

# PRECISION RECTANGULAR EJECTOR PINS WITH ENGRAVING

Non JIS material definition is listed on P.1351 - 1352

RoHS

Part Number	Head Thickness	P · W
(Sequential numbering designation) ERVF□M ERVF□MR	4mm	$\begin{matrix} 0 \\ -0.005 \end{matrix}$

Range of guaranteed shaft diameter precision (D) (Details P.1301)  
Step R (Details P.1302)

SKH51 equivalent  
58~60HRC  
Range of guaranteed base material hardness (Details P.1303)

1M · 1MR (1 character)	2M · 2MR (2 characters)	3M (3 characters)	4M (4 characters)	5M (5 characters)
A	BA	CBA	DCBA	EDCBA
$0.80 \leq P \leq 10.30$	$2.30 \leq P \leq 10.30$	$3.10 \leq P \leq 10.30$	$3.90 \leq P \leq 10.30$	$5.00 \leq P \leq 10.30$

Alterations Part Number **L** - **P** - **W** - **N** - Characters for engraving (0~9, A~Z, /, >, <, @, #, %) - (AKC · AWC...etc.)

**Quotation**

Alteration details P.195

Alterations	Code	Spec.	1Code
	AKC	AKC=1° increments 0 ≤ AKC < 360 When combined with KSA/WSA, 90° increments only.	
	AWC	AWC=1° increments 0 ≤ AWC < 360 When combined with KSA/WSA, 90° increments only.	
	ARC	ARC=1° increments 0 ≤ ARC < 360 When combined with KSA/WSA, 90° increments only.	
	ADC	ADC=1° increments 0 ≤ ADC < 360 When combined with KSA/WSA, 90° increments only.	
	KGA	KGA=1° increments 0 < KGA < 360	Quotation
	KGD	KGD=1° increments 0 < KGD < 360	
	HC	HC=0.1mm increments D+1 ≤ HC < H	
	HCC	HCC=0.1mm increments D+1 ≤ HCC < H-0.3	
	KSA	KSA=0.1mm increments W/2+0.1 ≤ KSA ≤ D/2-0.1	
	WSA	WSA=0.1mm increments W/2+0.1 ≤ WSA ≤ D/2-0.1	

Alterations	Code	Spec.	1Code
	TC	TC=0.1mm increments 2.0 ≤ TC < 4 (Dimensions L and N remain unchanged) 4 - TC ≤ Lmax. - L	
	NC	Dowel hole boring NC=90° increments Combination with other than NHC · NHN not available. How to order and detailed specifications P.195	
	NCW	Dowel hole boring + Spring pin driving NCW=90° increments Combination with other than NHC · NHN not available. How to order and detailed specifications P.195	
	NHC	Numbering on the head How to order P.196	
	NHN	Automatic sequential numbering on the head How to order P.196	
	CSW	C chamfering processing at 2 points on top (except tip) for relief is performed. Designation method CSW1-E25	Quotation
	CSF	C chamfering processing at 4 points (except tip) for relief is performed. Designation method CSF0.5-E30	

H	Part Number		0.01mm increments			Kmax.	N 1mm increments	Nmin.	Characters for engraving (Round Gothic type)
	Type	Character	D	L	P				
4	ERVF	1M	2	40.00~250.00	0.80~1.70	0.30~	1.9	10 ≤ (L-N) ≤ 200	0 1 2 3 4 5 6 7 8 9 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
5			2.5		0.80~2.20		2.4		
6			3		1.00~2.70		2.9		
7			3.5		1.00~3.20		3.4		
8			4		1.00~3.70		3.9		
9			4.5		1.20~4.20		4.4		
10			5		1.50~4.80		4.9		
11		2M	5.5	50.00~250.00	1.80~5.30	0.50~	5.4	10 ≤ (L-N) ≤ 200	Name Slash Greater Less Characters for engraving / > < Order code ¥ > <
12			6		2.00~5.80		5.9		
13			6.5		2.00~6.30		6.4		
14			7		2.30~6.80		6.9		
15			7.5		2.30~7.80		7.9		
16			8.5		2.30~8.30		8.4		
17			10		3.00~9.80		9.9		
18		1MR	8	50.00~250.00	2.30~7.80	0.50~	7.9	10 ≤ (L-N) ≤ 200	Name Centered dot Period Characters for engraving · · Order code @ &
19			8.5		2.30~8.30		8.4		
20		2MR	10	50.00~250.00	3.00~9.80	0.50~	9.9	10 ≤ (L-N) ≤ 200	Name Centered dot Period Characters for engraving · · Order code @ &
21	10.5		3.00~10.30		10.4				

