



# Value Creator IMAO

## Quick Fasteners & Machining Clamps



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# ONE-TOUCH FASTENERS



QUARTER-TURN CLAMPS



RETRACTABLE  
QUARTER-TURN CLAMPS



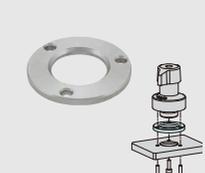
CAM RECEPTACLES



HEAVY DUTY  
QUARTER-TURN CLAMPS



RETRACTABLE HEAVY DUTY  
QUARTER-TURN CLAMPS



SPACER



LOCKING RECEPTACLE



KNOB-LOCKING PINS



BUTTON-LOCKING PINS



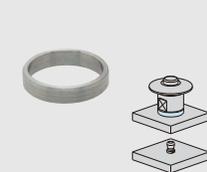
BALL-LOCK RECEPTACLES



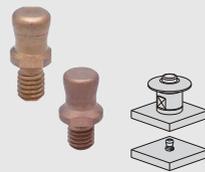
PIN HOLDING CLAMPS



SNAP-IN CLAMPS



SPACERS



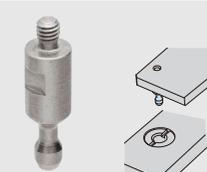
CLAMPING PINS



HOLE HOLDING CLAMPS



BALL-LOCK CLAMPING  
RECEPTACLES



BALL-LOCK CLAMPING  
PINS



MAGNET-LOCK CLAMPING  
RECEPTACLES



MAGNET-LOCK CLAMPING  
PINS



SHAFT COUPLING CLAMP

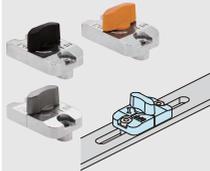


CAM RECEPTACLES



# ONE-TOUCH SLIDING LOCKS

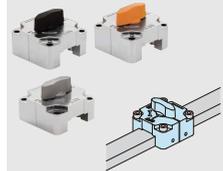
## ONE-TOUCH SLIDING LOCKS



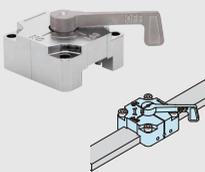
SLIDING LOCKS FOR SLOTTED HOLE



RISER PLATES FOR SLIDING LOCK



SLIDING LOCKS FOR SQUARE BAR

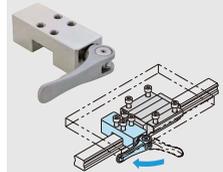


SLIDING LOCKS FOR SQUARE BAR WITH HANDLE



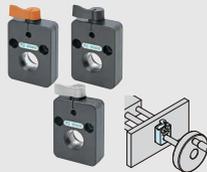
RISER PLATES FOR SLIDING LOCK

## LINEAR-MOTION STOPPERS



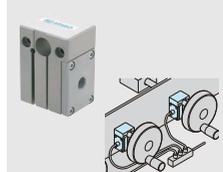
LINEAR-MOTION STOPPERS

## ONE-TOUCH SPINDLE LOCKS

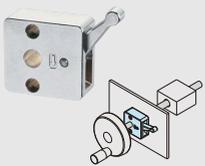


ONE-TOUCH SPINDLE LOCKS

## QUICK SHAFT-LOCKING CLAMPS



QUICK SHAFT-LOCKING CLAMPS (Pneumatic)



QUICK SHAFT-LOCKING CLAMPS

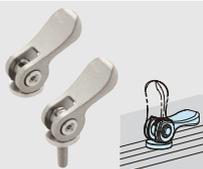


# HANDLES & KNOBS

## HANDLES



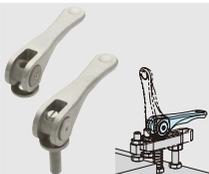
ADJUSTABLE-TORQUE  
HANDLES



COMPACT CAM HANDLES



CAM HANDLES



CAM HANDLES

## KNOBS



ONE-TOUCH LOCKING  
KNOBS



POINTER PLATE



TORQUE LIMITING KNOBS



# MECHANICAL LINEAR ACTUATORS

## COMPACT MECHANICAL LINEAR ACTUATORS



COMPACT MECHANICAL LINEAR ACTUATORS



COMPACT MECHANICAL LINEAR ACTUATORS (Synchro-Use)

## MECHANICAL LINEAR ACTUATORS



MECHANICAL LINEAR ACTUATORS



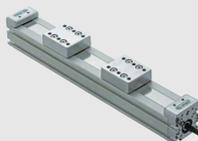
MECHANICAL LINEAR ACTUATORS (Customized Stroke)



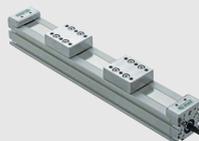
MECHANICAL LINEAR ACTUATORS WITH ADJUSTABLE GEARBOX



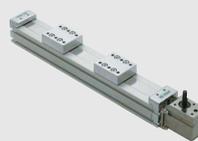
MECHANICAL LINEAR ACTUATORS WITH ADJUSTABLE GEARBOX (Customized Stroke)



MECHANICAL LINEAR ACTUATORS (Dual Carriage)



MECHANICAL LINEAR ACTUATORS (Dual Carriage, Customized Stroke)



MECHANICAL LINEAR ACTUATORS WITH ADJUSTABLE GEARBOX (Dual Carriage)



MECHANICAL LINEAR ACTUATORS WITH ADJUSTABLE GEARBOX (Dual Carriage, Customized Stroke)



MECHANICAL LINEAR ACTUATORS (Dual Carriage, Synchro-Use)



MECHANICAL LINEAR ACTUATORS (Dual Carriage, Synchro-Use, Customized Stroke)



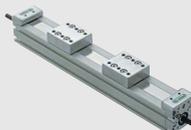
MECHANICAL LINEAR ACTUATORS WITH ADJUSTABLE GEARBOX (Synchro-Use)



MECHANICAL LINEAR ACTUATORS WITH ADJUSTABLE GEARBOX (Synchro-Use, Customized Stroke)



MECHANICAL LINEAR ACTUATORS (Dual Carriage, Synchro-Use)



MECHANICAL LINEAR ACTUATORS (Dual Carriage, Synchro-Use, Customized Stroke)



MECHANICAL LINEAR ACTUATORS WITH ADJUSTABLE GEARBOX (Dual Carriage, Synchro-Use)



MECHANICAL LINEAR ACTUATORS  
WITH ADJUSTABLE GEARBOX  
(Dual Carriage, Synchro-Use, Customized Stroke)

## ACCESSORIES



SHAFT LOCKS



ONE-TOUCH SPINDLE  
LOCKS



POSITIONING PLATE



DIGITAL POSITION  
INDICATORS



DIGITAL POSITION  
INDICATORS



POINTER



SCALES



ADAPTER SHAFTS



PLASTIC KNURLED KNOBS



PLASTIC SOLID DISK  
HANDWHEEL



PLASTIC ANGLED-SPOKE  
HANDWHEELS



PLASTIC CRANK HANDLES



PAIR OF STOPS



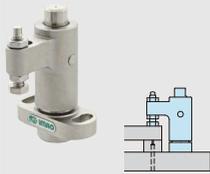
T-NUTS



GROOVE COVER



# PNEUMATIC CLAMPS



COMPACT PNEUMATIC SWING CLAMPS



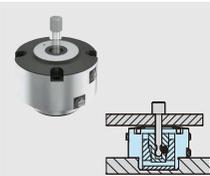
COMPACT PNEUMATIC SWING CLAMPS WITH ROD



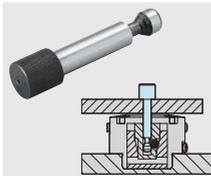
COMPACT PNEUMATIC SWING CLAMPS WITH DETECTING PORTS (Gasket Piping)



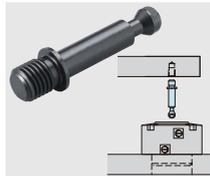
COMPACT PNEUMATIC SWING CLAMPS WITH DETECTING PORTS (Thread Piping)



PNEUMATIC PULL CLAMPS



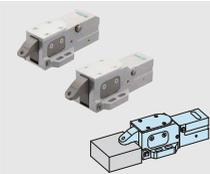
CLAMPING PINS



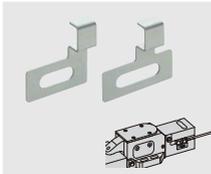
CLAMPING SCREWS



PNEUMATIC OD HOLDING CLAMPS



PNEUMATIC HOLD DOWN CLAMPS



SENSOR BRACKETS



# ONE-TOUCH CLAMPS

## ONE-TOUCH CLAMPS



SWING CLAMPS



SWING CLAMPS WITH CAM HANDLE



SWING CLAMPS WITH ADJUSTABLE HANDLE



SWING CLAMPS (Standard)



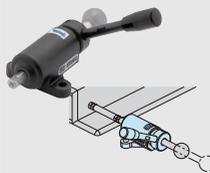
MACHINABLE CLAMP ARMS FOR STANDARD SWING CLAMPS



RETRACTABLE CLAMPS WITH CAM HANDLE



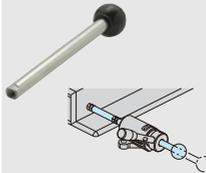
RETRACTABLE CLAMPS WITH ADJUSTABLE HANDLE



THRUST CLAMPS



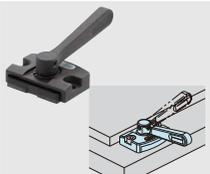
THRUST CLAMPS (Vertical)



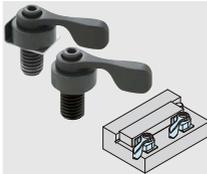
CLAMPING BARS



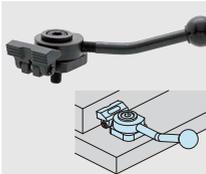
CAM EDGE CLAMPS



LOW-PROFILE CAM EDGE CLAMPS



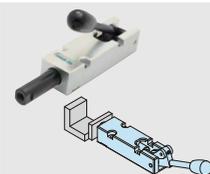
SPIRAL CAM CLAMPS



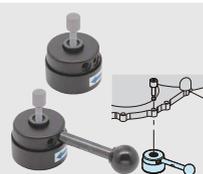
CAM EDGE CLAMPS



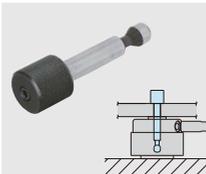
CAM PUSH CLAMPS



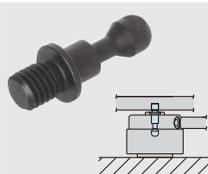
PRECISION THRUST CLAMPS



PULL CLAMPS (Standard)



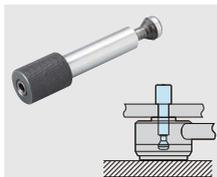
CLAMPING PINS (Standard)



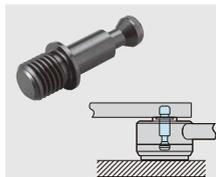
CLAMPING SCREWS (Standard)



PULL CLAMPS (Heavy)



CLAMPING PINS (Heavy)



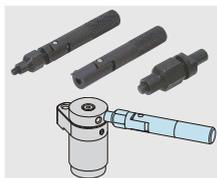
CLAMPING SCREWS (Heavy)



PUSH CLAMPS (Standard)



STANDARD HANDLES

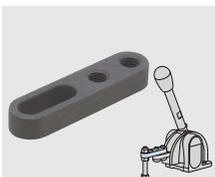


ADJUSTABLE-TORQUE HANDLES

# SNAP CLAMPS



VERTICAL-HANDLE HOLD-DOWN SNAP CLAMPS



EXTENSION ARM



ANGLE ADAPTOR



VERTICAL-HANDLE HOLD-DOWN SNAP CLAMPS(Mini)



PUSH-PULL SNAP CLAMPS

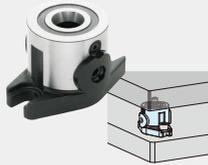


CLAMPING SPINDLES



# CLAMPS

## PULL CLAMPING SYSTEM



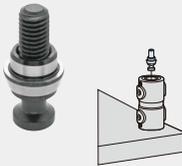
CLAMPING MODULES (Flanged)



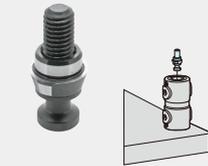
CLAMPING MODULES (Double)



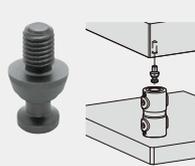
CLAMPING MODULES (Single)



TAPERED CLAMPING SCREWS



TAPERED CLAMPING SCREWS



CLAMPING SCREWS



TAPERED BUSHINGS

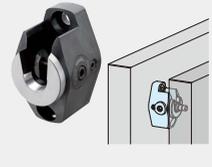


DOUBLE TAPERED CLAMPING PINS



LOCATING BUSHINGS

## PULL CLAMPING SYSTEM HOOK TYPE



CLAMPING MODULES (Hook)



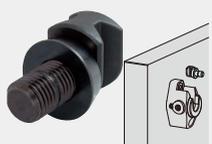
TAPERED CLAMPING SCREWS (Hook)



TAPERED CLAMPING SCREWS

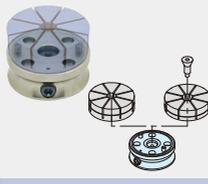


CLAMPING SCREWS (Hook)

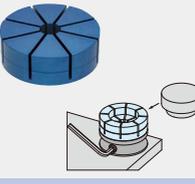


CLAMPING SCREWS

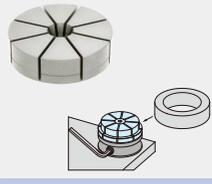
## OD / ID CLAMPS



FORM HOLDING CLAMPS



JAWS FOR EXTERNAL FORM HOLDING



JAWS FOR INTERNAL FORM HOLDING



TAPERED SCREWS FOR INTERNAL FORM HOLDING



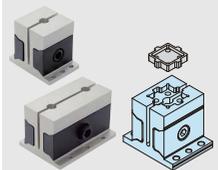
OD HOLDING CLAMPS



JAWS



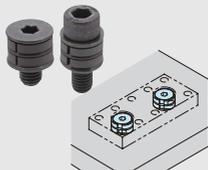
MOUNTING-ON-LATHE ADAPTERS



OD HOLDING CLAMPS (Wedge Style/Square)



OD HOLDING CLAMPS (Wedge Style/Round)

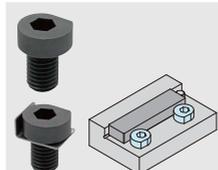


COMPACT ID HOLDING CLAMPS

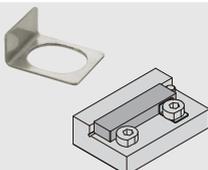


ID HOLDING CLAMPS

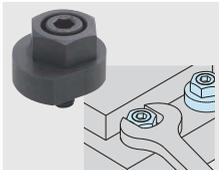
# CLAMPS



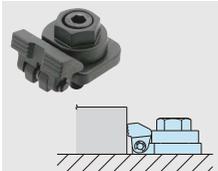
SPIRAL CAM CLAMPS



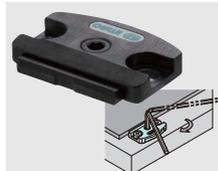
CLAMPING PLATES



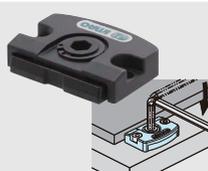
CAM CLAMPS



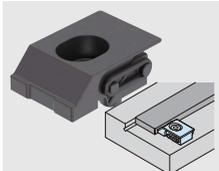
CAM EDGE CLAMPS



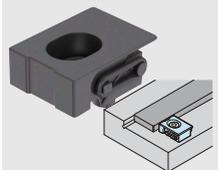
COMPACT LOW-PROFILE CAM EDGE CLAMPS



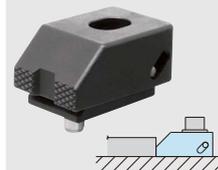
LOW-PROFILE CAM EDGE CLAMPS



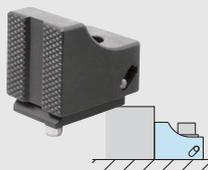
COMPACT TOE CLAMPS



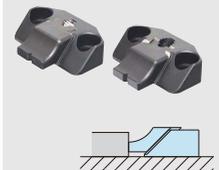
COMPACT SIDE CLAMPS



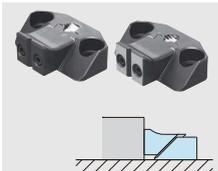
TOE CLAMPS



SIDE CLAMPS



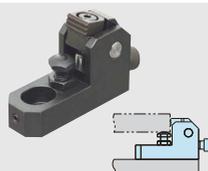
TOE CLAMPS



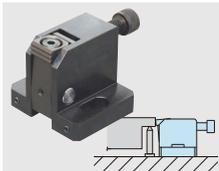
SIDE CLAMPS



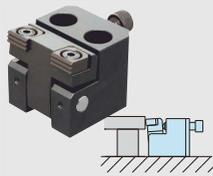
SIDE CLAMPS



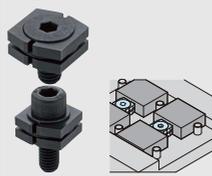
SIDE CLAMPS



SIDE CLAMPS



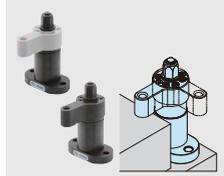
WIDE-JAW SIDE CLAMPS



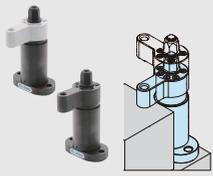
COMPACT WEDGE CLAMPS



SWING CLAMPS  
FOR TORQUE CONTROL



SWING CLAMPS  
(Quick-Acting)



SWING CLAMPS  
(Spiral-Acting)



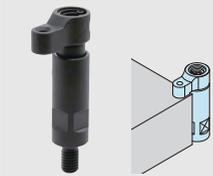
BLOCK PULL CLAMPS



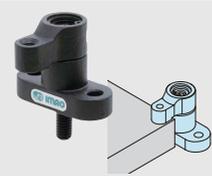
CLAMPING SCREWS  
FOR BLOCK PULL CLAMPS



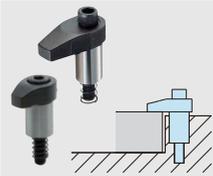
HOOK CLAMPS



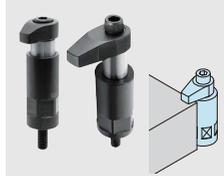
HOOK-CLAMP ASSEMBLIES



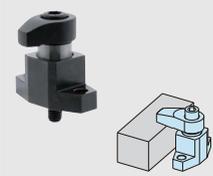
HOOK-CLAMP ASSEMBLIES  
WITH FLANGED HOLDER



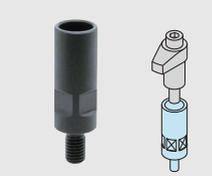
HOOK CLAMPS



HOOK-CLAMP ASSEMBLIES



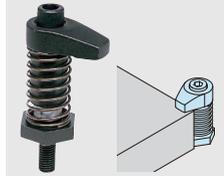
HOOK-CLAMP ASSEMBLIES  
(Flanged)



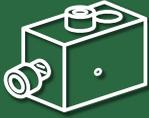
HOOK-CLAMP HOLDERS



HOOK-CLAMP HOLDERS  
(Flanged)



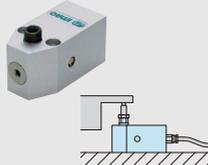
HOOK CLAMPS



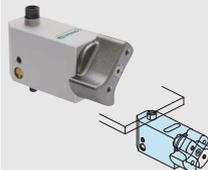
# WORK SUPPORTS



COMPACT PNEUMATIC  
WORK SUPPORTS



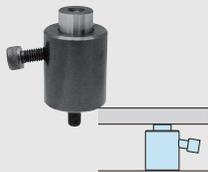
PNEUMATIC  
WORK SUPPORTS



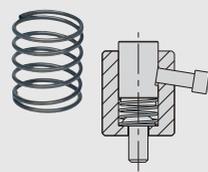
PRECISION  
WORK SUPPORT



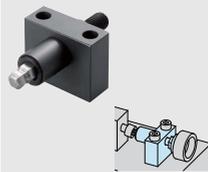
WORK SUPPORTS



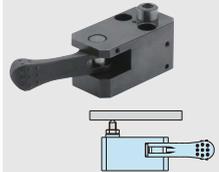
CYLINDRICAL  
WORK SUPPORTS



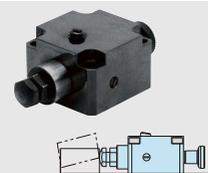
COIL SPRINGS FOR  
CYLINDRICAL WORK SUPPORTS



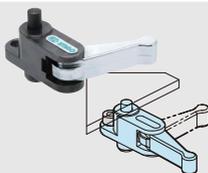
REMOTE-CONTROL UNITS



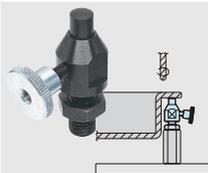
WORK SUPPORTS  
WITH CAM HANDLE



HORIZONTAL  
WORK SUPPORTS



COMPACT WORK SUPPORTS  
WITH CAM HANDLE



COMPACT  
WORK SUPPORTS

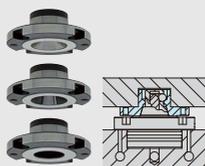


# FIXTURE CHANGING SYSTEM

## FLEX LOCATORS



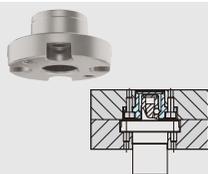
PNEUMATIC FLEX LOCATOR PINS



PNEUMATIC FLEX LOCATOR BUSHINGS



PNEUMATIC FLEX LOCATOR PINS



PNEUMATIC FLEX LOCATOR BUSHINGS



ONE-TOUCH FLEX LOCATOR CLAMPERS (Knob)



ONE-TOUCH FLEX LOCATOR CLAMPERS



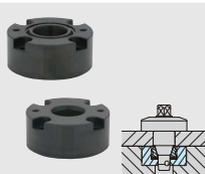
ONE-TOUCH FLEX LOCATOR BUSHINGS



ONE-TOUCH FLEX LOCATOR CLAMPERS (Hexagon Head)



ONE-TOUCH FLEX LOCATOR CLAMPERS (Cam Handle)



ONE-TOUCH FLEX LOCATOR BUSHINGS



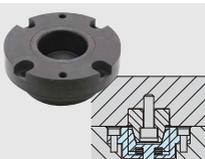
ONE-TOUCH FLEX LOCATOR PROTECTING COVERS



ADJUSTABLE-TORQUE WRENCHES



FLEX LOCATOR PINS



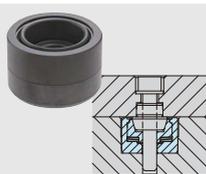
FLEX LOCATOR BUSHINGS (Blind)



FLEX LOCATOR PROTECTING COVERS



FLEX LOCATOR PINS



FLEX LOCATOR BUSHINGS (Through)

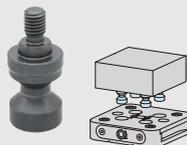


FLEX LOCATOR PROTECTING COVERS

## FLEX ZERO BASES



FLEX ZERO BASES



CLAMPING PINS



PROTECTING COVER

## QUICK ZERO SETTING DEVICE



BASE  
(QUICK ZERO SETTING DEVICE)



HOLDER  
(QUICK ZERO SETTING DEVICE)

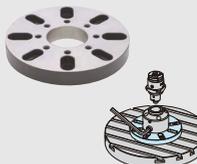
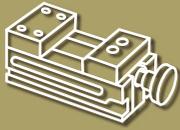


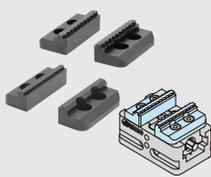
PLATE  
(QUICK ZERO SETTING DEVICE)



# VICES



CENTERING CLAMPS



JAWS



# ONE-TOUCH FASTENERS



# ONE-TOUCH FASTENERS



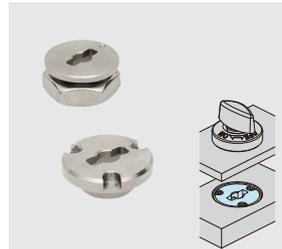
QUARTER-TURN CLAMPS

Part No. QCTH / QCTHL / QCTHH



RETRACTABLE  
QUARTER-TURN CLAMPS

Part No. QCTHA



CAM RECEPTACLES

Part No. QCTH-N / QCTH-B



HEAVY DUTY  
QUARTER-TURN CLAMPS

Part No. QCTHS



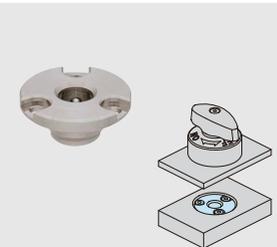
RETRACTABLE HEAVY DUTY  
QUARTER-TURN CLAMPS

Part No. QCTHSA



SPACER

Part No. QCTHSA



LOCKING RECEPTACLE

Part No. QCTHS-B



KNOB-LOCKING PINS

Part No. QCWE



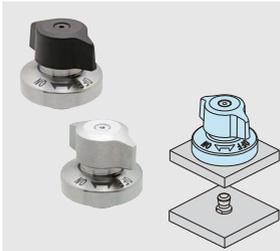
BUTTON-LOCKING PINS

Part No. QCBU / QCBUS



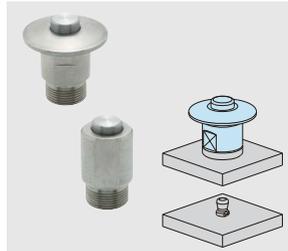
BALL-LOCK RECEPTACLES

Part No. QCBU-M



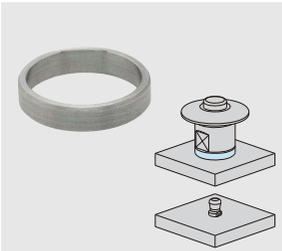
PIN HOLDING CLAMPS

Part No. QCPC



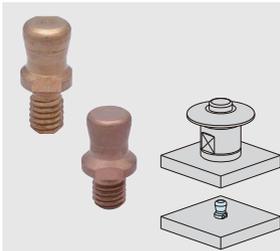
SNAP-IN CLAMPS

Part No. QCOW / QCOWS



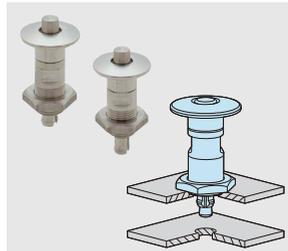
SPACERS

Part No. QCOW



CLAMPING PINS

Part No. QCPC-M



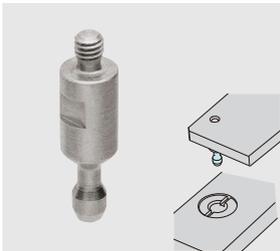
HOLE HOLDING CLAMPS

Part No. QCHC-N



BALL-LOCK CLAMPING RECEPTACLES

Part No. QCBA / QCBAS



BALL-LOCK CLAMPING PINS

Part No. QCBA-M



MAGNET-LOCK CLAMPING RECEPTACLES

Part No. QCMA



MAGNET-LOCK CLAMPING PINS

Part No. QCMA-M



SHAFT COUPLING CLAMP

Part No. QCSJ



CAM RECEPTACLES

Part No. QCSJ-S / QCSJ-B

# ONE-TOUCH FASTENERS



Screwless! Time Saving!

## ONE-TOUCH FASTENERS

Alternatives To Screws



Screw



Clamping



Unclamping

ONE-TOUCH FASTENERS

Easy! Secure!

### Kaizen for Frequent Setups!

Quick fasteners alternative to screws for quick changeover with no tools!  
One-Touch Fasteners slash setup time and provide secure locking with easy operation.



### Lineup

#### QUARTER-TURN CLAMPS

Easy-to-read ON/OFF position



#### RETRACTABLE QUARTER-TURN CLAMPS

No interference by retractable shank



#### HEAVY DUTY QUARTER-TURN CLAMPS

Clamping force 400N

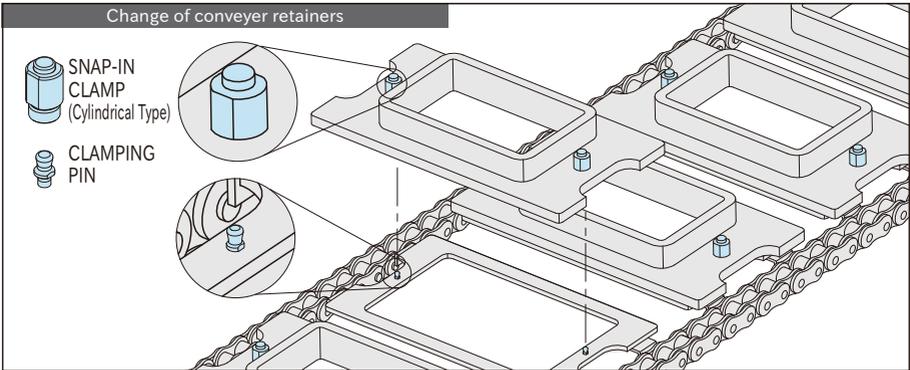
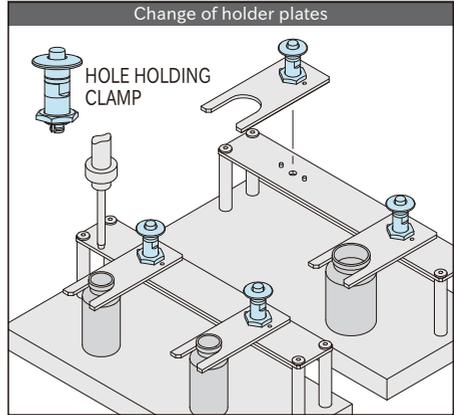
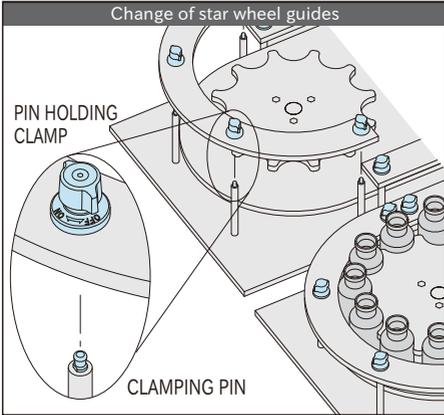


#### RETRACTABLE HEAVY DUTY QUARTER-TURN CLAMPS

Clamping force 400N  
Retractable shank



## Application Example



### KNOB-LOCKING PINS

Secure clamping with wedge



### BUTTON-LOCKING PINS

Securely locked upon releasing button



### PIN HOLDING CLAMPS

Pin clamping design enables space-saving application



### SNAP-IN CLAMPS

Quick & easy snap-in operation



### HOLE HOLDING CLAMPS

No need for receptacle



### BALL-LOCK CLAMPS

Compact & safety mechanical lock



### MAGNET-LOCK CLAMP

Compact & instant magnetic attachment



### SHAFT COUPLING CLAMP

Multipurpose coupling element



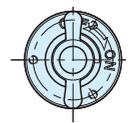
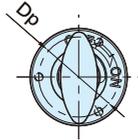
**QCTH / QCTHL / QCTHH** QUARTER-TURN CLAMPS



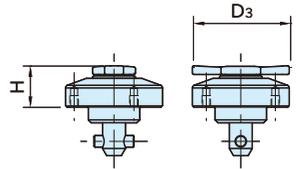
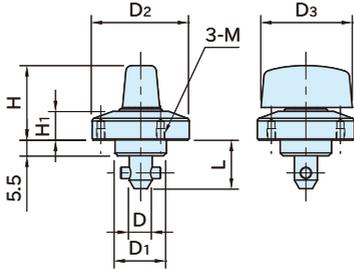
★Key Point Easy-to-read ON/OFF position



**QCTH**  
(Plastic Knob)



**QCTH-S**  
(Metal Knob)



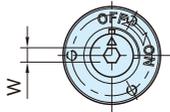
**QCTH** (Plastic Knob) **QCTH-S** (Metal Knob) **QCTH-SUS** (Stainless Steel)

**QCTHL-S**  
(Low-height Knob)

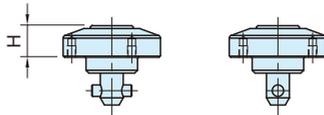


**QCTH-SUS**  
(Stainless Steel)

Stainless Steel



**QCTHL-S**  
(Low-height Knob)



**QCTHH**  
(Hex. Socket Head)

**Supplied With**

- **QCTH** **QCTH-S** **QCTHL-S** **QCTH-SUS** **QCTHH** 0525-10: 3 of socket-head cap screws (stainless steel), M2×0.4-5L
- **QCTH** **QCTH-S** **QCTHL-S** **QCTH-SUS** **QCTHH** 0834-14, 0834-20: 3 of socket-head cap screws (stainless steel), M3×0.5-6L



**QCTHH**  
(Hex. Socket Head)

Type	Body	Shank	Pin	Knob	Spring
<b>QCTH</b>	SUS303 stainless steel	S45C steel Electroless nickel plated	SUS304 stainless steel	Polyamide (glass-fiber reinforced)	Equivalent to SWOSC-V steel
<b>QCTH-S</b>				Black	
<b>QCTHL-S</b>				SCS13 stainless steel (Equivalent to SUS304)	
<b>QCTHH</b>				—	
<b>QCTH-SUS</b>	SUS303 stainless steel	SUS303 stainless steel		SCS13 stainless steel (Equivalent to SUS304)	SUS304 stainless steel

Size		Proper Plate Thickness	D ( $-0.04$ $-0.08$ )	D <sub>1</sub> (h9)	D <sub>2</sub>	L	H <sub>1</sub>	M	D <sub>p</sub>	Clamping Force (N)	Holding Force (N) (**)	Proper Cam Receptacles
<b>QCTH</b>	<b>0525-10</b>	3~10 (*)	5	14	25	15.5	6.5	M2×0.4 Depth 3	21	60	60	
<b>QCTH-S</b>												
<b>QCTHL-S</b>	<b>0834-14</b>	3~14 (*)	8	18	34	17	10	M3×0.5 Depth 4	28	90	90	QCTH0834-N, QCTH0834-B QCTH0834-N-SUS, QCTH0834-B-SUS
<b>QCTH-SUS</b>												
<b>QCTHH</b>	<b>0834-20</b>	12~20				23						

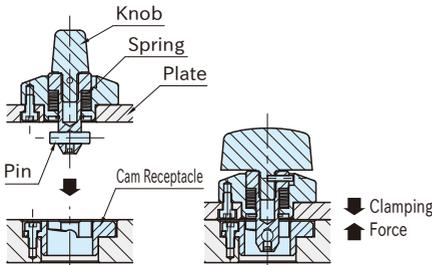
\*) Spacer **QCASP** is required for thinner plate than 6mm.

\*\*) The holding force limits the gap between plates within 0.1 mm.

<b>QCTH</b> (Plastic Knob)			<b>QCTH-S</b> (Metal Knob)			<b>QCTHL-S</b> (Low-height Knob)					
Part Number	D <sub>3</sub>	H	Weight (g)	Part Number	D <sub>3</sub>	H	Weight (g)	Part Number	D <sub>3</sub>	H	Weight (g)
<b>QCTH0525-10</b>	20	19	35	<b>QCTH0525-10S</b>	20	19	40	<b>QCTHL0525-10S</b>	25	11.5	35
<b>QCTH0834-14</b>	32	26	105	<b>QCTH0834-14S</b>	32	25.5	130	<b>QCTHL0834-14S</b>	34	15.5	80
<b>QCTH0834-20</b>			110	<b>QCTH0834-20S</b>			135	<b>QCTHL0834-20S</b>			85

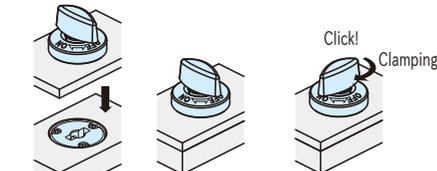
<b>QCTH-SUS</b> (Stainless Steel)			<b>QCTHH</b> (Hex. Socket Head)				
Part Number	D <sub>3</sub>	H	Weight (g)	Part Number	H	W	Weight (g)
<b>QCTH0525-10-SUS</b>	20	19	40	<b>QCTHH0525-10</b>	8	4	30
<b>QCTH0834-14-SUS</b>	32	25.5	130	<b>QCTHH0834-14</b>	11	5	105
<b>QCTH0834-20-SUS</b>			135	<b>QCTHH0834-20</b>			110

## Feature



When the pin contacts the cam in the Cam Receptacle, the spring gets compressed to press down the plate.

## How To Use

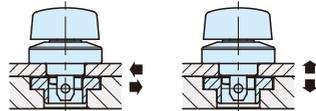


1. Ensure that the knob is positioned at the "OFF" mark.

2. Insert the Quarter-Turn Clamp.

3. Turn the knob to the "ON" mark for clamping. The knob clicks when it is clamped/unclamped. Note: For unclamping, follow back these steps.

## Technical information



Shear Strength      Tensile Strength

Part Number		Heatresistant Temperature(C)	Shear Strength (N)	Tensile Strength (N)
<b>QCTH</b>	<b>0525-10</b>	130	1800	1200
	<b>0834-14</b>		3200	2600
	<b>0834-20</b>			
<b>QCTH-S</b>	<b>0525-10</b>	180	1800	1200
	<b>QCTHL-S</b>		180	1200
	<b>QCTH-SUS</b>		3200	2600
<b>QCTHH</b>	<b>0834-20</b>			

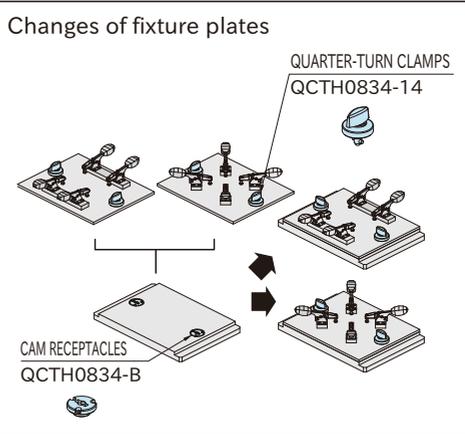
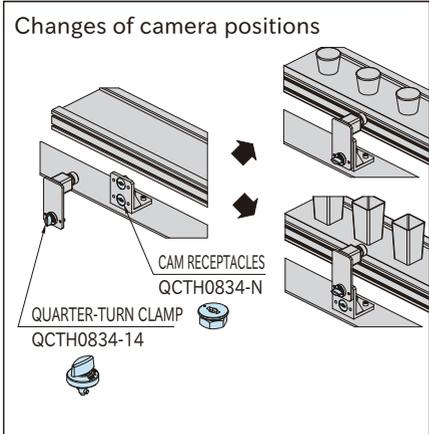
Shear and tensile strength is allowable load and the fastener could break when it receives bigger load.

## QCTH-N / QCTH-B CAM RECEPTACLES

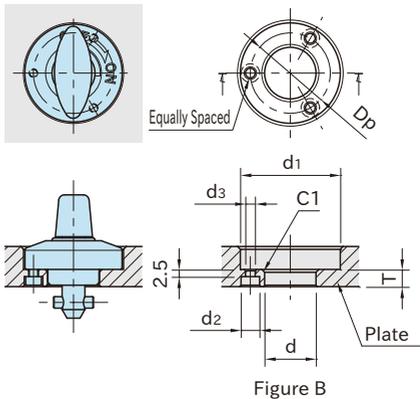
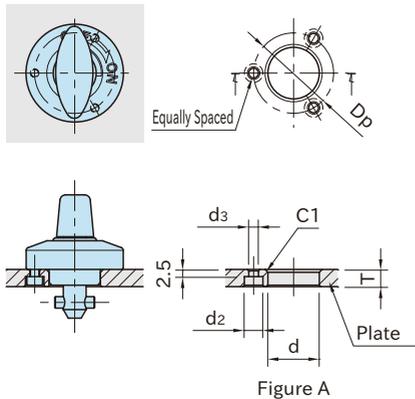


Continuing on Next Page

Application Example



How To Install

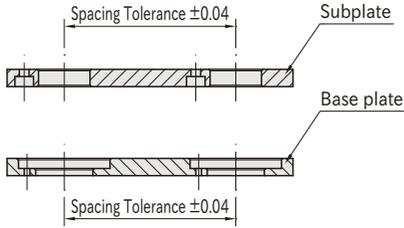


Part Number	Proper Plate Thickness	Figure	d (+0.10 / +0.05)	d <sub>1</sub>	T (±0.2)	d <sub>2</sub>	d <sub>3</sub>	D <sub>p</sub>
<b>QCTH</b> <b>QCTH-S</b> <b>QCTHL-S</b> <b>QCTH-SUS</b> <b>QCTHH</b>	3 or more, under 6		Spacer <b>QCASP</b> is required.					
	6	A	14	—	6	4.4	2.4	21
	Over 6, 10 or less	B	14	26	6	4.4	2.4	21
<b>QCTH</b> <b>QCTH-S</b> <b>QCTHL-S</b> <b>QCTH-SUS</b> <b>QCTHH</b>	3 or more, under 6		Spacer <b>QCASP</b> is required.					
	6	A	18	—	6	6.5	3.4	28
	Over 6, 14 or less	B		35				
	12	A	18	—	12	6.5	3.4	28
Over 12, 20 or less	B	35						



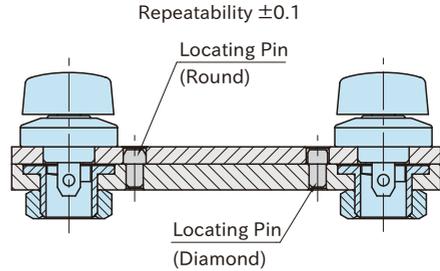
### Accuracy

#### ■ Machining Accuracy



Spacing tolerance on both the subplate and the base plate should be  $\pm 0.04$ .

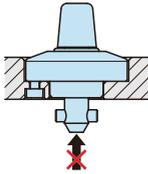
#### ■ Repeatability



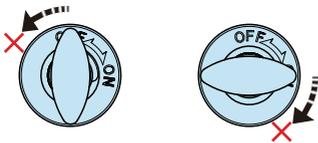
For higher accurate locating, use locating pins.

### ⚠ Caution

- Note the following cautions using **QCTH**  
**QCTH-S** **QCTHL-S** **QCTH-SUS** **QCTHH0525-10**
- Any force over 600N or more on the tip of the pin.



- The knob operating torque is 0.4 N·m. Note that the excessive operating torque over 2 N·m can damage the pin.



### Reference

- "How To Install" of **QCTH-N** **QCTH-B**  
**QCTH-N-SUS** **QCTH-B-SUS** Cam Receptacles
- Spacer **QCASP** is required for 3mm or more, under 6mm plate thickness.

**QCTHA**

**RETRACTABLE QUARTER-TURN CLAMPS**



**QCTHA**

(Plastic Knob)



**QCTHA-S**

(Metal Knob)  
(OFF position)



**QCTHA-SUS**

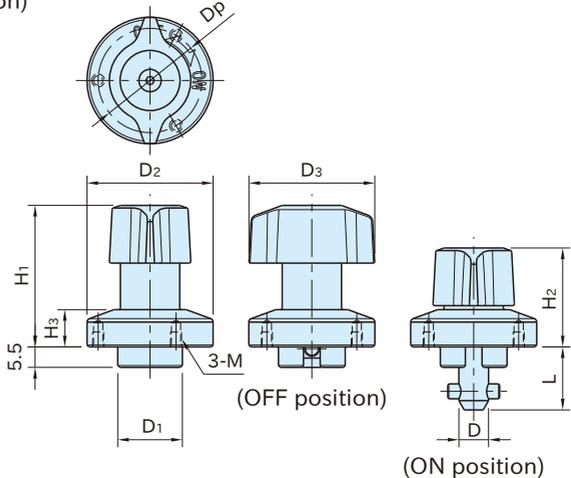
(Stainless Steel)

★ **One Point**  
No interference by retractable shank



**QCTHA**

(ON position)



Type	Body	Shank	Pin	Knob	Spring A	Spring B
<b>QCTHA</b>	SUS303 stainless steel	S45C steel Electroless nickel plated	SUS304 stainless steel	Polyamide (glass-fiber reinforced) Black	Equivalent to SWOSC-V steel	SUS304WPB stainless steel
<b>QCTHA-S</b>				SCS13 stainless steel (Equivalent to SUS304)		
<b>QCTHA-SUS</b>		SUS303 stainless steel		SUS304-CSP stainless steel		

Size	Proper Plate Thickness	D (-0.08)	D <sub>1</sub> (h9)	D <sub>2</sub>	D <sub>3</sub>	L	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	M	D <sub>p</sub>	Clamping Force(N)	Holding Force (N) **	Proper Cam Receptacles
<b>QCTHA</b>	0525-10	3~10 *)	5	14	25	25	15.5	30	20	6.5	M2×0.4 Depth 3	60	60	QCTH0825-N, QCTH0825-B
<b>QCTHA-S</b>														QCTH0825-N-SUS, QCTH0825-B-SUS
<b>QCTHA-SUS</b>	0834-14	3~14 *)	8	18	34	34	17	38	26.5	10	M3×0.5 Depth 4	90	90	QCTH0834-N, QCTH0834-B
														QCTH0834-N-SUS, QCTH0834-B-SUS

\*) Spacer **QCASP** is required for thinner plate than 6mm.

\*\*) The holding force limits the gap between plates within 0.1 mm.

QCTHA (Plastic Knob)		QCTHA-S (Metal Knob)		QCTHA-SUS (Stainless Steel)	
Part Number	Weight (g)	Part Number	Weight (g)	Part Number	Weight (g)
QCTHA0525-10	40	QCTHA0525-10S	50	QCTHA0525-10SUS	53
QCTHA0834-14	100	QCTHA0834-14S	120	QCTHA0834-14SUS	117

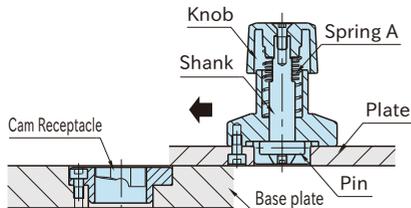
### Supplied With

- QCTHA QCTHA-S QCTHA-SUS 0525-10: 3 of socket-head cap screws (stainless steel), M2×0.4-5L
- QCTHA QCTHA-S QCTHA-SUS 0834-14: 3 of socket-head cap screws (stainless steel), M3×0.5-6L

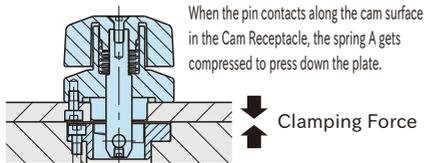
### QCTH-N/QCTH-B CAM RECEPTACLES



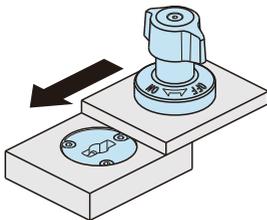
### Feature



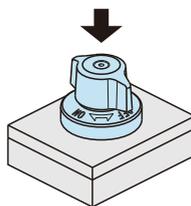
The shank retracts at the unclamping position to enable operations without interference with the base plate.



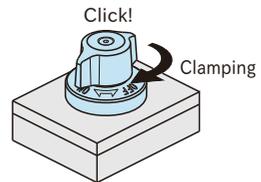
### How To Use



1. Ensure that the knob is positioned at the "OFF" mark and the shank is retracted.

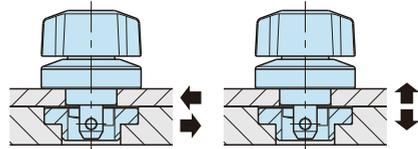


2. Insert Retractable Quarter-Turn Clamp pressing the knob.



3. Turn the knob to the "ON" mark for clamping. The knob clicks when clamped. Turning the knob to the "OFF" position, the shank returns automatically to the unclamping position by the spring.

### Technical Information



Shear Strength

Tensile Strength

Part Number		Heatresistant Temperature(C)	Shear Strength(N)	Tensile Strength(N)
QCTHA	0525-10	130	1800	1200
	0834-14		3200	400
QCTHA-S	0525-10	180	1800	1200
	QCTHA-SUS 0834-14		3200	

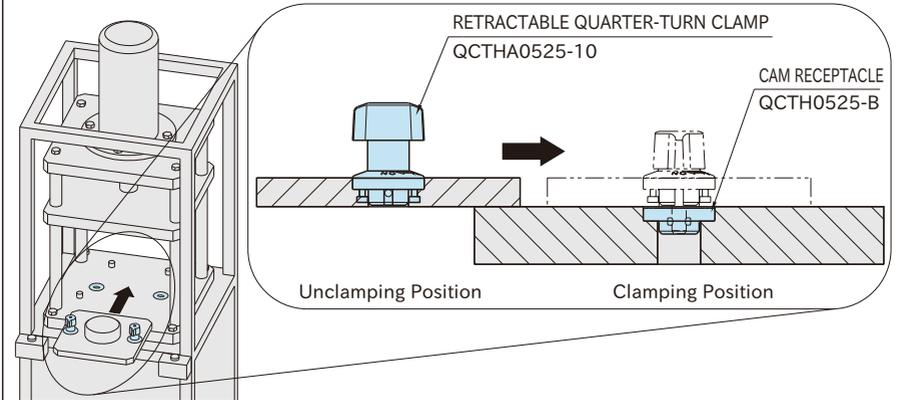
Shear and tensile strength is allowable load and the fastener could break when it receives bigger load.

When the fastener receives tensile load that is bigger than its clamping force, there is a gap between the plates and the fastener could break if this happens frequently.

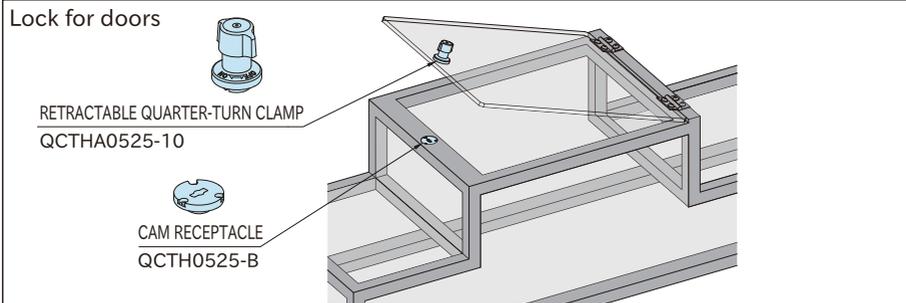
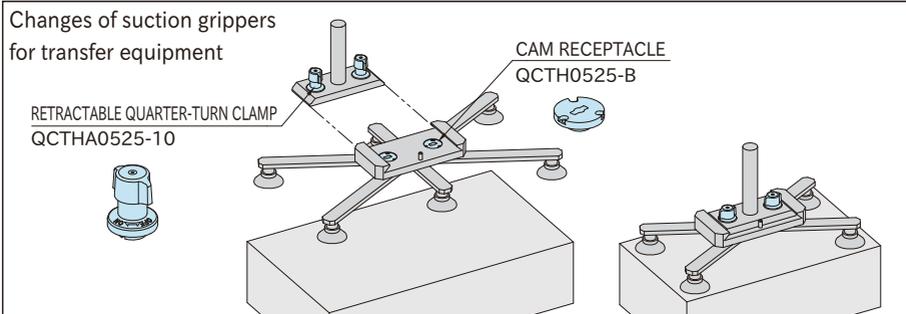
Continuing on Next Page

## Application Example

## Changes of fixture plates



## Lock for doors

Changes of suction grippers  
for transfer equipment

## Reference

- "How To Install" of [QCTH-N](#) | [QCTH-B](#) | [QCTH-N-SUS](#) | [QCTH-B-SUS](#) Cam Receptacles
- Spacer [QCASP](#) is required for 3mm or more, under 6mm plate thickness.

## How To Install

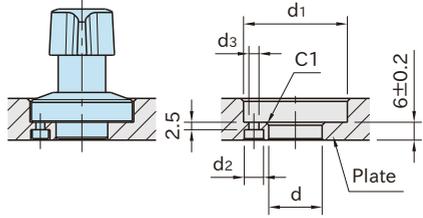
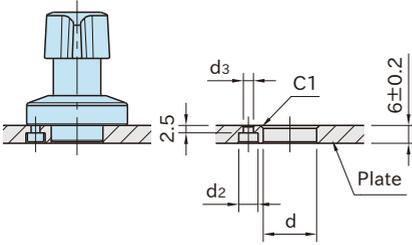
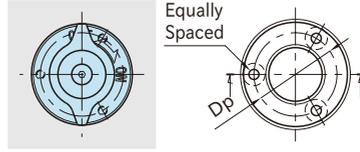
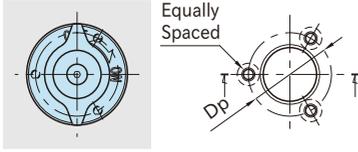


Figure A

Figure B

Part Number	Proper Plate Thickness	Figure	D ( $+0.10$ / $+0.05$ )	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	Dp
<b>QCTHA</b> <b>QCTHA-S</b> <b>QCTHA-SUS</b>	3 or more, under 6		Spacer <b>QCASP</b> is required.				
	6	A	14	—	4.4	2.4	21
	Over 6, 10 or less	B	14	26	—	—	—
<b>0834-14</b>	3 or more, under 6		Spacer <b>QCASP</b> is required.				
	6	A	18	—	6.5	3.4	28
	Over 6, 14 or less	B	18	35	—	—	—

## QCASP SPACERS



## Accuracy

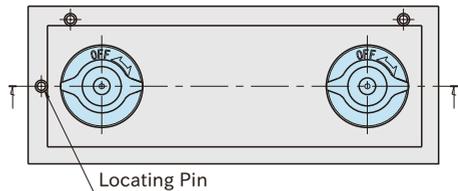
### ■ Machining Accuracy



Spacing tolerance on both the subplate and the base plate should be  $\pm 0.04$ .

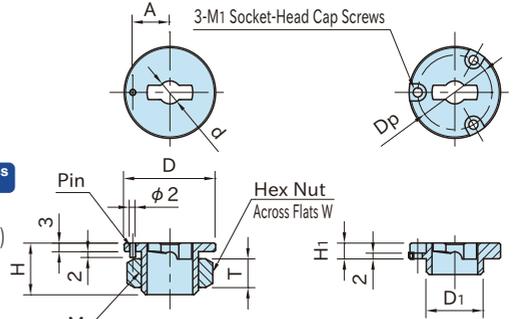
### ■ Repeatability

Repeatability  $\pm 0.1$



For higher accurate locating, use locating components.

# QCTH-N / QCTH-B CAM RECEPTACLES



**QCTH-N** **QCTH-N-SUS** (Thin-Plate Mount) **QCTH-B** **QCTH-B-SUS** (Embedded Mount, Stainless Steel)

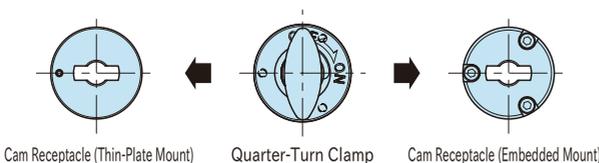
Type	Body	Nut
<b>QCTH-N</b>	SCM440 steel	Stainless steel
<b>QCTH-B</b>	Electroless nickel plated	—
<b>QCTH-N-SUS</b>	SCS24 stainless steel	Stainless steel
<b>QCTH-B-SUS</b>	(Equivalent to SUS630)	—

Part Number	Proper Plate Thickness	D	H	d (+0.08 / +0.04)	A (±0.1)	M	T	W	D <sub>1</sub> (-0.04 / -0.08)	H <sub>1</sub>	M <sub>1</sub>	D <sub>p</sub>	Weight (g)	Proper Quarter-Turn Clamps		
<b>QCTH0525-N</b>	Thin-Plate Mount	6~10	25	-0.04	16	5	10.5	M14×1.5 (Fine Thread)	8	22	—	—	40	<b>QCTH</b>	0525-10	
<b>QCTH0525-N-SUS</b>														<b>QCTH-S</b>		
<b>QCTH0834-N</b>		6~12	32	-0.08	18	8	13	M20×1.5 (Fine Thread)	10	30	—	—	55	<b>QCTH-L-S</b>		0834-14
<b>QCTH0834-N-SUS</b>														<b>QCTH-SUS</b>		
<b>QCTH0525-B</b>	Embedded Mount	Over 10	25	9	5	—	—	—	14	4.5	M2	21	20	<b>QCTHH</b>	0525-10	
<b>QCTH0525-B-SUS</b>														<b>QCTHA</b>		
<b>QCTH0834-B</b>		Over 12	32	11	8	—	—	—	20	5.5	M3	26	35	<b>QCTHA-S</b>		0834-14
<b>QCTH0834-B-SUS</b>														<b>QCTHA-SUS</b>		

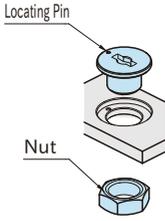
### Supplied With

- **QCTH0525-B** **QCTH0525-B-SUS** : 3 of socket-head cap screws(stainless steel), M2×0.4-5L
- **QCTH0834-B** **QCTH0834-B-SUS** : 3 of socket-head cap screws(stainless steel), M3×0.5-6L

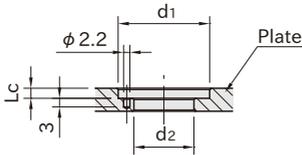
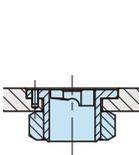
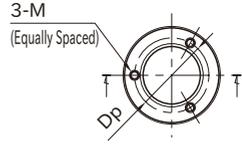
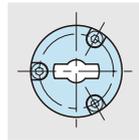
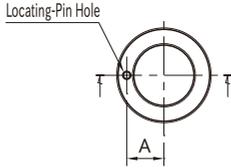
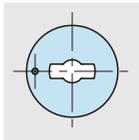
### Installing Position



## How To Install



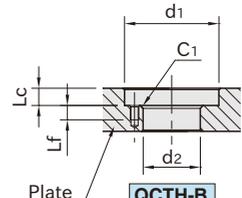
Locate the Cam Receptacle with the locating pin and fasten it with the nut.



**QCTH-N**  
(Thin-Plate Mount)



Socket-Head Cap Screw  
(included)



**QCTH-B**  
(Embedded Mount)

Part Number	Proper Plate Thickness	d <sub>1</sub>	d <sub>2</sub>	A (±0.1)	L <sub>c</sub> (+0.10/0)	M	L <sub>f</sub>	D <sub>p</sub>	
QCTH0525-N	Thin-Plate Mount	6~10	25	+0.10	3.5	—	—	—	
QCTH0525-N-SUS		6~12	32	+0.05					
QCTH0834-N			21	13					
QCTH0834-N-SUS	Embedded Mount	Over 10	26	14	+0.10	5	M2×0.4	4	21
QCTH0525-B									
QCTH0525-B-SUS									
QCTH0834-B									
QCTH0834-B-SUS									

## Reference

"Accuracy" of QCTHA | QCTH | QCTHL | QCTHH | Quarter-Turn Clamps

**QCTHS**

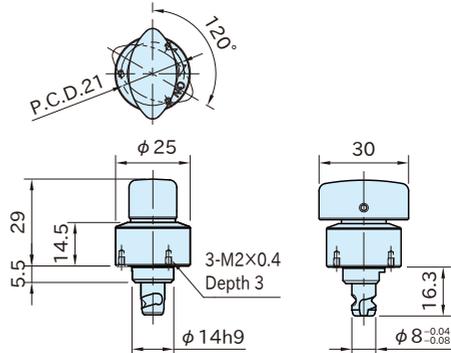
**HEAVY DUTY QUARTER-TURN CLAMPS**



**QCTHS0825-20**  
(Plastic Knob)



**QCTHS0825-20S**  
(Metal Knob)



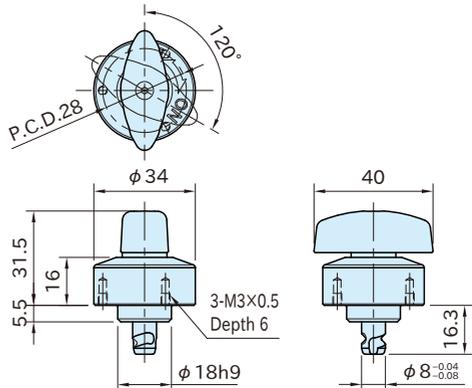
**QCTHS0825-20**    **QCTHS0825-20S**



**QCTHS0834-20**  
(Plastic Knob)



**QCTHS0834-20S**  
(Metal Knob)



**QCTHS0834-20**    **QCTHS0834-20S**

★Key Point  
Clamping force 400N,250N

Part Number	Body	Shank	Pin	Knob	Spring A	Spring B
<b>QCTHS</b>	SUS303 stainless steel	SKS3 steel Electroless nickel plated Quenched and tempered	SUS440C stainless steel Quenched and tempered	Polyamide (glass-fiber reinforced) Black	Equivalent to SWOSC-V steel	SUS316J1 stainless steel
<b>QCTHS-S</b>	steel			SCS13 stainless steel (Equivalent to SUS304)		

Part Number	Proper Plate Thickness	Clamping Force (N)	Holding Force (N)**	Weight (g)	Proper Locking Receptacle
<b>QCTHS0825-20</b>	3~20 )	250	250	62	<b>QCTHS0834-B</b>
<b>QCTHS0825-20S</b>				84	
<b>QCTHS0834-20</b>		400	400	121	
<b>QCTHS0834-20S</b>				157	

\*) Spacer [QCASP] is required for thinner plate than 6mm.

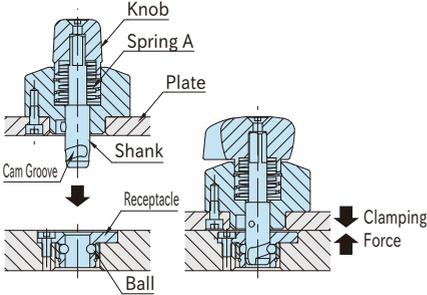
\*\*) The holding force limits the gap between plates within 0.1 mm.

## Supplied With

**QCTHS** **QCTHS-S** 0825-20:  
3 of socket-head cap screws(stainless steel),  
M2×0.4-5L

**QCTHS** **QCTHS-S** 0834-20:  
3 of socket-head cap screws(stainless steel),  
M3×0.5-6L

## Feature

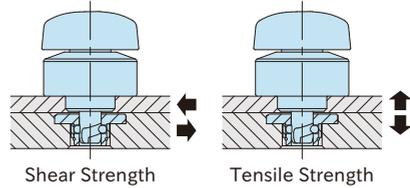


When the cam groove moves along the ball inside the receptacle, the spring A gets compressed to press down the plate.

## QCTHS-B LOCKING RECEPTACLE



## Technical Information

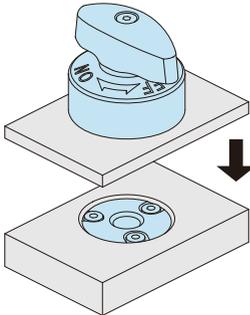


Part Number	Heatresistant Temperature (°C)	Shear Strength (N)	Tensile Strength (N)
<b>QCTHS0825-20</b>	130	4800	1100
<b>QCTHS0825-20S</b>	180		
<b>QCTHS0834-20</b>	130	4800	1600
<b>QCTHS0834-20S</b>	180		

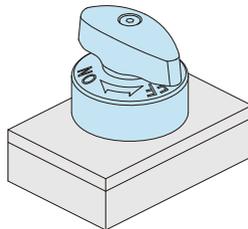
Shear and tensile strength is allowable load and the fastener could break when it receives bigger load.

When the fastener receives tensile load that is bigger than its clamping force, there is a gap between the plates and the fastener could break if this happens frequently.

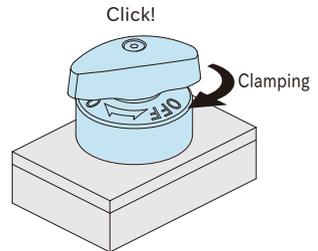
## How To Use



1. Ensure that the knob is positioned at the "OFF" mark.



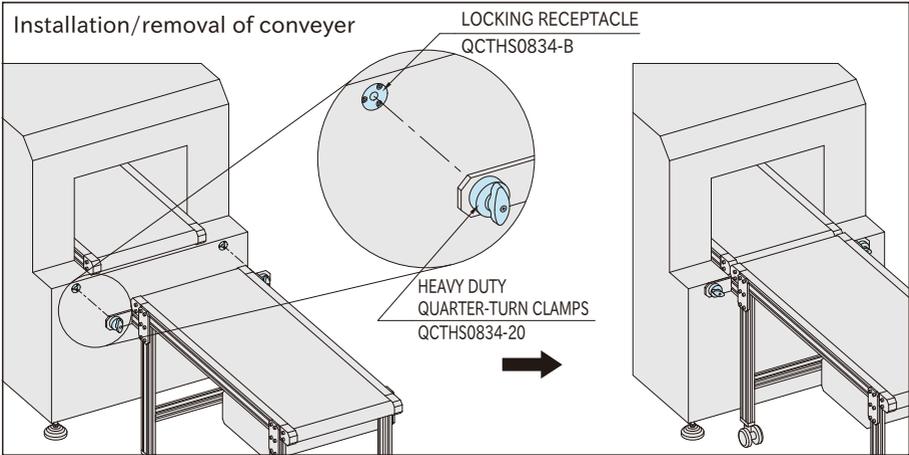
2. Insert the Heavy Duty Quarter-Turn Clamp.



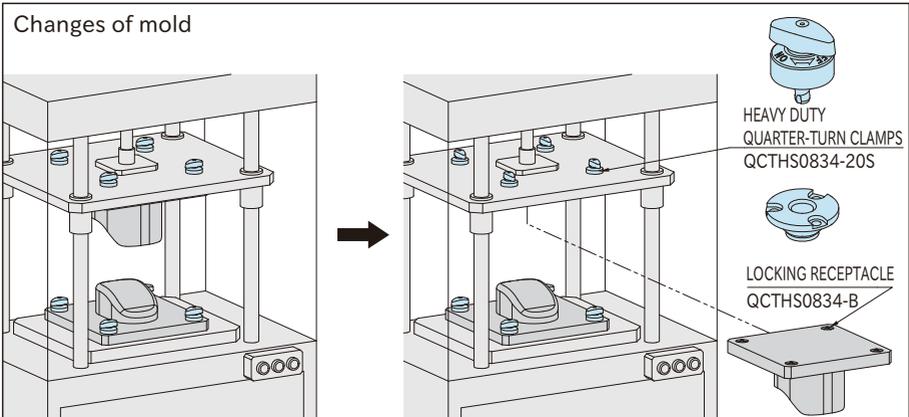
3. Turn the knob to the "ON" mark for clamping. The knob clicks when it is clamped/unclamped.  
Note: For unclamping, follow back these steps.

Continuing on Next Page

**Application Example**



Changes of mold



**Reference**

- "How To Install" of [QCTHS-B](#) Locking Receptacle
- Spacer [QCASP](#) is required for 3mm or more, under 6mm plate thickness.

## How To Install

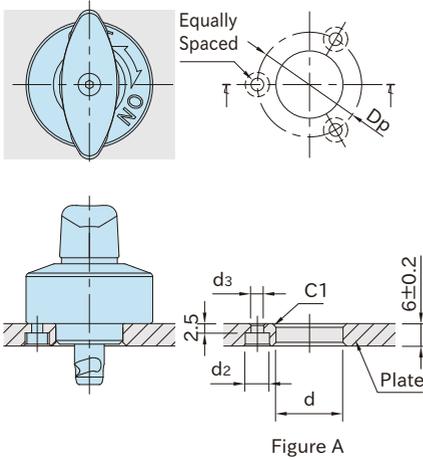


Figure A

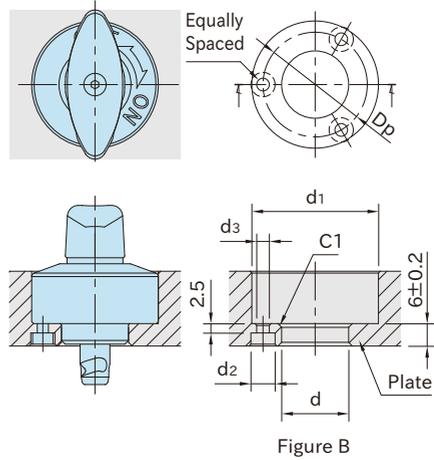


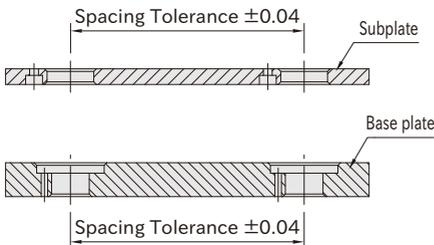
Figure B

Size	Proper Plate Thickness	Figure	d (+0.10 +0.05)	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	D <sub>p</sub>	
QCTHS	0825-20	3 or more, under 6	Spacer QCASP is required.					
		6	A	—	—	—	—	
QCTHS-S	0834-20	over 6, 20 or less	B	14	26	4.4	2.4	21
		3 or more, under 6	Spacer QCASP is required.					
	0834-20	6	A	—	—	—	—	
		over 6, 20 or less	B	18	35	6.5	3.4	28



## Accuracy

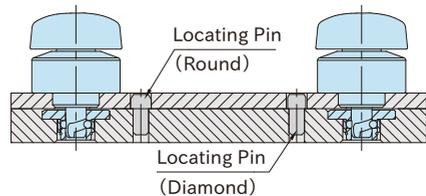
### ■ Machining Accuracy



Spacing tolerance on both the subplate and the base plate should be  $\pm 0.04$ .

### ■ Repeatability

Repeatability  $\pm 0.1$



For higher accurate locating, use locating pins.

# QCTHSA

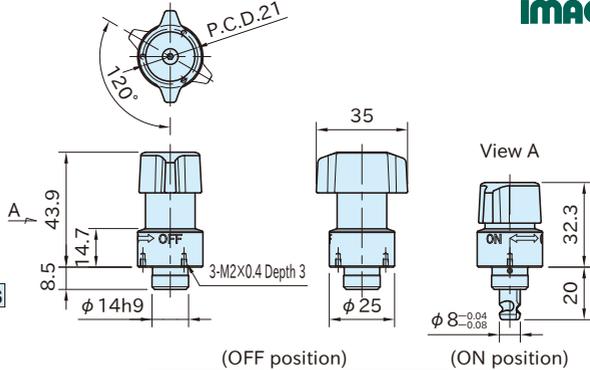
## RETRACTABLE HEAVY DUTY QUARTER-TURN CLAMPS



**QCTHSA0825-20**  
(Plastic Knob)  
(OFF position)



**QCTHSA0825-20S**  
(Metal Knob)  
(ON position)



**QCTHSA0825-20**

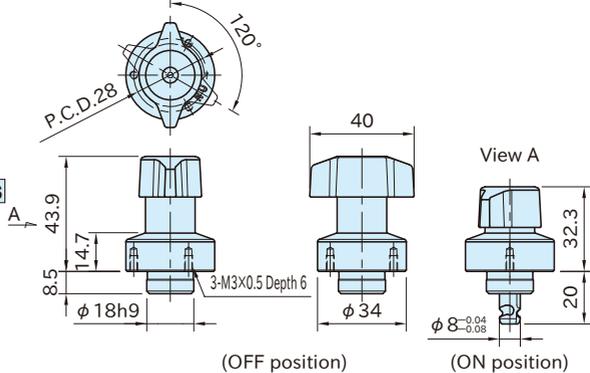
**QCTHSA0825-20S**



**QCTHSA0834-20**  
(Plastic Knob)  
(OFF position)



**QCTHSA0834-20S**  
(Metal Knob)  
(ON position)



**QCTHSA0834-20**

**QCTHSA0834-20S**

★ **Key Point**  
No interference by retractable shank

Type	Body	Shank	Pin	Knob	Spring A	Spring B
<b>QCTHSA</b>	SUS303 stainless steel	SKS3 steel	SUS420J2 stainless steel Quenched and tempered	Polyamide (glass-fiber reinforced)	Equivalent to SWOSC-V steel	SUS304WPB stainless steel
<b>QCTHSA-S</b>		Electroless nickel plated Quenched and tempered		Black SCS13 stainless steel (Equivalent to SUS304)		

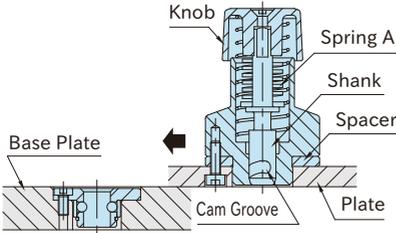
Part Number	Proper Plate Thickness	Clamping Force (N)	Holding Force (N)**	Weight (g)	Proper Locking Receptacle
<b>QCTHSA0825-20</b>	6~20*)	250	250	76	<b>QCTHSA0834-B</b>
<b>QCTHSA0825-20S</b>				104	
<b>QCTHSA0834-20</b>		400	400	130	
<b>QCTHSA0834-20S</b>				160	

\*) Spacer **QCASP** is required for thinner plate than 9mm.  
\*\*) The holding force limits the gap between plates within 0.1 mm.

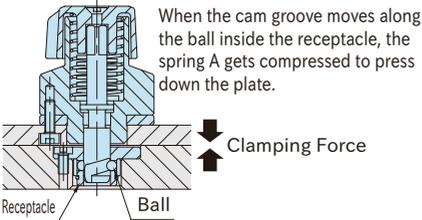


- Supplied With**
- QCTHSA** **QCTHSA-S** 0825-20 :  
3 of socket-head cap screws (stainless steel) M2X0.4-8L
  - QCTHSA** **QCTHSA-S** 0834-20 :  
3 of socket-head cap screws (stainless steel) M3X0.5-10L

## Feature

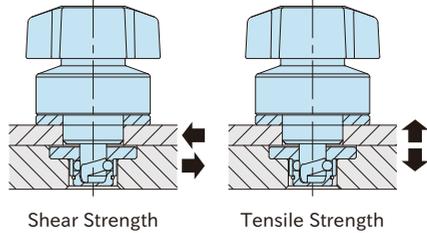


The shank retracts at the unclamping position to enable operations without interference with the base plate.



When the cam groove moves along the ball inside the receptacle, the spring A gets compressed to press down the plate.

## Technical Information

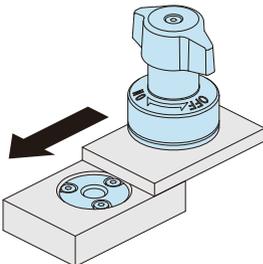


Part Number	Heatresistant Temperature (°C)	Shear Strength(N)	Tensile Strength(N)
QCTHSA0825-20	130	3000	1600
QCTHSA0825-20S	180		
QCTHSA0834-20	130	3000	1600
QCTHSA0834-20S	180		

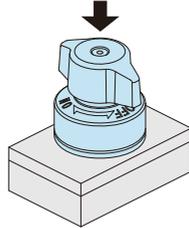
Shear and tensile strength is allowable load and the fastener could break when it receives bigger load.

When the fastener receives tensile load that is bigger than its clamping force, there is a gap between the plates and the fastener could break if this happens frequently.

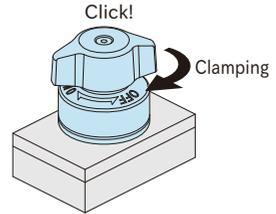
## How To Use



1. Ensure that the knob is positioned at the "OFF" mark.



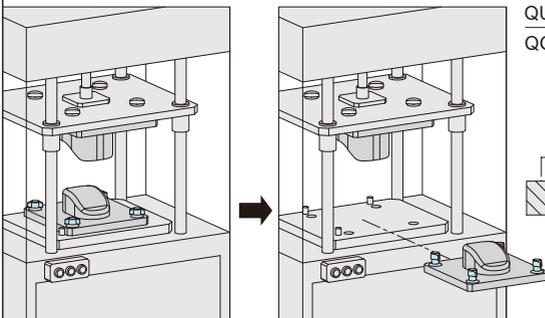
2. Insert the clamp pressing the knob.



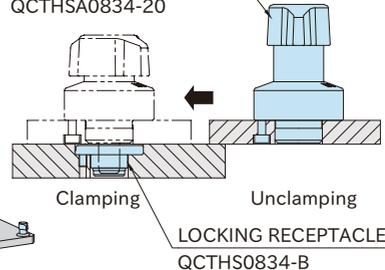
3. Turn the knob to the "ON" mark for clamping. The knob clicks when clamped. Turning the knob to the "OFF" position, the shank returns automatically to the unclamping position by the spring.

## Application Example

### Die Changing

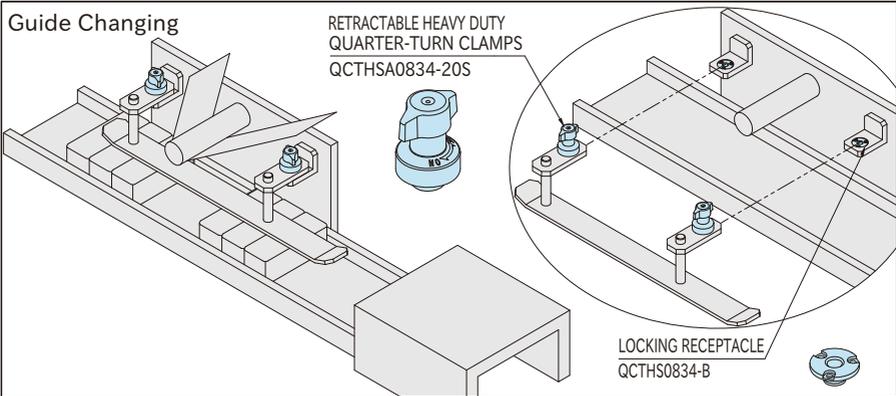


RETRACTABLE HEAVY DUTY QUARTER-TURN CLAMP  
QCTHSA0834-20



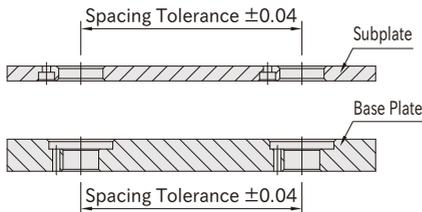
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Application Example



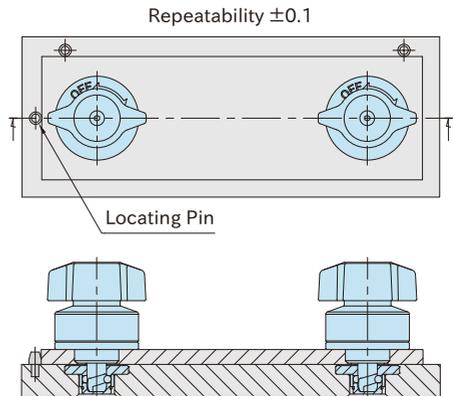
Accuracy

Machining Accuracy



Spacing tolerance on both the subplate and the base plate should be  $\pm 0.04$ .

Repeatability



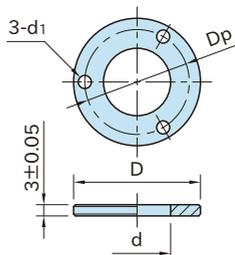
For higher accurate locating, use locating pins.

Reference

"How To Install Receptacle" of QCTHS-B LOCKING RECEPTACLE.

QCTHSA

SPACERS



Body
SUS303 stainless steel

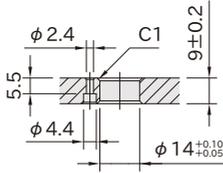
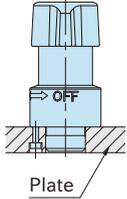
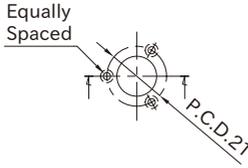
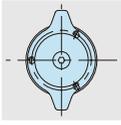
Part Number	D	d ( $^{+0.1}$ )	Dp	d <sub>1</sub>	Weight (g)
QCTHSA25-03-SUS	25	14	21	2.3	7
QCTHSA34-03-SUS	34	18	28	3.5	14

## How To Install

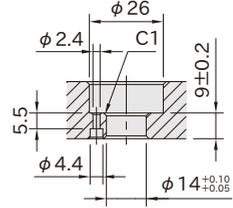
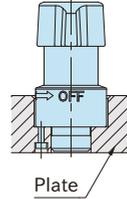
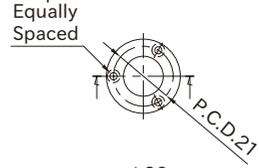
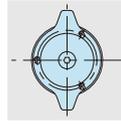
**QCTHSA0825-20**

**QCTHSA0825-20S**

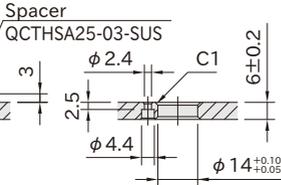
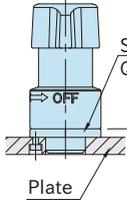
For 9mm plate



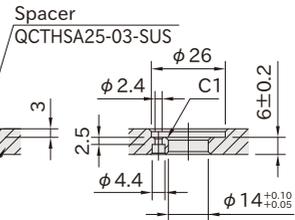
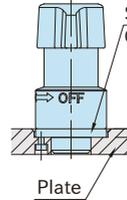
For over 9mm to 20mm plate



For 6mm plate



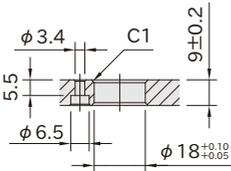
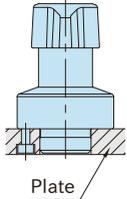
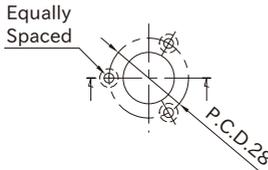
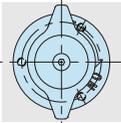
For over 6mm to under 9mm plate



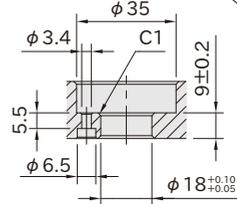
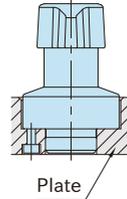
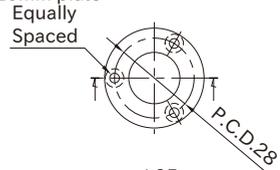
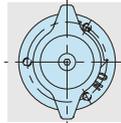
**QCTHSA0834-20**

**QCTHSA0834-20S**

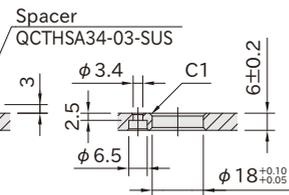
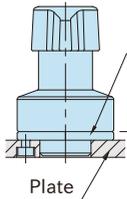
For 9mm plate



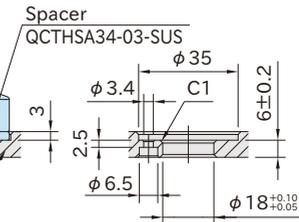
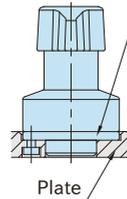
For over 9mm to 20mm plate



For 6mm plate

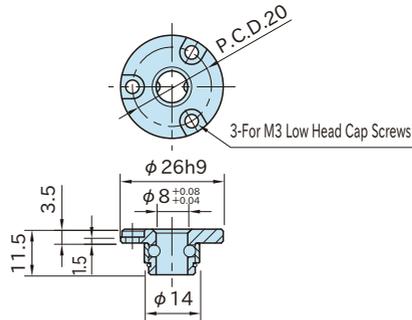


For over 6mm to under 9mm plate



**QCTHS-B**

**LOCKING RECEPTACLE**



Body	Ball	Collar	Retaining Ring
S45C steel Electroless nickel plated	SUS440C stainless steel Quenched and tempered	SKS3 steel Electroless nickel plated Quenched and tempered	SUS304WPB stainless steel

Part Number	Weight (g)
<b>QCTHS0834-B</b>	19

Part Number	Proper Heavy Duty Quarter-Turn Clamps	Proper Retractable Heavy Duty Quarter-Turn Clamps	Proper Heavy Duty Shaft Coupling Clamp
<b>QCTHS0834-B</b>	QCTHS0825-20 QCTHS0825-20S QCTHS0834-20 QCTHS0834-20S	QCTHSA0825-20 QCTHSA0825-20S QCTHSA0834-20 QCTHSA0834-20S	QCSJS0822A

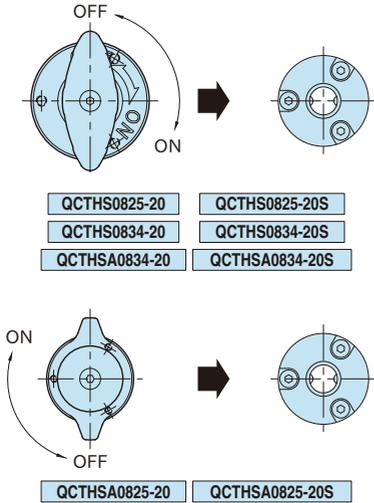
**Supplied With**

3 of low head cap screws(stainless steel), M3×0.5-6L

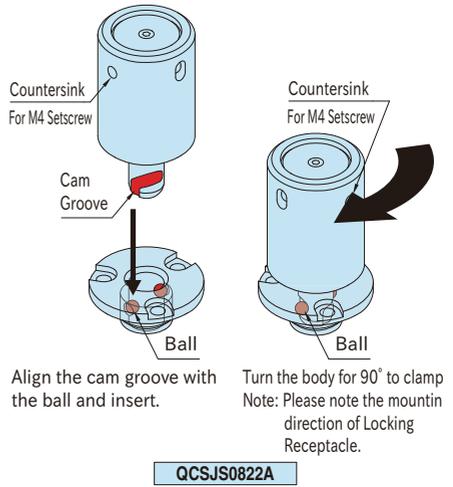
**Reference**

- [QCTHS](#) HEAVY DUTY QUARTER-TURN CLAMPS
- [QCTHS](#) RETRACTABLE HEAVY DUTY QUARTER-TURN CLAMPS
- [QCSJS](#) HEAVY DUTY SHAFT COUPLING CLAMP

## Installing Position with Quarter Turn Clamps



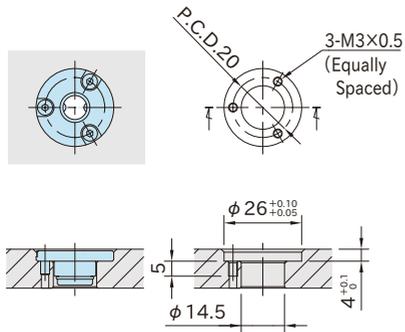
## Installing Position with Shaft Coupling Clamp



## Installing Position

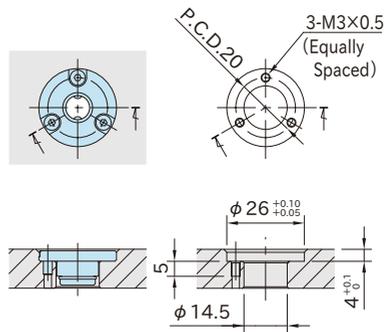
Use with Heavy Duty Quarter-Turn Clamps

Plate thickness should be 9mm or more.



