Stop Pins
Press-Fit Type, Urethane

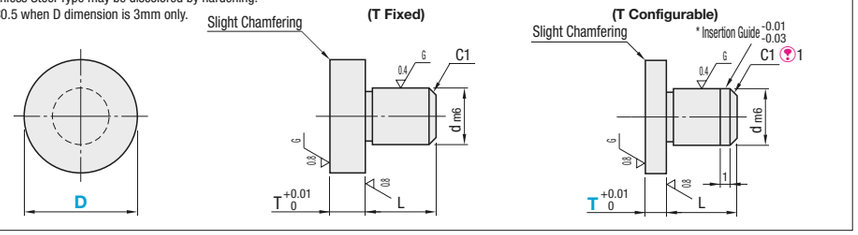
Features: Accurate stop positions can be obtained easily. The new configurable type is suitable in space saving applications and height adjusting applications.

Press-Fit Type



T	Type	M Material	H Hardness	S Surface Treatment
Fixed	STMH	EN 1.1191 Equiv.	46~50HRC	Electroless Nickel Plating
	SSTMH	EN 1.4125 Equiv.	50~55HRC	-
Configurable	STMHF	EN 1.7220 Equiv.	46~50HRC	Electroless Nickel Plating
	SSTMHF	EN 1.4125 Equiv.	40~45HRC	-

Stainless Steel Type may be discolored by hardening.
1. C0.5 when D dimension is 3mm only.



T Fixed Type

Part Number Type	D	dm6	L	T	Unit Price STMH	Unit Price SSTMH
(EN 1.1191 Equiv.) STMH / (EN 1.4125 Equiv.) SSTMH	5	3 +0.008 +0.002	5	5		
	5A		7			
	5B		5	3		
	6	4 +0.012 +0.004	6	5		
	6A		9			
	6B		6	3		
	8	5	8	5		
	8A		12			
	8B		8	3		
	10	6	8	5		
	10A		12			
	10B		8	3		
	12	8 +0.015 +0.006	10	5		
	12A		15			
	16		10			
	16A		15			
	18	10	12			
	18A		18			
	20	12 +0.018 +0.007	16			
	20A		24			

T Configurable Type

Part Number Type	D	T Configurable 0.5mm Increment	dm6	L	Unit Price STMHF	Unit Price SSTMHF
(EN 1.7220 Equiv.) STMHF / (EN 1.4125 Equiv.) SSTMHF	3	2~5	2	5		
	4	2~5	3	5		
	5	2~10	3	5		
	6	2~10	4	6		
	8	2~10	5	8		
	10	2~20	6	8		
	12	2~20	8	10		
	16	2~20	8	10		
	18	2~20	10	12		
	20	2~20	12	16		

Ordering Example

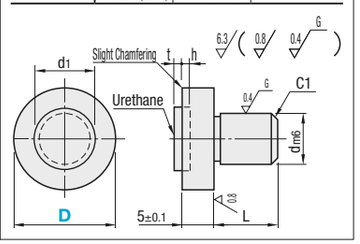
	Part Number	-	T
(T Fixed)	STMH16		
(T Configurable)	SSTMHF3	-	5

Features: Urethane absorbs shock.

Press-Fit Urethane Type



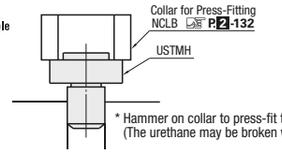
Type	M Material	H Hardness	S Surface Treatment
USTMH	EN 1.7220 Equiv.	46~50HRC	Electroless Nickel Plating
	Urethane (Black)	Shore A90	-
USSTMH	EN 1.4125 Equiv.	50~55HRC	-
	Urethane (Black)	Shore A90	-



Part Number Type	D	dm6	t	h	L	d1	Collar for Press-Fitting	Unit Price USTMH	Unit Price USSTMH
USTMH USSTMH	5	3 +0.008 +0.002	1.5	0.7	5	3	NCLB3-6-10		
	6	4 +0.012 +0.004		1.5	6	4	NCLB4-8-10		
	8	5			8	6	NCLB5-10-10		
	10	6	2.0	2.0		8	NCLB8-12-10		
	12	8 +0.015 +0.006			10	10	NCLB10-16-10		
	16					12	NCLB10-20-10		
	18	10			12	13	NCLB12-20-10		-
	20	12 +0.018 +0.007			16	15	NCLB16-20-10		

* Collar for press-fitting is not included.

Example

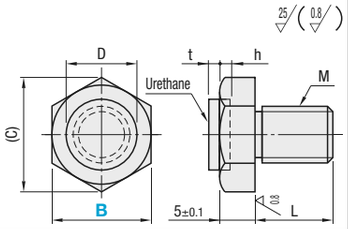


* Hammer on collar to press-fit the pin.
(The urethane may be broken when directly hammered.)

Screw-with-Urethane Type

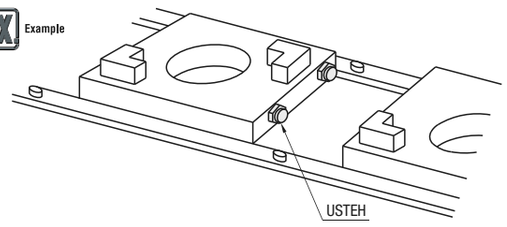


Type	M Material	H Hardness	S Surface Treatment
USTEH	EN 1.7220 Equiv.	46~50HRC	Electroless Nickel Plating
	Urethane (Black)	Shore A90	-
USSTEH	EN 1.4301 Equiv.	-	-
	Urethane (Black)	Shore A90	-



Part Number Type	B	M (Coarse)	t	h	L	D	(C)	Unit Price USTEH	Unit Price USSTEH
USTEH USSTEH	5.5	3	1.5	0.7	5	3.5	6.4		
	7	4		1.5		5	8.1		
	8	5			6	6	9.2		
	10	6	2.0	2.0		8	11.5		
	13	8			10	10	15		
	14						16.2		
	17	10			12	13	19.6		
	19	12			15	15	21.9		

Example



Ordering Example

Part Number
USTMH10
USTEH13

Stop Pins
Screw Type, Wrench Hole Type

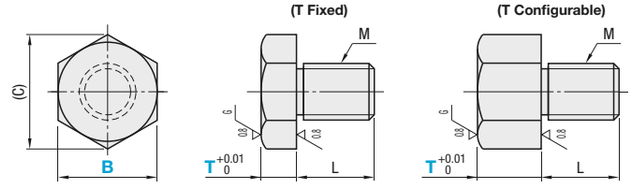
Features: Accuracy in Stop Positions is easily obtainable. Select Flat or Sphere Type according to the object shapes.

Screw Flat Type



T	Type	M Material	H Hardness	S Surface Treatment
Fixed	STEHN	EN 1.7220 Equiv.	46~50HRC	Electroless Nickel Plating
	SSTEH	EN 1.4125 Equiv.	50~55HRC	-
Configurable	STFHN	EN 1.7220 Equiv.	32~38HRC	Electroless Nickel Plating
	SSTFH	EN 1.4125 Equiv.	40~45HRC	-

Stainless Steel Type may be discolored by hardening.



