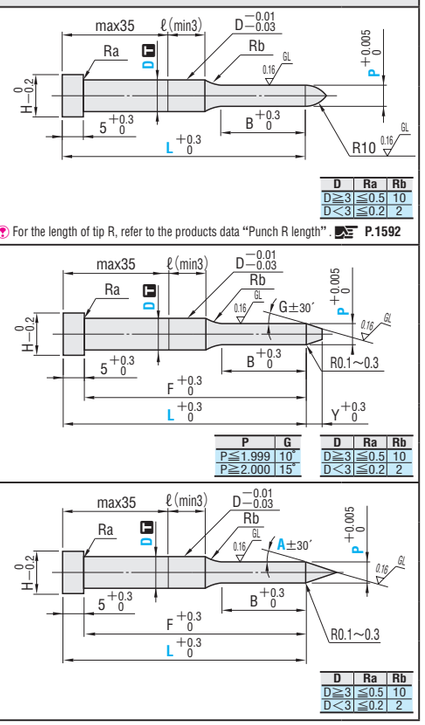
PILOT PUNCHES
—LAPPING—

Type	Shank diameter D T tolerance	M H	Catalog No. Type	B tip length
—Tip R・Lapping— RoHS	Dm5	Equivalent to SKD 11 60～63HRC	L—STA (D3～25)	S, L, X
		Equivalent to SKH51 61～64HRC	L—HSTA	
		Powdered high-speed steel 64～67HRC	L—PSTA	
	$D^{+0.005}_{0}$	Equivalent to SKD 11 60～63HRC	AL—STA (D3～25)	
		Equivalent to SKH51 61～64HRC	AL—HSTA	
		Powdered high-speed steel 64～67HRC	AL—PSTA	
—Tapered tip・Lapping— RoHS	Dm5	Equivalent to SKD 11 60～63HRC	L—TPA (D3～25)	
		Equivalent to SKH51 61～64HRC	L—HTPA	
		Powdered high-speed steel 64～67HRC	L—PTPA	
	$D^{+0.005}_{0}$	Equivalent to SKD 11 60～63HRC	AL—TPA (D3～25)	
		Equivalent to SKH51 61～64HRC	AL—HTPA	
		Powdered high-speed steel 64～67HRC	AL—PTPA	
—Sharp tip angle・Lapping— RoHS	Dm5	Equivalent to SKD 11 60～63HRC	L—ATA (D3～25)	
		Equivalent to SKH51 61～64HRC	L—HATA	
		Powdered high-speed steel 64～67HRC	L—PATA	
	$D^{+0.005}_{0}$	Equivalent to SKD 11 60～63HRC	AL—ATA (D3～25)	
		Equivalent to SKH51 61～64HRC	AL—HATA	
		Powdered high-speed steel 64～67HRC	AL—PATA	Tip length (B) X>L>S

Shape of tip changes depending on P dimension. P.250
For shank diameter tolerance D T, select either m5 or $^{+0.005}_{0}$.



D	Ra	Rb
D≧3	≦0.5	10
D<3	≦0.2	2

P	G
P≦1.999	10°
P≧2.000	15°

Catalog No. Type	B tip length	D	L							0.001mm increments min. P max.	A	B	H	Y
(Dm5)		1.6	42	52	62					0.300～ 1.590	(10) (15) (20) 25 30	(6)	2.6	(1)
M Equivalent to SKD11 (D3～25) L—STA	S	2.0	42	52	62					0.500～ 1.990		8	3	
L—TPA		2.5	42	52	62					1.000～ 2.490			3.5	
L—ATA		3	42	52	62	72	82	(92)		1.000～ 2.990		10	5	2
L—HSTA		4	42	52	62	72	82	(92)		1.000～ 3.990			7	
M Equivalent to SKH51 L—HTPA		5	42	52	62	72	82	(92)		2.000～ 4.990			8	3
L—HATA		6	42	52	62	72	82	(92)		2.500～ 5.990			9	
L—PSTA		8	(42)	52	62	72	82	(92)	(102)	3.000～ 7.990		15	11	5
M Powdered high-speed steel L—PTPA		10	(42)	52	62	72	82	(92)	(102)	3.000～ 9.990			13	
L—PATA		13	(42)	52	62	72	82	(92)	(102)	6.000～ 12.990			16	8
		16	(42)	52	62	72	82	(92)	(102)	10.000～ 15.990		21	19	
		20	(42)	52	62	72	82	(92)	(102)	13.000～ 19.990			23	
		25	(42)	52	62	72	82	(92)	(102)	18.000～ 24.990			28	
(D+0.005 0)		1.6	42	52	62					0.500～ 1.590		8	2.6	(1)
M Equivalent to SKD11 (D3～25) AL—STA	L	2.0	42	52	62					0.500～ 1.990		10	3	
AL—TPA		2.5	42	52	62					1.000～ 2.490		13	3.5	
AL—ATA		3		52	62	72	82	(92)		1.000～ 2.990		15	5	2
AL—HSTA		4		52	62	72	82	(92)		1.000～ 3.990			7	
M Equivalent to SKH51 AL—HTPA		5		52	62	72	82	(92)		2.000～ 4.990			8	3
AL—HATA		6		52	62	72	82	(92)		2.500～ 5.990			9	
AL—PSTA		8		52	62	72	82	(92)	(102)	3.000～ 7.990		21	11	5
M Powdered high-speed steel AL—PTPA		10		52	62	72	82	(92)	(102)	3.000～ 9.990			13	
AL—PATA		13		52	62	72	82	(92)	(102)	6.000～ 12.990			16	8
		16			62	72	82	(92)	(102)	10.000～ 15.990		27	19	
		20			62	72	82	(92)	(102)	13.000～ 19.990			23	
		25			62	72	82	(92)	(102)	18.000～ 24.990			28	
	X	3		52	62	72	82	(92)		1.200～ 2.990	(10) (15) (20) 25 30	21	5	2
		4		52	62	72	82	(92)		1.200～ 3.990			7	
		5			62	72	82	(92)		2.000～ 4.990		27	8	3
		6			62	72	82	(92)		2.500～ 5.990			9	
		8			62	72	82	(92)	(102)	3.000～ 7.990		32	11	5
		10			62	72	82	(92)	(102)	3.000～ 9.990			13	
		13			62	72	82	(92)	(102)	6.000～ 12.990			16	8
		16				72	82	(92)	(102)	10.000～ 15.990		42	19	
		20				72	82	(92)	(102)	13.000～ 19.990			23	
		25				72	82	(92)	(102)	18.000～ 24.990			28	