Use with Heavy Duty Shaft Coupling Clamp

Plate thickness should be 9mm or more.



QCWE

KNOB-LOCKING PINS



Stainless Steel



QCWE

QCWE-S

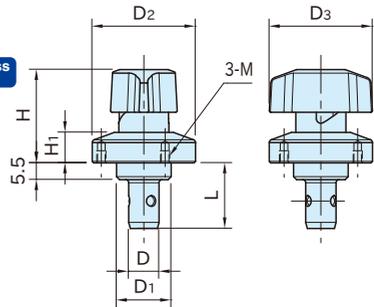
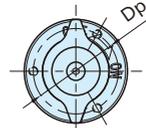
QCWE-SUS

(OFF position)



QCWE

(ON position)



★Key Point  
Clamping can be detected by sensor.

Type	Body	Shank	Knob	Ball	Spring
QCWE	SUS303 stainless steel	S45C steel Electroless nickel plated Quenched and tempered	Polyamide (glass-fiber reinforced) Black	SUS440C stainless steel Quenched and tempered	SUS304WPB stainless steel
QCWE-S			SCS13 stainless steel (Equivalent to SUS304)		
QCWE-SUS		SUS420J2 stainless steel Quenched and tempered			

Size	Proper Plate Thickness	D (-0.05/+0.10)	D <sub>1</sub> (h9)	D <sub>2</sub>	D <sub>3</sub>	L	H	H <sub>1</sub>	M	Dp	Clamping Force(N)	Holding Force (N)**	
QCWE	0625-10	3~10*)	6	14	25	25	19.5	24.5	6.5	M2X0.4 Depth3	21	30	90
QCWE-S													
QCWE-SUS	1034-14	3~14*)	10	18	34	34	21.5	31	10	M3X0.5 Depth4	28	50	150

\*) Spacer [QCASP] is required for thinner plate than 6mm.

\*\*) The holding force limits the gap between plates within 0.1 mm, even if the fastener receives a tensile force exceeding the clamping force.

Size	Proper Receptacle	Proper Sensor Receptacles
QCWE	QCBU0608-M12 QCBU0608-M12SUS	QCWE0625-M16-S
QCWE-S		
QCWE-SUS	QCBU1012-M16 QCBU1012-M16SUS	QCWE1034-M20-S

QCWE (Plastic Knob)		QCWE-S (Metal Knob)		QCWE-SUS (Stainless Steel)	
Part Number	Weight (g)	Part Number	Weight (g)	Part Number	Weight (g)
QCWE0625-10	40	QCWE0625-10S	50	QCWE0625-10-SUS	50
QCWE1034-14	95	QCWE1034-14S	120	QCWE1034-14-SUS	120
QCWE1034-20	100	QCWE1034-20S	130	QCWE1034-20-SUS	130

## Supplied With

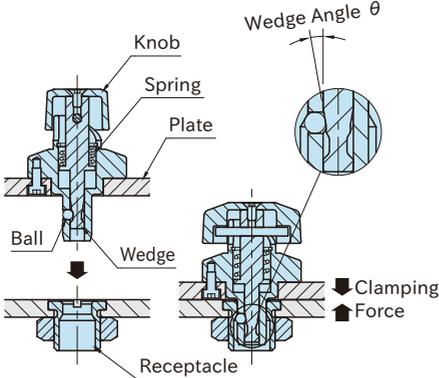
- QCWE | QCWE-S | QCWE-SUS | 0625-10 :  
3 of socket-head cap screws (stainless steel), M2×0.4-5L
- QCWE | QCWE-S | QCWE-SUS | 1034-14, 1034-20 :  
3 of socket-head cap screws (stainless steel), M3×0.5-6L

## QCBU-M

## BALL-LOCK RECEPTACLES

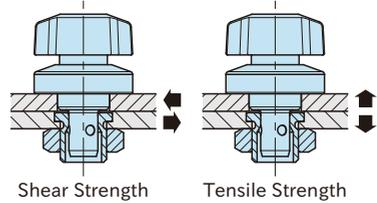


## Feature



The wedge of the locking pin pushes out the ball onto the taper of the receptacle, for clamping of the two plates.

## Technical Information

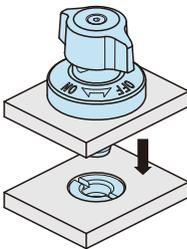


Size		Heatresistant Temperature(°C)	Shear Strength (N)	Tensile Strength (N)
QCWE	0625-10	130	3000	500
	1034-14		9000	1500
	1034-20		9000	1500
QCWE-S QCWE-SUS	0625-10	180	3000	500
	1034-14		9000	1500
	1034-20		9000	1500

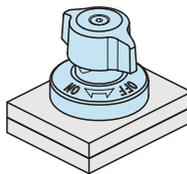
Shear and tensile strength is allowable load and the fastener could break when it receives bigger load.

The ball locking mechanism holds the two plates until the fastener receives bigger tensile load.

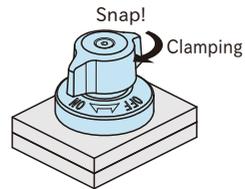
## How To Use



1. Ensure that the knob is positioned at the "OFF" mark.



2. Insert the Knob-Locking Pin.

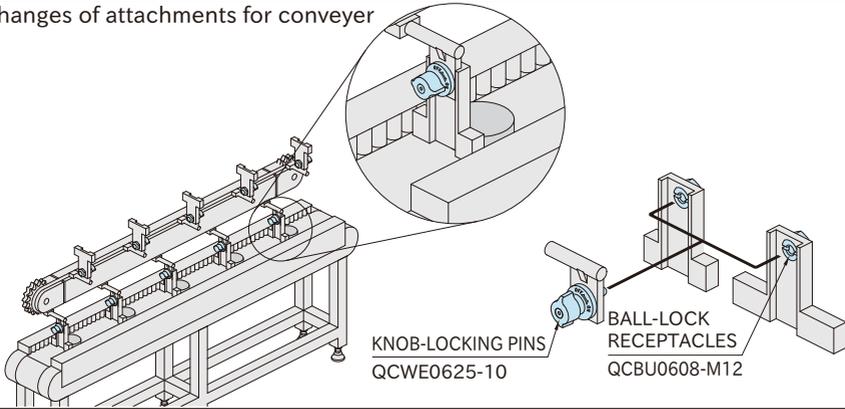


3. Turn the knob to the "ON" mark for clamping. The knob turns lightly by spring force. Note: For unclamping, follow back these steps.

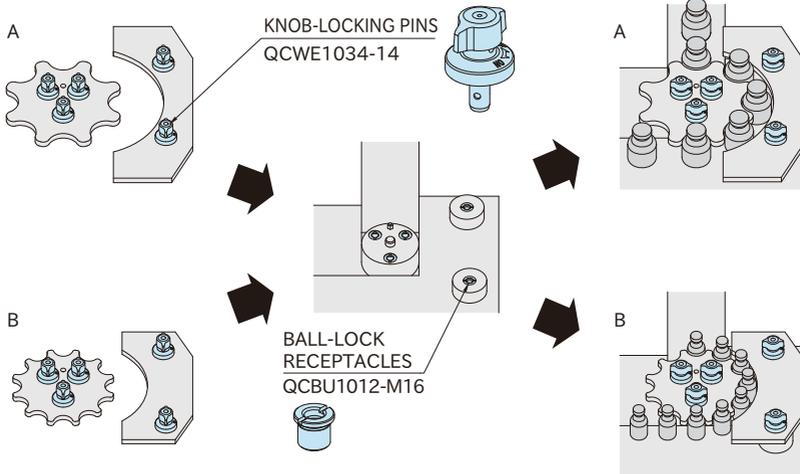
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Application Example

Changes of attachments for conveyer

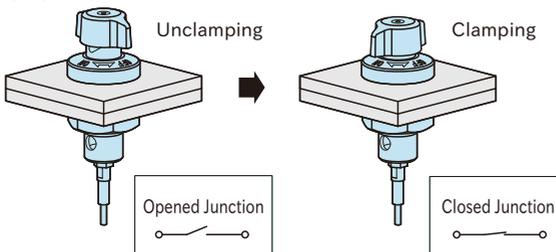


Changes of star wheels and guide plates



Detection by sensor

Detection of clamping condition prevents human error and improper operation of machinery.



QCWE-M-S

POSITION SENSOR RECEPTACLES



## How To Install

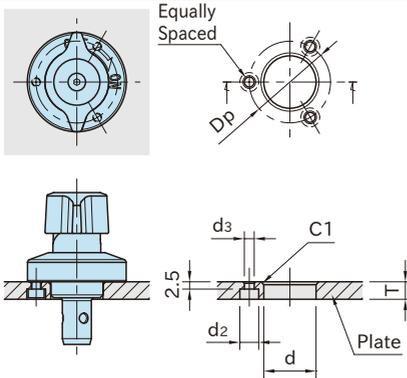


Figure A

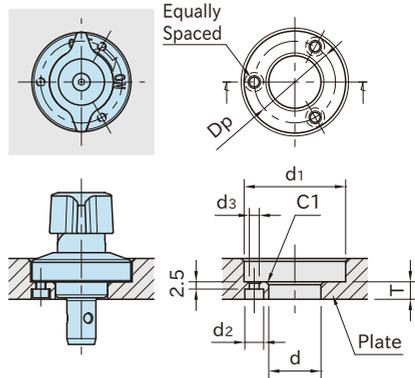


Figure B

Size	Proper Plate Thickness	Figure	d (+0.10 +0.05)	d <sub>1</sub>	T* (±0.2)	d <sub>2</sub>	d <sub>3</sub>	Dp
QCWE QCWE-S QCWE-SUS	0625-10	3 or more, under 6	Spacer <b>QCASP</b> is required.					
		6	A	14	-	6	4.4	2.4
	Over 6, 10 or less	B	26					
0625-10	3 or more, under 6	Spacer <b>QCASP</b> is required.						
		6	A	18	-	6	6.5	3.4
	Over 6, 14 or less	B	35					
	12	A	-		12			
Over 12, 20 or less	B	35						

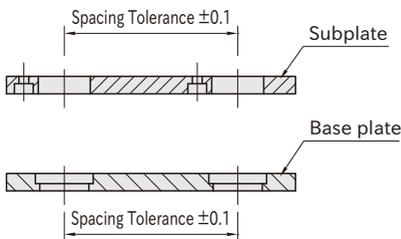
\* In the use of Position Sensor Receptacles **QCWE-M-S**, tolerance of dimension T should be ±0.1 for stable sensor working.

## QCASP SPACERS



## Accuracy

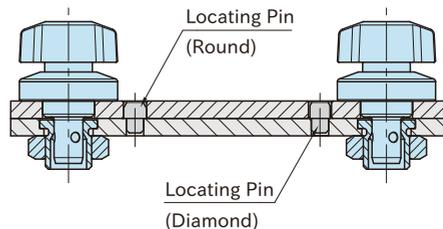
### Machining Accuracy



Spacing tolerance on both the subplate and the base plate should be ±0.1.

### Repeatability

Repeatability ±0.25



For higher accurate locating, use locating pins.

# QCBU / QCBUS BUTTON-LOCKING PINS



Stainless Steel

Heat resistance: 180°C



★Key Point  
Secure clamping with wedge



**QCBU**  
(Standard)



**QCBU-SUS**  
(Stainless Steel)

Stainless Steel

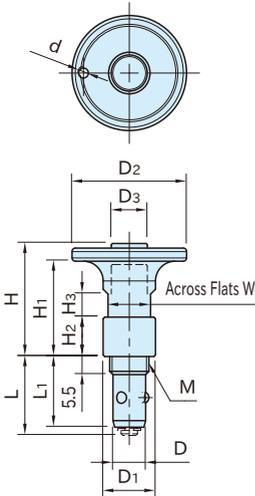


**QCBUS**  
(Cylindrical)

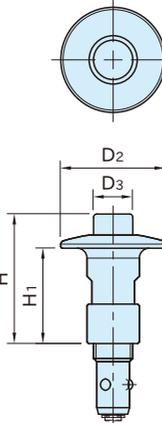


**QCBUS-SUS**  
(Cylindrical, Stainless Steel)

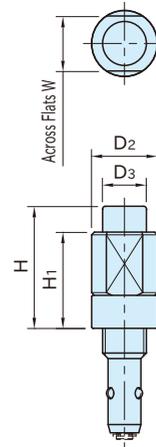
Stainless Steel



**QCBU**



**QCBU-SUS**



**QCBUS**

**QCBUS-SUS**

Part Number	Body	Button	Ball	Coiled Spring	Snap Ring	O-Ring
<b>QCBU</b>	0608-10 S45C steel	S45C steel	Electroless nickel plated	SUS440C stainless steel	SUS304WPB stainless steel	FKM fluororubber
<b>QCBUS</b>	1012-16 Electroless nickel plated					—
<b>QCBU-SUS</b>	0608-10 SUS303	SUS420J2 stainless steel	Quenched and tempered	Quenched and tempered	Stainless steel	FKM fluororubber
<b>QCBUS-SUS</b>	1012-16 stainless steel					—

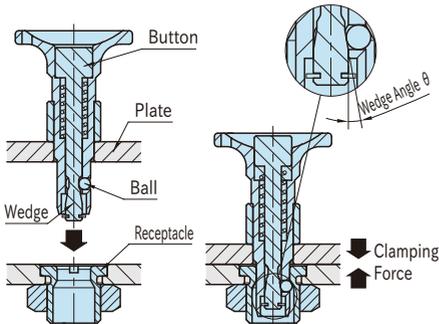
Part Number	Proper Plate Thickness	D ( <sup>-0.05</sup> / <sub>-0.10</sub> )	M	D <sub>1</sub>	L	L <sub>1</sub>	H <sub>2</sub>	W	Clamping Force(N)	Holding Force (N) *	Proper Receptacles	
<b>QCBU</b>	0608-10	6~10	6	M 8×1.25	12	21	19	6	10	30	90	QCBU0608-M12
<b>QCBUS</b>												QCBU0608-M12SUS
<b>QCBU-SUS</b>	1012-16	6~16	10	M12×1.5 (Fine Thread)	16	23.5	21.5	12	13	50	150	QCBU1012-M16
<b>QCBUS-SUS</b>												QCBU1012-M16SUS

\*) The holding force limits the gap between plates within 0.1 mm, even if the fastener receives a tensile force exceeding the clamping force.

QCBU (Standard)								QCBU-SUS (Stainless Steel)						
Part Number	D <sub>2</sub>	D <sub>3</sub>	H	H <sub>1</sub>	H <sub>3</sub>	d	Weight (g)	Part Number	D <sub>2</sub>	D <sub>3</sub>	H	H <sub>1</sub>	H <sub>3</sub>	Weight (g)
QCBU0608-10	25	8	22	18	5.5	—	30	QCBU0608-10-SUS	23	8	26	18	5.5	30
QCBU1012-16	35	11	34.5	29	7	3	75	QCBU1012-16-SUS	32	12	39.5	29	7	75

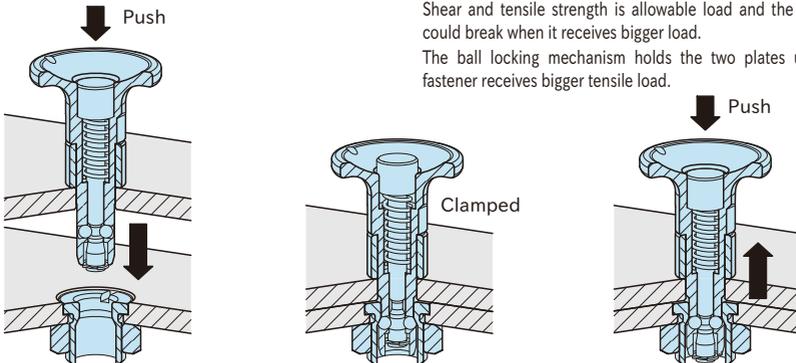
QCBUS (Cylindrical)							QCBUS-SUS (Cylindrical, Stainless Steel)						
Part Number	D <sub>2</sub>	D <sub>3</sub>	H	H <sub>1</sub>	H <sub>3</sub>	Weight (g)	Part Number	D <sub>2</sub>	D <sub>3</sub>	H	H <sub>1</sub>	H <sub>3</sub>	Weight (g)
QCBUS0608-10	12	8	22	17.5	11.5	30	QCBUS0608-10SUS	12	8	22	17.5	11.5	30
QCBUS1012-16	16	11	34.5	28	16	50	QCBUS1012-16SUS	16	11	34.5	28	16	50

### Feature



The wedge of the locking pin pushes out the ball onto the taper of the receptacle, for clamping of the two plates.

### How To Use

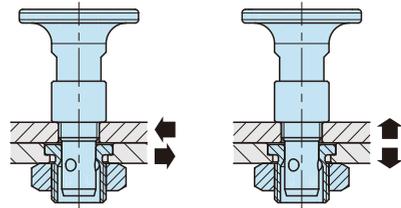


1. Insert the pin pressing the button.

2. When the button is released, plates are clamped.

3. For removal, pull out the pin pressing the button.

### Technical Information



Shear Strength

Tensile Strength

Part Number	Heatresistant Temperature (°C)	Shear Strength (N)	Tensile Strength (N)
QCBU QCBUS QCBU-SUS QCBUS-SUS	180	3000	500
0608-10 1012-16		9000	1500

Shear and tensile strength is allowable load and the fastener could break when it receives bigger load.

The ball locking mechanism holds the two plates until the fastener receives bigger tensile load.

### QCBU-M BALL-LOCK RECEPTACLES



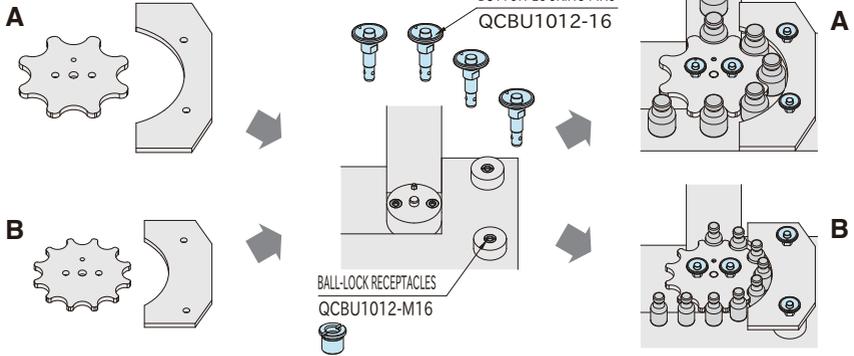
### Note

For cylindrical types, prepare handles or knobs separately to facilitate the operation. Use of cylindrical type requires handles or knobs separately to operate the product properly.

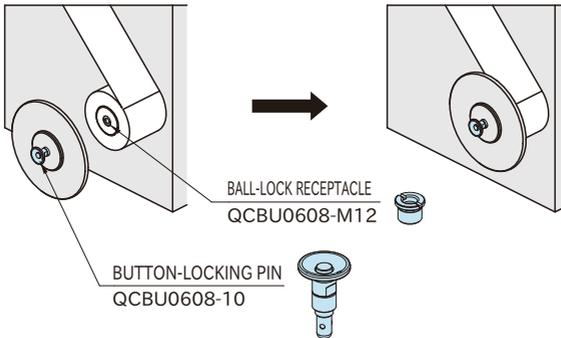
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**Application Example**

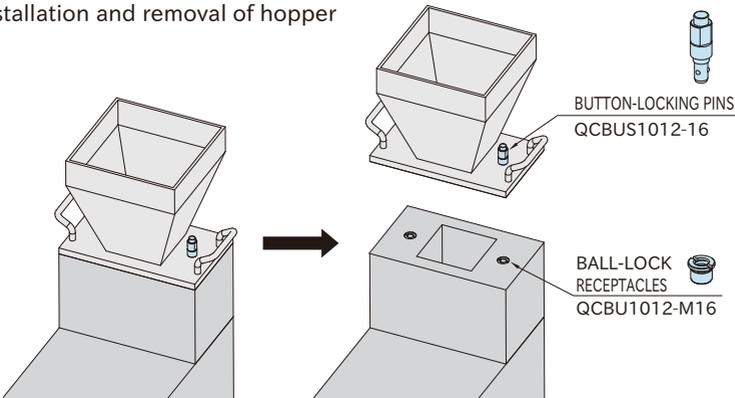
Changes of star wheels and guide plates



Installation and removal of stopper plate for rolls

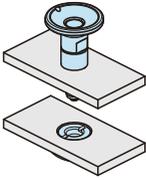


Installation and removal of hopper



## How To Install

### Fixed Installation



Part Number		Proper Plate Thickness	Figure	M	d <sub>2</sub>
QCBU	0608-10	6	A	M 8×1.25	—
		Over 6, 10 or less	B		13
QCBU-SUS	1012-16	6	A	M12×1.5 (Fine Thread)	—
		Over 6, 16 or less	B		17

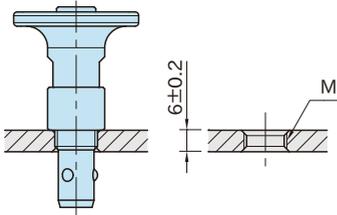


Figure A

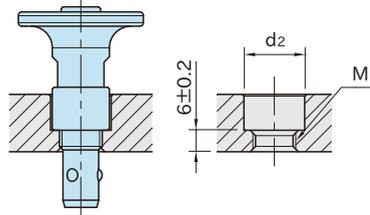
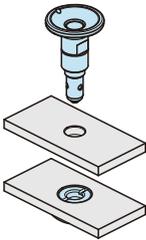


Figure B

### Unfixed Installation (Except QCBUS QCBUS-SUS type)



Part Number		Proper Plate Thickness	Figure	d <sub>1</sub> ( <sup>+0.1</sup> / <sub>0</sub> )	d <sub>2</sub>
QCBU	0608-10	6	C	8	—
		Over 6, 10 or less	D		13
QCBU-SUS	1012-16	6	C	12	—
		Over 6, 16 or less	D		17

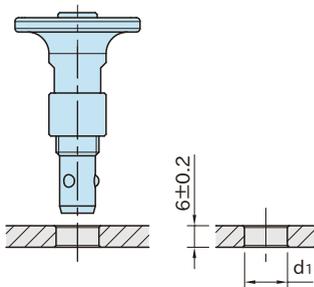


Figure C

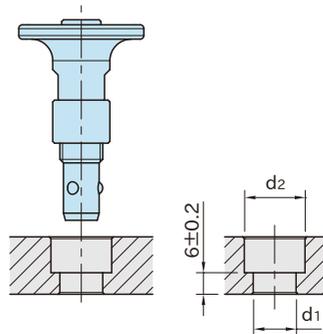
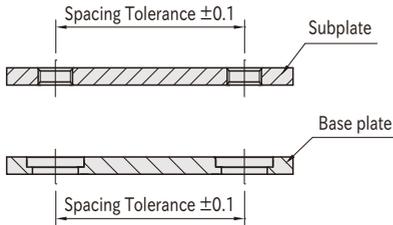


Figure D

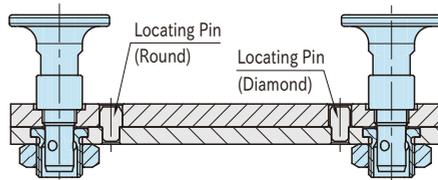
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**Accuracy****■ Machining Accuracy**

Spacing tolerance on both the subplate and the base plate should be  $\pm 0.1$ .

**■ Repeatability**

Repeatability is  $\pm 0.25$  for both fixed and unfixed installations.



For higher accurate locating, use locating pins.



# QCBU-M

# BALL-LOCK RECEPTACLES



Stainless Steel

Heat resistance: 180°C

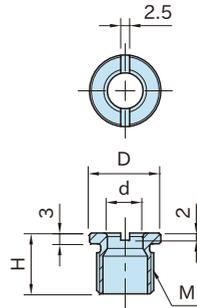


**QCBU-M**



Stainless Steel

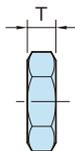
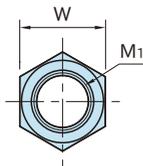
**QCBU-M-SUS**



Type	Body
<b>QCBU-M</b>	S45C steel Electroless nickel plated
<b>QCBU-M-SUS</b>	SUS303 stainless steel

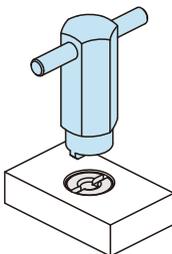
Part Number	Proper Plate Thickness	d (+0.2)	D (h9)	M	H	Weight (g)	Proper Knob-Locking Pins	Proper Button-Locking Pins
<b>QCBU0608-M12</b>	6 or more	6	16	M12×1.5 (Fine Thread)	15	9	QCWE0625-10	QCBU0608-10, QCBUS0608-10
<b>QCBU0608-M12SUS</b>							QCWE0625-10S	QCBU0608-10-SUS
<b>QCBU1012-M16</b>							QCWE0625-10-SUS	QCBUS0608-10SUS
<b>QCBU1012-M16SUS</b>	10	20		M16×1.5 (Fine Thread)	17	13	QCWE1034-14, QCWE1034-14S	QCBU1012-16, QCBUS1012-16
							QCWE1034-20, QCWE1034-20S	QCBU1012-16-SUS
							QCWE1034-14-SUS, QCWE1034-20-SUS	QCBUS1012-16SUS

**Order Separately** Nut (Stainless Steel)



Part Number	M <sub>1</sub>	T	W
<b>NDX12-NUT-SUS</b>	M12×1.5 (Fine Thread)	6	19
<b>NDX16-NUT-SUS</b>	M16×1.5 (Fine Thread)	8	24

**Order Separately** Installation Wrench



Part Number

**PW16**

## How To Install

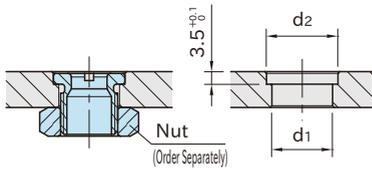


Figure A

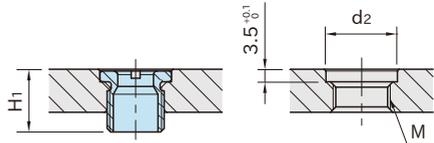
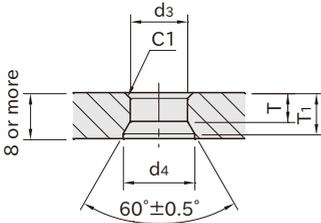


Figure B

Part Number	Proper Plate Thickness	Figure	M	d <sub>1</sub>	d <sub>2</sub> (+0.10 +0.05)	H <sub>1</sub>
<b>QCBU-M</b>	12	6~10	A	—	13	—
		Over 10	B	M12X1.5 (Fine Thread)	—	16
<b>QCBU-M-SUS</b>	16	6~10	A	—	17	—
		Over 10	B	M16X1.5 (Fine Thread)	—	20

## Without Ball-Lock Receptacle

With additional work to plate of 8mm or more thickness, Button-Locking Pins and Knob-Locking Pins can be used directly on the plate made of hard steel such as S45C.



Dimensions				Proper Knob-Locking Pins	Proper Button-Locking Pins
d <sub>3</sub> (+0.4 +0.2)	d <sub>4</sub>	T (±0.1)	T <sub>1</sub>		
6	8 or more	4.9	(6.6)	<b>QCWE</b> <b>QCWE-S</b> <b>QCWE-SUS</b>	<b>0625-10</b> <b>1034-14</b> <b>1034-20</b>
10	12.5 or more	5	(7.2)	<b>QCBU</b> <b>QCBU-SUS</b> <b>QCBUS</b> <b>QCBUS-SUS</b>	<b>0608-10</b> <b>1012-16</b>

## Reference

"Accuracy" of **QCWE** Knob-Locking Pins and **QCBU**/**QCBUS** Button-Locking Pins

QCPC

PIN HOLDING CLAMPS



Stainless Steel



QCPC



QCPC-S

(OFF position)



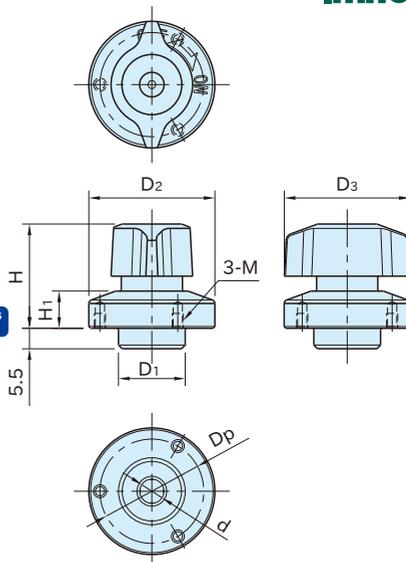
QCPC-SUS

Stainless Steel



QCPC

(ON position)



★Key Point

Pin clamping design enables space-saving application.

Type	Body	Shaft	Knob	Ball	Spring
QCPC	SUS303 stainless steel	S45C steel Electroless nickel plated	Polyamide (glass-fiber reinforced) Black	SUS440C stainless steel Quenched and tempered	SUS304WPB stainless steel
QCPC-S			SCS13 stainless steel (Equivalent to SUS304)		
QCPC-SUS		SUS303 stainless steel			

Size	Proper Plate Thickness	d (+0.4 / -0.2)	D1 (h9)	D2	D3	H	H1	M	Dp	Clamping Force (N)	Holding Force (N)**	Proper Clamping Pins	
QCPC QCPC-S	0625-10	3~10 *)	6	14	25	25	23	6.5	M2×0.4 Depth 3	21	7	110	QCPC0625-M4-SUS
QCPC-SUS	0834-14	3~14 *)	8	18	34	34	28	10	M3×0.5 Depth 4	28	9	150	QCPC0834-M5-SUS

\*) Spacer [QCASP] is required for thinner plate than 6mm.

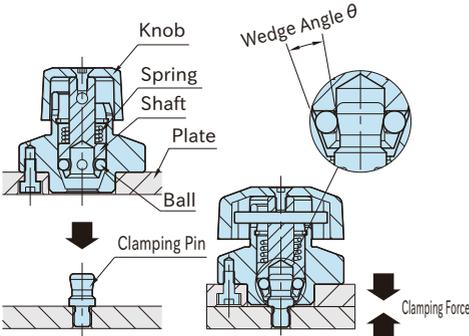
\*\*) The holding force limits the gap between plates within 0.1 mm, even if the fastener receives a tensile force exceeding the clamping force.

QCPC (Plastic Knob)		QCPC-S (Metal Knob)		QCPC-SUS (Stainless Steel)	
Part Number	Weight (g)	Part Number	Weight (g)	Part Number	Weight (g)
QCPC0625-10	35	QCPC0625-10S	45	QCPC0625-10-SUS	45
QCPC0834-14	85	QCPC0834-14S	105	QCPC0834-14-SUS	105



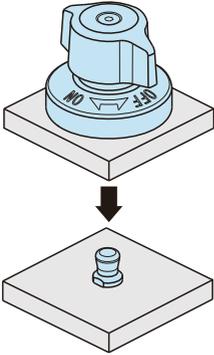
- Supplied With**
- QCPC QCPC-S QCPC-SUS 0625-10 : 3 of socket-head cap screws(stainless steel), M2×0.4-5L
  - QCPC QCPC-S QCPC-SUS 0834-14 : 3 of socket-head cap screws(stainless steel), M3×0.5-6L

## Feature



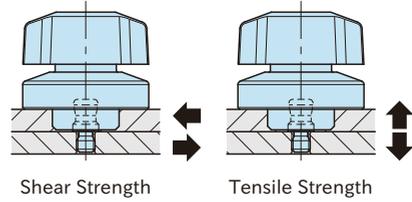
Four balls hold the Clamping Pin to pull the plate for clamping.

## How To Use



1. Ensure that the knob is positioned at the "OFF" mark and put Pin Holding Clamp over the Clamping Pin.

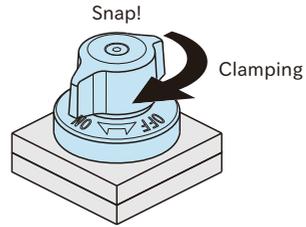
## Technical Information



Size		Heatresistant Temperature (°C)	Shear Strength (N)	Tensile Strength (N)
QCPC	0625-10	130	1100	250
	0834-14		1800	400
QCPC-S	0625-10	180	1100	250
QCPC-SUS	0834-14		1800	400

Shear and tensile strength is allowable load and the fastener could break when it receives bigger load.

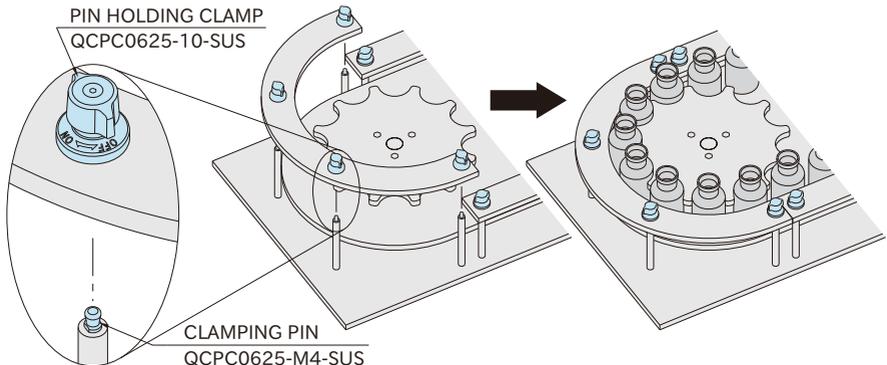
The ball locking mechanism holds the two plates until the fastener receives bigger tensile load.



2. Turn the knob to the "ON" mark for clamping.  
Note: For unclamping, follow back these steps.

## Application Example

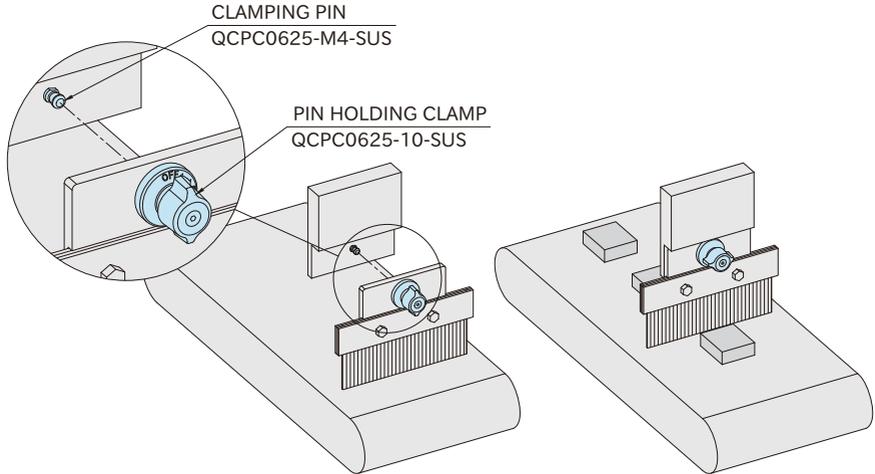
Changes of guides around star wheels



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**Application Example**

Changes of static electricity removal brush



**How To Install**

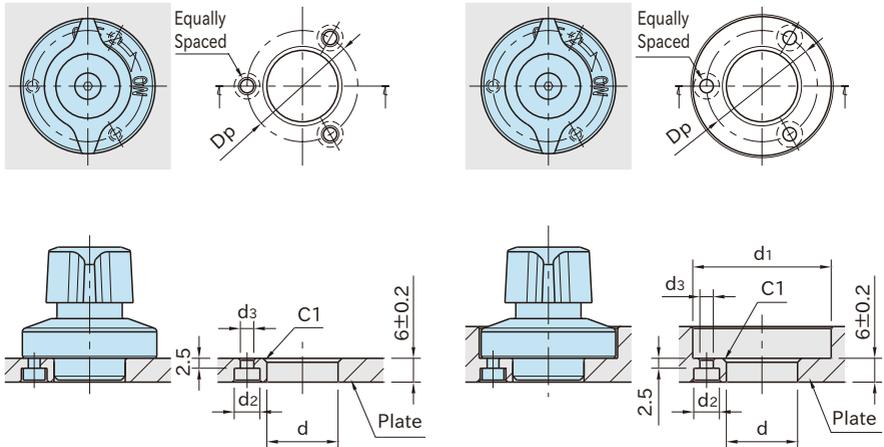


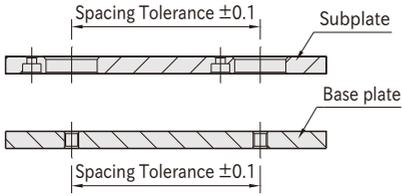
Figure A

Figure B

Size	Proper Plate Thickness	Figure	d (+0.10 +0.05)	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	D <sub>p</sub>	
<b>QCPC</b> <b>QCPC-S</b> <b>QCPC-SUS</b>	<b>0625-10</b> 3 or more, under 6 6 Over 6, 10 or less	Spacer <b>QCASP</b> is required.						
		A	14	—	4.4	2.4	21	
	B	—	26	4.4	2.4	21		
<b>QCPC-SUS</b>	<b>0834-14</b> 3 or more, under 6 6 Over 6, 14 or less	Spacer <b>QCASP</b> is required.						
		A	18	—	6.5	3.4	28	
	B	—	35	6.5	3.4	28		

## Accuracy

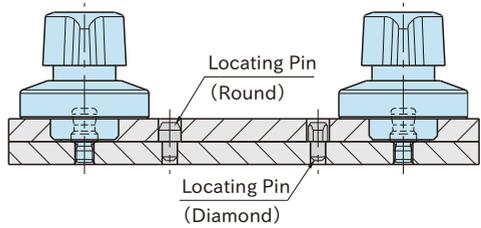
### ■ Machining Accuracy



Spacing tolerance on both the subplate and the base plate should be  $\pm 0.1$ .

### ■ Repeatability

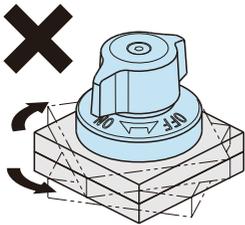
Repeatability  $\pm 0.25$



For higher accurate locating, use locating pins.

### 🔪 Note

Rotation of either sub plate or base plate can get Pin Holding Clamp unclamped, when one pair of the clamp and the clamping pin is used. Prepare a stop in such application.



### Reference

- "How To Install" of [QCPC-M](#) Clamping Pins
- Spacer [QCASP](#) is required for 3mm or more, under 6mm plate thickness.

## QCASP SPACERS



# QCOW / QCOWS SNAP-IN CLAMPS



Stainless Steel

Heat resistance: 180°C

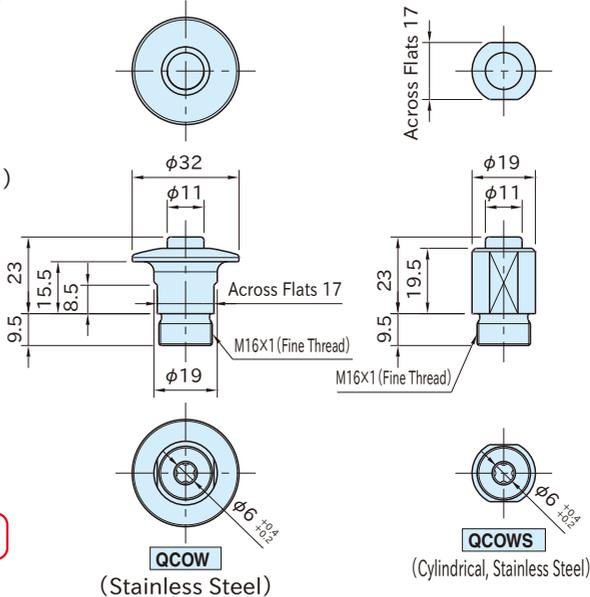


**QCOW**  
(Stainless Steel)



**QCOWS**  
(Cylindrical, Stainless Steel)

Body/Button	Ball	Spring	O-Ring
SUS303 stainless steel	SUS440C stainless steel Quenched and tempered	SUS304WPB stainless steel	FKM Fluororubber



★ **Key Point**

Quick & easy snap-in operation

Part Number	Proper Plate Thickness	Clamping Force (N)	Holding Force (N)*	Weight (g)	Proper Clamping Pin
<b>QCOW 0616-10SUS</b>	3~10	6	100	65	QCPC0625-M4-SUS
<b>QCOWS0616-10SUS</b>	3~27			50	

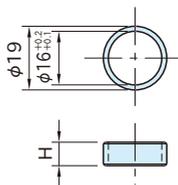
\*) The holding force limits the gap between plates within 0.1 mm, even if the fastener receives a tensile force exceeding the clamping force.

# QCOW SPACERS



Stainless Steel

Heat resistance: 180°C

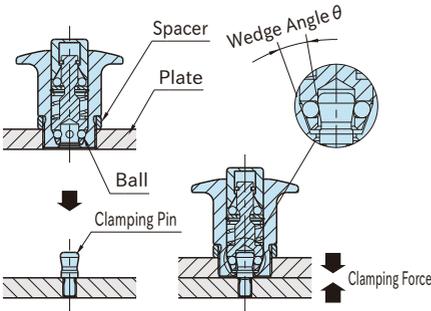


Spacer  
SUS303 stainless steel

Part Number	Proper Plate Thickness	H ( $\pm 0.05$ )	Weight (g)	Proper Snap-In Clamps
<b>QCOW0616-04-SUS</b>	6	4	2.5	QCOW0616-10SUS QCOWS0616-10SUS
<b>QCOW0616-05-SUS</b>	5	5	3	
<b>QCOW0616-06-SUS</b>	4	6	3.5	
<b>QCOW0616-07-SUS</b>	3	7	4	

QCPC-M	CLAMPING PINS

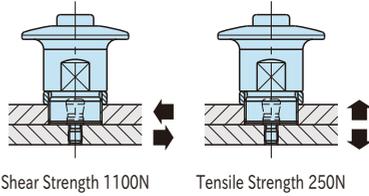
## Feature



Four balls hold the Clamping Pin to pull the plate for clamping.

## Technical Information

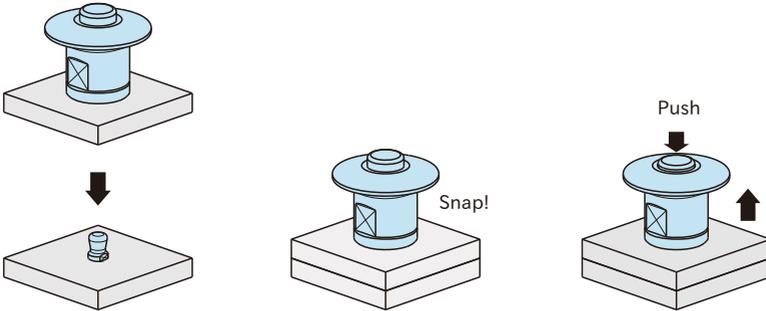
- Heatresistant Temperature 180°C
- Mechanical Strength



Shear and tensile strength is allowable load and the fastener could break when it receives bigger load.

The ball locking mechanism holds the two plates until the fastener receives bigger tensile load.

## How To Use

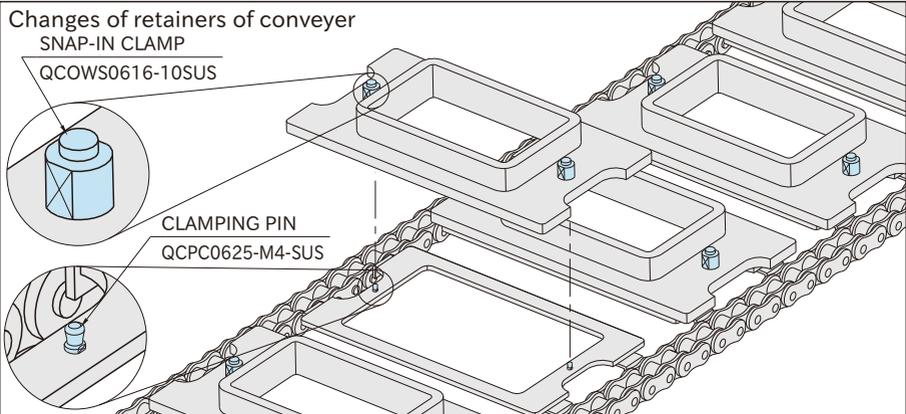


1. Put Snap-In Clamp over the Clamping Pin. No need to push the button.

2. Clamped instantly as the pin is inserted.

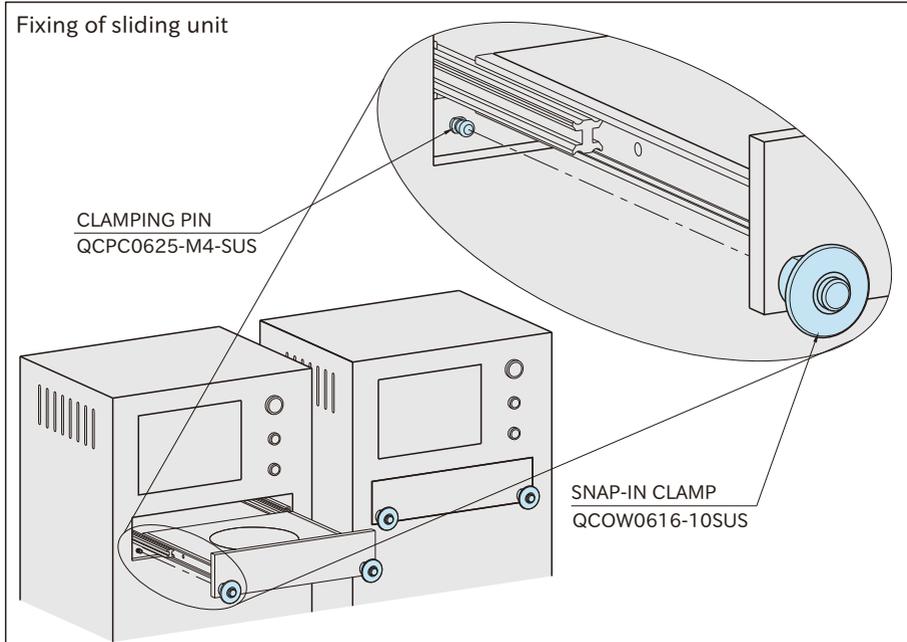
3. For unclamping, push the button and pull the clamp.

## Application Example



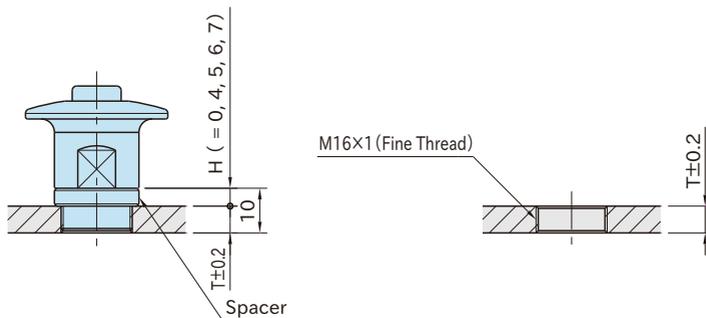
Continuing on Next Page

Application Example

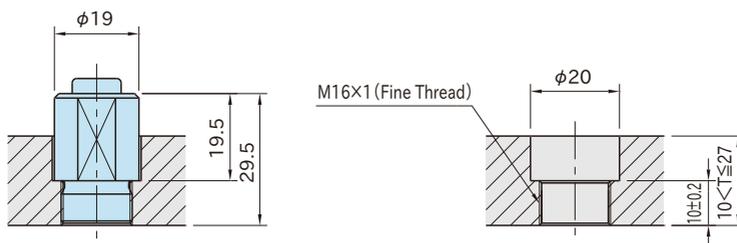


How To Install

For 3 to 10mm-thick plate

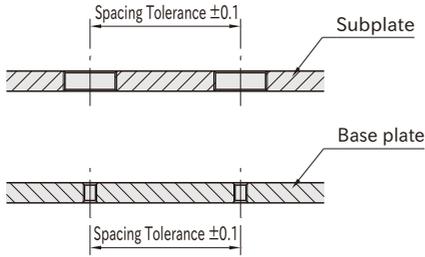


For over 10mm-thick plate



## Accuracy

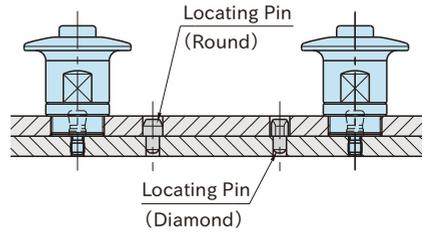
### ■ Machining Accuracy



Spacing tolerance on both the subplate and the base plate should be  $\pm 0.1$ .

### ■ Repeatability

Repeatability  $\pm 0.25$



For higher accurate locating, use locating pins.

# QCPC-M

# CLAMPING PINS



Stainless Steel

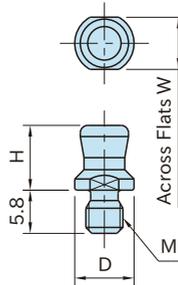
Heat resistance: 180°C



QCPC0625-M4-SUS



QCPC0834-M5-SUS



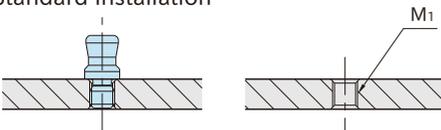
Body
SUS630 stainless steel Precipitation hardened

Part Number	D ( $-0.05$ $-0.10$ )	M	H	W	Weight (g)	Proper Pin Holding Clamps	Proper Snap-In Clamps
QCPC0625-M4-SUS	6	M4×0.7	7.6	5	2	QCPC0625-10 QCPC0625-10S QCPC0625-10-SUS	QCOW0616-10SUS QCOWS0616-10SUS
QCPC0834-M5-SUS	8	M5×0.8	8.7	7	3	QCPC0834-14 QCPC0834-14S QCPC0834-14-SUS	—

Note: Refer to the product pages of clamps for machining accuracy and repeatability.

## How To Install

### Standard Installation

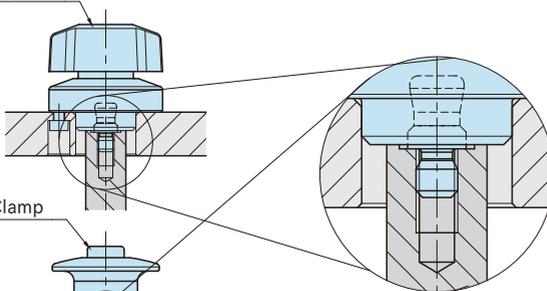


Part Number	M <sub>1</sub>	d
QCPC0625-M4-SUS	M4×0.7	7
QCPC0834-M5-SUS	M5×0.8	9

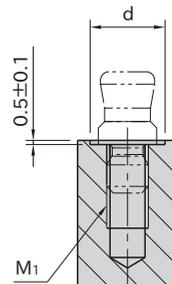
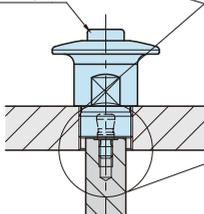
### Space-Saving Installation

Prepare a counterbored hole with depth  $0.5 \pm 0.1$  on the surface where Clamping Pin to be mounted directly contacts with the bottom surface of the clamp.

#### Pin Holding Clamp



#### Snap-In Clamp



#### Note

The color could be different from the picture due to the hardening.



# QCHC-N

## HOLE HOLDING CLAMPS



Stainless Steel

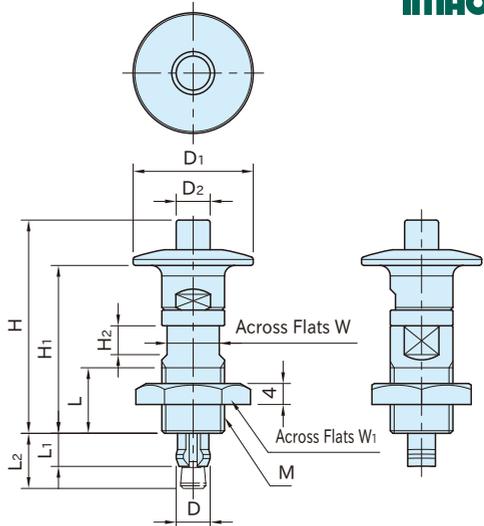
Heat resistance: 180°C



QCHC-N-3



QCHC-N-6



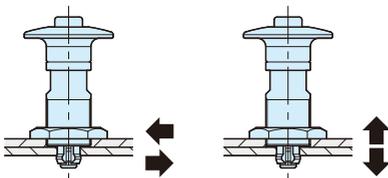
★Key Point  
Receptacle is not required.

Part Number	Body/Nut	Spacer	Spring/Snap Ring
QCHC-N-3	SUS303 stainless steel	SUS303 stainless steel	SUS304WPB stainless steel
QCHC-N-6		—	

Part Number	Proper Base Plate Thickness	Proper Plate Thickness	D	M	D <sub>1</sub>	D <sub>2</sub>	H	L	H <sub>1</sub>	L <sub>1</sub>	L <sub>2</sub>	H <sub>2</sub>	W	W <sub>1</sub>	Clamping Force(N)	Holding Force (N*)	Weight (g)
QCHC0612N-3-SUS	3	3~ 8	6.5	M12×1 (Fine Thread)	23	6.5	40	12.5	32	6.5	10.5	5.5	10	19	3	30	41
QCHC0612N-6-SUS	6						37		29	9.5	13.5						40
QCHC0816N-3-SUS	3	3~12	8.5	M16×1 (Fine Thread)	32	10	51	16.5	41.5	6.5	11	7	14	24	6	60	88
QCHC0816N-6-SUS	6						48		38.5	9.5	14						86

\*) The holding force limits the gap between plates within 0.1 mm, even if the fastener receives a tensile force exceeding the clamping force.

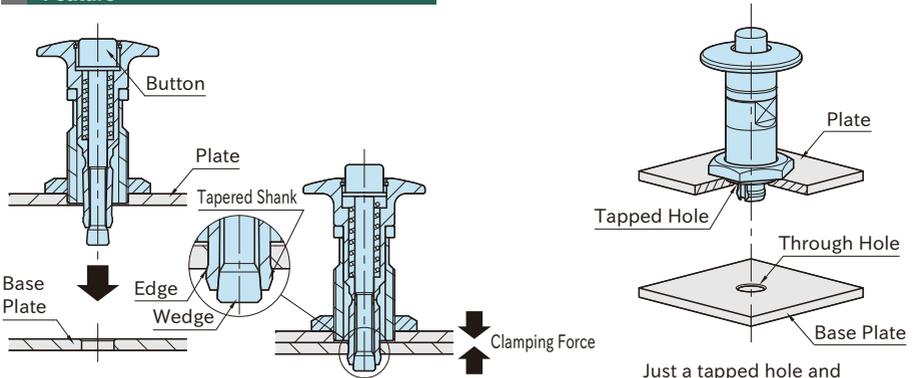
### Technical Information



Shear Strength      Tensile Strength  
Shear and tensile strength is allowable load and the fastener could break when it receives bigger load.

Part Number	Heat Resistant Temperature (°C)	Shear Strength (N)	Tensile Strength (N)
QCHC0612N-3-SUS	180	200	150
QCHC0612N-6-SUS			150
QCHC0816N-3-SUS		400	300
QCHC0816N-6-SUS			

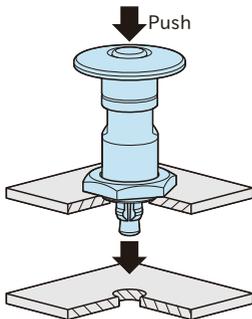
## Feature



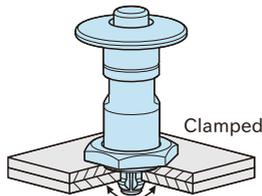
The tapered shank expanded by the wedge pushes out the edge of the hole on the base plate, and the two plates are clamped.

Just a tapped hole and a through hole are required.

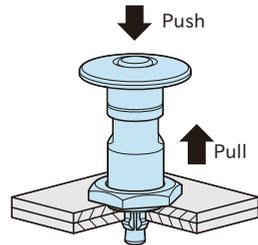
## How To Use



1. Insert Hole Holding Clamp pressing the button.



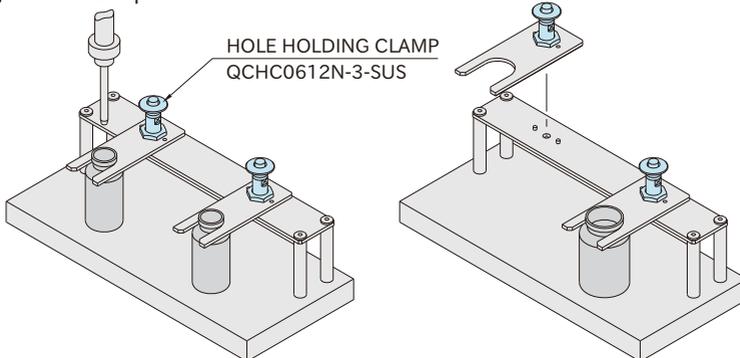
2. The slitted part on the shank expands once the button is released, and the plate is clamped.



3. For unclamping, push the button and pull the clamp.

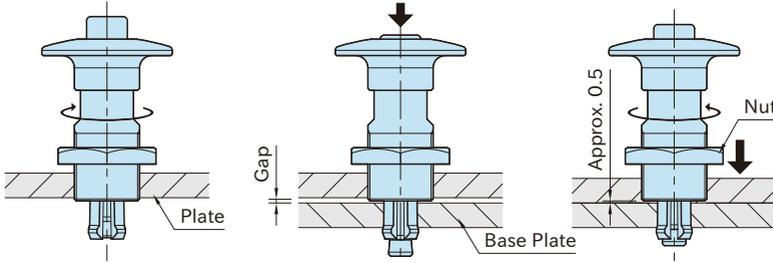
## Application Example

Changes of holder plates



Continuing on Next Page

**How To Install**

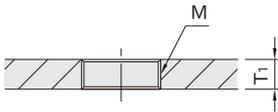


1. Screw Hole Holding Clamp into the plate until the end of threaded part comes out of the plate.

2. Insert the clamp pushing the button.

3. Adjust the clamp until the both plates get contacted, and then lock the clamp with the nut.

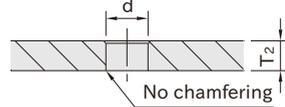
**Mounting Hole on Plate**



Part Number	M	T <sub>1</sub>
<b>QCHC0612N</b>	M12×1 (Fine Thread)	3~ 8
<b>QCHC0816N</b>	M16×1 (Fine Thread)	3~12

**Mounting Hole on Baseplate**

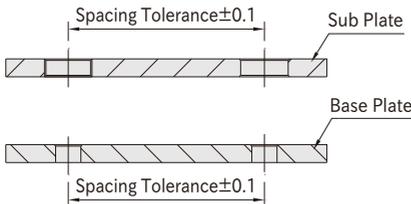
Use hard metals such as stainless steels for the base plate.



Part Number	d (±0.1)	T <sub>2</sub>
<b>QCHC0612N-3-SUS</b>	6.5	3
<b>QCHC0612N-6-SUS</b>		6
<b>QCHC0816N-3-SUS</b>	8.5	3
<b>QCHC0816N-6-SUS</b>		6

**Accuracy**

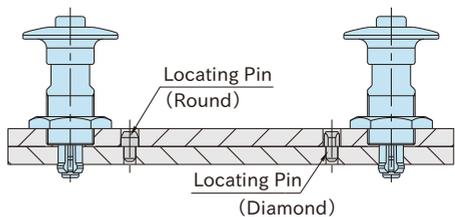
**Machining Accuracy**



Spacing tolerance on both the subplate and the base plate should be ±0.1.

**Repeatability**

Repeatability ±0.25



For higher accurate locating, use locating pins.



# QCBA / QCBAS BALL-LOCK CLAMPING RECEPTACLES



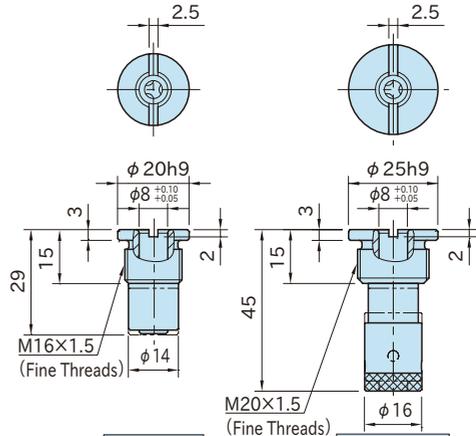
Heat resistance: 180°C



**QCBA0816**  
(Standard)

**QCBAS0820**  
(Safety Lock)

Type	Body/Collar	Balls	Coiled Spring	Locking Knob
<b>QCBA0816</b>	S45C steel Electroless nickel plated	SUS440C stainless steel Quenched and tempered	SUS304WPB stainless steel	—
<b>QCBAS0820</b>	S45C steel Electroless nickel plated	SUS440C stainless steel Quenched and tempered	SUS304WPB stainless steel	S45C steel Electroless nickel plated



**QCBA0816**  
(Standard)

**QCBAS0820**  
(Safety Lock)

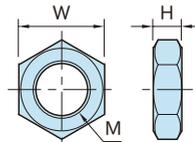
**QCBA0816** (Standard)

Part Number	Clamping Force (N)	Weight (g)
<b>QCBA0816A</b>	7	30
<b>QCBA0816B</b>	15	

**QCBAS0820** (Safety Lock)

Part Number	Clamping Force (N)	Weight (g)
<b>QCBAS0820A</b>	7	65
<b>QCBAS0820B</b>	15	

Order Separately Nut (Stainless Steel)



Part Number	M (Fine Threads)	H	W	Proper Ball-Lock Clamping Receptacles
<b>NDX16-NUT-SUS</b>	M16x1.5	8	24	<b>QCBA0816</b>
<b>NDX20-NUT-SUS</b>	M20x1.5	10	30	<b>QCBAS0820</b>

Order Separately Installation Wrench



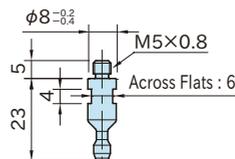
Part Number  
**PW16**

## QCBA-M

## BALL-LOCK CLAMPING PINS



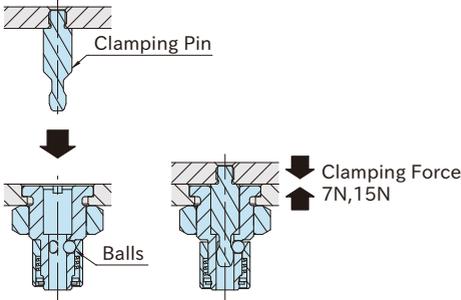
Heat resistance: 180°C



Body
S45C steel Quenched and tempered Electroless nickel plated

Part Number	Weight (g)
<b>QCBA0816-M5</b>	7

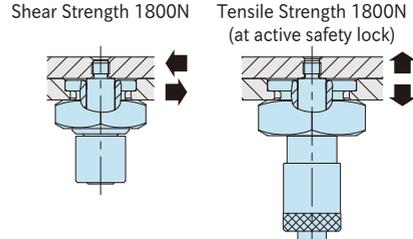
## Feature



The 3 balls pull in the clamping pin.

## Technical Information

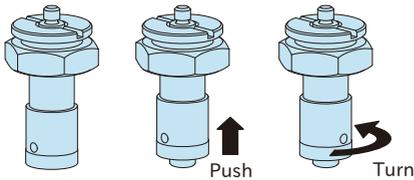
- Heat resistance 180°C
- Mechanical Strength



Shear and tensile strength is allowable load and the fastener could break when it receives bigger load.

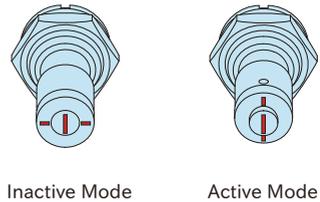
When the fastener receives tensile load that is bigger than its clamping force, there is a gap between the plates.

## How To Operate Safety Lock



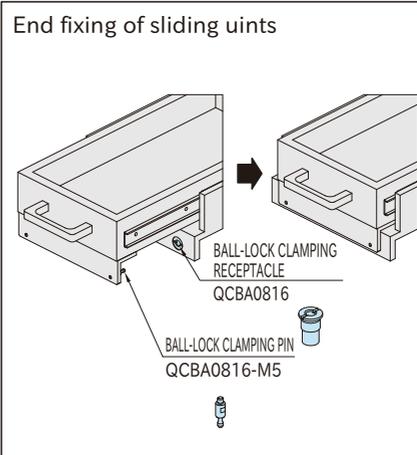
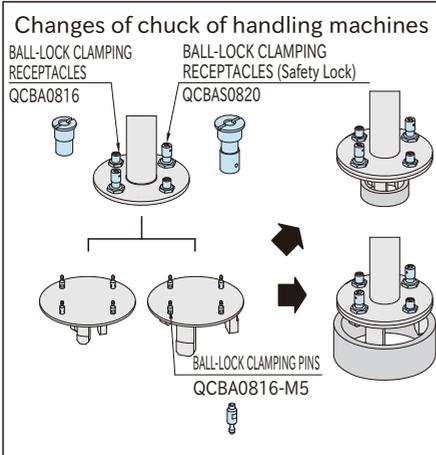
Turn in the arrowhead direction pushing the locking knob.  
Note: To release the safety lock, follow the steps back.

## How To Check Safety Lock



When the mark lines on the end of the locking knob are aligned, the safety lock is active.

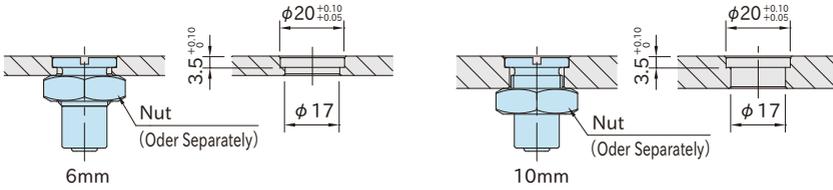
## Application Example



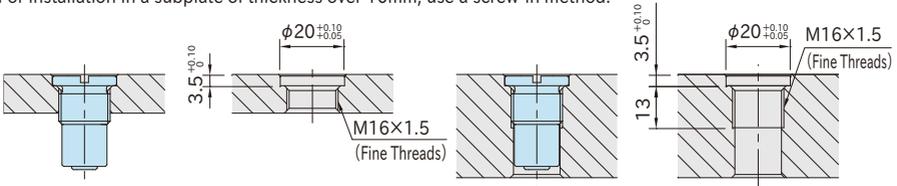
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**How To Install (Standard)**

For installation in a subplate of thickness ranging from 6mm to 10mm, use a nut for fastening.



For installation in a subplate of thickness over 10mm, use a screw-in method.

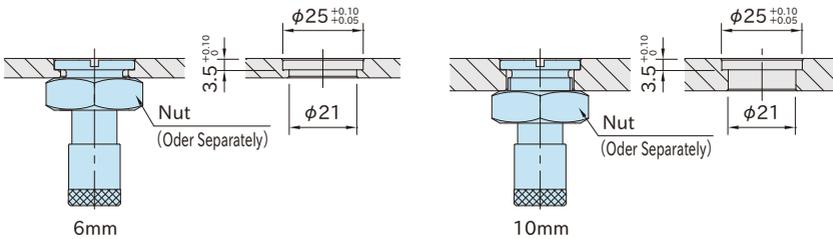


Installation in a subplate

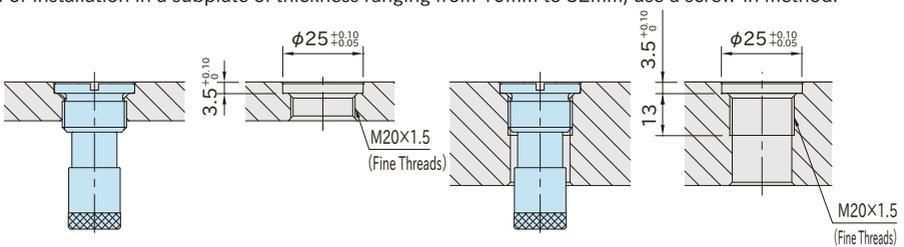
Installation in a block

**How To Install (Safety Lock)**

For installation in a subplate of thickness ranging from 6mm to 10mm, use a nut for fastening.



For installation in a subplate of thickness ranging from 10mm to 32mm, use a screw-in method.

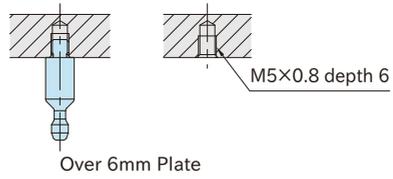
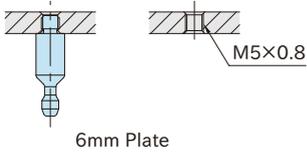


Installation in a subplate

Installation in a block

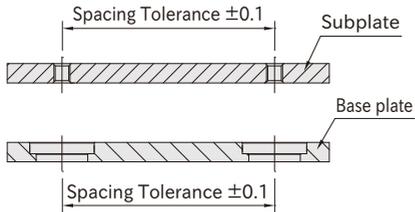
## How To Install (Ball-Lock Clamping Pins)

Plate thickness should be 6mm or more.



## Accuracy

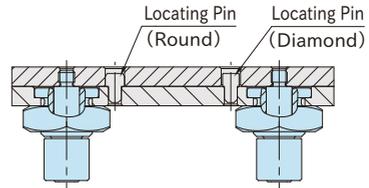
### ■ Machining Accuracy



Spacing tolerance on both the subplate and the base plate should be  $\pm 0.1$ .

### ■ Repeatability

Repeatability  $\pm 0.25$



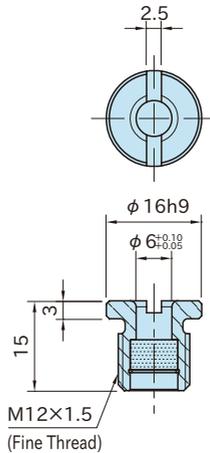
For higher accurate locating, use locating pins.

**QCMA**

**MAGNET-LOCK CLAMPING RECEPTACLE**



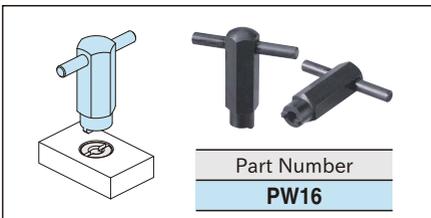
Stainless Steel



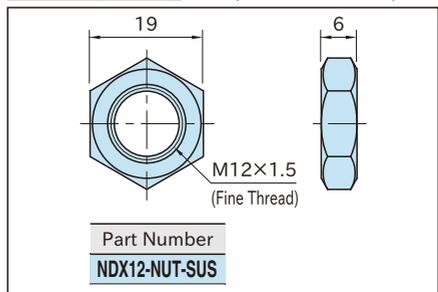
Body	Magnet
SUS304 stainless steel	Neodymium

Part Number	Clamping Force (N)	Weight (g)
<b>QCMA0612A</b>	7	12

Order Separately Installation Wrench

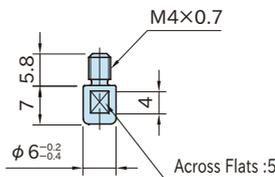


Order Separately Nut (Stainless Steel)



**QCMA-M**

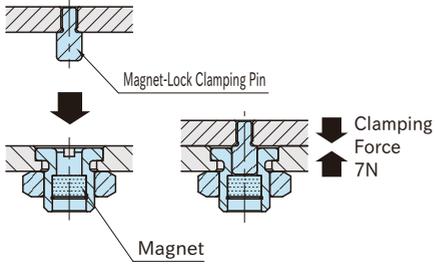
**MAGNET-LOCK CLAMPING PIN**



Body
S45C steel Electroless nickel plated

Part Number	Weight (g)
<b>QCMA0612-M4</b>	2

## Feature

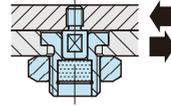


The magnet pulls in the clamping pin.

## Technical Information

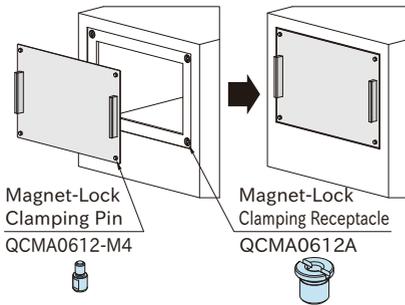
- Heat resistance 80°C
- Mechanical Strength

Shear Strength 900N



## Application Example

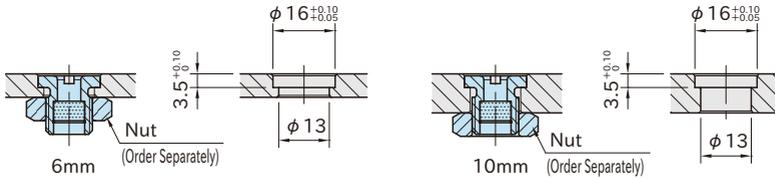
Installation/removal of maintenance cover plate of machines



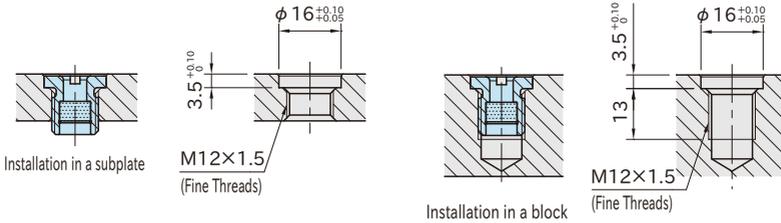
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**How To Install Magnet-Lock Clamping Receptacle**

For installation in a subplate of thickness ranging from 6mm to 10mm, use a nut for fastening.

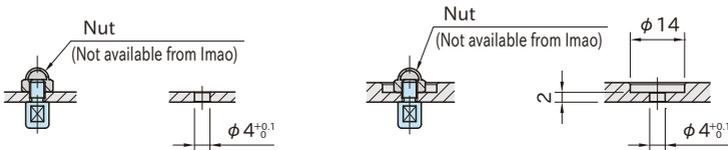


For installation in a subplate of thickness over 10mm, use a screw-in method.



**How To Install Magnet-Lock Clamping Pin**

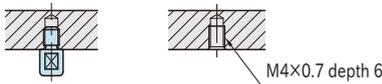
For installation in a subplate of thickness ranging from 2mm to 6mm, use a nut for fastening.



Installation in a plate of thickness ranging from 2 to 2.6mm.

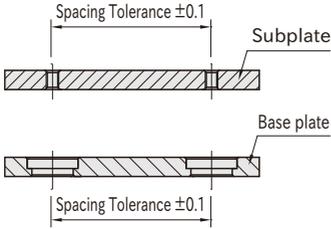
Installation in subplates of thickness ranging from over 2.6mm to 6mm.

For installation in a subplate of thickness over 6mm, use a screw-in method.



### Accuracy

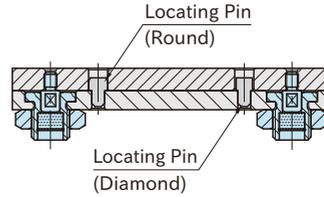
#### ■ Machining Accuracy



Spacing tolerance on both the subplate and the base plate should be  $\pm 0.1$ .

#### ■ Repeatability

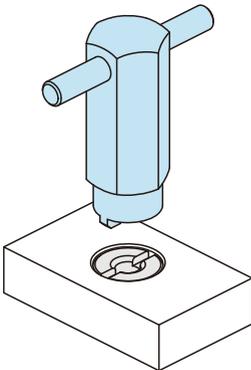
Repeatability  $\pm 0.25$



For higher accurate locating, use locating pins.

## Installation Wrench

### Order Separately



Use this wrench for installation and removal of the parts below.

- [QCWE-M-S](#) POSITION SENSOR RECEPTACLES
- [QCBU-M](#) [QCBU-M-SUS](#) BALL-LOCK RECEPTACLES
- [QCBA](#) [QCBAS](#) BALL-LOCK CLAMPING RECEPTACLES
- [QCMA](#) MAGNET-LOCK CLAMPING RECEPTACLE



Part Number

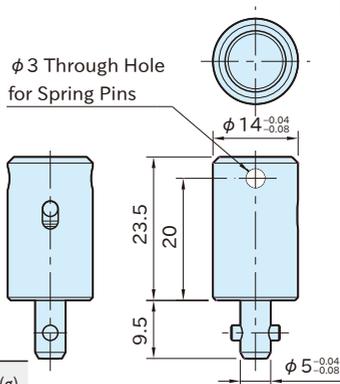
**PW16**

**QCSJ**

**SHAFT COUPLING CLAMP**



Heat resistance: 180°C



★ **Key Point**

Multipurpose coupling element

Part Number	Clamping Force(N)	Holding Force(N)*	Weight(g)
<b>QCSJ0514A</b>	90	90	25

\*) The holding force limits the gap between plates within 0.1 mm.

**Note**

Spring pins are not supplied.

Body/Shank	Pin	Spring
S45C steel Electroless nickel plated	SUS304 stainless steel	Equivalent to SWOSC-V steel

**QCSJ-S / QCSJ-B**

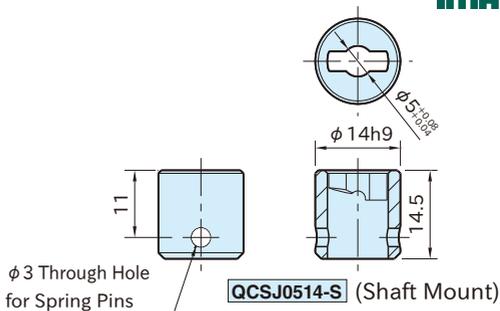
**CAM RECEPTACLES**



**QCSJ0514-S**  
(Shaft Mount)



**QCSJ0514-B**  
(Plate Mount)



Body
SCM440 steel Quenched and tempered Electroless nickel plated

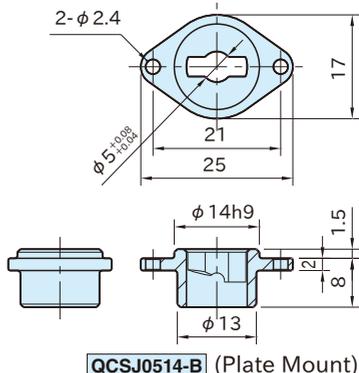
Part Number	Weight(g)
<b>QCSJ0514-S</b>	10
<b>QCSJ0514-B</b>	8

**Supplied With**

**QCSJ0514-B**: 2 of socket-head cap screws (stainless steel), M2×0.4-5L

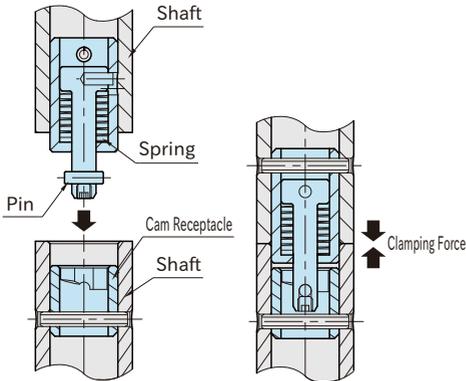
**Note**

Spring pins to mount **QCSJ0514-S** are not supplied.



**QCSJ0514-B** (Plate Mount)

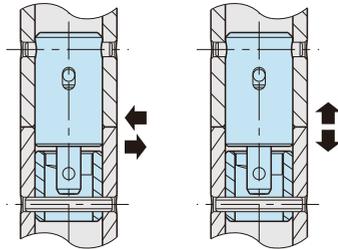
## Feature



When the pin contacts along the cam surface in Cam Receptacle, the spring gets compressed to clamp the shafts.

## Technical Information

- Heatresistant Temperature 180°C
- Mechanical Strength

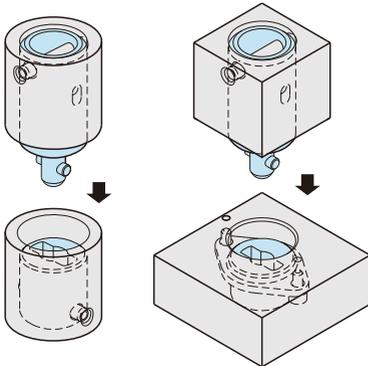


Shear Strength 1800N    Tensile Strength 1200N

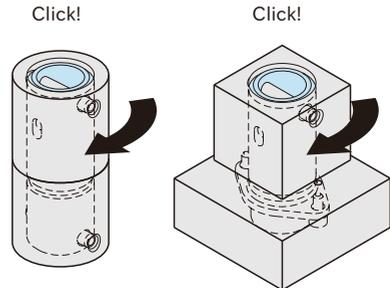
Shear and tensile strength is allowable load and the fastener could break when it receives bigger load.