T Fixed Type

Part Number Type	B	T	M (Coarse)	L	(C)	Unit Price STEHN	Unit Price SSTEHN
(EN 1.7220 Equiv.) STEHN / (EN 1.4125 Equiv.) SSTEH	5.5A	3	3	5	6.4		
	5.5	5	3	5	6.4		
	7	5	4	5	8.1		
	8	5	5	6	9.2		
	10	5	6	6	11.5		
	10B	8	6	9	11.5		
	13	5	8	10	15		
	13A	5	8	10	15		
	14B	8	8	12	15		
	14	5	8	10	16.2		
	14A	8	8	10	16.2		
	14B	8	8	12	16.2		
	17	5	10	12	19.6		
	17A	8	10	12	19.6		
	17B	8	10	15	19.6		
	19	5	12	15	21.9		
	19A	8	12	15	21.9		
	19B	8	12	18	21.9		

T Configurable Type

Part Number Type	B	T Configurable 0.5mm Increment	M (Coarse)	L	(C)	Unit Price STFHN	Unit Price SSTFH
(EN 1.7220 Equiv.) STFHN / (EN 1.4125 Equiv.) SSTFH	5.5	2.0~10.0	3	5	6.4		
	7	2.0~10.0	4	5	8.1		
	8	2.0~10.0	5	6	9.2		
	10	5.0~30.0	6	6	11.5		
	13	5.0~30.0	8	10	15		
	14	5.0~30.0	8	10	16.2		
	17	10.0~50.0	10	12	19.6		
	19	10.0~50.0	12	15	21.9		

Ordering Example

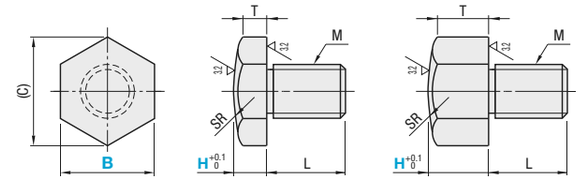
	Part Number	-	H
(T Fixed) (T Configurable)	STEHN5.5A STFHN10	-	6.5

Screw Spherical Type



H	Type	M Material	H Hardness	S Surface Treatment
Fixed	BSTEH	EN 1.7220 Equiv.	46~50HRC	Electroless Nickel Plating
	SBTEH	EN 1.4125 Equiv.	50~55HRC	-
Configurable	BSTFH	EN 1.7220 Equiv.	32~38HRC	Electroless Nickel Plating
	SBTFH	EN 1.4125 Equiv.	40~45HRC	-

Stainless Steel Type may be discolored by hardening.



H Fixed Type

Part Number Type	B	H	M (Coarse)	L	(C)	T	SR	Unit Price BSTEH	Unit Price SBTEH
BSTEH SBTEH	5.5	5	3	5	6.4	4.3	7.5		
	7		4		8.1	4	8.5		
	8		5	6	9.2	3.9	10		
	10	8	6	9	11.5	6.5	12		
	10B			10	15	6.1	16		
	13		8		16.2	6.1	18		
	14			12					
	14B				19.6	7.7	22		
	17	10	10	15	21.9	7.5	25		
	19		12	18					
	19B								

H Configurable

Part Number Type	B	H 0.5mm Increment	M (Coarse)	L	(C)	T	SR	Unit Price BSTFH	Unit Price SBTFH
BSTFH SBTFH	5.5	2.0~10.0	3	5	6.4	R0.7	7.5		
	7		4		8.1	R1	8.5		
	8		5	6	9.2	R1.1	10		
	10		6		11.5	R1.5	12		
	13	5.0~30.0	8	10	15	R1.9	16		
	14				16.2	R1.9	18		
	17	10.0~50.0	10	12	19.6	R2.3	22		
	19		12	15	21.9	R2.5	25		

Ordering Example

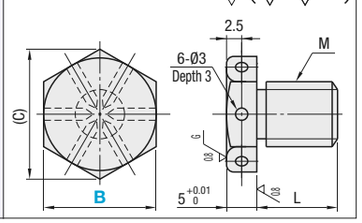
	Part Number	-	H
(H Fixed) (H Configurable)	BSTEH10B SBTFH8	-	8.5

Features: Can be used in limited spaces.

Wrench Hole Type



Type	M Material	H Hardness	S Surface Treatment
STEHNW	EN 1.7220 Equiv.	46~50HRC	Electroless Nickel Plating
SSTEHW	EN 1.4125 Equiv.	50~55HRC	-



Part Number Type	B	M (Coarse)	L	(C)	Unit Price STEHNW	Unit Price SSTEHW
STEHNW SSTEHW	10	6	6	11.5		
	13	8	10	15		
	14			16.2		
	17	10	12	19.6		
	19	12	15	21.9		

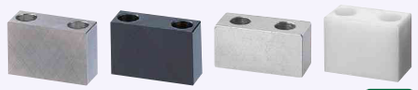
Ordering Example

Part Number
STEHNW14

Stopper Blocks

Features: Hole types are selectable.

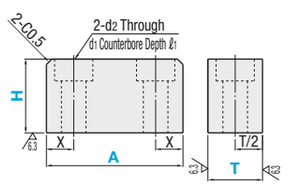
Straight Type



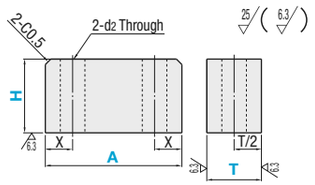
RoHS

Type		Material	Hardness	Surface Treatment
Counterbored Hole	Through Hole			
SBHB	SBKHB	EN 1.1191 Equiv.	-	Black Oxide
SBHM	SBKHM		-	Electroless Nickel Plating
SBHHB	-		40HRC~	Black Oxide
SBHHM	SBKHHM			Electroless Nickel Plating
SBHU	-	Urethane	Shore A90	-
SBHJ	-	Polyacetal	-	-

Counterbored Hole



Through Hole



Part Number (Counterbored Hole)	Part Number (Through Hole)	A Selection	H 5mm Increment	T Counterbored Hole	T Through Hole	X	d1	d2	ℓ1	T	Unit Price SBHB SBKHB	SBHM SBKHM	SBHHB	SBHHM SBKHHM	SBHU	SBHJ
SBHB	SBKHB	20 30 40 50	(5) 10~40	10	10	5	8	4.5	4.5	10, A10						
SBHM	SBKHM	30 40 50 60	(10) 15~50	15	A10	7	9.5	5.5	5.5	15, A15						
SBHHB		30 40 50 60 70 80	(15) 20~50	20	15	8	11	6.5	6.5	20						
SBHHM	SBKHHM	40 50 60 70 80 90 100	(20) 30~50	30	A15	10	14	9	9	30						
SBHU																
SBHJ																

A≥H H dimension in ( ) is for Through Hole Type only.

