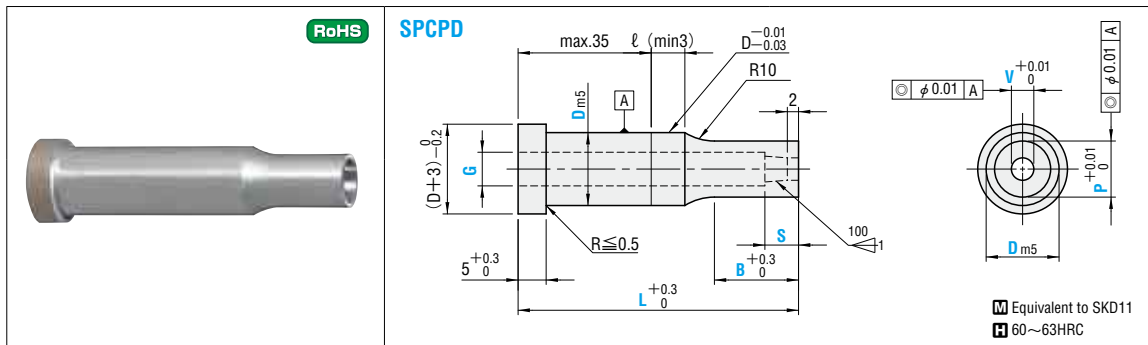


BLANKING PUNCHES

PUNCH TIP SHEAR ANGLE ALTERATIONS



Catalog No.	0.1mm increments		0.01mm increments		0.1mm increments		0.1mm increments		G	Base unit price 1~9 pieces		
	L	P	min.	max.	B	min.	max.					
SPCPD	8		4.80 ~ 7.99	1.50	4.0 ≤ B ≤ 19.0 and B ≤ L - 27	3	(10)	G ≤ P × 0.6 and P - G ≥ 1.20	0.2mm increments	Quotation		
	10	35.0 ~ 60.0	4.80 ~ 9.99	1.50	4.0 ≤ B ≤ 25.0 and B ≤ L - 27		12				15	0.5mm increments
	13		5.80 ~ 12.99	1.50								
	16		9.80 ~ 15.99	2.50								
	20	40.0 ~ 60.0	12.80 ~ 19.99	3.50	4.0 ≤ B ≤ 25.0 and B ≤ L - 32		12				15	0.5mm increments
	25		17.80 ~ 24.99	5.00								
32		19.80 ~ 31.99	7.50									

⚠ Smax. (10) → When V ≤ 1.99, S is 4 mm at maximum.
 ⚠ P > D - 0.03 → If P > D - 0.03, D_{-0.01}^{-0.03} (press-in lead) is not included.

Order **SPCPD 20 - 55.0 - P14.65 - V7.35 - B8 - S10 - G8.5** Example

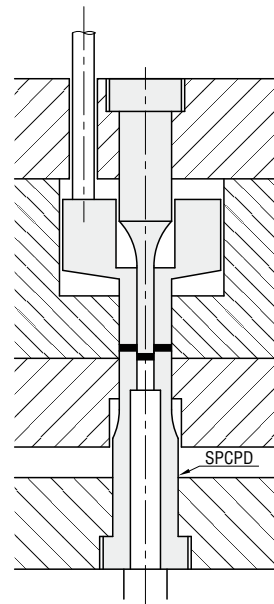
⚠ Be aware that when the difference between P dimension and V dimension or G dimension is small (thin walls), the punch may lack sufficient strength depending on the workpiece.

Days to Ship **Quotation**

Price **Quotation**

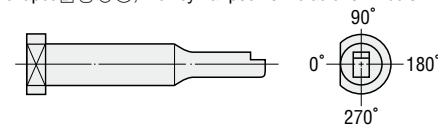
Alterations **SPCPD 20 - 55.0 - P14.65 - V7.35 - B8 - S10 - G8.5 - TKC**

Alteration	Code	Spec.	1Code
Alterations to tip	PKC	Tip tolerance change P ₀ ^{+0.01} ↪ ^{+0.005} ⚠ (P dimension can be selected in 0.001 mm increments.)	
	VKC	Tip tolerance change V ₀ ^{+0.01} ↪ ^{+0.005} ⚠ (V dimension can be selected in 0.001 mm increments.)	
Full length	LKC	Full length tolerance change L ₀ ^{+0.3} ↪ ^{+0.05}	
Alterations to head	KC	Addition of single key flat to head	Quotation
	WKC	Addition of double key flats in parallel	
	HC	Head diameter change D ≤ HC < (D+3) 0.1 mm increments	
	TC	Head thickness change 2 ≤ TC < 5 0.1mm increments (If combined with TKC-TKM, 0.01mm increments can be selected.) ⚠ The full length remains as specified.	
	TKM	Head thickness tolerance change T ₀ ^{+0.3} ↪ ^{+0.02} T ₀ ^{+0.3} ↪ ⁰	
Shank	NDC	No press-in lead ℓ ≥ 3 ↪ ℓ = 0	