When the fastener receives tensile load that is bigger than its clamping force, there is a gap between the parts.

## How To Use



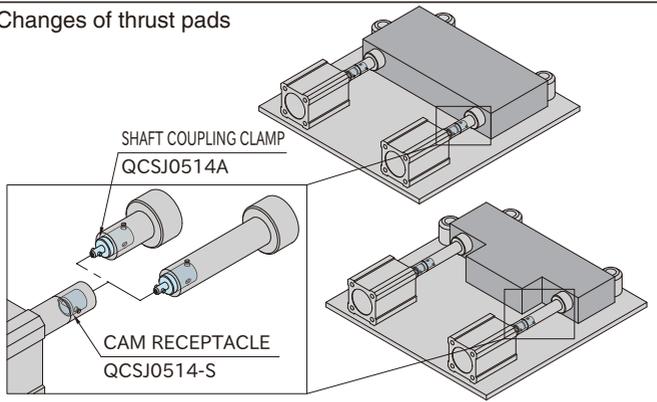
1. Insert the shaft into the keyway of Cam Receptacle.



2. Turn the shaft or block for 90° to clamp. The element clicks when clamped. For unclamping, follow back these steps.

## Application Example

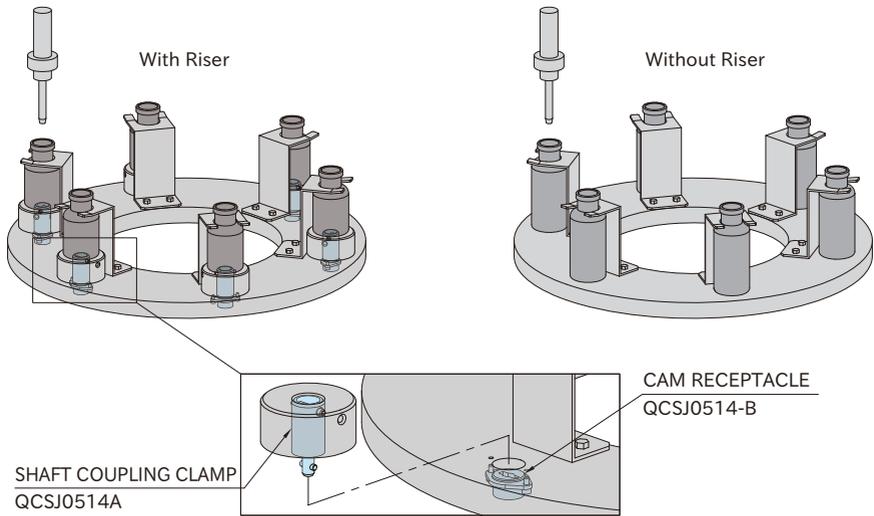
### Changes of thrust pads



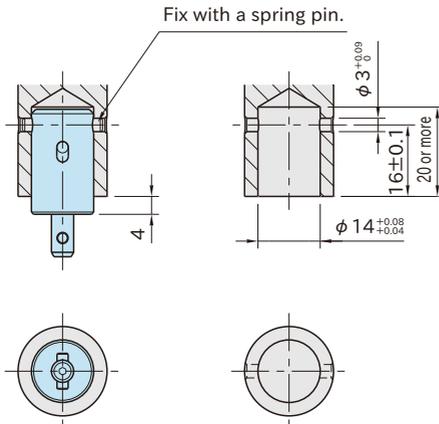
Continuing on Next Page

Application Example

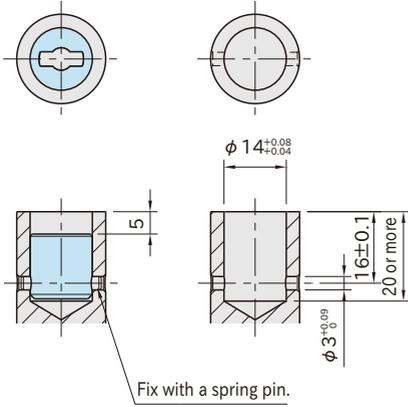
Changes of riser



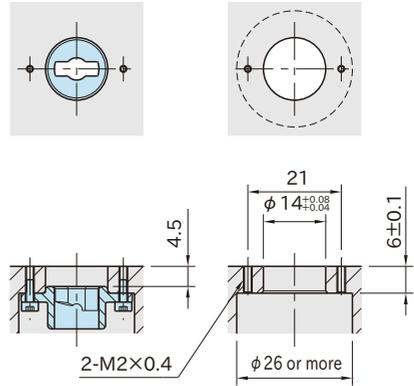
How To Install Shaft Coupling Clamp



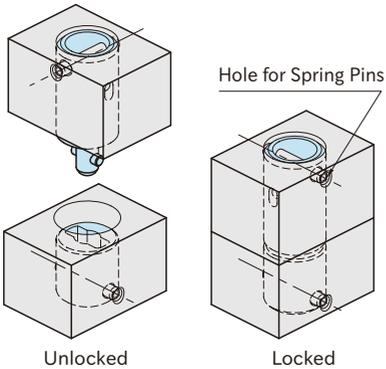
## How To Install Cam Receptacle (Shaft Mount)



## How To Install Cam Receptacle (Plate Mount)



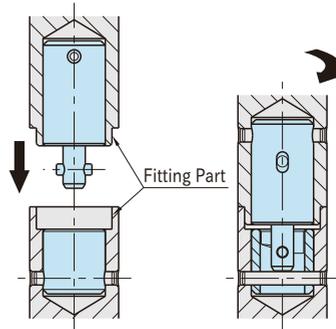
### Note



Pay attention to the direction of holes for spring pins.

### Repeatability

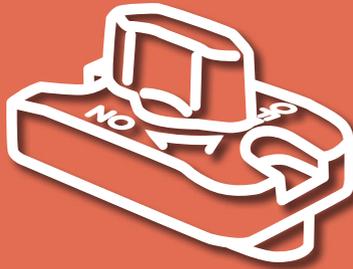
Repeatability  $\pm 0.08$



Prepare male and female fittings for higher accurate locating.



# ONE-TOUCH SLIDING LOCKS



**ONE-TOUCH SLIDING LOCKS**

**LINEAR-MOTION STOPPERS**

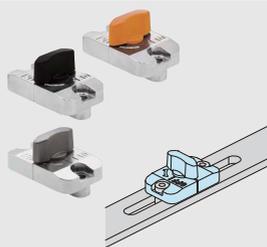
**ONE-TOUCH SPINDLE LOCKS**

**QUICK SHAFT-LOCKING CLAMPS**

# ONE-TOUCH SLIDING LOCKS



## ONE-TOUCH SLIDING LOCKS



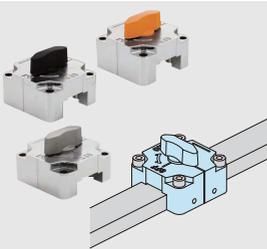
SLIDING LOCKS FOR  
SLOTTED HOLE

Part No. QCSL



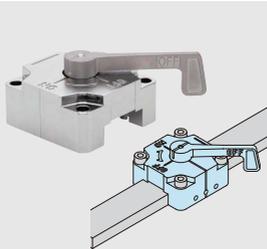
RISER PLATES FOR  
SLIDING LOCK

Part No. QCSLSP



SLIDING LOCKS FOR  
SQUARE BAR

Part No. QCSQ



SLIDING LOCKS FOR  
SQUARE BAR WITH HANDLE

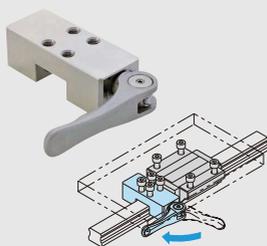
Part No. QCSQ-L



RISER PLATES FOR  
SLIDING LOCK

Part No. QCSQSP

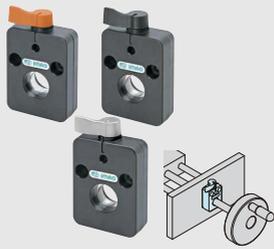
## LINEAR- MOTION STOPPERS



LINEAR-MOTION  
STOPPERS

Part No. LSM

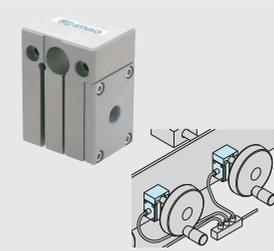
## ONE-TOUCH SPINDLE LOCKS



### ONE-TOUCH SPINDLE LOCKS

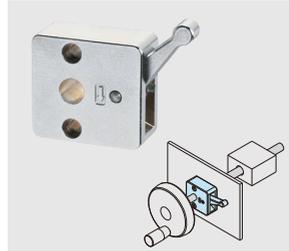
Part No. QCSPL

## QUICK SHAFT- LOCKING CLAMPS



### QUICK SHAFT-LOCKING CLAMPS (Pneumatic)

Part No. QSCA



### QUICK SHAFT-LOCKING CLAMPS

Part No. QSC

## ONE-TOUCH SLIDING LOCKS

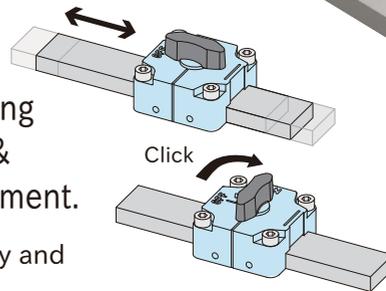
New solution for  
sliding adjustment!

# ONE-TOUCH SLIDING LOCKS

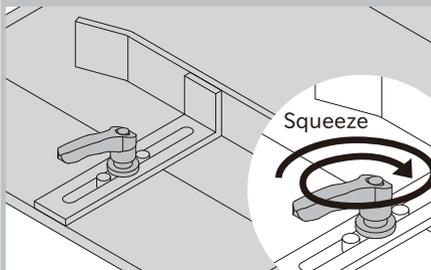


One-touch Sliding Lock is a fixing component that enables easy & secure locking in sliding adjustment.

This dramatically improves reliability and safety in set-ups of various devices.

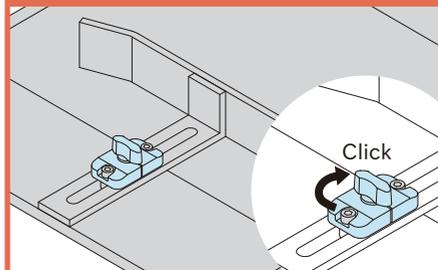


### Conventional Method



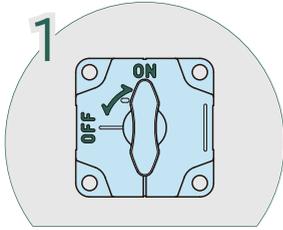
Required to tighten by main force to prevent misalignment.

### IMAO Method



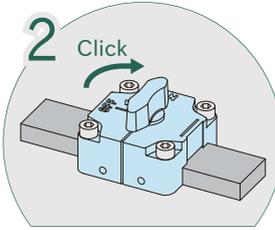
Prevents misalignment with easy operation!

## Feature



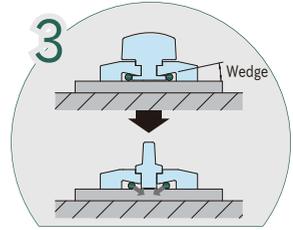
### High Visibility

Easy-to-read ON/OFF position



### Leveling of Operation

The knob clicks when it is locked/unlocked.

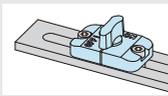


### Secure Locking

Secure locking with wedge structure.

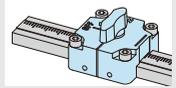
## Lineup

### Sliding Locks for Slotted Hole



Plastic knob is available in black or orange. Metal knob is resistant to damage.

### Sliding Locks for Square Bar



Can be used with commercially-available square bars



Knob is available in plastic or metal.

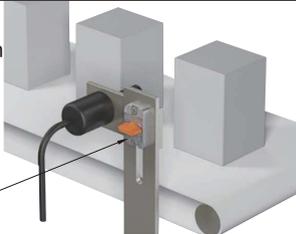
Handle is accessible from the side even in tight space.

## Application

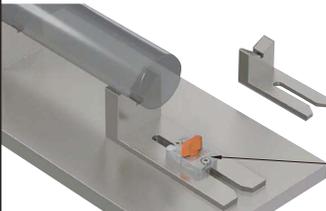
### For Adjusting Camera Position



Sliding Locks For Slotted Hole  
QCSL

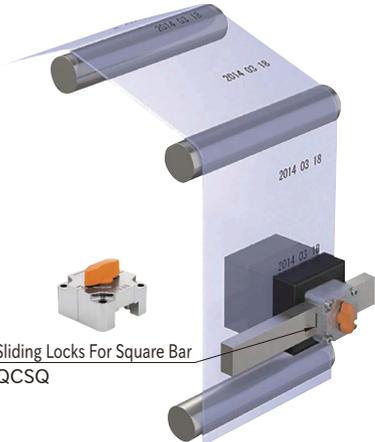


### For Adjusting Workpiece Guide



Sliding Locks For Slotted Hole  
QCSL

### For Adjusting Stamp Base Position



Sliding Locks For Square Bar  
QCSQ

## QCSL

## SLIDING LOCKS FOR SLOTTED HOLE



Type	Body	Knob	Shafts / Wedge	Ball Plunger
<b>QCSL-OG</b>	Die-cast zinc Chrome plated	Polyamide (glass-fiber reinforced)	Stainless steel	Polyacetal
<b>QCSL-BK</b>				
<b>QCSL-S</b>		SCS13 stainless steel (Equivalent to SUS304)		

**QCSL-OG**

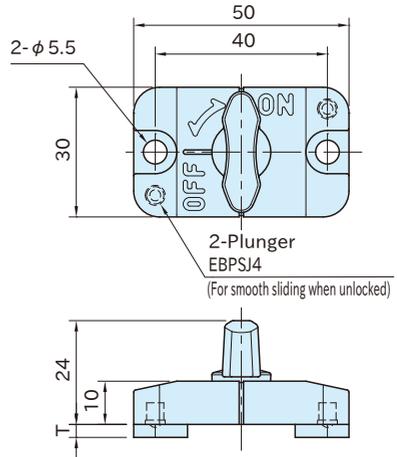
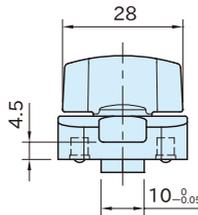
(Plastic Knob, Orange)

**QCSL-BK**

(Plastic Knob, Black)

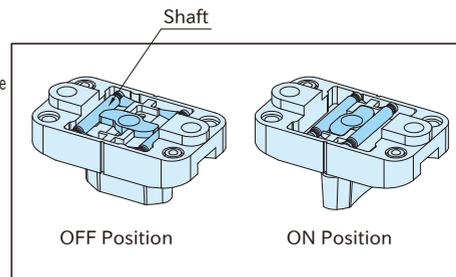
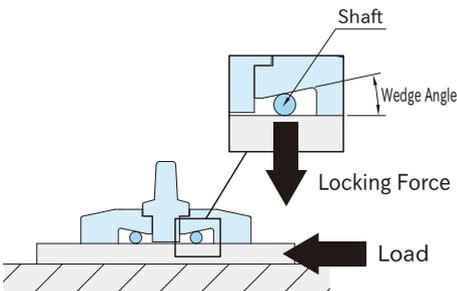
**QCSL-S**

(Metal Knob)



### ■ Locking Mechanism

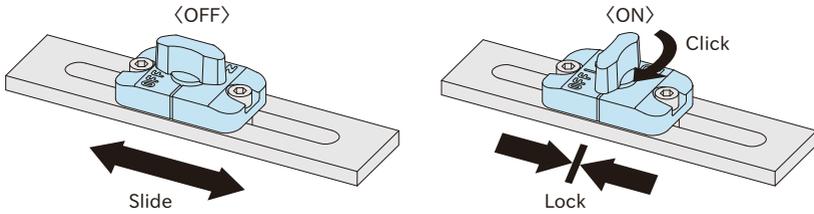
The shafts are locked being pushed into the wedged spaces when sliding load is applied in horizontal direction.



<b>QCSL-OG</b> (Plastic Knob, Orange)		<b>QCSL-BK</b> (Plastic Knob, Black)		<b>QCSL-S</b> (Metal Knob)		T
Part Number	Weight (g)	Part Number	Weight (g)	Part Number	Weight (g)	
<b>QCSL1003-OG</b>	80	<b>QCSL1003-BK</b>	80	<b>QCSL1003-S</b>	95	3
<b>QCSL1006-OG</b>	80	<b>QCSL1006-BK</b>	80	<b>QCSL1006-S</b>	95	6

## How To Use

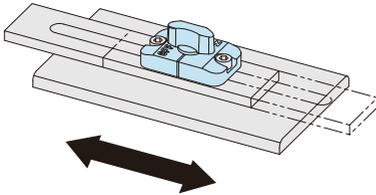
### Operating Instructions



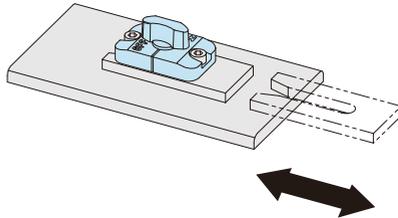
The slide is locked when the knob is at "ON" position.

### Usage Instructions \* Refer to the "Note" for safety use.

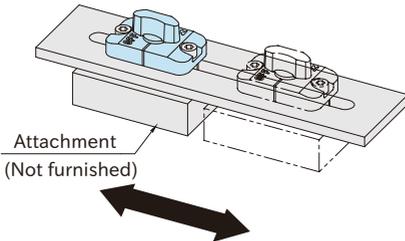
1. Slide the steel bar.



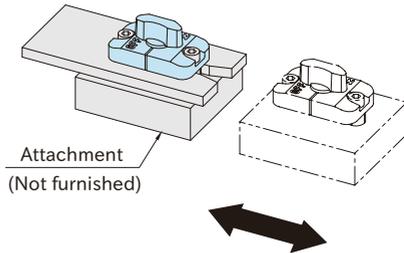
2. Attach/remove the steel bar.



3. Slide the Sliding Locks For Slotted Hole.



4. Attach/remove the Sliding Locks For Slotted Hole.

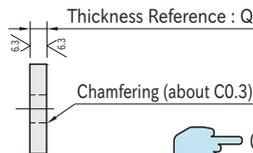
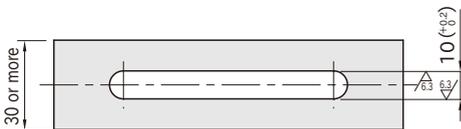


### Steel Bar Materials

· Usable Materials: Flat bar (JIS h14 grade) made of SS400, S45C or SUS304 etc.

· Machining of slotted hole: Recommended tolerance of the slotted hole to prevent chattering is shown as below.

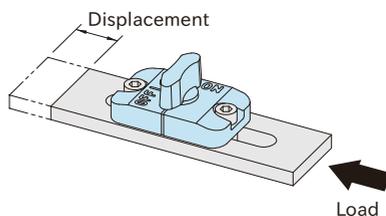
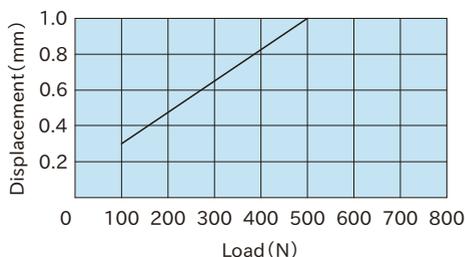
For more accurate sliding, machine the slotted hole to fit the dimension of 10mm(-0.05 to 0) on the bottom of Sliding Locks. Remove the burr around the slotted hole to ensure secure locking.



Continuing on Next Page

## Performance Curve

■ The displacement of steel bar by axial load (Static load from single direction)



Note: The above data is for a flat bar made of SUS304 stainless steel, SS400 steel and S45C steel.  
Using an aluminum flat bar, the surface will be scratched or dent by applied load.

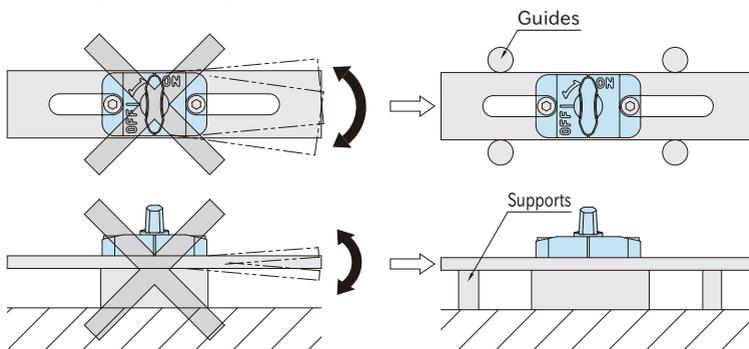
## Technical Information

- Heat resistance : Up to 90°C
- Rated load : Up to 500N

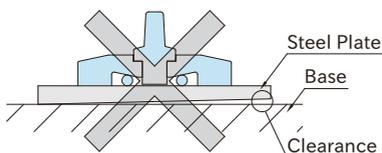
## Note

The following conditions may cause displacement increasing or misalignment.

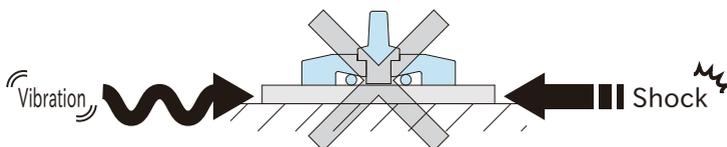
1. Use under slippage or chattering caused by vertical or horizontal loads



2. Use with a clearance between the steel bar and the base when the Sliding Locks at "ON" position.

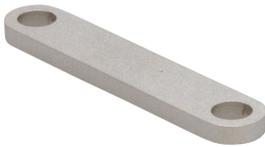


3. Use under excess shock or vibration

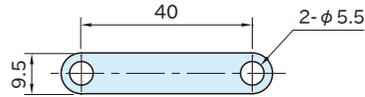


# QCSLSP

## RISER PLATES FOR SLIDING LOCK



Body
SUS304 stainless steel

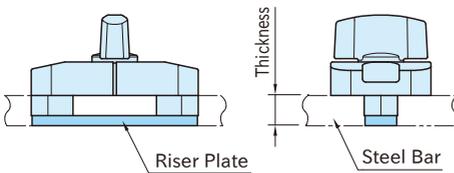


Part Number	T <sub>1</sub>	Weight (g)
QCSLSP1002	2	6
QCSLSP1003	3	10

### How To Use

#### How to Use Riser Plate

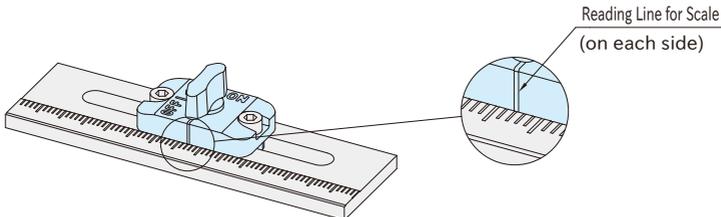
Can be used for various steel thicknesses by attaching the Riser Plates (to be ordered separately).



Type	Part No. of Riser Plates	Thickness of Steel Bar(h14) (mm)
QCSL	1003	—
	QCSLSP1002	3 <sup>(+0.0)</sup> <sub>(-0.25)</sub>
	QCSLSP1002	5 <sup>(+0.0)</sup> <sub>(-0.3)</sub>
	1006	—
QCSLSP1002	6 <sup>(+0.0)</sup> <sub>(-0.3)</sub>	
QCSLSP1002	8 <sup>(+0.0)</sup> <sub>(-0.36)</sub>	
QCSLSP1003	9 <sup>(+0.0)</sup> <sub>(-0.36)</sub>	

#### How to Use Scale Plate

- You can read the scale with the line on the body of Sliding Lock.
- **ES1N** Scale Plate is separately available.



QCSQ

SLIDING LOCKS FOR SQUARE BAR



IMAO

Type	Body	Knob	Shafts / Wedge	Flat Spring
<b>QCSQ-OG</b>	Die-cast zinc Chrome plated	Polyamide (glass-fiber reinforced)	Stainless steel	C519P phosphor bronze
<b>QCSQ-BK</b>				
<b>QCSQ-S</b>		SCS13 stainless steel (Equivalent to SUS304)		

**QCSQ-OG**

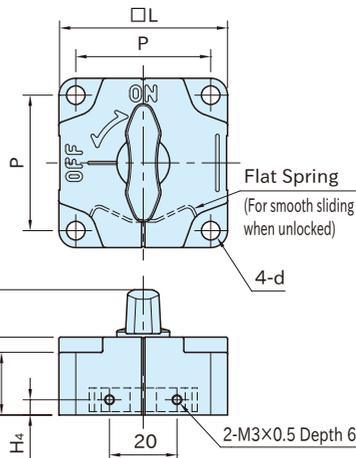
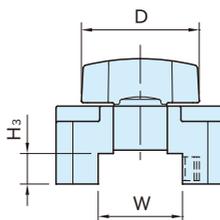
(Plastic Knob, Orange)

**QCSQ-BK**

(Plastic Knob, Black)

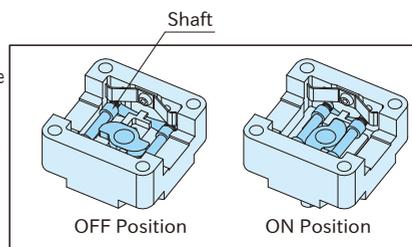
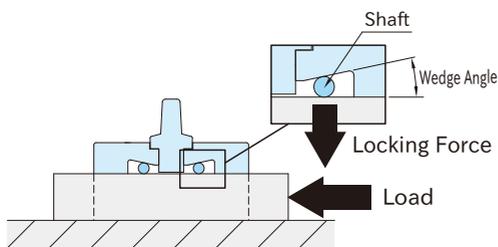
**QCSQ-S**

(Metal Knob)



### ■ Locking Mechanism

The shafts are locked being pushed into the wedged spaces when sliding load is applied in horizontal direction.



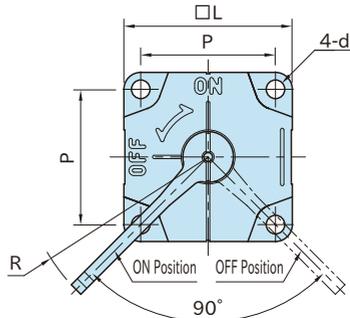
Size	L	H	W ( $+0.05$ 0)	H <sub>3</sub>	D	H <sub>1</sub>	H <sub>2</sub>	H <sub>4</sub>	P	d	
<b>QCSQ-OG</b>	40	1212	36	12	28	22	18.5	6	32	4.5	
		1616	40	16		26	22.5	8			
		2509	37	25		23	18.5	4.5			
<b>QCSQ-BK</b>	50	3212	40	12	35	26	21.5	6	40	5.5	
			3216	32		16	30	25.5			8

QCSQ-OG (Plastic Knob, Orange)		QCSQ-BK (Plastic Knob, Black)		QCSQ-S (Metal Knob)	
Part Number	Weight (g)	Part Number	Weight (g)	Part Number	Weight (g)
QCSQ1212-OG	130	QCSQ1212-BK	130	QCSQ1212-S	145
QCSQ1616-OG	150	QCSQ1616-BK	150	QCSQ1616-S	165
QCSQ2509-OG	220	QCSQ2509-BK	220	QCSQ2509-S	245
QCSQ2512-OG	240	QCSQ2512-BK	240	QCSQ2512-S	265
QCSQ3212-OG	220	QCSQ3212-BK	220	QCSQ3212-S	245
QCSQ3216-OG	240	QCSQ3216-BK	240	QCSQ3216-S	265

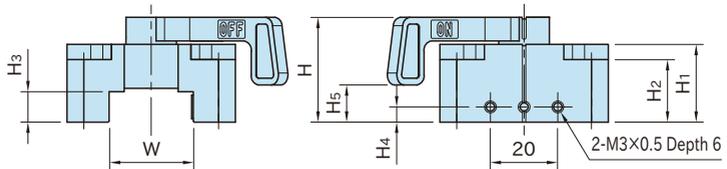
## QCSQ-L SLIDING LOCKS FOR SQUARE BAR WITH HANDLE



Body	Handle	Shafts / Wedge	Flat Spring
Die-cast zinc Chrome plated	SCS13 stainless steel (Equivalent to SUS304)	Stainless steel	C519P phosphor bronze



★Key Point  
The handle is accessible from the side even in tight spaces.

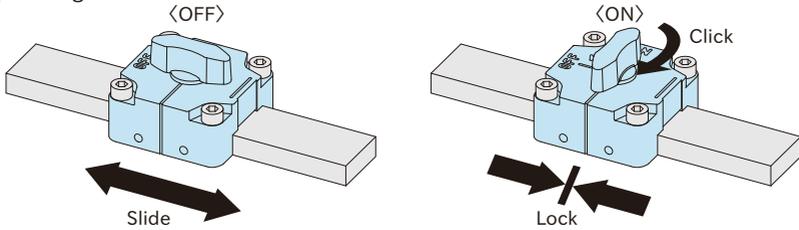


Part Number	L	H	W (+0.05/0)	H3 (+0.2/0)	H1	H2	H4	R	H5	P	d	Weight (g)
QCSQ1212-L	40	29	12	12	22	18.5	6	46	11	32	4.5	150
QCSQ1616-L		33										16
QCSQ2509-L	50	31	25	9	23	18.5	4.5	55.5	11	40	5.5	250
QCSQ2512-L		34										12
QCSQ3212-L		38	32	16	30	25.5	8		18			
QCSQ3216-L												38

Continuing on Next Page

## How To Use

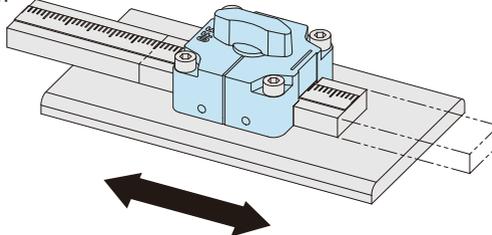
### Operating Instructions



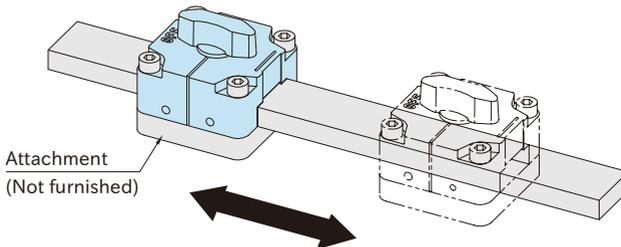
The slide is locked when the knob is at "ON" position.

### Usage Instructions \* Refer to the "Note" for safety use.

- Slide the steel bar.



- Slide the Sliding Locks For Square Bar.



### Steel Bar Materials

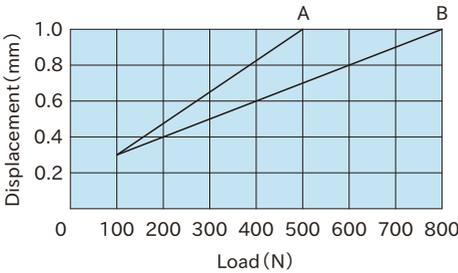
Usable Materials: Flat bar (JIS h14 grade) made of SS400, S45C or SUS304 etc.



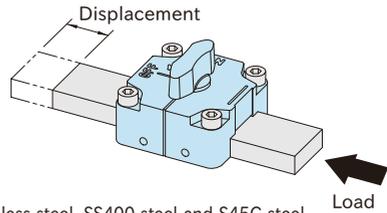
	Size	W	H
QCSQ	1212	12 ( $_{-0.43}^0$ )	12 ( $_{-0.43}^0$ )
	1616	16 ( $_{-0.43}^0$ )	16 ( $_{-0.43}^0$ )
	2509	25 ( $_{-0.52}^0$ )	9 ( $_{-0.36}^0$ )
	2512		12 ( $_{-0.43}^0$ )
	3212	32 ( $_{-0.62}^0$ )	
	3216		16 ( $_{-0.43}^0$ )

## Performance Curve

■ The displacement of steel bar by axial load (Static load from single direction)



A: QCSQ 1212,1616  
 B: QCSQ 2509,2512  
 QCSQ 3212,3216



Note: The above data is for a flat bar made of SUS304 stainless steel, SS400 steel and S45C steel. Using an aluminum flat bar, the surface will be scratched or dent by applied load.

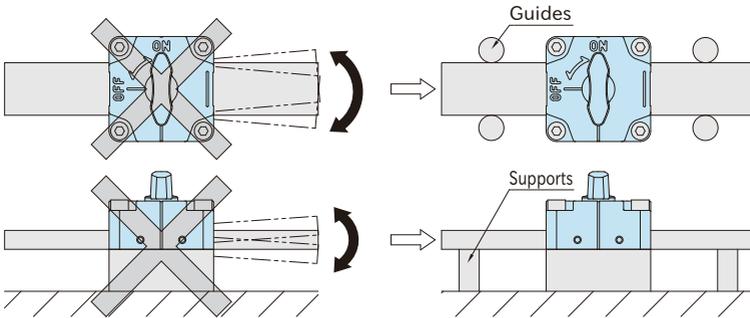
## Technical Information

- Heat resistance : Up to 90°C
- Rated load : QCSQ 1212,1616 : 500N  
 QCSQ 2509,2512,3212,3216 : Up to 800N

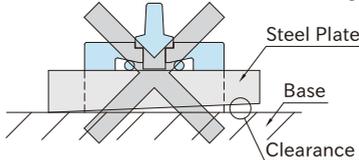
## Note

The following conditions may cause displacement increasing or misalignment.

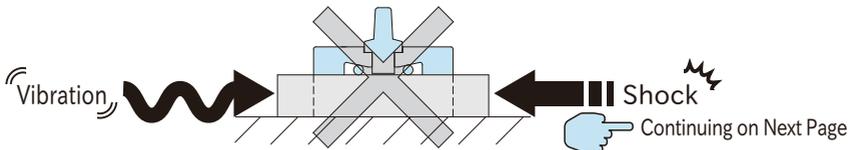
1. Use under slippage or chattering caused by vertical or horizontal loads



2. Use with a clearance between the steel bar and the base when the Sliding Locks at "ON" position.

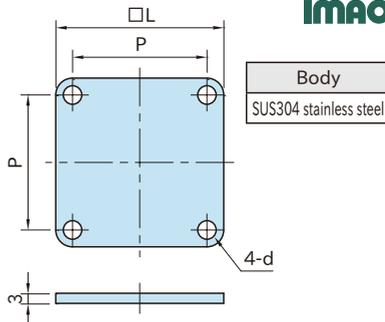


3. Use under excess shock or vibration



## QCSQSP

## RISER PLATES FOR SLIDING LOCK

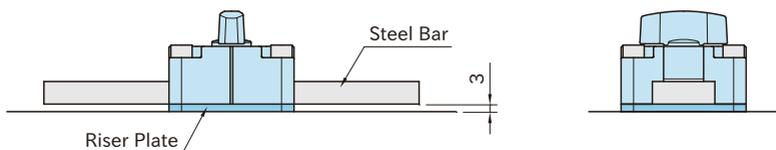



Part Number	L	d	P	Weight (g)
<b>QCSQSP4003</b>	40	4.5	32	35
<b>QCSQSP5003</b>	50	5.5	40	55

### How To Use

#### How to Use Riser Plate

Riser Plates (to be ordered separately) can lift the steel bar to create a clearance between the steel bar and the base.

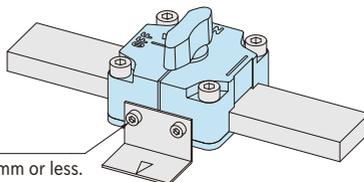


#### How to Use Tapped Holes on Side Surface

Can be used with attachments such as pointer plates and brackets.

Screw Size M3×0.5

Note: Screw depth must be 6mm or less.



#### How to Use Scale Plate

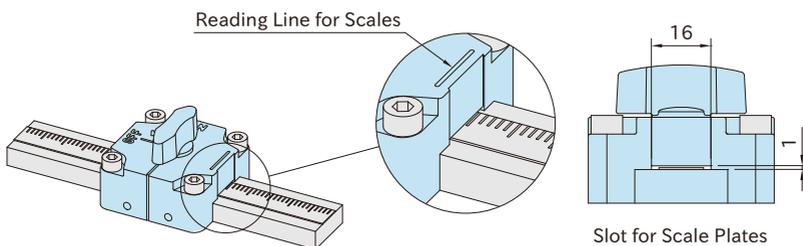
Scale plate can be put on the steel bar.

Note: Fit scale plate inside the slot in the figure below.

Putting scale plate outside the slot cause interference between scale plate and Sliding Lock, and this may cause failure.

Scale plate can not be put on the [QCSQ1212](#) or [QCSQ1616](#).

ES1N Scale Plate is separately available.



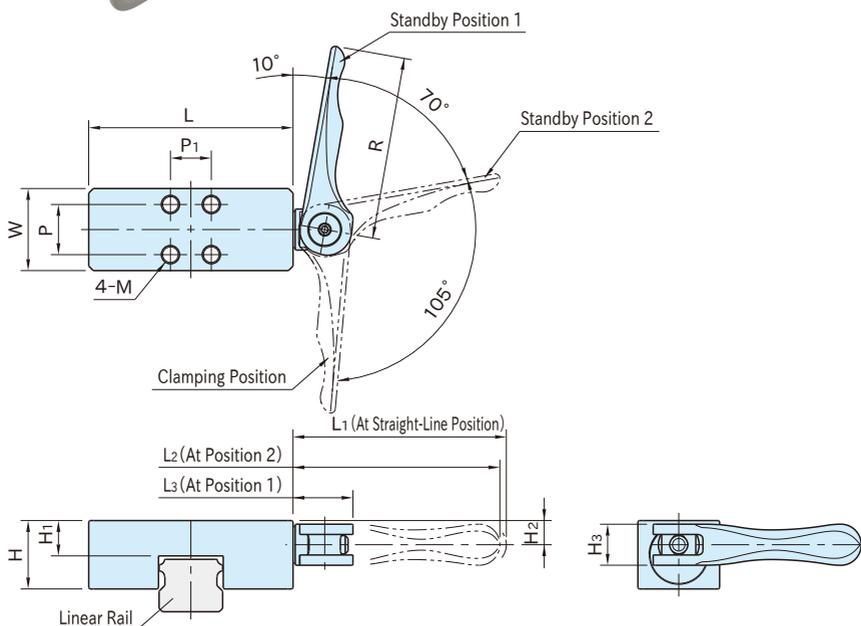


## LSM

## LINEAR-MOTION STOPPERS



Body	Handle	Ring Nut / Spacer	Push Bar
S45C steel Electroless nickel plated	SCM440 steel Quenched and tempered Electroless nickel plated	SCM435 steel Quenched and tempered Electroless nickel plated	S45C steel

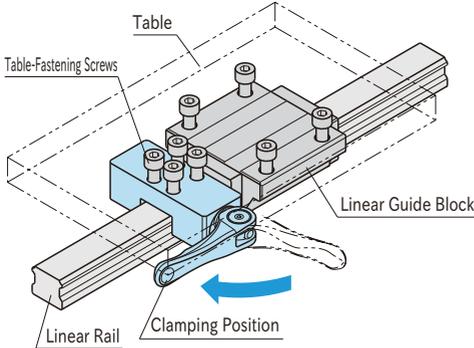


Part Number	Linear Size	L	W	H	H <sub>1</sub>	R	H <sub>3</sub>	H <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	M
<b>LSM-20</b>	20	63	26	22	11.5	63	14	7.8	76	73	23	M5×0.8 Depth 10
<b>LSM-25</b>	25	70	30	24	13.5			9.5				M6×1 Depth 12
<b>LSM-30</b>	30	90	36	30	15.5	80	18	10.6	95	92	27	M8×1.25 Depth 14
<b>LSM-35</b>	35	100	38	34	18.5			13.4				

Part Number	P	P <sub>1</sub>	Handle Operating Load (N)	Holding Force (N)	Weight (g)
<b>LSM-20</b>	16	13	40	150	283
<b>LSM-25</b>	18	15			376
<b>LSM-30</b>	22	18	50	250	729
<b>LSM-35</b>	24	24			932

## How To Use

Turning the handle to the clamping position allows clamping the linear rail.

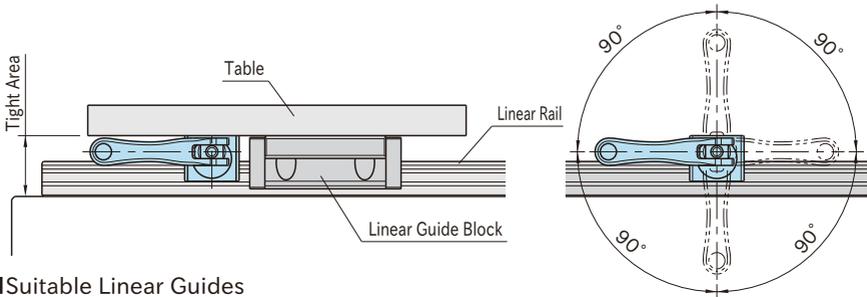


## Note

- Unless the handle is turned to the clamping position, the engineered full clamping force can not be distributed.
- When the friction factor is extremely small due to oil or the like applied on the linear rail, the holding force can decrease.
- When a heavy impact load is applied, slippage can occur due to impact strength.

## Feature

- Locks positively through simple operation.
- Always provides constant clamping force due to clamping with built-in spring.
- Can be operated in tight areas as shown below, due to no need of space for handle swivel.
- The handle can be changed in orientation every 90°.



## Suitable Linear Guides

Manufacturer	Type	
THK	SHS	SHS-C / SHS-LC, SHS-V / SHS-LV
	SSR	SSR-XW / SSR-XWM, SSR-XV / SSR-XVM, SSR-XTB
	HSR	HSR-A / HSR-AM / HSR-LA / HSR-LAM, HSR-B / HSR-BM / HSR-LB / HSR-LBM, HSR-CA / HSR-CAM / HSR-HA / HSR-HAM, HSR-CB / HSR-CBM / HSR-HB / HSR-HBM
	SR	SR-W / SR-WM / SR-V / SR-VM, SR-TB / SR-TBM / SR-SB / SR-SBM
IKO	LWE	LWEC / LWE / LWEG / LWEC...SL / LWE...SL / LWEG...SL, LWE...Q
	LWET	LWETC / LWET / LWETG / LWETC...SL / LWET...SL / LWETG...SL, LWET...Q
	LWES	LWESC / LWES / LWESG / LWESC...SL / LWES...SL / LWESG...SL, LWES...Q
	LWH	LWH...B / LWHG / LWH...SL / LWH...M
	LWHT	LWHT...B / LWHTG / LWHT...SL / LWHT...M
	LWHS	LWHS...B / LWHSG / LWHS...SL / LWHS...M

\*) For use on other linear guides than above, contact us.

\*) Note that Linear-Motion Stoppers are not products by manufacturers of linear guides, and any of such manufacturers are not liable or compensate for any trouble that may be caused by use of our Linear-Motion Stoppers.

## QCSPL

## ONE-TOUCH SPINDLE LOCKS



QCSPL-OG

(Plastic knob, Orange)



QCSPL-BK

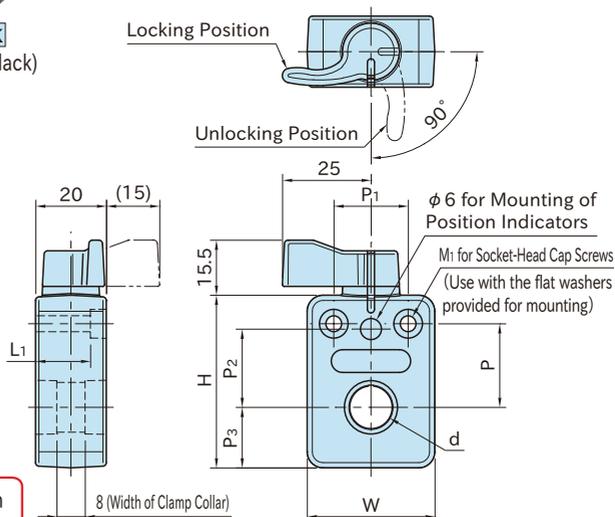
(Plastic knob, Black)



QCSPL-S

(Metal knob)

Type	Housing	Knob	Clamp Collar
QCSPL-OG	Polyamide (glass-fiber reinforced) Black	Polyamide (glass-fiber reinforced)	SUS630 stainless steel
QCSPL-BK		Black	
QCSPL-S		SCS13 stainless steel (Equivalent to SUS304)	



## ★ Key Point

Secure locking of spindles with one-touch action!

Plastic Knob			Metal Knob				d	W	H	M <sub>1</sub>	L <sub>1</sub>	P	P <sub>1</sub>	P <sub>2</sub>	P <sub>3</sub>	Suitable shaft dia.(h7) *)
Part Number		Weight (g)	Part Number	Weight (g)												
Orange	Black															
QCSPL0408-OG	QCSPL0408-BK	50	QCSPL0408-S	70	8	36	48.5	M4	14	23.5	21	22	17			φ 8
QCSPL0410-OG	QCSPL0410-BK		10		φ 10											
QCSPL0412-OG	QCSPL0412-BK		12		φ 12											
QCSPL0414-OG	QCSPL0414-BK		14		φ 14											
QCSPL0912-OG	QCSPL0912-BK	100	QCSPL0912-S	120	12	51	69	M5	12.5	17	34	30	26			φ 12
QCSPL0915-OG	QCSPL0915-BK		15		φ 15											
QCSPL0916-OG	QCSPL0916-BK		16		φ 16											
QCSPL0920-OG	QCSPL0920-BK		20		φ 20											

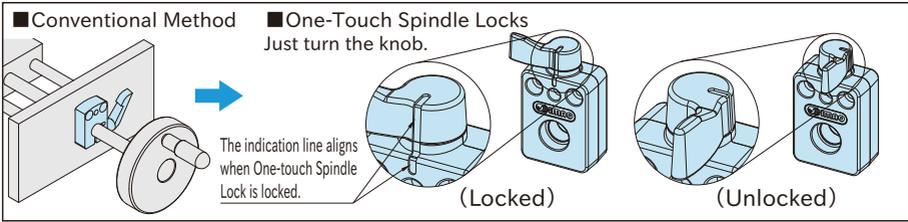
\*) Using shafts with tolerances other than h7 may decrease the allowable holding torque or allowable sliding load

## Supplied With

2 of Flat round washer(Stainless Steel)

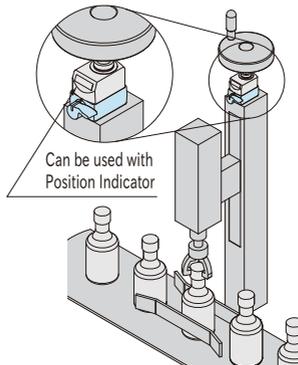
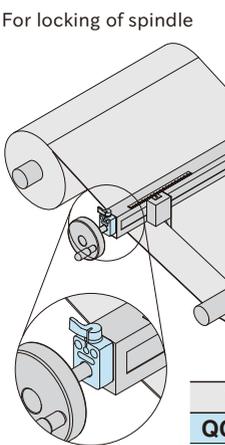
## Feature

- One-touch Spindle Locks enable quick and secure locking of shafts with one click of the knob.
- When One-touch Spindle Lock is operated, the knob clicks and the shaft is locked with a steady force. This provides reliable locking of shafts.
- The knob position and the indication line clearly indicate lock/unlock position.

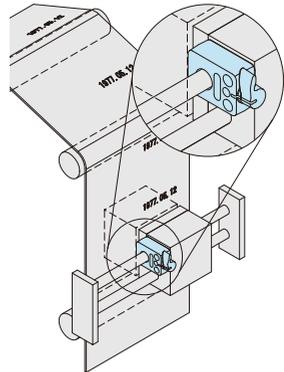


## How To Use

For locking of spindle



For locking of sliding shaft



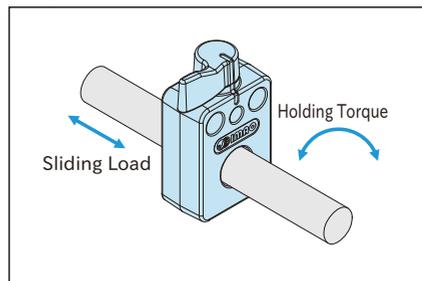
Types	Suitable position indicators
QCSPL04	SDP-04
QCSPL09	SDP-09-N

Note: To mount position indicators to One-touch Spindle Locks, use a rubber cushion supplied with position indicators.

## Technical Information

One-touch Spindle Locks can fix both revolving and sliding of shafts.

Size	Allowable Holding Torque(N·m)	Allowable Sliding Load(N)
0408	3	400
QCSPL-0G	4	500
QCSPL-BK	0414	500
QCSPL-S	0912	
	0915	
	0916	
	0920	



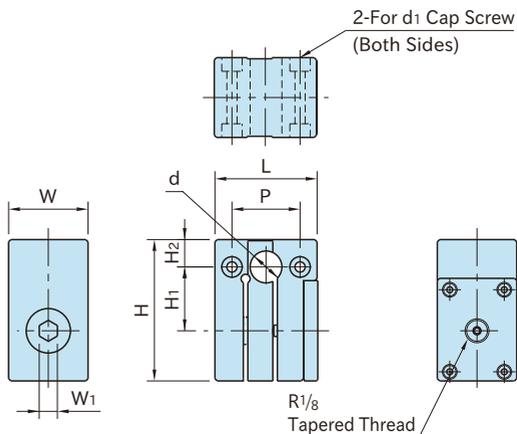
Note: The above information is for cold finished S45C steel bars with tolerance h7. Use this only as a guide.

## Note

- Allowable tightening torque for mounting screws  
 [QCSPL] 04 Size: 1.5 N·m, [QCSPL] 09 Size: 3.0 N·m  
 Note: Tightening with torque greater than the allowable tightening torque may cause failure by deformation of the body.
- This product cannot be used as bearings or guides for shafts.
- Shafts may slip in environments where shocks or vibrations are present.

## QSCA

## QUICK SHAFT-LOCKING CLAMPS (Pneumatic)



## ★ One Point

Clamping by spring pressure / Unclamping by air pressure

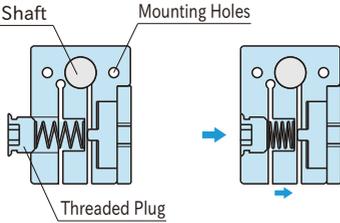
Body / Cover Plate	O-Ring
A5052 aluminum alloy Sand blasting finish Anodized Natural	Nitrile rubber

Part Number	d	H <sub>2</sub>	L	W	H	d <sub>1</sub>	P	W <sub>1</sub>	H <sub>1</sub>
<b>QSCA10-N</b>	10	12	45	35	62	M4 Counterbore depth 4.5	30	8	28
<b>QSCA12-N</b>	12								
<b>QSCA14-N</b>	14								
<b>QSCA15-N</b>	15	19	58	40	80	M5 Counterbore depth 5.5	35	10	35
<b>QSCA16-N</b>	16								
<b>QSCA20-N</b>	20								

Part Number	Holding Torque (N·m)	Sliding Load (N)	Weight (g)	Shaft Dia. (h6-h9)
<b>QSCA10-N</b>	1	150	230	φ 10
<b>QSCA12-N</b>	1.2			φ 12
<b>QSCA14-N</b>	1.4			φ 14
<b>QSCA15-N</b>	2.2	200	450	φ 15
<b>QSCA16-N</b>	2.4			φ 16
<b>QSCA20-N</b>	2.6			φ 20

## How To Use

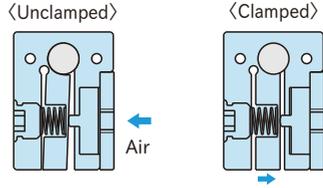
### How to Install



Slide the clamp over the shaft at the unclamped mode, and then fix the body using the 2 mounting holes.

Screwing the plug completely into the hole allows locking the shaft.

### How to Operate



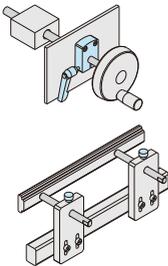
Supplying air allows compressing the spring to get the shaft unlocked.

Releasing the air allows getting the spring to work to lock the shaft.

## Feature

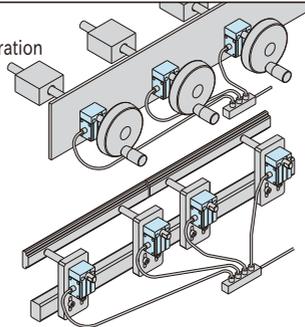
- Air pressure to be applied : 0.5 - 0.7MPa Recommended to use with a three-way valve.
- The mechanism of spring-pressure clamping and air-pressure unclamping prevents shaft-locking force from getting lowered.
- Connecting air plumbing to multiple Quick Shaft-Locking Clamps installed allows doing clamping/unclamping in one operation.

### Conventional



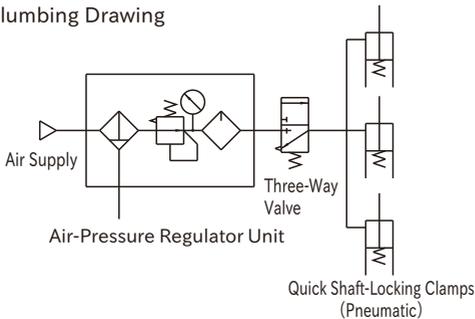
### Imao

Pneumatic operation



Simultaneous control of multiple clamps is possible.

### Plumbing Drawing

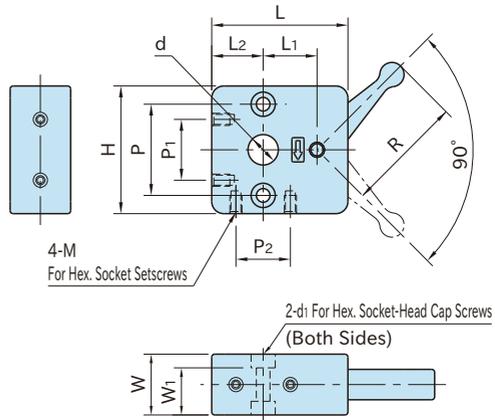


QSC

QUICK SHAFT-LOCKING CLAMPS



IMAO



Body / Handle	Locking Block	Flat Spring
Die cast zinc Chrome plated finish	CAC402 cast bronze	SUS304 stainless steel

Part Number	d	L <sub>2</sub>	L	W	H	R	L <sub>1</sub>	d <sub>1</sub>	W <sub>1</sub>	P	M	P <sub>1</sub>	P <sub>2</sub>
<b>QSC10S</b>	10	17	45	20	42	39	17.6	M4	15.5	30	M4×0.7 Depth 6	20	18
<b>QSC12S</b>	12						18.8						
<b>QSC14S</b>	14						19.9						
<b>QSC15L</b>	15	20	55	26	50	50	24.1	M5	20.5	35	M5×0.8 Depth 8	20	20
<b>QSC16L</b>	16						24.7						
<b>QSC20L</b>	20						27						

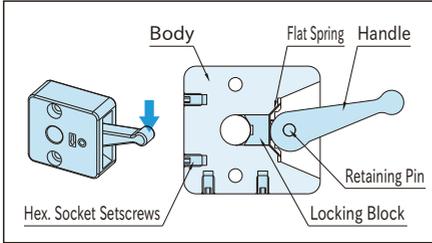
Part Number	Weight (g)	Shaft Dia. (h9)
<b>QSC10S</b>	228	φ 10
<b>QSC12S</b>	224	φ 12
<b>QSC14S</b>	220	φ 14
<b>QSC15L</b>	428	φ 15
<b>QSC16L</b>	418	φ 16
<b>QSC20L</b>	359	φ 20

## Supplied With

Four hex. socket setscrews

## How To Use

- As the handle is turned down, it pushes the locking block toward the shaft for clamping. When the handle is released, the flat spring allows the locking block to be returned to the original position.
- Both faces can be used for installation. Two sides with two tapped holes can also be used for installation (remove the setscrews).



## Note

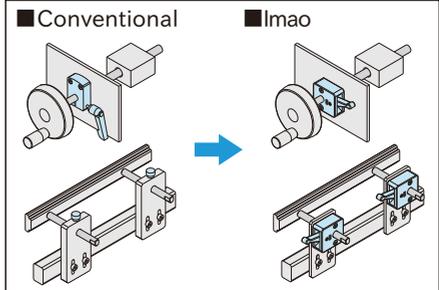
Do not give hammer taps to the handle or extend the handle with a pipe or the like for easier clamping, to avoid any damage.

**Greasing**

Dimensions between the shaft-hole center and the sides are not precise. When installing a Quick Shaft-Locking Clamp using tapped holes provided on two sides, make position adjustments using a bracket, shim or the like to prevent conflicts between the shaft hole and a shaft. It is recommended that the cam section and the retaining pin be greased periodically (every about 30,000 cycles) for stable holding torque and sliding load.

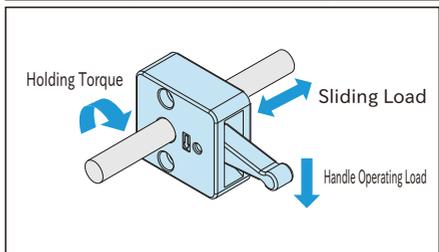
## Feature

- Designed to positively lock a lead screw or slide shaft with ease.
- Ideal especially in applications where position adjustments are often made, due to better workability than conventional holding methods using adjustable handles or knobs.
- Can also be used in limited space due to no need of space for handle's large swing.



## Technical Information

Part Number	Handle Operating Load (N)	Holding Torque (N·m)	Sliding Load (N)
<b>QSC10S</b>	80	2	220
<b>QSC12S</b>		3	
<b>QSC14S</b>		3.5	
<b>QSC15L</b>		4.5	
<b>QSC16L</b>		5.5	
<b>QSC20L</b>		6.5	





# HANDLES & KNOBS



HANDLES

KNOBS

# HANDLES & KNOBS

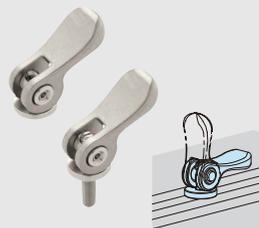


## HANDLES



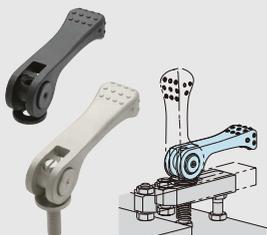
ADJUSTABLE-TORQUE  
HANDLES

Part No. ATCL



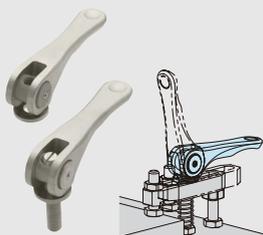
COMPACT CAM HANDLES

Part No. QLCCS



CAM HANDLES

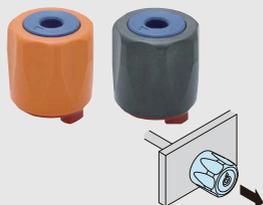
Part No. QLCA



CAM HANDLES

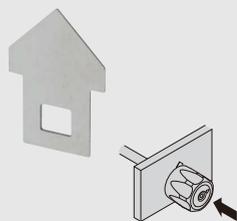
Part No. QLCL

## KNOBS



ONE-TOUCH LOCKING  
KNOBS

Part No. OTLK



POINTER PLATE

Part No. OTLK-A



## TORQUE LIMITING KNOBS

Part No. CTK

## ATCL

## ADJUSTABLE-TORQUE HANDLES

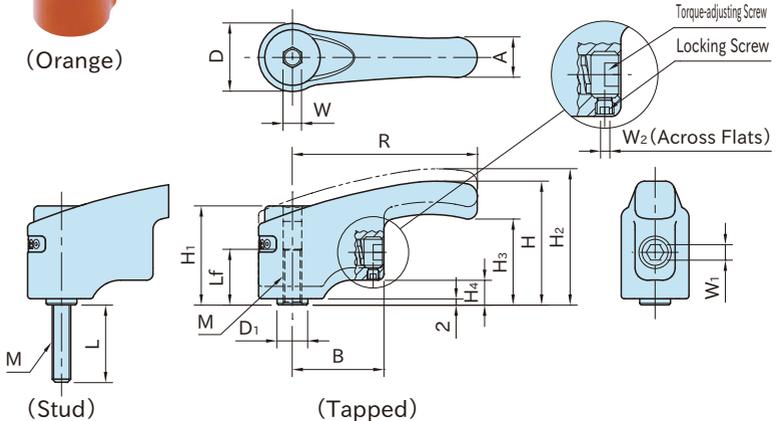


(Black)



(Orange)

Handle	Ratchet	Stud
SCM440 steel Quenched and tempered Painted Black, Orange	SCM415 steel Carburized-hardened Black oxide finished	SCM435 steel Quenched and tempered Black oxide finished



Type/Size	R	M	H	D	H <sub>1</sub>	H <sub>2</sub>	D <sub>1</sub>	H <sub>3</sub>	H <sub>4</sub>	A	B	W	W <sub>1</sub>	W <sub>2</sub>	Teeth	Torque Range (N·m)	Tightening Force(kN) *
<b>ATCL 6</b>	60	M 6X1	40	22	32	44	10	27.5	8	13	30	6	5	2	12	1~3.5	0.8~2.9
<b>ATCL 8</b>	75	M 8X1.25	48	26	38	52.5	13	33	9	15	37	8	6	2.5		2~5.4	1.3~3.4
<b>ATCL10</b>	90	M10X1.5	57	32	45	62.5	16	39.5	10.5	18	39	10		3~8		1.5~4	

\*) Use this tightening force information as an indication. (Tightening Force(kN) = Torque(N·m) / {0.2×d(mm)} d: nominal screw diameter)

### ■ Tapped

Part Number		Lf	Weight (g)
Black	Orange		
<b>ATCL 6-BK</b>	<b>ATCL 6-OG</b>	18	160
<b>ATCL 8-BK</b>	<b>ATCL 8-OG</b>	22	270
<b>ATCL10-BK</b>	<b>ATCL10-OG</b>	25	445

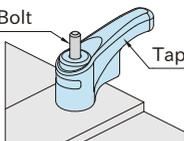
### ■ Stud

Part Number		L	Weight (g)
Black	Orange		
<b>ATCL 6×15-BK</b>	<b>ATCL 6×15-OG</b>	15	167
<b>ATCL 6×20-BK</b>	<b>ATCL 6×20-OG</b>	20	168
<b>ATCL 6×25-BK</b>	<b>ATCL 6×25-OG</b>	25	169
<b>ATCL 6×30-BK</b>	<b>ATCL 6×30-OG</b>	30	170
<b>ATCL 8×20-BK</b>	<b>ATCL 8×20-OG</b>	20	282
<b>ATCL 8×25-BK</b>	<b>ATCL 8×25-OG</b>	25	284
<b>ATCL 8×30-BK</b>	<b>ATCL 8×30-OG</b>	30	286
<b>ATCL 8×40-BK</b>	<b>ATCL 8×40-OG</b>	40	290
<b>ATCL10×20-BK</b>	<b>ATCL10×20-OG</b>	20	464
<b>ATCL10×25-BK</b>	<b>ATCL10×25-OG</b>	25	467
<b>ATCL10×30-BK</b>	<b>ATCL10×30-OG</b>	30	470
<b>ATCL10×40-BK</b>	<b>ATCL10×40-OG</b>	40	475

### Feature

- The handle is adjustable.
- Handle that allows setting a desired tightening torque.
- When the desired torque is reached, the handle clicks to indicate completed tightening.

#### Bolt



Tapped type

• Tapped type has a through hole that can be used with bolts.

### How To Use



1. Lift the handle to disengage the teeth from the locking element.



2. Turn the handle to a desired position.



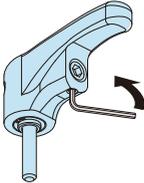
3. When the handle is released, the return spring automatically engages the teeth again for further tightening. The handle can be positioned every 30 degrees.



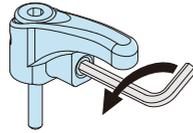
4. Turn the handle to clamp. The handle clicks to indicate completed tightening at desired tightening torque.

### How To Set Torque

The preset torque is roughly its maximum tightening torque.

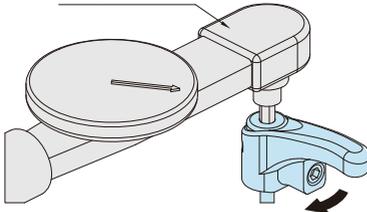


1. Loosen the locking screw by inserting a hex. wrench into the underside of the body.



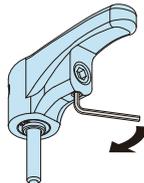
2. Adjust the torque by turning the torque-adjusting screw in the side of the body.

#### Torque Wrench



3. Measure the torque with a torque wrench.

- Connect a torque wrench to the Adjustable-Torque Handle.
- Apply a load in the tightening direction, and fine adjust the depth of torque-adjusting screw to reach the desired torque when the handle clicks.



4. When the desired torque is reached, tighten the locking screw.

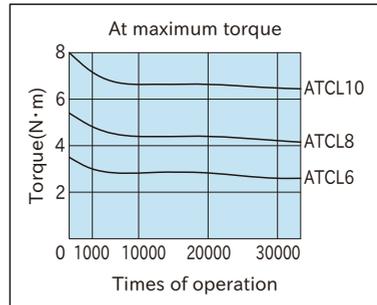
### Related Product

- **CTK** Torque Limiting Knobs
- **CP-TCW** ADJUSTABLE-TORQUE WRENCHES

### Torque Performance

- For initial several thousand operations, the tightening torque decreases. (See the graph below.) Measure the torque regularly, and fine adjust the depth of torque-adjusting screw when needed.
- The tightening torque can vary. (Max.  $\pm 15\%$ ) Not recommended for applications where precise tightening torque is required.

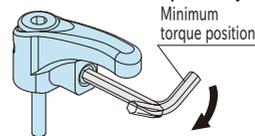
Torque Performance Graph



### Note

Adjust the torque-adjusting screw within the torque range. Do not overtighten or overloosen the screw.

### Guide for Torque Adjusting



Size	Rotation
ATCL 6	3/4
ATCL 8	1
ATCL10	3/4

- To reach approx. the min torque, loosen the torque adjusting screw to the same end surface level of the body, then tighten it until you feel light touch of stop. (Ensure that the torque adjusting screw does not protrude from the body when loosening it.)
- To reach approx. the max torque, rotate the torque adjusting screw depending on the above table from the approx. min torque as instructed previously.

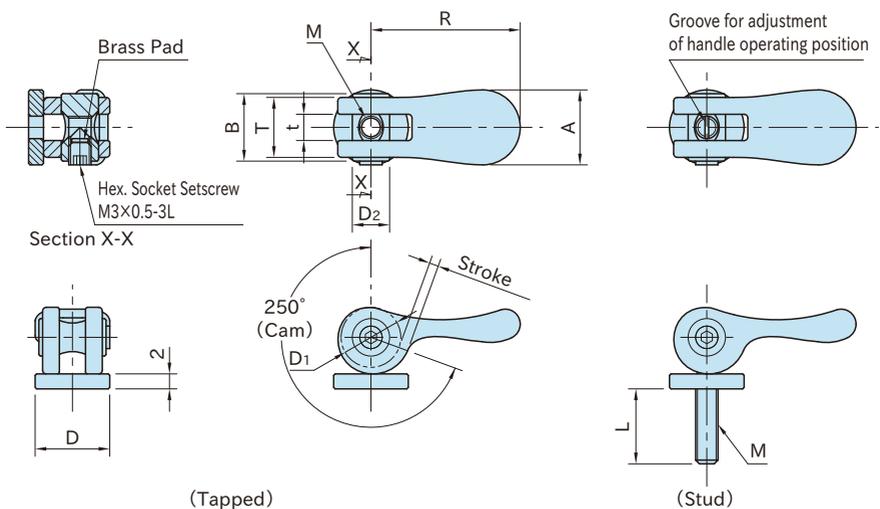
## QLCCS

## COMPACT CAM HANDLES



★Key Point  
Easy clamping and unclamping.

Handle	Ring Nut / Stud	Washer
SCS13 stainless steel (Equivalent to SUS304)	SUS303 stainless steel	SUS304 stainless steel



Size		D <sub>1</sub>	R	A	D	M	T	t	B	D <sub>2</sub>
QLCCS	03	8	20	10	10	M3×0.5	8	3.5	9	5
	04	10	25	13	12	M4×0.7	10	4.5	11	6
	05	12	32	16	14	M5×0.8	12	5.5	13	8

Size		Clamping Stroke	Allowable Operating Load (N)	Clamping Force (N)	Clamping Mechanism
QLCCS	03	1.2	30	400	Spiral Cam Cam Angle : 4°
	04	1.5	40	500	
	05	1.8	50	700	

### QLCCS (Tapped)

Part Number	Weight (g)
QLCCS-03	7
QLCCS-04	13
QLCCS-05	23

### QLCCS (Stud)

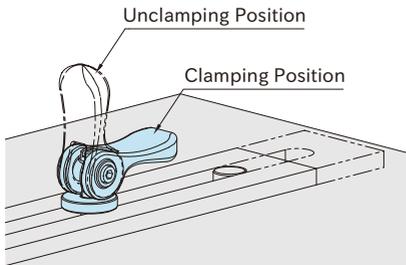
Part Number	L	Weight (g)
QLCCS-03×10	10	8
QLCCS-03×15	15	
QLCCS-04×15	15	16
QLCCS-04×20	20	
QLCCS-04×30	30	17
QLCCS-04×40	40	18
QLCCS-05×20	20	28
QLCCS-05×30	30	30
QLCCS-05×40	40	31
QLCCS-05×50	50	33

### Feature

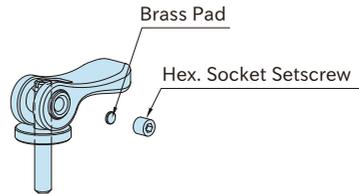
The handle position of Stud-type Compact Cam Handles can be set to a desired direction.

### How To Use

#### Application Example

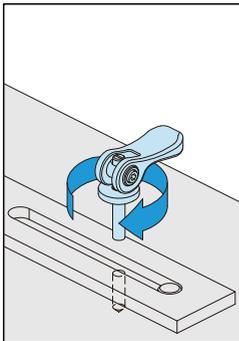


#### Fixing the Cam Handle

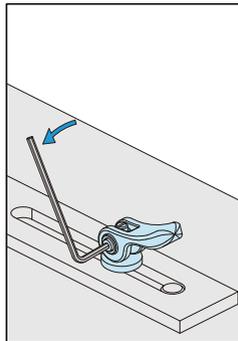


Use a brass pad and a hex. socket setscrew included to fix the handle.

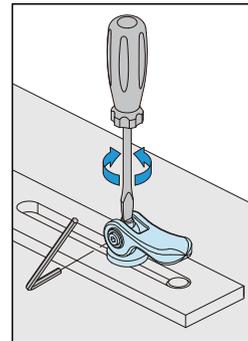
#### How to Mount Stud-type Cam Handles



1. Fix the stud to the handle with a brass pad and a hex socket setscrew and screw the Compact Cam Handle to the counterpart.



2. Turn the handle to a desired direction and loosen the setscrew.



3. With a flathead screwdriver, adjust the handle to a desired clamping height and the load to fold the handle. Then fix the stud with the setscrew.

## QLCA

## CAM HANDLES



(Tapped)

QLCA

(Black Oxide Finish)



(Stud)



(Tapped)

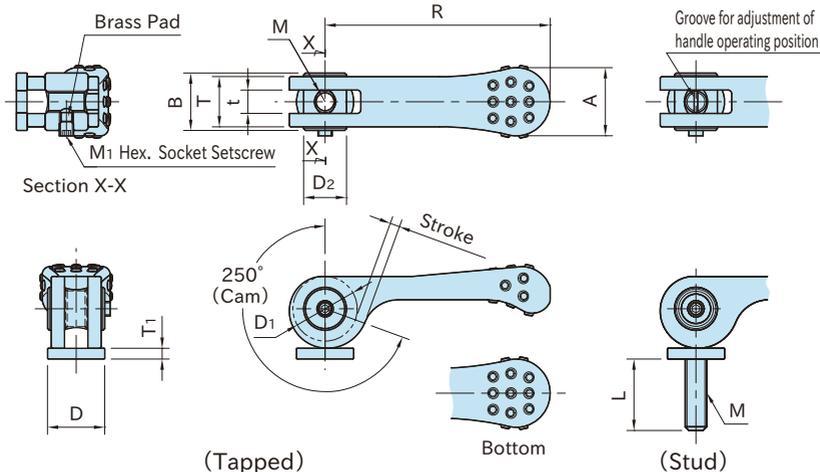
QLCA-NP

(Electroless Nickel Plated)



(Stud)

Style	Handle	Ring Nut / Washer	Stud
QLCA	SCM440 steel Quenched and tempered Black Oxide Finish	S45C steel Quenched and tempered Black Oxide Finish	SCM435 steel Quenched and tempered Black Oxide Finish
QLCA-NP	SCM440 steel Quenched and tempered Electroless Nickel Plated	S45C steel Quenched and tempered Electroless Nickel Plated	SCM435 steel Quenched and tempered Electroless Nickel Plated



(Tapped)

Bottom

(Stud)

Size	D <sub>1</sub>	R	A	D	T <sub>1</sub>	M	T	t	B	D <sub>2</sub>	M <sub>1</sub>
QLCA	04	12	40	14	12	M 4×0.7	10	4.5	12	8	M3×0.5-3L
	05	15	50	16	14	M 5×0.8	12	5.5	14	10	
QLCA-NP	06	18	63	19	16	M 6×1	14	6.5	16	12	M4×0.7-4L
	08	22	80	24	20	M 8×1.25	18	9	20	15	
	10	28	100	30	25	M10×1.5	23	11	25	18	

Size	Clamping Stroke	Allowable Operating Load (N)	Clamping Force (kN)	Clamping Mechanism
QLCA	04	1.8	80	0.9
	05	2.3	100	1.3
QLCA-NP	06	2.7	150	2.4
	08	3.3	200	3.6
	10	4.3	300	4.8

Spiral Cam  
Cam Angle : 4°

**QLCA** **QLCA-NP** (Tapped)

Black Oxide Finish	Electroless Nickel Plated	Weight (g)
Part Number	Part Number	
<b>QLCA-04</b>	<b>QLCA-04-NP</b>	26
<b>QLCA-05</b>	<b>QLCA-05-NP</b>	46
<b>QLCA-06</b>	<b>QLCA-06-NP</b>	80
<b>QLCA-08</b>	<b>QLCA-08-NP</b>	154
<b>QLCA-10</b>	<b>QLCA-10-NP</b>	318

**QLCA** **QLCA-NP** (Stud)

Black Oxide Finish	Electroless Nickel Plated	L	Weight (g)
Part Number	Part Number		
<b>QLCA-04×15</b>	<b>QLCA-04×15-NP</b>	15	28
<b>QLCA-04×20</b>	<b>QLCA-04×20-NP</b>	20	29
<b>QLCA-04×30</b>	<b>QLCA-04×30-NP</b>	30	30
<b>QLCA-04×40</b>	<b>QLCA-04×40-NP</b>	40	31
<b>QLCA-05×20</b>	<b>QLCA-05×20-NP</b>	20	51
<b>QLCA-05×30</b>	<b>QLCA-05×30-NP</b>	30	52
<b>QLCA-05×40</b>	<b>QLCA-05×40-NP</b>	40	54
<b>QLCA-05×50</b>	<b>QLCA-05×50-NP</b>	50	55
<b>QLCA-06×20</b>	<b>QLCA-06×20-NP</b>	20	89
<b>QLCA-06×30</b>	<b>QLCA-06×30-NP</b>	30	91
<b>QLCA-06×40</b>	<b>QLCA-06×40-NP</b>	40	93
<b>QLCA-06×50</b>	<b>QLCA-06×50-NP</b>	50	96
<b>QLCA-08×25</b>	<b>QLCA-08×25-NP</b>	25	176
<b>QLCA-08×30</b>	<b>QLCA-08×30-NP</b>	30	178
<b>QLCA-08×40</b>	<b>QLCA-08×40-NP</b>	40	182
<b>QLCA-08×50</b>	<b>QLCA-08×50-NP</b>	50	186
<b>QLCA-10×25</b>	<b>QLCA-10×25-NP</b>	25	351
<b>QLCA-10×30</b>	<b>QLCA-10×30-NP</b>	30	354
<b>QLCA-10×40</b>	<b>QLCA-10×40-NP</b>	40	360
<b>QLCA-10×50</b>	<b>QLCA-10×50-NP</b>	50	366

**Feature**

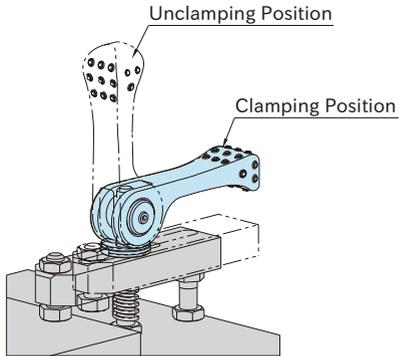
The handle position of Stud-type Cam Handles can be set to a desired direction.



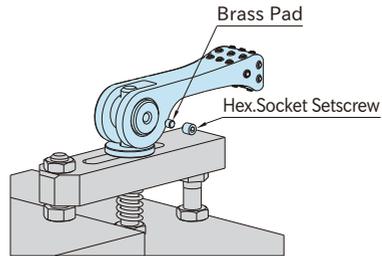
Continuing on Next Page

## How To Use

## ■ Application Example

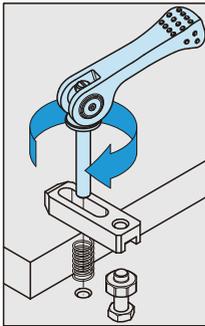


## ■ Fixing the Cam Handle

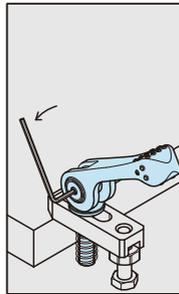


Use a brass pad and a hex. socket setscrew included.

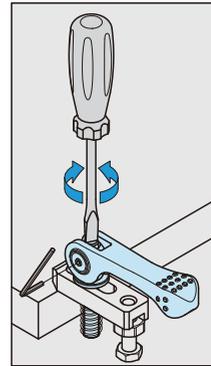
## ■ How to Mount Stud-type Cam Handles



1. Fix the stud to the handle with a brass pad and a hex socket setscrew and screw the Cam Handle to the counterpart.



2. Turn the handle to a desired direction and loosen the setscrew.

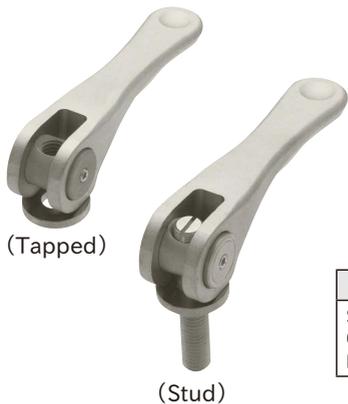


3. With a flathead screwdriver, adjust the handle to a desired clamping height and the load to fold the handle. Then fix the stud with the setscrew.



## QLCL

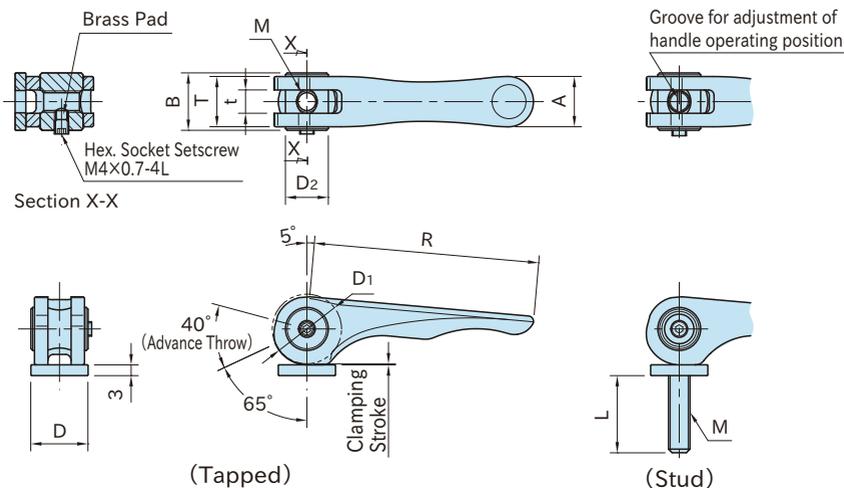
## CAM HANDLES



## ★Key Point

Easy clamping and unclamping.  
Handle clicks at clamping end.

Handle	Ring Nut / Washer	Stud
SCM440 steel Quenched and tempered Electroless nickel plated	S45C steel Quenched and tempered Electroless nickel plated	SCM435 steel Quenched and tempered Electroless nickel plated



Type		D <sub>1</sub>	R	A	D	M	T	t	B	D <sub>2</sub>	Clamping Stroke
QLCL-NP	06	19.4	63	14	16	M6X1	14	6.5	16	12	0.3
	08	23.2	80	18	20	M8X1.25	18	9	20	15	0.4

Type		Advance Stroke	Allowable Operating Load (N)	Clamping Force (kN)	Clamping Mechanism
QLCL-NP	06	0.8	40	0.7	Spiral Cam Cam Angle : 2°
	08		50	1.4	

### QLCL-NP (Tapped)

Part Number	Weight (g)
QLCL-06-NP	64
QLCL-08-NP	121

### QLCL-NP (Stud)

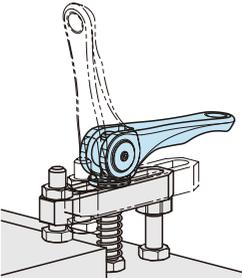
Part Number	L	Weight (g)
QLCL-06×20-NP	22	72
QLCL-06×30-NP	32	75
QLCL-06×40-NP	42	77
QLCL-06×50-NP	52	79
QLCL-08×25-NP	27	139
QLCL-08×30-NP	32	141
QLCL-08×40-NP	42	145
QLCL-08×50-NP	52	149

### Feature

- By its unique cam design, the handle clicks at clamping end.
- Compared to conventional cam handles, this product has higher resistance against vibration.
- The handle position of Stud-type Cam Handles can be set to a desired direction.

### How To Use

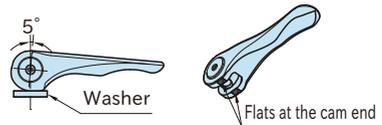
#### Application Example



#### Fixing the Cam Handle

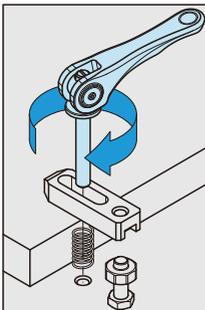


Use a brass pad and a hex. socket setscrew included to fix the handle.

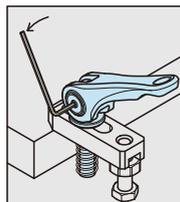


Note: Top surface of washer and flats at the cam end should align at the clamping position.