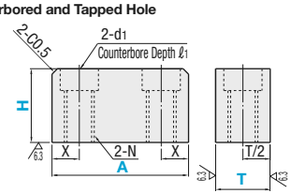
Tapped Hole Type

RoHS

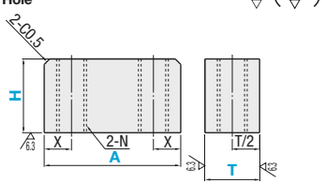


Type		Material	Hardness	Surface Treatment
Counterbored and Tapped Hole	Tapped Hole			
SBNB	SBKNB	EN 1.1191 Equiv.	-	Black Oxide
SBNM	SBKNM		-	Electroless Nickel Plating
SBNHB	-		40HRC~	Black Oxide
SBNHM	SBKNHM			Electroless Nickel Plating

Counterbored and Tapped Hole



Tapped Hole



Part Number (Counterbored and Tapped Hole)	Part Number (Tapped Hole)	A Selection	H 5mm Increment	T Counterbored and Tapped Hole	T Tapped Hole	X	d1	ℓ1	N	T	Unit Price SBNB SBKNB	SBNM SBKNM	SBNHB	SBNHM SBKNHM
SBNB	SBKNB	20 30 40 50	(5) 10~40	10	10	5	8	4.5	M5	10, A10				
SBNM	SBKNM	30 40 50 60	(10) 15~50	15	A10	7	9.5	5.5	M6	15, A15				
SBNHB		30 40 50 60 70 80	(15) 20~50	20	15	8	11	6.5	M8	20				
SBNHM	SBKNHM	40 50 60 70 80 90 100	(20) 30~50	30	A15	10	14	9	M10	30				

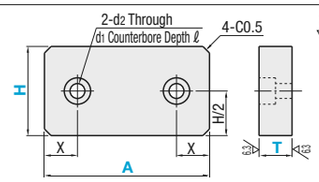
A≥H H dimensions in ( ) are for Tapped Hole Type only.

Plate Type



RoHS

Type	Material	Hardness	Surface Treatment
SBFB	EN 1.1191 Equiv.	-	Black Oxide
SBFM		-	Electroless Nickel Plating
SBFHB		40HRC~	Black Oxide
SBFHM		40HRC~	Electroless Nickel Plating



Part Number	A Selection	H 5mm Increment	T	X	d1	d2	ℓ	Unit Price SBFB	SBFM	SBFHB	SBFHM
SBFB	20 30 40 50	10~30	5	5	-	5.5	-				
SBFM	20 30 40 50 60	10~40	8	5	8	4.5	4.5				
SBFHB	30 40 50 60 70 80	15~50	10	7	9.5	5.5	5.5				
SBFHM	30 40 50 60 70 80 90 100	20~50	15	8	11	6.5	6.5				

The bolt mounting hole is a through hole when T=5. A≥H

Ordering Example

Part Number	-	A	-	H	-	T
SBKHB	-	40	-	10	-	A10
SBNB	-	20	-	10	-	10
SBFB	-	30	-	15	-	5

Stopper Blocks with Urethane

Features: Best suited for easily scratched workpieces.

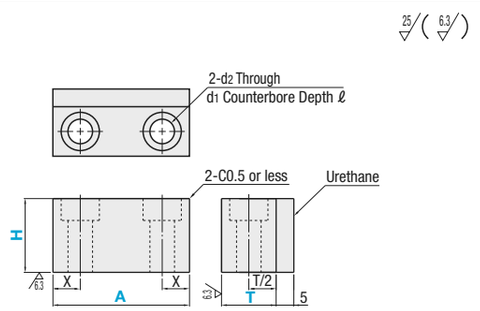
Stopper Blocks with Urethane



RoHS

Type	Urethane	Material	Surface Treatment
SBUB	Shore A90 (Natural Color)	EN 1.1191 Equiv.	Black Oxide
SBUM			Electroless Nickel Plating

Urethane is baked.
Surface treatment of verge part between core block and urethane may be peeled off about 2 ~ 3mm from edge.



Part Number Type	A Selection	H Selection	T	X	d1	d2	ℓ	Unit Price SBUB	SBUM
SBUB SBUM	30 40 50	20 25 30 40 50	15	7	9.5	5.5	5.5		
	30 40 50	25 30 40 50	20	8	11	6.5	6.5		
	40 50 60	30 40 50	30	10	14	9	9		

A≥H

Ordering Example

Part Number	-	A	-	H	-	T
SBUB	-	40	-	20	-	15

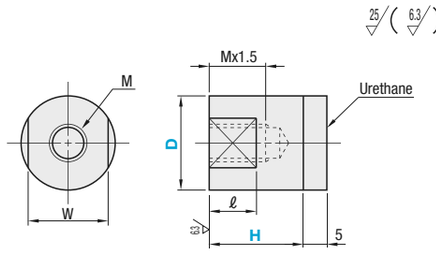
Stopper Blocks with Urethane - Cylinder Type



RoHS

Type	Urethane	Material	Surface Treatment
SBEB	Shore A90 (Black)	EN 1.1191 Equiv.	Black Oxide
SBEM			Electroless Nickel Plating

Urethane is baked.
Surface treatment of verge part between core block and urethane may be peeled off about 2 ~ 3mm from edge.



Part Number Type	D	H Selection	M (Coarse)	W	ℓ	Unit Price SBEB	SBEM
SBEB SBEM	10	20 25 30 35 40	6	8	8		
	20	25 30 35 40	10	17	10		
	30	30 35 40	12	27	15		

Ordering Example

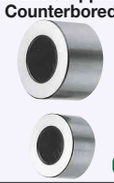
Part Number	-	D	-	H
SBEM	-	20	-	35

Round Stoppers / Shims for Round Stoppers Standard Type

Counterbored Holes, Tapped Holes

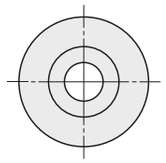
Features: Use at stop point of equipments and workpieces. Selectable from Standard/Free Type according to the applications.

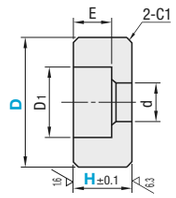
Round Stoppers - Counterbored Holes



RoHS

Standard **AST**
Configurable **ASTNF**





25 (6.3 1.6)

M Material: EN 1.1191 Equiv.
H Hardness: 40~45HRC

Standard

Part Number Type	No.	D	H	d	D1	E	Applicable Screw	Unit Price 1 ~ 19 pc(s).	Volume Discount Rate 20 ~ 99 pcs.
AST	3	12	8	3.4	6.5	3.5	M 3		
	4	16		4.4	8	4.5	M 4		
	5	19	10	5.4	9.5	5.5	M 5		
	6	20		6.6	11	6.5	M 6		
	8	25	15	9	14	8.6	M 8		
	10	28	16	11	17.5	11	M10		
	12	30	18	14	20	13.5	M12		

For orders of 100 or more pieces, please request a quotation.

