

# Blocks for Shim Adjustment of Welding Jigs

Straight / Shim Sets for Straight Blocks / L-Shaped Type

**Straight Type**

**CMAJ** **CMAJW**

Material: 1045 Carbon Steel or Equivalent  
Surface Treatment: Black Oxide

Ⓢ The opposite side of the chamfering C2 is the reference planes A and B.

Part Number		L	D	d	P	P <sub>1</sub>	P <sub>2</sub>	W
Type	A							
CMAJ	16	65	6	7	—	30	52	7
	20	75	8	9	—	40	62	9
CMAJW	16	114	6	7	50	80	102	7
	20	124	8	9	50	90	112	9

**Shim Sets for Straight Blocks**

**CMAJC** **CMAJWC**

Material: Low Carbon Steel

Ⓢ This product is offered as a set of two pieces of 1 mm and 0.5 mm thickness.

Part Number		L	R	P
Type	A			
CMAJC	16	65	4	—
	20	75	5	—
CMAJWC	16	114	4	50
	20	124	5	50

**L-Shaped Type**

**CMAJL**

Material: 1045 Carbon Steel or Equivalent  
Surface Treatment: Black Oxide

Part Number		L	D	d	B	P <sub>1</sub>	P <sub>2</sub>	W
Type	A							
CMAJL	16	65	6	7	28	20	50	7
	20	100	8	9	53	40	80	9

**Shim Sets for L-Shaped Blocks**

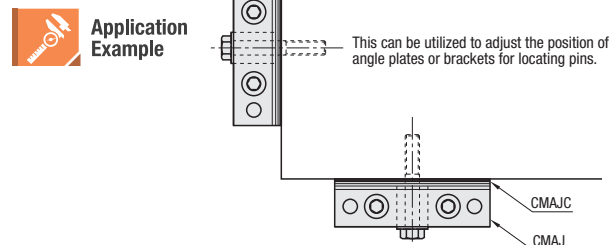
**CMAJLC**

Material: Low Carbon Steel

Ⓢ This product is offered as a set of two pieces of 1 mm and 0.5 mm thickness.

**Part Number Example**

CMAJ16  
CMAJC16  
CMAJL16  
CMAJLC20



# Work Detection Unit / Detection Pins for Weld Nut

**Work Detection Unit**

Type	Body		Pin		Spring
	Material	Surface Treatment	Material	Surface Treatment	Material
PCPNA	6061 Aluminum Alloy	Clear Anodize	1045 Carbon Steel or Equivalent	Electroless Nickel Plating	304 Stainless Steel-WPB

Accessory: Set Screw M4 1pc.  
Ⓢ Can be used in combination with Detector Pins for Weld Nuts.

Stroke		
0 (min.)	3	8 (max.)
OFF	ON	ON

Spring		S Soft	H Hard
Spring Constant (N/mm)		0.3	0.5
Outer Diameter (mm)		12	12
Wire Dia. (mm)		0.65	0.8
Inner Diameter (mm)		10.7	10.4
Free Length (mm)		20	20
Allowable Deflection		12	9

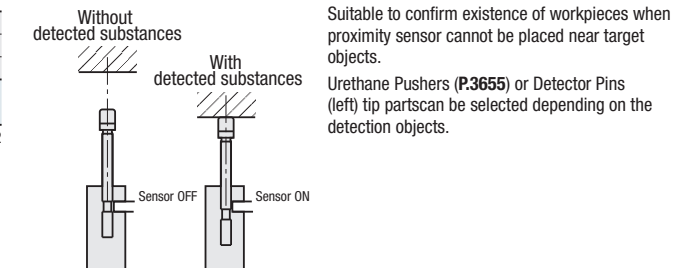
\*Example of an applicable proximity sensor (shield type of 2-Line type)  
KEYENCE: EV-108M  
OMRON: E2E-X2D1-M3G

Ⓢ A proximity sensor is not included.

Type	D	Spring Selection	L Selection	S Soft Load N		H Hard Load N	
				min	max	min	max
PCPNA	8	S Soft H Hard	30 50	1.2	3.6	2.0	6.0

kgf=Nx0.101972

Part Number - L  
PCPNA8H - 50



**Detection Pins for Weld Nut**

Type	Material	Hardness	Surface Treatment
NUTK	1045 Carbon Steel or Equivalent	—	—
BNUTK	1045 Carbon Steel or Equivalent	Hardened Hardness 45-50 HRC	Black Oxide

Ⓢ Combination of Work Detecting Unit and Cylinder is available.

**Tip Shapes**  
Select from the diagram on the right.

M x Pitch	M x Pitch	Reference:
Fine Thread	Coarse Thread	
5 x 0.5	5 x 0.8	sin 15°=0.259 sin 45°=0.707 tan 15°=0.267 tan 45°=1
6 x 0.75	6 x 1.0	sin 30°=0.5 sin 60°=0.87 tan 30°=0.577 tan 60°=1.73
8 x 0.75	8 x 1.25	

Ⓢ The center hole remains.

Tip Shape		
A Shape	B Shape	C Shape
Tapered Ⓢ P-2Etan(A/2)≥0.73	Taper R Ⓢ e=P/2tan(A/2+R-[R/sin(A/2)])	Sphere SR P/2

Type	Tip Shape	D	P		B	L	A Selection	E (A Shape) 1 mm Increment	M		
			0.1 mm Increment	1 mm Increment					Coarse Thread		Fine Thread
NUTK BNUTK	A	12	5.0-10.0	5-30 (B≤Px4)	15-20	30	1-10	5	5S		
	B	16	10.1-12.0			60		5	6	5S 6S	
	C	16	12.1-14.0			90		5	6	8 5S 6S 8S	
			12.1-14.0			120					

**Part Number Example**

Part Number - P - B - L - A - E - M

Type	Tip Shape	D
NUTK	A	12
NUTK	C	16

A Shape: A30 - E2 - M5  
C Shape: - M6