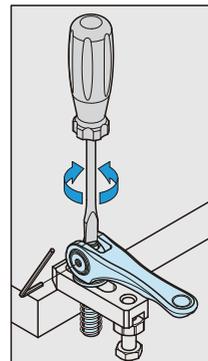
#### Mounting Stud-type Cam Handles



1. Fix the stud to the handle with a brass pad and a hex socket setscrew and screw the Cam Handle to the counterpart.



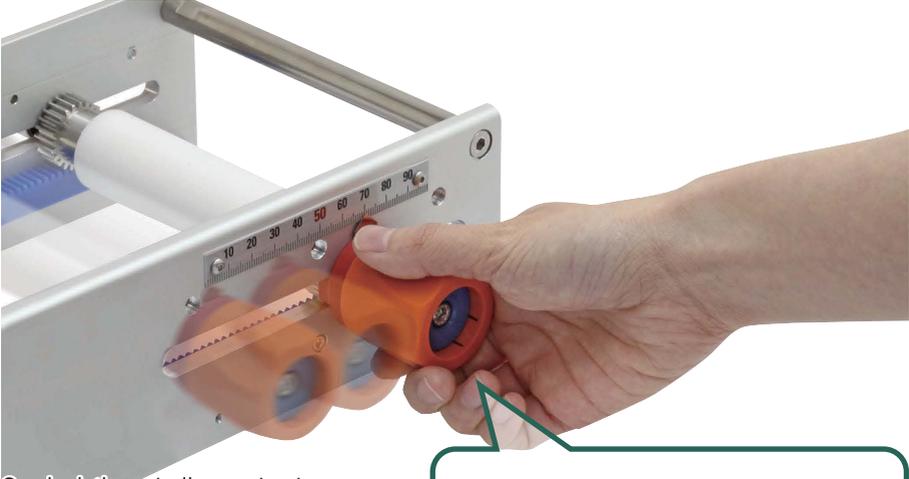
2. Turn the handle to a desired direction and loosen the setscrew.



3. With a flathead screwdriver, adjust the handle to a desired clamping height and the load to fold the handle. Then fix the stud with the setscrew.



ONE-TOUCH LOCKING KNOBS



Can lock the spindle rotation in one action. Ideal for fixing rack and pinion axis or leadscrew axis.

<Locked>  
(Position adjusted)



Blue = Safety to operate machine

<Unlocked>  
(Position adjustable)



Red = Caution to operate machine

INNOVATIVE Knob!

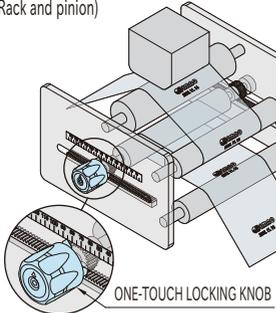
Adjustment & Locking at a time!



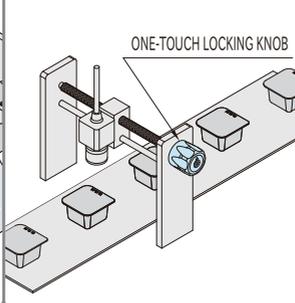
ONE-TOUCH LOCKING KNOBS

Application Example

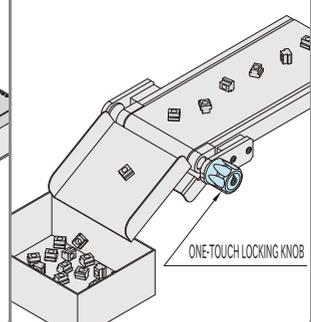
Adjustment of film tension in printing machine  
(Rack and pinion)



Changes of camera position  
(Leadscrew)



Changes of shooter angle



## OTLK

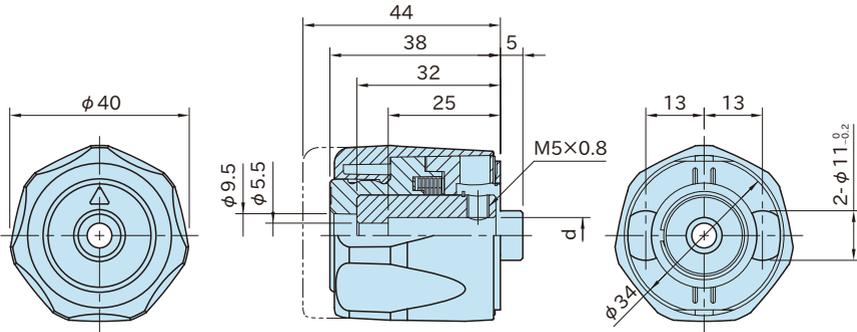
## ONE-TOUCH LOCKING KNOBS



## ★Key Point

Secure locking of spindle with one-touch action!

Housing	Boss	Base	Insert
Polyamide (glass-fiber reinforced) Black, Orange	Polyamide (glass-fiber reinforced) Blue	Polyamide (glass-fiber reinforced) Red	SUS304 stainless steel



Part Number		d	Weight
Black	Orange	(H7)	(g)
OTLK4008-BK	OTLK4008-OG	8	95
OTLK4010-BK	OTLK4010-OG	10	90

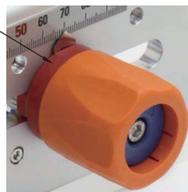
## Supplied With

- 1 pc. of M5×15 Stainless-Steel Socket-Head Cap Screw
- 1 pc. of M5×5 Stainless-Steel Cup-Point Socket-Head Setscrew with Locking Agent

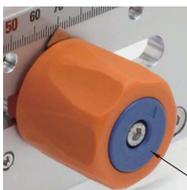
## Feature

- OTLK enables one-touch locking and unlocking of spindle.
- Locking and unlocking of spindle can be perceived with click.
- Red and blue colors indicate whether spindle is locked or unlocked.

Red indicates caution to operate machine.



<Unlocked>

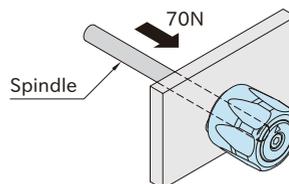


Blue indicates safety to operate machine.

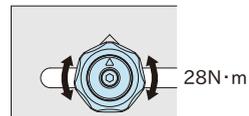
<Locked>

## Technical Information

- OTLK has 50 teeth inside and it engages at every  $7.2^\circ (= 360^\circ / 50)$ .
- OTLK pulls the spindle by the inner spring with 70N force to prevent chattering of the spindle.
- Note: The spindle should be fully inserted into the knob for 25mm.

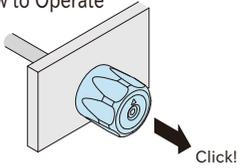


- Allowable moment at locking position:  
28N·m (Safety Factor = 5)

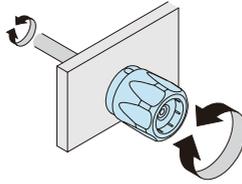


### How To Use

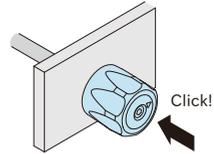
#### How to Operate



By pulling the housing until it clicks, the teeth of the knob disengage from the base.

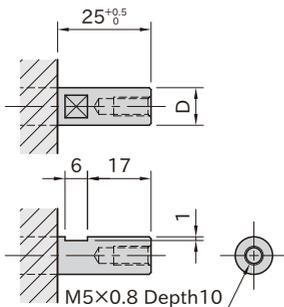


Turn OTLK to rotate the spindle.



By pushing the housing until it clicks, the teeth engage again and lock the rotation of the spindle.

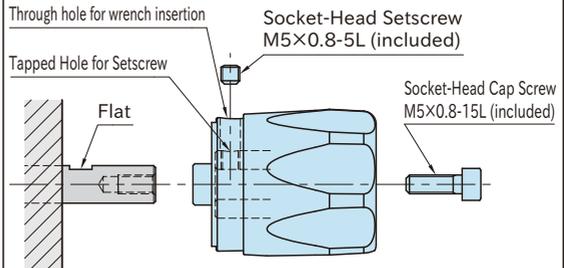
#### Mounting Spindle Dimension



Size	D (g6)
<b>OTLK4008</b>	8
<b>OTLK4010</b>	10

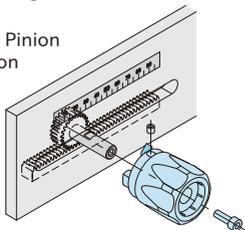
#### How to Install

1. Pull the housing and align the through hole on the base and the tapped hole on the insert.
2. Align the flat and the tapped hole on the insert and then mount to the spindle.
3. Fix OTLK temporarily using M5x0.8-15L socket-head cap screw included.
4. Fix OTLK to the spindle temporarily using a setscrew included.
5. Tighten M5x0.8-15L socket-head cap screw fully.
6. Tighten the setscrew fully.

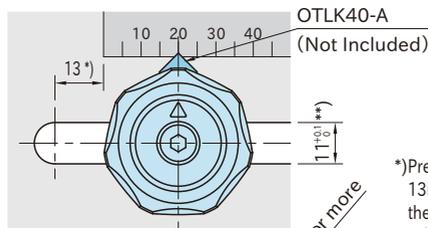
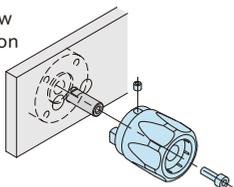


#### Mounting Hole Dimension

##### Rack and Pinion Application

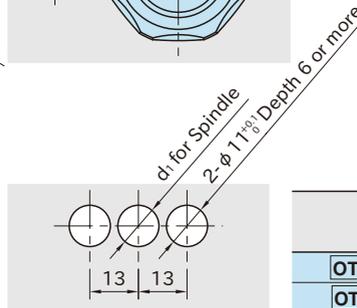


##### Leadscrew Application



\*) Prepare clearance of 13mm or more from the end of a required spindle stroke.

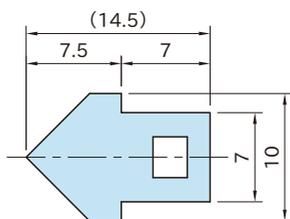
\*\*) Recommended surface roughness is  $1.6 \sqrt{\text{mm}}$  for the inner surface of the slotted hole.



Size	d <sub>1</sub>
<b>OTLK4008</b>	9
<b>OTLK4010</b>	11

## OTLK-A

## POINTER PLATE



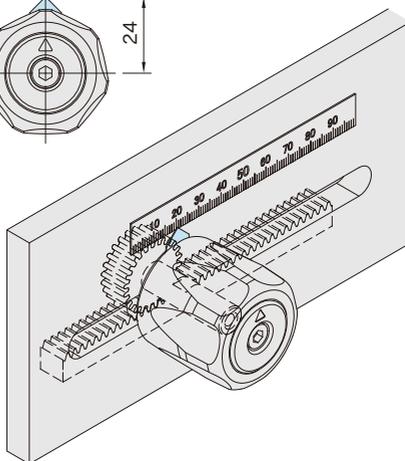
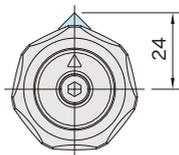
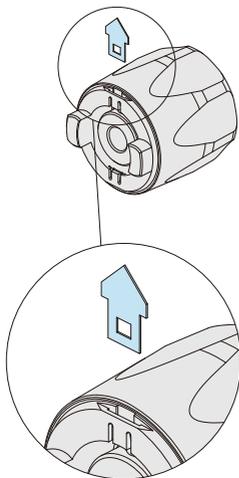
Body

SUS304  
stainless steel

Part Number	Weight (g)
<b>OTLK40-A</b>	21

## How To Use

- Use with scale plate for reading graduations in radial feeding applications such as rack and pinion.
- Insert Pointer Plate to the slot on the base component of One-Touch Locking Knobs.





## CTK

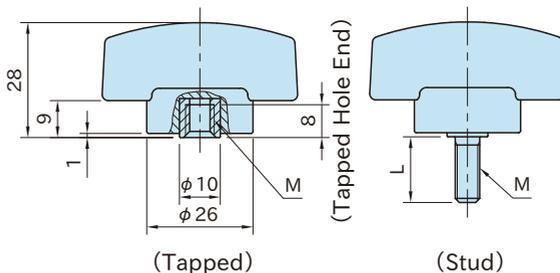
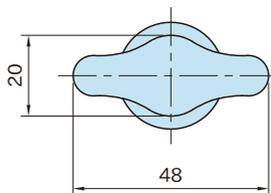
## TORQUE LIMITING KNOBS



(Tapped)



(Stud)



(Tapped)

(Stud)

## ★Key Point

Tightening end is detectable by sound and touch of a click.

Knob	Insert
Polyamide (glass-fiber reinforced) Black matte Orange matte	S45C steel Electroless nickel plated

Type	M	Torque (N·m) *	Tightening Force (kN) **
<b>CTK48-5-2</b>	M5×0.8	2	2
<b>CTK48-5-3</b>		3	3
<b>CTK48-6-2</b>	M6×1	2	1.7
<b>CTK48-6-3</b>		3	2.5

\*) Torque can vary  $\pm 15\%$  (Max).

\*\*) Use these values only as a guide. &lt;Tightening force (kN) = Torque(N·m)/(0.2×d(mm)) d:Nominal diameter of the stud&gt;

## ■ Tapped

Part Number		Weight (g)
Black	Orange	
CTK48-5-2BK	CTK48-5-2OG	35
CTK48-5-3BK	CTK48-5-3OG	36
CTK48-6-2BK	CTK48-6-2OG	34
CTK48-6-3BK	CTK48-6-3OG	35

## ■ Stud

Part Number		L	Weight (g)
Black	Orange		
CTK48-5×10-2BK	CTK48-5×10-2OG	10	37
CTK48-5×10-3BK	CTK48-5×10-3OG		38
CTK48-5×16-2BK	CTK48-5×16-2OG	16	38
CTK48-5×16-3BK	CTK48-5×16-3OG		39
CTK48-6×16-2BK	CTK48-6×16-2OG	16	39
CTK48-6×16-3BK	CTK48-6×16-3OG		40
CTK48-6×25-2BK	CTK48-6×25-2OG	25	41
CTK48-6×25-3BK	CTK48-6×25-3OG		42

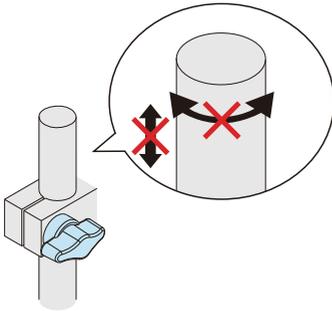
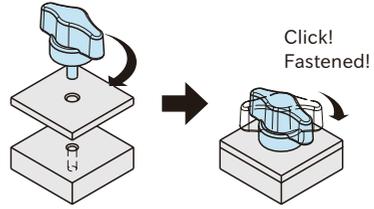
## Feature

- Can be tightened with the specified torque.
- The spring and the balls inside provide a touch of click when the knob reaches to the specified torque.
- The knob can keep rotated to the desired position after reaching to the specified torque.

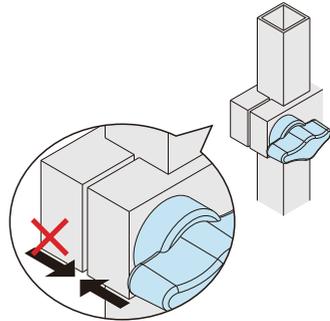
## Technical Information

Working temperature : Between 0°C and 80 °C

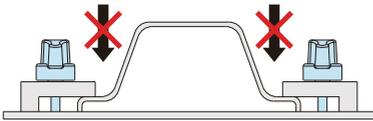
## How To Use



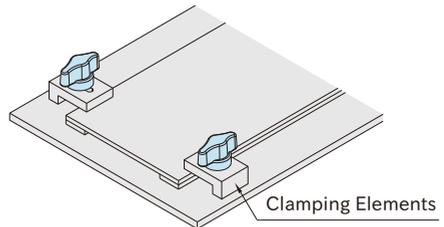
Prevent rotation or slippage.



Prevent deformation or scratch.



Prevent deformation of workpiece.



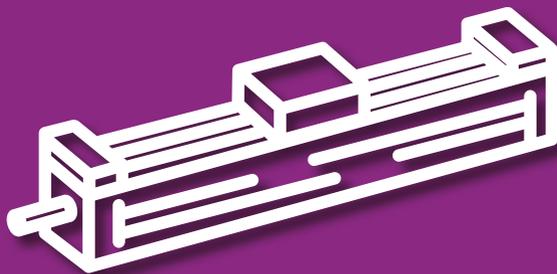
Can be used with clamping elements.

## Related Product

**ATCL** Adjustable-Torque Handles



# MECHANICAL LINEAR ACTUATORS



**COMPACT MECHANICAL LINEAR  
ACTUATORS**

**MECHANICAL LINEAR  
ACTUATORS**

**ACCESSORIES**

# MECHANICAL LINEAR ACTUATORS



## COMPACT MECHANICAL LINEAR ACTUATORS



COMPACT MECHANICAL LINEAR  
ACTUATORS

Part No. MAU3222SS



COMPACT MECHANICAL LINEAR  
ACTUATORS (Synchro-Use)

Part No. MAU3222DS

## MECHANICAL LINEAR ACTUATORS



MECHANICAL LINEAR ACTUATORS

Part No. MAU5040SS



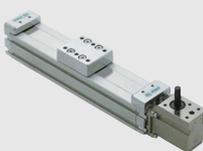
MECHANICAL LINEAR ACTUATORS  
(Customized Stroke)

Part No. MAUX5040SS



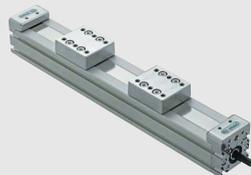
MECHANICAL LINEAR ACTUATORS  
WITH ADJUSTABLE GEARBOX

Part No. MAG5040SS



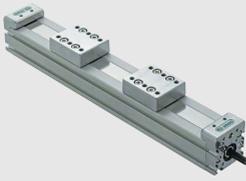
MECHANICAL LINEAR ACTUATORS  
WITH ADJUSTABLE GEARBOX  
(Customized Stroke)

Part No. MAGX5040SS



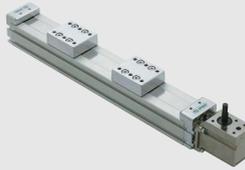
MECHANICAL LINEAR ACTUATORS  
(Dual Carriage)

Part No. MAU5040SW



MECHANICAL LINEAR ACTUATORS  
(Dual Carriage, Customized Stroke)

Part No. MAUX5040SW



MECHANICAL LINEAR ACTUATORS  
WITH ADJUSTABLE GEARBOX  
(Dual Carriage)

Part No. MAG5040SW



MECHANICAL LINEAR ACTUATORS  
WITH ADJUSTABLE GEARBOX  
(Dual Carriage, Customized Stroke)

Part No. MAG5040SW



MECHANICAL LINEAR ACTUATORS  
(Synchro-Use)

Part No. MAU5040DS



MECHANICAL LINEAR ACTUATORS  
(Synchro-Use, Customized Stroke)

Part No. MAUX5040DS



MECHANICAL LINEAR ACTUATORS  
WITH ADJUSTABLE GEARBOX  
(Synchro-Use)

Part No. MAG5040DS



MECHANICAL LINEAR ACTUATORS  
WITH ADJUSTABLE GEARBOX  
(Synchro-Use, Customized Stroke)

Part No. MAGX5040DS



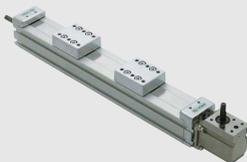
MECHANICAL LINEAR ACTUATORS  
(Dual Carriage, Synchro-Use)

Part No. MAU5040DW



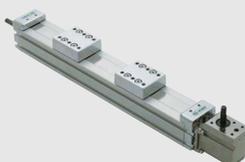
MECHANICAL LINEAR ACTUATORS  
(Dual Carriage, Synchro-Use,  
Customized Stroke)

Part No. MAUX5040DW



MECHANICAL LINEAR ACTUATORS  
WITH ADJUSTABLE GEARBOX  
(Dual Carriage, Synchro-Use)

Part No. MAG5040DW



MECHANICAL LINEAR ACTUATORS  
WITH ADJUSTABLE GEARBOX  
(Dual Carriage, Synchro-Use, Customized Stroke)

Part No. MAGX5040DW

# ACCESSORIES



SHAFT LOCKS

Part No. MAU-SL



ONE-TOUCH SPINDLE  
LOCKS

Part No. QCSPL



POSITIONING PLATE

Part No. MAU5040-PS01



DIGITAL POSITION  
INDICATORS

Part No. SDP-02



DIGITAL POSITION  
INDICATORS

Part No. SDP-04



POINTER

Part No. ES3-A



SCALES

Part No. ES1N



ADAPTER SHAFTS

Part No. MAU-SH



PLASTIC KNURLED KNOBS

Part No. GH-N



PLASTIC SOLID DISK  
HANDWHEEL

Part No. EDHN-M



PLASTIC ANGLED-SPOKE  
HANDWHEELS

Part No. TWN-M



PLASTIC CRANK HANDLES

Part No. BCHN-M



PAIR OF STOPS

Part No. MAU5040-ST02



T-NUTS

Part No. L5-TST



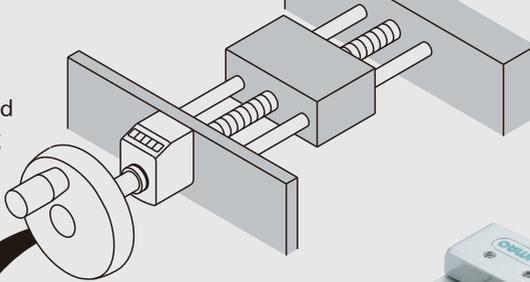
GROOVE COVER

Part No. L5-GVC2000N

## MECHANICAL LINEAR ACTUATORS

### Conventional

Self-made linear actuators required selecting, making and assembling many parts.



**No More Selfbuild!**

**Ready-to-use  
linear unit**



# MECHANICAL LINEAR ACTUATORS

No Parts  
Selection

No  
Designing

No  
Assembly

IMAO's pre-assembled Linear Unit can be used with simple manual adjustments without complex processes of parts selection, design and assembly. The internal parts are protected from dust by its aluminum profile body and dustproof sheet.

### Compact Type!

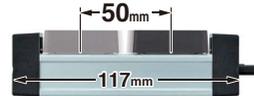
Compact body fits in a small area!  
2 sizes are available.



Stroke: 50mm

**Very small!**

Suitable for a narrow space.



Stroke: 100mm

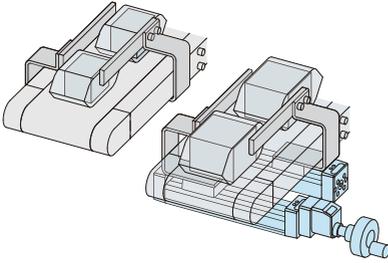
**Shorter & lighter body!**

Same stroke but shorter & lighter!

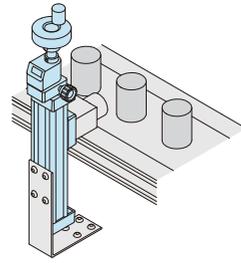


## Application Example

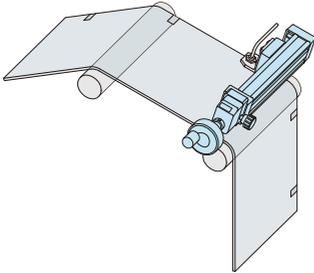
### Conveyer Guide Adjustment



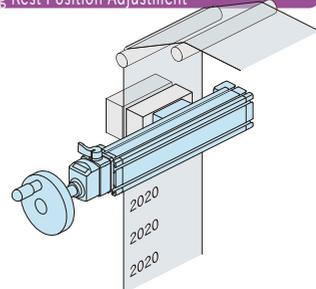
### Camera Position Adjustment



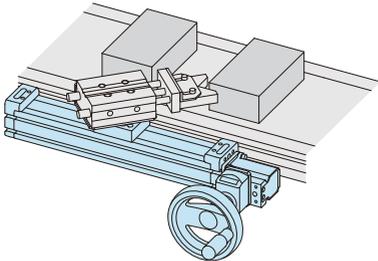
### Registration Marks Sensor Position Adjustment



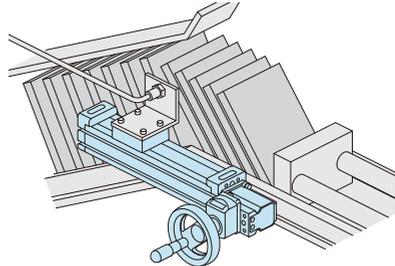
### Stamping Rest Position Adjustment



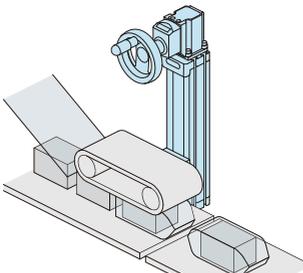
### Stopper Position Adjustment



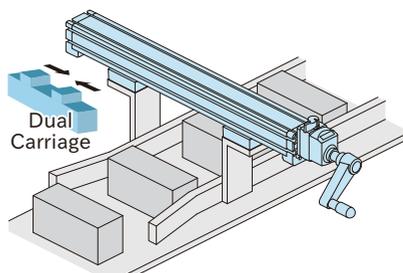
### Counting Sensor Position Adjustment



### Holder Belt Height Adjustment



### Conveyer Guide Adjustment



Lineup

### Single Carriage CCW CW

Carriage moves along with rotation of the handle shaft.

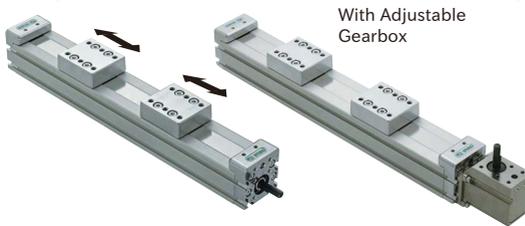


Single Carriage

- Customized Stroke
- Adjustable Gearbox
- Adjustable Gearbox & Customized Stroke

### Dual Carriage CW

Carriages move towards the center or opposite directions along with the rotation of the handle shaft.



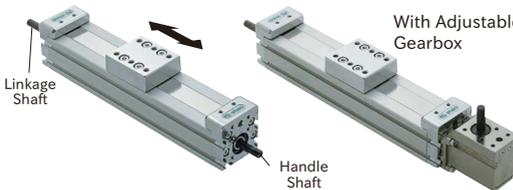
Dual Carriage

- Customized Stroke
- Adjustable Gearbox
- Adjustable Gearbox & Customized Stroke

### Linkage Single Carriage

CCW CW With Handle Shaft Without Handle Shaft

The actuators can be used in pairs connected at linkage shafts.



Linkage Single Carriage

- Customized Stroke
- Adjustable Gearbox
- Adjustable Gearbox & Customized Stroke

### Linkage Dual Carriage

CW With Handle Shaft Without Handle Shaft

Carriages move towards the center or opposite directions along with the rotation of the shaft. The actuators can be used in pairs connected at linkage shafts.



Linkage Dual Carriage

- Customized Stroke
- Adjustable Gearbox
- Adjustable Gearbox & Customized Stroke

## Lineup

### Compact CCW CW

Carriage moves along with rotation of the handle shaft.



### Compact Linkage

CCW CW

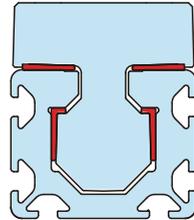
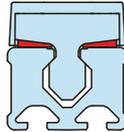
With Handle Shaft Without Handle Shaft

The actuators can be used in pairs connected at linkage shafts.



## Mechanism

The abrasion resistance and self-lubricating material of sliding parts give the unit a longer lifetime against the load of up and down or sideways.



## Related Product

Various accessories for actuators are available from IMAO.



### SHAFT LOCKS



### ONE-TOUCH SPINDLE LOCKS

Secure locking of spindles with a quarter turn!



### DIGITAL POSITION INDICATORS



### HANDWHEELS

Dedicated handwheels for actuators

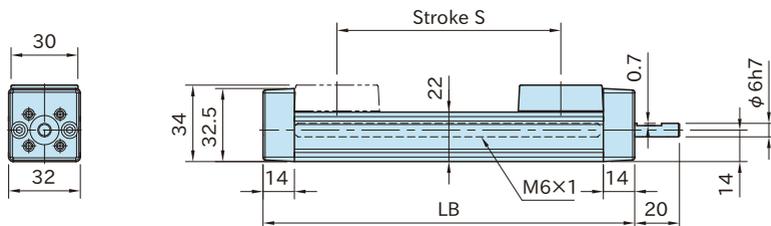
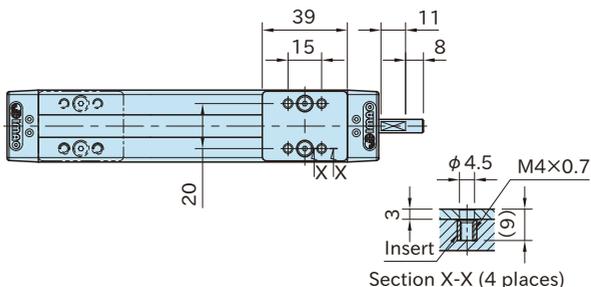


# MAU3222SS

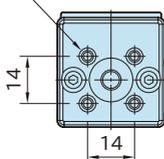
## COMPACT MECHANICAL LINEAR ACTUATORS



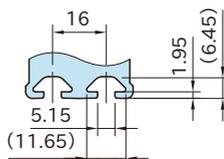
Body	Carriage End Plates	Shaft	Dustproof Sheet
A6N01 aluminum Anodized Natural	Polyamide (glass-fiber reinforced) Black	S45C steel Black oxide finish	SUS304 stainless steel



4-M3x0.5 Depth 5



Dimensions of End Plate (Both ends)



Dimensions of Slots

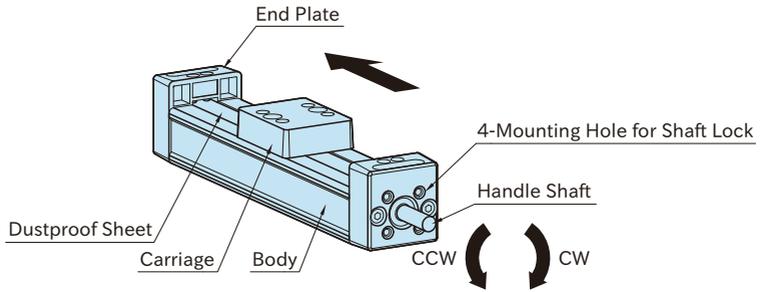
Part Number	Rotative Direction	S	LB	Weight (kg)
<b>MAU3222SS-050R</b>	CW	50	117	0.19
<b>MAU3222SS-050L</b>	CCW			
<b>MAU3222SS-100R</b>	CW	100	167	0.26
<b>MAU3222SS-100L</b>	CCW			

### Related Product

Choose the optional elements for your needs.

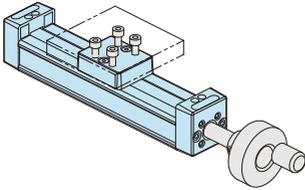
- Shaft Locks
- Digital Position Indicators
- Pointer
- Scales
- Adapter Shafts
- Handwheels
- T-Nuts

## How To Use

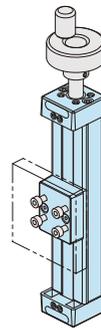


- **MAU3222SS-R** : Carriage moves toward the arrow direction by turning the Handle Shaft clockwise.
- **MAU3222SS-L** : Carriage moves toward the arrow direction by turning the Handle Shaft counterclockwise.
- Carriage moves 1mm per rotation of the Handle Shaft.

### ■ Horizontal Use



### ■ Vertical Use

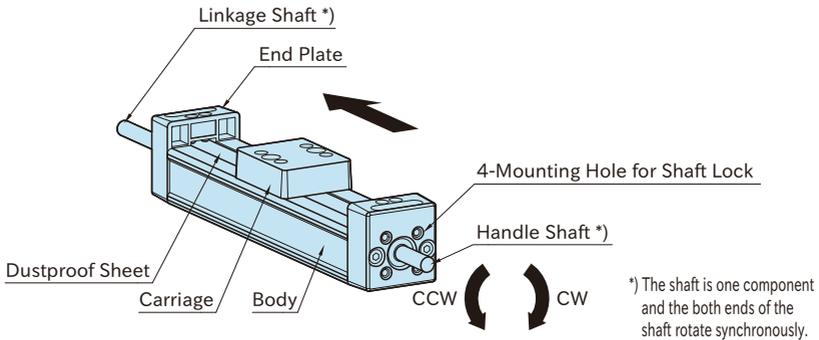


## Reference

Technical Information of Mechanical Linear Actuators



## How To Use



- **MAU3222DS-R,Y** : Carriage moves toward the arrow direction by turning the Handle Shaft clockwise.
- **MAU3222DS-L,Z** : Carriage moves toward the arrow direction by turning the Handle Shaft counterclockwise.
- Carriage moves 1mm per rotation of the Handle Shaft.

**Parallel Use**  
Attach pulleys or sprockets to Linkage Shafts and align the carriages for movement in synchronization.

**MAU3222DS-R,L**

**MAU3222DS-Y,Z**

Pulleys/ Sprockets

**Serial Use**  
Connect two linkage Shafts using a coupling.

**MAU3222DS-R,L**

Coupling

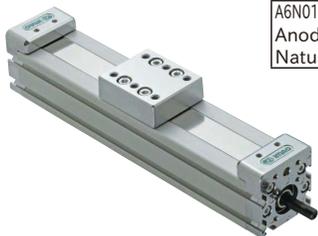
**MAU3222DS-Y,Z**

## Reference

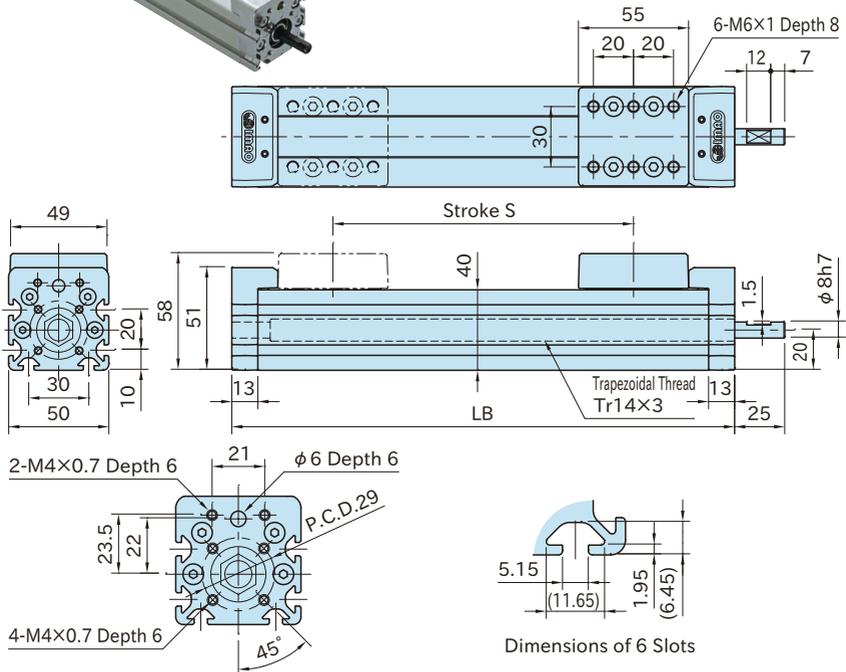
Technical Information of Mechanical Linear Actuators

# MAU5040SS

## MECHANICAL LINEAR ACTUATORS



Body	Carriage End Plates	Shaft	Trapezoidal Nut	Screw	Dustproof Sheet
A6N01 aluminum Anodized Natural	ZDC2 die-cast zinc Chrome plated	S45C steel Black oxide finish	CAC902 copper alloy	SCM435 steel Trivalent chromate	SUS304H stainless steel



Dimensions of End Plate (Both ends)

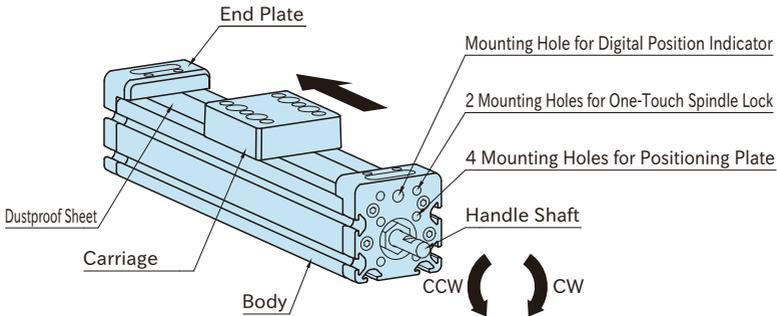
Part Number	Rotative Direction	S	LB	Weight (kg)
MAU5040SS-100R	CW	100	201	1.5
MAU5040SS-100L	CCW	100	201	1.5
MAU5040SS-150R	CW	150	251	1.7
MAU5040SS-150L	CCW	150	251	1.7
MAU5040SS-200R	CW	200	301	1.9
MAU5040SS-200L	CCW	200	301	1.9
MAU5040SS-250R	CW	250	351	2.1
MAU5040SS-250L	CCW	250	351	2.1
MAU5040SS-300R	CW	300	401	2.3
MAU5040SS-300L	CCW	300	401	2.3

### Related Product

Choose the optional elements for your needs.

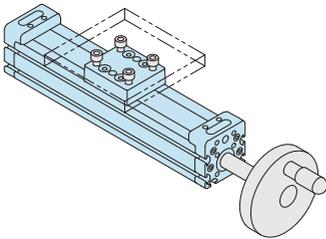
- For actuators with customized stroke, see [MAUX5040SS](#).
- One-Touch Spindle Locks
- Positioning Plate
- Digital Position Indicators
- Adapter Shafts
- Handwheels
- Pair of Stops
- T-Nuts
- Groove Cover

## How To Use

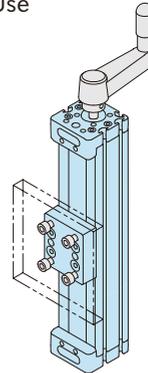


- **MAU5040SS-R**: Carriage moves toward the arrow direction by turning the Handle Shaft clockwise.
- **MAU5040SS-L**: Carriage moves toward the arrow direction by turning the Handle Shaft counterclockwise.
- Carriage moves 3mm per rotation of the Handle Shaft.

### Horizontal Use



### Vertical Use



## Reference

Technical Information of Mechanical Linear Actuators

# MAUX5040SS

## MECHANICAL LINEAR ACTUATORS (Customized Stroke)

On Request



IMA O

Ordering Example

**MAUX5040SS-AL 170**  
Part Number                      Stroke S

### Feature

- The stroke of **MAU5040SS** is customizable.
- For ordering, specify the stroke.

### Note

Body length : LB = Stroke S + 101mm

### Reference

Technical Information of Mechanical Linear Actuators

Part Number		S (by 10mm)	Delivery Time
<b>MAUX5040SS-A</b>	R(CW) L(CCW)	160~290	15 Working Days
<b>MAUX5040SS-B</b>		310~500	
<b>MAUX5040SS-C</b>		510~700	

# MAG5040SS

## MECHANICAL LINEAR ACTUATORS WITH ADJUSTABLE GEARBOX

On Request 

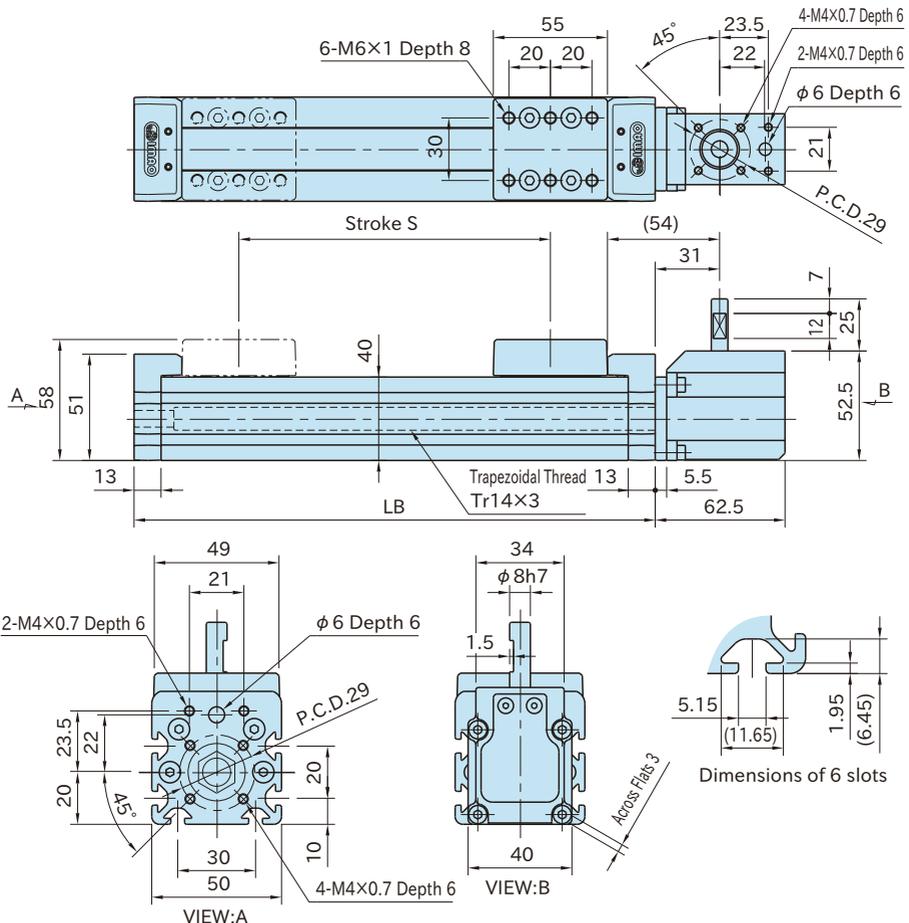
**IMAO**



Body	Carriage/End Plates	Shaft	Trapezoidal Nut
A6N01 aluminum Anodized Natural	ZDC2 die-cast zinc Chrome plated	S45C steel Black oxide finish	CAC902 copper alloy
Screw	Dustproof Sheet	Gearbox	
SCM435 steel Trivalent chromate	SUS304H stainless steel	S45C steel Electroless nickel plated	



Gearbox can be positioned at every 90 degree.



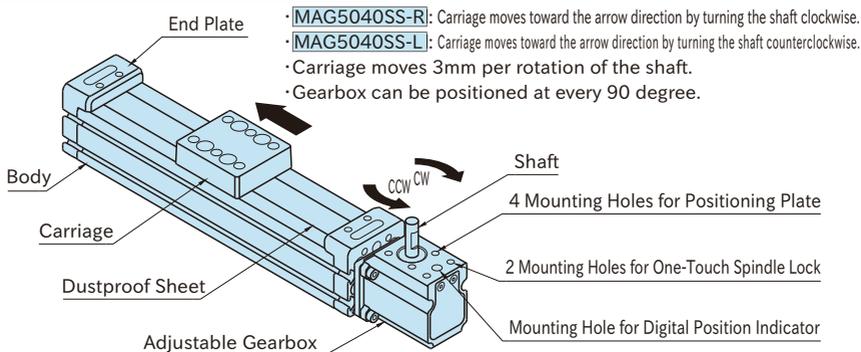
Part Number	Rotative Direction	S	LB	Weight (kg)	Delivery Time
MAG5040SS-100R	CW	100	201	2.0	10 Working Days
MAG5040SS-100L	CCW				
MAG5040SS-150R	CW	150	251	2.2	
MAG5040SS-150L	CCW				
MAG5040SS-200R	CW	200	301	2.4	
MAG5040SS-200L	CCW				
MAG5040SS-250R	CW	250	351	2.6	
MAG5040SS-250L	CCW				
MAG5040SS-300R	CW	300	401	2.8	
MAG5040SS-300L	CCW				

### Related Product

Choose the optional elements for your needs.

- For actuators with customized stroke, see [MAGX5040SS](#).
- One-Touch Spindle Locks
- Positioning Plate
- Digital Position Indicators
- Adapter Shafts
- Handwheels
- Pair of Stops
- T-Nuts
- Groove Cover

### How To Use



### Note

The gearbox will be delivered with mounted to Mechanical Linear Actuators in the orientation as in the figure above.

### Reference

- How To Change Gearbox Position
- Dimensions of Gearbox
- Technical Information of Mechanical Linear Actuators

## MAGX5040SS

### MECHANICAL LINEAR ACTUATORS WITH ADJUSTABLE GEARBOX (Customized Stroke)

On Request



Ordering Example

**MAGX5040SS-AL 170**

Part Number

Stroke S

### Feature

- The stroke length of [MAG5040SS](#) is customizable.
- For ordering, specify the stroke.

### Note

Body length : LB = Stroke S+101mm

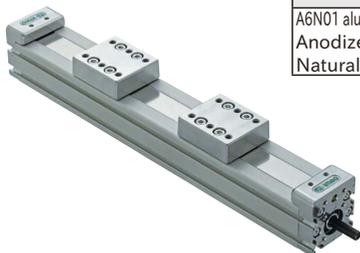
Part Number		S Desired Length (by 10mm)	Delivery Time
<a href="#">MAGX5040SS-A</a>	R(CW) L(CCW)	160~290	15 Working Days
<a href="#">MAGX5040SS-B</a>		310~500	
<a href="#">MAGX5040SS-C</a>		510~700	

### Reference

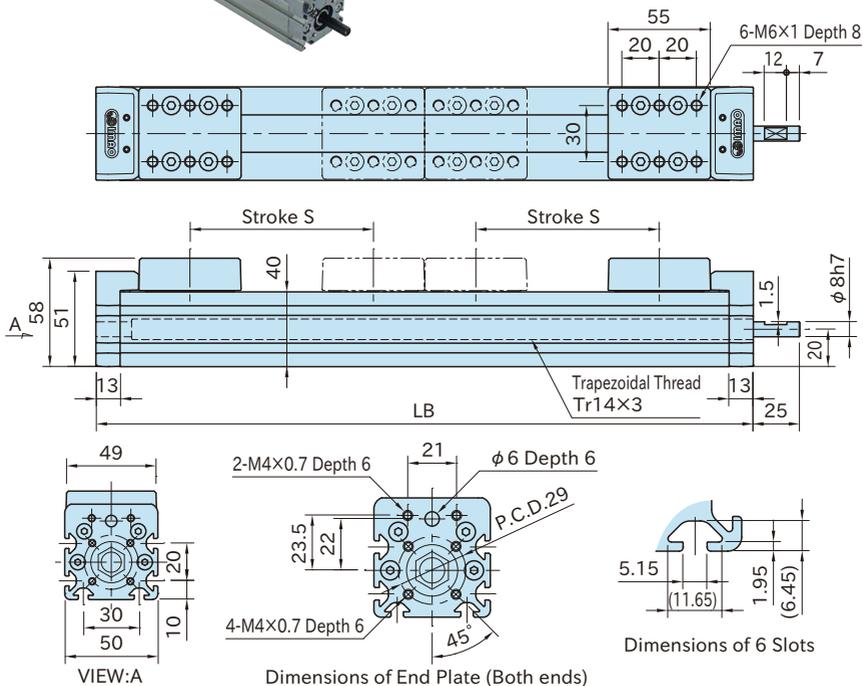
- How To Change Gearbox Position
- Dimensions of Gearbox
- Technical Information of Mechanical Linear Actuators

# MAU5040SW

## MECHANICAL LINEAR ACTUATORS (Dual Carriage)



Body	Carriage End Plates	Shaft	Trapezoidal Nut	Screw	Dustproof Sheet
A6N01 aluminum Anodized Natural	ZDC2 die-cast zinc Chrome plated	S45C steel Black oxide finish	CAC902 copper alloy	SCM435 steel Trivalent chromate	SUS304H stainless steel



Part Number	S	LB	Weight (kg)
MAU5040SW-100	100	356	2.4
MAU5040SW-150	150	456	2.8

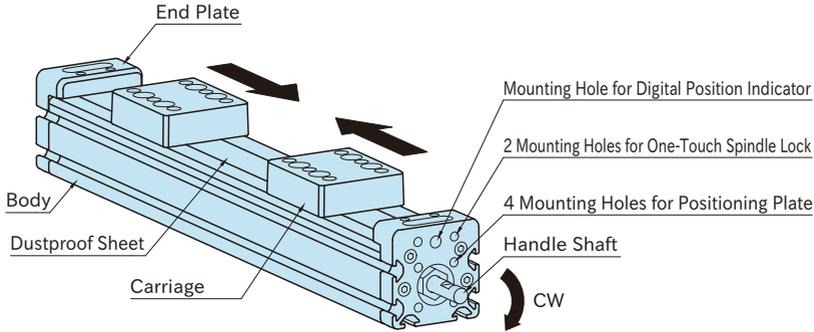
### Reference

Technical Information of Mechanical Linear Actuators

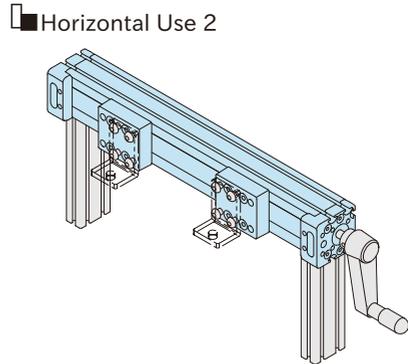
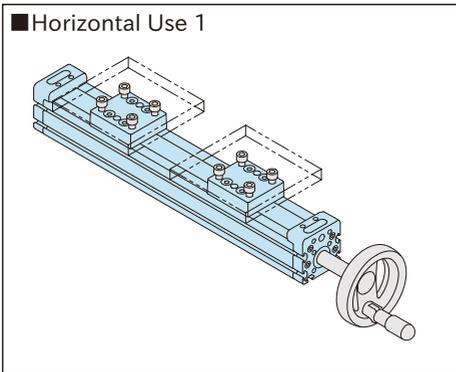
### Related Product

- Choose the optional elements for your needs.
- For actuators with customized stroke, see [MAUX5040SW](#).
  - One-Touch Spindle Locks
  - Positioning Plate
  - Digital Position Indicators
  - Adapter Shafts
  - Handwheels
  - Pair of Stops
  - T-Nuts
  - Groove Cover

## How To Use



- Two carriages move toward the arrow directions by turning the Handle Shaft clockwise.
- Two carriages move against the arrow directions by turning the Handle Shaft counterclockwise.
- Pitch between two carriages increases or decreases 6mm per rotation of the Handle Shaft.



# MAUX5040SW

## MECHANICAL LINEAR ACTUATORS (Dual Carriage, Customized Stroke)

On Request



IMAO

Ordering Example

**MAUX5040SW-B 240**  
Part Number                      Stroke S

### Feature

- The stroke of **MAUX5040SW** is customizable.
- For ordering, specify the stroke.

### Note

Body length :  $LB = \text{Stroke} \times 2 + 156\text{mm}$

### Reference

Technical Information of Mechanical Linear Actuators

Part Number	S (by 10mm)	Delivery Time
<b>MAUX5040SW-A</b>	160~220	15 Working Days
<b>MAUX5040SW-B</b>	230~280	
<b>MAUX5040SW-C</b>	290~340	

# MAG5040SW

## MECHANICAL LINEAR ACTUATORS WITH ADJUSTABLE GEARBOX (Dual Carriage)

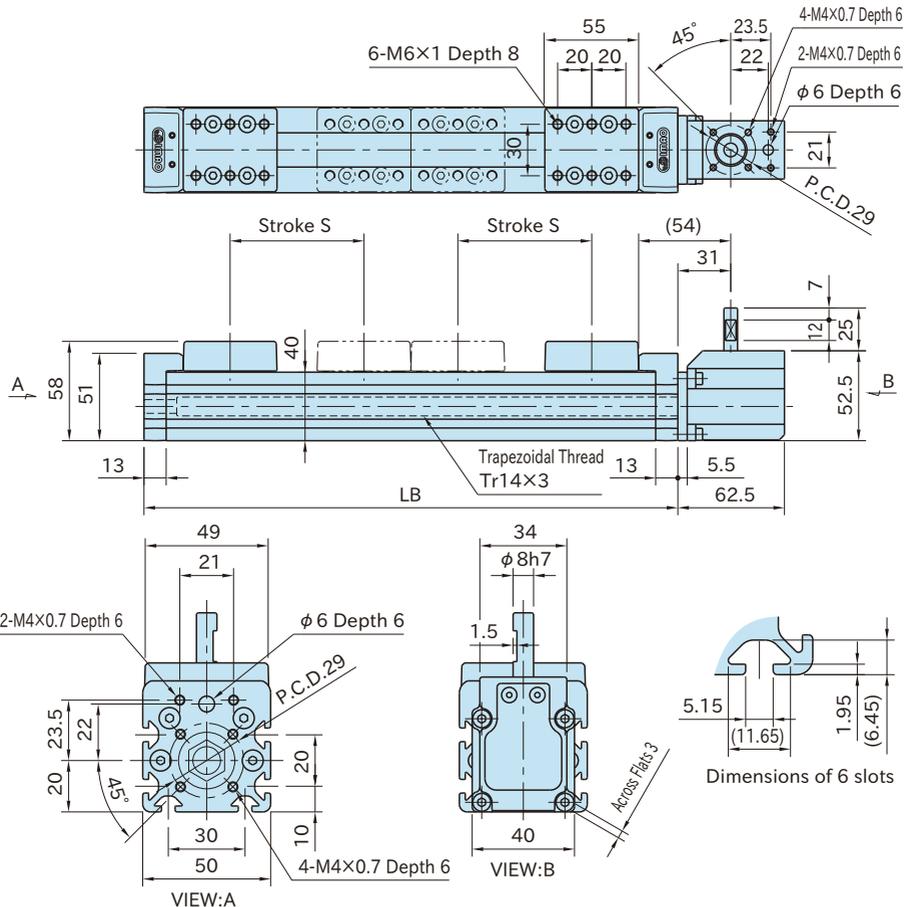
On Request



Body	Carriage/End Plates	Shaft	Trapezoidal Nut
A6N01 aluminum Anodized Natural	ZDC2 die-cast zinc Chrome plated	S45C steel Black oxide finish	CAC902 copper alloy
Screw	Dustproof Sheet	Gearbox	
SCM435 steel Trivalent chromate	SUS304H stainless steel	S45C steel Electroless nickel plated	



Gearbox can be positioned at every 90 degree.



Part Number	S	LB	Weight(kg)	Delivery Time
MAG5040SW-100	100	356	2.9	10 Working Days
MAG5040SW-150	150	456	3.3	

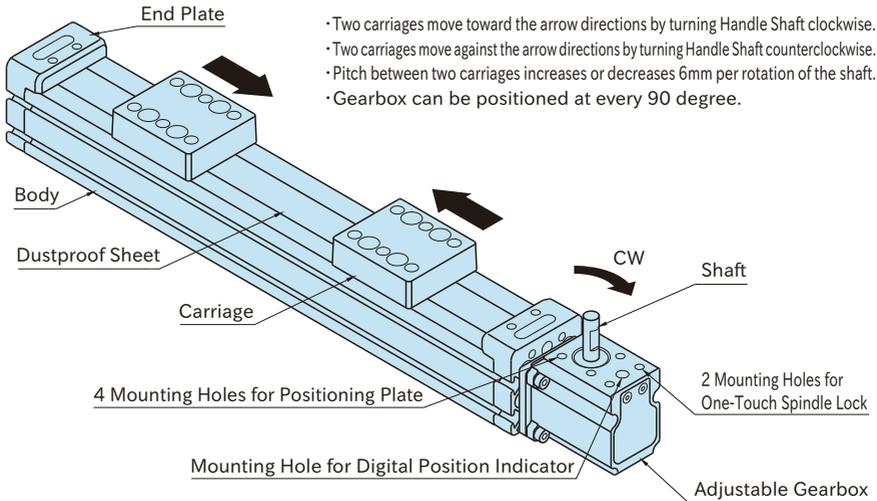
### Note

The gearbox will be delivered with mounted to Mechanical Linear Actuators in the orientation as in the figure below.

### Reference

- How To Change Gearbox Position
- Dimensions of Gearbox
- Technical Information of Mechanical Linear Actuators

### How To Use



- Two carriages move toward the arrow directions by turning Handle Shaft clockwise.
- Two carriages move against the arrow directions by turning Handle Shaft counterclockwise.
- Pitch between two carriages increases or decreases 6mm per rotation of the shaft.
- Gearbox can be positioned at every 90 degree.

### Related Product

- Choose the optional elements for your needs.
- For actuators with customized stroke, see [MAGX5040SW](#).
  - One-Touch Spindle Locks
  - Positioning Plate
  - Digital Position Indicators
  - Adapter Shafts
  - Handwheels
  - Pair of Stops
  - T-Nuts
  - Groove Cover

## MAGX5040SW

MECHANICAL LINEAR ACTUATORS WITH ADJUSTABLE GEARBOX  
(Dual Carriage, Customized Stroke)

On Request



Ordering Example

**MAGX5040SW-B 240**  
Part Number                      Stroke S

### Feature

- The stroke length of [MAG5040SW](#) is customizable.
- For ordering, specify the stroke.

### Note

Body length : LB = Stroke S×2+156mm

### Reference

- How To Change Gearbox Position
- Dimensions of Gearbox
- Technical Information of Mechanical Linear Actuators

Part Number	S Desired Stroke (by 10mm)	Delivery Time
<a href="#">MAGX5040SW-A</a>	160~220	15 Working Days
<a href="#">MAGX5040SW-B</a>	230~280	
<a href="#">MAGX5040SW-C</a>	290~340	

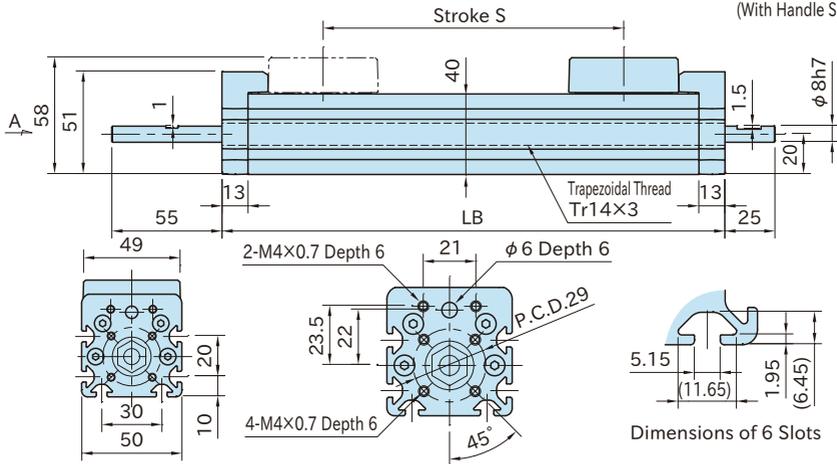
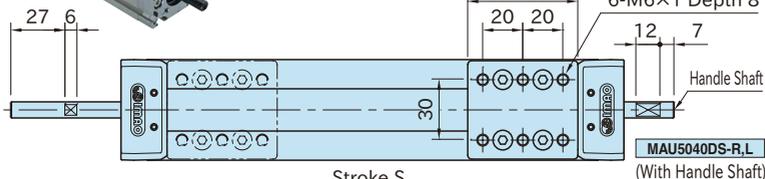
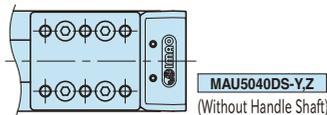
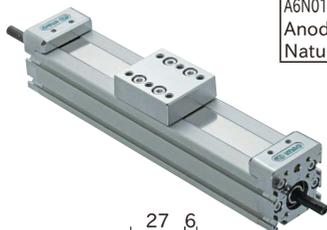
# MAU5040DS

## MECHANICAL LINEAR ACTUATORS (Synchro-Use)

On Request



Body	Carriage End Plates	Shaft	Trapezoidal Nut	Screw	Dustproof Sheet
A6N01 aluminum Anodized Natural	ZDC2 die-cast zinc Chrome plated	S45C steel Black oxide finish	CAC902 copper alloy	SCM435 steel Trivalent chromate	SUS304H stainless steel



VIEW:A

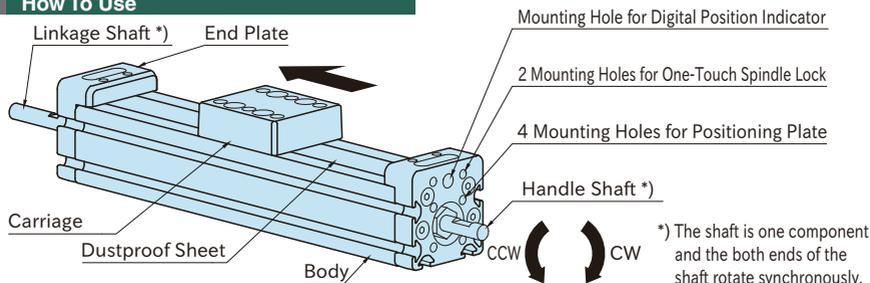
Dimensions of End Plate (Both ends)

Part Number		Rotative Direction	S	LB	Weight (kg)	Delivery Time
With Handle Shaft	Without Handle Shaft					
MAU5040DS-100R	MAU5040DS-100Y	CW	100	201	1.5	10 Working Days
MAU5040DS-100L	MAU5040DS-100Z	CCW				
MAU5040DS-150R	MAU5040DS-150Y	CW	150	251	1.7	
MAU5040DS-150L	MAU5040DS-150Z	CCW				
MAU5040DS-200R	MAU5040DS-200Y	CW	200	301	1.9	
MAU5040DS-200L	MAU5040DS-200Z	CCW				
MAU5040DS-250R	MAU5040DS-250Y	CW	250	351	2.1	
MAU5040DS-250L	MAU5040DS-250Z	CCW				
MAU5040DS-300R	MAU5040DS-300Y	CW	300	401	2.3	
MAU5040DS-300L	MAU5040DS-300Z	CCW				

### Reference

Technical Information of  
Mechanical Linear Actuators

## How To Use

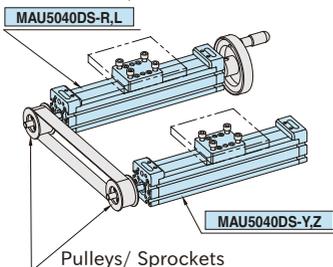


\*) The shaft is one component and the both ends of the shaft rotate synchronously.

- **MAUX5040DS-R,Y**: Carriage moves toward the arrow direction by turning the Linkage Shaft clockwise.
- **MAUX5040DS-L,Z**: Carriage moves toward the arrow direction by turning the Handle Shaft counterclockwise.
- Carriage moves 3mm per rotation of the Handle Shaft.

### Parallel Use

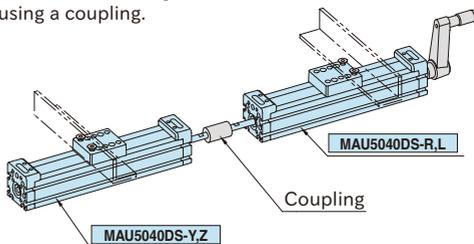
Attach pulleys or sprockets to Linkage Shafts and align the carriages for movement in synchronization.



Pulleys/ Sprockets

### Serial Use

Connect two Linkage Shafts using a coupling.



Coupling

## Related Product

Choose the optional elements for your needs.

- For actuators with customized stroke, see **MAUX5040DS**.
- One-Touch Spindle Locks
- Positioning Plate
- Digital Position Indicators
- Adapter Shafts
- Handwheels
- Pair of Stops
- T-Nuts
- Groove Cover

# MAUX5040DS

## MECHANICAL LINEAR ACTUATORS (Synchro-Use, Customized Stroke)

On Request



IMA

Ordering Example

**MAUX5040DS-BR 450**

Part Number

Stroke S

### Feature

- The stroke of **MAUX5040DS** is customizable.
- For ordering, specify the stroke.

### Note

Body length : LB = Stroke S + 101mm

Part Number	S(by 10mm)	Delivery Time
<b>MAUX5040DS-A</b>	160~290	15 Working Days
<b>MAUX5040DS-B</b>	310~500	
<b>MAUX5040DS-C</b>	510~700	

### Reference

Technical Information of Mechanical Linear Actuators

# MAG5040DS

## MECHANICAL LINEAR ACTUATORS WITH ADJUSTABLE GEARBOX (Synchro-Use)

On Request 

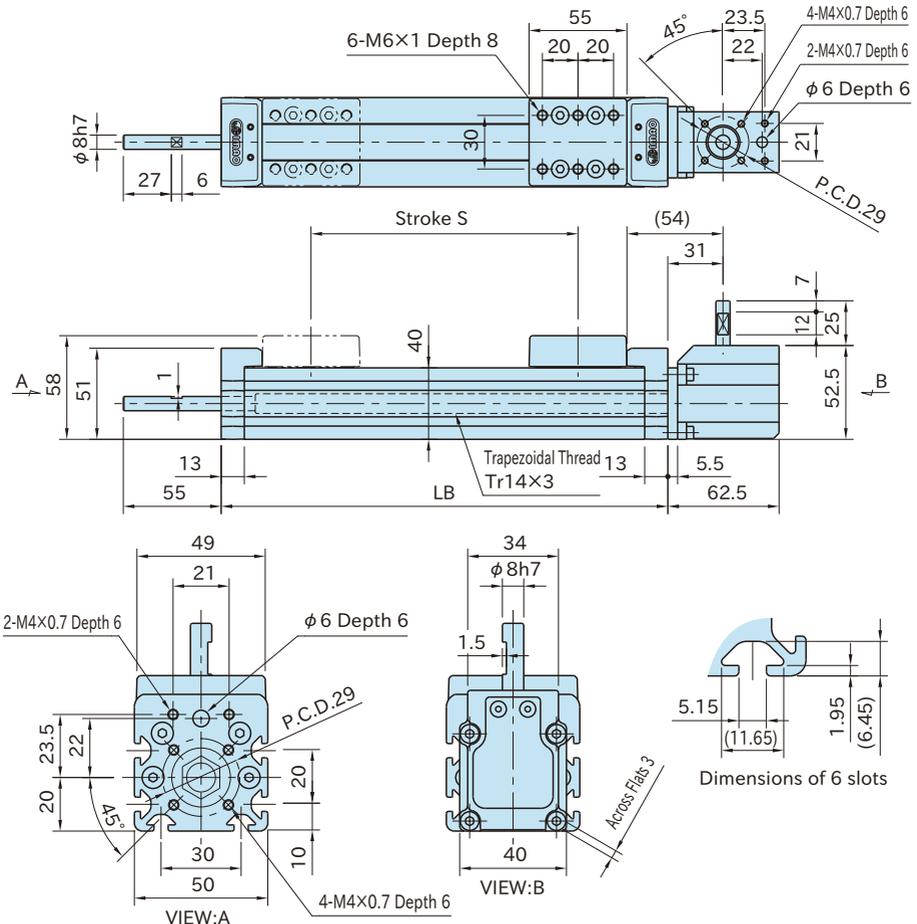
**IMAO**



Body	Carriage/End Plates	Shaft	Trapezoidal Nut
A6N01 aluminum Anodized Natural	ZDC2 die-cast zinc Chrome plated	S45C steel Black oxide finish	CAC302 copper alloy
Screw	Dustproof Sheet	Gearbox	
SCM435 steel Trivalent chromate	SUS304H stainless steel	S45C steel Electroless nickel plated	



Gearbox can be positioned at every 90 degree.

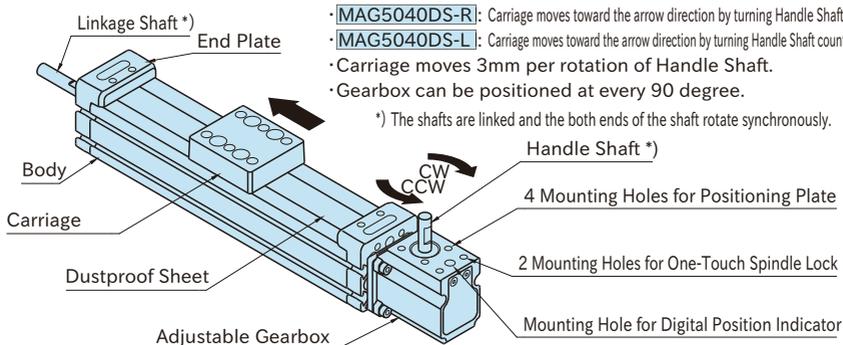


Part Number	Rotative Direction	S	LB	Weight(kg)	Delivery Time
MAG5040DS-100R	CW	100	201	2.0	10 Working Days
MAG5040DS-100L	CCW				
MAG5040DS-150R	CW	150	251	2.2	
MAG5040DS-150L	CCW				
MAG5040DS-200R	CW	200	301	2.4	
MAG5040DS-200L	CCW				
MAG5040DS-250R	CW	250	351	2.6	
MAG5040DS-250L	CCW				
MAG5040DS-300R	CW	300	401	2.8	
MAG5040DS-300L	CCW				

### Related Product

- Choose the optional elements for your needs.
- For actuators with customized stroke, see [MAGX5040DS](#).
  - One-Touch Spindle Locks
  - Positioning Plate
  - Digital Position Indicators
  - Adapter Shafts
  - Handwheels
  - Pair of Stops
  - T-Nuts
  - Groove Cover

### How To Use



- [MAG5040DS-R](#): Carriage moves toward the arrow direction by turning Handle Shaft clockwise.
- [MAG5040DS-L](#): Carriage moves toward the arrow direction by turning Handle Shaft counterclockwise.
- Carriage moves 3mm per rotation of Handle Shaft.
- Gearbox can be positioned at every 90 degree.

\*) The shafts are linked and the both ends of the shaft rotate synchronously.

### Note

The gearbox will be delivered with mounted to Mechanical Linear Actuators in the orientation as in the figure above.

### Reference

- How To Change Gearbox Position
- Dimensions of Gearbox
- Technical Information of Mechanical Linear Actuators

# MAGX5040DS

MECHANICAL LINEAR ACTUATORS WITH ADJUSTABLE GEARBOX  
(Synchro-Use, Customized Stroke)

On Request

**IMAO**

Ordering Example

## MAGX5040DS-BR 450

Part Number

Stroke S

### Feature

- The stroke length of [MAG5040DS](#) is customizable.
- For ordering, specify the stroke.

### Note

Body length : LB = Stroke S+101mm

Part Number	S Desired Stroke (by 10mm)	Delivery Time	Reference
<a href="#">MAGX5040DS-A</a>	R(CW) L(CCW)	15 Working Days	<ul style="list-style-type: none"> <li>· How To Change Gearbox Position</li> <li>· Dimensions of Gearbox</li> <li>· Technical Information of Mechanical Linear Actuators</li> </ul>
<a href="#">MAGX5040DS-B</a>			
<a href="#">MAGX5040DS-C</a>			

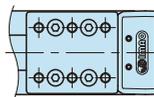
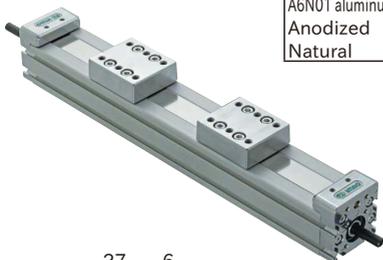
# MAU5040DW

## MECHANICAL LINEAR ACTUATORS (Dual Carriage, Synchro-Use)

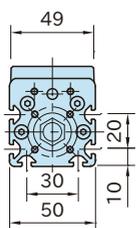
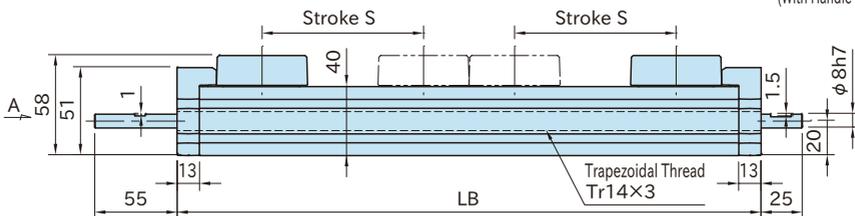
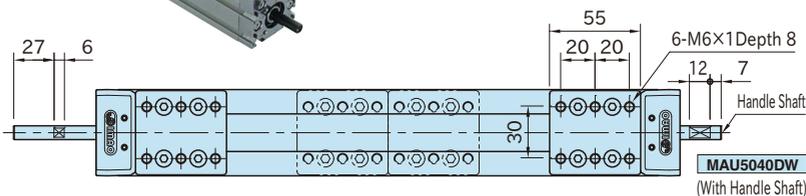
On Request 

**IMAO**

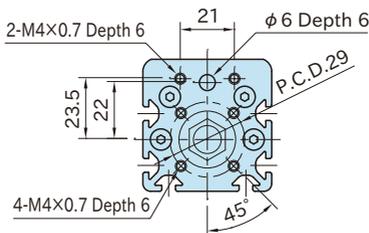
Body	Carriage End Plates	Shaft	Trapezoidal Nut	Screw	Dustproof Sheet
A6N01 aluminum Anodized Natural	ZDC2 die-cast zinc Chrome plated	S45C steel Black oxide finish	CAC902 copper alloy	SCM435 steel Trivalent chromate	SUS304H stainless steel



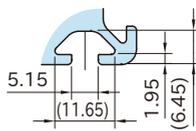
**MAU5040DW-Y**  
(Without Handle Shaft)



VIEW:A



Dimensions of End Plate (Both ends)



Dimensions of 6 Slots

Part Number		S	LB	Weight (kg)	Delivery Time
With Handle Shaft	Without Handle Shaft				
MAU5040DW-100	MAU5040DW-100Y	100	356	2.4	10 Working Days
MAU5040DW-150	MAU5040DW-150Y	150	456	2.8	

### Reference

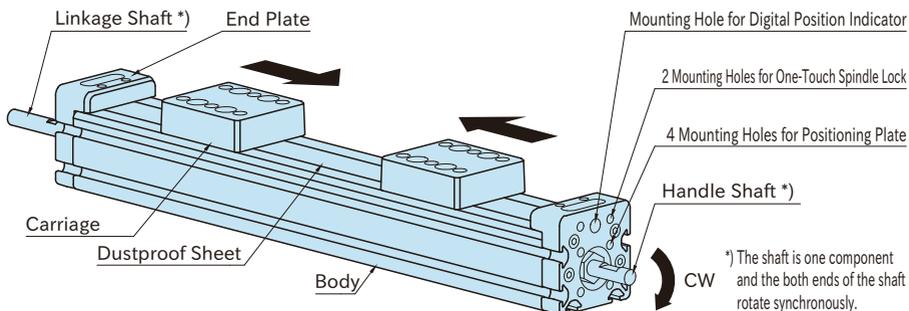
Technical Information of Mechanical Linear Actuators

### Related Product

Choose the optional elements for your needs.

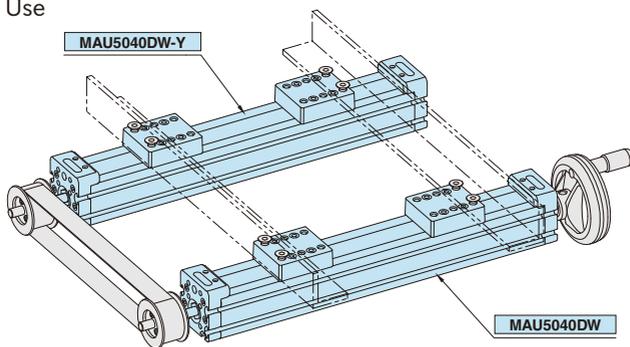
- For actuators with customized stroke, see [MAUX5040DW](#).
- One-Touch Spindle Locks
- Positioning Plate
- Digital Position Indicators
- Adapter Shafts
- Handwheels
- Pair of Stops
- T-Nuts
- Groove Cover

## How To Use



- Two carriages move toward the arrow directions by turning the Handle Shaft clockwise.
- Two carriages move against the arrow directions by turning the Handle Shaft counterclockwise.
- Pitch between two carriages increases or decreases 6mm per rotation of the Handle Shaft.

## Parallel Use



# MAUX5040DW

## MECHANICAL LINEAR ACTUATORS (Dual Carriage, Synchro-Use, Customized Stroke)

On Request



IMAO

Ordering Example

**MAUX5040DW-CY 290**

Part Number

Stroke S

### Feature

- The stroke of **MAUX5040DW** is customizable.
- For ordering, specify the stroke.

### Note

Body length :  $LB = \text{Stroke } S \times 2 + 156\text{mm}$

Part Number		S (by 10mm)	Delivery Time
<b>MAUX5040DW-A</b>	(With Handle Shaft) Y (Without Handle Shaft)	160~220	15 Working Days
<b>MAUX5040DW-B</b>		230~280	
<b>MAUX5040DW-C</b>		290~340	

### Reference

Technical Information of  
Mechanical Linear Actuators



Part Number	S	LB	Weight (kg)	Delivery Time
MAG5040DW-100	100	356	2.9	10 Working Days
MAG5040DW-150	150	456	3.3	

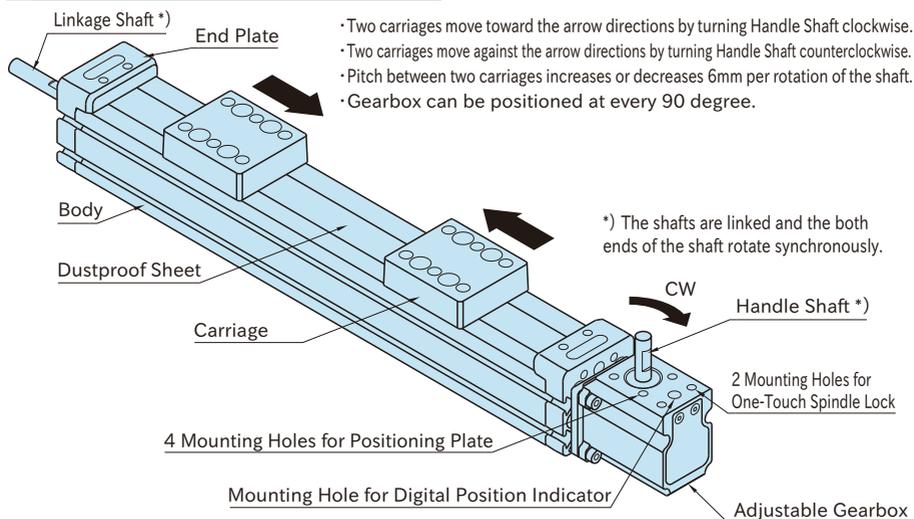
### Note

The gearbox will be delivered with mounted to Mechanical Linear Actuators in the orientation as in the figure below.

### Reference

- How To Change Gearbox Position
- Dimensions of Gearbox
- Technical Information of Mechanical Linear Actuators

### How To Use



### Related Product

- Choose the optional elements for your needs.
- For actuators with customized stroke, see [MAGX5040DW](#).
  - One-Touch Spindle Locks
  - Positioning Plate
  - Digital Position Indicators
  - Adapter Shafts
  - Handwheels
  - Pair of Stops
  - T-Nuts
  - Groove Cover

## MAGX5040DW

MECHANICAL LINEAR ACTUATORS WITH ADJUSTABLE GEARBOX  
 (Dual Carriage, Synchro-Use, Customized Stroke)

On Request



Ordering Example

**MAGX5040DW-C 290**

Part Number

Stroke S

### Feature

- The stroke length of [MAGX5040DW](#) is customizable.
- For ordering, specify the stroke.

### Note

Body length : LB = Stroke S×2+156mm

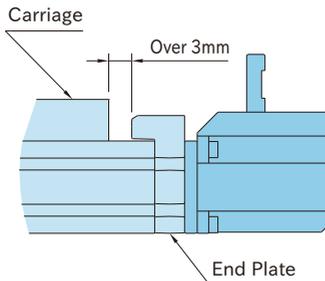
### Reference

- How To Change Gearbox Position
- Dimensions of Gearbox
- Technical Information of Mechanical Linear Actuators

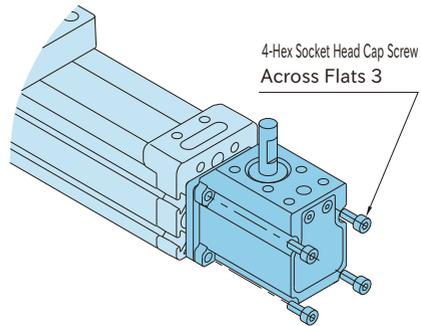
Part Number	S Desired Stroke (by 10mm)	Delivery Time
<a href="#">MAGX5040DW-A</a>	160~220	15 Working Days
<a href="#">MAGX5040DW-B</a>	230~280	
<a href="#">MAGX5040DW-C</a>	290~340	

## How To Change Gearbox Position

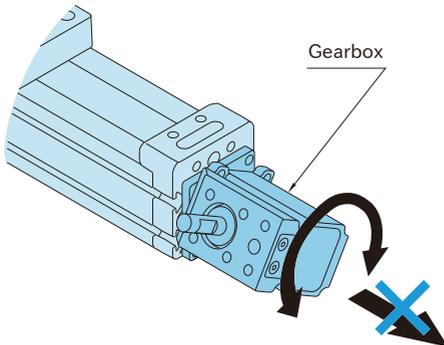
- ① The clearance between carriage and end plate should be 3mm at least.



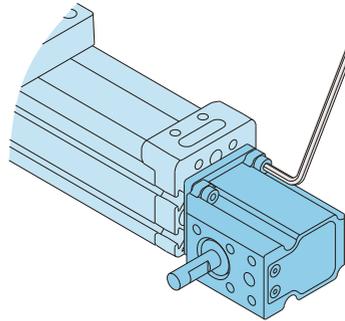
- ② Remove four hex socket head cap screws attached to the gearbox.



- ③ The gearbox is free to rotate and change the position at every 90 degree.



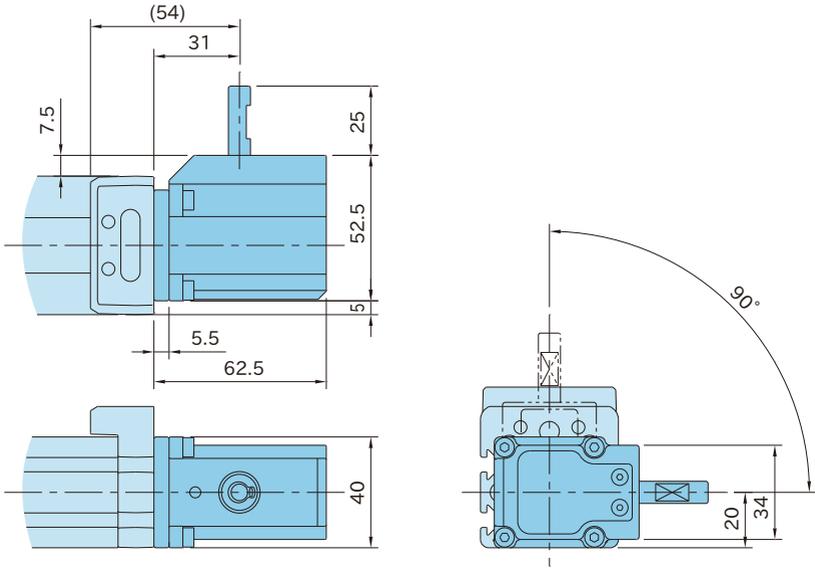
- ④ Fix the gearbox at the desired position with four hex socket head cap screws.



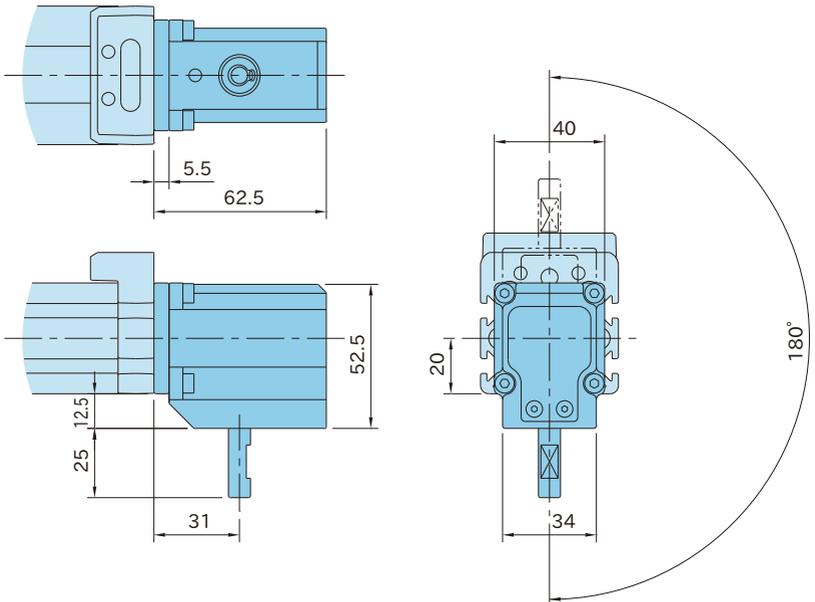
Note: Do not pull the gearbox to the axial direction.