Configurable

Part Number Type	No.	D 1mm Increment	H 1mm Increment	d	D1	E	Applicable Screw	Unit Price
ASTNF	3	10~15	5~30 (H≥E+1)	3.4	6.5	3.5	M 3	
	4	10~25		4.4	8	4.5	M 4	
	5	12~35		5.4	9.5	5.5	M 5	
	6	15~40		6.6	11	6.5	M 6	
	8	16~50		9	14	8.6	M 8	
	10	22~50		11	17.5	11	M10	
	12	24~50		14	20	13.5	M12	

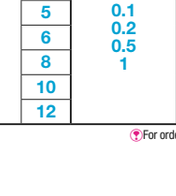
Round Stoppers - Tapped Holes



RoHS

Standard **ASTM**
Configurable **ASTMF**





25 (1.6)

M Material: EN 1.1191 Equiv.
H Hardness: 40~45HRC

Standard

Part Number Type	No.	D	H	M (Coarse)	B	Unit Price 1 ~ 19 pc(s).	Volume Discount Rate 20 ~ 99 pcs.
ASTM	3	12	8	M3	10		
	4	16		M4	14		
	5	19	10	M5	17		
	6	20		M6			
	8	25	15	M8	22		
	10	28	16	M10	24		
	12	30	18	M12	27		

For orders of 100 or more pieces, please request a quotation.

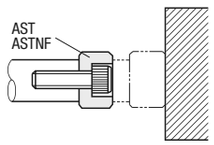
Configurable

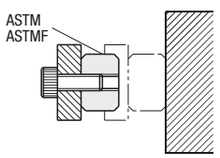
Part Number Type	No.	D 1mm Increment	H 1mm Increment	M (Coarse)	B	Unit Price
ASTMF	3	10~15	5~30 (H≤Mx4)	M3	D-2	
	4	10~25		M4		
	5	12~35		M5		
	6	15~40		M6		
	8	16~50		M8		
	10	22~50		M10		
	12	24~50	6~30	M12		

Ordering Example

Part Number	-	D	-	H	
AST8					(Counterbored Standard Type)
ASTNF3	-	12	-	10	(Counterbored Configurable Type)
ASTM6					(Tapped Hole Standard Type)
ASTMF5	-	12	-	15	(Tapped Hole Configurable Type)

Example



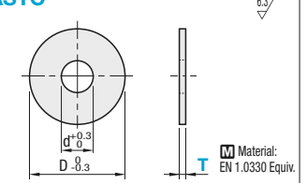


Shims for Round Stoppers Standard Type



RoHS

ASTC



For Configurable Type Shims, see P.Z-157

Ordering Example

Part Number	-	T
ASTC3	-	0.1

Part Number Type	No.	T Selection	d	D	Unit Price 1 ~ 19 pc(s).	Volume Discount Rate 20 ~ 50 pcs.
ASTC	3	0.1 0.2 0.5 1	4	12		
	4		5	16		
	5		6	19		
	6		8	20		
	8		10	25		
	10		12	28		
	12		14	30		

For orders larger than indicated quantity, please request a quotation.

Flat Stoppers / Shims for Flat Stoppers Standard Type

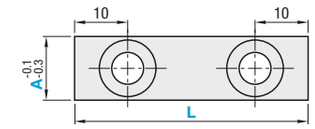
Flat Stoppers - T, L Selectable / T, L Configurable

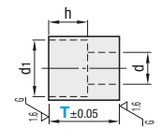


RoHS

Type T, L Selectable	Type T, L Configurable	M Material	H Hardness
FSWN	FSWNF	EN 1.1191 Equiv.	40~45HRC
FSWJ	FSWJF	Polyacetal	-

6.3 (1.6 G) for 1.6 G area of FSWJ, FSWJF and FSWNF.





T, L Selectable

Part Number Type	A	T Selection	L Selection	d	d1	h	Unit Price FSWN	Unit Price FSWJ
FSWN FSWJ	12	12 15 20	50 75 100	4.5	8	5		
	15			5.5	9.5	6		
	16							
	19			6.6	11	7		
	25							

T, L Configurable

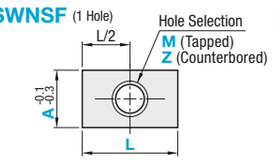
Part Number Type	A	T 1mm Increment	L 5mm Increment	d	d1	h	Unit Price FSWNF	Unit Price FSWJF
FSWNF FSWJF	12	10~20	35~100	4.5	8	5		
	15			5.5	9.5	6		
	16							
	19			6.6	11	7		
	25							

Flat Stoppers - Hole Selectable

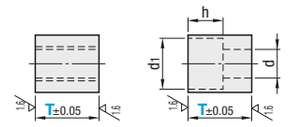


RoHS

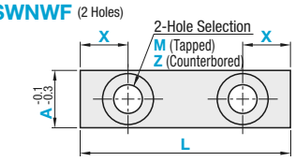
FSWNSF (1 Hole)



Hole Details M (Tapped Hole) Z (Counterbored Hole)



FSWNWF (2 Holes)



Counterbore Dimensions

	d	d1	h
Z4	4.5	8	5
Z5	5.5	9.5	6
Z6	6.6	11	7

M Material: EN 1.1191 Equiv. H Hardness: 40~45HRC

Hole Selectable: One-Hole

Part Number Type	A	T 1mm Increment	L 1mm Increment	Hole Selection M (Tapped)	Hole Selection Z (Counterbored)	Unit Price
FSWNSF	12	10~15	A≤L≤60	M4, 5, 6	Z4, 5	
	15				Z4, 5, 6	
	16					
	19	10~20		M6	Z6	
	25					

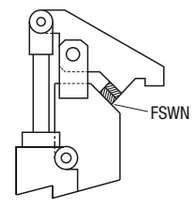
Hole Selectable: Two-Hole

Part Number Type	A	T 1mm Increment	L 1mm Increment	X 1mm Increment	Hole Selection M (Tapped)	Hole Selection Z (Counterbored)	Unit Price
FSWNWF	12	10~15	35~100	10~30	M4, 5, 6	Z4, 5	
	15					Z4, 5, 6	
	16						
	19	10~20			M6	Z6	
	25						

Ordering Example

Part Number	-	T	-	L	-	X	-	Hole Selection
FSWN12	-	15	-	75				
FSWNSF16	-	12	-	16			-	Z5
FSWNWF16	-	15	-	40	-	X10	-	M6

Example

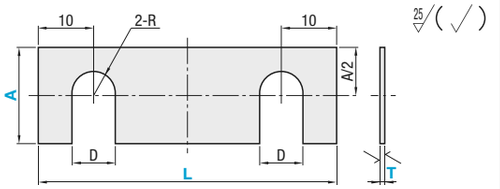


Shims for Flat Stoppers Standard Type



RoHS

Type	M Material	S Surface Treatment	T
FSWNC	EN 1.4301 Equiv.	-	0.1 0.2 0.3
	EN 1.0330 Equiv.	Black Oxide	0.5 1



Part Number Type	A	T Selection EN 1.4301 Equiv.	T Selection EN 1.0330 Equiv.	L Selection	D	Unit Price T0.1, 0.2, 0.3	Unit Price T0.5, 1
FSWNC	12	0.1 0.2 0.3	0.5 1	30 50 75 100	5		
	15				6		
	16						
	19				7		
	25						

For Shims for T and L Configurable Flat Stoppers, see P.Z-161

Ordering Example

Part Number	-	T	-	L
FSWNC12	-	0.1	-	75

Shock Absorption Stoppers

Bolts / Hex Socket Head Cap Screws with Low Elastic Rubber Head

■Bolts with Low Elastic Rubber Head



RoHS

Type	Stopper		Screw	Hex Nut
	Material	Hardness	Material	Material
UNST	Low Elastic Rubber (Hanenaito® RGP-60L)	Shore A57	EN 1.4301 Equiv.	EN 1.4301 Equiv.