Designate P · W dimensions within the Kmax.  $K = \sqrt{P^2 + W^2}$   $P \geq W$   
 Use ¥ for indicating / (slash), # for - (minus), % for (space), @ for · (centered dot), and & for . (period)  
 1MR and 2MR are sequential numbering designation. In the case of bulk order of two or more ejector pins with the same size, the sequential numbering engraving is performed.  
 In case of 1MR, "0" is next to "9" while "A" is next to "Z".  
 In case of 2MR, the ones digit is sequential, and if next to "9" or "Z", it starts from "0" or "A" while the tens digit is increased by one.  
 In case of 1MR and 2MR, other engraving characters cannot be used for designation.

When placing the order for 5 pieces of ERVF1MR2-150-P1.5-W0.5-N70-1, characters for engraving "1 2 3 4 5"  
 When placing the order for 3 pieces of ERVF1MR3-150-P2.5-W1.2-N70-Z, characters for engraving "Z A B"  
 When placing the order for 4 pieces of ERVF2MR4-100-P3.0-W2.0-N50-01, characters for engraving "01 02 03 04"  
 When placing the order for 4 pieces of ERVF2MR4-100-P3.5-W2.2-N50-A8, characters for engraving "A8 A9 B0 B1"  
 When placing the order for 6 pieces of ERVF2MR6-150-P5.0-W2.6-N70-1X, characters for engraving "1X 1Y 1Z 2A 2B 2C"

Ejector pins	Finished products
Reversed reading (Concave character)	Normal character (Convex character)

**Details of engraving**

Width of engraving (a)	$0.1 \times Q \sim 0.2 \times Q$
Angle of engraving (b°)	$35^\circ \pm 2^\circ$
Depth of engraving (e)	<ul style="list-style-type: none"> <li>When <math>P \leq 0.99</math> <math>0.03 \pm 0.01</math></li> <li>When <math>P \geq 1.00</math> <math>0.05 \pm 0.02</math></li> </ul>

### Relationship between Dimension (P) and Character Size (Q,Z)

P (Horizontal size)	W (Vertical size)	Q (Character Height)	Z(Character Width)				
			1M-1MR (1 character)	2M-2MR (2 characters)	3M (3 characters)	4M (4 characters)	5M (5 characters)
0.30~0.39	0.2	0.1	0.6	0.9	1.2	1.5	
0.40~0.49	0.25	0.15	0.65	1	1.3	1.65	
0.50~0.59	0.35	0.2	0.75	1.15	1.5	1.9	
0.60~0.79	0.4	0.2	0.8	1.2	1.6	2	
0.80~0.99	0.6	0.3	1	1.5	2	2.5	
1.00~1.29	0.8	0.4	1.2	1.8	2.4	3.0	
1.30~1.49	1.0	0.5	1.4	2.1	2.9	3.7	
1.50~1.99	1.2	0.6	1.6	2.4	3.3	4.2	
2.00~2.49	1.5	0.8	2	3.2	4.4	5.6	
2.50~3.49	2.0	1.0	2.6	4.2	5.8	7	
3.50~4.49	3.0	1.5	3.9	5.9	8	9.7	
4.50~5.49	4.0	2.0	5.2	7.5	10.2	12.4	
5.50~10.30	5.0	2.5	6.2	9.0	12.2	14.9	

### Precision Standard

**Squareness of the tip corner**

W plane as the base  
(Pmax. - Pmin.) ≤ 0.01

**Corner R value of the tip corner**

Rmax. ≤ 0.03 (Trimming R)  
The tip corners have been slightly trimmed to measure the P · W dimensions. (Details P.1313)

Order Part Number **L** - **P** - **W** - **N** - Characters for engraving (0~9, A~Z, /, >, <, @, #, %)

Days to Ship **Quotation**

Price **Quotation**

Rectangular Ejector Pins  
High Speed Steel SKH51 equivalent  
With Engraving P · W<sub>-0.005</sub> Free designation