## Dimensions of Gearbox

- Dimensions of Gearbox at 90 degrees rotation  
(For dimensions of Gearbox at 270 degrees, invert the drawing below.)

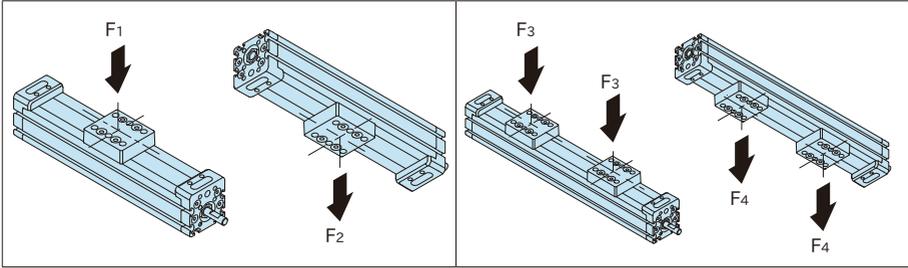


- Dimensions of Gearbox at 180 degrees rotation

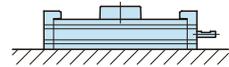


# Technical Information of Mechanical Linear Actuators

## Allowable Load

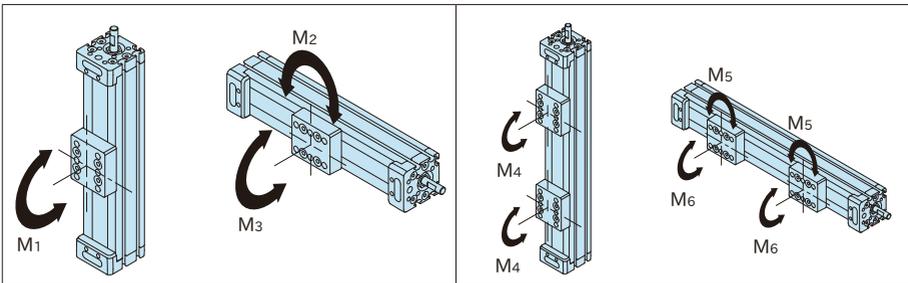


Type	F <sub>1</sub> (N)	F <sub>2</sub> (N)	F <sub>3</sub> (N)	F <sub>4</sub> (N)
<b>MAU3222*S</b>	30	15	-	-
<b>MAU5040*S</b>	600	300	-	-
<b>MAG5040*S</b>				
<b>MAU5040*W</b>	-	-	300	150
<b>MAG5040*W</b>				

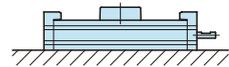


Note: The values above are for Actuators placed on a flat surface.

## Allowable Moment



Type	M <sub>1</sub> (N·m)	M <sub>2</sub> (N·m)	M <sub>3</sub> (N·m)	M <sub>4</sub> (N·m)	M <sub>5</sub> (N·m)	M <sub>6</sub> (N·m)
<b>MAU3222*S</b>	0.3	0.2	0.3	-	-	-
<b>MAU5040*S</b>	9	8	10	-	-	-
<b>MAG5040*S</b>						
<b>MAU5040*W</b>	-	-	-	4.5	4	5
<b>MAG5040*W</b>						



Note: The values above are for Actuators placed on a flat surface.

## Allowable Rotation Speed

When using a motor, rotation speed must be within;  
 150min<sup>-1</sup> for **MAU3222\*\***  
 250min<sup>-1</sup> for **MAU5040\*\*** **MAG5040\*\***

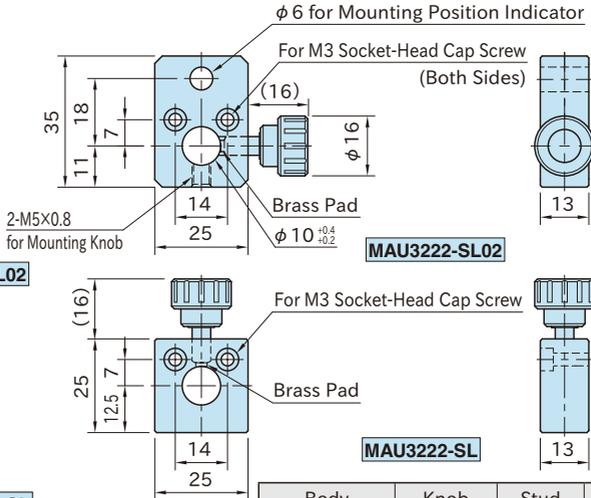
# MAU-SL SHAFT LOCKS



**MAU3222-SL02**



**MAU3222-SL**



Body	Knob	Stud	Pad
S45C steel Electroless nickel plated	Polyamide plastic Black matte	SUS304 stainless steel	Brass (Low cadmium)

Part Number	Weight (g)	Proper Adapter Shaft
<b>MAU3222-SL</b>	58	<b>MAU3222-SH</b>
<b>MAU3222-SL02</b>	78	

### Feature

- Avoids the shaft rotating. The brass pad of the knob prevents the shaft from damage.
- Can be used with [MAU3222](#).

### Supplied With

2 of M3X0.5-14L Hex Socket Head Screw

### How To Use

#### ■ MAU3222-SL

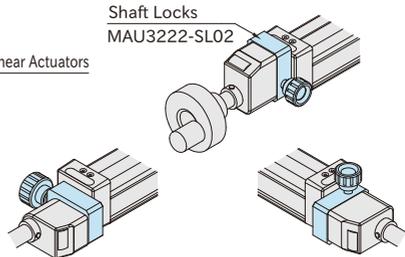
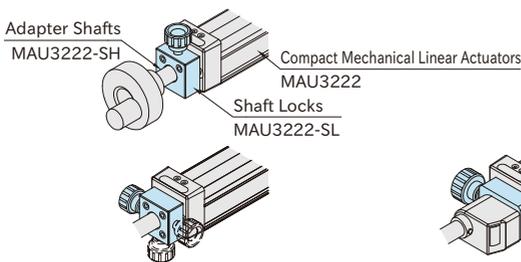
The position of the knob follows the mounting direction.

### Note

- This product does not have bearing or guiding functions.
- Shocks or vibrations may loosen the lock.
- Can not be used with [MAU5040\\*\\*](#) or [MAG5040\\*\\*](#).

#### ■ MAU3222-SL02

Use with [SDP-02](#).  
Mounting direction can be changed.



# QCSPL

# ONE-TOUCH SPINDLE LOCKS



**QCSPL-OG**

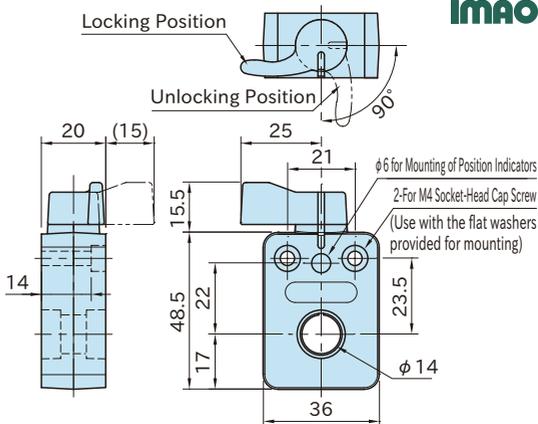
(Plastic knob, Orange)

**QCSPL-BK**

(Plastic knob, Black)

**QCSPL-S**

(Metal knob)



### ★Key Point

Secure locking of spindles with one-touch action!

Type	Housing	Knob	Clamp Collar
<b>QCSPL-OG</b>	Polyamide plastic (glass-fiber reinforced)	Polyamide plastic (glass-fiber reinforced)	SUS630 stainless steel
<b>QCSPL-BK</b>		Polyamide plastic (glass-fiber reinforced)	
<b>QCSPL-S</b>	Black matte	SCS13 stainless steel (Equivalent to SUS304)	stainless steel

Plastic Knob			Metal Knob		Allowable Holding Torque(N·m)	Suitable shaft dia. (h7)
Part Number		Weight (g)	Part Number	Weight (g)		
Orange	Black				50	<b>QCSPL0414-S</b>
<b>QCSPL0414-OG</b>	<b>QCSPL0414-BK</b>					

### Feature

- One-touch Spindle Locks enable quick and secure locking of shafts with one click of the knob.
- When One-touch Spindle Lock is operated, the knob clicks and the shaft is locked with a steady force. This provides reliable locking of shafts.

### Supplied With

2 of Flat round washer (Stainless Steel)

### How To Use

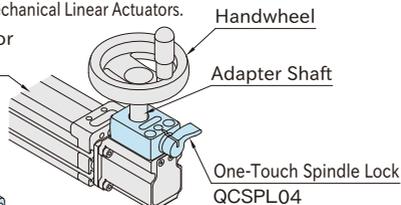
Usage examples to mount on Mechanical Linear Actuators.

Mechanical Linear Actuator With Adjustable Gear Box  
MAG5040

Mechanical Linear Actuator  
MAU5040

One-Touch Spindle Lock  
QCSPL04

Adapter Shaft



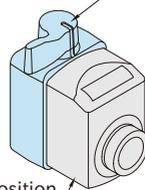
Handwheel

Adapter Shaft

One-Touch Spindle Lock  
QCSPL04

One-Touch Spindle Lock  
QCSPL04

Digital Position Indicator  
SDP-04



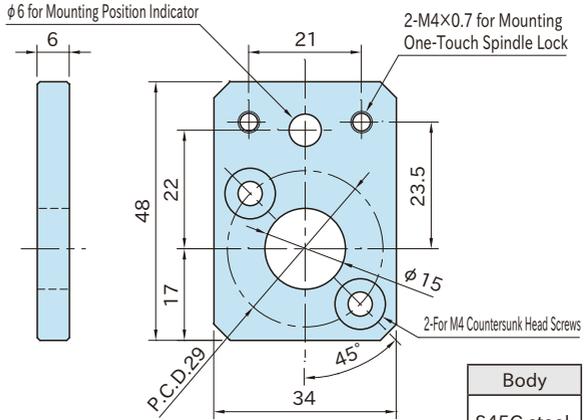
### Reference

Please refer to another **QCSPL** page for further information.

### Note

- Allowable Tightening Torque for Mounting Screws is 1.5N·m.
- Tightening with torque greater than the allowable tightening torque may cause failure by deformation of the body.
- Can not be used with **MAU3222\*\***.

# MAU5040-PS01 POSITIONING PLATE



Body
S45C steel Chrome plated

Part Number	Weight (g)
<b>MAU5040-PS01</b>	63

### Feature

Enables to change the orientation of One-Touch Spindle Locks and Digital Position Indicators for every 90 degrees.

### Supplied With

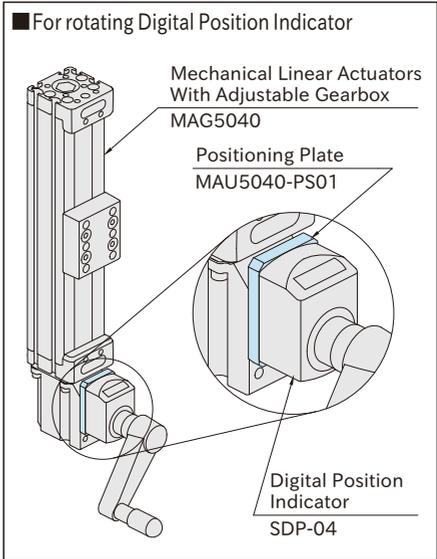
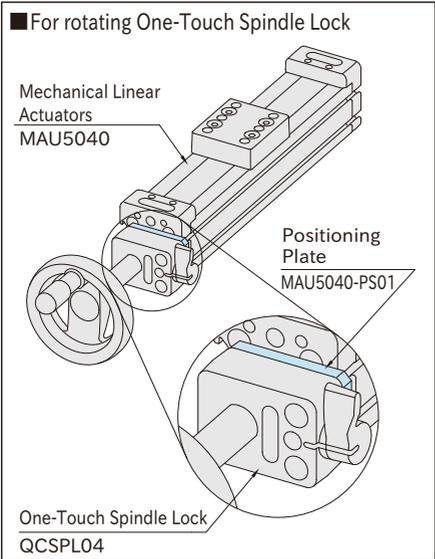
2 of M4x0.7-10L Hex Socket Countersunk Head Screw

### Note

Can not be used with [MAU3222\\*\\*](#).

### How To Use

Mount Positioning Plate to the End Plate of actuators with the included hex-socket countersunk head screws.



# SDP-02

# DIGITAL POSITION INDICATORS



**SDP-02H**



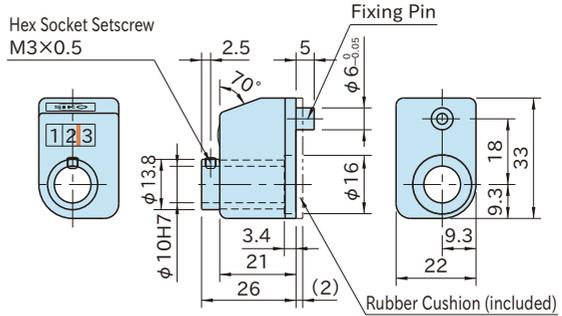
**SDP-02V**

On Request



**SDP-02F**

On Request



Housing
Polyamide (nylon6) plastic Orange

## Feature

Easy to read the feed amount of Compact Mechanical Linear Actuators.

## Supplied With

1 of rubber cushion (with adhesive tape)

## Technical Information

Working temperature : Up to 80°C

## Reference

Please refer to another SPD-02 page for further information at our website.

## Note

- Ensure that the start-up revolution speed is 1/3 or less of the allowable revolution speed.
- Do not give rapid acceleration or sudden stop.
- These position indicators can not be used in applications where the shaft moves in axial direction.
- Can not be used with [MAU5040\\*\\*](#) · [MAG5040\\*\\*](#).

Window Position		
Style H	Style F	Style V
To install on shaft at lower eye level	Window is visual at eye level	Install on vertical shaft

Rotative Direction	
R	L
CW Forward Counting CCW Backforward Counting	CCW Forward Counting CW Backforward Counting

Display Example		
Yellow Line		
Yellow Line indicates decimal point.	Forward counting from "000"	Backforward counting from "000"

Type	Window Style	Rotative Direction	Display Per Rotation	Allowable Rotation Speed (min <sup>-1</sup> )	Weight (g)	Proper Compact Mechanical Linear Actuators *)
SDP-02	H	R	1B 010 )	500	20	MAU3222SS
	F On Request	L	2B 020			MAU3222DS
	V On Request					

\*) Compact Mechanical Linear Actuators uses M6×1 Thread (Pitch 1mm).  
Carriage moves 1mm per rotation of the Handle Shaft.

Ordering Example | **SDP-02 H L - 1B**  
 Window Style      Rotative Direction      Display Per Rotation

### How To Install

φ 6 Mounting Hole for Digital Position Indicator

Shaft Lock MAU3222-SL02

Handle Shaft

End Plate

Rubber Cushion

Hex. Socket Setscrew

Stick the rubber cushion to the back of the indicator, slide the indicator onto the shaft to the end plate. Then tighten the included setscrew.

### How To Use

Compact Mechanical Linear Actuator MAU3222

Shaft Lock MAU3222-SL02

To mount SDP-02 on MAU3222, use with MAU3222-SL02.

# SDP-04

# DIGITAL POSITION INDICATORS



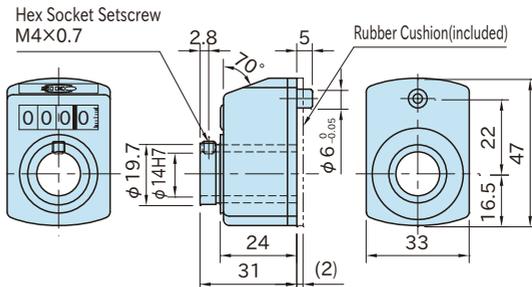
SDP-04H



SDP-04F



SDP-04V



Housing
Polyamide (nylon6) plastic Orange

### Feature

- Easy to read the feed amount of Mechanical Linear Actuator.
- Display figure height : 6mm

### Supplied With

One rubber cushion

### Technical Information

Working temperature : Up to 80°C

### Reference

Please refer to another [SDP-04](#) page for further information at our website.

### Note

- Ensure that the start-up revolution speed is 1/3 or less of the allowable revolution speed.
- Do not give rapid acceleration or sudden stop.
- These position indicators can not be used in applications where the shaft moves in axial direction.
- Can not be used with [MAU3222\\*](#).

Window Position		
Style H	Style F	Style V
To install on shaft at lower eye level	Window is visual at eye level	Install on vertical shaft

Rotative Direction	
R	L
CW Forward Counting CCW Backward Counting	CCW Forward Counting CW Backward Counting

Display Example		
Yellow Line indicates decimal point.	Count up from "0000".	Count down from "0000".

Type	Window Style	Rotative Direction	Spindle Thread Pitch Per Rotation	Allowable Rotation Speed (min <sup>-1</sup> )	Weight (g)	Proper Mechanical Linear Actuators *)
SDP-04	H	R	3B 0030 **)	500	50	MAU5040*S MAUX5040*S MAG5040*S MAGX5040*S
	F V	L	6B 0060 ***)	250		MAU5040*W MAUX5040*W MAG5040*W MAGX5040*W

\*)Mechanical Linear Actuator uses Tr14x3 Trapezoidal Thread (Pitch 3mm).

\*\*)|MAU5040\*S|·|MAUX5040\*S|·|MAG5040\*S|·|MAGX5040\*S| Carriage moves 3mm per rotation of the Handle Shaft.

\*\*\*)|MAU5040\*W|·|MAUX5040\*W|·|MAG5040\*W|·|MAGX5040\*W| Pitch between two carriages increases or decreases 6mm per rotation of the shaft.

Ordering Example

**SDP-04 H L - 3B**

Window  
Style

Rotative  
Direction

Spindle Thread Pitch  
After 1st Revolution

## How To Install

φ 6 Mounting Hole for  
Digital Position Indicator

22

Handle Shaft

End Plate

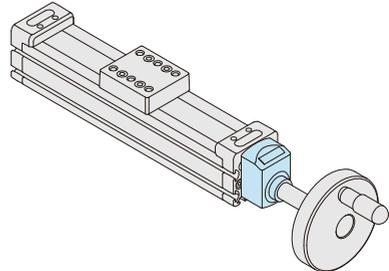
Rubber Cushion

Hex. Socket Setscrew

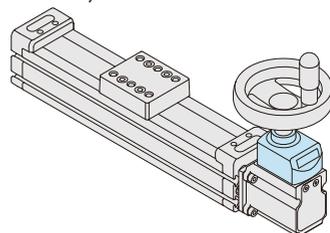
Stick the rubber cushion to the back of the indicator, slide the indicator onto the shaft to the end plate. Then tighten the included setscrew.

## How To Use

### ■ Install on Mechanical Linear Actuator



### ■ Install on Adjustable Gearbox of Mechanical Linear Actuator

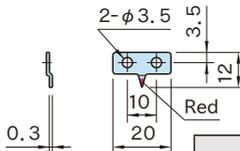


# ES3-A

# POINTER



Stainless Steel



Body
SUS304 stainless steel

Part Number	Weight(g)
<b>ES3-A</b>	1

### Note

- This pointer is adhesive-mount. Ensure that the mounting surface is dry and clean before mount.
- The pointer tip can be bent.

# ES1N

# SCALES

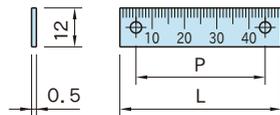


**ES1N-U50R**

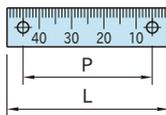


**ES1N-U5050**

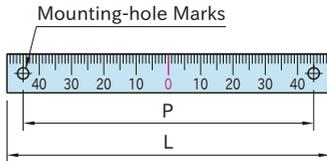
Body
A1050P aluminum
Graduations
etched



**ES1N-U50R,100R**



**ES1N-U50L,100L**



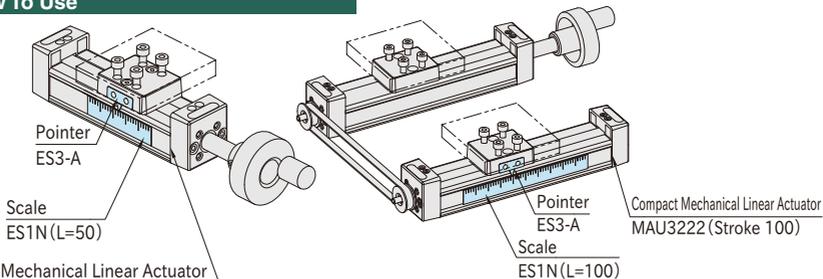
**ES1N-U5050**

Part Number	L	P	No. of Mounting-Hole Mark	Weight(g)
<b>ES1N-U50R</b>	50	40	2	0.8
<b>ES1N-U100R</b>	100	90		1.6
<b>ES1N-U50L</b>	50	40		0.8
<b>ES1N-U100L</b>	100	90		1.6
<b>ES1N-U5050</b>	100	90		1.6

### Note

- This scale is adhesive-mount. Ensure that the mounting surface is dry and clean before mount.
- Scales are not designed for accurate measurement.

### How To Use



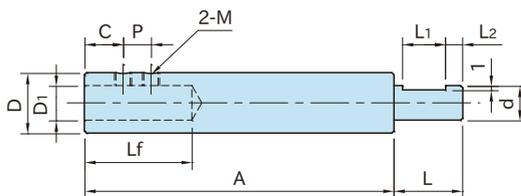
Compact Mechanical Linear Actuator MAU3222 (Stroke 50)

Compact Mechanical Linear Actuator MAU3222 (Stroke 100)



# MAU-SH

## ADAPTER SHAFTS



Body
S45C steel Black oxide finish

### MAU3222-SH

Part Number	d (h8)	A	L	L1	L2	D (h7)	D1 (+0.018 / +0.008)	C	P	Lf	M	Weight (g)	Proper Actuators
<b>MAU3222-SH06-26</b>	6	26	12	8	3	10	6	4	6	21.5	M3×0.5	13	MAU3222**
<b>MAU3222-SH06-50</b>		50										28	

### MAU5040-SH

Part Number	d (h8)	A	L	L1	L2	D (h7)	D1 (H7)	C	P	Lf	M	Weight (g)	Proper Actuators
<b>MAU5040-SH08-42</b>	8	42	16	10	4	14	8	9	6.5	25	M4×0.7	46	MAU5040** MAG5040**
<b>MAU5040-SH08-62</b>		62										70	
<b>MAU5040-SH10-42</b>	10	42	20	12	6	14	8	9	6.5	25	M4×0.7	50	
<b>MAU5040-SH10-62</b>		62										74	
<b>MAU5040-SH12-42</b>	12	42	20	12	6	14	8	9	6.5	25	M4×0.7	57	
<b>MAU5040-SH12-62</b>		62										82	

### Related Product

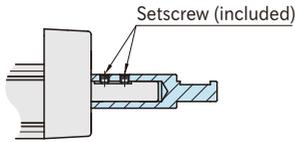
- Handwheel for [MAU3222-SH](#)
  - GH-N
- Handwheel for [MAU5040-SH](#)
  - GH-N
  - EDHN-M
  - TWN-M
  - BCHN-M

## How To Use

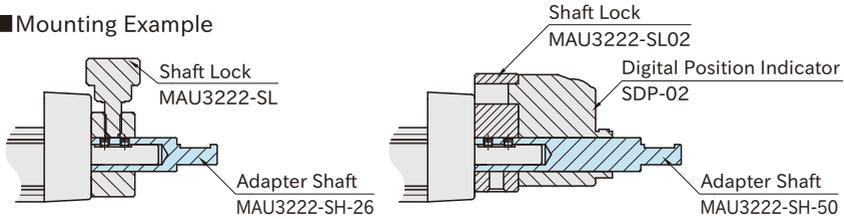
### MAU3222-SH

#### How to Fix

Fix the Adapter Shaft using setscrews included to the Handle Shaft of Compact Mechanical Linear Actuators.



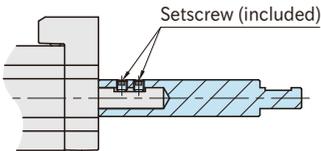
#### Mounting Example



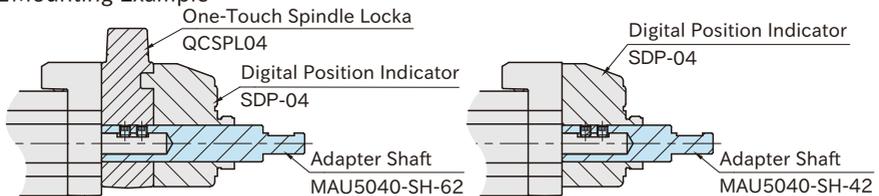
### MAU5040-SH

#### How to Fix

Fix the Adapter Shaft using setscrews included to the Handle Shaft of Mechanical Linear Actuators.



#### Mounting Example



#### Note

To produce an adapter shaft at customers, we recommend to follow the specifications below.

#### MAU3222-SH

O.D. of Shaft:  $\phi 10h7$  Surface Roughness:  $\sqrt{6.3}$

#### MAU5040-SH

<For use with One-Touch Spindle Locks>

O.D. of Shaft:  $\phi 14h7$  Surface Roughness:  $\sqrt{6.3}$

<For use with Digital Position Indicators>

O.D. of Shaft:  $\phi 14h9$  Surface Roughness:  $\sqrt{6.3}$

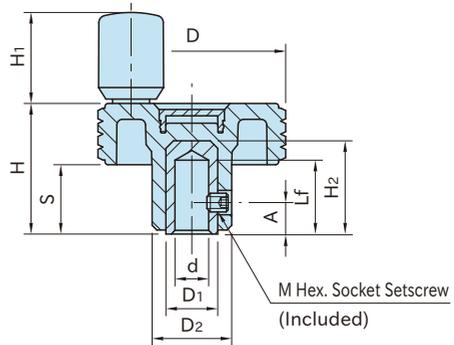
#### Supplied With

**MAU3222-SH**: 2 of M3×0.5-2.5L Hex Socket Setscrew

**MAU5040-SH**: 2 of M4×0.7-4L Hex Socket Setscrew

GH-N

PLASTIC KNURLED KNOBS

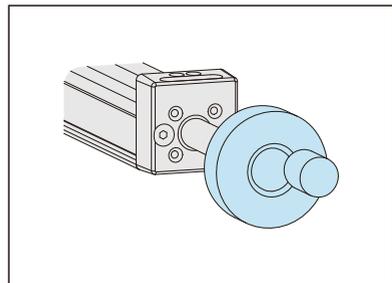


Knob	Handle	Hub	Center Cap
Polypropylene Black matte	Polyamide Black matte	Brass (Low cadmium)	Polyamide Black matte

Part Number	D	d (H9)	H	D <sub>2</sub>	D <sub>1</sub>	H <sub>2</sub>	Lf	S	A	H <sub>1</sub>	M	Weight (g)	Proper Adapter Shaft
<b>GH40N</b>	39.5	6	26.5	17	12	17	14	12.5	4	20	M4×0.7	34	MAU3222-SH06-**
<b>GH50N</b>	50		33	20	15	23	18	16	5	6	23	54	
<b>GH60N</b>	61	8	39	23		25	20	18.5	6			23	M5×0.8
<b>GH70N</b>	70	10	42	24	16	30	25	20.5		73	MAU5040-SH10-**		

Reference

Please refer to another [GH-N](#) page for further information at our website.



# EDHN-M

# PLASTIC SOLID DISK HANDWHEEL

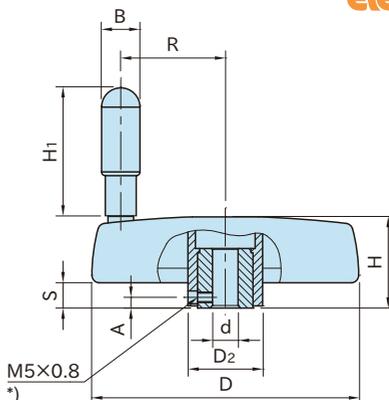
On Request 



**EDHN-R-M**  
(With Revolving Handle)



**EDHN-F-M**  
(With Revolving Fold-Away Handle)



Handwheel	Hub	Center cap	Handle
Polypropylene Black matte	SUM24L steel Black oxide finish	Polyacetal plastic Light gray (Only for EDHN80F-M) (Polypropylene Black matte)	Polyamide Black matte

**EDHN-R-M** (With Revolving Handle)

Part Number	D	d (H7)	H	D <sub>2</sub>	S	A	B	H <sub>1</sub>	R	Weight (g)	Delivery Time
EDHN 80R-M	83	8	29	26	9	5	15.5	45	30.5	106	2 Working days **)
EDHN100R-M	102	10	34	30	10		18	60	39	174	
EDHN125R-M	125	12	39.5	35	11	6		49	270		

**EDHN-F-M** (With Revolving Fold-Away Handle)

Part Number	D	d (H7)	H	D <sub>2</sub>	S	A	B	H <sub>1</sub>	R	Weight (g)	Delivery Time
EDHN 80F-M	83	8	38	25	18.5	9	15.5	45	28	133	2 Working days **)
EDHN100F-M	102	10	34	30	10	5		39	170		
EDHN125F-M	125	12	39.5	35	11	6	18	60	49	307	

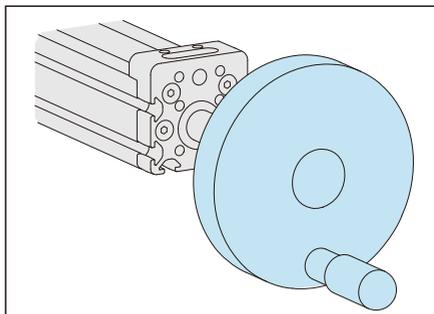
 **Note**

\*) These are machined handwheels of **EDHN-R** , **EDHN-F** to add the hole for setscrew.

For further information, please refer to the catalog pages at our website.

\*\*\*) Ordering 11 pcs or more, please ask us for the delivery time.

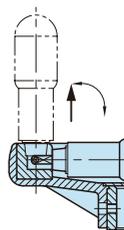
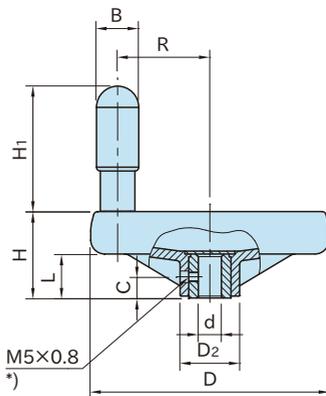
\*\*\*\*) Can not be used with **MAU3222\*\***.



# TWN-M

## PLASTIC ANGLED-SPOKE HANDWHEELS

On Request



**TWN-M**

**TWN-F-M**

(With Revolving Handle)

(With Revolving Fold-Away Handle)

Handwheel	Hub	Center Cap	Handle
Polypropylene plastic Black matte	SUM24L steel Black oxide finish	A3104 aluminum Silver matte	Polyamide plastic Black matte

### TWN-M (With Revolving Handle)

Part Number	D	d (H7)	H	D <sub>2</sub>	L	C	B	H <sub>1</sub>	R	Weight (g)	Delivery Time
TWN 80-M	80	8	35	25	17	8	15.5	45	29	104	2 Working Days **)
TWN100-M	99	10	37	25.5			18	60	37	145	
TWN125-M	125	12	44	31	22	11	22	65	48	245	

### TWN-F-M (With Revolving Fold-Away Handle)

Part Number	D	d (H7)	H	D <sub>2</sub>	L	C	B	H <sub>1</sub>	R	Weight (g)	Delivery Time
TWN 80F-M	80	8	35	25	17	8	15.5	45	29	102	2 Working Days **)
TWN100F-M	99	10	37	25.5			18	60	37	163	
TWN125F-M	125	12	44	31	22	11	22	65	48	230	

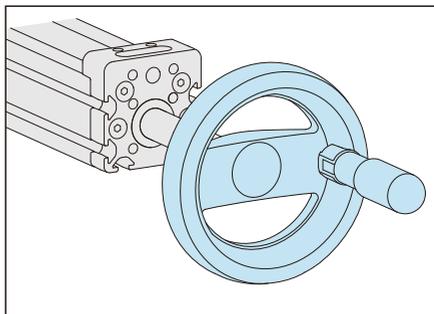
### Note

\*) These are machined handwheels of **TWN** , **TWN-F** to add the hole for setscrew.

For further information, please refer to the catalog pages at our website.

\*\*) Ordering 11 pcs or more, please ask us for the delivery time.

\*\*) Can not be used with **MAU3222**.



# BCHN-M

# PLASTIC CRANK HANDLES

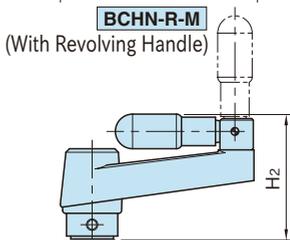
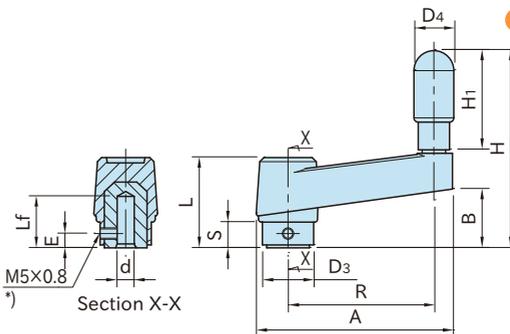
On Request



**BCHN-R-M**  
(With Revolving Handle)



**BCHN-F-M**  
(With Revolving Fold-Away Handle)



Crank	Hub	Handle
Polyamide plastic (Glass-fiber reinforced) Black matte	SUM22L steel Black oxide finish	Polyamide plastic Black matte

**BCHN-R-M** (With Revolving Handle)

Part Number	R	d (H9)	Lf	A	H	D <sub>3</sub>	L	S	E	B	D <sub>4</sub>	H <sub>1</sub>	Weight (g)	Delivery Time
BCHN 64R-M	64	8	20	86	78	24	31.5	9	5	17.5	15.5	45	82	2 Working days **)
BCHN 80R-M	80	10	25	106	99		37	11	6	23.5	18	60	118	
BCHN100R-M	100	12	24	128	106		40.5	10	5	25	22	65	190	

**BCHN-F-M** (With Revolving Fold-Away Handle)

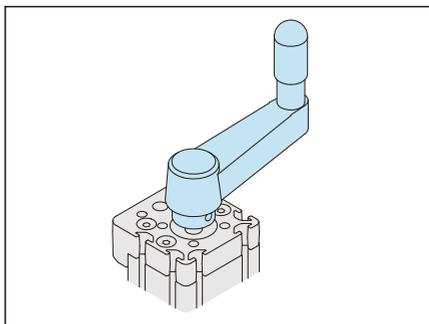
Part Number	R	d (H9)	Lf	A	H	H <sub>2</sub>	D <sub>3</sub>	L	S	E	B	D <sub>4</sub>	H <sub>1</sub>	Weight (g)	Delivery Time
BCHN 64F-M	64	8	20	86	91	47	24	31.5	9	5	17.5	15.5	45	89	2 Working days **)
BCHN 80F-M	80	10	25	106	111	53.5		37	11	6	23.5	18	60	130	
BCHN100F-M	100	12	24	128	124	59.5		40.5	10	5	25	22	65	200	

**Note**

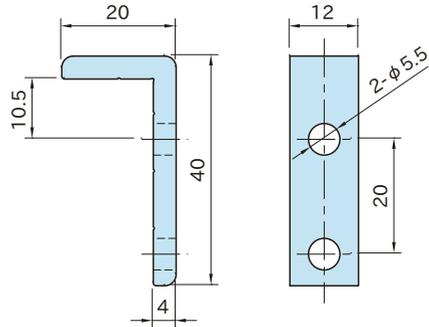
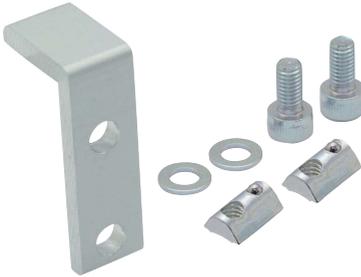
\*) These are machined handles of **BCHN-R**, **BCHN-F** to add the hole for setscrew.  
For further information, please refer to the catalog pages at our website.

\*\*) Ordering 11 pcs or more, please ask us for the delivery time.

\*\*) Can not be used with **MAU3222**.



# MAU5040-ST02 PAIR OF STOPS

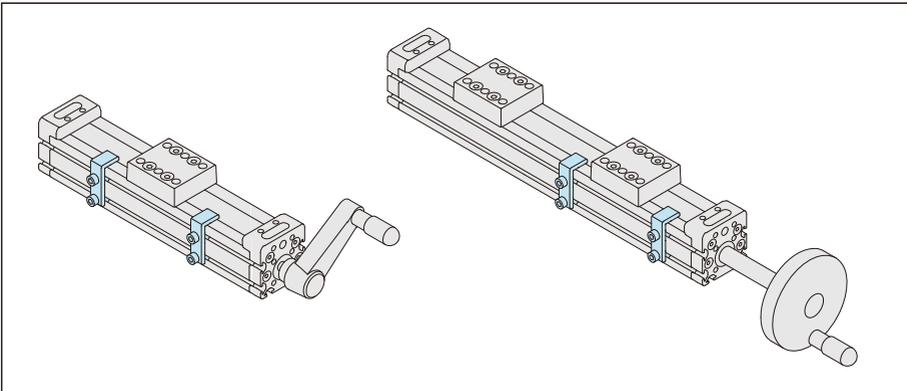


Part Number	Weight (g)
<b>MAU5040-ST02</b>	20

Body
Equivalent to A6N01 aluminum Anodized Natural color

## How To Use

For limiting the travel of Carriages on Actuators.



## Note

- Stops can be misaligned by shock or load from Carriages of Actuators.
- The surfaces inside the mounting holes and the both cut ends are not anodized.
- T-Nut can be inserted directly into the T-slot of the body. (Cannot be slide-inserted from the end plates.)
- Can not be used with [MAU3222\\*\\*](#).

## Supplied With

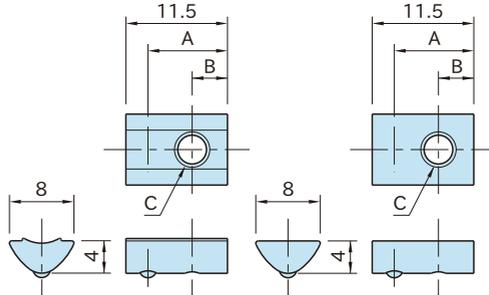
- 2 of M5×0.8-10L Hex-Socket Head Cap Screw
- 2 of round washer for M5 screws
- 2 of M5 T-Slot Nut

L5-TST

T-NUT



Stainless Steel



L5-TST (Steel)

L5-TST-SUS (Stainless steel)

Part Number	A	B	C	Weight (g)
L5-TST3	8	3	M3×0.5	2
L5-TST4	8	3	M4×0.7	
L5-TST5	9	4	M5×0.8	
L5-TST4-SUS	8	3	M4×0.7	
L5-TST5-SUS	9	4	M5×0.8	

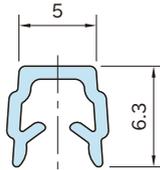
Type	Body
L5-TST	Steel Galvanized trivalent chromate treated
L5-TST-SUS	Stainless steel

Note

T-Nut can be inserted directly into the T-slot of the body. (Cannot be slide-inserted from the end plates.)

L5-GVC2000N

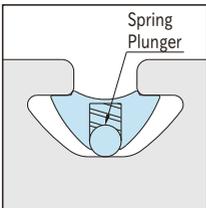
GROOVE COVER



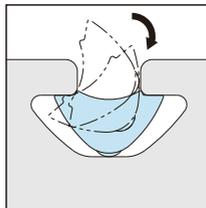
Body
PP Polypropylene plastic (Include Thermoplastic elastomer)

Part Number	Length (m)	Weight (g)
L5-GVC2000N	2	27

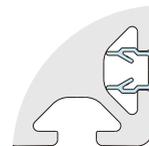
How To Use



Insert the nut into the groove. The spring plunger prevents the nut move freely inside the groove.



The nut can be inserted from any position on groove.



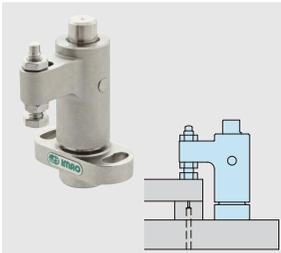
Use the groove cover for unused groove on profile body.



# PNEUMATIC CLAMPS



# PNEUMATIC CLAMPS



COMPACT PNEUMATIC SWING CLAMPS

Part No. AMWSW-W



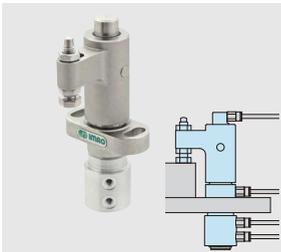
COMPACT PNEUMATIC SWING CLAMPS  
WITH ROD

Part No. AMWSW-W-D



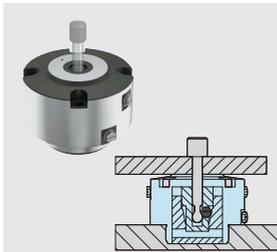
COMPACT PNEUMATIC SWING CLAMPS  
WITH DETECTING PORTS (Gasket Piping)

Part No. AMWSW-W-AG



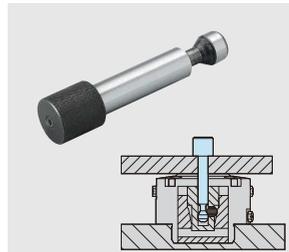
COMPACT PNEUMATIC SWING CLAMPS  
WITH DETECTING PORTS (Thread Piping)

Part No. AMWSW-W-AC



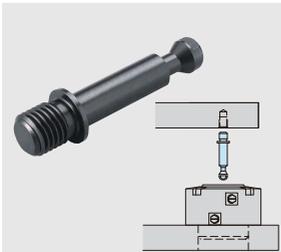
PNEUMATIC PULL  
CLAMPS

Part No. AMWPD-W



CLAMPING PINS

Part No. AMWPD-X



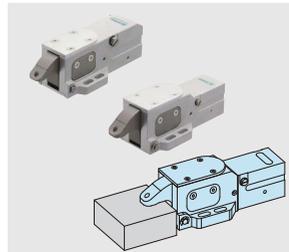
CLAMPING SCREWS

Part No. AMWPD-M



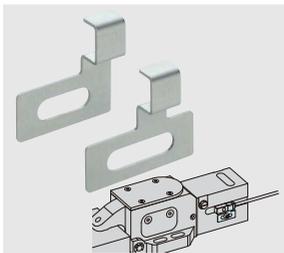
PNEUMATIC OD HOLDING  
CLAMPS

Part No. AMCH-W



PNEUMATIC HOLD DOWN  
CLAMPS

Part No. AMWD-WS



## SENSOR BRACKETS

Part No. AMWD-WS-B

# AIR ASSISTED CLAMPS



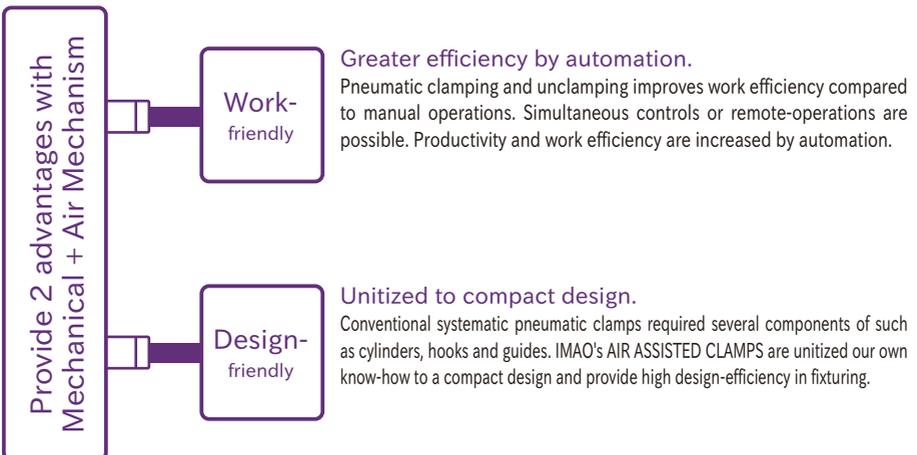
## AIR ASSISTED CLAMPS

[Mechanical + Air = Hybrid]



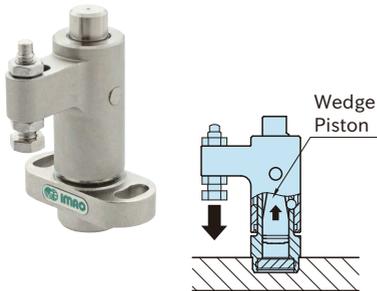
AIR ASSISTED CLAMPS are IMAO's automated clamps that satisfy needs for much more efficiency and automation in production. Our original mechanical clamp technology in combination with air provides diverse lineup of products. With our own know-how as a clamping tools manufacturer, we unitized the clamping devices to support making compact automated fixtures.

### Feature



### COMPACT PNEUMATIC SWING CLAMPS

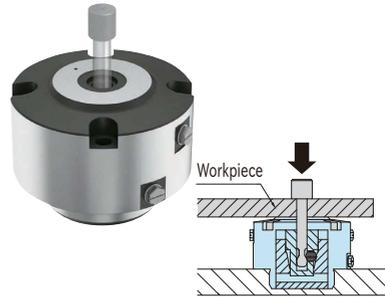
High clamping force with small body



Wedge mechanism provides high holding capacity.

### PNEUMATIC PULL CLAMPS

Clamping workpiece with through hole allows multi-surface machining.



Wedge mechanism provides high clamping force.

### PNEUMATIC OD HOLDING CLAMPS

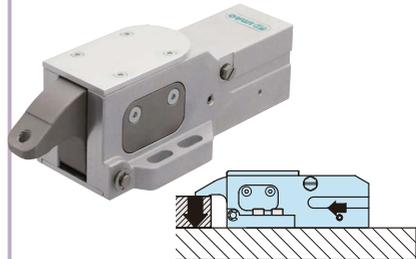
Ideal for irregular-shaped or small workpieces.



Machine the jaw to custom fit a workpiece.

### PNEUMATIC HOLD DOWN CLAMPS

Magnetic sensor mountable.



Wedge mechanism provides high holding capacity.

### More air-assisted products!

COMPACT  
PNEUMATIC  
WORK SUPPORTS



PNEUMATIC WORK  
SUPPORTS



PNEUMATIC FLEX LOCATORS



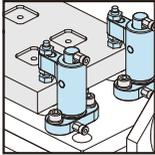
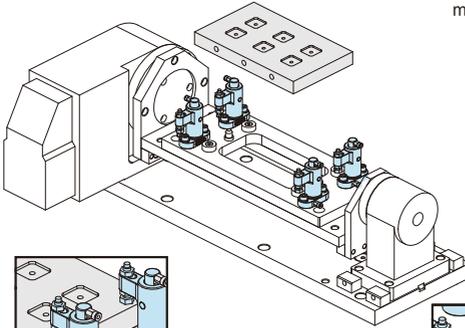
# APPLICATION EXAMPLE for AIR ASSISTED CLAMPS



## COMPACT PNEUMATIC SWING CLAMPS

Vertical machining center + NC rotary table

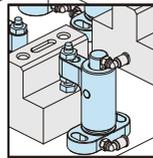
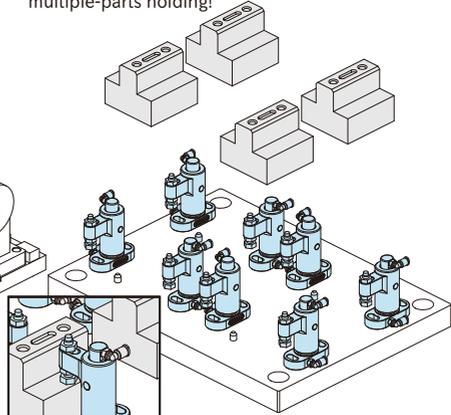
Wedge style locking provides machining from 4 sides!



▲ Clamping

Vertical machining center

Small body provides high productivity by multiple-parts holding!



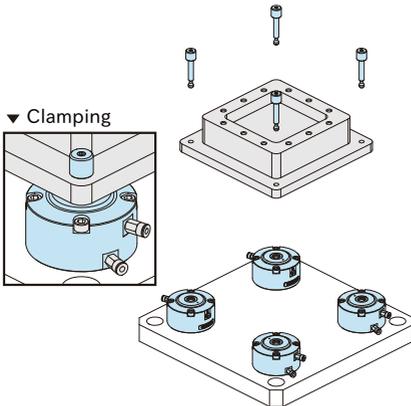
◀ Clamping



## PNEUMATIC PULL CLAMPS

Assembling line

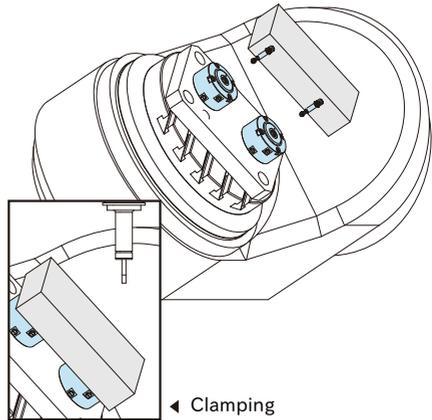
Easy workpiece loading without screw provides shorter setup time.  
Stable clamping force offers accurate machining!



▼ Clamping

5-axis machining center

Clamping and holding with wedge mechanism enables 5-sides machining!



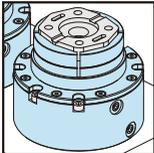
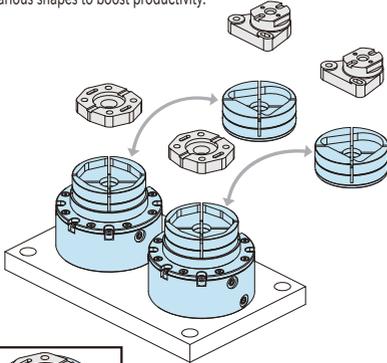
◀ Clamping



### PNEUMATIC OD HOLDING CLAMPS

#### Vertical machining center

Machinable jaws allow clamping workpieces of various shapes to boost productivity.



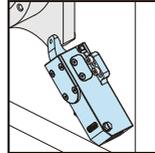
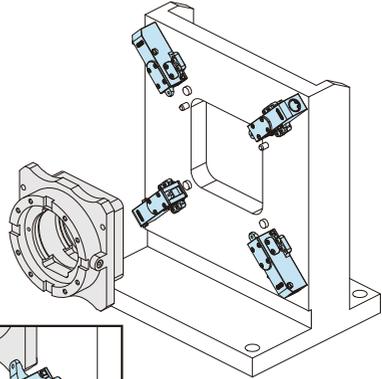
◀ Clamping



### PNEUMATIC HOLD DOWN CLAMPS

#### Horizontal machining center

Less tool interference by low profile body!



◀ Clamping

COMPACT PNEUMATIC SWING CLAMPS

# COMPACT PNEUMATIC SWING CLAMPS

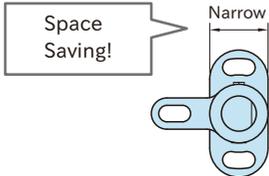
In addition to IMAO's long selling swing clamps, we provide the new Pneumatic Swing Clamps!



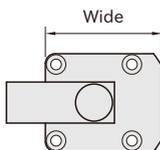
Feature 1

Compact Design

IMAO Method



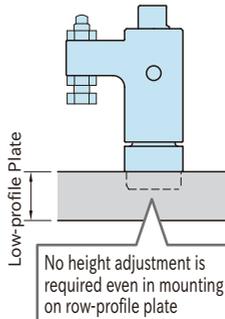
Conventional Method



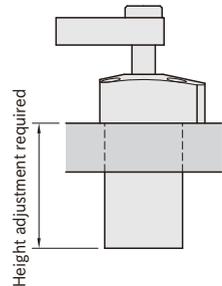
Feature 2

Easy Mounting

IMAO Method



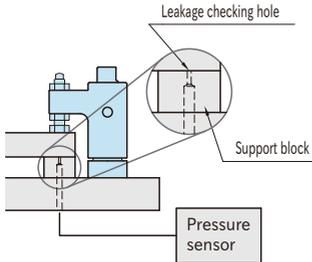
Conventional Method



## Application Example

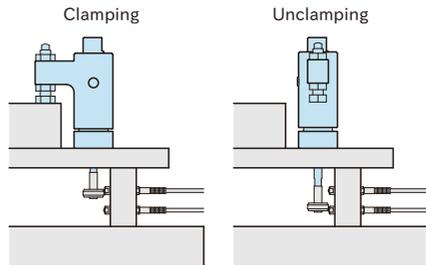
### Standard, Air leakage cheking

Pressure sensor detects the clamping/unclamping conditions by preparing air leakage checking hole.



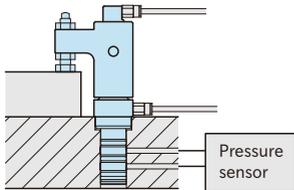
### With Rod

Clamping/unclamping conditions can be detected by switch.

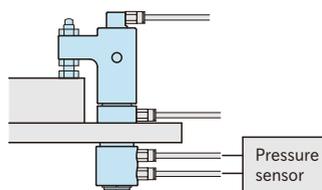


**With Detecting Ports** Using with pressure sensors, clamping/unclamping conditions can be detected.

(Gasket piping)

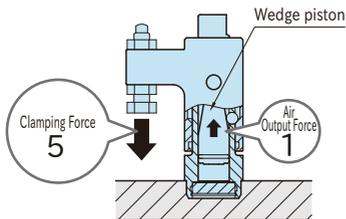


(Thread piping)



## Feature 3

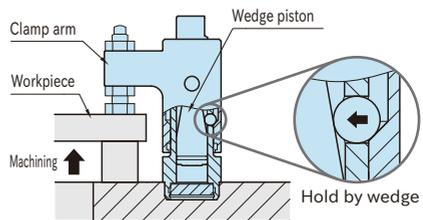
### High Clamping Force



Wedge mechanism generates approx. 5 times clamping force of the same size of air cylinder.

## Feature 4

### High Holding Capacity (Double of clamping force)



The clamp arm stays still against reaction force due to wedge mechanism.

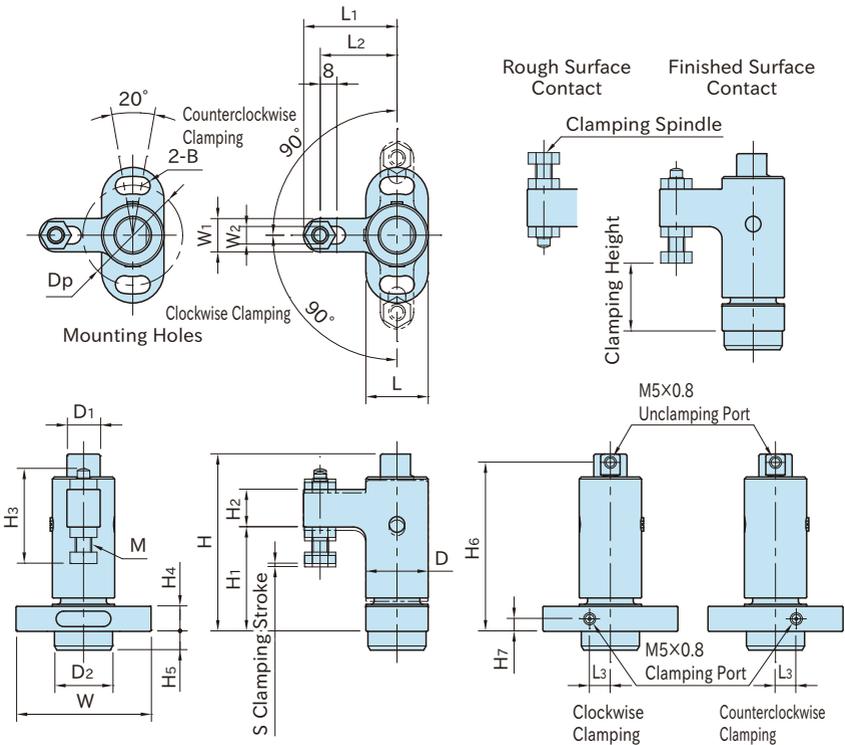
AMWSW-W

COMPACT PNEUMATIC SWING CLAMPS



Body / Clamp Arm / Piston	Clamping Spindle
SCM440 steel Electroless nickel plated	S45C steel Quenched and tempered Electroless nickel plated

★Key Point  
Compact design!



Part Number	Clamping Direction	Clamping Height *)				S	L <sub>2</sub>	L <sub>1</sub>	W	L	H <sub>4</sub>	B	D <sub>p</sub>	H	D	W <sub>1</sub>	W <sub>2</sub>	H <sub>2</sub>	H <sub>1</sub>
		Finished Surface Contact		Rough Surface Contact															
		Min.	Max.	Min.	Max.														
AMWSW16R-W	CW	32.5	39	33.5	40	1.2	37	45	65	30	12	8.4	48	85	30	16	8.4	18	50
AMWSW16L-W	CCW																		
AMWSW20R-W	CW	41.5	51	44	53.5	1.6	45	55	85	40	15	10.5	64	106	40	20	10.4	22	65
AMWSW20L-W	CCW																		

Part Number	M	H <sub>3</sub>	D <sub>1</sub>	D <sub>2</sub>	H <sub>5</sub>	L <sub>3</sub>	H <sub>6</sub>	H <sub>7</sub>	Operating Air Pressure (MPa)	Clamping Force (kN **)	Holding Capacity (kN **)	Weight (g)
AMWSW16R-W	M 8×1.25	45.5	16	28	9	10	81	6	0.5~0.7	0.4	0.8	500
AMWSW16L-W												
AMWSW20R-W												
AMWSW20L-W	M10×1.5	57	22	35	11	13	101	8		0.65	1.3	1120

\*) Clamping height can be adjusted within this range.

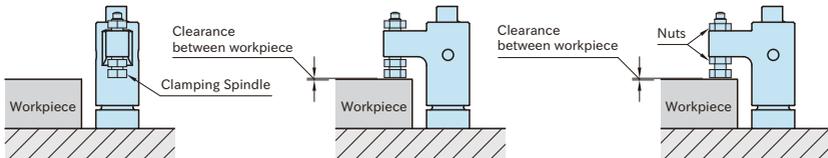
\*\*) The clamping force and the holding capacity above are at 0.5 MPa.

### How To Use

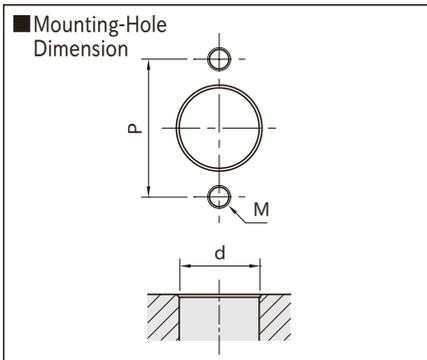
#### ■ Setting Clearance between Workpiece

A clearance between clamping spindle and workpiece should be roughly half of the clamping stroke. The clamp arm swings horizontally.

Follow the steps below to adjust the clamping spindle to create proper clearance.

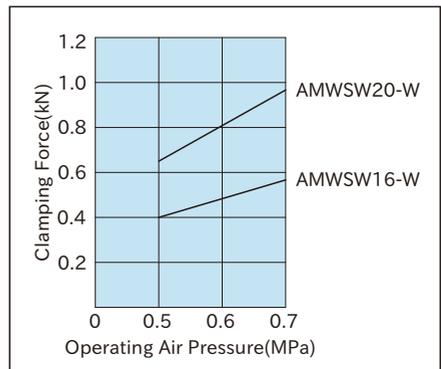


1. Apply air to the unclamping port with an air blow gun to move the clamp to unclamping position.
2. Rotate the arm manually to straight direction, and create an appropriate clearance to the workpiece. Putting a feeler gauge between the workpiece and the clamping spindle facilitates this setting.
3. Fix the clamping spindle with nuts.



Part No.	d (+0.2/0)	M	P
AMWSW16-W	28	M 8×1.25	48
AMWSW20-W	35	M10×1.5	64

### Performance Curve



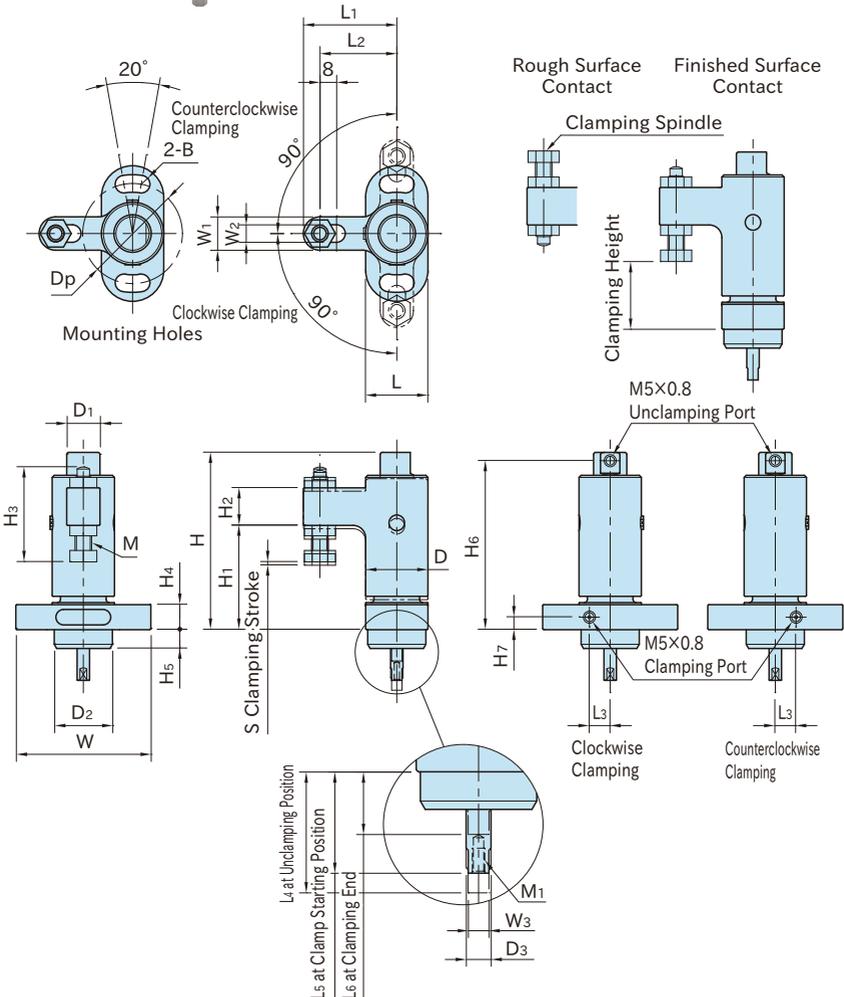
AMWSW-W-D

COMPACT PNEUMATIC SWING CLAMPS WITH ROD



★Key Point  
Compact design!

Body / Clamp Arm / Piston	Rod	Clamping Spindle
SCM440 steel Electroless nickel plated	S45C steel Electroless nickel plated	S45C steel Quenched and tempered Electroless nickel plated



Part Number	Clamping Direction	Clamping Height *)				S	L <sub>2</sub>	L <sub>1</sub>	W	L	H <sub>4</sub>	B	D <sub>p</sub>	H	D	W <sub>1</sub>	W <sub>2</sub>	H <sub>2</sub>	H <sub>1</sub>	M
		Finished Surface Contact		Rough Surface Contact																
		Min.	Max.	Min.	Max.															
AMWSW16R-W-D	CW	32.5	39	33.5	40	1.2	37	45	65	30	12	8.4	48	85	30	16	8.4	18	50	M 8×1.25
AMWSW16L-W-D	CCW																			
AMWSW20R-W-D	CW	41.5	51	44	53.5	1.6	45	55	85	40	15	10.5	64	106	40	20	10.4	22	65	M10×1.5
AMWSW20L-W-D	CCW																			

Part Number	H <sub>3</sub>	D <sub>1</sub>	D <sub>2</sub>	H <sub>5</sub>	L <sub>3</sub>	H <sub>6</sub>	H <sub>7</sub>	L <sub>4</sub>	L <sub>5</sub>	L <sub>6</sub>	M <sub>1</sub>	D <sub>3</sub>	W <sub>3</sub>	Operating Air Pressure(MPa)	Clamping Force(kN)**	Holding Capacity(kN)**	Weight (g)
AMWSW16R-W-D	45.5	16	28	9	10	81	6	29	24	17	M3×0.5	6	5	0.5~0.7	0.35	0.7	510
AMWSW16L-W-D											Depth 6						
AMWSW20R-W-D	57	22	35	11	13	101	8	35	29	19.5	M4×0.7	8	7		0.55	1.1	1130
AMWSW20L-W-D											Depth 8						

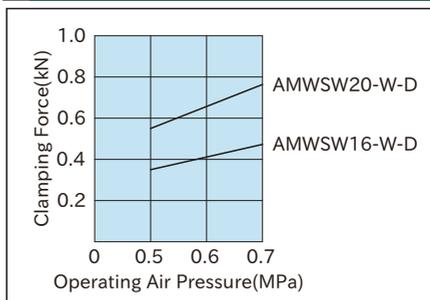
\*) Clamping height can be adjusted within this range.

\*\*) The clamping force and the holding capacity above are at 0.5 MPa.

### Feature

The rod on the bottom of the clamp can be used for detecting clamping/unclamping with switches.

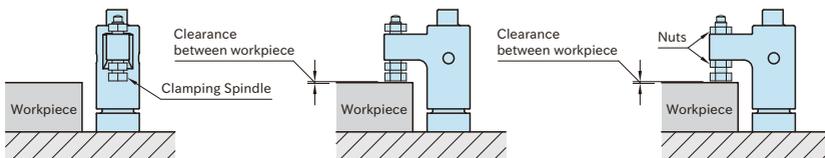
### Performance Curve



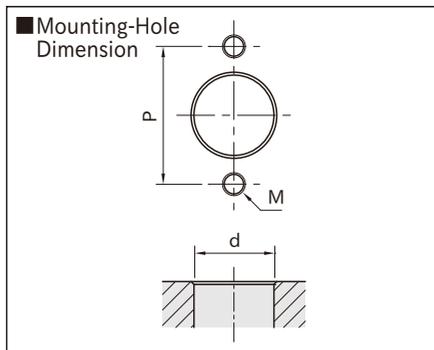
### How To Use

#### ■ Setting Clearance between Workpiece

A clearance between clamping spindle and workpiece should be roughly half of the clamping stroke. The clamp arm swings horizontally. Follow the steps below to adjust the clamping spindle to create proper clearance.



1. Apply air to the unclamping port with an air blow gun to move the clamp to unclamping position.
2. Rotate the arm manually to straight direction, and create an appropriate clearance to the workpiece. Putting a feeler gauge between the workpiece and the clamping spindle facilitates this setting.
3. Fix the clamping spindle with nuts.



Part No.	d (+0.2)	M	P
AMWSW16-W-D	28	M 8×1.25	48
AMWSW20-W-D	35	M10×1.5	64

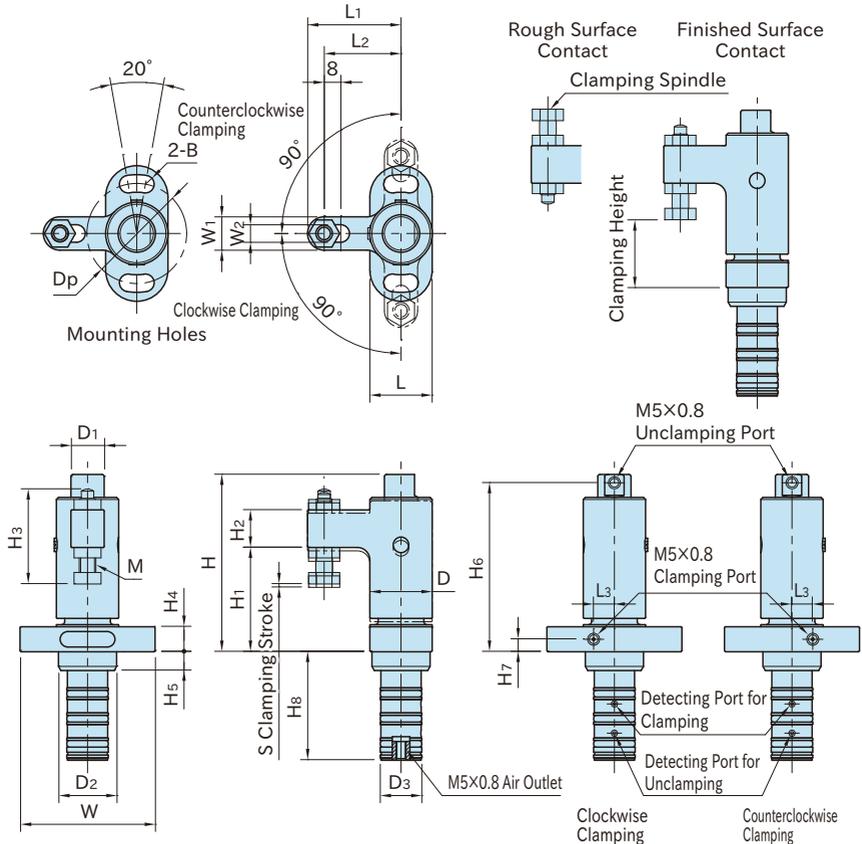
**AMSWW-W-AG**

**COMPACT PNEUMATIC SWING CLAMPS WITH DETECTING PORTS (Gasket Piping)**



★Key Point  
Compact design!

Body / Clamp Arm / Piston	Holder	Clamping Spindle
SCM440 steel Electroless nickel plated	A5056 aluminum Anodized	S45C steel Quenched and tempered Electroless nickel plated



Part Number	Clamping Direction	Clamping Height *)				S	L <sub>2</sub>	L <sub>1</sub>	W	L	H <sub>4</sub>	B	D <sub>p</sub>	H	D	W <sub>1</sub>	W <sub>2</sub>	H <sub>2</sub>	H <sub>1</sub>
		Finished Surface Contact		Rough Surface Contact															
		Min.	Max.	Min.	Max.														
AMWSW16R-W-AG	CW	32.5	39	33.5	40	1.2	37	45	65	30	12	8.4	48	85	30	16	8.4	18	50
AMWSW16L-W-AG	CCW																		
AMWSW20R-W-AG	CW	41.5	51	44	53.5	1.6	45	55	85	40	15	10.5	64	106	40	20	10.4	22	65
AMWSW20L-W-AG	CCW																		

Part Number	M	H <sub>3</sub>	D <sub>1</sub>	D <sub>2</sub>	H <sub>5</sub>	L <sub>3</sub>	H <sub>6</sub>	H <sub>7</sub>	H <sub>8</sub>	D <sub>3</sub>	Operating Air Pressure(MPa)	Clamping Force(kN)**	Holding Capacity(kN)**	Weight (g)
AMWSW16R-W-AG	M 8×1.25	45.5	16	28	9	10	81	6	52	20	0.5~0.7	0.35	0.7	540
AMWSW16L-W-AG														
AMWSW20R-W-AG	M10×1.5	57	22	35	11	13	101	8	62	25	0.5~0.7	0.55	1.1	1180
AMWSW20L-W-AG														

\*) Clamping height can be adjusted within this range. \*\*) The clamping force and the holding capacity above are at 0.5 MPa.

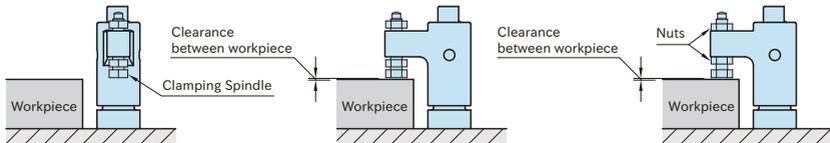
### Feature

Using with pressure sensors, clamping/unclamping conditions can be detected.

### How To Use

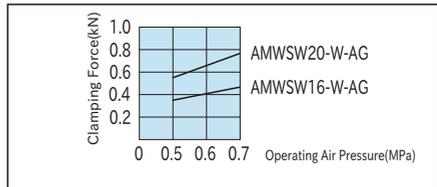
#### ■ Setting Clearance between Workpiece

A clearance between clamping spindle and workpiece should be roughly half of the clamping stroke. The clamp arm swings horizontally. Follow the steps below to adjust the clamping spindle to create proper clearance.

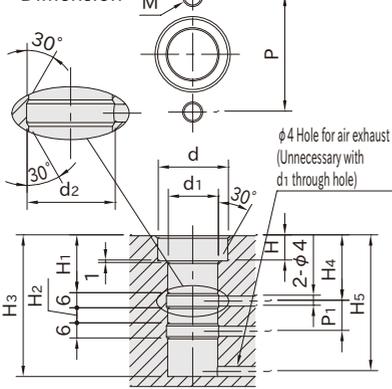


1. Apply air to the unclamping port with an air blow gun to move the clamp to unclamping position.
2. Rotate the arm manually to straight direction, and create an appropriate clearance to the workpiece. Putting a feeler gauge between the workpiece and the clamping spindle facilitates this setting.
3. Fix the clamping spindle with nuts.

### Performance Curve

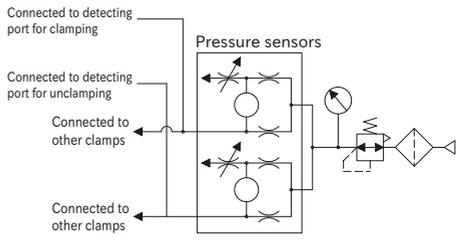


#### ■ Mounting-Hole Dimension



#### ■ Connection with Pressure Sensors

To check clamping/unclamping conditions, pressure sensor is required. Please contact us for the detail.



Part No.	d <sub>(φ2)</sub>	H	d <sub>1</sub> (H8)	H <sub>1</sub>	H <sub>2</sub>	d <sub>2</sub>	H <sub>3</sub>	P <sub>1</sub>	H <sub>4</sub>	H <sub>5</sub>	M	P
AMWSW16-W-AG	28	10	20	23	6	21	56 or more	12	26	54	M 8×1.25	48
AMWSW20-W-AG	35	12	25	29	10	26	66 or more	16	32	64	M10×1.5	64

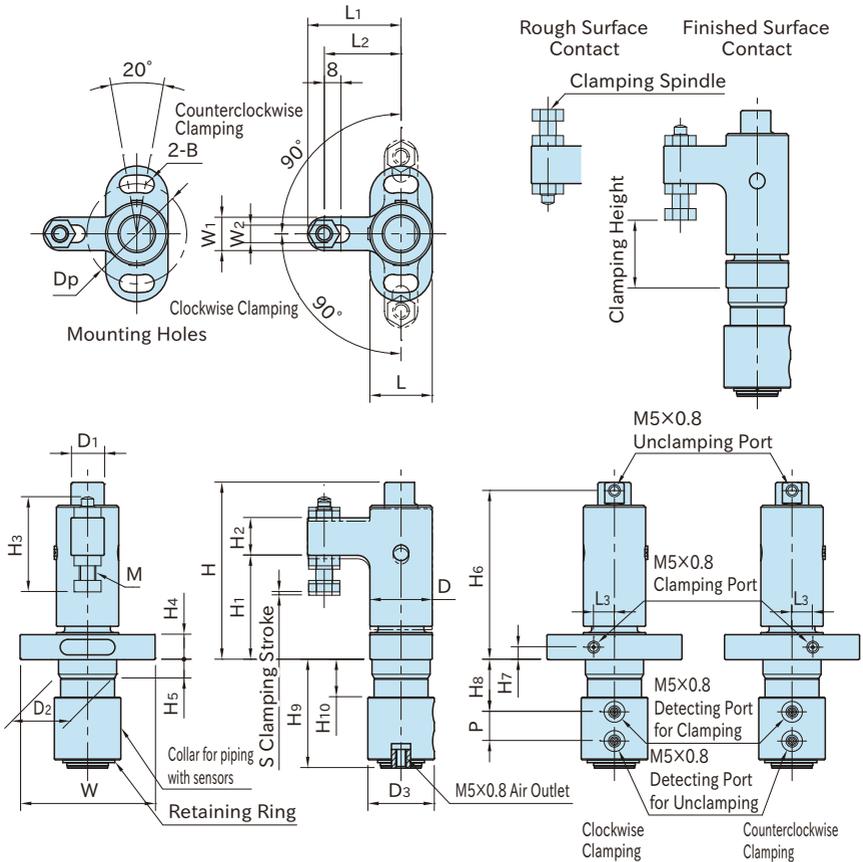
**AMSW-W-AC**

**COMPACT PNEUMATIC SWING CLAMPS WITH DETECTING PORTS (Thread Piping)**



★Key Point  
Compact design!

Body / Clamp Arm / Piston	Collar	Clamping Spindle
SCM440 steel Electroless nickel plated	A5056 aluminum Anodized	S45C steel Quenched and tempered Electroless nickel plated



Part Number	Clamping Direction	Clamping Height *)				S	L <sub>2</sub>	L <sub>1</sub>	W	L	H <sub>4</sub>	B	D <sub>p</sub>	H	D	W <sub>1</sub>	W <sub>2</sub>	H <sub>2</sub>	H <sub>1</sub>
		Finished Surface Contact		Rough Surface Contact															
		Min.	Max.	Min.	Max.														
AMWSW16R-W-AC	CW	32.5	39	33.5	40	1.2	37	45	65	30	12	8.4	48	85	30	16	8.4	18	50
AMWSW16L-W-AC	CCW																		
AMWSW20R-W-AC	CW	41.5	51	44	53.5	1.6	45	55	85	40	15	10.5	64	106	40	20	10.4	22	65
AMWSW20L-W-AC	CCW																		

Part Number	M	H <sub>3</sub>	D <sub>1</sub>	D <sub>2</sub>	H <sub>5</sub>	L <sub>3</sub>	H <sub>6</sub>	H <sub>7</sub>	H <sub>8</sub>	P	H <sub>9</sub>	D <sub>3</sub>	H <sub>10</sub>	Operating Air Pressure (MPa)	Clamping Force (kN **)	Holding Capacity (kN **)	Weight (g)
AMWSW16R-W-AC	M 8X1.25	45.5	16	28	9	10	81	6	25	14	52	32	18	0.5~0.7	0.35	0.7	580
AMWSW16L-W-AC																	
AMWSW20R-W-AC	M10X1.5	57	22	35	11	13	101	8	31	18	62	38	24		0.55	1.1	
AMWSW20L-W-AC																	

\*) Clamping height can be adjusted within this range.  
 \*\*) The clamping force and the holding capacity above are at 0.5 MPa.

### Feature

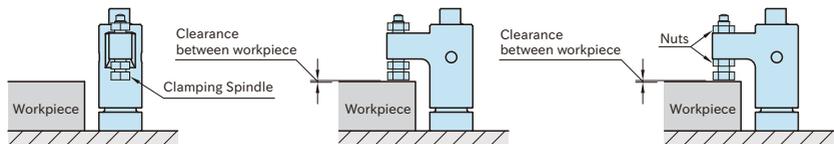
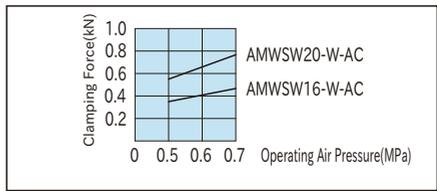
Using with pressure sensors, clamping/unclamping conditions can be detected.

### How To Use

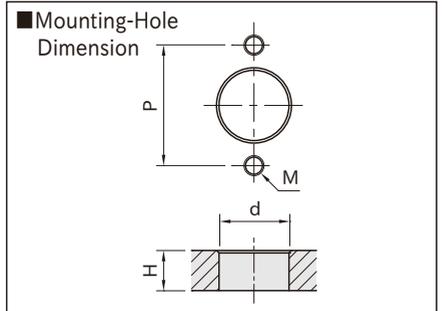
#### Setting Clearance between Workpiece

A clearance between clamping spindle and workpiece should be roughly half of the clamping stroke. The clamp arm swings horizontally. Follow the steps below to adjust the clamping spindle to create proper clearance.

### Performance Curve



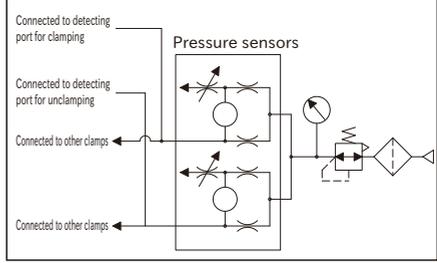
1. Apply air to the unclamping port with an air blow gun to move the clamp to unclamping position.
2. Rotate the arm manually to straight direction, and create an appropriate clearance to the workpiece. Putting a feeler gauge between the workpiece and the clamping spindle facilitates this setting.
3. Fix the clamping spindle with nuts.



Part No.	d (+0.2/0)	M	P	H
AMWSW16-W-AC	28	M 8X1.25	48	16 or less
AMWSW20-W-AC	35	M10X1.5	64	22 or less

#### Connection with Pressure Sensors

To check clamping/unclamping conditions, pressure sensor is required. Please contact us for the detail.



#### Note

Attach the collar and the retaining ring to the product by yourself. The collar rotates for 360° freely. Set the collar to your desired position.

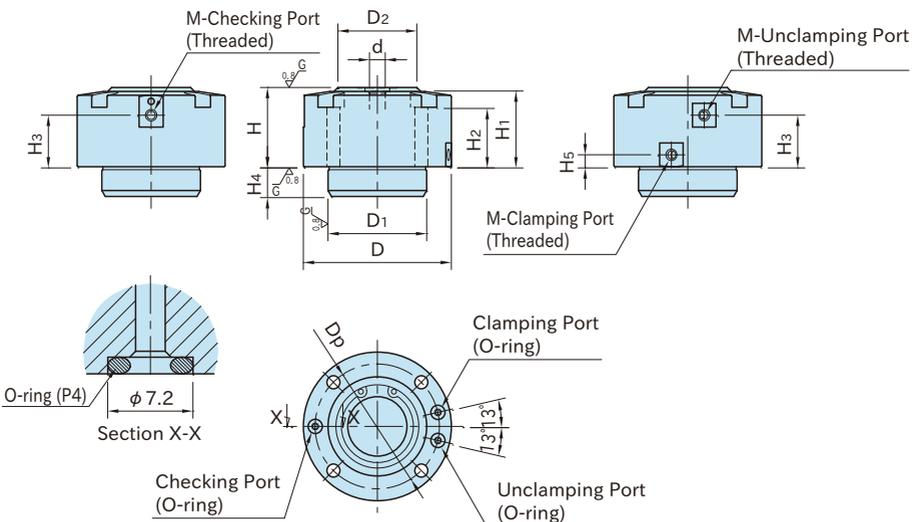
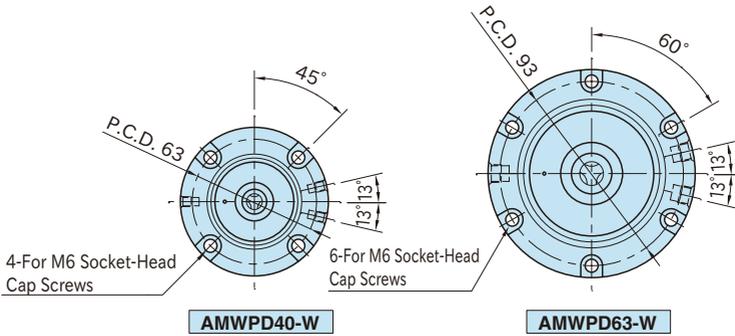
AMWPD-W

PNEUMATIC PULL CLAMPS



★Key Point  
High clamping force by wedge mechanism.