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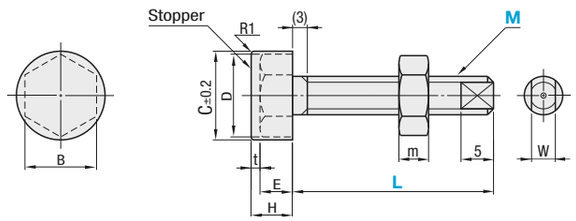

Part Number Type	M (Coarse)	L Selection	t	C	D	B	H	E	Shock Absorption Amount (kgf · cm)	Withstand Load (kgf)	m	W	Unit Price
UNST	3	10 15 20	4	8	6.15	5.5	6	2	0.045	2.2	1.8	2	
	4	10 15 20 30	4.2	10	7.7	7	7	2.8	0.069	3.4	2.4	3	
	5	20 30 40	4.5	12	8.8	8	8	3.5	0.112	5.4	3.2	4	
	6	20 30 40	5	15	11.1	10	9	4	0.207	9.4	3.6	4.5	
	8	30 40 50	5.7	18	14.4	13	11	5.3	0.350	14.2	5	6.5	
	10	30 40 50	5.6	21	17.8	16	12	6.4	0.517	23.4	6	8	

■Hex Socket Head Cap Screws with Low Elastic Rubber Head



RoHS

Type	Stopper		Screw	Hex Nut
	Material	Hardness	Material	Material
UNSTH	Low Elastic Rubber (Hanenaito® RGP-60L)	Shore A57	EN 1.4301 Equiv.	EN 1.4301 Equiv.

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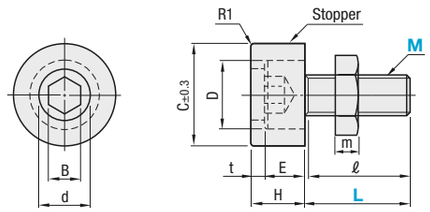


Part Number Type	M (Coarse)	L Selection	t	C	D	d	B	H	E	Shock Absorption Amount (kgf · cm)	Withstand Load (kgf)	m	ℓ	Unit Price
UNSTH	4	10 15 20 *30	4.2	11	7	5	3	8.2	4	0.055	2.4	3.2	Full Thread (22)	
	5	15 20	4.5	13	8.5	7	4	9.5	5	0.072	3.0	4	Full Thread	
	6	15 20 25 30 *40	5	18	10	8	5	11	6	0.197	7.4	5	Full Thread (26)	
	8	25 30	5.7	20	13	9	6	13.7	8	0.272	8.8	6.5	Full Thread	
	10	30 40 *50	5.6	25	16	12	8	15.6	10	0.444	14.4	8	Full Thread (34)	

ℓ dimension for * marked L dimension is in ( ).

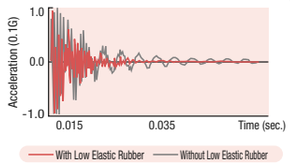
Part Number - L

UNST8 - 40
UNSTH4 - 20

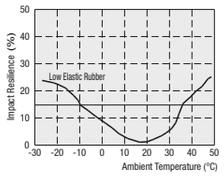
■Material with Excellent Shock Absorption

· Low Elastic Rubber

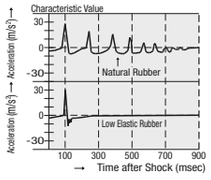
It is used as cushioning material for pallet damper, conveyor machine, precision instrument etc, because of its good elongation and shock absorption. Also it is used as vibration absorption materials of various precision instruments because of its excellent vibration absorption.



■Impact Resilience Variation by Temperature of Low Elastic Rubber



■Shock Absorption of Low Elastic Rubber

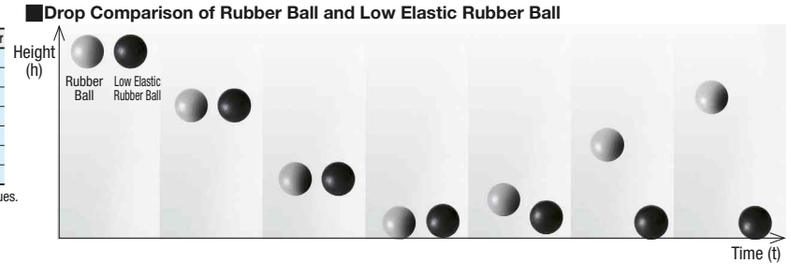


■Properties

Item	Unit	Low Elastic Rubber
Hardness	(JIS-A)	57
Tensile Strength	(MPa)	8.3
(Same as above)	(kgf/cm2)	85
Elongation	(%)	810
Impact Resilience	(%)	2
Compression Set	70°C x 22hr (%)	16
Specific Gravity		1.35

Above data are standard values, not guaranteed values.

■Drop Comparison of Rubber Ball and Low Elastic Rubber Ball



Washers, Stoppers with Plates

Urethane Type, Low Elastic Rubber Type

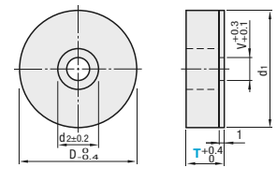
■Urethane Type Urethane Stoppers with Washers

RoHS



Urethane is baked on a EN 1.4301 Equiv. plate.

Type	Urethane		Washer
	Material	Hardness	Material
UPWH	Ether Polyurethane (Black)	Shore A90	EN 1.4301 Equiv.



Part Number Type	No.	T	D	d1	d2	V	Unit Price	Volume Discount Rate 1 ~ 4 pc(s).	5 ~ 19 pcs.	20 ~ 49 pcs.	50 ~ 200 pcs.
UPWH	3	7	15	14	6	3					
		10									
	4	8	20	19	8	4					
		15									
	5	9	25	24	9.5	5					
		20									
	6	10	30	29	11	6					
		25									
	8	12	40	39	14	8					
		30									
	10	14	50	49	17	10					
		35									

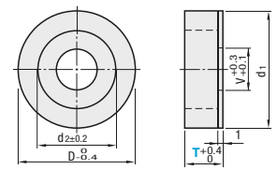
■Urethane Type Urethane Stoppers with Washers for Extra Low Head Screws

RoHS



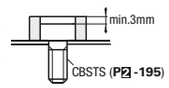
Urethane is baked on a EN 1.4301 Equiv. plate.