Shape	Code	Tip shape		1Code
		Ⓐ	Ⓓ Ⓔ Ⓕ Ⓖ	
	1F		<ul style="list-style-type: none"> 1 ≤ S ≤ B 1 ≤ S ≤ P/2 U ≤ S - 1 Q = 0 or 1 ≤ Q ≤ P/2 ⊗ Cannot be used for LKC-LKZ. ⊗ ⊕ shape Q dimension cannot be selected. S: 0.1mm increments U: 0.1mm increments E: 0.01mm increments Q: 0.01mm increments 	
	2F	<ul style="list-style-type: none"> 0° < A ≤ 15° P tanA + 2 < B ⊗ Cannot be used for LKC-LKZ-LCT-LMT. ⊗ Cannot be combined with PRC-PCC-GC. ⊗ Cannot be combined with KC-WKC-KFC-SKC. A: 1° increments 	<ul style="list-style-type: none"> 0° < A ≤ 15° P tanA + 2 < B ⊗ Cannot be used for LKC-LKZ-LCT-LMT. 	
	3F	<ul style="list-style-type: none"> 0° < A ≤ 15° P/2 tanA + 2 < B ⊗ Cannot be used for LKC-LKZ-LCT-LMT. ⊗ Cannot be combined with PRC-PCC-GC. ⊗ Cannot be combined with KC-WKC-KFC-SKC. A: 1° increments 	<ul style="list-style-type: none"> 0° < A ≤ 15° P/2 tanA + 2 < B ⊗ Cannot be used for LKC-LKZ-LCT-LMT. 	
	4F	<ul style="list-style-type: none"> 0° < A ≤ 15° P/2 tanA < B ⊗ Cannot be used for LKC-LKZ-LCT-LMT. ⊗ Cannot be combined with PRC-PCC-GC. ⊗ Cannot be combined with KC-WKC-KFC-SKC. A: 1° increments 	<ul style="list-style-type: none"> 0° < A ≤ 15° P/2 tanA < B ⊗ Cannot be used for LKC-LKZ-LCT-LMT. 	Quotation
	5F	<ul style="list-style-type: none"> P + 1 ≤ R ≤ P + 5 ⊗ Full length tolerance L ± 0.3 ⊗ Not spherical machining. ⊗ Cannot be used for LKC-LKZ-LCT-LMT. ⊗ Cannot be combined with PRC-PCC-GC. ⊗ Cannot be combined with KC-WKC-KFC-SKC. ⊗ Cannot be combined with PKC. R: 0.1mm increments 	<ul style="list-style-type: none"> P + 1 ≤ R ≤ P + 5 ⊗ Full length tolerance L ± 0.3 ⊗ No spherical surface. ⊗ Cannot be used for LKC-LKZ-LCT-LMT. ⊗ Cannot be combined with PKC. R: 0.1mm increments 	
	6F	<ul style="list-style-type: none"> S < R S ≥ 0.5 2√{R² - (R-S)²} < P ⊗ Cannot be used for LKC-LKZ-LCT-LMT. ⊗ Cannot be combined with PRC-PCC-GC. ⊗ Cannot be combined with KC-WKC-KFC-SKC. R: 0.1mm increments S: 0.1mm increments 	<ul style="list-style-type: none"> S < R S ≥ 0.5 2√{R² - (R-S)²} < P ⊗ Cannot be used for LKC-LKZ-LCT-LMT. 	
	7F	<ul style="list-style-type: none"> 0° < A ≤ 45° S ≥ 0.5 S/tanA < P/2 - 0.3 ⊗ Cannot be used for LKC-LKZ-LCT-LMT. ⊗ Cannot be combined with PRC-PCC-GC. ⊗ Cannot be combined with KC-WKC-KFC-SKC. A: 1° increments, S: 0.1mm increments 		

⚠ Applicable ranges for the above alterations
 Tip shape Ⓐ → P ≥ 2.0mm, B ≤ 10P Tip shape Ⓓ Ⓔ Ⓕ Ⓖ → W ≥ 2.0mm, B ≤ 10W
 ⚠ For tip shape Ⓐ no key flat is provided.
 For tip shapes Ⓓ Ⓔ Ⓕ Ⓖ, the key flat position is as shown below.



Effect of the shear angle
 The benefits of adding a shear angle to the punch tip include a reduction in punching load, reduced noise, and prevention of scrap lifting.

Order **Standard order code** — Punch tip shear angle alteration
 Catalog No. — L — Tip dimension (P,W,R) — Code — Specified dimension (S-E-U-Q-A)
SPEL 16 - 70 - P12.00 - W6.00 - 3F - A11

Days to Ship **Quotation**

Type	Catalog No.	Page
	SP□□	
	SH□□	P.55
	PH□□	
	SP□□-C	P.113
	AP□□	P.137
	APH□□	P.177
	MP□□	P.197