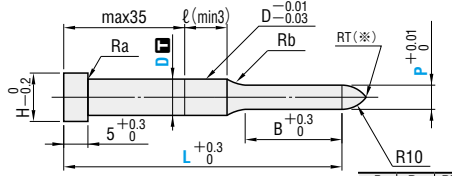
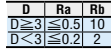
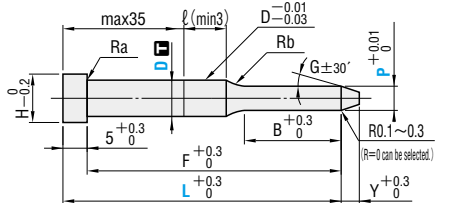
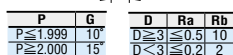
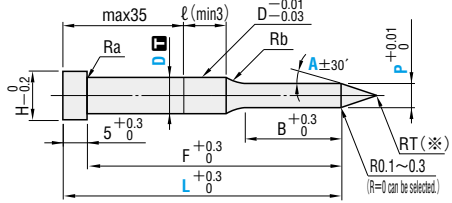
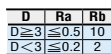


PILOT PUNCHES

Type	Shank diameter D  tolerance		Catalog No.		Shape
			Type	B tip length	
—Tip R type— 	D _{m5}		Equivalent to SKD 11 60~63HRC	STA (D3~25)	  ⚠ RT (※) → If P < 8, tip is rounded for safety. To keep the sharp tip (no rounding), specify RT = 0. (If P ≥ 8, tip end is flat.  P.1592) ⚠ For the length of tip R, refer to the products data "Punch R length".  P.1592
			Equivalent to SKH51 61~64HRC	HSTA	
			Powdered high-speed steel 64~67 HRC	PSTA	
	D ⁺ +0.005 0	Equivalent to SKD 11 60~63HRC	A—STA (D3~25)		
			Equivalent to SKH51 61~64HRC	A—HSTA	
			Powdered high-speed steel 64~67HRC	A—PSTA	
—Tapered tip type— 	D _{m5}		Equivalent to SKD 11 60~63HRC	TPA (D3~25)	  ⚠ RT (※) → The tip is rounded for safety. To keep the sharp tip (no rounding), specify RT = 0.
			Equivalent to SKH51 61~64HRC	HTPA	
			Powdered high-speed steel 64~67HRC	PTPA	
	D ⁺ +0.005 0	Equivalent to SKD 11 60~63HRC	A—TPA (D3~25)		
			Equivalent to SKH51 61~64HRC	A—HTPA	
			Powdered high-speed steel 64~67HRC	A—PTPA	
—Sharp tip angle type— 	D _{m5}		Equivalent to SKD 11 60~63HRC	ATA (D3~25)	  ⚠ RT (※) → The tip is rounded for safety. To keep the sharp tip (no rounding), specify RT = 0.
			Equivalent to SKH51 61~64HRC	HATA	
			Powdered high-speed steel 64~67HRC	PATA	
	D ⁺ +0.005 0	Equivalent to SKD 11 60~63HRC	A—ATA (D3~25)		
			Equivalent to SKH51 61~64HRC	A—HATA	
			Powdered high-speed steel 64~67HRC	A—PATA	

Catalog No.		L		0.01mm increments		A	B	H	Y
Type	B tip length	D		min.	P max.				
(Dm5) Equivalent to SKD11 (D3~25) Equivalent to SKH51 Powdered high-speed steel	S	1.6	42 52 62		0.30 ~ 1.59	(10) (15) (20) 25 30	(6)	2.6	(1)
		2.0	42 52 62		0.50 ~ 1.99		8	3	
		2.5	42 52 62		1.00 ~ 2.49			3.5	
		3	42 52 62 72 82 (92)		1.00 ~ 2.99			5	2
		4	42 52 62 72 82 (92)		1.00 ~ 3.99		10	7	
		5	42 52 62 72 82 (92)		2.00 ~ 4.99			8	
		6	42 52 62 72 82 (92)		2.50 ~ 5.99			9	3
		8	(42) 52 62 72 82 (92) (102) (112)		3.00 ~ 7.99		15	11	5
		10	(42) 52 62 72 82 (92) (102) (112)		3.00 ~ 9.99			13	
		13	(42) 52 62 72 82 (92) (102) (112)		6.00 ~ 12.99			16	
		16	(42) 52 62 72 82 (92) (102) (112)		10.00 ~ 15.99			19	8
		20	(42) 52 62 72 82 (92) (102) (112)		13.00 ~ 19.99		21	23	
(D+0.005 0) Equivalent to SKD11 (D3~25) Equivalent to SKH51 Powdered high-speed steel	L	1.6	42 52 62		0.50 ~ 1.59	(10) (15) (20) 25 30	8	2.6	(1)
		2.0	42 52 62		0.50 ~ 1.99		10	3	
		2.5	42 52 62		1.00 ~ 2.49		13	3.5	
		3	52 62 72 82 (92)		1.00 ~ 2.99			5	2
		4	52 62 72 82 (92)		1.00 ~ 3.99			7	
		5	52 62 72 82 (92)		2.00 ~ 4.99		15	8	
		6	52 62 72 82 (92)		2.50 ~ 5.99			9	3
		8	52 62 72 82 (92) (102) (112)		3.00 ~ 7.99		21	11	5
		10	52 62 72 82 (92) (102) (112)		3.00 ~ 9.99			13	
		13	52 62 72 82 (92) (102) (112)		6.00 ~ 12.99			16	
		16	62 72 82 (92) (102) (112)		10.00 ~ 15.99		27	19	8
		20	62 72 82 (92) (102) (112)		13.00 ~ 19.99			23	
(D+0.005 0) Equivalent to SKD11 (D3~25) Equivalent to SKH51 Powdered high-speed steel	X	3	52 62 72 82 (92)		1.20 ~ 2.99	(10) (15) (20) 25 30	21	5	2
		4	52 62 72 82 (92)		1.20 ~ 3.99			7	
		5	62 72 82 (92)		2.00 ~ 4.99		27	8	3
		6	62 72 82 (92)		2.50 ~ 5.99			9	
		8	62 72 82 (92) (102) (112)		3.00 ~ 7.99		32	11	5
		10	62 72 82 (92) (102) (112)		3.00 ~ 9.99			13	
		13	62 72 82 (92) (102) (112)		6.00 ~ 12.99			16	
		16	72 82 (92) (102) (112)		10.00 ~ 15.99		42	19	8
		20	72 82 (92) (102) (112)		13.00 ~ 19.99			23	
		25	72 82 (92) (102) (112)		18.00 ~ 24.99			28	