Type	Urethane		Washer
	Material	Hardness	Material
USWH	Ether Polyurethane (Black)	Shore A90	EN 1.4301 Equiv.



Part Number Type	No.	T	D	d1	d2	V	Unit Price
USWH	3	4	11	10	7	3.5	
		7					
	4	4	13	12	9	4.5	
		7					
	5	4	14	13	10	6	
		7					
	6	4	15	14	11	7	
		7					

Example



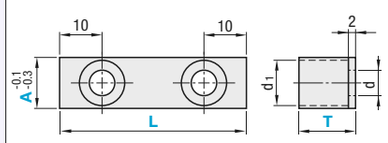
■Urethane Type Urethane Stoppers with Plates

RoHS



Urethane is baked on a EN 1.4301 Equiv. plate.
* Use low head bolts.

Type	Urethane		Plate
	Material	Hardness	Material
UPPL	Ether Polyurethane (Black)	Shore A90	EN 1.4301 Equiv.



Part Number Type	A	T Selection	L Selection	d	d1	Unit Price
UPPL	12	6	30	3.5	6.5	
			50			
	15	8	50	4.5	8.0	
	19	10	75			

Ordering Example — Part Number - T - L

UPWH4 - 8
USWH3 - 7
UPPL12 - 6 - 30

■Low Elastic Rubber Type Low Elastic Rubber Stoppers with Washers

RoHS



Rubber is baked on a EN 1.4301 Equiv. plate.

Type	Rubber		Washer
	Material	Hardness	Material
TUPWH	Low Elastic Rubber (Hanenaito® GP-60L)	Shore A57	EN 1.4301 Equiv.

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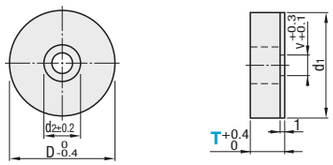
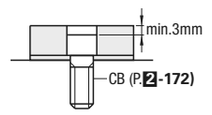
For features of the Low Elastic Rubber, see P.1723



Part Number Type	No.	T	D	d1	d2	V	Shock Absorption Amount (kgf · cm)	Withstand Load (kgf)	Unit Price
TUPWH	3	7	15	14	6	3	0.112	4.2	
		10					0.161	3.6	
	4	8	20	19	8	4	0.261	8.0	
		15					0.474	6.8	
	5	9	25	24	9.5	5	0.523	14.0	
	6	10	30	29	11	6	0.919	21.4	
		25					2.018	16.4	
	8	12	40	39	14	8	2.221	41.6	

Example



■Low Elastic Rubber Type Low Elastic Rubber Stoppers with Plates

RoHS



Rubber is baked on a EN 1.4301 Equiv. plate.

Type	Rubber		Plate
	Material	Hardness	Material
TUPPL	Low Elastic Rubber (Hanenaito® GP-60L)	Shore A57	EN 1.4301 Equiv.

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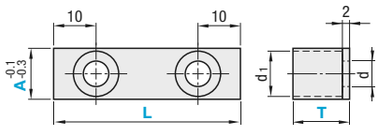
* Use low head bolts.

For features of the Low Elastic Rubber, see P.1723



Part Number Type	A	T Selection	L Selection	d	d1	Shock Absorption Amount (kgf · cm)	Withstand Load (kgf)	Unit Price
TUPPL	12	6	30	3.5	6.5	0.217	6.6	
			50			0.577	17.6	
		10	30			0.324	6.0	
			50			0.786	14.6	
	15	10	30	3.5	6.5	0.408	7.4	
			50			1.024	19.0	
	19	10	50	4.5	8.0	1.234	23.0	
			75			2.51	47.0	

Ordering Example — Part Number - T - L

TUPWH6 - 10
TUPPL12 - 6 - 30

Roller Pushers / Point Pads
Low Dust Generation Type

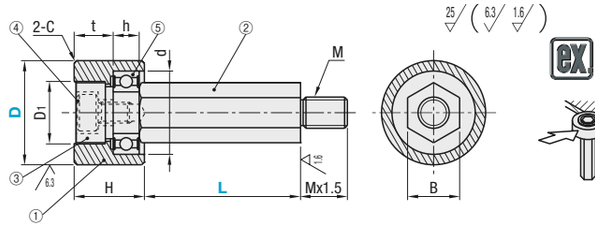
Features: Can be used for alignment adjustment for thin workpieces such as glass plates. Low dust generation bearings are used.

Roller Pushers
- Low Particle Generation Type

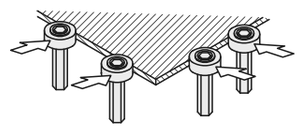


Type Components ①②③④⑤	①Cap	Material ②Post	③Holder	④Screw	⑤Bearing (Low Dust Generation)
RLLP	Polyacetal	EN 1.4301 Equiv.	EN 1.4301 Equiv.	EN 1.4567 Equiv.	SBC6□□ZZ (Stainless Steel)
RLLUP	Ultra High-Molecular-Weight Polyethylene				
RLLPK	PEEK				

* Low Dust Generation Grease Filled Bearing SBC6□□ZZ P.1009



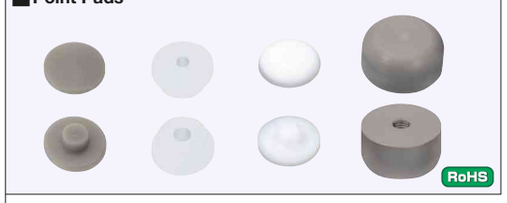
Example — As the cap rotates, it prevents the workpiece from being damaged.



Part Number Type	D	L 5mm Increment	H	D1	④Screw	C	t	h	d	B	M	Unit Price RLLP	RLLUP	RLLPK
RLLP RLLUP RLLPK	10	5~30	10	7.5	SCB2.6-5	0.2	5.5	2.5	7	5	M3			
	20	10~50	14	12	SCB4-6	0.5	7.5	5	16	10	M6			
	30	10~70	18	12	SCB5-8	0.5	9	8	26	13	M8			

Ordering Example: Part Number - L → RLLP10 - 20

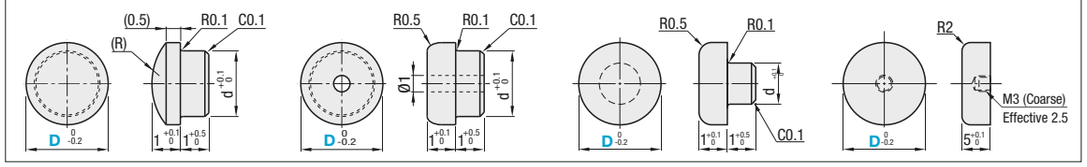
Point Pads



Type Spherical Type	Hole Type	Flat Type	Tapped Type	Material
PDKPK	-	PDAPK	PDUPK	PEEK
-	-	PDATF	-	PTFE Resin
PDKUP	PDCUP	PDAUP	PDUUP	Ultra High-Molecular-Weight Polyethylene

6.3

- Spherical Type
- Suction Hole Type
- Flat Type
- Tapped Type



Spherical Type

Features: Suitable for reducing contact area since the pads make point contacts.

