

Blocks for Shim Adjustment of Welding Fixtures / Shim Sets

Straight, L-Shaped

Straight Type

CMAJ **CMAJW**

Material: EN 1.1191 Equiv. Surface Treatment: Black Oxide

Part Number Type	A	L	D	d	P	P1	P2	W	Unit Price	Volume Discount Rate
CMAJ	16	65	6	7	-	30	52	7	1 ~ 9 pc(s).	10 ~ 30 pcs.
	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: EN 1.0330 Equiv.

Part Number Type	A	L	R	P	Unit Price	Volume Discount Rate
CMAJC	16	65	4	-	1 ~ 9 set(s)	10 ~ 30 sets
	20	75	5	-		
CMAJWC	16	114	4	50		
	20	124	5	50		

L-Shaped Type

CMAJL

Material: EN 1.1191 Equiv. Surface Treatment: Black Oxide

Part Number Type	A	L	D	d	B	P1	P2	W	Unit Price	Volume Discount Rate
CMAJL	16	65	6	7	28	20	50	7	1 ~ 9 pc(s).	10 ~ 30 pcs.
	20	100	8	9	53	40	80	9		

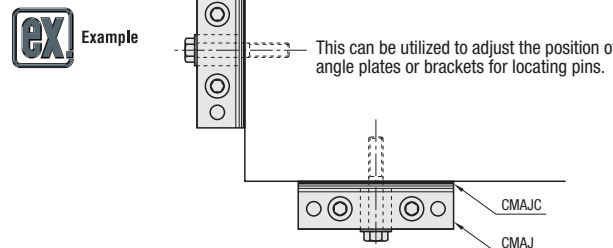
Shim Sets for L-Shaped Blocks

CMAJLC

Material: EN 1.0330 Equiv.

Part Number Type	A	L	R	Unit Price	Volume Discount Rate
CMAJLC	16	42	4	1 ~ 9 set(s)	10 ~ 30 sets
	20	54	5		

Ordering Example
Part Number
 CMAJ16
 CMAJC16
 CMAJL16
 CMAJLC20



Workpiece Detection System / Detection Pins for Weld Nuts

Workpiece Detection System

PCPNA

Material: EN 1.1191 Equiv. Surface Treatment: Black Oxide

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

Spring	S (Soft)	H (Hard)
Spring Constant (N/mm)	0.3	0.5
O.D. (mm)	12	12
Wire Dia. (mm)	0.65	0.8
I.D. (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

Type	D	Spring Selection	L Selection	S (Soft)		H (Hard)		Unit Price
				Load (N) min	Load (N) max	Load (N) min	Load (N) max	
PCPNA	8	S (Soft)	30	1.2	3.6	2.0	6.0	kgf=Nx0.101972
				H (Hard)	50			

Ordering Example: **Part Number** - **L**
PCPNA8H - **50**

Suitable to confirm existence of workpieces when proximity sensor cannot be placed near target objects.
 For Urethane Pushers (P.1553) or Detector Pins (below), tip parts can be selected depending on the objects to be detected.

Detection Pins for Weld Nuts

Type	Material	Hardness	Surface Treatment	MxPitch Fine	MxPitch Coarse
NUTK	EN 1.1191 Equiv.	-	-	5x0.5	5x0.8
BNUTK	EN 1.1191 Equiv.	Hardened Hardness: 45 ~ 50HRC	Black Oxide	6x0.75	6x1.0
				8x0.75	8x1.25

Reference: $\sin 15^\circ = 0.259$, $\sin 30^\circ = 0.5$, $\sin 45^\circ = 0.707$, $\sin 60^\circ = 0.87$, $\tan 15^\circ = 0.267$, $\tan 30^\circ = 0.577$, $\tan 45^\circ = 1$, $\tan 60^\circ = 1.73$

Combination of Workpiece Detecting Unit and Cylinder is available.

Tip Shape: Select from the diagram on the right.

Part Number Type	Tip Shape	D	P	B	L	A	E	M	Unit Price
NUTK	A	12	5.0~10.0	5~30 (BxPx4)	15~20	30	1~10	5	5S
	B	16	10.1~12.0			60		5	6
	C	16	12.1~14.0			90		5	6
BNUTK	A	12	5.0~10.0	5~30 (BxPx4)	15~20	30	1~10	5	5S
	B	16	10.1~12.0			60		5	6
	C	16	12.1~14.0			90		5	6

Ordering Example: **Part Number**
Type **Tip Shape** **D** **P** **B** **L** **A** **E** **M**
 NUTK A 12 - P6.0 - B10 - L20 - A30 - E2 - M5 (Shape A)
 NUTK C 16 - P10.5 - B15 - L20 - - M6 (Shape C)