Body	Cylinder
S45C steel Induction hardened (top surface) Black oxide finished Precision ground	SCM440 steel ISONITE treated



Part Number	d (F7)	D <sub>2</sub>	H (±0.01)	D	H <sub>1</sub>	D <sub>1</sub> (g6)	H <sub>4</sub>	H <sub>2</sub>	Dp *)	M	H <sub>3</sub>	H <sub>5</sub>
<b>AMWPD40-W</b>	8	40	40	75	38	50	15	30	63	M5×0.8	26	6
<b>AMWPD63-W</b>	12	63	50	105	47	75	19	35	88	Rc1/8	31	10

Part Number	Furnished O-ring	Operating Air Pressure (MPa)	Clamping Force (kN) **)	Weight (kg)
<b>AMWPD40-W</b>	P4	0.3~1.0	1	1.3
<b>AMWPD63-W</b>			2.5	3.2

\*) The dimensions above are for ports with o-ring.

\*\*) The clamping forces above are at 0.5 MPa.

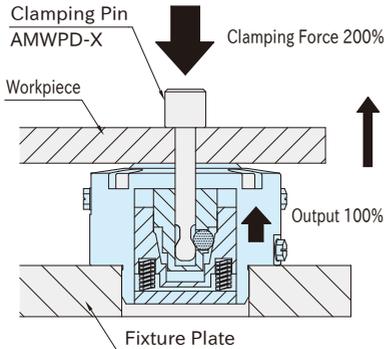
## Feature

### ■ High Clamping Force

- Wedge mechanism increases clamping force to 200% compared to the air cylinder of the same size.
- When the air pressure is lowered by such as an air leakage, wedge mechanism prevents prompt lowering of the clamping force.

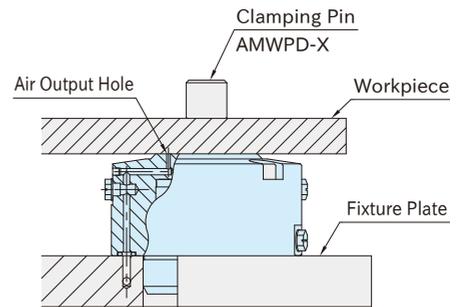
Clamping Force at 0 Mpa Air Pressure (by spring force)

- AMWPD40-W···160N
- AMWPD63-W···500N



### ■ Checking Hole

Can check if the workpiece is clamped properly by applying air through the checking hole.



## Technical Information

### ■ Allowable Counterforce (Per Clamp)

Part Number	Max. load(N)
<b>AMWPD40-W</b> <b>AMWPD63-W</b>	Clamping force × 2

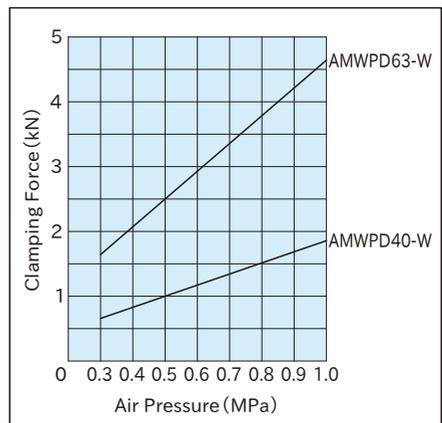
## Related Product

- AMWPD-X CLAMPING PINS
- AMWPD-M CLAMPING SCREWS

## Note

- Use clean air by removing dust with filter or draining with dryer.
- Impure compressed air may cause malfunction of the products.
- Using lubricator is recommended.

## Performance Curve

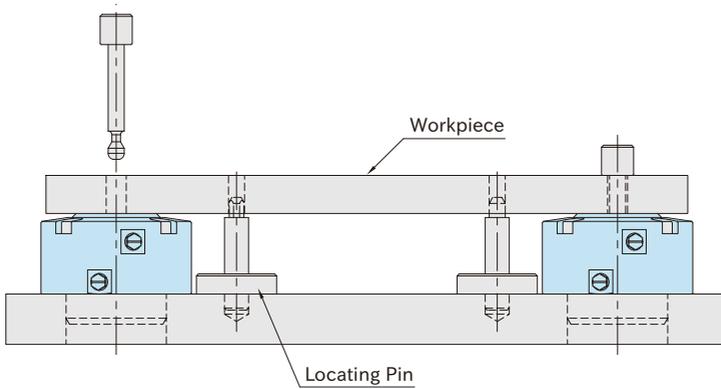


Continuing on Next Page

**How To Use**

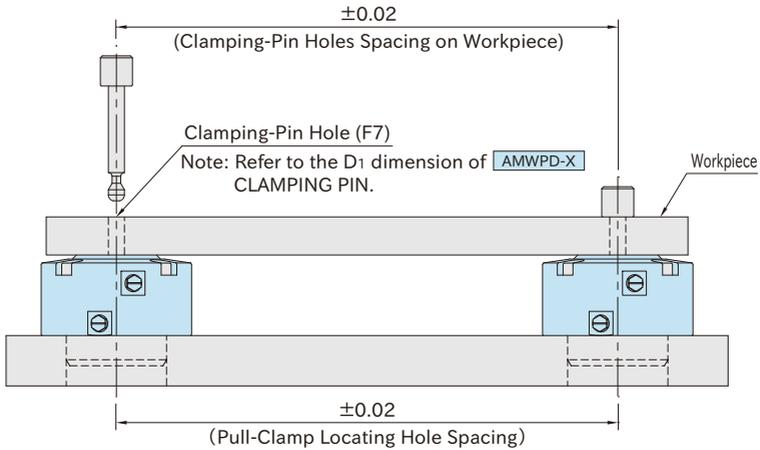
■ **How to Locate Workpiece**

1. Basic Method



2. Method for clamping and locating at a time

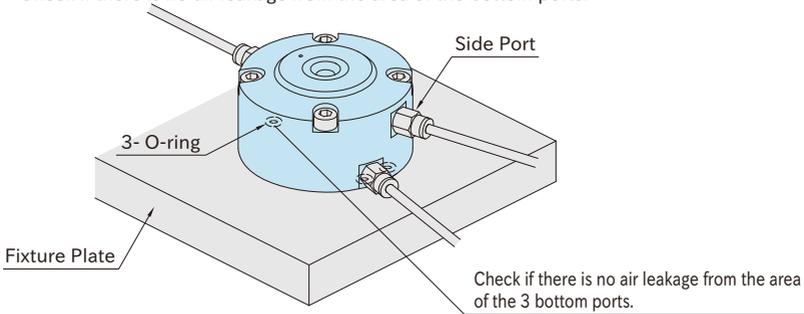
Locating Accuracy  $\pm 0.08$



## How to Install

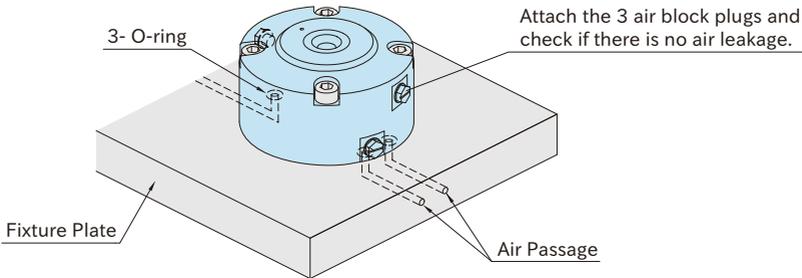
### 1. With Side Ports

- Attach the furnished o-rings to the bottom ports.
- Plate surface must be flat ( $\frac{6.3}{\sqrt{}}$ ) to get the bottom ports sealed up.
- Check if there is no air leakage from the area of the bottom ports.

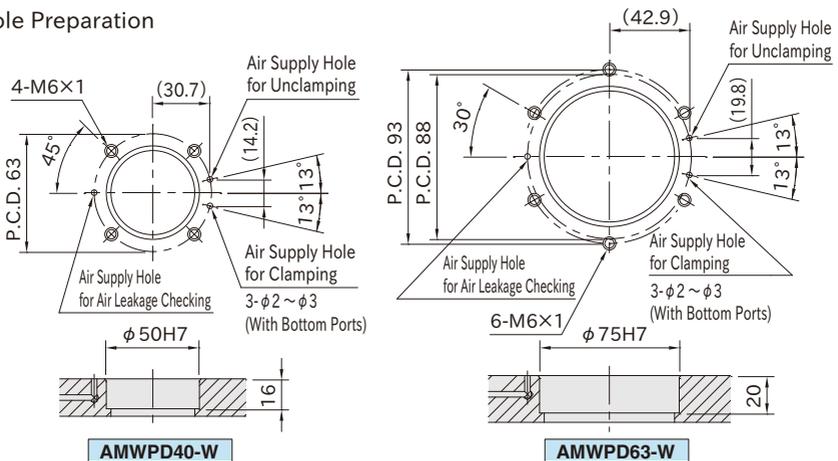


### 2. With Bottom Ports

- Attach the furnished o-rings to the bottom ports.
- Plate surface must be flat ( $\frac{6.3}{\sqrt{}}$ ) to get the bottom ports sealed up.
- Refer to the figure below for the hole details.
- Ensure that the furnished air block plugs are attached to the side ports.



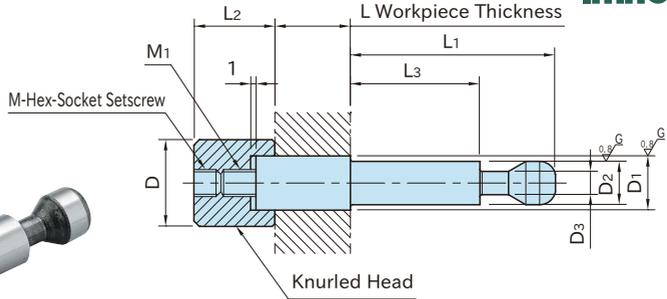
## Hole Preparation



# AMWPD-X

## CLAMPING PINS

On Request 



Note: L dimension is adjustable by  $\pm 1$ mm to fit actual workpiece thickness.

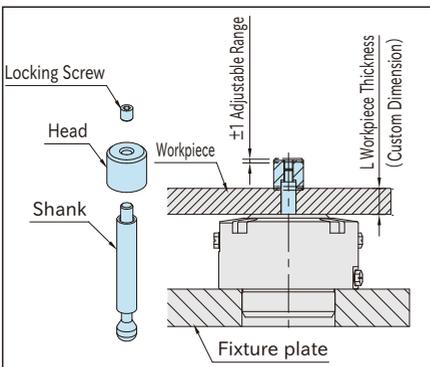
Shank	Head
SCM435 steel Induction hardened (taper seat) Precision ground	S45C steel Quenched and tempered Black oxide finish

Part Number	D <sub>2</sub> (f7)	D <sub>1</sub> (f7)	L* (By 0.1mm)	D	L <sub>2</sub>	L <sub>1</sub>	L <sub>3</sub>	D <sub>3</sub>	M
AMWPD40- 8-(L Dim. in mm)	8	8	$4 \leq L \leq 64$	16	15	38	24	4.3	M5×0.8 -5L
AMWPD40-10-(L Dim. in mm)		10							
AMWPD63-12-(L Dim. in mm)	12	12	$0 < L \leq 90$	18	23	48	31.5	6.5	M8×1.25-8L
AMWPD63-16-(L Dim. in mm)		16		24					

Part Number	M <sub>1</sub>	Proper Pull Clamps	Weight (g)
AMWPD40- 8-(L Dim. in mm)	M5×0.8	AMWPD40-W	min. 30~max. 60
AMWPD40-10-(L Dim. in mm)			min. 31~max. 77
AMWPD63-12-(L Dim. in mm)	M8×1.25	AMWPD63-W	min. 70~max.160
AMWPD63-16-(L Dim. in mm)			min.175~max.265

\* ) For ordering, specify workpiece thickness.

### How To Use



### Note

The length of L dimension should be decided depending on the workpiece thickness.

### Ordering Example

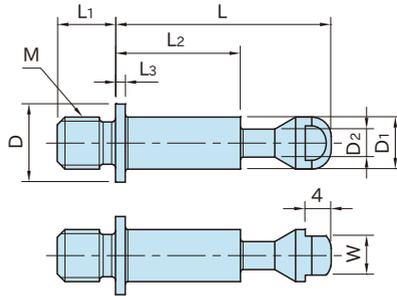
**AMWPD40-8 - 10.5**

Shank Size

L Dim.

AMWPD40-8 for 10.5mm  
thickness workpiece.

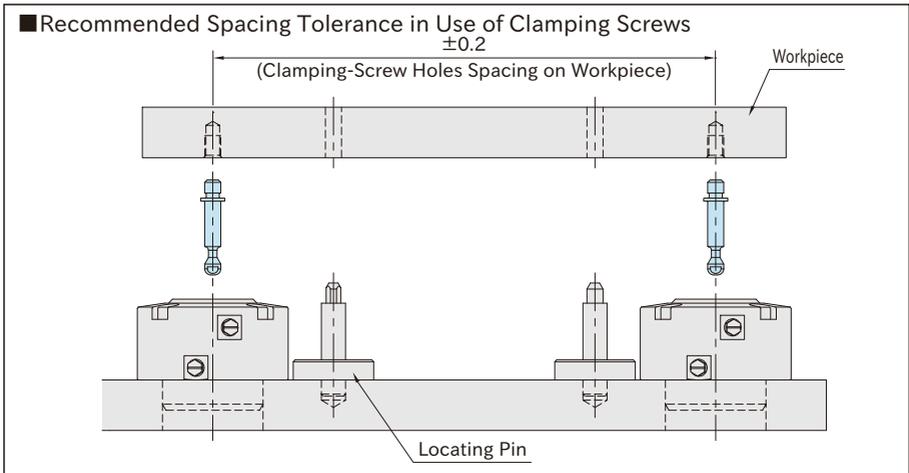
# AMWPD-M CLAMPING SCREWS



Body
SCM435 steel
Quenched and tempered
Black oxide finish

Part Number	D <sub>1</sub>	M	L <sub>1</sub>	L	D	L <sub>2</sub>	L <sub>3</sub>	D <sub>2</sub>	W	Proper Pull Clamps	Weight (g)
<b>AMWPD40-M 8</b>	8	M 8x1.25	9	38	12	24	1.5	4.3	6	AMWPD40-W	16
<b>AMWPD40-M10</b>		M10x1.5	11								20
<b>AMWPD63-M12</b>	12	M12x1.75	13	48	20	31.5	2	6.5	10	AMWPD63-W	50
<b>AMWPD63-M16</b>		M16x2	17								64

## How To Use



## Note

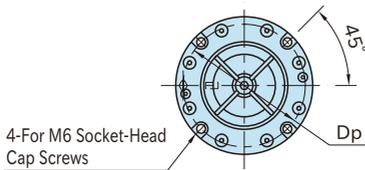
Custom Clamping Screws (different screw thread sizes) are available on request.

AMCH-W

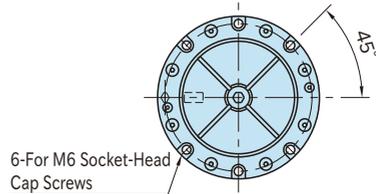
PNEUMATIC OD HOLDING CLAMPS



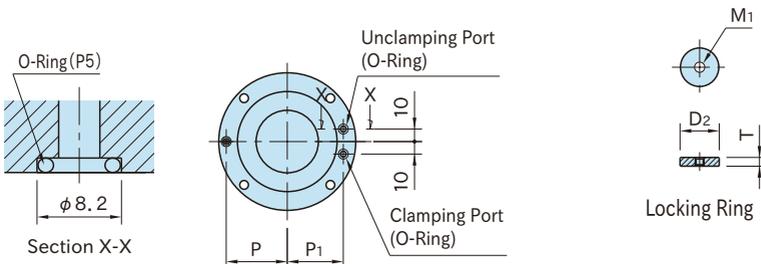
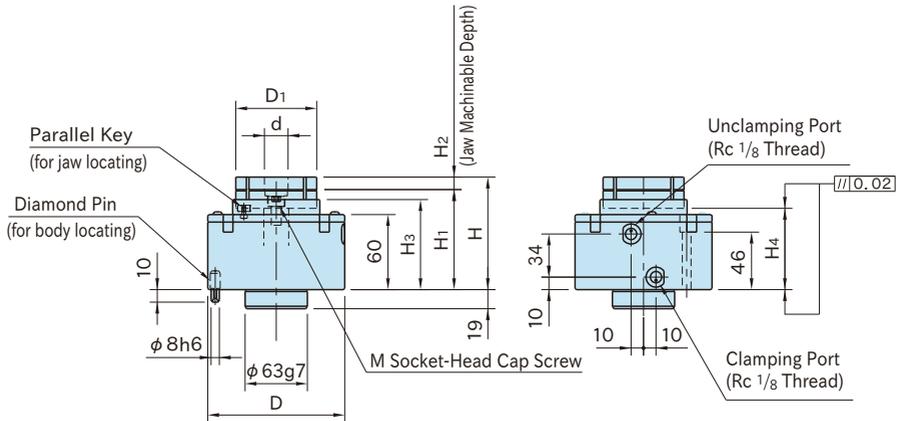
Body	Jaw
S45C steel Electroless nickel plated	A7075 aluminum Anodized Blue



AMCH080-5W



AMCH100-5W



Part Number	D <sub>1</sub>	d	H	H <sub>2</sub>	D	H <sub>1</sub>	H <sub>3</sub>	H <sub>4</sub> (±0.02)	Dp	P (±0.02)	P <sub>1</sub>	M	M <sub>1</sub>
<b>AMCH080-5W</b>	65	19	90	10	110	80	72	65	98	49	45	M 8×1.25-15L	M4×0.7
<b>AMCH100-5W</b>	90	23	100	15	130	85	74	66	118	59	55	M10×1.5 -20L	M5×0.8

Part Number	D <sub>2</sub>	T	Furnished O-Ring	Operating Air Pressure(MPa *)	Clamping Force (kN **)	Weight (kg)
<b>AMCH080-5W</b>	18	4	P5	0.5	4	4.2
<b>AMCH100-5W</b>	22	6			6	6

\*) Operating air pressure range: 0.45 - 0.55 MPa.

\*\*) The clamping forces above are at 0.5 MPa.

### Supplied With

- 1 of locking ring
- 2 of O-Ring
- 1 of diamond pin

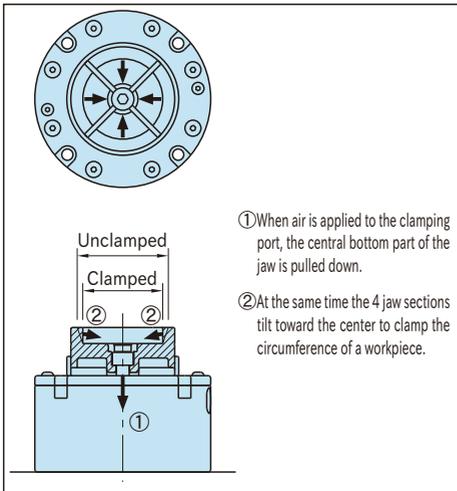
### Technical Information

- Workpiece locating repeatability : ±0.03
- Jaw locating repeatability : ±0.02

### Note

- Do not actuate clamping without a workpiece inserted to avoid damage and deformation.
- Do not machine the jaw beyond the machinable area.
- Changeable Jaws **CPI21** are available.
- Use clean air by removing dust with filter or draining with dryer.
- Impure compressed air may cause malfunction of the products.
- Using lubricator is recommended.

### Feature



① When air is applied to the clamping port, the central bottom part of the jaw is pulled down.

② At the same time the 4 jaw sections tilt toward the center to clamp the circumference of a workpiece.

- The diaphragm clamping mechanism allows securely clamping a workpiece with 4 jaw sections.
- Different irregularly-shaped workpieces can be clamped.
- 0.15mm clamping stroke of each jaw section is perfect for clamping of lost-wax parts, die-cast parts, extruded parts, solid-drawn parts, prefinished parts, etc.



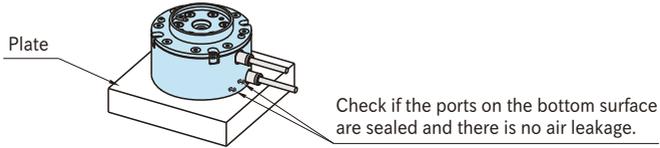
Continuing on Next Page

## How To Use

### Body Installing

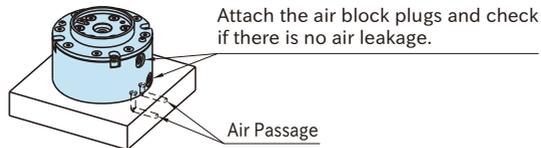
#### With Side Ports

- Attach the furnished o-rings to the bottom ports.
- Plate surface must be flat ( $\sqrt{6.3}$ ) to get the bottom ports sealed up.
- Check if there is no air leakage from the area of the bottom ports.

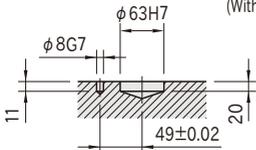
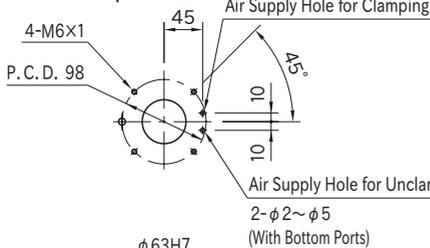


#### With Bottom Ports

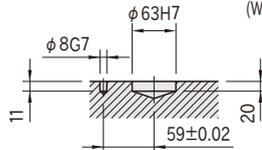
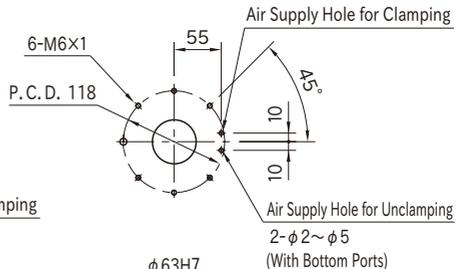
- Attach the furnished o-rings to the bottom ports.
- Plate surface must be flat ( $\sqrt{6.3}$ ) to get the bottom ports sealed up.
- Refer to the figure below for the hole positions for ports.
- Ensure that the furnished air block plugs are attached to the side ports.



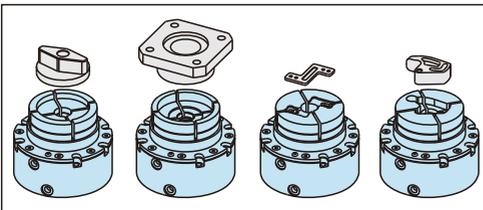
### Hole Preparation



AMCH080-5W



AMCH100-5W

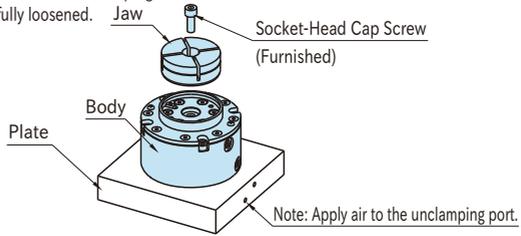


- Machinable jaws allow clamping workpieces of various shapes.
- Ideal way to hold workpieces for machining on small-size machining centers, tapping centers, small-size 5-axis machines, CNC rotary tables, etc.

Changeable Jaws [CP121](#) are available.

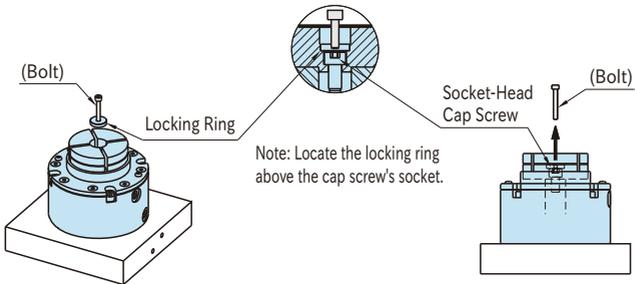
### ■ Jaw Setting

At jaw installation, ensure that air is applied to the unclamping port and the socket-head cap screw is fully loosened.

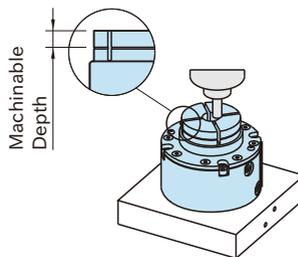


### ■ Jaw Machining

1. Set the locking ring in the jaw.  
(using a bolt facilitates setting)
2. Apply air to the clamping port to clamp the locking ring.  
(After clamping, remove the bolt from the locking ring.)

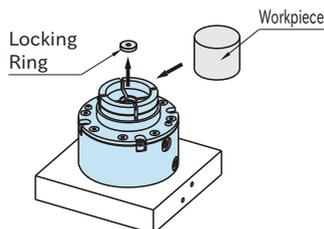


3. Machine the jaw to custom fit a workpiece.



### ■ Workpiece Setting

1. After machining apply air to the unclamping port to take out the locking ring.
2. Mount a workpiece and then apply air to the clamping port for clamping.



# AMWD-WS

## PNEUMATIC HOLD DOWN CLAMPS



★ **One Point**  
Magnetic sensor mountable!

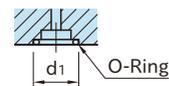
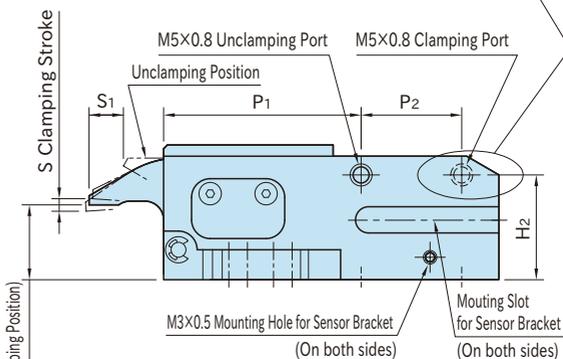
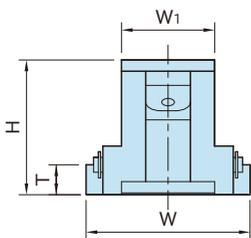
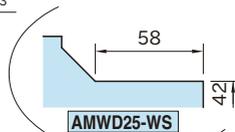
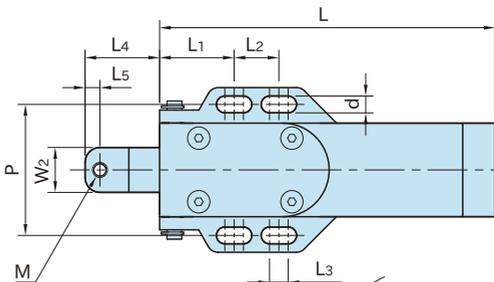


**AMWD16-WS**

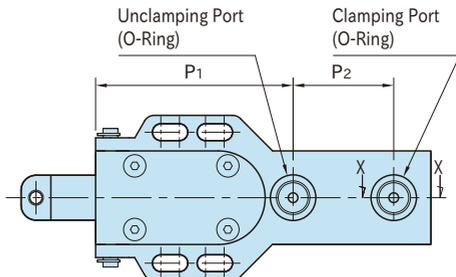


**AMWD25-WS**

Body	Clamp Arm
AC7A aluminum Anodized	SCM415 steel Carburized-hardened Electroless Nickel Plated



Section X-X



Part Number	W <sub>2</sub>	L <sub>4</sub>	M	L <sub>5</sub>	H <sub>1</sub>	S	S <sub>1</sub>	L	W <sub>1</sub>	H	W	T	d	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>
<b>AMWD16-WS</b>	12	20	M4×0.7	4	20	2	9	90	25	36	44	8	4.5	20	12	5
<b>AMWD25-WS</b>	18	32	M6×1	6	30	3	15	135	40	54	65	12	6.5	30	20	8

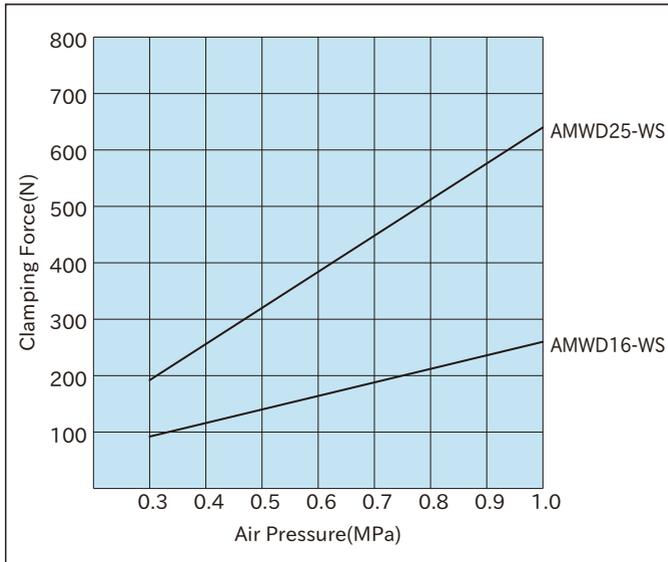
Part Number	P	d <sub>1</sub>	P <sub>1</sub>	P <sub>2</sub>	H <sub>2</sub>	Operating Air Pressure (MPa)	Clamping Force (N) *	Furnished O-Ring	Weight (g)
<b>AMWD16-WS</b>	35	12.2	53	27	28	0.3 - 1.0	140	P 9	250
<b>AMWD25-WS</b>	53	18	84	38	33		320	P14	850

### Supplied With

2 of O-Ring

\*) The clamping forces above are at 0.5 MPa.

### Performance Curve



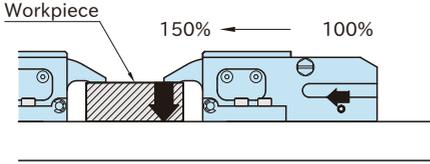
### Related Product Page

[AMWD-WS-B](#) SENSOR BRACKETS

 Continuing on Next Page

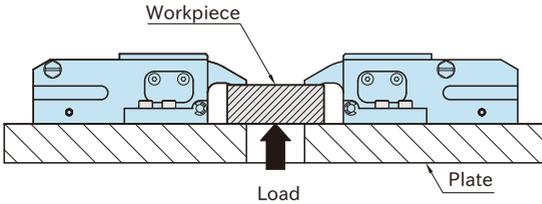
**Feature**

- Wedge mechanism provides 150% clamping force.



- The allowable counterforce is shown in the chart below.
- Wedge mechanism prevents the clamping force from immediate decrease if air pressure lowers.

Note: The clamping force may be decreased by excessive vibration.

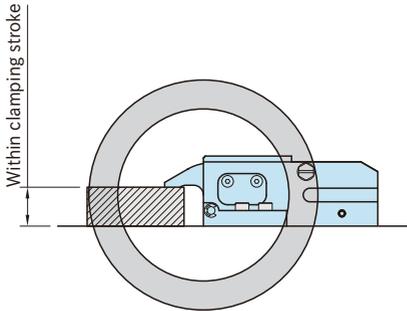


Allowable Counterforce (Per Clamp)

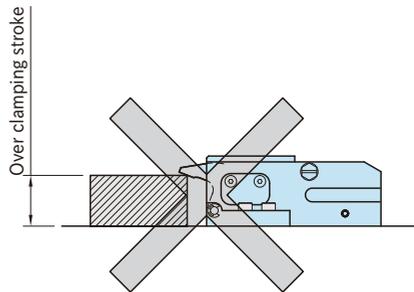
Part Number	Allowable Force (kN)
<b>AMWD16-WS</b>	1
<b>AMWD25-WS</b>	2.2

**Note**

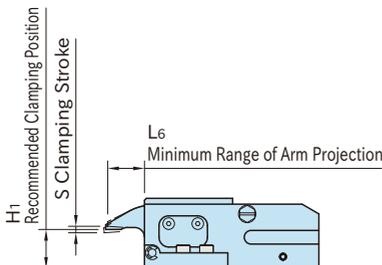
- Use clean air by removing dust with filter or draining with dryer.
- Impure compressed air may cause malfunction of the products.
- Using lubricator is recommended.
- Use the clamp within the clamping stroke.



The wedge mechanism works to clamp the workpiece securely.



The wedge mechanism does not work.

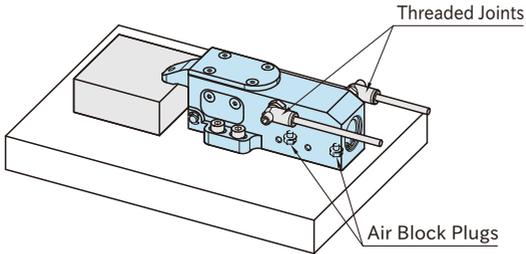


Part Number	S	H <sub>1</sub>	L <sub>6</sub>
<b>AMWD16-WS</b>	2	20	19
<b>AMWD25-WS</b>	3	30	30.5

## How To Use

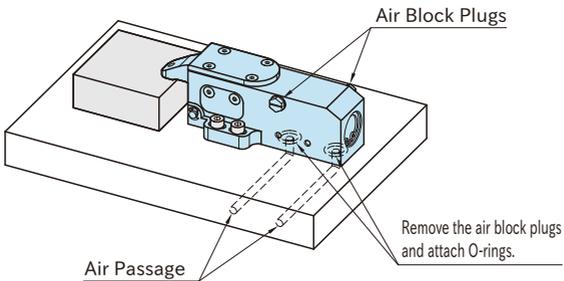
### ■ With Side Ports

- Ensure that the furnished air block plugs are attached to the bottom ports.
- Remove the air block plugs on the side ports and connect the piping.
- Refer to the figure below for the hole preparation.

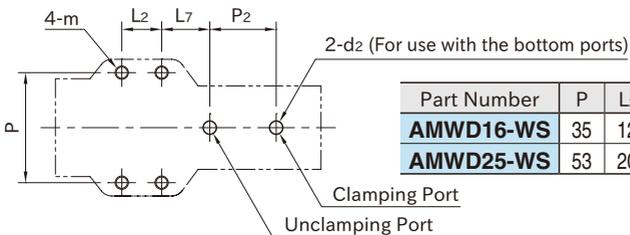


### ■ With Bottom Ports

- Ensure that the furnished air block plugs are attached to the side ports.
- Remove the air block plugs on the bottom ports and attach O-rings (included) to it.
- Plate surface must be flat ( $\nabla^{6.3}$ ) to get the bottom ports sealed up.
- Refer to the figure below for the hole preparation.



### ■ Hole Preparation



Part Number	P	L <sub>2</sub>	L <sub>7</sub>	P <sub>2</sub>	m	d <sub>2</sub>
<b>AMWD16-WS</b>	35	12	21	27	M4×0.7	φ2 - φ4
<b>AMWD25-WS</b>	53	20	34	38	M6×1	φ2 - φ6

# AMWD-WS-B

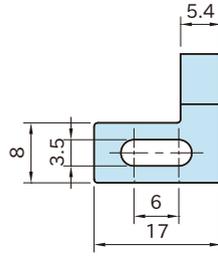
# SENSOR BRACKETS



Stainless  
Steel



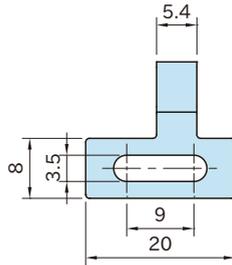
AMWD16-WS-B



AMWD16-WS-B



AMWD25-WS-B



AMWD25-WS-B

Body
SUS304 stainless steel

Part Number	Weight (g)	Proper Sensor *)
AMWD16-WS-B	5.5	AH006-S, N
AMWD25-WS-B	6	

\*)Magnetic Proximity Sensors of ASA ELECTRONICS INDUSTRY CO., LTD.  
Please refer to their catalog for details of sensors.

### Feature

- Using proper sensors enables to detect the piston positions.
- Prepare the sensors as needed.(Not available from Imao.)

### Supplied With

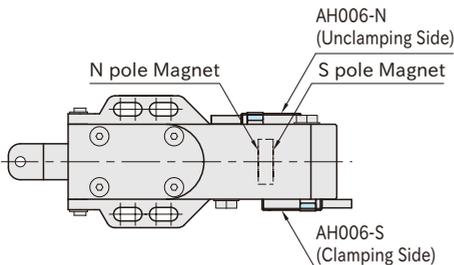
2 of M3x0.5-5L Hex socket button head screw

### Related Product

AMWD-WS PNEUMATIC HOLD DOWN CLAMPS

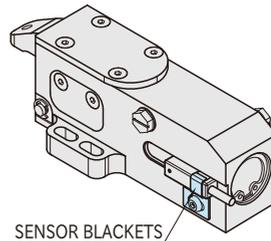
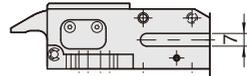
### How To Use

- Must be used with 1 pc. each of AH006-S (S pole) and AH006-N (N pole).
- Adjust the detecting positions by mounting sensors of S and N poles as shown below.



### Note

- Only Magnetic Proximity Sensors AH-006 of ASA ELECTRONICS was tested with AMWD-WS PNEUMATIC HOLD DOWN CLAMPS.
- Ensure to follow the criteria below before using other magnetic sensors.
  - Can be mounted in the 7mm slot of the clamp body.
- Can detect the internal magnet of the clamp.
- Brackets should be made by the customer referring to the datasheet of AMWD-WS-B SENSOR BRACKETS.



# ONE-TOUCH CLAMPS



ONE-TOUCH CLAMPS

SNAP CLAMPS

# ONE-TOUCH CLAMPS

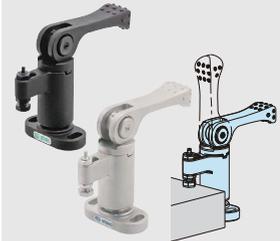


## ONE-TOUCH CLAMPS



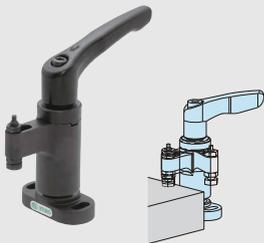
SWING CLAMPS

Part No. QLSWC



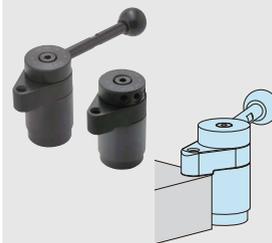
SWING CLAMPS  
WITH CAM HANDLE

Part No. QLSWC



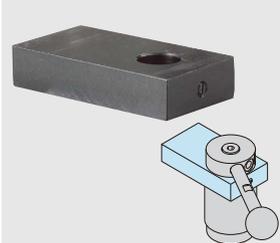
SWING CLAMPS  
WITH ADJUSTABLE HANDLE

Part No. QLSWC



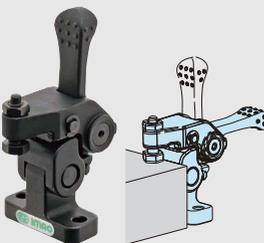
SWING CLAMPS  
(Standard)

Part No. QLSW



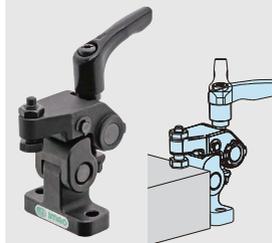
MACHINABLE CLAMP ARMS  
FOR STANDARD SWING CLAMPS

Part No. QLSW-SH



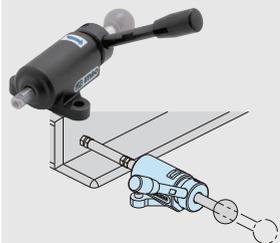
RETRACTABLE CLAMPS  
WITH CAM HANDLE

Part No. QLRE



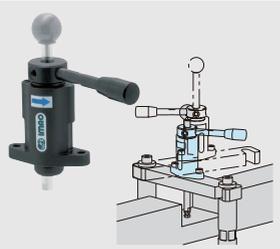
RETRACTABLE CLAMPS  
WITH ADJUSTABLE HANDLE

Part No. QLRE



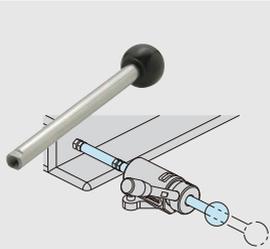
THRUST CLAMPS

Part No. QLRC



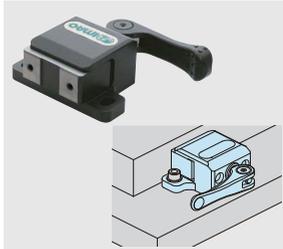
**THRUST CLAMPS (Vertical)**

Part No. QLRCF



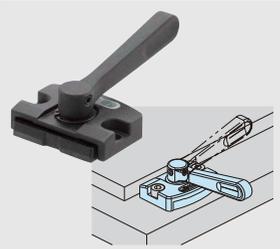
**CLAMPING BARS**

Part No. QLRC5



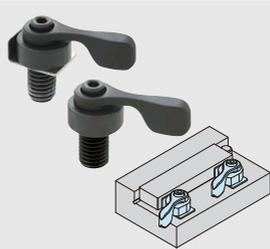
**CAM EDGE CLAMPS**

Part No. QLSC5



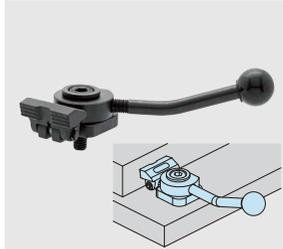
**LOW-PROFILE  
CAM EDGE CLAMPS**

Part No. QLSC-L



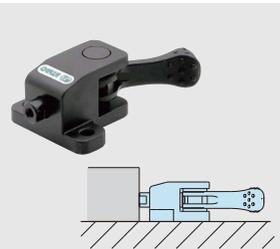
**SPIRAL CAM CLAMPS**

Part No. CP135-L



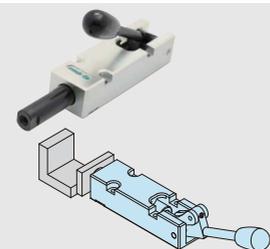
**CAM EDGE CLAMPS**

Part No. QLSC



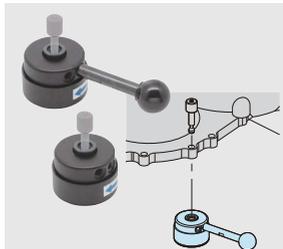
**CAM PUSH CLAMPS**

Part No. QLCP



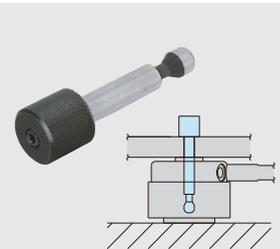
**PRECISION THRUST  
CLAMPS**

Part No. QLPC



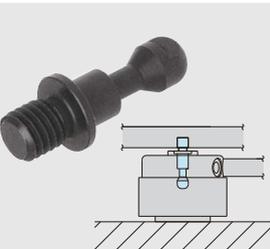
**PULL CLAMPS (Standard)**

Part No. QLPD



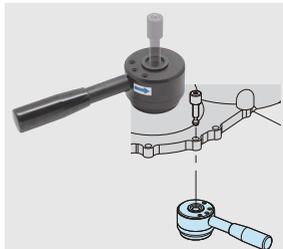
**CLAMPING PINS  
(Standard)**

Part No. QLPD-X



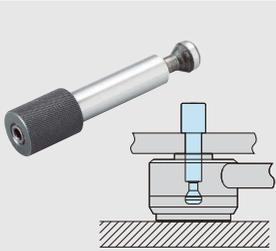
**CLAMPING SCREWS  
(Standard)**

Part No. QLPD-M



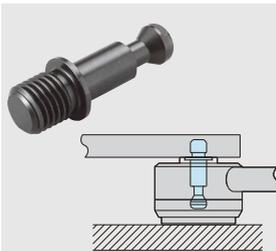
**PULL CLAMPS (Heavy)**

Part No. QLPDH



CLAMPING PINS (Heavy)

Part No. QLPDH-X



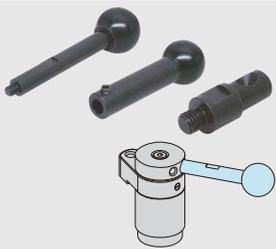
CLAMPING SCREWS  
(Heavy)

Part No. QLPDH-M



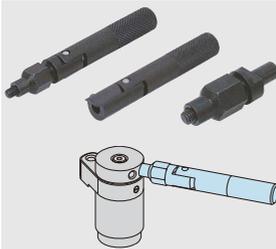
PUSH CLAMPS (Standard)

Part No. QLPU



STANDARD HANDLES

Part No. QLSL



ADJUSTABLE-TORQUE  
HANDLES

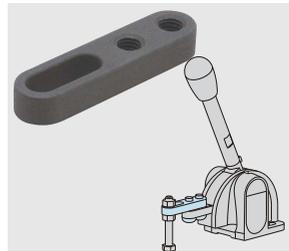
Part No. QLTL

## SNAP CLAMPS



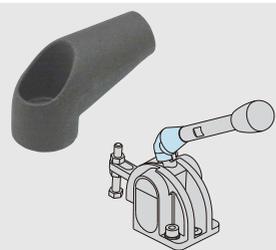
VERTICAL-HANDLE  
HOLD-DOWN SNAP CLAMPS

Part No. QLSND



EXTENSION ARM

Part No. QLSND-EX20



ANGLE ADAPTOR

Part No. QLSND-AN10



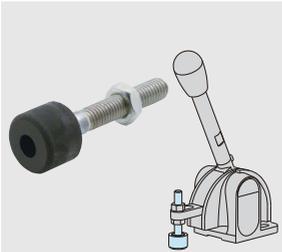
VERTICAL-HANDLE  
HOLD-DOWN SNAP CLAMPS(Mini)

Part No. QLSNDM



PUSH-PULL SNAP CLAMPS

Part No. QLSNS



## CLAMPING SPINDLES

Part No. UB

## ONE-TOUCH CLAMPS

**Any Tools Needed? No Need!**  
Just Turn the Handle!



## ONE-TOUCH CLAMPS

for Better Efficiency and Lower Costs

### Quick Manual Clamps with No Tools

Imao One-Touch Clamps allow clamping and unclamping the workpiece just by turning the handle, without any tools. This one-touch feature helps to slash workpiece loading/unloading time, for drastic setup time reduction and increased productivity.



One-Touch Clamps reduce setup time in machining, assembly, inspection and testing fixtures for various industries.



This extended line of One-Touch Clamps covers a wide range of clamping applications for small parts, and aluminum, zinc, cast-iron or steel parts.



## Push-Down



SWING CLAMPS



SWING CLAMPS WITH CAM HANDLE



SWING CLAMPS WITH ADJUSTABLE HANDLE



SWING CLAMPS



RETRACTABLE CLAMPS WITH CAM HANDLE



RETRACTABLE CLAMPS WITH ADJUSTABLE HANDLE



THRUST CLAMPS (Vertical)



## Side-Push



THRUST CLAMPS



CAM EDGE CLAMPS



LOW-PROFILE CAM EDGE CLAMPS



SPIRAL CAM CLAMPS



CAM EDGE CLAMPS



CAM PUSH CLAMPS



PRECISION THRUST CLAMPS



## Pull-Down



PULL CLAMPS



PULL CLAMPS (Heavy)



## Push-Up



PUSH CLAMPS

QLSWC

SWING CLAMPS



(Black Oxide Finish)

(Electroless Nickel Plated)

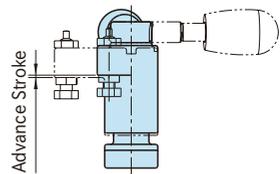
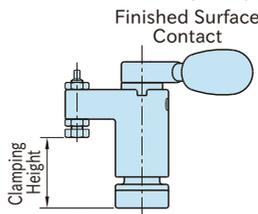
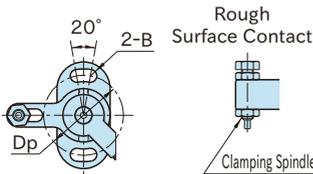
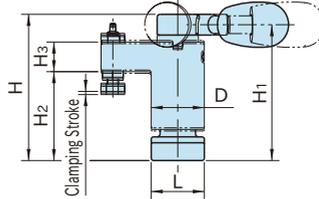
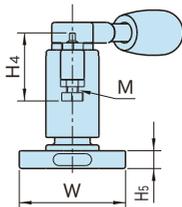
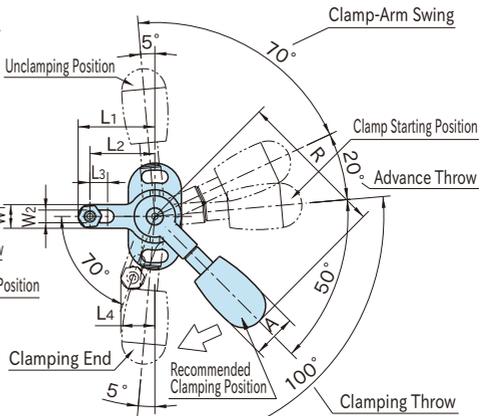
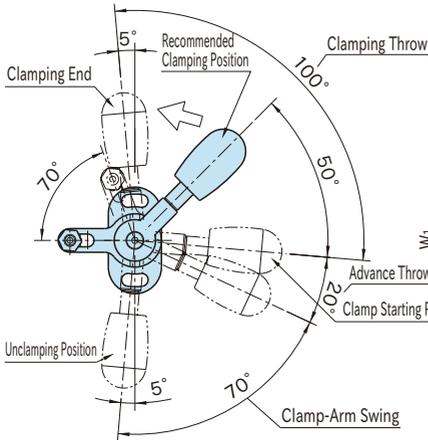
On Request



Type	Body/Handle/Clamping Spindle	Arm	Cam Shaft	Knob
<b>QLSWC</b>	S45C steel Quenched and tempered Black oxide finish	SCM440 steel Quenched and tempered Black oxide finish	SCM415 steel Quenched and tempered Black oxide finish	Phenolic plastic Black
<b>QLSWC-NP</b>	S45C steel Quenched and tempered Electroless nickel plated	SCM440 steel Quenched and tempered Electroless nickel plated	SCM415 steel Quenched and tempered Electroless nickel plated	

Counterclockwise Clamping

Clockwise Clamping



Part Number	Clamping Direction	Clamping Height *)				Clamping Stroke	Advance Stroke	L <sub>2</sub>	L <sub>3</sub>	L <sub>1</sub>	L <sub>4</sub>	W	L	H <sub>5</sub>	B
		Finished Surface Contact		Rough Surface Contact											
		Min.	Max.	Min.	Max.										
QLSWC100R	CW	22.8	24.8	22.4	24.4	1	0.8	22	6	26	11.5	36	18	6	4.3
QLSWC100L	CCW	(22.3~23.3)	(24.3~25.3)	(21.9~22.9)	(23.9~24.9)										
QLSWC150R	CW	31.3	33.3	32.2	34.2	1.4	1.1	30		35	15.3	45	23	8	5.3
QLSWC150L	CCW	(30.6~32)	(32.6~34)	(31.5~32.9)	(33.5~34.9)										
QLSWC200R	CW	32.5	39	33.5	40	1.5	1.4	37	8	45	20.7	65	30	12	8.4
QLSWC200L	CCW	(31.7~33.2)	(38.2~39.7)	(32.7~34.2)	(39.2~40.7)										
QLSWC300R	CW	36.5	46	39	48.5	1.9	1.7	45		55	25.4	85	40	15	10.5
QLSWC300L	CCW	(35.5~37.4)	(45~46.9)	(38~39.9)	(47.5~49.4)										

Part Number	D <sub>p</sub>	H	D	W <sub>1</sub>	W <sub>2</sub>	H <sub>3</sub>	H <sub>2</sub>	M	H <sub>4</sub>	R	A	H <sub>1</sub>	Allowable Operating Load (N)**	Clamping Force (kN)	Clamping Mechanism
QLSWC100R	27	49	18	8	4.3	10	30	M 4×0.7	22.8	50	15	45.8	100	1.1	Spiral Cam Cam Angle: 5°
QLSWC100L															
QLSWC150R															
QLSWC150L	34	66	23	10	5.3	14	40	M 5×0.8	28.5	63	20	61.3	150	1.8	Spiral Cam Cam Angle: 5°
QLSWC200R															
QLSWC200L	48	82	30	16	8.4	18	50	M 8×1.25	45.5	80	26	76.5	200	2.2	Spiral Cam Cam Angle: 4°
QLSWC300R															
QLSWC300L															
QLSWC300L	64	100	40	20	10.4	22	60	M10×1.5	57	100	33	93	300	3.5	

QLSWC (Black oxide finish)

QLSWC-NP (Electroless nickel)

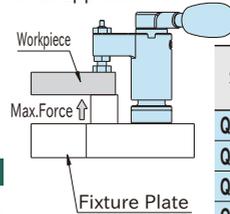
Part Number	Weight (g)	On Request	
		Part Number	Weight (g)
QLSWC100R	112	QLSWC100R-NP	112
QLSWC100L		QLSWC100L-NP	
QLSWC150R	250	QLSWC150R-NP	250
QLSWC150L		QLSWC150L-NP	
QLSWC200R	570	QLSWC200R-NP	570
QLSWC200L		QLSWC200L-NP	
QLSWC300R	1200	QLSWC300R-NP	1200
QLSWC300L		QLSWC300L-NP	

\*) Clamping height can be adjusted. The parenthesised values denote clamping height range.

\*\*\*) Allowable load to operate the handle.

### Technical Information

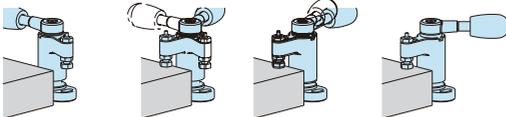
■ Allowable Loads in Machining of Workpiece Bottom  
Ensure that any force more than stated below is not applied.



Series	Allowable Force To Workpiece Bottom (Per Clamp)
QLSWC100	max.2.3kN
QLSWC150	max.3.6kN
QLSWC200	max.3.7kN
QLSWC300	max.5.6kN

### How To Use

■ Operation of CW Type (Invert the operation for CCW type.)



1. Unclamped Load or unload a part.

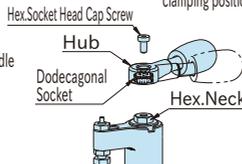
2. Arm Swing  
Turn the handle to set the clamp arm in position.

3. Clamping Setup  
Continue turning the handle to set the spindle close to the part.

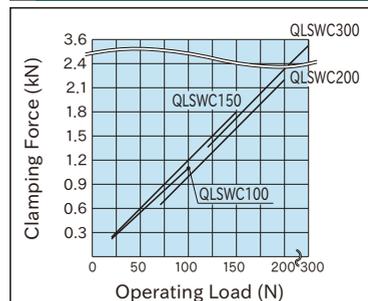
4. Clamping  
Turn the handle to the recommended clamping position.

■ How to Change Handle Position

The dodecagonal socket in the hub of the handle allows changing the handle position by 30°.



### Performance Curve



QLSWC

SWING CLAMPS WITH CAM HANDLE



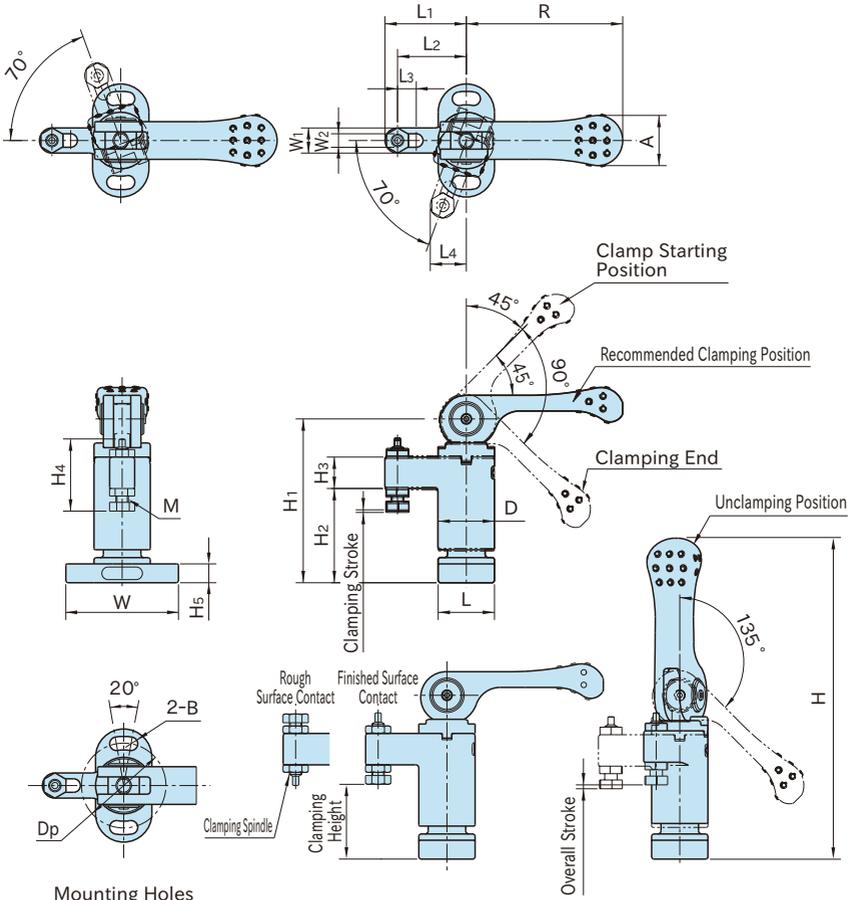
(Black Oxide Finish) (Electroless Nickel Plated)

Style	Body/Washer/Clamping Spindle	Arm/Handle
<b>QLSWC</b>	S45C steel Quenched and tempered Black oxide finish	SCM440 steel Quenched and tempered Black oxide finish
<b>QLSWC-NP</b>	S45C steel Quenched and tempered Electroless nickel plated	SCM440 steel Quenched and tempered Electroless nickel plated

On Request

Counterclockwise Clamping

Clockwise Clamping



Part Number	Clamping Direction	Clamping Height *)				Clamping Stroke	Overall Stroke	L <sub>2</sub>	L <sub>3</sub>	L <sub>1</sub>	L <sub>4</sub>	W	L	H <sub>5</sub>	B
		Finished Surface Contact		Rough Surface Contact											
		Min.	Max.	Min.	Max.										
QLSWC100VR	CW	22.8	24.8	22.4	24.4	0.8	1.2	22	6	26	11.5	36	18	6	4.3
QLSWC100VL	CCW	(22.4~23.2)	(24.4~25.2)	(22~22.8)	(24~24.8)										
QLSWC150VR	CW	31.3	33.3	32.2	34.2	1	1.5	30	8	35	15.3	45	23	8	5.3
QLSWC150VL	CCW	(30.8~31.8)	(32.8~33.8)	(31.7~32.7)	(33.7~34.7)										
QLSWC200VR	CW	32.5	39	33.5	40	1.2	1.8	37	8	45	20.7	65	30	12	8.4
QLSWC200VL	CCW	(31.9~33.1)	(38.4~39.6)	(32.9~34.1)	(39.4~40.6)										
QLSWC300VR	CW	36.5	46	39	48.5	1.5	2.3	45	8	55	25.4	85	40	15	10.5
QLSWC300VL	CCW	(35.7~37.2)	(45.2~46.7)	(38.2~39.7)	(47.7~49.2)										

\*) Clamping height can be adjusted. The parenthesized values denotes clamping height range.

Part Number	Dp	H	D	W <sub>1</sub>	W <sub>2</sub>	H <sub>3</sub>	H <sub>2</sub>	M	H <sub>4</sub>	R	A	H <sub>1</sub>	Cam Handles Part Number	Allowable Operating Load (N)**	Clamping Force (kN)	Clamping Mechanism
QLSWC100VR	27	102	18	8	4.3	10	30	M 4x0.7	22.8	50	16	52	QLCA-05	100	0.8	Spiral Cam Cam Angle: 4°
QLSWC100VL																
QLSWC150VR	34	131	23	10	5.3	14	40	M 5x0.8	28.5	63	19	68	QLCA-06	150	1.5	
QLSWC150VL																
QLSWC200VR	48	167	30	16	8.4	18	50	M 8x1.25	45.5	80	24	87	QLCA-08	200	2.1	
QLSWC200VL																
QLSWC300VR	64	207	40	20	10.4	22	60	M10x1.5	57	100	30	107	QLCA-10	300	2.8	
QLSWC300VL																

\*\* Allowable load to operate the handle

**QLSWC** (Black Oxide Finish)

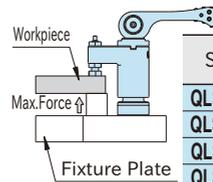
**QLSWC-NP** (Electroless Nickel Plated)

Part Number	Weight (g)
QLSWC100VR	134
QLSWC100VL	
QLSWC150VR	272
QLSWC150VL	
QLSWC200VR	625
QLSWC200VL	
QLSWC300VR	1340
QLSWC300VL	

Part Number	Weight (g)
QLSWC100VR-NP	134
QLSWC100VL-NP	
QLSWC150VR-NP	272
QLSWC150VL-NP	
QLSWC200VR-NP	625
QLSWC200VL-NP	
QLSWC300VR-NP	1340
QLSWC300VL-NP	

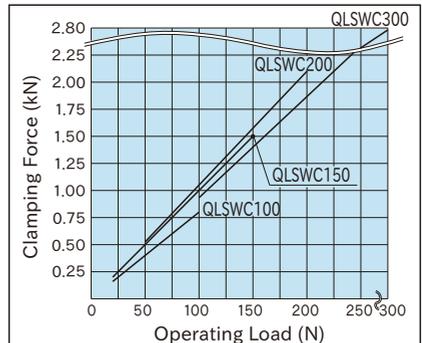
### Technical Data

■ Allowable Loads in Machining of Workpiece Bottom  
Ensure that any force more than stated below is not applied.



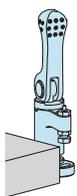
Series	Allowable Force To Workpiece Bottom (Per Clamp)
QLSWC100	max.2.3kN
QLSWC150	max.3.6kN
QLSWC200	max.3.7kN
QLSWC300	max.5.6kN

### Performance Curve

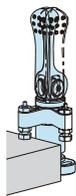


### How To Use

■ Operation of CW Type (Invert the operation for CCW type.)



1. Unclamped Load or unload a workpiece.



2. Arm Swing Turn the handle to set the clamp arm in position.



3. Clamping Set the handle down to clamp the workpiece.

QLSWC

SWING CLAMPS WITH ADJUSTABLE HANDLE

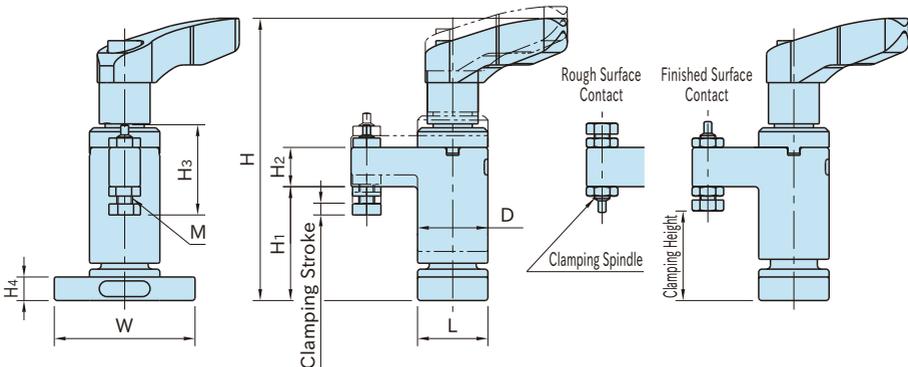
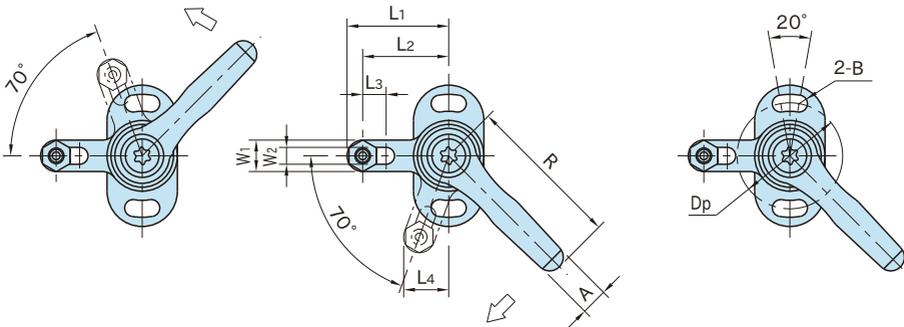


Base/Washer/Clamping Spindle	Body	Handle
S45C steel	SCM440 steel	ZDC1 die cast zinc
Quenched and tempered	Quenched and tempered	Coated with paint
Black oxide finish	Black oxide finish	Black

- Clamp worked by a screw-locking mechanism which allows providing longer clamping stroke and greater clamping force than a cam-locking mechanism.
- Operated by an adjustable handle that allows for flexible handle positioning.

Counterclockwise Clamping

Clockwise Clamping



Part Number	Clamping Direction	Clamping Height *)				Clamping Stroke	L <sub>2</sub>	L <sub>3</sub>	L <sub>1</sub>	L <sub>4</sub>	W	L	H <sub>4</sub>	B	Dp
		Finished Surface Contact		Rough Surface Contact											
		Min.	Max.	Min.	Max.										
QLSWC-0618KR	CW	21.8	23.8	21.4	23.4	3	22	6	26	11.5	36	18	6	4.3	27
QLSWC-0618KL	CCW	(21.8~24.8)	(23.8~26.8)	(21.4~24.4)	(23.4~26.4)										
QLSWC-0823KR	CW	30.3	32.3	31.2	33.2	4	30	8	35	15.3	45	23	8	5.3	34
QLSWC-0823KL	CCW	(30.3~34.3)	(32.3~36.3)	(31.2~35.2)	(33.2~37.2)										
QLSWC-1030KR	CW	30.5	37	31.5	38										
QLSWC-1030KL	CCW	(30.5~34.5)	(37~41)	(31.5~35.5)	(38~42)										
QLSWC-1240KR	CW	34.5	44	37	46.5	5	45	8	55	25.4	85	40	15	10.5	64
QLSWC-1240KL	CCW	(34.5~39.5)	(44~49)	(37~42)	(46.5~51.5)										

\*) Clamping height can be adjusted. The parenthesised values denote clamping height range.

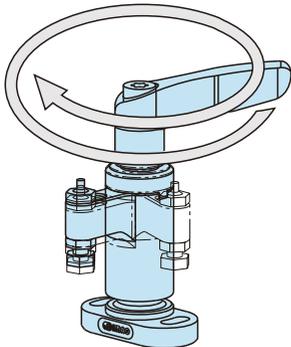
Part Number	H	D	W <sub>1</sub>	W <sub>2</sub>	H <sub>2</sub>	H <sub>1</sub>	M	R	A	H <sub>3</sub>	Adjustable Handles **)	Allowable Operating Load (N)***)	Clamping Force (kN)	Weight (g)
QLSWC-0618KR	71.9	18	8	4.3	10	29	M 4x0.7	40	7	22.8	FKF 6-BR	170	2	121
QLSWC-0618KL											FKF 8-BR		3.2	
QLSWC-0823KR	97.3	23	10	5.3	14	39	M 5x0.8	65	9.5	28.5	FKF 8-BR	350	3.2	276
QLSWC-0823KL											FKF10-BR		4.5	
QLSWC-1030KR	122.3	30	16	8.4	18	48	M 8x1.25	80	11	45.5	FKF10-BR	410	4.5	600
QLSWC-1030KL											FKF12-BR		6	
QLSWC-1240KR	145.7	40	20	10.4	22	58	M10x1.5	95	13	57	FKF12-BR	410	6	1225
QLSWC-1240KL														

\*\* ) Studs are bonded with FKF handles.

\*\*\*) Allowable load to operate the handle.

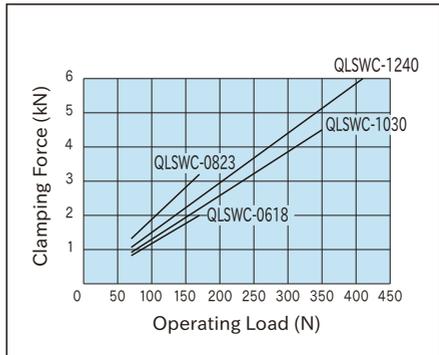
## How To Use

- Turning the handle allows the clamp arm to swing for clamping.
- Lifting the handle allows the handle to be disengaged from the teeth of the locking element and then be turned to a desired position.



Note: The above indicates the handle operation of CW type. Invert the operation for CCW type.

## Performance Curve



## QLSWC

SWING CLAMPS FOR TORQUE CONTROL



Stronger type without handle is available.

QLSW

SWING CLAMPS (Standard)



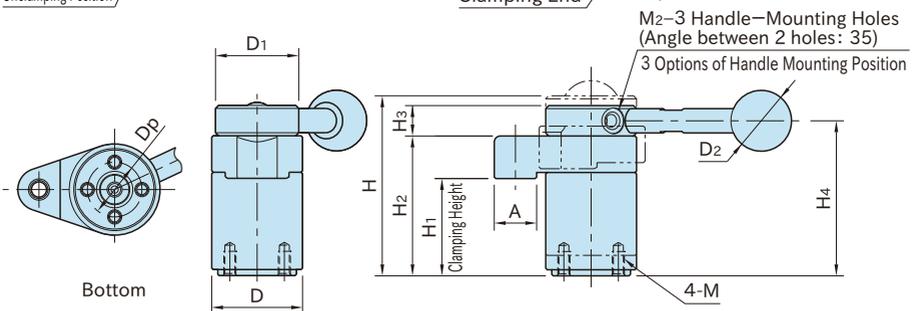
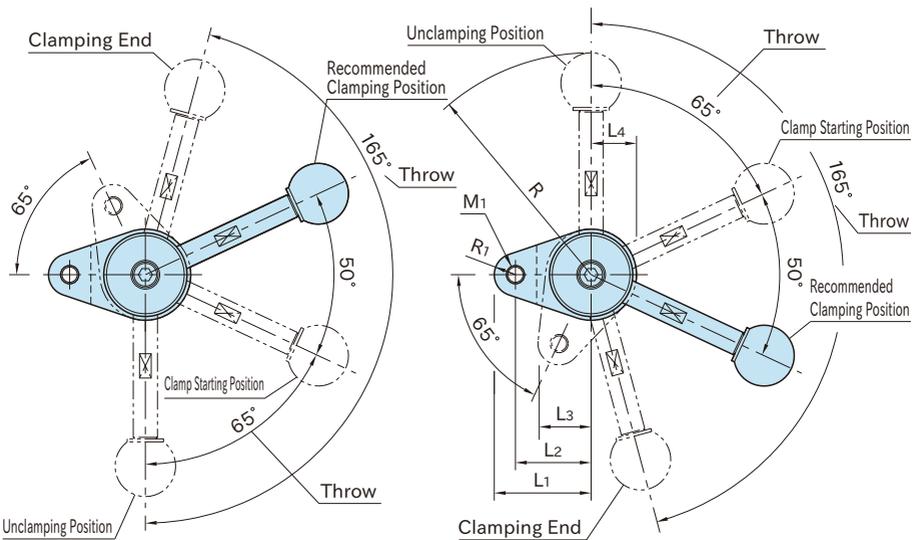
With Handle

Without Handle

Body / Shaft	Clamp Arm / Adaptor Head	Handle	Ball Knob
SCM440 steel Quenched and tempered Black oxide finish	S45C steel Quenched and tempered Black oxide finish	S45C steel Black oxide finish	ABS resin Black

Counterclockwise Clamping

Clockwise Clamping



Size/Type	Clamping Direction	H <sub>1</sub>	A	R <sub>1</sub>	M <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>3</sub>	D	M	D <sub>p</sub>
QLSW150R	CW	32	14	7	M6×1	25	32	17.5	30	M4×0.7 Depth 8	18
QLSW150L	CCW	*)									
QLSW200R	CW	45	16	8	M8×1.25	32	40	21.5	40	M6×1 Depth 12	25
QLSW200L	CCW	**)									

\*) Actual clamping height: 31.4 to 32.6 (clamping stroke: 1.2)

\*\*) Actual clamping height: 44.1 to 45.9 (clamping stroke: 1.8)

Size/Type	H	D <sub>1</sub>	H <sub>3</sub>	H <sub>2</sub>	M <sub>2</sub>	H <sub>4</sub>	L <sub>4</sub>	Clamping Force (kN)	Clamping Mechanism
QLSW150R	57.5	30	10	46	M5×0.8	51	15	0.8	Spiral Cam Cam Angle: 4°
QLSW150L									
QLSW200R	78.1	38	13	63	M6×1	69.5	20	1.2	
QLSW200L									

### ■ With Handle

Part Number	R	D <sub>2</sub>	Allowable Operating Load (N) ***)	Weight (g)
QLSW150R	73	20	150	320
QLSW150L				
QLSW200R	107	25	200	710
QLSW200L				

\*\*\*) Allowable load to operate the handle

### ■ Without Handle

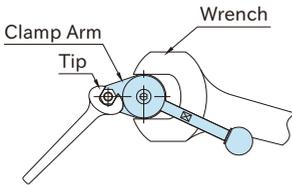
Part Number	Weight (g)
QLSW150NR	295
QLSW150NL	
QLSW200NR	660
QLSW200NL	

Note : The handle must be ordered separately.

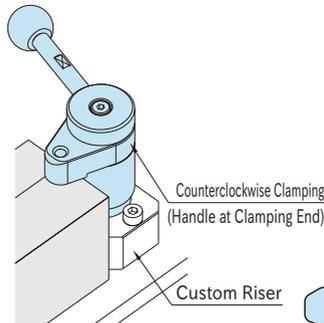
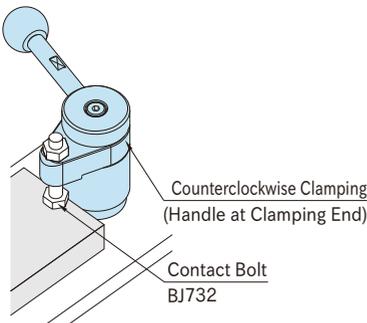
- **QLSL** STANDARD HANDLES
- **QLTL** ADJUSTABLE-TORQUE HANDLES

### ■ Tip Installation

When installing a tip on the clamp arm, lock the clamp arm using a wrench to prevent the clamp from receiving any torque.



### How To Use

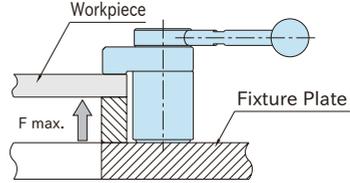


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**Technical Information**

■ Allowable Loads in Machining of Workpiece Bottom

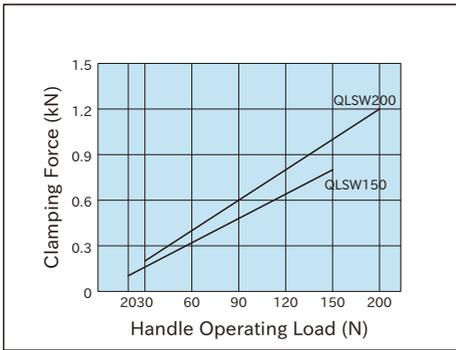
Type	Allowable Force To Workpiece Bottom (Per Clamp)
QLSW150	max. 2.1kN
QLSW200	max. 2.7kN



**Performance Curve**

■ QLSL STANDARD HANDLES

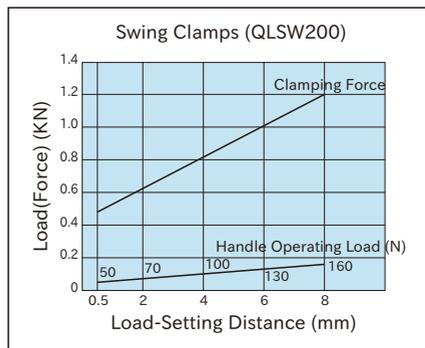
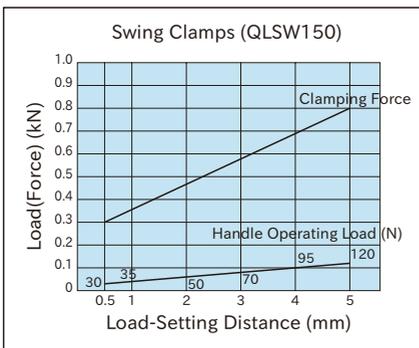
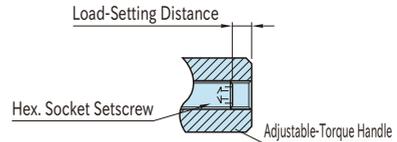
⚠ The performance curves shown below do not denote the guaranteed performance.



■ QLTL ADJUSTABLE-TORQUE HANDLES

Use a force gauge when measuring handle-operating loads.

⚠ The performance curves shown below do not denote the guaranteed performance.



## Clamp Arm

### ■ Custom Clamp Arm

Recommended Dimensions

Type	L <sub>5</sub> (Max. *)	L <sub>6</sub>	W	H <sub>6</sub>	L <sub>7</sub>	d (F8)	R <sub>2</sub>	B	H <sub>7</sub>	M <sub>3</sub>	C
<b>QLSW150</b>	45	15	30	12	32	10	11	1.5	5	M4×0.7	C5
<b>QLSW200</b>	55	20	40	16	42	16	15	2	6	M5×0.8	C8

\*) See page [QLSW-SH](#) clamping force vs. clamp - arm length

### ■ Installation / Removal

To install a clamp arm,

1. Fit it onto the shaft getting the stop pin received in the stop-pin slot provided on the clamp-arm bottom.
2. Place the adaptor head onto the shaft getting the shaft fitted into the shaft-receiving pocket in the adaptor head, and then lock the adaptor head using a hex. socket head cap screw.
3. Tighten the ball plungers inside the clamp arm.

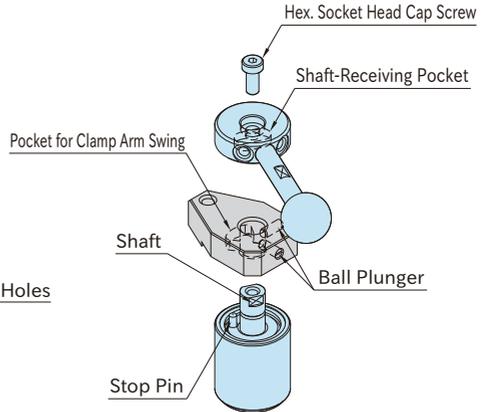
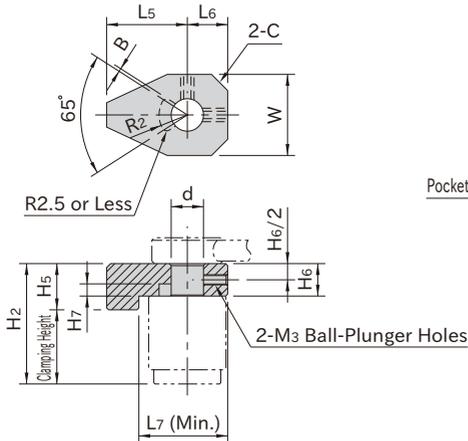
To remove the clamp arm, follow the above steps back.

### How to Determine H<sub>5</sub> Dimensions

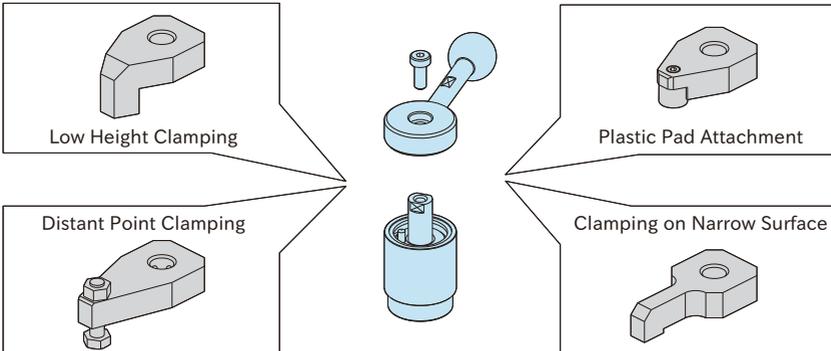
Type	H <sub>2</sub>	H <sub>5</sub>
<b>QLSW150</b>	46	46—Clamping Height
<b>QLSW200</b>	63	63—Clamping Height

### Ball Plunger

Type	Part Number
<b>QLSW150</b>	LBSTH4
<b>QLSW200</b>	LBSTH5

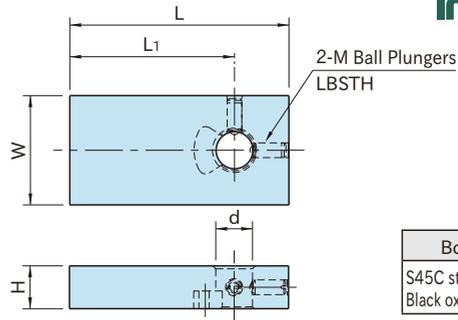


### ■ Clamp Arm Customization Examples



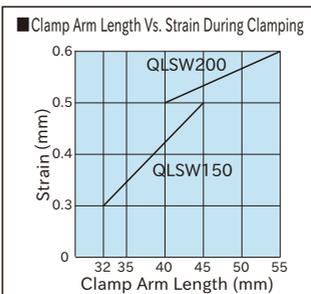
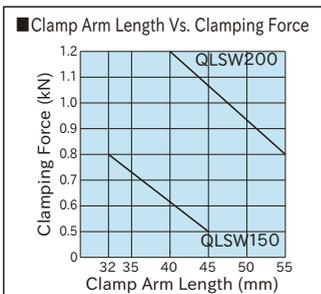
## QLSW-SH

## MACHINABLE CLAMP ARMS FOR STANDARD SWING CLAMPS



Part Number	L	W	H	d (F8)	L <sub>1</sub>	M	Allowable Weight of Clamping Tip (g) *	Weight (g)	Swing Clamps
QLSW150-SH	60	30	12	10	45	M4	100	150	QLSW150Series
QLSW200-SH	75	40	16	16	55	M5		330	QLSW200Series

\*) A clamping tip to mount on the end of the clamp arm must not weigh over 100g.



Notes:

- Clamp arm length denotes L<sub>1</sub> dimensions below.
- Clamping force and strain during clamping denote values gained when the max. allowable load is applied to the handle.

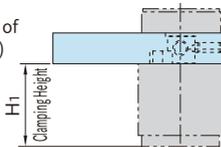
### Note

Use within smaller clamping stroke when the clamp arm becomes longer than standard one.