Part Number Type	D	d	(R)	PDKPK (PEEK) Unit Price 1 ~ 9 pc(s).	Volume Discount Rate 10 ~ 29 pcs.	30 ~ 100 pcs.	PDKUP (Ultra High-Molecular-Weight Polyethylene) Unit Price 1 ~ 9 pc(s).	Volume Discount Rate 10 ~ 29 pcs.	30 ~ 100 pcs.
PDKPK (PEEK)	3	1.5	2.5						
	4	2	4.25						
PDKUP (Ultra High-Molecular-Weight Polyethylene)	5	2	6.5						

For orders larger than indicated quantity, please check with WOS.

Suction Hole Type

Features: Can be used for vacuum pickup of objects such as glass plates.

Part Number Type	D	d	PDCUP (Ultra High-Molecular-Weight Polyethylene) Unit Price 1 ~ 9 pc(s).	Volume Discount Rate 10 ~ 29 pcs.	30 ~ 100 pcs.
PDCUP (Ultra High-Molecular-Weight Polyethylene)	5	4			
	8	5			
	10	5			

For orders larger than indicated quantity, please check with WOS.

Flat Type

Features: Can be used when surface contacting with objects are desired.

Part Number Type	D	d	PDAPK (PEEK) Unit Price 1 ~ 9 pc(s).	Volume Discount Rate 10 ~ 29 pcs.	30 ~ 100 pcs.	PDATF (PTFE Resin) Unit Price 1 ~ 9 pc(s).	Volume Discount Rate 10 ~ 29 pcs.	30 ~ 100 pcs.	PDAUP (Ultra High-Molecular-Weight Polyethylene) Unit Price 1 ~ 9 pc(s).	Volume Discount Rate 10 ~ 29 pcs.	30 ~ 100 pcs.
PDAPK (PEEK)	3	1.5									
PDATF (PTFE Resin)	4	2									
PDAUP (Ultra High-Molecular-Weight Polyethylene)	5	2									

For orders larger than indicated quantity, please check with WOS.

Ordering Example

Part Number	
PDKPK3	(Spherical Type)
PDCUP10	(Suction Hole Type)
PDATF3	(Flat Type)
PDUPK20	(Tapped Type)

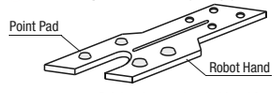
Tapped Type

Features: Can be used for screw fastening.

Part Number Type	D	PDUPK(PEEK) Unit Price 1 ~ 9 pc(s).	Volume Discount Rate 10 ~ 29 pcs.	30 ~ 100 pcs.	PDUUP (Ultra High-Molecular-Weight Polyethylene) Unit Price 1 ~ 9 pc(s).	Volume Discount Rate 10 ~ 29 pcs.	30 ~ 100 pcs.
PDUPK (PEEK)	10						
PDUUP (Ultra High-Molecular-Weight Polyethylene)	15						
	20						

For orders larger than indicated quantity, please check with WOS.

Example



Point pad prevents robot hand from contacting conveyed products directly.

Lift Pins

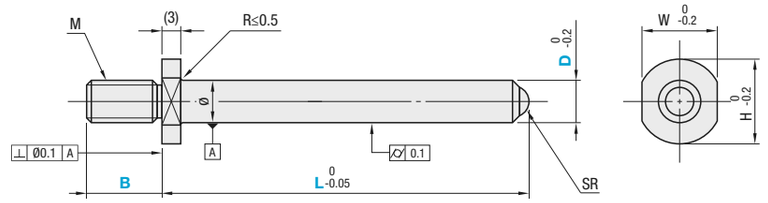
Features: Useable for lifting work objects that require isolation from metal contacts. A 50% more economical length selectable type is introduced.

Lift Pins



Type L Selectable	L Configurable	L, B Configurable	Material Main Body	Tip
-	LPCE	LPFCE	EN 1.4301 Equiv.	Ceramic (Al2O3/Alumina 99)
LPEPK	LPPK	LPFPK		PEEK
-	LPMC	LPFMC		MC Nylon

6.3



L Selectable Type

Part Number Type	D	L Selection	B Fixed	M (Coarse)	H	W	SR	Unit Price L 25, 50	L 75, 100	L 120
LPEPK	3	25 50 75 100 120	4.5	3	6	5	1.2			
	4		6	4	8	7				
	5		7.5	5	9	7	2			
	6		9	6	10	8				

L Configurable Type

Part Number Type	D	L 1mm Increment	B Fixed	M (Coarse)	H	W	SR	Unit Price L15~50 LPCE	LPPK	LPMC	L51~120 LPCE	LPPK	LPMC
LPCE LPPK LPMC	3	15~120	4.5	3	6	5	1.2						
	4		6	4	8	7							
	5		7.5	5	9	7	2						
	6		9	6	10	8							
	8	20~120	12	8	12	10	3.2						
	10		15	10	15	13							

L, B Configurable Type

Part Number Type	D	L 1mm Increment	B 0.5mm Increment	M (Coarse)	H	W	SR	Unit Price L15~50 LPCFE	LPFPK	LPFMC	L51~120 LPCFE	LPFPK	LPFMC
LPFCE LPFPK LPFMC	3	15~120	5.0~9.0	3	6	5	1.2						
	4		6.5~12.0	4	8	7							
	5		8.0~15.0	5	9	7	2						
	6		9.5~18.0	6	10	8							
	8	20~120	12.5~24.0	8	12	10	3.2						
	10		15.5~30.0	10	15	13							

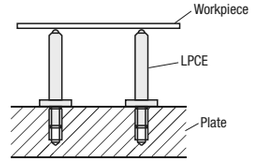
L+B≤135

Ordering Example

Part Number				
LPEPK3	-	120		(L Selectable)
LPCE4	-	72		(L Configurable)
LPFCE5	-	75	- B9.0	(L, B Configurable)

Example

Suitable for lifting high temperature objects and objects that are not to come in contact with metals.



Blocks for Shim Adjustment of Welding Fixtures / Shim Sets

Straight, L-Shaped

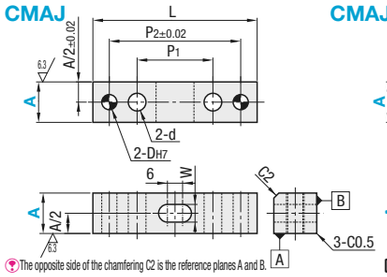
Workpiece Detection System / Detection Pins for Weld Nuts

■Straight Type

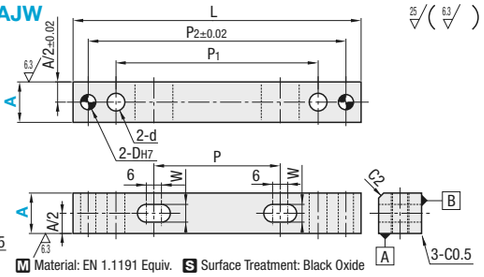


RoHS

CMAJ



CMAJW

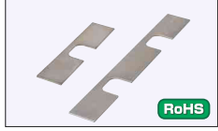


The opposite side of the chamfering C2 is the reference planes A and B.

