Quotation
	BC	Tip length change (shorter than standard) 2≦BC<B 0.1 mm increments The following restriction applies to L—SJAX or AL—SJAX with D dimension 5 or 6. PC: 1.80 ~ 1.99 / Bmax.: 20		
	PRC	Rounding of tip side edge 0.3≦PRC≦1 0.1 mm increments PRC≦(P−d_1−0.5)/2 d_1 dimension P.236 ⊗ Cannot be combined with PCC.	——	
	PCC	Chamfering to tip side edge 0.3≦PCC≦1 0.1 mm increments PCC≦(P−d_1−0.5)/2 d_1 dimension P.236 ⊗ Cannot be combined with PRC.	——	
	LC	Full length change (reduction in tip length) LC<L 0.1 mm increments Tip length B is reduced by (L—LC). (If combined with LKC·LKZ, 0.01 mm increments can be selected.) Projection length of jector pin is 2 mm.		
	LCT	Changes to head thickness tolerance and full length are processed using a single code. The allowable range of change, increment, ordering process, and notes (?) are the same as for LC. TKC: Head thickness tolerance change T +0.3 0 ⇨ +0.02 0 LC: +Full length change+ L +0.3 0 ⇨ +0.1 0 (Full length tolerance change)		
	LMT	Changes to head thickness tolerance and full length are processed using a single code. The allowable range of change, increment, ordering process, and notes (?) are the same as for LC. TKM: Head thickness tolerance change T +0.3 0 ⇨ 0 −0.02 LC: +Full length change+ L +0.3 0 ⇨ +0.1 0 (Full length tolerance change)		
	LKC	Full length tolerance change L +0.3 0 ⇨ +0.05 0		
	LKZ	Full length tolerance change L +0.3 0 ⇨ +0.01 0		

Price Quotation

Alterations to head

Alteration	Code	Ⓐ	DREG	1Code
	KC	Addition of single key flat to head	90° 0° 180° 270° Key flat position change 1° increments	
	WKC	Addition of double key flats in parallel	Double key flats in parallel Can be combined with KC.	
	KFC	90° 0° 180° 270° Double key flats at 0° and a selected angle 1° increments ⊗ Cannot be combined with KC·WKC.	90° 0° 180° 270° Double key flats at 0° and a selected angle 1° increments ⊗ Cannot be combined with KC·WKC.	
	NKC	——	No key flat	
	HC	Head diameter change D≦HC<H 0.1 mm increments		
	TC	Head thickness change 3.5≦TC<5 0.1 mm increments (If combined with TKC·TKM·LCT·LMT, 0.01 mm increments can be selected.) Full length L is shortened by (5—TC). If combined with LC·LCT·LMT, full length remains as specified.		
	TKC	Head thickness tolerance change T +0.3 0 ⇨ +0.02 0		Quotation
	TKM	Head thickness tolerance change T +0.3 0 ⇨ 0 −0.02		
	TCC	Chamfering of head This improves the strength of the punch head. P.1611 0.1 mm increments 0.5≦TCC≦(H−D)/2 If H≦5, then TCC is 0.5.		
	RC	0 −0.04 Head thickness is machined to a tolerance of −0.04~0 relative to the retainer surface. ⊗ Cannot be used for $D^{+0.005}_{0}$ types.		

Alterations to shank

Alteration	Code	Ⓐ	DREG	1Code
	SKC	Single key flat on shank Ⓐ: $\frac{D}{2}-0.5^{\ 0}_{-0.01}$ ·D4~6 P≦D−1.2 W≦D−1.2 (Machining width 0.5) ·D8~ P≦D−2.2 W≦D−2.2 (Machining width 1) ⊗ Cannot be combined with KC·WKC·KFC.	DREG: $\frac{D}{2}-1^{\ 0}_{-0.01}$	
	AC	AIR 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	WARNING The jector pin is removed. ⊗ Cannot be combined with AC.		
	NDC	No press-in lead ℓ≧3⇨ℓ=0		