### How To Use

- Use for **QLSW** clamp arm customization
- Machine to your clamping requirements

(Clamping Height in Use of Machinable Clamp Arms)



Part Number	H <sub>1</sub>
QLSW150-SH	34 **)
QLSW200-SH	47 ***)

\*\* ) Actual clamping height: 33.4 to 34.6 (clamping stroke: 1.2)

\*\*\* ) Actual clamping height: 46.1 to 47.9 (clamping stroke: 1.8)

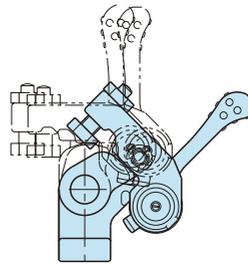
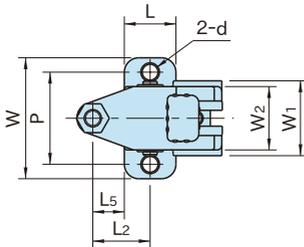


QLRE

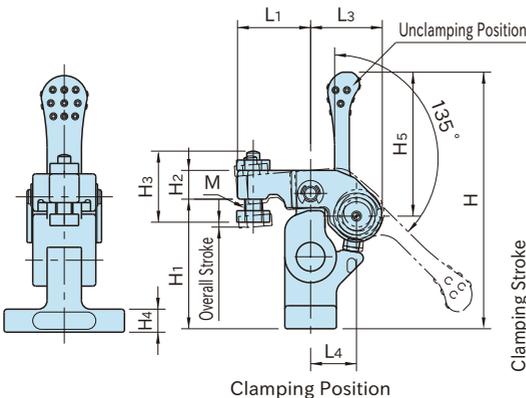
RETRACTABLE CLAMPS WITH CAM HANDLE



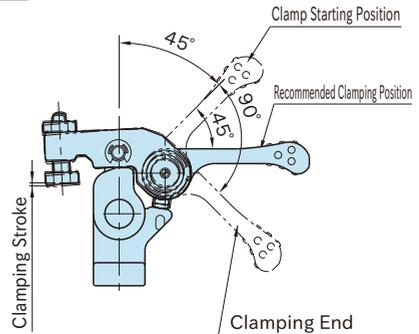
Body/Spindle	Arm/Joint	Cam Handle
S45C steel	SCM435 steel	SCM440 steel
Quenched and tempered	Quenched and tempered	Quenched and tempered
Black oxide finish	Black oxide finish	Black oxide finish



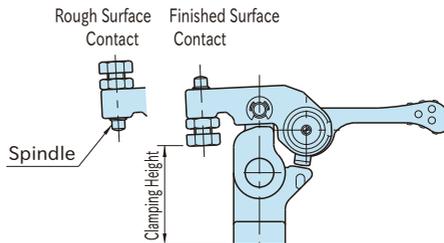
Unclamped



Clamping Position



Clamping Throw



Rough Surface Contact

Finished Surface Contact

Spindle

Clamping Height

Part Number	Clamping Height *)				Clamping Stroke	Overall Stroke	L <sub>2</sub>	L <sub>5</sub>	W	L	H <sub>4</sub>	d	P	H	L <sub>1</sub>	L <sub>3</sub>
	Finished Surface Contact		Rough Surface Contact													
	min.	max.	min.	max.												
<b>QLRE100</b>	32 (31.5~32.5)	40 (39.5~40.5)	35 (34.5~35.5)	43 (42.5~43.5)	1	1.5	20	11	42	18	8	5.5	32	89	25.5	25
<b>QLRE150</b>	37 (36.4~37.6)	48 (47.4~48.6)	42 (41.4~42.6)	53 (52.4~53.6)	1.2	1.8	25	14	52	22	10	6.6	40	109	32	31

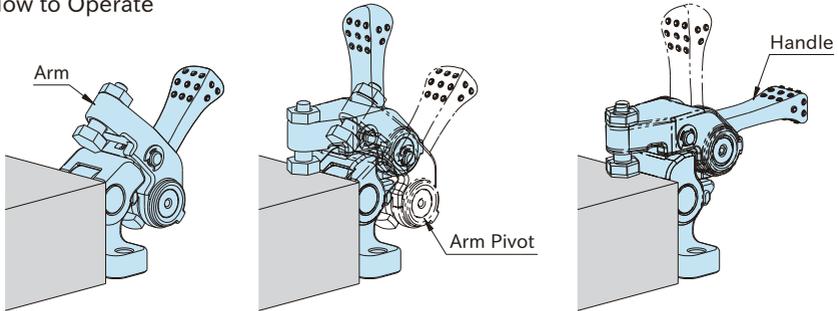
\*) Clamping height can be adjusted. The parenthesised values denote actual clamping height.

Part Number	W <sub>1</sub>	W <sub>2</sub>	H <sub>2</sub>	H <sub>1</sub>	M	H <sub>3</sub>	H <sub>5</sub>	L <sub>4</sub>	Cam Handles Part Number	Allowable Operating Load (N)**)	Clamping Force (kN)	Clamping Mechanism	Weight (g)
<b>QLRE100</b>	26	22	10	45	M6×1	24	50	16	QLCA-05	100	0.7	Spiral Cam	244
<b>QLRE150</b>	32	28	12	55	M8×1.25	30.5	63	20	QLCA-06	150	1.1	Cam Angle: 4°	468

\*\*\*) Allowable load to operate the handle

## How To Use

### How to Operate



1. Unclamped  
Load a workpiece.

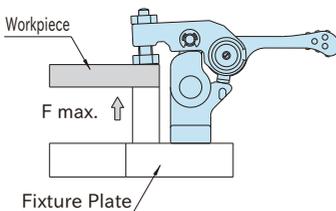
2. Clamping Setup  
Set the arm in clamping position holding it at the arm pivot.

3. Clamping  
Set the handle down to clamp the workpiece.  
(For unclamping, follow the above steps back.)

## Technical Information

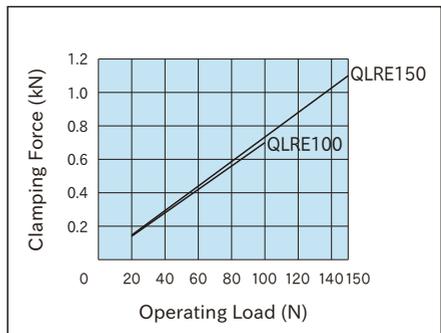
### Allowable Loads in Machining of Workpiece Bottom

Ensure that any force more than stated below is not applied.



Part Number	Allowable Force to Workpiece Bottom (per Clamp)
<b>QLRE100</b>	max. 5kN
<b>QLRE150</b>	max. 6kN

## Performance Curve



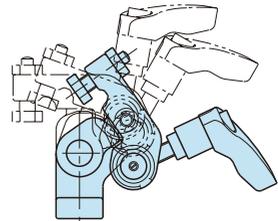
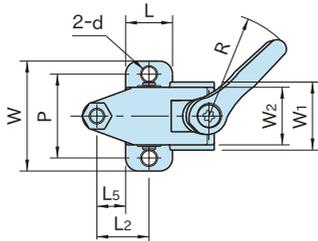
QLRE

RETRACTABLE CLAMPS WITH ADJUSTABLE HANDLE

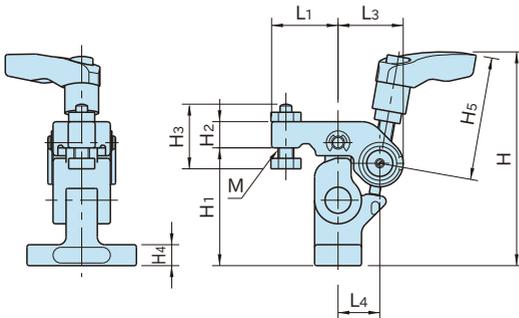


Body/Spindle	Arm/Joint
S45C steel Quenched and tempered Black oxide finish	SCM435 steel Quenched and tempered Black oxide finish

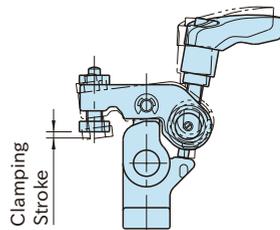
Screw clamping mechanism allows for longer clamping stroke and greater clamping force.



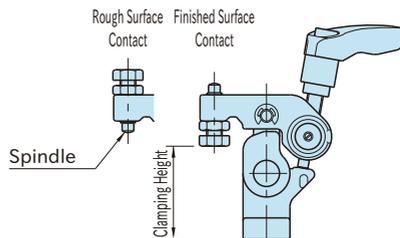
Unclamped



Clamping Position



Clamping Throw



Part Number	Clamping Height *)				Clamping Stroke	L <sub>2</sub>	L <sub>5</sub>	W	L	H <sub>4</sub>	d	P	H	L <sub>1</sub>	L <sub>3</sub>	W <sub>1</sub>
	Finished Surface Contact		Rough Surface Contact													
	min.	max.	min.	max.												
<b>QLRE-06</b>	32 (32~29.5)	40 (40~37.5)	35 (35~32.5)	43 (43~40.5)	2.5	20	11	42	18	8	5.5	32	81	25.5	25	26
<b>QLRE-08</b>	37 (37~33.5)	48 (48~44.5)	42 (42~38.5)	53 (53~49.5)	3.5	25	14	52	22	10	6.6	40	100	32	31	32

\*) Clamping height can be adjusted. The parenthesised values denote actual clamping height.

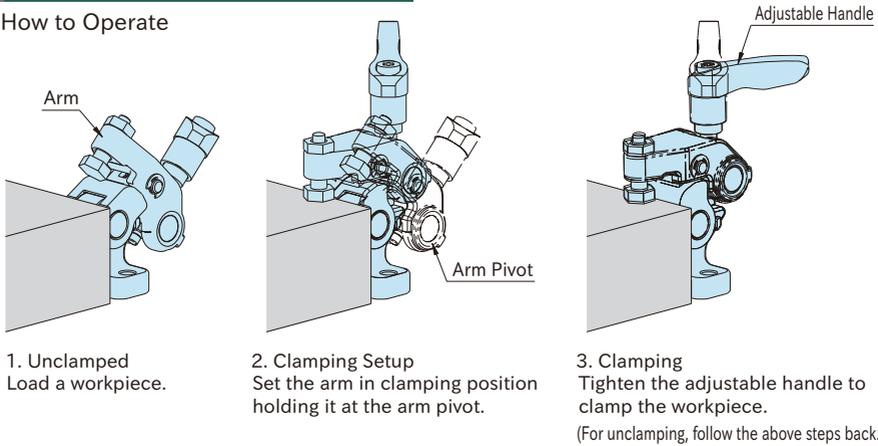
Part Number	W <sub>2</sub>	H <sub>2</sub>	H <sub>1</sub>	M	H <sub>3</sub>	R	H <sub>5</sub>	L <sub>4</sub>	Adjustable Handles **)	Allowable Operating Load (N ***)	Clamping Force (kN)	Clamping Mechanism	Weight (g)
<b>QLRE-06</b>	22	10	45	M6×1	24	40	47	16	FKF6-BR	170	2.4	Screw	242
<b>QLRE-08</b>	28	12	55	M8×1.25	30.5	65	63	20	FKF8-BR	210	4.2		490

\*\* ) Studs are bonded with FKF handles.

\*\*\*) Allowable load to operate the handle.

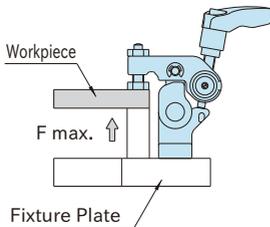
## How To Use

### How to Operate



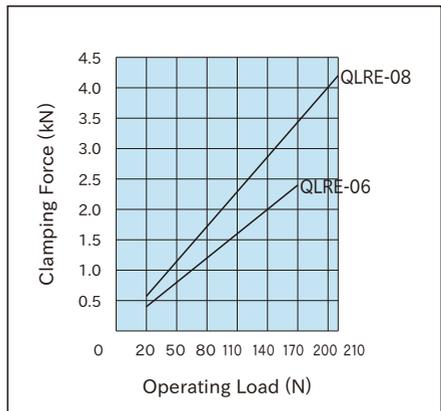
## Technical Information

■ Allowable Loads in Machining of Workpiece Bottom  
Ensure that any force more than stated below is not applied.



Part Number	Allowable Force to Workpiece Bottom (per Clamp)
<b>QLRE-06</b>	max. 5kN
<b>QLRE-08</b>	max. 6kN

## Performance Curve



QLRC

THRUST CLAMPS



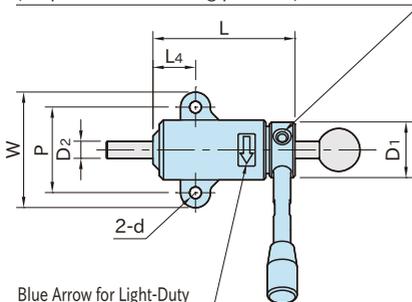
Light-Duty  
(Marked with Blue Arrow)

Heavy-Duty  
(Marked with Black Arrow)

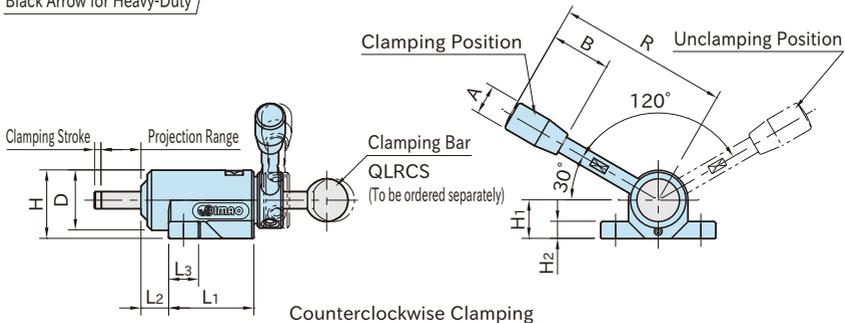
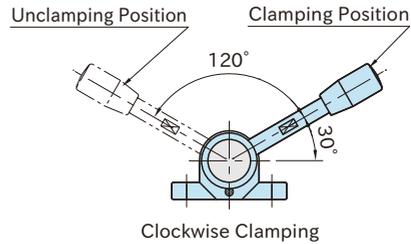
Note: Clamping bar is not included.

Body/Lever Arm	Cam	Handle
S45C steel Black oxide finish	SCM415 steel Carburized-hardened Black oxide finish	Phenolic plastic Black matte

M-4 Handle-Mounting Holes(provided every 90° angle)  
(4 options of mounting position)



Blue Arrow for Light-Duty  
Black Arrow for Heavy-Duty



Type	Clamping Stroke	D <sub>2</sub>	H <sub>1</sub>	L <sub>4</sub>	W	L <sub>3</sub>	H <sub>2</sub>	d	P	H	D	D <sub>1</sub>	L	L <sub>1</sub>	L <sub>2</sub>	R	B	A	M
<b>QLRC-08</b>	1.5	8	18	20	54	14	8	5.5	40	32	28	26	68.5	40	13	80	28	14	M5×0.8
<b>QLRC-12</b>	2.3	12	25	30	80	20	12	9	60	45	40	36	93.7	55	20	132	50	21	M6×1

## QLRC-L (Light-Duty)

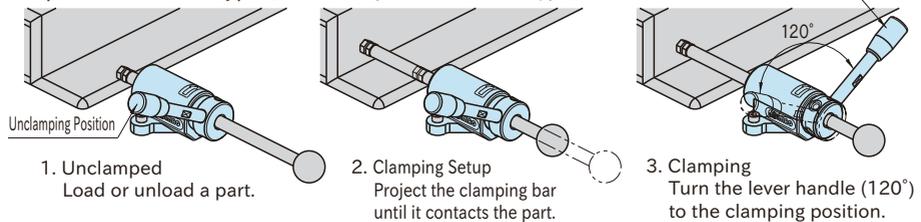
Part Number	Clamping Direction	Allowable Operating Load (N)	Clamping Force (kN)	Weight (g)	Clamping-Bar Projection Range
<b>QLRC-08R-L</b>	CW	40	0.2	330	QLRCS-08100 0 ~ 30
<b>QLRC-08L-L</b>	CCW				QLRCS-08125 0 ~ 55
<b>QLRC-12R-L</b>	CW	100	0.7	930	QLRCS-12125 0 ~ 29
<b>QLRC-12L-L</b>	CCW				QLRCS-12150 0 ~ 54
					QLRCS-12200 0 ~ 104

## QLRC (Heavy-Duty)

Part Number	Clamping Direction	Allowable Operating Load (N)	Clamping Force (kN)	Weight (g)	Clamping-Bar Projection Range
<b>QLRC-08R</b>	CW	80	0.5	330	QLRCS-08100 0 ~ 30
<b>QLRC-08L</b>	CCW				QLRCS-08125 0 ~ 55
<b>QLRC-12R</b>	CW	150	1.4	910	QLRCS-12125 0 ~ 29
<b>QLRC-12L</b>	CCW				QLRCS-12150 0 ~ 54
					QLRCS-12200 0 ~ 104

## How To Use

### ■ Operation of CW Type (Invert the operation for CCW type.)



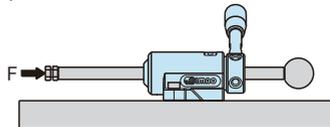
## Feature

- Spring-loaded clamp that provides constant clamping force.
  - Long clamping-bar projection range allows clamping a recessed part.
  - Clamping Bars are not included (must be ordered separately).
- (When using your own clamping bar, ensure that the diameter is finished to a h9 or better tolerance)

## Note

When a reaction force (F) becomes greater than a clamping force, the clamping bar slides back to get a part unclamped.

Type	Clamp Releasing Force
<b>QLRC-08-L</b>	$F > 0.2\text{kN}$
<b>QLRC-12-L</b>	$F > 0.7\text{kN}$
<b>QLRC-08</b>	$F > 0.5\text{kN}$
<b>QLRC-12</b>	$F > 1.4\text{kN}$



QLRCF

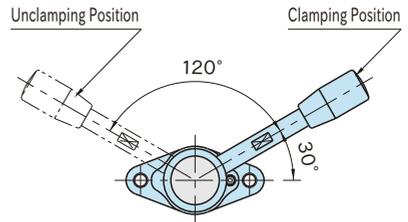
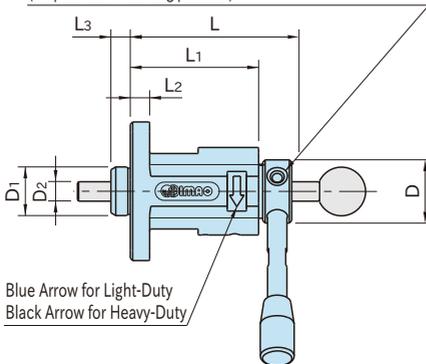
THRUST CLAMPS (Vertical)



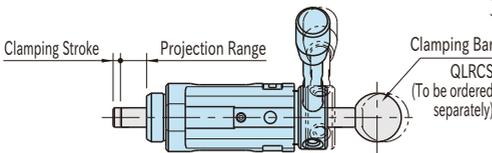
**Light-Duty**  
(Marked with Blue Arrow)      **Heavy-Duty**  
(Marked with Black Arrow)  
Note: Clamping bar is not included.

Body/Lever Arm	Cam	Handle
S45C steel Black oxide finish	SCM415 steel Carburized-hardened Black oxide finish	Phenolic plastic Black matte

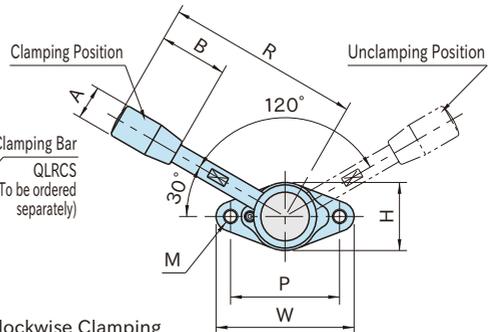
M1-4 Lever-Arm Mounting Holes (angle between 2 holes : 90°)  
(4 options of mounting position)



Clockwise Clamping



Counterclockwise Clamping



Type	Clamping Stroke	D <sub>2</sub>	W	H	L <sub>2</sub>	M	P	L	L <sub>1</sub>	L <sub>3</sub>	D	D <sub>1</sub> (-0.04 -0.08)	R	B	A	M <sub>1</sub>
QLRCF-08	1.5	8	57	28	8	M 6×1 (Prepared Hole 5.2)	45	68.5	53	8	26	20	80	28	14	M5×0.8
QLRCF-12	2.3	12	85	40	12	M10×1.5 (Prepared Hole 8.5)	65	90.7	72	12	36	30	132	50	21	M6×1

## QLRCF-L (Light-Duty)

Part Number	Clamping Direction	Allowable Operating Load (N)	Clamping Force (kN)	Weight (g)	Clamping-Bar Projection Range	
QLRCF-08R-L	CW	40	0.2	330	QLRCS-08100	0~22
QLRCF-08L-L	CCW				QLRCS-08125	0~47
					QLRCS-08150	0~72
QLRCF-12R-L	CW	100	0.7	930	QLRCS-12125	0~20
QLRCF-12L-L	CCW				QLRCS-12150	0~45
					QLRCS-12200	0~95

## QLRCF (Heavy-Duty)

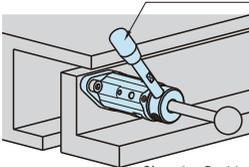
Part Number	Clamping Direction	Allowable Operating Load (N)	Clamping Force (kN)	Weight (g)	Clamping-Bar Projection Range	
QLRCF-08R	CW	80	0.5	330	QLRCS-08100	0~22
QLRCF-08L	CCW				QLRCS-08125	0~47
					QLRCS-08150	0~72
QLRCF-12R	CW	150	1.4	950	QLRCS-12125	0~20
QLRCF-12L	CCW				QLRCS-12150	0~45
					QLRCS-12200	0~95

### Feature

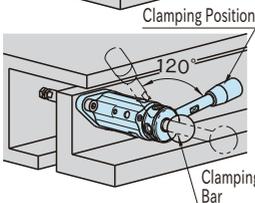
- Can be used in both vertical and horizontal clamping applications.
- The horizontal style is also available. (see page for [QLRC](#))
- Spring-loaded clamp that provides constant clamping force.
- Long clamping-bar projection range allows clamping a recessed part. (When using your own clamping bar, ensure that the diameter is finished to a h9 or better tolerance)

### How To Use

- Operation of CW Type (Invert the operation for CCW type.)  
Unclamping Position

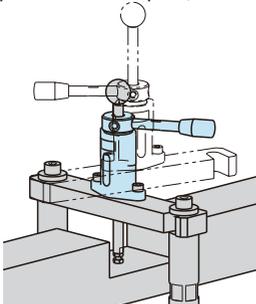


1. Unclamped  
Load or unload a part.



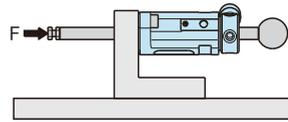
2. Clamping Setup  
Project the clamping bar until it contacts the part.
3. Clamping  
Turn the lever handle (120°) to the clamping position.

- Application Example (Vertical Clamping)



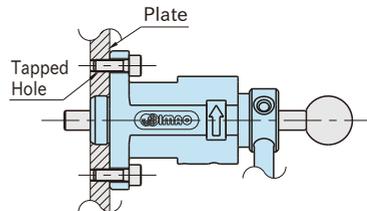
### Note

When a reaction force (F) becomes greater than a clamping force, the clamping bar slides back to get a part unclamped.



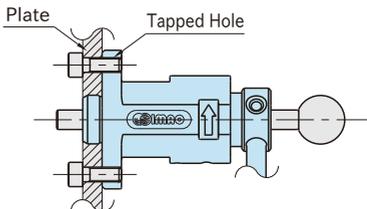
Type	Clamp Releasing Force
QLRCF-08-L	$F > 0.2\text{kN}$
QLRCF-12-L	$F > 0.7\text{kN}$
QLRCF-08	$F > 0.5\text{kN}$
QLRCF-12	$F > 1.4\text{kN}$

- How to Mount



- Face Mounting

(Use cap screws with one-size smaller threads than mounting-hole threads.)

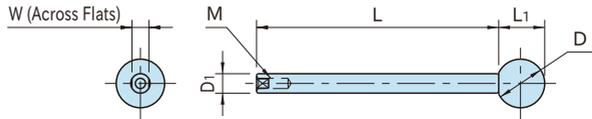


- Back Mounting

(Use cap screws with threads of the same size as mounting-hole threads.)

## QLRCS

## CLAMPING BARS

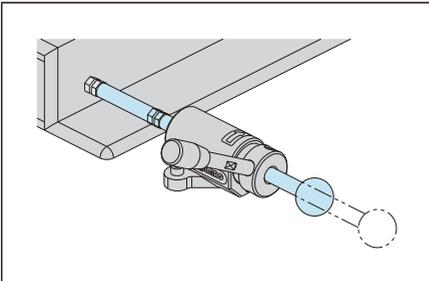


Part Number	D <sub>1</sub> (f8)	L	L <sub>1</sub>	D	W	M	Weight (g)
QLRCS-08100	8	100	19	20	7	M4×0.7 Depth 8	50
QLRCS-08125		125					60
QLRCS-08150		150					70
QLRCS-12125	12	125	24	25	10	M6×1 Depth 12	130
QLRCS-12150		150					150
QLRCS-12200		200					190

Arm	Ball Knob
S45C steel	ABS resin
Chrome plated	Black

### How To Use

- QLRCS THRUST CLAMPS
- QLRCS THRUST CLAMPS (Vertical)
- Can be cut shorter to a desired length.





QLSCH

CAM EDGE CLAMPS

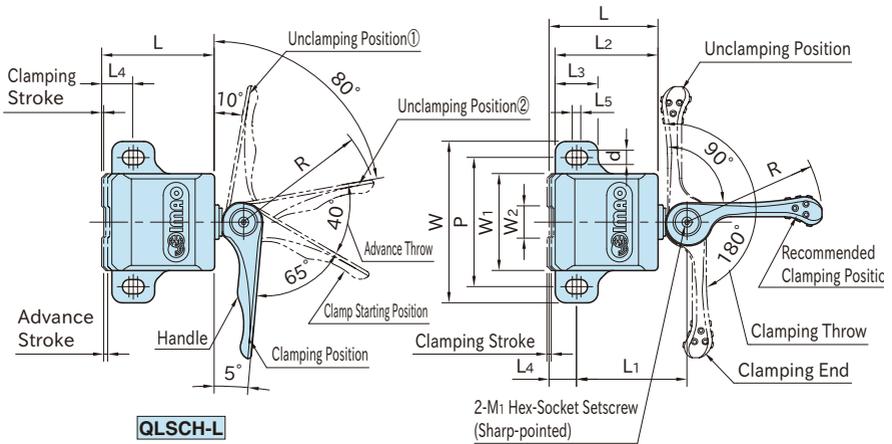


**QLSCH-L**  
(Light-Duty)

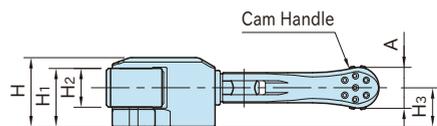
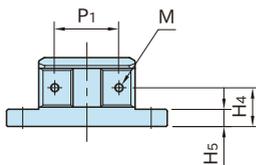


**QLSCH**  
(Standard)

Type	Body	Jaw/Handle Shaft	Handle
<b>QLSCH-L</b>	S45C steel Black oxide finished	S45C steel Quenched & tempered Black oxide finished Precision ground	SCM440 steel Quenched & tempered Electroless nickel plated
<b>QLSCH</b>			SCM440 steel Quenched & tempered Black oxide finished



**QLSCH-L**  
(Light-Duty)



**QLSCH**  
(Standard)

Size	W <sub>1</sub>	W <sub>2</sub>	H <sub>1</sub>	H <sub>2</sub>	M	P <sub>1</sub>	H <sub>4</sub>	L <sub>4</sub>	W	L <sub>3</sub>	H <sub>5</sub>	d	L <sub>5</sub>	P
<b>QLSCH32</b>	45	15	27	18	M4×0.7 Depth 6	30	18	13	75	20	8	6.6	3	60
<b>QLSCH40</b>	60	20	33	22	M5×0.8 Depth 8	40	22	17	100	26	10	8.6	4	80

Size	H	L	L <sub>2</sub>	R	L <sub>1</sub>	H <sub>3</sub>	M <sub>1</sub>
<b>QLSCH32</b>	32	51	48	63	51.5	18	M4×0.7-5L
<b>QLSCH40</b>	40	67	63	80	67	22	M5×0.8-6L

### Related Product



Stronger type without handle is available.  
**QLSCH-HI SIDE CLAMPS**

### Light-Duty

Part Number	A	Clamping Stroke *	Advance Stroke	Operating Load (N) **	Clamping Force (kN)	Weight (g)
<b>QLSCH32L</b>	14	0.3	0.8	40	0.6	600
<b>QLSCH40L</b>	18	0.4		50	1.2	1320

\* Dimensional variations between workpieces should be 0.1 mm or less.

\*\* Load needed to turn the handle to clamping position

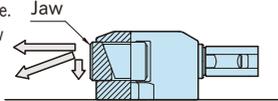
### Standard

Part Number	A	Clamping Stroke	Handle Number	Operating Load (N) ***	Clamping Force (kN)	Weight (g)
<b>QLSCH32</b>	19	1.6	QLCA-06	150	2	620
<b>QLSCH40</b>	24	2.2	QLCA-08	200	3	1360

\*\*\* Allowable load to operate the handle

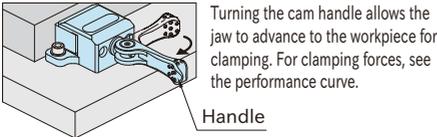
### Feature

- The cam handle allows fast clamping in single operation.
- Spring-loaded light-duty style allows distributing constant clamping force.
- Standard style allows adjusting clamping force depending on operating loads.
- Precision-ground jaw is perfect for clamping the workpiece on its finished surface.
- In clamping, the jaw provides downward force to prevent part lift.



### How To Use

#### Standard

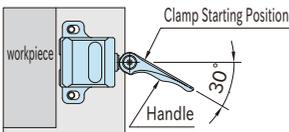


Turning the cam handle allows the jaw to advance to the workpiece for clamping. For clamping forces, see the performance curve.

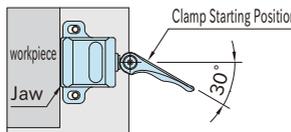
Handle

### Installation Instructions for Light-Duty Style

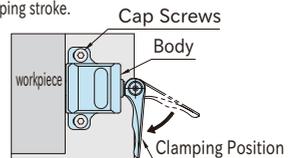
The steps below must be followed so that constant clamping force can be distributed within the clamping stroke.



Set the handle to the clamp starting position.



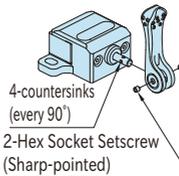
Contact the jaw to the workpiece.



Fasten the clamp with hex socket-head cap screws, and then turn the handle to the clamping position for clamping.

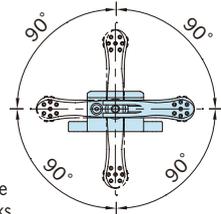
### Changing Handle Position

The handle shaft has 4 countersinks which are provided every 90° for 4 options of handle position.

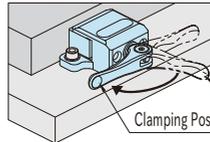


4-countersinks (every 90°)  
2-Hex Socket Setscrew (Sharp-pointed)

Note: The setscrews must be tightened into 2 countersinks.



#### Light-Duty



Turning the handle to the clamping position allows clamping the workpiece with constant clamping force.

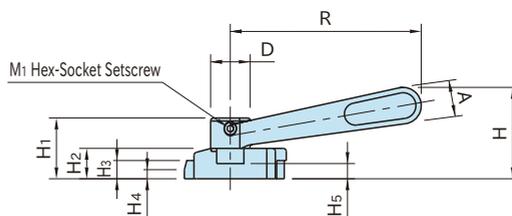
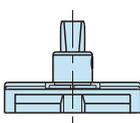
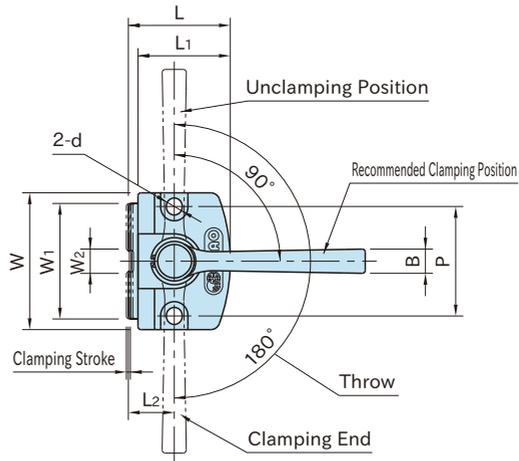
Handle

## QLSCL-R

## LOW-PROFILE CAM EDGE CLAMPS



Body	Jaw/Cam	Handle
S45C steel Black oxide finish	SCM440 steel Quenched and tempered Black oxide finish	S45C steel Quenched and tempered Black oxide finish



Part Number	Clamping Stroke	W <sub>1</sub>	W <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>	L <sub>2</sub>	W	L	H <sub>2</sub>	d	P	H <sub>5</sub>	L <sub>1</sub>	Clamping Mechanism
<b>QLSCL10R</b>	1	38	8	6	3	15	45	33.5	10	5.2	36	5	30.5	Spiral Cam
<b>QLSCL15R</b>	2	60	12	9	5	22	70	50	15	8.2	55	7	46	Cam Angle: 4°

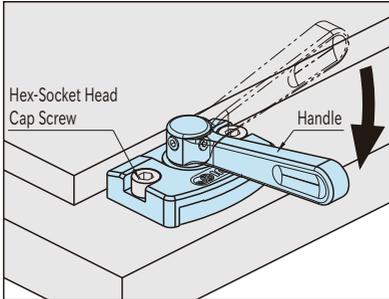
Part Number	H	D	H <sub>1</sub>	R	A	B	M <sub>1</sub>	Allowable Operating Load (N *)	Clamping Force (kN)	Weight (g)
<b>QLSCL10R</b>	30	13	20	63	12	8	M4X0.7-4L	170	4	130
<b>QLSCL15R</b>	46	19	30	100	18	12	M5X0.8-5L	280	6	440

\*) Allowable load to operate the handle

## Feature

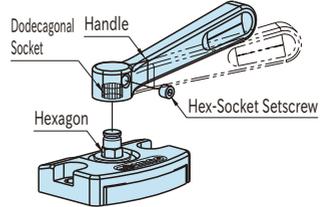
Designed to prevent part lift.

## How To Use



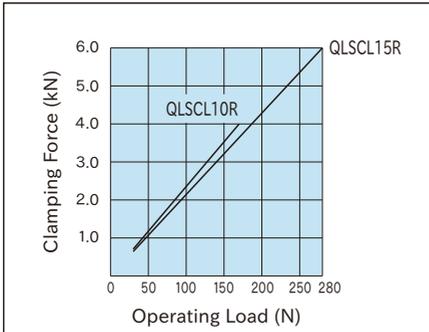
Turning the handle allows the cam to project the jaw for clamping. When the handle is turned back for unclamping, the loaded spring lets the jaw return to the original position.

## How to Change Handle Position



The handle has the dodecagonal socket to allow changing the handle position by 30°

## Performance Curve



## Note

Ensure that mounting surfaces are finished to  $\sqrt{6.3}$  (6.3a) or better, without any scratches or dents.

## QLSCL-NR

### LOW-PROFILE CAM EDGE CLAMPS



Without handle type is available.

## CP135-L

## SPIRAL CAM CLAMPS



CP135-AL

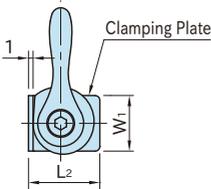


CP135-L

## ★Key Point

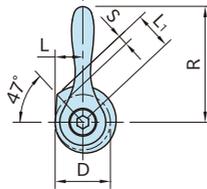
Space saving.  
Long clamping stroke.

Spiral Cam Clamp	Handle	Clamping Plate
SCM440 steel Black oxide finished HRC33-39	SCM440 steel Black oxide finish HRC30-35	SUS304CSP stainless steel



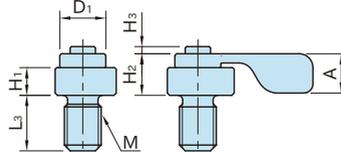
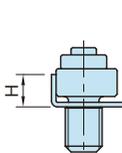
CP135-AL

(With Clamping Plate)



CP135-L

(Without Clamping Plate)



Type	S	L	L <sub>1</sub>	D	M	H <sub>1</sub>	L <sub>3</sub>	D <sub>1</sub>	H <sub>2</sub>	R	H <sub>3</sub>	A	Allowable Operating Load (N)	Clamping Force (kN)
CP135-08001	2.2	6	8.2	12	M 8×1.25	6	12	10	9	25	1.5	8.5	50	0.3
CP135-10001	2.5	7	9.5	14	M10×1.5	7	15	12	11	30	1.8	10	70	0.5
CP135-12001	2.9	8	10.9	16	M12×1.75	8	18	14	13	40	2.2	12	100	0.7

## CP135-AL (With Clamping Plate)

Part Number	H	W <sub>1</sub>	L <sub>2</sub>	Clamping Plates	Weight (g)
CP135-08001AL	7	12	15.5	CP135-08001P	19
CP135-10001AL	8	14	18	CP135-10001P	32
CP135-12001AL	9	16	20	CP135-12001P	54

## CP135-L (Without Clamping Plate)

Part Number	Weight (g)
CP135-08001L	17
CP135-10001L	30
CP135-12001L	51

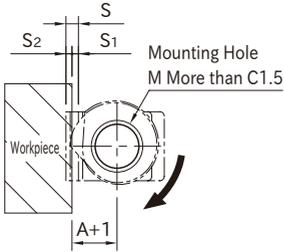
## Feature

- The spiral cam provides quick and powerful clamping.
- The simple design keeps cost low and the small size allows more workpieces per load.
- Clamping Plate avoids marring workpiece surfaces.

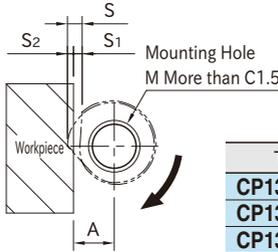
## How To Use

### Mounting Hole Dimension

With Clamping Plate



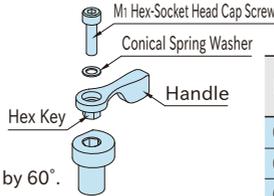
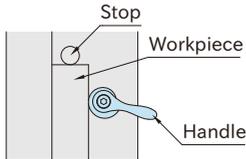
Without Clamping Plate



Type	A	S	S <sub>1</sub>	S <sub>2</sub>	M
CP135-08001	7.1	2.2	1.1	1.1	M 8x1.25
CP135-10001	8.3	2.5	1.3	1.2	M10x1.5
CP135-12001	9.5	2.9	1.5	1.4	M12x1.75

Note: Dimension A and A+1 are the recommended distances between the mounting hole and the end of the workpiece.

### How to Install Handle

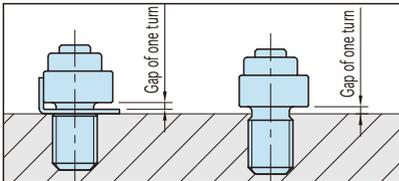


The handle position is adjustable by 60°.

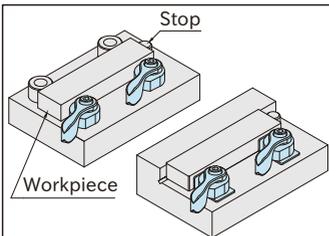
Part Number	M <sub>1</sub>	Recommended Tightening Torque (N·m)
CP135-08001L	M3x0.5	1.2
CP135-10001L	M4x0.7	3
CP135-12001L	M5x0.8	6

### Note

Tighten Spiral Cam Clamp fully and loosen it about one turn. Then mount a workpiece.



- Tighten clockwise to clamp the workpiece.
- Mount a stop on the right side of the workpiece.



### CP135-P

### Clamping Plates



### CP135

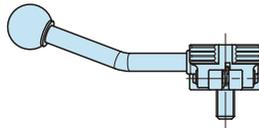
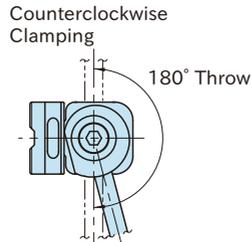
### SPIRAL CAM CLAMPS



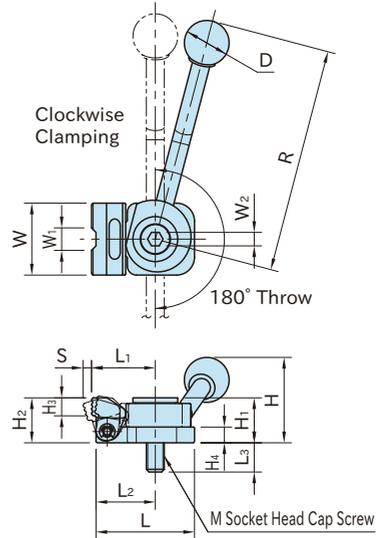
Without handle type is available.

## QLSC

## CAM EDGE CLAMPS



Body/Jaw	Cam/Handle	Ball Knob
SCM440 steel Quenched and tempered Black oxide	SCM435 steel Quenched and tempered Black oxide	ABS resin Black



Part Number	Clamping Direction	H <sub>2</sub>	S	W	W <sub>1</sub>	H <sub>3</sub>	L <sub>1</sub>	L	L <sub>2</sub>	H <sub>4</sub>	M	L <sub>3</sub>	H <sub>1</sub>	H
QLSC-08R	CW	20	3.8	32	10	8	28.5	44	26.5	7	M 8×1.25	13	20	38
QLSC-08L	CCW													
QLSC-12R	CW	30	5.5	46	14	12	39.5	62	37.5	11	M12×1.75	17	30	55
QLSC-12L	CCW													

Part Number	R	D	W <sub>2</sub>	Allowable Operating Load (N)	Clamping Force (kN)	Weight (g)
QLSC-08R	100	20	6	250	2.5	195
QLSC-08L						
QLSC-12R	146	25	10	400	5	600
QLSC-12L						

### Feature

Enables one-touch clamping / unclamping of workpiece.

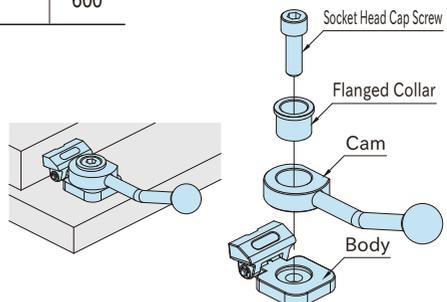
### How To Use

Secure the body and the flanged collar with a socket head cap screw, and then turn the the handle to clamp a workpiece.

### Related Product



**B.J162** CAM EDGE CLAMPS  
Without handle type is available.



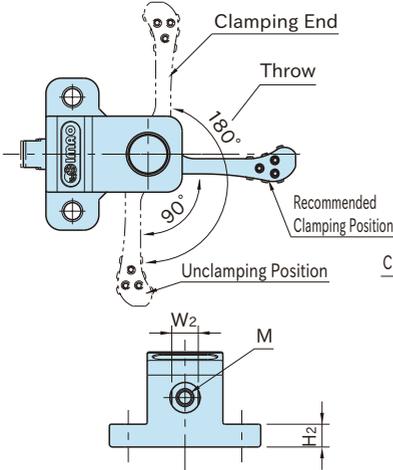
QLCP

CAM PUSH CLAMPS

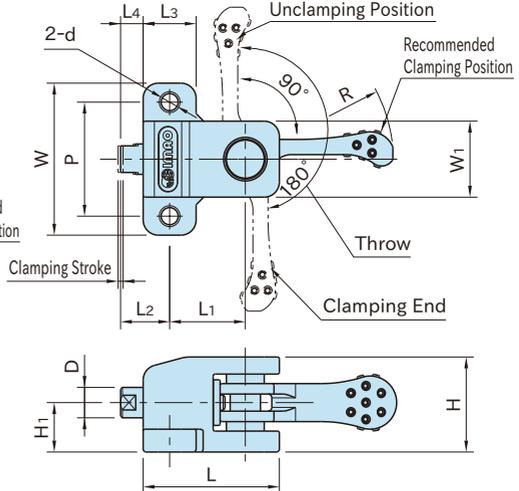


Body	Piston / Pin	Cam Handle
S45C steel Black oxide finish	S45C steel Quenched and tempered Black oxide finish	SCM440 steel Quenched and tempered Black oxide finish

Counterclockwise Clamping



Clockwise Clamping

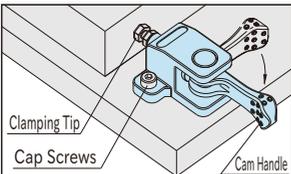


Part Number	Clamping Direction	Clamping Stroke	H <sub>1</sub>	D	W <sub>2</sub>	M	L <sub>2</sub>	L <sub>4</sub>	W	L <sub>3</sub>	H <sub>2</sub>	d	P	H	L	W <sub>1</sub>	R	L <sub>1</sub>	Cam Handle
QLCP080R	CW	1.2	13	8	7	M4x0.7 Depth 8	13	6	40	14	6	4.5	30	25	36	20	40	20	QLCA-04
QLCP080L	CCW																		
QLCP150R	CW	1.6	18	12	10	M6x1 Depth 12	19	9	55	20	10	6.6	40	33	50	26	63	28	QLCA-06
QLCP150L	CCW																		

Part Number	Allowable Operating Load (N) *	Clamping Force (kN)	Clamping Mechanism	Weight (g)
QLCP080R	80	0.9	Spiral Cam Cam Angle: 4°	130
QLCP080L				
QLCP150R	150	2.4		350
QLCP150L				

\* Allowable load to operate the cam handle

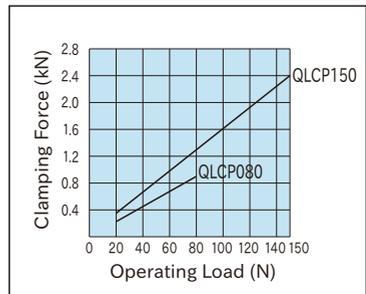
How To Use



Turning the handle in the clamping direction lets the cam work to project the piston for clamping.

Turning the handle back lets the spring work to retract the piston for unclamping.

Performance Curve



Feature

The tapped hole in the piston allows a tip to be fitted to the push clamp.

## QLPCT

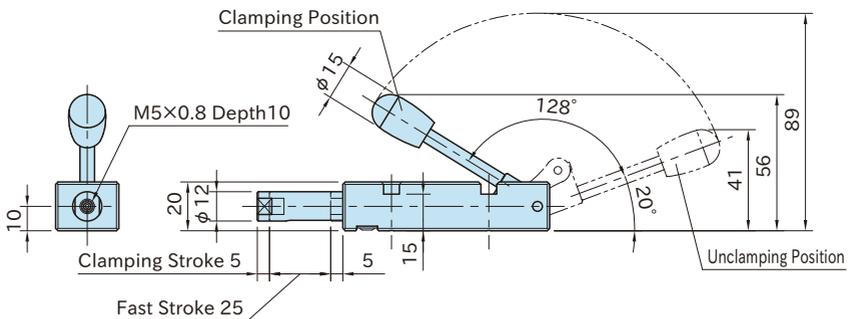
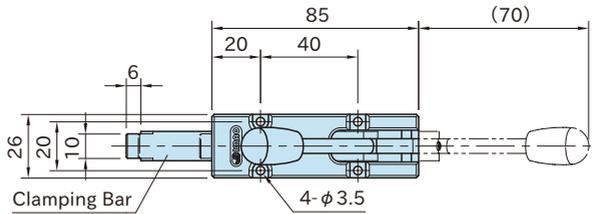
## PRECISION THRUST CLAMPS



(Clamping)

(Unclamping)

Body	Clamping Bar
AC7A aluminum Anodized	S45C steel Solid film lubricated
Linkage End	Knob
S45C steel Black oxide finished	Phenolic plastic Black



Part Number	Clamping Force(N) Initial - Final *)	Weight (g)
<b>QLPCT20-07</b>	55~ 85	170
<b>QLPCT20-13</b>	90~175	

\*) The minimum clamping force at clamping end position, and the maximum clamping force at clamp starting position.

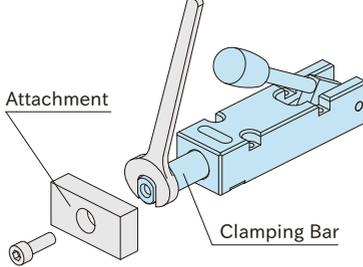
## Feature

- Precision Thrust Clamps can clamp at the same position by precise projection of clamping bars.
- Spring-loaded clamp provides constant clamping force.
- The handle clicks to indicate completed clamping.

## Note

### How to Install Attachments

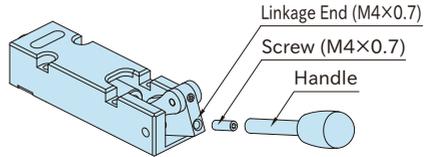
When installing an attachment on the clamping bar, lock the clamping bar using a wrench to prevent it from receiving any torque.



### How to Replace Handle

The handle is replaceable.

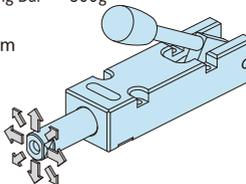
When installing/removing a handle, do not apply torque to the Linkage End.



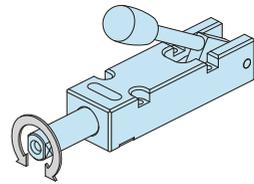
## Technical Information

### Allowable Load and Accuracy of Clamping Bar

- Allowable Weight of Attachments on Clamping Bar ... 500g
- Deflection ...  $\pm 0.05$
- Allowable Rotation Torque ...  $0.5\text{N}\cdot\text{m}$
- Rotation Accuracy ...  $\pm 0.1^\circ$  (Under no load)
- ...  $\pm 1^\circ$  (Under load at allowable rotation torque)



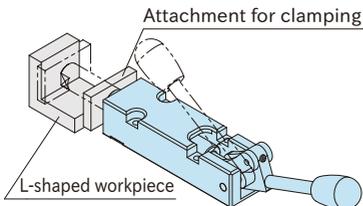
<Allowable Weight / Deflection>



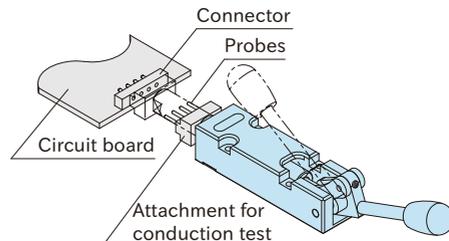
<Allowable Rotation Torque / Rotation Accuracy>

## How To Use

For clamping a recessed part / clamping with constant clamping force



For press-fit fixtures and conduction test fixtures that require precise projection of clamping bars.



QLPD

PULL CLAMPS (Standard)



( CCW Clamping )  
( With Handle )



( CW Clamping )  
( Without Handle )



( CW Clamping )  
( With Handle )

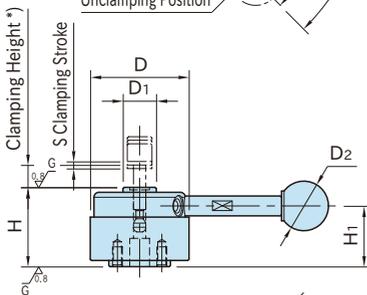
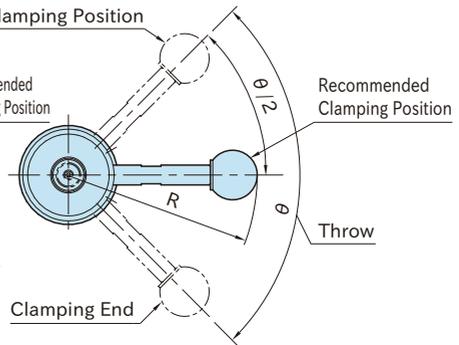
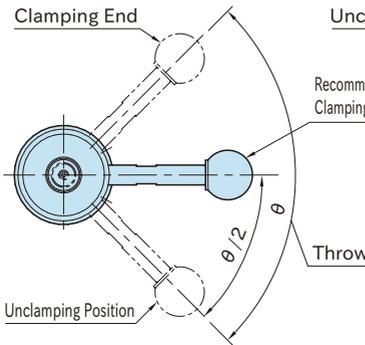
Note: Clamping Pins or Screws must be ordered separately.

★Key Point  
Easy clamping without screws.

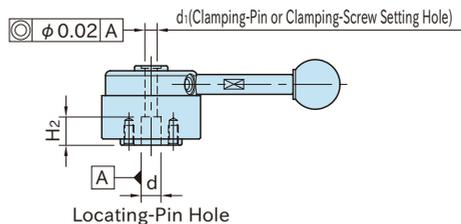
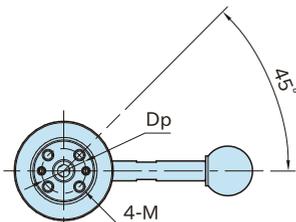
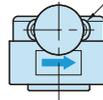
Body	Handle Shank	Ball Knob
SCM440 steel Quenched and tempered Black oxide finish	S45C steel Black oxide finish	ABS resin Black

Counterclockwise Clamping

Clockwise Clamping



M1-3 Handle Mounting Holes  
(Angle between 2 holes:30°)  
3 Options of Handle Mounting Position



Type	S	d (G6)	d <sub>1</sub> (F7)	H <sub>2</sub>	D <sub>1</sub>	H (±0.01)	D	θ	Dp	M
<b>QLPD150</b>	1.5	8	5	10	13.5	32	40	90°	18	M4×0.7 Depth 8
<b>QLPD200</b>	2	12	8	13	18	40	50	110°	25	M6×1 Depth 9

Type	M <sub>1</sub>	H <sub>1</sub>	Clamping Force (kN)	Clamping Mechanism	Recommended Workpiece Thickness Tolerance **)
<b>QLPD150</b>	M5×0.8	24.5	0.9	Spiral Cam Cam Angle: 4°	±0.3
<b>QLPD200</b>	M6×1	30.7	2.5		±0.5

### ■ With Handle

Part Number	Clamping Direction	R	D <sub>2</sub>	Allowable Operating Load(N) ***)	Weight (g)
<b>QLPD150R</b>	CW	76.5	20	150	245
<b>QLPD150L</b>	CCW				
<b>QLPD200R</b>	CW	111.5	25	200	470
<b>QLPD200L</b>	CCW				

### ■ Without Handle \*\*\*\*)

Part Number	Clamping Direction	Weight (g)
<b>QLPD150NR</b>	CW	220
<b>QLPD150NL</b>	CCW	
<b>QLPD200NR</b>	CW	420
<b>QLPD200NL</b>	CCW	

\*) Grip length of **QLPD-X** Clamping Pin (workpiece thickness)

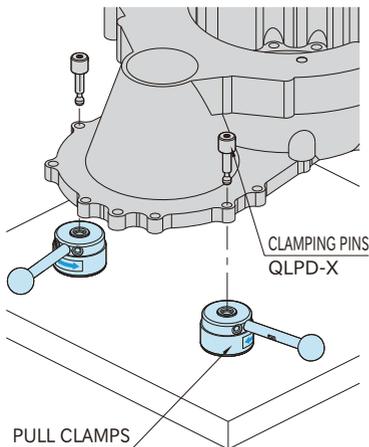
\*\* ) Maintaining these recommended tolerances allows minimizing the variation of handle position in the clamping mode in clamping with the use of the Clamping Pin.

\*\*\* ) Allowable load to operate the handle.

\*\*\*\* ) The handle must be ordered separately.

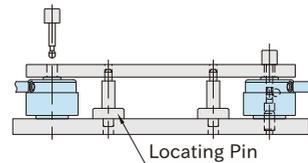
- **QLSL** STANDARD HANDLES
- **QLTL** ADJUSTABLE-TORQUE HANDLES

## How To Use



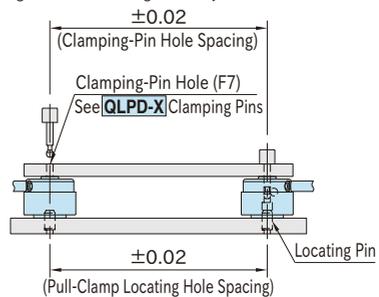
### ■ How to Locate Workpiece

#### 1. Basic Method



#### 2. Method for clamping and locating a workpiece at a time

Give an accuracy shown below to the hole spacing to generate a locating accuracy of ±0.08.

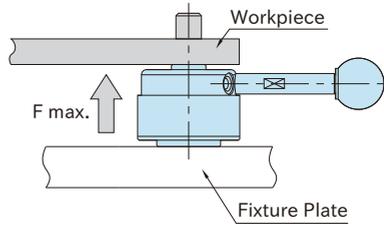


Continuing on Next Page

## Technical Information

■ Allowable Loads in Machining of Workpiece Bottom  
Ensure that a force more than indicated below is not applied to the workpiece bottom.

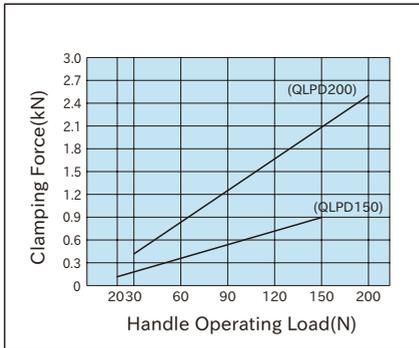
Type	Allowable Force To Workpiece Bottom (Per Clamp)
QLPD150	max.2 kN
QLPD200	max.5.5kN



## Performance Curve

### ■ QLSL STANDARD HANDLES

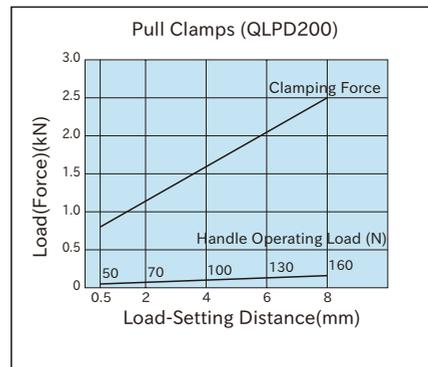
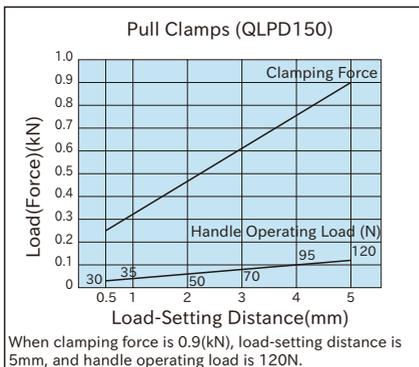
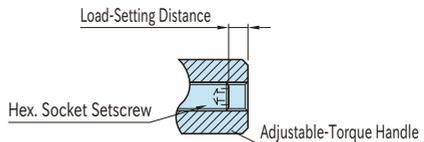
⚠ The performance curves shown below do not denote the guaranteed performance.



### ■ QLTL ADJUSTABLE-TORQUE HANDLES

Use a force gauge when measuring handle-operating loads.

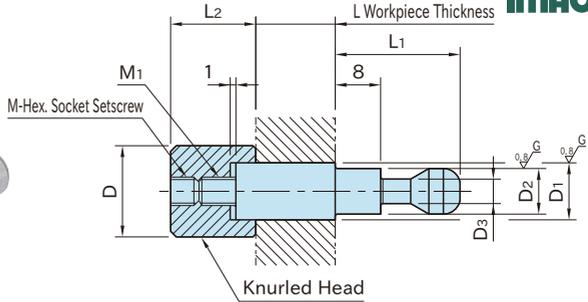
⚠ The performance curves shown below do not denote the guaranteed performance.



QLPD-X

CLAMPING PINS (Standard)

On Request



L dimension is adjustable by ±1mm to fit actual workpiece thickness.

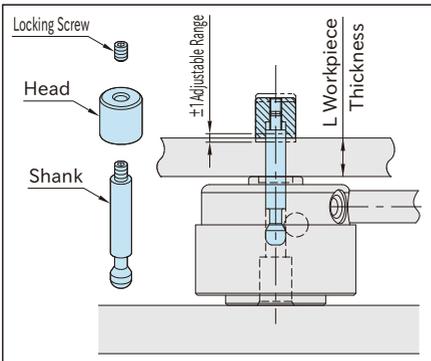
Shank	Head
SCM435 steel Induction hardened(taper seat) Precision ground	S45C steel Quenched and tempered Black oxide finish

Part Number	D <sub>2</sub> (f7)	D <sub>1</sub> (f7)	L* (By 0.1 mm)	D	L <sub>2</sub>	L <sub>1</sub>	D <sub>3</sub>	M
QLPD150-5X 5- (L Dim. in mm)	5	5	3 ≤ L ≤ 50	10	10	17	3	M3×0.5-4L
QLPD150-5X 6- (L Dim. in mm)		6						
QLPD200-8X 8- (L Dim. in mm)	8	8	4 ≤ L ≤ 80	16	15	22	4.3	M5×0.8-5L
QLPD200-8X10- (L Dim. in mm)		10						

Part Number	M <sub>1</sub>	Weight (g)	Pull Clamps
QLPD150-5X 5- (L Dim. in mm)	M3×0.5	min. 8~max.16	QLPD150Series
QLPD150-5X 6- (L Dim. in mm)		min. 8~max.19	
QLPD200-8X 8- (L Dim. in mm)	M5×0.8	min.30~max.60	QLPD200Series
QLPD200-8X10- (L Dim. in mm)		min.31~max.77	

\*) For ordering, specify workpiece thickness.

How To Use



Note

The length of L dimension should be decided depending on the workpiece thickness.

Ordering Example

**QLPD150-5×5-10.5**

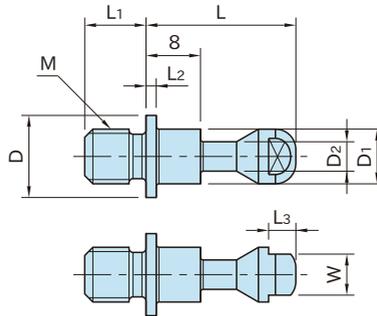
Shank Size

L Dim.

※ QLPD150-5×5 for 10.5mm thickness workpiece.

## QLPD-M

## CLAMPING SCREWS (Standard)



Body
SCM435 steel
Quenched and tempered
Black oxide finish

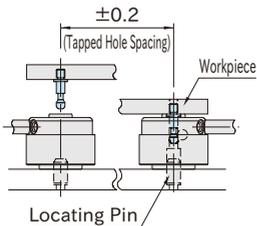
Part Number	D <sub>1</sub>	M	L <sub>1</sub>	L	D	L <sub>2</sub>	D <sub>2</sub>	W	L <sub>3</sub>	Weight (g)	Pull Clamps
QLPD150-M 5	5	M 5×0.8	6	17	8	1.2	3	4	2.5	3	QLPD150
QLPD150-M 6		M 6×1	7							4	
QLPD200-M 8	8	M 8×1.25	9	22	12	1.5	4.3	6	4	10	QLPD200
QLPD200-M10		M10×1.5	11							13	

**Note**

Custom Clamping Screws (different screw thread sizes) are available on request.

**How To Use**

## Recommended Spacing Tolerance in Use of Clamping Screws

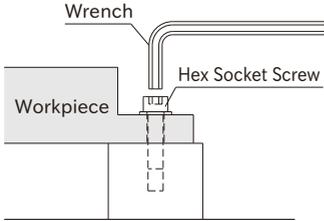


## Advantage of PULL CLAMPS

### Conventional Method

#### Conventional

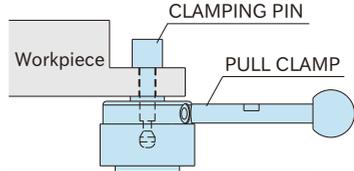
Uses hex socket screw



Requires wrench & screw in addition to block for clamping.

#### QLPD PULL CLAMP

Uses dedicated clamping pin



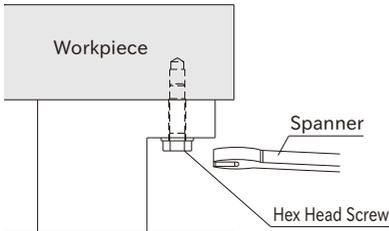
Simply turn the handle after inserting the pin.

=Setup time becomes 1/3!!

### Conventional Method

#### Conventional

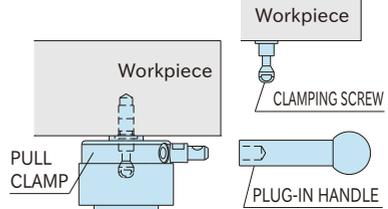
Uses hex head screw



Require to operate from bottom.

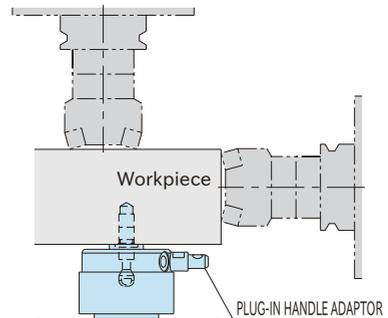
#### QLPD PULL CLAMPS

Use dedicated clamping screw



Simply turn the handle after inserting the clamping screw mounted on the workpiece.

=Setup time becomes 1/3!!



PLUG-IN HANDLE type enables machining from 5 sides.

QLPDH

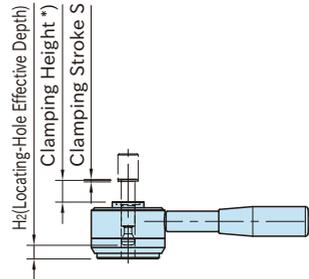
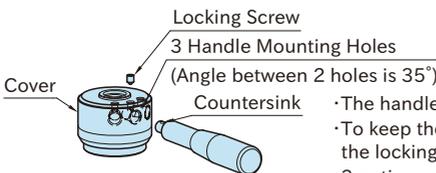
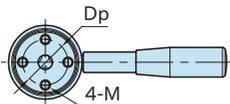
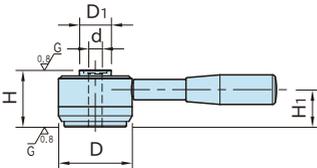
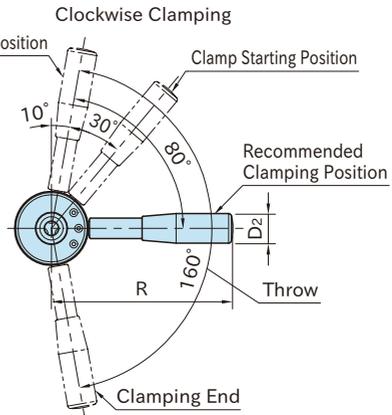
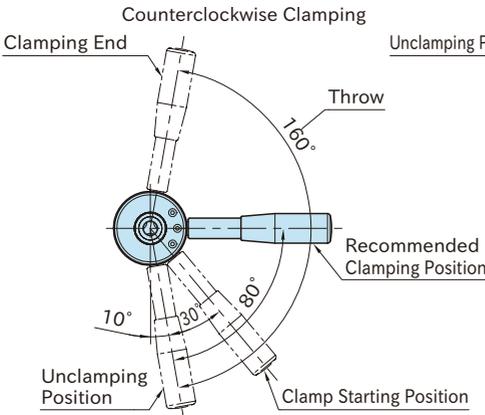
PULL CLAMPS (Heavy)



★ **Key Point**  
Easy clamping without screws.

Note: Clamping Pins or Screws must be ordered separately.

Body	Handle Shank	Handle
SCM440 steel Quenched and tempered Black oxide finish	S45C steel Quenched and tempered Black oxide finish	Phenolic plastic Black



- The handle can be removed by loosening the locking screw.
- To keep the handle mounted permanently, make sure that the locking screw is fully tightened.
- 3 options of handle mounting position.

Part Number	Clamping Direction	S	d (F7)	H <sub>2</sub>	D <sub>1</sub>	H (±0.01)	D	M	Dp	R
<b>QLPDH400R</b>	CW	2	12	10	28	50	65	M 8×1.25 Depth 14	40	160
<b>QLPDH400L</b>	CCW									
<b>QLPDH500R</b>	CW	2.5	16	12	34	63	80	M10×1.5 Depth 18	50	180

Part Number	D <sub>2</sub>	H <sub>1</sub>	Allowable Operating Load (N)**	Clamping Force (kN)	Clamping Mechanism	Recommended Workpiece Thickness Tolerance***	Weight (kg)
<b>QLPDH400R</b>	26	32.8	600	6	Spiral Cam Cam Angle: 4°	±0.5	1.2
<b>QLPDH400L</b>				8			
<b>QLPDH500R</b>	28	41.1				±0.8	2.2

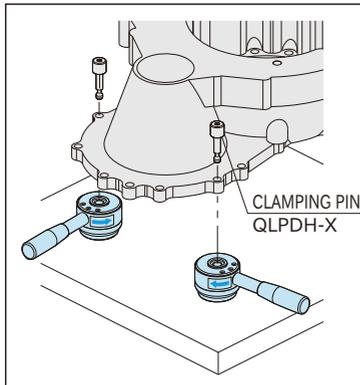
\* ) Grip length of **QLPDH-X** Clamping Pin (workpiece thickness)

\*\* ) Allowable load to operate the handle

\*\*\* ) Maintaining these recommended tolerances allows minimizing the variation of handle position in the clamping mode in clamping with the use of the Clamping P in.

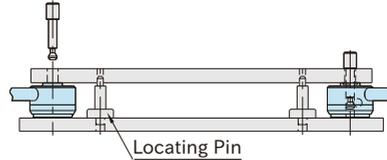
\*\*\*\* ) **QLPDH500** is available only with Clockwise Clamping.

## How To Use



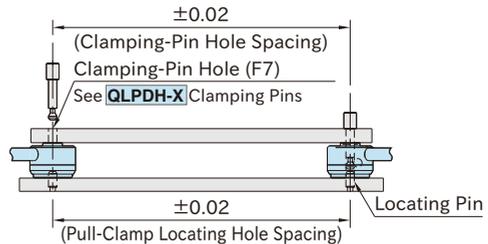
### How to Locate Workpiece

#### 1. Basic Method



#### 2. Method for clamping and locating a workpiece at a time

Give an accuracy shown below to the hole spacing to generate a locating accuracy of ±0.08.

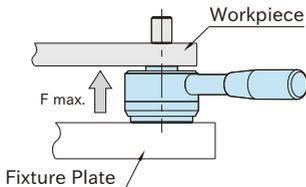


## Related Product

- **QLPDH-X** CLAMPING PINS (Heavy)
- **QLPDH-M** CLAMPING SCREWS(Heavy)

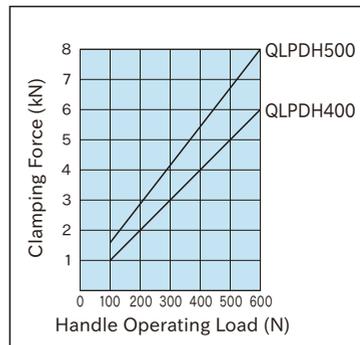
## Technical Information

■ Allowable Loads in Machining of Workpiece Bottom  
Ensure that a force more than indicated below is not applied to the workpiece bottom.



Type	Allowable Force To Workpiece Bottom (Per Clamp)
<b>QLPDH400</b>	max. 8kN
<b>QLPDH500</b>	max.14kN

## Performance Curve



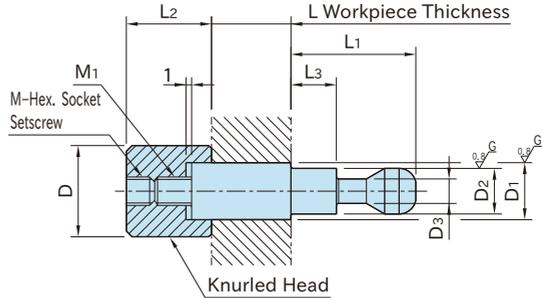
## QLPDH-X

## CLAMPING PINS (Heavy)

On Request



IMAO



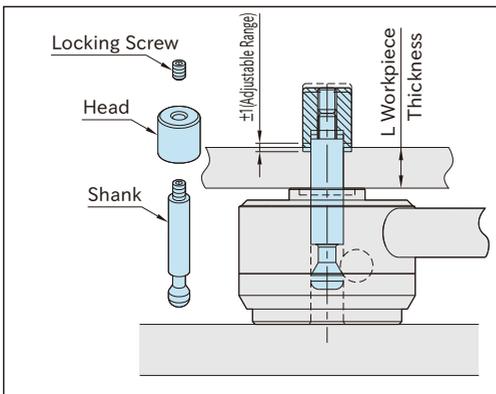
L dimension is adjustable by  $\pm 1$  mm to fit actual workpiece thickness.

Shank	Head
SCM435 steel Induction hardened (taper seat) Precision ground	S45C steel Quenched and tempered Black oxide finish

Part Number	D <sub>2</sub> (f7)	D <sub>1</sub> (f7)	L* (By 0.1mm)	D	L <sub>2</sub>	L <sub>1</sub>	L <sub>3</sub>	D <sub>3</sub>	M	M <sub>1</sub>	Weight (g)	Pull Clamps
QLPDH400-12-(L Dim. In mm)	12	12	0 < L ≤ 100	18	23	38	21.5	6.5	M 8×1.25-8L	M 8×1.25	min. 70~max.160	QLPDH400R
QLPDH400-16-(L Dim. In mm)				24	29	48	28	9.5	M 10×1.5-10L	M 10×1.5	min.175~max.265	
QLPDH500-16-(L Dim. In mm)	16	16	0 < L ≤ 120	24	29	48	28	9.5	M 10×1.5-10L	M 10×1.5	min.160~max.350	QLPDH500R
QLPDH500-20-(L Dim. In mm)				30	35	54	32	12.5	M 12×1.5-12L	M 12×1.5	min.325~max.515	

\*) For ordering, specify workpiece thickness.

## How To Use



## Ordering Example

**QLPDH400-12-20.5**

Shank Size L Dim.

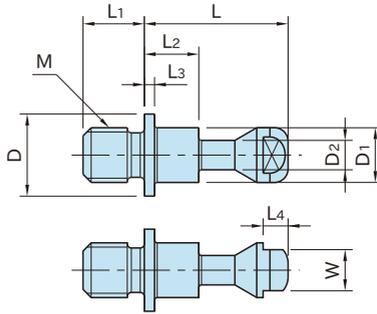
※ QLPD400-12 for 20.5mm thickness workpiece.

## Note

The length of L dimension should be decided depending on the workpiece thickness.

QLPDH-M

CLAMPING SCREWS(Heavy)



Body
SCM435 steel Quenched and tempered Black oxide finish

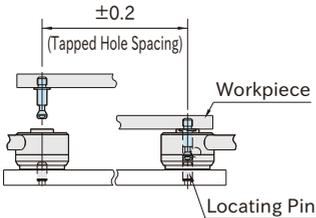
Part Number	D <sub>1</sub>	M	L <sub>1</sub>	L	D	L <sub>2</sub>	L <sub>3</sub>	D <sub>2</sub>	W	L <sub>4</sub>	Weight (g)	Pull Clamps
QLPDH400-M12	12	M12×1.75	13	38	20	21.5	2	6.5	10	4	40	QLPDH400R
QLPDH400-M16		M16×2									55	
QLPDH500-M16	16	M16×2	21	48	25	28	2.5	9.5	13	5	90	QLPDH500R
QLPDH500-M20		M20×2.5									110	

**Note**

Custom Clamping Screws (different screw thread sizes) are available on request.

**How To Use**

■ Recommended Spacing Tolerance in Use of Clamping Screws



## QLPU

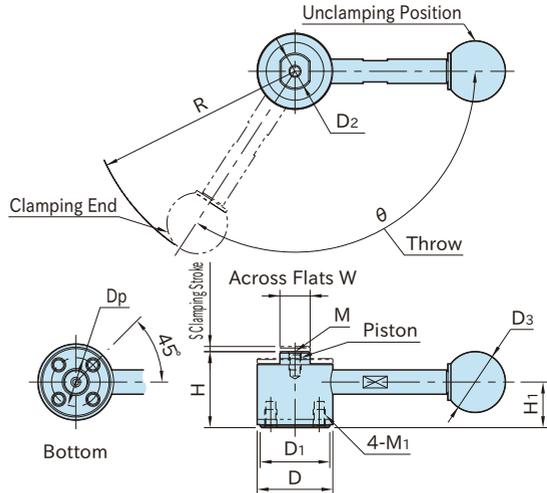
## PUSH CLAMPS(Standard)



With Handle



Without Handle



Cam	Piston	Handle	Ball Knob
SCM440 steel Quenched and tempered Black oxide finish	S45C steel Quenched and tempered Black oxide finish	S45C steel Black oxide finish	ABS resin Black

Type	H	S	D <sub>2</sub>	M	W	θ	D	D <sub>1</sub>	M <sub>1</sub>	D <sub>p</sub>	H <sub>1</sub>
QLPU150	25 *)	1.7	12	M4×0.7 Depth 6	10	123°	25	23	M4×0.7 Depth 6	16	15
QLPU200	32 **)	2.5	15	M6×1 Depth 9	13	135°	32	30	M6×1 Depth 9	20	19.5

Type	Clamping Force (kN)	Clamping Mechanism
QLPU150	3	Spiral Cam Cam Angle:4°
QLPU200	4	

\*) Actual clamping height : 25 to 26.7 (clamping stroke : 1.7)

\*\*) Actual clamping height : 32 to 34.5 (clamping stroke : 2.5)

#### ■ With Handle

Part Number	R	D <sub>3</sub>	Allowable Operating Load (N) (***)	Weight (g)
QLPU150R	69.5	20	150	100
QLPU200R	103	25	200	200

\*\*\*) Allowable load to operate the handle.

#### ■ Without Handle

Part Number	Handle Mounting Hole	Weight (g)
QLPU150NR	M5×0.8	75
QLPU200NR	M6×1	150

The handle must be ordered separately.

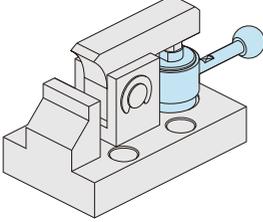
·[QLSL](#) STANDARD HANDLES

·[QLTL](#) ADJUSTABLE-TORQUE HANDLES

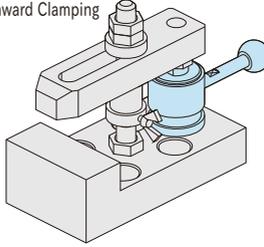
## How To Use

### Application Examples

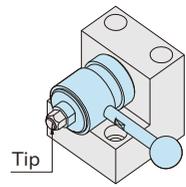
Downthrust Clamping



Downward Clamping

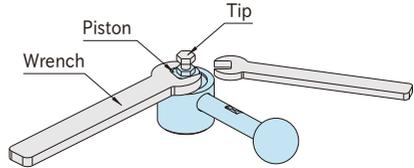


Sideways Clamping



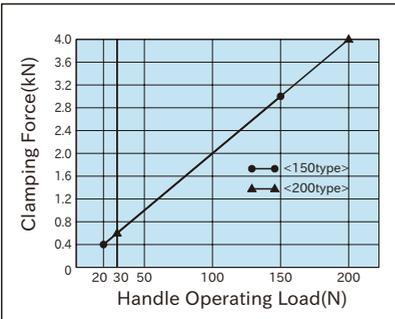
### Note

- When installing a tip on the piston, lock the piston using a wrench to prevent the clamp from receiving any torque.
- The piston goes down when turning handle over clamping end.



## Performance Curve

### QLSL STANDARD HANDLES

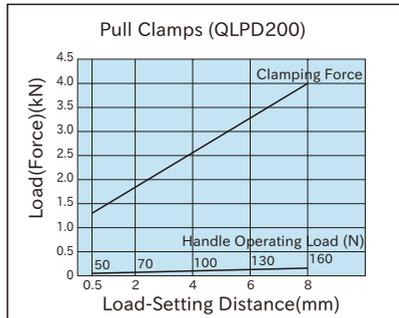
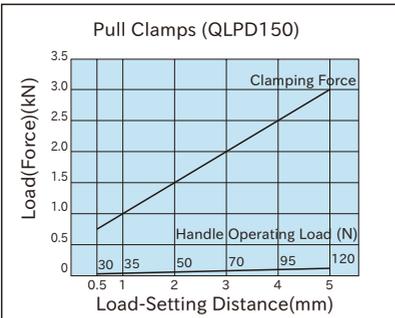
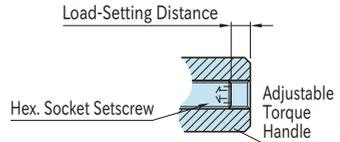


⚠ The performance curves shown below do not denote the guaranteed performance.

### QLTL ADJUSTABLE-TORQUE HANDLES

- Use a force gauge when measuring handle-operating loads.

⚠ The performance curves shown below do not denote the guaranteed performance.



## QLSL

## STANDARD HANDLES



**QLSL**

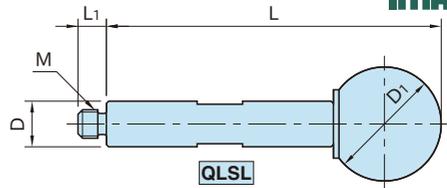
(Screw-In Handles)


**QLSL-RL**

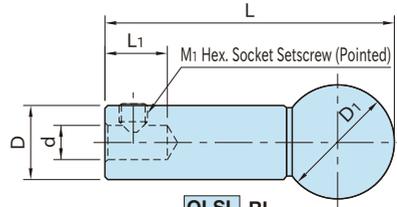
(Plug-In Handles)


**QLSL-RA**

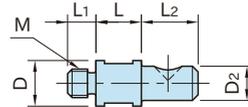
(Plug-In-Handle Adaptors)


**QLSL**

(Screw-In Handles)


**QLSL-RL**

(Plug-In Handles)


**QLSL-RA**

(Plug-In-Handle Adaptors)

Type	Handle	Ball Knob	Shaft
<b>QLSL</b>	SCM435 steel Tempered Black oxide finish	ABS resin Black	—
<b>QLSL-RL</b>	S45C steel Black oxide finish	—	—
<b>QLSL-RA</b>	—	—	SCM435 steel Quenched and tempered Black oxide finish

**QLSL** (Screw-In Handles)

Part Number	L	D <sub>1</sub>	D	M	L <sub>1</sub>	Weight (g)
<b>QLSL150</b>	59	20	8	M5×0.8	5	25
<b>QLSL200</b>	89	25	10	M6×1	6	50

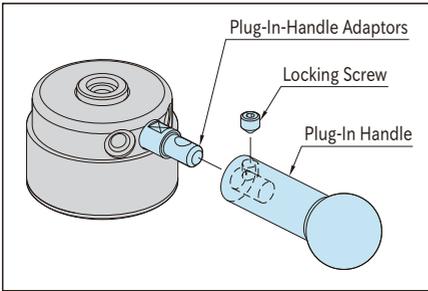
**QLSL-RL** (Plug-In Handles)

Part Number	L	D <sub>1</sub>	D	d	L <sub>1</sub>	M <sub>1</sub>	Weight (g)
<b>QLSL150-RL</b>	51	20	13	6	11	M5×0.8-5L	45
<b>QLSL200-RL</b>	79	25	15	8	13	M6×1 -6L	90

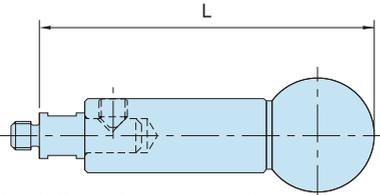
**QLSL-RA** (Plug-In-Handle Adaptors)

Part Number	L	D	L <sub>2</sub>	D <sub>2</sub>	M	L <sub>1</sub>	Weight (g)
<b>QLSL150-RA</b>	8	8	10	6	M5×0.8	5	7
<b>QLSL200-RA</b>	10	10	12	8	M6×1	6	14

## How To Use



Secure the Plug-In Handle to the Adaptor using the locking screw if necessary.