M Material: EN 1.1191 Equiv. S Surface Treatment: Black Oxide

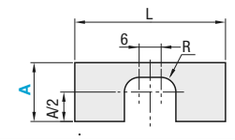
Part Number Type	A	L	D	d	P	P1	P2	W	Unit Price 1 ~ 9 pc(s).	Volume Discount Rate 10 ~ 30 pcs.
CMAJ	16	65	6	7	-	30	52	7		
	20	75	8	9		40	62	9		
CMAJW	16	114	6	7	50	80	102	7		
	20	124	8	9		90	112	9		

■Shim Sets For Straight Blocks

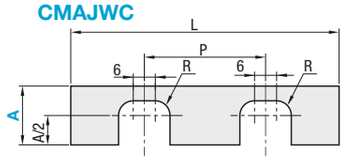


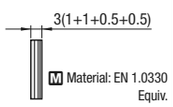
RoHS

CMAJC



CMAJWC





M Material: EN 1.0330 Equiv.

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

For orders larger than indicated quantity, please check with WOS.

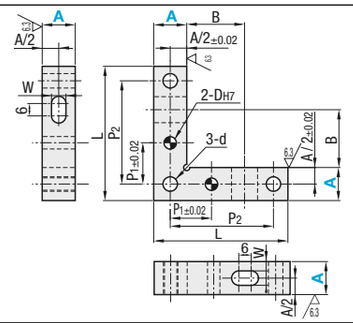
This product is offered as a set of 2 pieces of 1mm and 0.5mm thickness.

■L-Shaped Type



RoHS

CMAJL



M Material: EN 1.1191 Equiv.
S Surface Treatment: Black Oxide

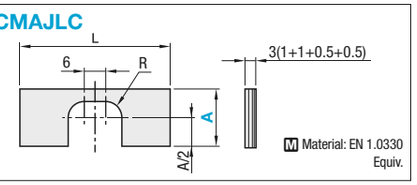
Part Number Type	A	L	D	d	B	P1	P2	W	Unit Price 1 ~ 9 pc(s).	Volume Discount Rate 10 ~ 30 pcs.
CMAJL	16	65	6	7	28	20	50	7		
	20	100	8	9	53	40	80	9		

■Shim Sets for L-Shaped Blocks



RoHS

CMAJLC



M Material: EN 1.0330 Equiv.

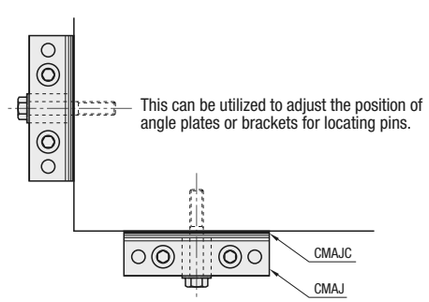
Part Number Type	A	L	R	Unit Price 1 ~ 9 set(s)	Volume Discount Rate 10 ~ 30 sets
CMAJLC	16	42	4		
	20	54	5		

This product is offered as a set of 2 pieces of 1mm and 0.5mm thickness.
For orders larger than indicated quantity, please check with WOS.

Ordering Example

Part Number
CMAJ16
CMAJC16
CMAJL16
CMAJLC20

Example



■Workpiece Detection System

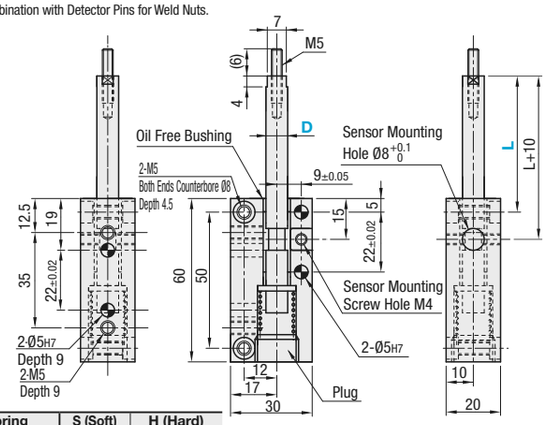


RoHS

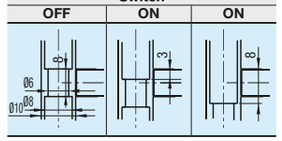
Type	Body M Material	Body S Surface Treatment	Pin M Material	Pin S Surface Treatment	Spring M Material
PCPNA	EN AW-6061 Equiv.	Clear Anodize	EN 1.1191 Equiv.	Electroless Nickel Plating	EN 1.4301 (WPB) Equiv.

A Accessory: Set Screw M4, 1pc.

Can be used in combination with Detector Pins for Weld Nuts.



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

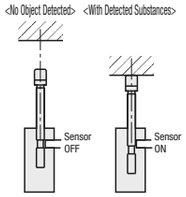
A proximity sensor is not included.

Part Number Type	D	Spring Selection	L Selection	S (Soft) Load (N) min	S (Soft) Load (N) max	H (Hard) Load (N) min	H (Hard) Load (N) max	Unit Price
PCPNA	8	S (Soft)	30	1.2	3.6	2.0	6.0	
		H (Hard)	50					

kgf=Nx0.101972

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 (**2-P.1553**) or Detector Pins (**below**), tip parts can be selected depending on the objects to be detected.

■Detection Pins for Weld Nuts

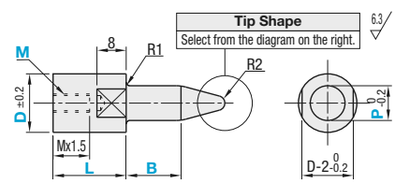


RoHS

Type	M Material	H Hardness	S Surface Treatment
NUTK	EN 1.1191 Equiv.	-	-
BNUTK		Hardened Hardness: 45 ~ 50HRC	Black Oxide

Combination of Workpiece Detecting Unit and Cylinder is available.

Tip Shape
Select from the diagram on the right.

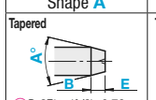


MxPitch Fine	MxPitch Coarse
5x0.5	5x0.8
6x0.75	6x1.0
8x0.75	8x1.25

Reference: sin15°≈0.259 sin30°=0.5 sin45°≈0.707 sin60°=0.87 tan15°≈0.267 tan30°=0.577 tan45°=1 tan60°=1.73

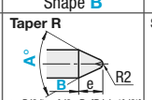
Tip Shape The center hole remains.

Shape A — Tapered



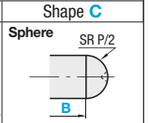
P-2Etan(A/2)≥0.73

Shape B — Taper R



e=P/2/tanA/2+R-{R/sin(A/2)}

Shape C — Sphere



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

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)