(?) L(42)···If full length L is (42), tip length B is 10mm in all cases.
(?) L(92) (102)···L92 and 102 can be used for tip R types and tapered tip types only.
(?) L(102)···L102 of D8 can be used for SKD11 with Dm5 only.
(?) P>D−0.03 ···ℓ=0 If P>D−0.03, $D^{-0.01}_{-0.03}$ (press-in lead) is not included.
(?) B(6)···If P<0.5, tip length B is 2mm.
(?) Y(1)···If P<0.5, Y dimension is 0.5mm.
⊗ A(10)···If P≧6.0, A10 cannot be selected.
⊗ A(15)···If P≧15.0, A15 cannot be selected.
⊗ A(20)···If P≧20.0, A20 cannot be selected.

Order

Catalog No.	—	L	—	P	—	A
AL—STAS 6	—	72	—	P5.020		
L—PTPAS 6	—	52	—	P4.970		
L—ATAS 6	—	52	—	P2.600	—	A15

(?) A Can be used for sharp tip angle types only.

Days to Ship Quotation

Alterations

Catalog No.	—	L(LC・LCT・LMT)	—	P(PC)	—	A	— (BC・HC・TC, etc.)
L—STAS 8	—	LCT76	—	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≧ Pmin./2 ≧0.3 0.01mm increments	Tip diameter change PC≧ Pmin./2 ≧0.3 0.01mm increments (?) Ymax.=YCmax.	Quotation
	BC	P(PC) / Bmax.: 0.300～0.499: 2; 0.500～0.999: 10; 1.000～1.999: 20; 2.000～3.999: 35; 4.000～5.999: 45; 6.000～: 60. Tip length change 2≦BC≦Bmax. 0.1mm increments (?) Full length L must be at least 25mm longer than tip length BC.	P(PC) / Bmax.: 0.300～0.499: 2; 0.500～0.999: 8; 1.000～1.199: 15; 1.200～1.999: 20; 2.000～2.999: 30; 3.000～3.999: 35; 4.000～5.999: 45; 6.000～: 60.	
	RLC	Tip R is cut flat. 2≦RLC<Y<8 Y=√P(10−P/4) 0.1mm increments	——	
	YC	——	Tip taper length change ・P<2.0 1≦YC≦P×2.83−0.3 ・P≧2.0 1≦YC≦P×1.86−0.3≦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.	
Alterations to full length	LC	Full length change 25+B(BC)≦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).		
	LKC	——	Full length tolerance change $L^{+0.3}_{0}$ ⇨ $^{+0.05}_{0}$	

Alteration	Code	Tip R type	Tapered tip and sharp tip angle types	1Code
Alterations to full length	LCT	Changes to head thickness tolerance and full length are processed using a single code. The allowable range of change, increments, and notes (?) are the same as for LC. TKC Head thickness tolerance change $T^{+0.3}_{0}$ ⇨ $^{+0.02}_{0}$ + LC Full length change		Quotation
	LMT	Changes to head thickness tolerance and full length are processed using a single code. The allowable range of change, increments, and notes (?) are the same as for LC. TKM Head thickness tolerance change $T^{+0.3}_{0}$ ⇨ $^{0}_{-0.02}$ + LC 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 $D^{+0.005}_{0}$ types.		
	HC	Head diameter change D≦HC<H 0.1mm increments		
	TC	Head thickness change 2≦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 $T^{+0.3}_{0}$ ⇨ $^{+0.02}_{0}$		
	TKM	Head thickness tolerance change $T^{+0.3}_{0}$ ⇨ $^{0}_{-0.02}$		
Alterations to shank	FKC	——	F dimension tolerance change $F^{+0.3}_{0}$ ⇨ $^{+0.05}_{0}$ ⊗ Cannot be combined with LKC.	
	NDC	No press-in lead ℓ≧3 ⇨ ℓ=0		

Price Quotation

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