Ⓛ (42) → If full length L is (42), tip length B is 10mm in all cases. Ⓛ (102) (112) → L92, L102 and L112 can be used for tip R types and tapered tip types only. Ⓛ (102) (112) → L102 and L112 of D8 can be used for SKD11 with Dm5 only. P>D-0.03 → ℓ=0 If P>D-0.03, D=0.03 (press-in lead) is not included. (*) For D10~25 types with L exceeding 102, refer to Pilot Punches with Locating Dowel Holes on P.203. (Can be used for SKD11 with Dm5 only.)

Ⓛ (6) → If P<0.5, tip length B is at 2mm. Ⓛ (10) → If P≥6.0, A10 cannot be selected. Ⓛ (1) → If P<0.5, Y dimension is 0.5mm. Ⓛ (15) → If P≥15.0, A15 cannot be selected. Ⓛ (20) → If P≥20.0, A20 cannot be selected.



Catalog No. — L — P — A — (RT=0
R=0)

A—STAS 6 — 72 — P5.02 — RT0
PTPAS 6 — 52 — P4.97
ATAS 6 — 52 — P2.60 — A15 — R0

A Can be used for sharp tip angle types only.
RT=0 only can be selected. (Can be used for tip R types with P<8 and sharp tip angle types.)
R=0 only can be selected. (Can be used for tapered tip types and sharp tip angle types.)



Days to Ship **Quotation**



Alterations Catalog No. — L (LC-LCT-LMT) — P (PC) — A — (RT=0
R=0) — (BC-HC-TC, etc.)

A—STAS 8 — LC7 6 — PC1.50 — HC10.0

Alteration	Code	Tip R type	Tapered tip and sharp tip angle types	1Code
Alterations to tip	PC	Tip diameter change $PC \geq \frac{P_{min}}{2} \geq 0.3$ 0.01mm increments (If combined with PKC, 0.001mm increments can be selected.)	Tip diameter change $PC \geq \frac{P_{min}}{2} \geq 0.3$ 0.01mm increments (If combined with PKC, 0.001mm increments can be selected.) Ymax=YCmax	
	BC	Tip length change $2 \leq BC \leq B_{max}$ Full length L must be at least 25mm longer than tip length BC.	0.1mm increments	
	RLC	Tip R is cut flat. $2 \leq RLC < Y < 8$ $Y = \sqrt{P(10-P/4)}$ 0.1mm increments		Quotation
	YC		Tip taper length change • P<2.0 $1 \leq YC \leq P \times 2.83 - 0.3$ • P≥2.0 $1 \leq YC \leq P \times 1.86 - 0.3 \leq 18$ L (LC) + YC ≤ Lmax + 8 0.1mm increments Ⓛ Cannot be used for sharp tip angle types. Ⓛ Cannot be used for P0.300~0.499.	
	PKC	Tip diameter tolerance change $P + 0.01 \Rightarrow +0.005$ 0 (P dimension can be selected in 0.001 mm increments.)		
	LC	Full length change $25 + B (BC) \leq LC < L$ 0.1mm increments Ⓛ If difference between full length and tip length is 25mm or less, tip length is adjusted to (Full length-25mm).		
Alterations to full length	LKC		Full length tolerance change $L + 0.3 \Rightarrow +0.05$ 0	



Price **Quotation**

Alteration	Code	Tip R type	Tapered tip and sharp tip angle types	1Code
Alterations to full length	LCT	TKC Head thickness tolerance change $T + 0.3 \Rightarrow +0.02$ 0	Full length change	
	LMT	TKM Head thickness tolerance change $T + 0.3 \Rightarrow 0$ -0.02	Full length change	
Alterations to head	KC		Addition of single key flat to head	
	WKC		Addition of double key flats in parallel	
	RC		Head thickness is machined to a tolerance of -0.04~0 relative to the retainer surface. Ⓛ Cannot be used for D+0.005 types.	Quotation
	HC		Head diameter change $D \leq HC < H$ 0.1mm increments	
	TC		Head thickness change $2 \leq TC < 5$ 0.1mm increments (If combined with LCT, LMT, TKC, and TKM, 0.01mm increments can be selected.) Ⓛ Full length L is shortened by (5-TC). If combined with LC, full length is equal to LC.	
	TKC		Head thickness tolerance change $T + 0.3 \Rightarrow +0.02$ 0	
Alterations to shank	TKM		Head thickness tolerance change $T + 0.3 \Rightarrow 0$ -0.02	
	FKC		F dimension tolerance change $F + 0.3 \Rightarrow +0.05$ 0 Ⓛ Cannot be combined with LKC.	
	NDC		No press-in lead $\ell \geq 3 \Rightarrow \ell = 0$	