Plug-In Handle Coupled with the Adaptor

### ■ Proper One-Touch Clamps

- SWING CLAMPS <QLSW>
- PULL CLAMPS <QLPD>
- PUSH CLAMPS <QLPU>

Type	L
<b>QLSL150</b>	59
<b>QLSL200</b>	89

## QLTL

## ADJUSTABLE-TORQUE HANDLES



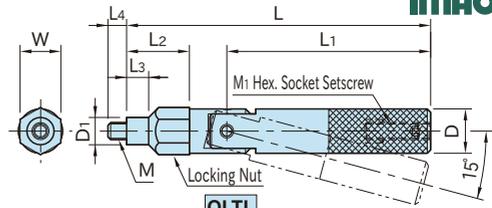

**QLTL**  
(Screw-In Handles)



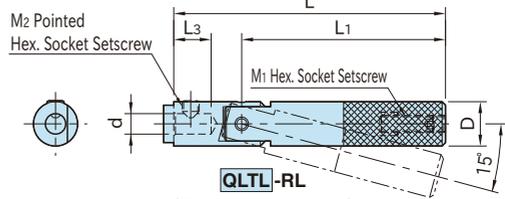
**QLTL-RL**  
(Plug-In Handles)



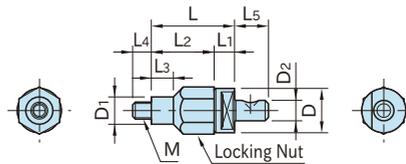
**QLTL-RA**  
(Plug-In-Handle Adaptors)



**QLTL**  
(Screw-In Handles)



**QLTL-RL**  
(Plug-In Handles)



**QLTL-RA**  
(Plug-In-Handle Adaptors)

Type	Stem	Locking Nut	Handle
<b>QLTL</b>	SCM435 steel Quenched & tempered Black oxide finished	S45C steel Black oxide finished	S45C steel Quenched & tempered Black oxide finished
<b>QLTL-RL</b>		—	
<b>QLTL-RA</b>		S45C steel Black oxide finished	—

**QLTL** (Screw-In Handles)

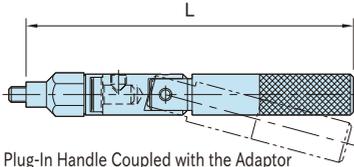
Part Number	L	L <sub>1</sub>	D	L <sub>2</sub>	L <sub>3</sub>	D <sub>1</sub>	W	M	L <sub>4</sub>	M <sub>1</sub>	Weight (g)
<b>QLTL120</b>	89.5	60	13	18.5	6.5	8	12	M5×0.8	5.5	M5×0.8-16L	90
<b>QLTL160</b>	119	84	15	23	8	10	14	M6×1	6.5	M6×1 -20L	140

**QLTL-RL** (Plug-In Handles)

Part Number	L	L <sub>1</sub>	D	d	L <sub>3</sub>	M <sub>2</sub>	M <sub>1</sub>	Weight (g)
<b>QLTL120-RL</b>	80	60	13	6	11	M5×0.8-5L	M5×0.8-16L	70
<b>QLTL160-RL</b>	107	84	15	8	13	M6×1 -6L	M6×1 -20L	130

**QLTL-RA** (Plug-In-Handle Adaptors)

Part Number	L	L <sub>1</sub>	D	L <sub>2</sub>	L <sub>3</sub>	D <sub>1</sub>	L <sub>5</sub>	D <sub>2</sub>	M	L <sub>4</sub>	Weight (g)
<b>QLTL120-RA</b>	24.5	6	13	18.5	6.5	8	10	6	M5×0.8	5.5	20
<b>QLTL160-RA</b>	30	7	15	23	8	10	12	8	M6×1	6.5	40



Plug-In Handle Coupled with the Adaptor

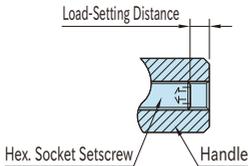
Type	L
<b>QLTL120</b>	104.5
<b>QLTL160</b>	137

## ■ Proper One-Touch Clamps

- SWING CLAMPS <QLSW>
- PULL CLAMPS <QLPD>
- PUSH CLAMPS <QLPU>

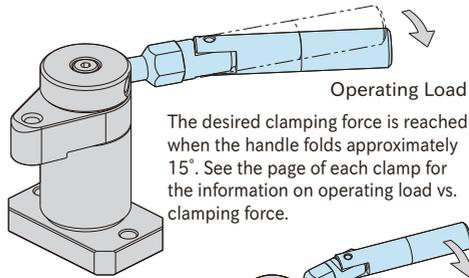
## How To Use

Turning the setscrew inside the handle allows adjusting the torque to set a desired clamping force.

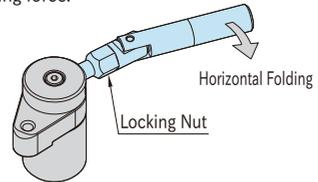


[Operating-Load Setting Range]  
 QLTL120/QLTL120-RL : 30N to 120N  
 QLTL160/QLTL160-RL : 50N to 160N

Note : Ensure that the operating load is not set below the lower limit to prevent the handle from returning to the unclamping position due to shock load generated during the transfer of machine pallets.

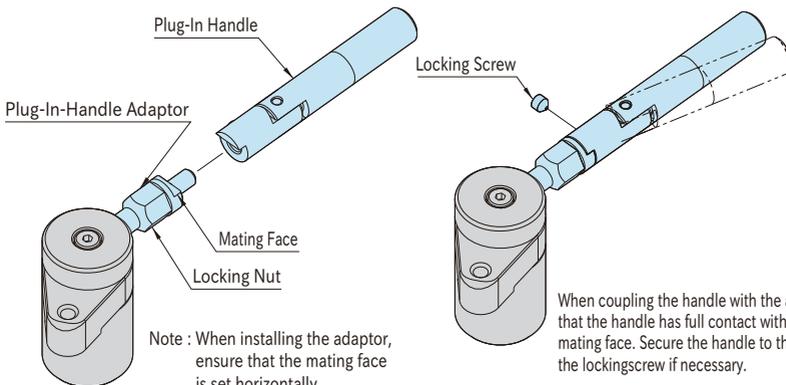


The desired clamping force is reached when the handle folds approximately 15°. See the page of each clamp for the information on operating load vs. clamping force.



Note : Ensure that the handle is set to fold horizontally.

## Plug-In Handle Installation



Note : When installing the adaptor, ensure that the mating face is set horizontally.

When coupling the handle with the adaptor, ensure that the handle has full contact with the adaptor's mating face. Secure the handle to the adaptor using the lockingscrew if necessary.



SNAP CLAMPS

500,000 Cycles!

Click-Out Clamping!

SNAP CLAMPS

A click indicates completed clamping.



Hold-Down Style    Push-Pull Style    Hold-Down (Mini) Style

IMAO's Snap-On System

As the handle is operated, the built-in balls move following the slit to let tension accumulate on the flat spring. When the balls are positioned in the clamping pockets, the accumulated tension is released and transformed into clamping force.



Hold-Down Standard Double-Lock



Push-Pull Double-Lock



Hold-Down Mini Single-Lock

Stable Clamping!

Provide the firm clamping force at every operation.

Smooth Clamping!

A small handle operating load generates a maximal clamping capacity.

Secure Clamping!

A snap-on system allows clamping a part with no errors.



Highly Durable!

New Sturdy Clamps!  
500,000 Cycles Cleared! \*)

Due to one-piece body construction and heat treatment to the pressurizing members, Snap Clamps can work with little wear-out, deformation or deterioration, and do not get shaky or weak in clamping even after long-term use.

Snap Clamps are far more durable than traditional toggle clamps or the like, and can be used without maintenance.

\*) Result of Imao original proof test (note that cycle life varies with operating conditions and environments).



One-Piece Body

Visible Clamping Force

A label number stands for clamping force.

Example:  
6 ... 60N



QLSND

VERTICAL-HANDLE HOLD-DOWN SNAP CLAMPS

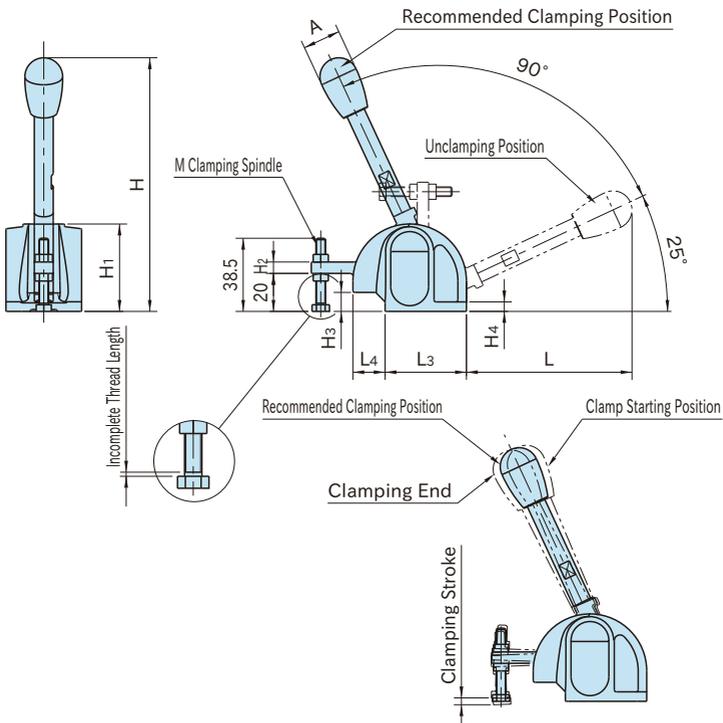
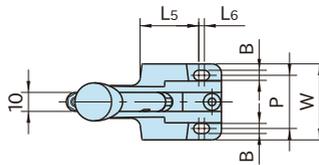
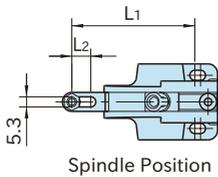


Clamping Mode

Unclamping Mode

Body	Clamping Arm	Handle	Knob	Clamping Spindle
ZDC2 steel Cation coating finish Black	SCM440 steel Quenched and tempered Black oxide finish	S45C steel Chrome plated	Phenolic plastic Black	SCM435 steel Quenched and tempered Black oxide finish

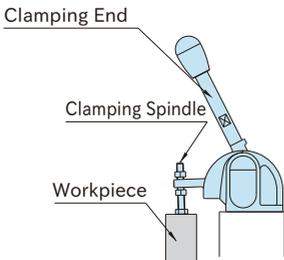
★Key Point  
The handle clicks at clamping end.



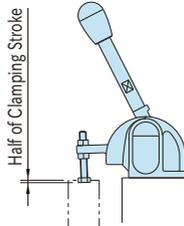
Part Number	Clamping Stroke	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	W	H <sub>4</sub>	B	L <sub>6</sub>	P	L <sub>5</sub>	H max.	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>
<b>QLSND28-02</b>	3	65	10	43	40	5	5.3	3	28	31	140	46	6	10
<b>QLSND28-05</b>														
<b>QLSND30-03</b>		75	12	48.5	42	6	6.4	6	30	32.5	158	53	8	12
<b>QLSND30-06</b>														

Part Number	L <sub>4</sub>	M	L	A	Handle Operating Load (N)	Clamping Force (N)	Weight (g)	
<b>QLSND28-02</b>	17	M5×0.8-35L Incomplete Thread Length:1.5	88	20	6	20	390	
<b>QLSND28-05</b>					12	50		
<b>QLSND30-03</b>	22.5			98	26	6	30	520
<b>QLSND30-06</b>						12	60	

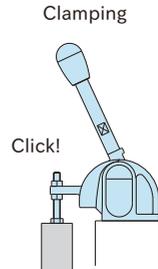
### How To Set Handle To Recommended Clamping Position



1. Set the clamping spindle to contact a workpiece at clamping end position.



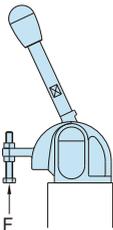
2. Project the clamping spindle by about half of the clamping stroke and tighten the nut.



3. Setting Completed

### Note

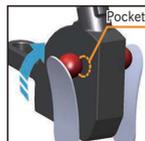
- The clamping forces and handle operating loads stated above can vary by up to ± 20%.
- When the reaction force(F) becomes greater than the clamping force, clamping is lifted.



Part Number	Clamping Is Lifted When :
<b>QLSND28-02</b>	$F > 20N$
<b>QLSND28-05</b>	$F > 50N$
<b>QLSND30-03</b>	$F > 30N$
<b>QLSND30-06</b>	$F > 60N$

### Feature

- The long handle facilitates clamping operation.
- The handle is locked at the unclamping position.
- Uses a snap-on system (double locking)



### Related Product

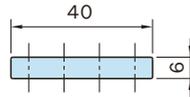
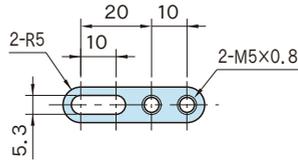
- **QLSND-EX20** Extension Arms to extend the clamp arm.
- **QLSND-AN10** Angle Adaptors to set the handle in an angled position.
- **UB** Clamping Spindles to protect workpieces from being marred.

## QLSND-EX20

## EXTENSION ARM



Dedicated for Snap Clamps



Body

S45C steel  
Black oxide finish

Part Number	Weight (g)
QLSND-EX20	12

## Supplied With

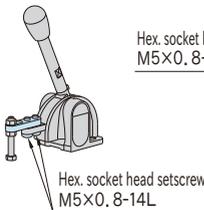
Hex. socket head setscrew M5×0.8-14L ×2 pcs.

## How To Use

Use to extend the clamping arm for clamping at a more distant point.

Face Mounting

Back Mounting

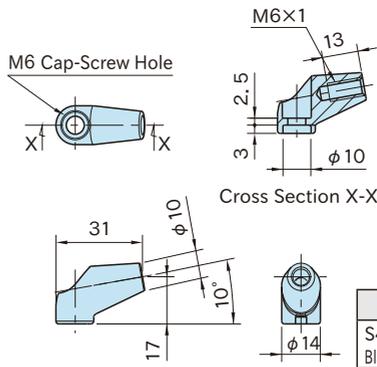
Hex. socket head setscrew  
M5×0.8-14L

## Clamping Forces Generated in Use of Extension Arms

Part Number	Clamping Force (N)
QLSND28-02	15
QLSND28-05	35
QLSND30-03	20
QLSND30-06	40

# QLSND-AN10 ANGLE ADAPTOR

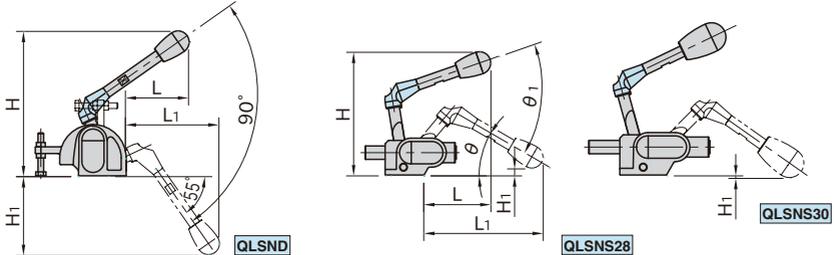
**RHS** Dedicated for Snap Clamps



Part Number	Weight (g)
<b>QLSND-AN10</b>	12

Body
S45C steel
Black oxide finish

**Dimensions of Snap Clamps with Angular Adaptor Installed**



Type	H	L	H <sub>1</sub>	L <sub>1</sub>
<b>QLSND28</b>	130	57	71	84
<b>QLSND30</b>	145	61	79	92

Type	H	L	H <sub>1</sub>	L <sub>1</sub>	$\theta$	$\theta_1$
<b>QLSNS28</b>	110	60	6	107	30°	50°
<b>QLSNS30</b>	136	53	2	123	35°	60°

**Supplied With**

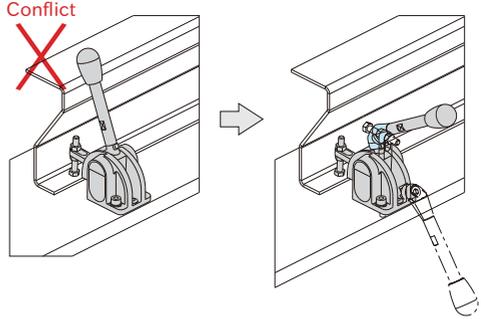
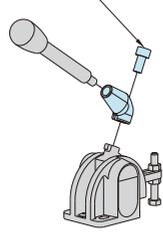
Hex.socket head cap screw M6×1-12L × 1pc.

**How To Use**

Remove the handle and then install an Angular Adaptor between the body and the handle.  
(Use a wrench of nominal size 9 for removal of the handle.)

Perfect in applications where the handle can not be turned to the clamping position.

Hex.Socket Head Cap Screw  
M6×1-12L



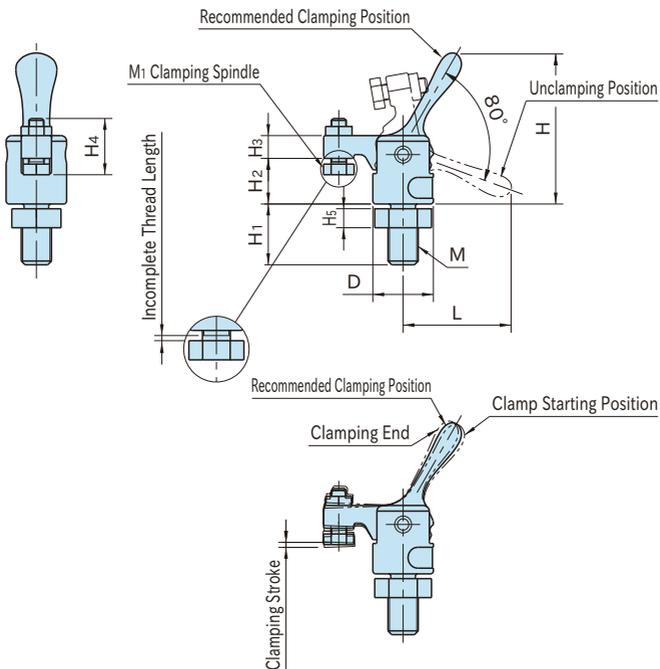
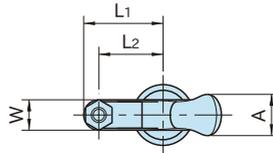
QLSNDM

VERTICAL-HANDLE HOLD-DOWN SNAP CLAMPS (Mini)



(Black Oxide Finish) (Stainless Steel) (Electroless Nickel Plated)

Type	Body	Clamping Arm / Handle	Clamping Spindle
QLSNDM08	S45C steel Black oxide finish	SCM440 steel Quenched and tempered Black oxide finish	SUS304 stainless steel
QLSNDM12			SCM435 steel Quenched and tempered Black oxide finish
QLSNDM08-SUS QLSNDM12-SUS	SCS13 steel (equivalent to SUS304)	SCS13 steel (equivalent to SUS304)	SUS304 stainless steel
QLSNDM08-NP QLSNDM12-NP	S45C steel Electroless Nickel Plated	SCM440 steel Electroless Nickel Plated	



Type	Clamping Stroke	L <sub>2</sub>	M	H <sub>1</sub>	H	D	L <sub>1</sub>	W	H <sub>3</sub>	H <sub>2</sub>	M <sub>1</sub>	H <sub>4</sub>	L	A	H <sub>5</sub>
QLSNDM08-01	1	17	M 8×1.25	16	39.5	16	21	8	6	12	M4×0.7-12L Incomplete Thread Length :1	15	28.5	11	5
QLSNDM12-01	1.5	22	M12×1.75	24	53.5	22	27	10	8	17	M5×0.8-15L Incomplete Thread Length :1.5	18.5	38	13	7
QLSNDM12-03															

### QLSNDM (Black Oxide Finish)

Part Number	Handle Operating Load (N)	Clamping Force (N)	Weight (g)
QLSNDM08-01	5	10	50
QLSNDM12-01			120
QLSNDM12-03	13	30	

### QLSNDM-SUS (Stainless Steel)

Part Number	Handle Operating Load (N)	Clamping Force (N)	Weight (g)
QLSNDM08-01-SUS	5	10	50
QLSNDM12-01-SUS			120
QLSNDM12-03-SUS	13	30	

### QLSNDM-NP (Electroless Nickel Plated)

Part Number	Handle Operating Load (N)	Clamping Force (N)	Weight (g)
QLSNDM08-01-NP	5	10	50
QLSNDM12-01-NP			120
QLSNDM12-03-NP	13	30	

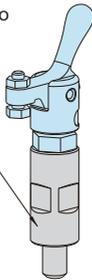
### Feature

- The clamp clicks when clamping is done.
- Perfect for clamping of a small part, and for use in limited space.
- Designed for fingertip handle operation.
- The handle is locked at the unclamping position.
- Uses a snap-on system (single locking).

### How To Use

Use a **BJ601** Small Cylindrical Risers to raise these clamps.

Small Cylindrical Risers  
BJ601

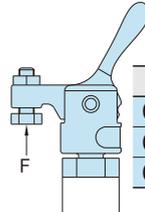


### Related Product

**UB** Clamping Spindles with a plastic tip are available for clamping without marring a part.

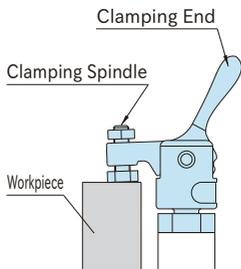
### Note

- The clamping forces and handle operating loads stated above can vary by up to ± 20%.
- When the reaction force(F) becomes greater than the clamping force, clamping is lifted.

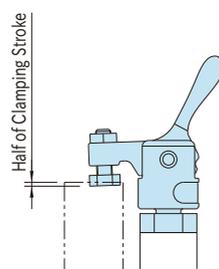


Type	Clamping Is Lifted When :
QLSNDM08-01	F is larger than 10N
QLSNDM12-01	F is larger than 30N
QLSNDM12-03	F is larger than 30N

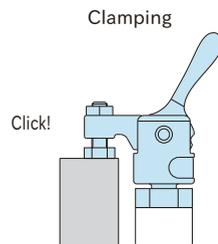
### How To Set Handle To Recommended Clamping Position



1. Set the clamping spindle to contact a workpiece at clamping end position.



2. Project the clamping spindle by about half of the clamping stroke and tighten the nut.



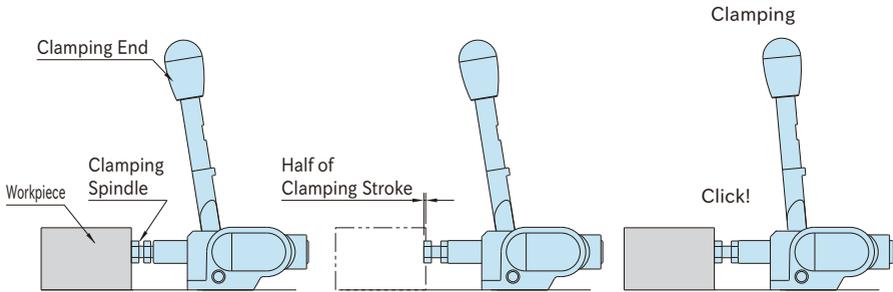
3. Setting Completed



Part Number	Projecting Stroke	Clamping Stroke	H <sub>3</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	W	H <sub>2</sub>	d	L <sub>4</sub>	P
<b>QLSNS28-05</b>	12	1.5	20	22	63	35	40	5	5.5	5	28
<b>QLSNS28-12</b>			25	33	80	42	42	6	6.5	6	30
<b>QLSNS30-07</b>	22										
<b>QLSNS30-14</b>											

Part Number	H max.	H <sub>1</sub>	A	L	θ	θ <sub>1</sub>	Handle Operating Load (N)	Clamping Force (N)	Weight (g)
<b>QLSNS28-05</b>	133	33	20	101	50°	50°	9	50	370
<b>QLSNS28-12</b>							20	120	
<b>QLSNS30-07</b>	157	38	26	131	60°	45°	6	70	500
<b>QLSNS30-14</b>							18	140	

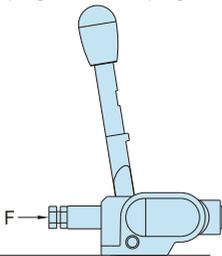
### How To Set Handle To Recommended Clamping Position



1. Set the clamping spindle to contact a workpiece at clamping end position.
2. Project the clamping spindle by about half of the clamping stroke and tighten the nut.
3. Setting Completed

### Note

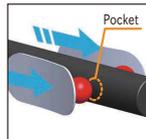
- The clamping forces and handle operating loads stated above can vary by up to ± 20%.
- When the reaction force(F) becomes greater than the clamping force, clamping is lifted.



Part Number	Clamping Is Lifted When:
<b>QLSNS28-05</b>	$F > 50N$
<b>QLSNS28-12</b>	$F > 120N$
<b>QLSNS30-07</b>	$F > 70N$
<b>QLSNS30-14</b>	$F > 140N$

### Feature

- The long handle facilitates clamping operation.
- The handle is locked at the unclamping position.
- Uses a snap-on system (double locking)



### Related Product

- **QLSND-AN10** Angle Adaptors to set the handle in an angled position.
- **UB** Clamping Spindles to protect workpieces from being marred.

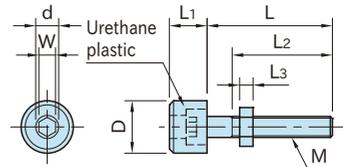
UB

CLAMPING SPINDLES



Dedicated for Snap Clamps

IMAO



Part Number	M	L	D	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>
<b>UB4×15</b>	M4×0.7	15	10	7	14	2.4
<b>UB5×15</b>	M5×0.8		12.5	9	13.5	3.2
<b>UB5×30</b>		30	24			
<b>UB6×20</b>		M6×1	20	15	10	18

Tip	Screw	Hex. Nut
Black urethane plastic Shore A90	SCM435 steel Trivalent chromate plated	SS400 steel Trivalent chromate plated

### Installation example

The urethane tip avoids marring soft or finished surfaces.

Part Number	d	W	Weight (g)	Proper Snap Clamps
<b>UB4×15</b>	4.2	3	4	Mini Hold-Down
<b>UB5×15</b>	5.5	4	6	
<b>UB5×30</b>			8	Standard Hold-Down
<b>UB6×20</b>	6	5	10	



# CLAMPS



**PULL CLAMPING SYSTEM**

**PULL CLAMPING SYSTEM  
HOOK TYPE**

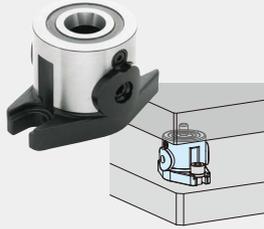
**OD / ID CLAMPS**

**CLAMPS**

# CLAMPS



## PULL CLAMPING SYSTEM



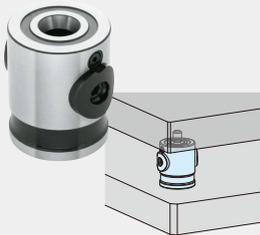
CLAMPING MODULES (Flanged)

Part No. CP150



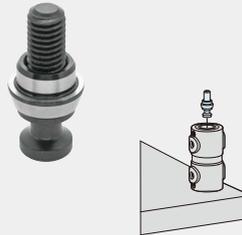
CLAMPING MODULES (Double)

Part No. CP151



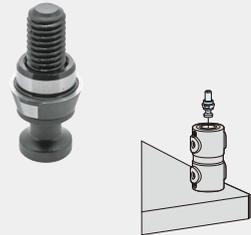
CLAMPING MODULES (Single)

Part No. CP152



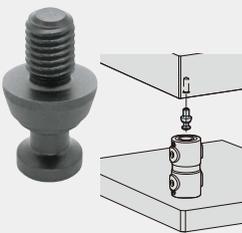
TAPERED CLAMPING SCREWS

Part No. CP155-L



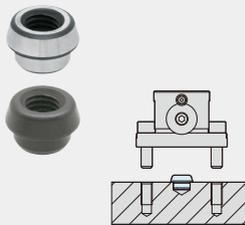
TAPERED CLAMPING SCREWS

Part No. CP155-D



CLAMPING SCREWS

Part No. CP156



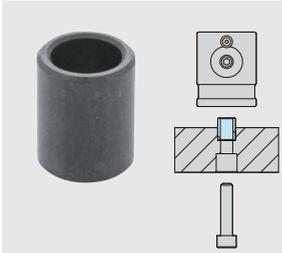
TAPERED BUSHINGS

Part No. CP157



DOUBLE TAPERED CLAMPING PINS

Part No. CP158



LOCATING BUSHINGS

Part No. CP159

## PULL CLAMPING SYSTEM HOOK TYPE



CLAMPING MODULES  
(Hook)

Part No. CP160



TAPERED CLAMPING  
SCREWS (Hook)

Part No. CP165-LH



TAPERED CLAMPING  
SCREWS

Part No. CP165-L



CLAMPING SCREWS  
(Hook)

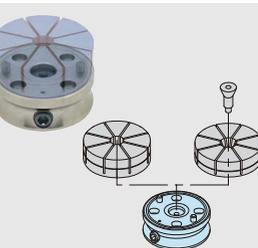
Part No. CP166-H



CLAMPING SCREWS

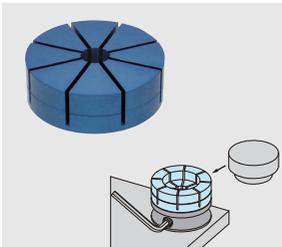
Part No. CP166

## OD / ID CLAMPS



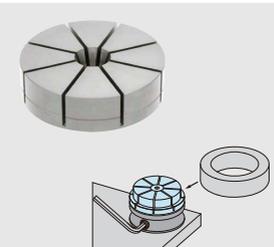
FORM HOLDING CLAMPS

Part No. CP125



JAWS FOR EXTERNAL  
FORM HOLDING

Part No. CP126



JAWS FOR INTERNAL  
FORM HOLDING

Part No. CP127



TAPERED SCREWS FOR  
INTERNAL FORM HOLDING

Part No. CP127-B



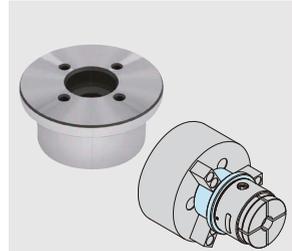
OD HOLDING CLAMPS

Part No. CP120



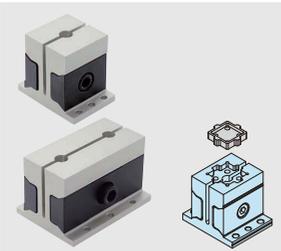
JAWS

Part No. CP121



MOUNTING-ON-LATHE ADAPTERS

Part No. CP122



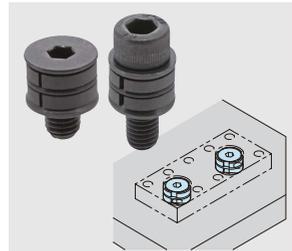
OD HOLDING CLAMPS (Wedge Style/Square)

Part No. CP124



OD HOLDING CLAMPS (Wedge Style/Round)

Part No. CP123



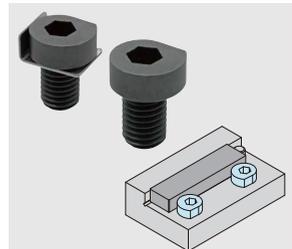
COMPACT ID HOLDING CLAMPS

Part No. CP131



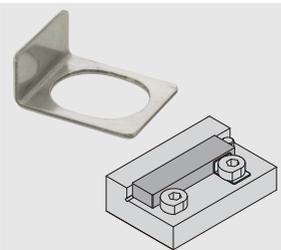
ID HOLDING CLAMPS

Part No. CP130



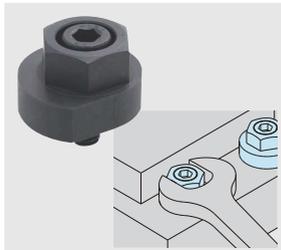
SPIRAL CAM CLAMPS

Part No. CP135



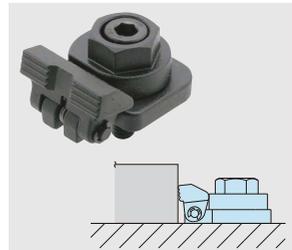
CLAMPING PLATES

Part No. CP135-P



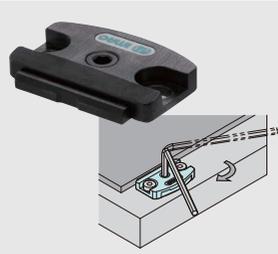
CAM CLAMPS

Part No. BJ161



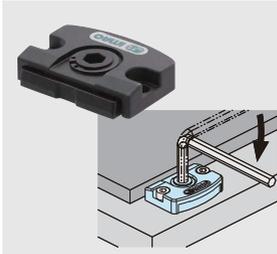
CAM EDGE CLAMPS

Part No. BJ162



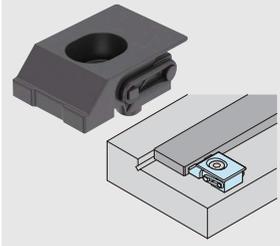
COMPACT LOW-PROFILE  
CAM EDGE CLAMPS

Part No. QLSCL



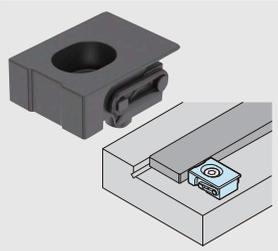
LOW-PROFILE  
CAM EDGE CLAMPS

Part No. QLSCL-NR



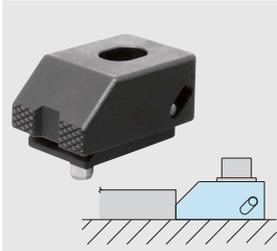
COMPACT TOE CLAMPS

Part No. CP133



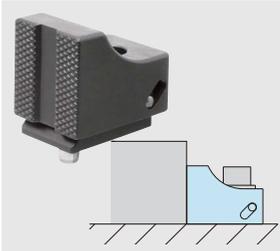
COMPACT SIDE CLAMPS

Part No. CP134



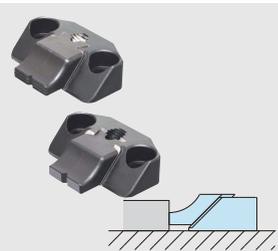
TOE CLAMPS

Part No. CP106



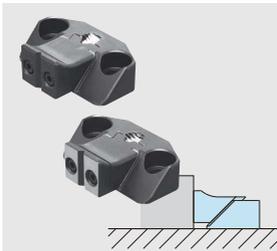
SIDE CLAMPS

Part No. CP107



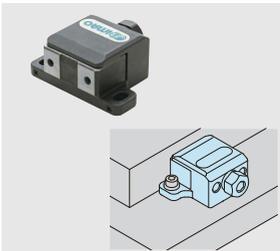
TOE CLAMPS

Part No. CP104



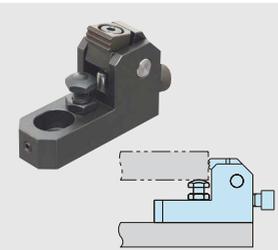
SIDE CLAMPS

Part No. CP105



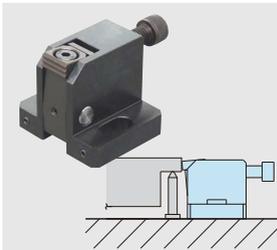
SIDE CLAMPS

Part No. QLSCH-H



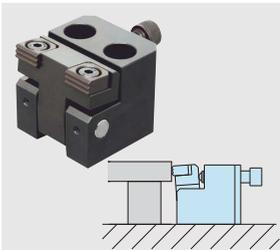
SIDE CLAMPS

Part No. CP100



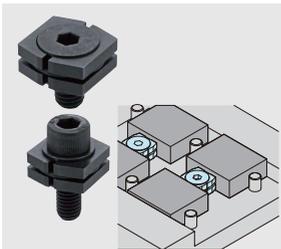
SIDE CLAMPS

Part No. CP101



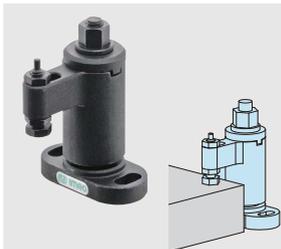
WIDE-JAW SIDE CLAMPS

Part No. CP102



**COMPACT WEDGE CLAMPS**

Part No. CP132



**SWING CLAMPS FOR TORQUE CONTROL**

Part No. QLSWC



**SWING CLAMPS (Quick-Acting)**

Part No. PTSW1



**SWING CLAMPS (Spiral-Acting)**

Part No. PTSW2



**BLOCK PULL CLAMPS**

Part No. PTPD



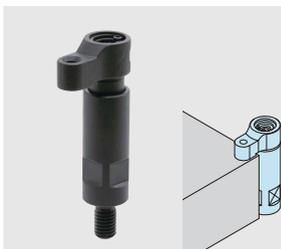
**CLAMPING SCREWS FOR BLOCK PULL CLAMPS**

Part No. PTPD-M



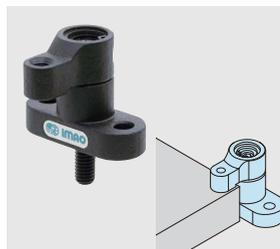
**HOOK CLAMPS**

Part No. BJ132



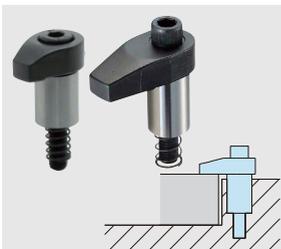
**HOOK-CLAMP ASSEMBLIES**

Part No. BJ132-A



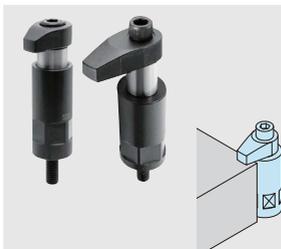
**HOOK-CLAMP ASSEMBLIES WITH FLANGED HOLDER**

Part No. BJ132-B



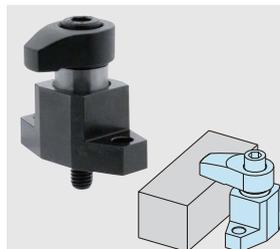
**HOOK CLAMPS**

Part No. BJ130



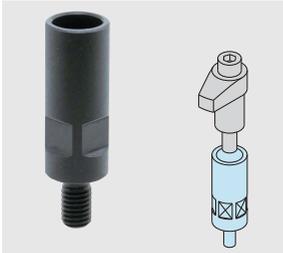
**HOOK-CLAMP ASSEMBLIES**

Part No. BJ130-A



**HOOK-CLAMP ASSEMBLIES (Flanged)**

Part No. BJ130-B1



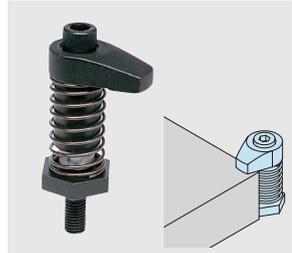
HOOK-CLAMP HOLDERS

Part No. BJ530



HOOK-CLAMP HOLDERS  
(Flanged)

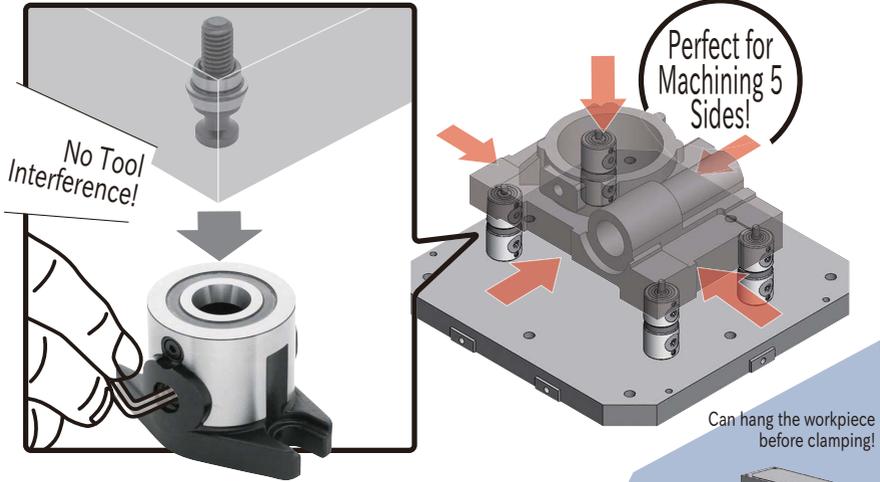
Part No. BJ531



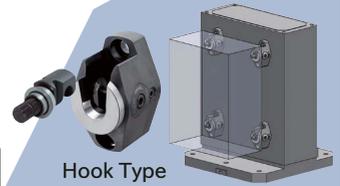
HOOK CLAMPS

Part No. BJ131

## MODULAR PULL CLAMPING SYSTEM



# New Style of Pull Clamps! MODULAR PULL CLAMPING SYSTEM



Hook Type

The cylindrical body allows machining 5 sides without tool interference!  
Dual surface contact of the tapered surfaces provides  $5\ \mu\text{m}$  locating repeatability!

### Single Setup!

Full access to 5 sides without tool interference!

### Mechanical Zero Point Clamping!

Quick and precise fixture changing!

## Simple workholding !

- |                           |                                  |
|---------------------------|----------------------------------|
| Better Machining Accuracy | Shorter Fixture Preparation Time |
| Lower Fixture Cost        | No Tool Interference             |



## Fixture Improvement

**Before**

Many setups with vise

**Improvement**

Single Setup

**Before**

Pull clamping with screws (Using riser blocks)

**Improvement**

Easy Clamping Operation

**Before**

Pull clamping with screws (Using fixture plate)

**Improvement**

Eliminating Interference with Fixture Plate

**Without fixture plate**

Mounting clamping screws directly on workpiece

**After**

Mounting clamping screws on fixture plate

**With fixture plate**

## Quick Fixture Change

Quick and precise fixture change

**No need of mounting holes**  
Full space is available for fixture parts.

## Modular Fixture

Can be used as a universal fixture by standardizing the mounting hole location.

Custom fixture plate with 50mm pitch holes

**Universal Fixture**

## Workpiece Raising

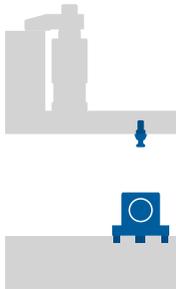
Prevent tool interference

Easy chip cleaning

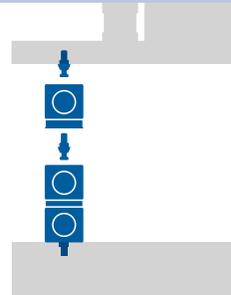
**Before**

**After**

# How To Use Modular Pull Clamping System



The Modular Pull Clamping System consists of clamping modules and clamping screws. Each module can be coupled to increase the height.



## Clamping Modules

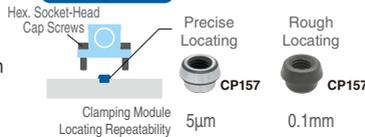


### Flanged

Low profile, fixed with hexagon socket head cap screws

Part Number	Diameter (mm)	Height (mm)	Clamping Force (kN)
<b>CP150-06025</b>	30	25	5
<b>CP150-08040</b>	40	40	8
<b>CP150-12063</b>	60	63	15
<b>CP150-16080</b>	80	80	25

#### Mounting on plate



### Double

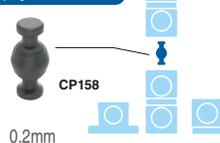
Flexible type with clamping mechanism on the top and bottom

Part Number	Diameter (mm)	Height (mm)	Clamping Force (kN)
<b>CP151-06050</b>	30	50	5
<b>CP151-08080</b>	40	80	8
<b>CP151-12125</b>	60	125	15
<b>CP151-16160</b>	80	160	25

#### Mounting on plate



#### Coupling with another module



### Single

For precise coupling

Part Number	Diameter (mm)	Height (mm)	Clamping Force (kN)
<b>CP152-06032</b>	30	32	5
<b>CP152-08050</b>	40	50	8
<b>CP152-12080</b>	60	80	15
<b>CP152-16100</b>	80	100	25

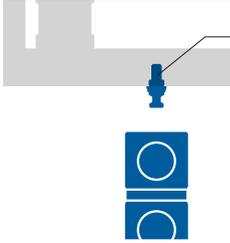
#### Mounting on plate



#### Coupling with another module



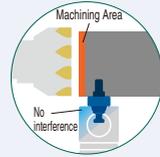
## Clamping Screws



Mount to bottom of workpiece to pull it down

**For machining close area to clamping module**

To avoid tool interferences, raise workpieces with Riser Screws.



### Tapered Clamping Screws (Round)

For Precise Locating



Overall surface is the reference.

CP155-L

With Riser



Overall surface is the reference.

CP155-LS

Workpiece Locating Repeatability ( $\mu\text{m}$ )

5

### Tapered Clamping Screws (Diamond)

For Precise Locating



Diagonal surfaces are the references.

CP155-D

With Riser



Diagonal surfaces are the references.

CP155-DS

Workpiece Locating Repeatability ( $\mu\text{m}$ )

5

(Should be used with round type.)

### Clamping Screws

No locating function.

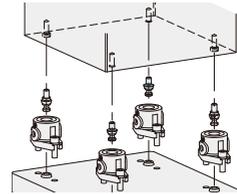


CP156

With Riser

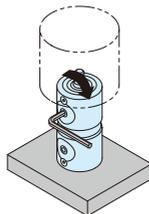
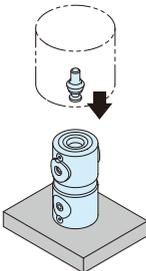


CP156-S

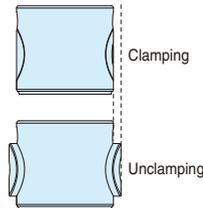


## Clamping Operation

Install the clamping screw on the workpiece and mount it on the clamping module. Tighten the locking screw of the clamping module.



Clamping / Unclamping is visible.

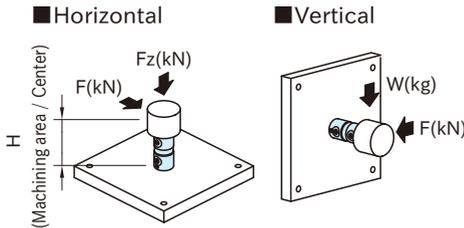


# Allowable Cutting Force & Workpiece Weight of CLAMPING MODULES

Ensure the cutting force and the workpiece weight are within the allowable level. The values below are only the strength of the body of clamping modules. The rigidity of the whole fixtures and the workpiece are not considered. Use the values as a guide for setting appropriate machining conditions.

## 1 Module

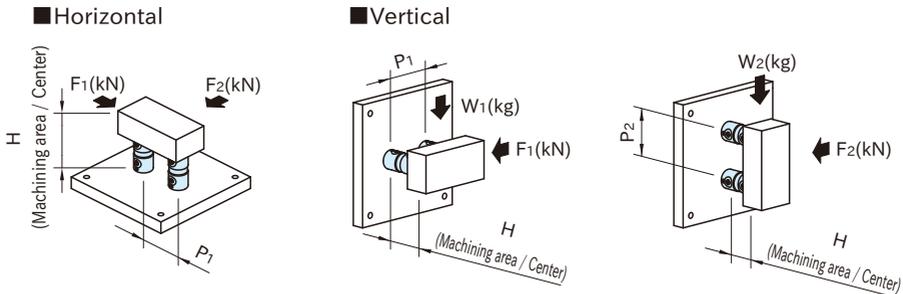
- \* Prepare a locator when the workpiece gets big rotating force.
- \*\* The use of Riser Screw is not recommended because allowable cutting force and allowable workpiece weight will be decreased.



Part Number	Allowable Cutting Force		Allowable Workpiece Weight
	F(kN)	Fz(kN)	W(kg)
CP150-06025	50/H	1.5	50×100/H
CP151-06050	25/H		25×100/H
CP152-06032	25/H		25×100/H
CP150-08040	120/H	2.5	120×100/H
CP151-08080	70/H		70×100/H
CP152-08050	70/H		70×100/H
CP150-12063	250/H	7.5	250×100/H
CP151-12125	150/H		150×100/H
CP152-12080	150/H		150×100/H
CP150-16080	500/H	15	500×100/H
CP151-16160	300/H		300×100/H
CP152-16100	300/H		300×100/H

## 2 Modules

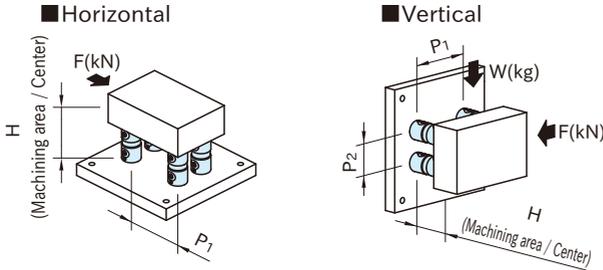
- \*\*\* The use of Riser Screw is not recommended because allowable cutting force and allowable workpiece weight will be decreased.



Part Number	Allowable Cutting Force			Allowable Workpiece Weight		
	F <sub>1</sub> (kN)	F <sub>2</sub> (kN)	Max(kN)	W <sub>1</sub> (kg)	W <sub>2</sub> (kg)	Max(kg)
CP150-06025	(0.10P <sub>1</sub> + 180)/H	100/H	1.8	100×100/H	(0.10P <sub>2</sub> + 180)×100/H	180
CP151-06050	(0.05P <sub>1</sub> + 90)/H	50/H		50×100/H	(0.05P <sub>2</sub> + 90)×100/H	
CP152-06032	(0.05P <sub>1</sub> + 90)/H	50/H		50×100/H	(0.05P <sub>2</sub> + 90)×100/H	
CP150-08040	(0.24P <sub>1</sub> + 432)/H	240/H	3.2	240×100/H	(0.24P <sub>2</sub> + 432)×100/H	320
CP151-08080	(0.14P <sub>1</sub> + 252)/H	140/H		140×100/H	(0.14P <sub>2</sub> + 252)×100/H	
CP152-08050	(0.14P <sub>1</sub> + 252)/H	140/H		140×100/H	(0.14P <sub>2</sub> + 252)×100/H	
CP150-12063	(0.50P <sub>1</sub> + 900)/H	500/H	6	500×100/H	(0.50P <sub>2</sub> + 900)×100/H	600
CP151-12125	(0.30P <sub>1</sub> + 540)/H	300/H		300×100/H	(0.30P <sub>2</sub> + 540)×100/H	
CP152-12080	(0.30P <sub>1</sub> + 540)/H	300/H		300×100/H	(0.30P <sub>2</sub> + 540)×100/H	
CP150-16080	(1.00P <sub>1</sub> +1800)/H	1000/H	10	1000×100/H	(1.00P <sub>2</sub> +1800)×100/H	1000
CP151-16160	(0.60P <sub>1</sub> +1080)/H	600/H		600×100/H	(0.60P <sub>2</sub> +1080)×100/H	
CP152-16100	(0.60P <sub>1</sub> +1080)/H	600/H		600×100/H	(0.60P <sub>2</sub> +1080)×100/H	

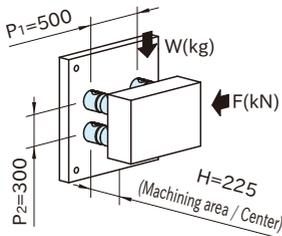
## 4 Modules

\*\*\*\*) Allowable cutting force and allowable workpiece weight are significantly decreased when using Riser Screws. Please see the table below as a guide.



Part Number	Allowable Cutting Force		Allowable Workpiece Weight		When using Riser Screws ****)	
	F(kN)	Max(kN)	W(kg)	Max(kg)		
CP150-06025	$2 \times (0.10P_1 + 180) / H$	3.6	$2 \times (0.10P_2 + 180) \times 100 / H$	360	—	
CP151-06050	$2 \times (0.05P_1 + 90) / H$		$2 \times (0.05P_2 + 90) \times 100 / H$			
CP152-06032	$2 \times (0.05P_1 + 90) / H$		$2 \times (0.05P_2 + 90) \times 100 / H$			
CP150-08040	$2 \times (0.24P_1 + 432) / H$	6.4	$2 \times (0.24P_2 + 432) \times 100 / H$	640	Allowable Cutting Force	×50%
CP151-08080	$2 \times (0.14P_1 + 252) / H$		$2 \times (0.14P_2 + 252) \times 100 / H$			
CP152-08050	$2 \times (0.14P_1 + 252) / H$		$2 \times (0.14P_2 + 252) \times 100 / H$			
CP150-12063	$2 \times (0.50P_1 + 900) / H$	12	$2 \times (0.50P_2 + 900) \times 100 / H$	1200	Allowable Workpiece Weight	×60%
CP151-12125	$2 \times (0.30P_1 + 540) / H$		$2 \times (0.30P_2 + 540) \times 100 / H$			
CP152-12080	$2 \times (0.30P_1 + 540) / H$		$2 \times (0.30P_2 + 540) \times 100 / H$			
CP150-16080	$2 \times (1.00P_1 + 1800) / H$	20	$2 \times (1.00P_2 + 1800) \times 100 / H$	2000	Allowable Workpiece Weight	×70%
CP151-16160	$2 \times (0.60P_1 + 1080) / H$		$2 \times (0.60P_2 + 1080) \times 100 / H$			
CP152-16100	$2 \times (0.60P_1 + 1080) / H$		$2 \times (0.60P_2 + 1080) \times 100 / H$			

### Calculation Example



- Vertical mounting
- 4 pcs of CP151-12125 (height 125mm)
- Pitch:  
 $P_1=500\text{mm}$   
 $P_2=300\text{mm}$
- Workpiece center:  $H=225\text{mm}$
- F direction cutting force: 3kN
- Workpiece weight: 375kg

<Allowable Cutting Force F>

$$\begin{aligned}
 F &= 2 \times (0.3 \times P_1 + 540) / H \\
 &= 2 \times (0.3 \times 500 + 540) / 225 \\
 &= 6.13\text{kN}
 \end{aligned}$$

\*) Cutting force 3kN is within allowable value (6.13kN).

<Allowable Workpiece Weight W>

$$\begin{aligned}
 W &= 2 \times (0.3 \times P_2 + 540) \times 100 / H \\
 &= 2 \times (0.3 \times 300 + 540) \times 100 / 225 \\
 &= 560\text{kg}
 \end{aligned}$$

\*) Workpiece weight 375kg is within allowable value (560kg).

### Related Product

Hook type for horizontal machining center is available.

CP150

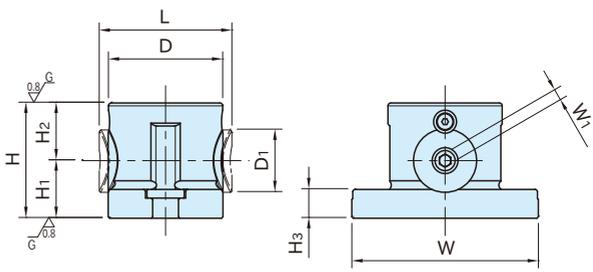
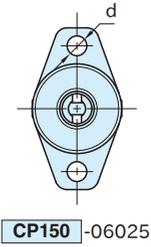
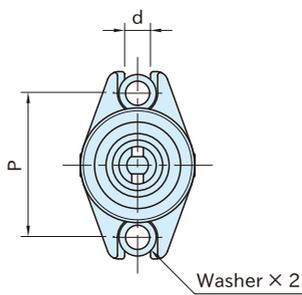
CLAMPING MODULES (Flanged)



CP150-06025



CP150-08040, 1206, 16080



Body	Clamping Nut	Locking Screw
SCM440 steel Induction hardened Black oxide finished Precision ground	SCM440 steel Quenched and tempered Black oxide finished	SCM435 steel Quenched and tempered Black oxide finished

Part Number	D	H (±0.01)	D <sub>1</sub>	L	H <sub>1</sub>	H <sub>2</sub>	W	H <sub>3</sub>	d	P	W <sub>1</sub>
CP150-06025	30	25	15	34.5	12.5	12.5	54	7	6.6	42	3
CP150-08040	40	40	22	46	20	20	65	10	9	50	4
CP150-12063	60	63	32	69	33	30	95	15	13	75	6
CP150-16080	80	80	44	91	40	40	130	20	17	100	8

Part Number	Clamping Force (kN)	Allowable Screw Torque (N·m)	Weight (kg)
CP150-06025	5	4	0.1
CP150-08040	8	8	0.3
CP150-12063	15	22	1.4
CP150-16080	25	50	3.3

**Supplied With**  
 CP150-08040, 12063, 16080 :  
 2 pcs. of flat washer

**Technical Information**  
 Allowable Cutting Force & Workpiece  
 Weight of CLAMPING MODULES

**Related Product**

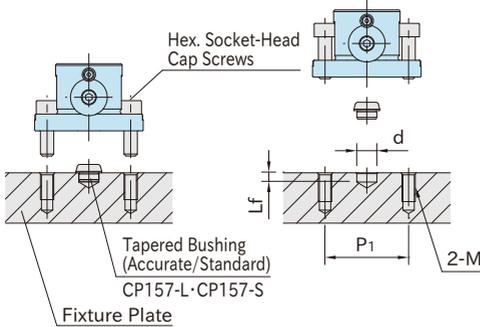
- CP155-L Tapered Clamping Screws
- CP155-D Tapered Clamping Screws
- CP156 Clamping Screws
- CP157 Tapered Bushings

- For workpiece raising
- CP155-LS Tapered Riser Screws
  - CP155-DS Tapered Riser Screws
  - CP156-S Riser Screws

## How To Use

- Use **CP157-L** Tapered Bushing (Accurate) for precise locating.
- Use **CP157-S** Tapered Bushing (Standard) for rough locating.

## Mounting-Hole Dimension



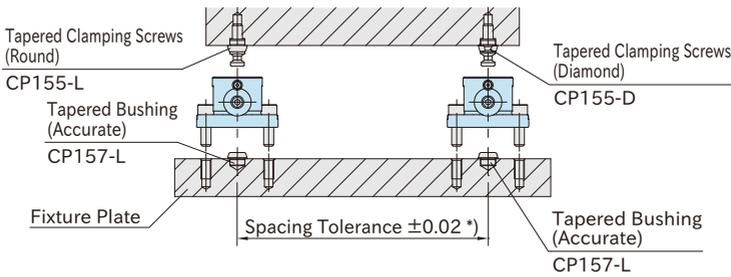
Part Number	d (H7)	Lf	M	P <sub>1</sub>
<b>CP150-06025</b>	8	5.5	M 6×1	42
<b>CP150-08040</b>	12	5.5	M 8×1.25	50
<b>CP150-12063</b>	18	6.5	M12×1.75	75
<b>CP150-16080</b>	22	8	M16×2	100

Note: The tolerance of dimension "d" for Tapered Bushing (Standard) should be  $\begin{matrix} +0.1 \\ 0 \end{matrix}$ .

## Spacing Tolerance

Spacing tolerance for CP157-L Tapered Bushings (Accurate) should be  $\pm 0.02$ .

\*) Spacing tolerance for CP157-S Tapered Bushings (Standard) should be  $\pm 0.1$ .

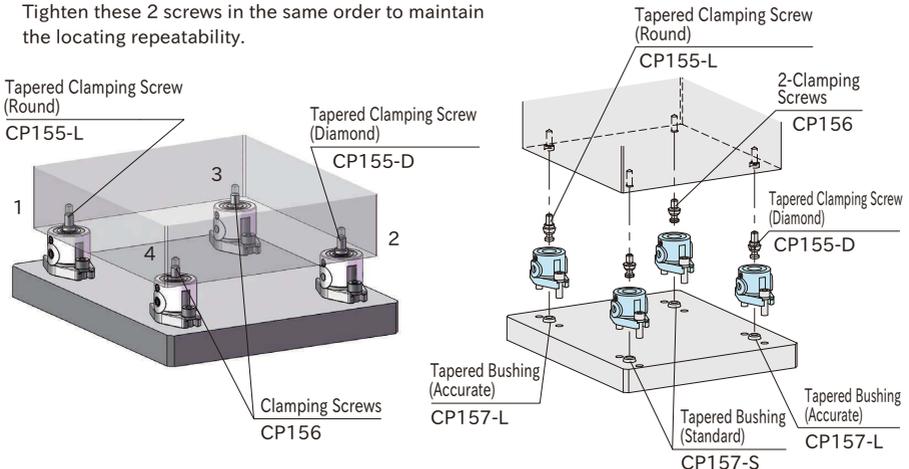


## Tightening Order

Tighten the locking screws in order of 1(Round Tapered Clamping Screw)→2(Diamond Tapered Clamping Screw)→3(Clamping Screw)→4(Clamping Screw).

Note: For **CP150-06025**, use 2 pieces of Round Tapered Clamping Screw.

Tighten these 2 screws in the same order to maintain the locating repeatability.



## CP151

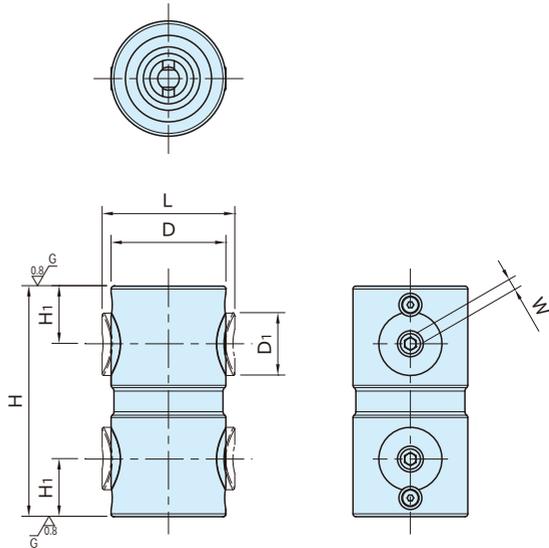
## CLAMPING MODULES (Double)



CP151-06050



CP151-08080, 12125, 16160



Body	Clamping Nut	Locking Screw
SCM440 steel Induction hardened Black oxide finished Precision ground	SCM440 steel Quenched and tempered Black oxide finished	SCM435 steel Quenched and tempered Black oxide finished

Part Number	D	H (±0.01)	D <sub>1</sub>	L	H <sub>1</sub>	W	Clamping Force (kN)	Allowable Screw Torque (N·m)	Weight (kg)
CP151-06050	30	50	15	34.5	12.5	3	5	4	0.2
CP151-08080	40	80	22	46	20	4	8	8	0.7
CP151-12125	60	125	32	69	30	6	15	22	2.6
CP151-16160	80	160	44	91	40	8	25	50	5.8

### Related Product

- CP150 Clamping Modules (Flanged)
  - CP152 Clamping Modules (Single)
  - CP155-L Tapered Clamping Screws
  - CP155-D Tapered Clamping Screws
  - CP156 Clamping Screws
- For workpiece raising
- CP155-LS Tapered Riser Screws
  - CP155-DS Tapered Riser Screws
  - CP156-S Riser Screws

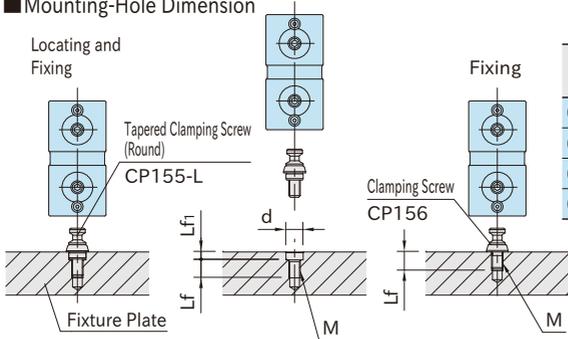
### Technical Information

Allowable Cutting Force & Workpiece Weight of  
CLAMPING MODULES

## How To Use

- Use **CP155-L** Tapered Clamping Screw (Round) for precise locating.
- Use **CP156** Clamping Screw just for fixing.

### Mounting-Hole Dimension



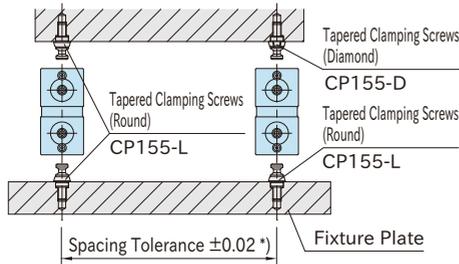
Part Number	d (H7)	Lf	Lf <sub>1</sub>	M
<b>CP151-06050</b>	8	9	5.5	M 6×1
<b>CP151-08080</b>	12	13	5.5	M 8×1.25
<b>CP151-12125</b>	18	19	6.5	M12×1.75
<b>CP151-16160</b>	22	23	8	M16×2

Note: Only tapped hole is required for CP156 Clamping Screw.

### Spacing Tolerance

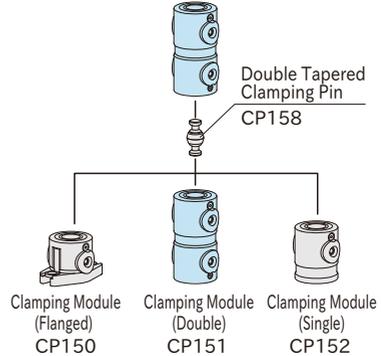
Spacing tolerance for CP155-L Tapered Clamping Screws (Accurate) should be  $\pm 0.02$ .

\*) Spacing tolerance for CP156 Clamping Screws should be  $\pm 0.2$ .



### Coupling with Other Clamping Modules

Can be coupled with each Clamping Module. (Locating Repeatability is 0.2)

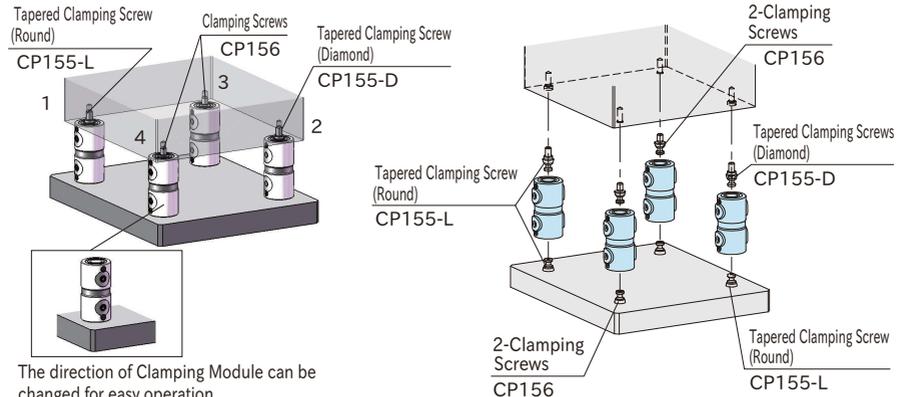


### Tightening Order

Tighten the locking screws in order of 1(Round Tapered Clamping Screw)→2(Diamond Tapered Clamping Screw)→3(Clamping Screw)→4(Clamping Screw).

Note: For **CP151**-06050, use 2 pieces of Round Tapered Clamping Screw.

Tighten these 2 screws in the same order to maintain the locating repeatability.

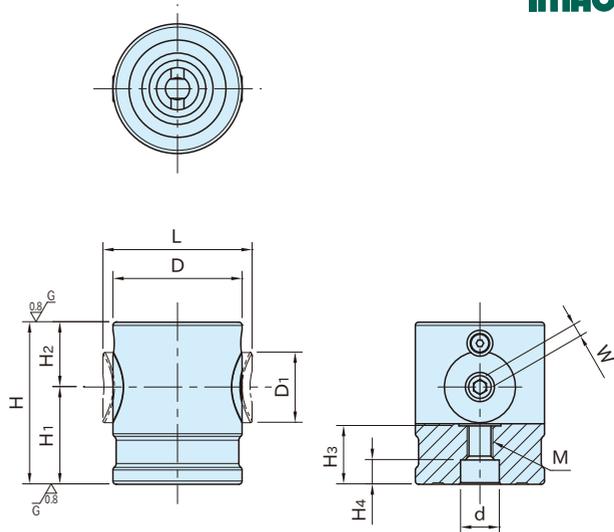


## CP152

## CLAMPING MODULES (Single)



CP152-06032



CP152-08050, 12080, 16100

Body	Clamping Nut	Locking Screw
SCM440 steel Induction hardened Black oxide finished Precision ground	SCM440 steel Quenched and tempered Black oxide finished	SCM435 steel Quenched and tempered Black oxide finished

Part Number	D	H (±0.01)	D <sub>1</sub>	L	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	d (H7)	H <sub>4</sub>	M	W
CP152-06032	30	32	15	34.5	19.5	12.5	11.5	8	5	M 6X1	3
CP152-08050	40	50	22	46	30	20	18	12	7.5	M 8X1.25	4
CP152-12080	60	80	32	69	50	30	25	18	10.5	M12X1.75	6
CP152-16100	80	100	44	91	60	40	31	22	12.5	M16X2	8

Part Number	Clamping Force (kN)	Allowable Screw Torque (N·m)	Weight (kg)
CP152-06032	5	4	0.2
CP152-08050	8	8	0.5
CP152-12080	15	22	1.6
CP152-16100	25	50	3.8

### Technical Information

Allowable Cutting Force &  
Workpiece Weight of CLAMPING  
MODULES

### Related Product

- CP150 Clamping Modules (Flanged)
- CP151 Clamping Modules (Double)
- CP159 Locating Bushings

- CP155-L Tapered Clamping Screws
- CP155-D Tapered Clamping Screws
- CP156 Clamping Screws

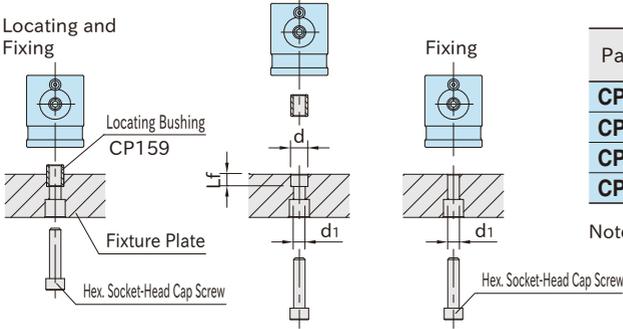
For workpiece raising

- CP155-LS Tapered Riser Screws
- CP155-DS Tapered Riser Screws
- CP156-S Riser Screws

## How To Use

- Use **CP159** Locating Bushing for precise locating.
- Use only hex. socket-head cap screw just for fixing.

### ■ Mounting-Hole Dimension



Part Number	d (H7)	Lf	d1 (+0.2 / 0)
<b>CP152-06032</b>	8	6.5	6
<b>CP152-08050</b>	12	8.5	8
<b>CP152-12080</b>	18	12.5	12
<b>CP152-16100</b>	22	16.5	16

Note: Only c'bored hole is required just for fixing.

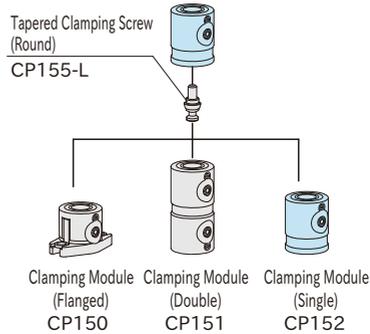
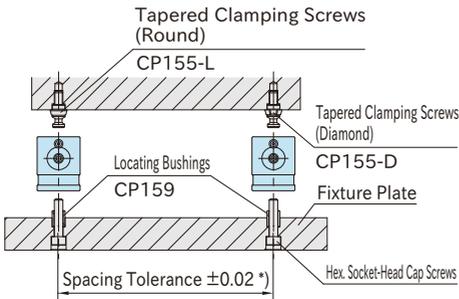
### ■ Spacing Tolerance

Spacing tolerance for CP159 Locating Bushings should be  $\pm 0.02$ .

\*) Spacing tolerance for hex. socket-head cap screw should be  $\pm 0.1$ .

### ■ Coupling with Other Clamping Modules

Can be coupled with each Clamping Module. (Locating Repeatability is  $5 \mu\text{m}$ )

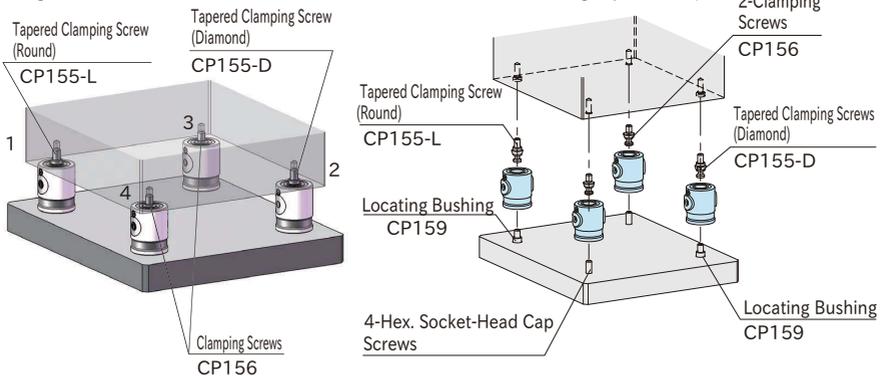


### ■ Tightening Order

Tighten the locking screws in order of 1 (Round Tapered Clamping Screw) → 2 (Diamond Tapered Clamping Screw) → 3 (Clamping Screw) → 4 (Clamping Screw).

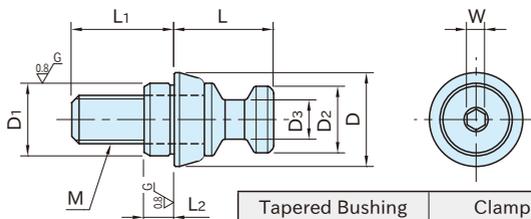
Note: For **CP152**-06032, use 2 pieces of Round Tapered Clamping Screw.

Tighten these 2 screws in the same order to maintain the locating repeatability.



# CP155-L

## TAPERED CLAMPING SCREWS

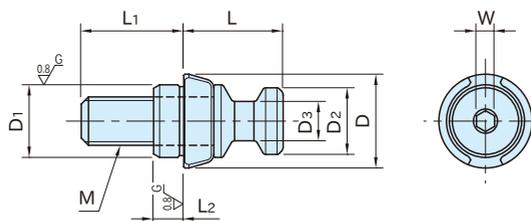


Tapered Bushing	Clamping Screw
S45C steel Black oxide finished Precision ground	SCM435 steel Quenched and tempered Black oxide finished

Part Number	M	D <sub>1</sub> (g6)	L <sub>2</sub>	L <sub>1</sub>	D	L	D <sub>2</sub>	D <sub>3</sub>	W	Weight (g)	CLAMPING MODULES
CP155-06001L	M 6X1	8	5	13	11.5	10	8	4.8	2.5	6	CP150-06025, CP151-06050 CP152-06032
CP155-08061L	M 6X1	10	5	17	15.5	16.5	11	6.5	3	17	CP150-08040, CP151-08080 CP152-08050
CP155-08001L	M 8X1.25	12	6	24	24.5	25	16	9.5	5	20	CP150-12063, CP151-12125 CP152-12080
CP155-12081L	M 8X1.25	12	5	17	24.5	25	16	9.5	5	52	CP150-12063, CP151-12125 CP152-12080
CP155-12001L	M12X1.75	18	6	24	31.5	33	21	13	6	70	CP150-16080, CP151-16160 CP152-12080
CP155-16121L	M12X1.75	18	6	24	31.5	33	21	13	6	125	CP150-16080, CP151-16160 CP152-16100
CP155-16001L	M16X2	22	7.5	30	31.5	33	21	13	6	150	CP152-16100

# CP155-D

## TAPERED CLAMPING SCREWS



Tapered Bushing	Clamping Screw
S45C steel Black oxide finished Precision ground	SCM435 steel Quenched and tempered Black oxide finished

Part Number	M	D <sub>1</sub> (g6)	L <sub>2</sub>	L <sub>1</sub>	D	L	D <sub>2</sub>	D <sub>3</sub>	W	Weight (g)	CLAMPING MODULES
CP155-08061D	M 6X1	10	5	17	15.5	16.5	11	6.5	3	17	CP150-08040, CP151-08080 CP152-08050
CP155-08001D	M 8X1.25	12	6	24	24.5	25	16	9.5	5	20	CP150-12063, CP151-12125 CP152-12080
CP155-12081D	M 8X1.25	12	5	17	24.5	25	16	9.5	5	51	CP150-12063, CP151-12125 CP152-12080
CP155-12001D	M12X1.75	18	6	24	31.5	33	21	13	6	70	CP150-16080, CP151-16160 CP152-12080
CP155-16121D	M12X1.75	18	6	24	31.5	33	21	13	6	123	CP150-16080, CP151-16160 CP152-16100
CP155-16001D	M16X2	22	7.5	30	31.5	33	21	13	6	150	CP152-16100

## How To Use

### Round Type

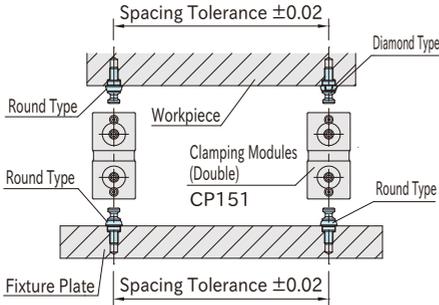
- Can be used for locating **CP151** Clamping Module (Double).
- Can be used for locating a workpiece with diamond type.

### Diamond Type

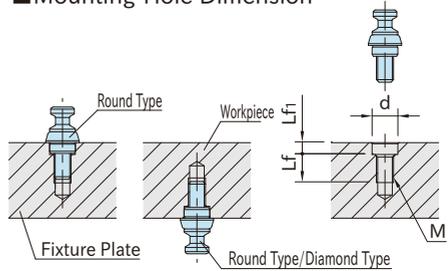
- Can be used for locating a workpiece with round type.
- Fix the tapered bushing of diamond type after deciding the direction.

Note: For **CP150**-06025, **CP151**-06050 or **CP152**-06032, use 2 pieces of Round Type.

### Spacing Tolerance

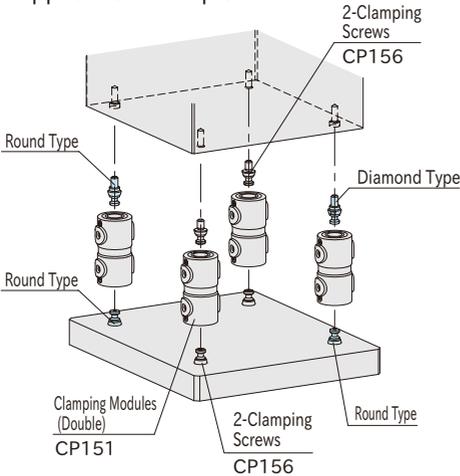


### Mounting-Hole Dimension



Size	d (H7)	Lf	Lf1	M
<b>CP155-06001</b>	8	9	5.5	M 6×1
<b>CP155-08061</b>	10	13	5.5	M 6×1
<b>CP155-08001</b>	12			M 8×1.25
<b>CP155-12081</b>	12	13	5.5	M 8×1.25
<b>CP155-12001</b>	18	19	6.5	M12×1.75
<b>CP155-16121</b>	18	19	6.5	M12×1.75
<b>CP155-16001</b>	22	23	8	M16×2

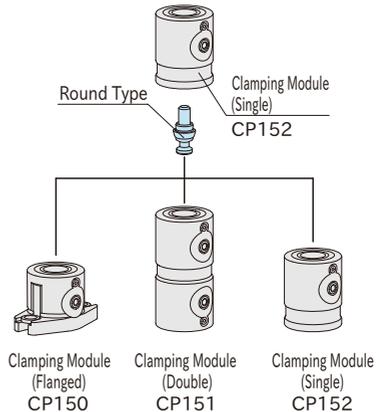
### Application Example



### Coupling of Clamping Module (Single)

Round type can be used as a coupling for Clamping Module (Single).

⟨Locating Repeatability is 5 μm⟩

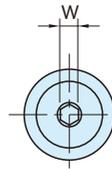
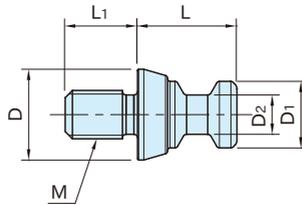


### Related Product

- **CP150** Clamping Modules (Flanged)
- **CP151** Clamping Modules (Double)
- **CP152** Clamping Modules (Single)
- **CP156** Clamping Screws

# CP156

## CLAMPING SCREWS

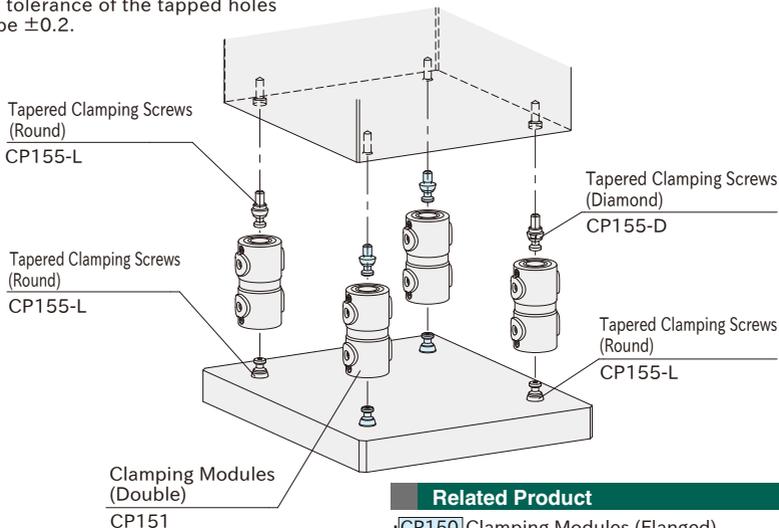


Body
SCM435 steel Quenched and tempered Black oxide finished

Part Number	M	L <sub>1</sub>	D	L	D <sub>1</sub>	D <sub>2</sub>	W	Weight (g)	CLAMPING MODULES
<b>CP156-06001</b>	M 6×1	8	11	10	8	4.8	2.5	5	CP150-06025, CP151-06050 CP152-06032
<b>CP156-08061</b>	M 6×1	9	15	16.5	11	6.5	3	13	CP150-08040, CP151-08080 CP152-08050
<b>CP156-08001</b>	M 8×1.25	12						16	
<b>CP156-12081</b>	M 8×1.25	12	24	25	16	9.5	5	46	CP150-12063, CP151-12125 CP152-12080
<b>CP156-12101</b>	M10×1.5	15						51	
<b>CP156-12001</b>	M12×1.75	18						57	
<b>CP156-16101</b>	M10×1.5	15	31	33	21	13	6	102	CP150-16080, CP151-16160 CP152-16100
<b>CP156-16121</b>	M12×1.75	18						108	
<b>CP156-16001</b>	M16×2	22						125	

### How To Use

- Can be used for mounting [CP151](#) Clamping Module (Double) on the fixture plate.
- Can be installed on the workpiece.
- No locating function.
- Spacing tolerance of the tapped holes should be ±0.2.



### Related Product

- [CP150](#) Clamping Modules (Flanged)
- [CP151](#) Clamping Modules (Double)
- [CP152](#) Clamping Modules (Single)
- [CP155-L](#) Tapered Clamping Screws
- [CP155-D](#) Tapered Clamping Screws

### Note

Contact us for customization.

## CP157

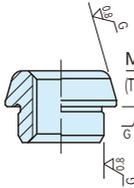
## TAPERED BUSHINGS



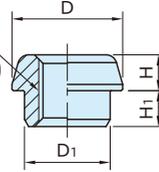
**CP157-L**  
(Accurate)



**CP157-S**  
(Standard)



**CP157-L**  
(Accurate)



**CP157-S**  
(Standard)

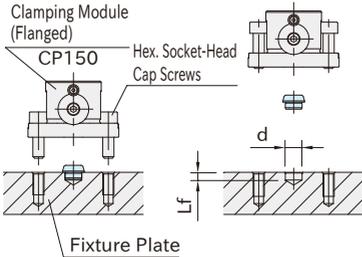
Body
S45C steel
Black oxide finished
Precision ground (only for Accurate type)

Accurate		Standard		D	H	H <sub>1</sub>	M	Weight (g)	CLAMPING MODULES
Part Number	D <sub>1</sub> (g6)	Part Number	D <sub>1</sub> (-0.02 / -0.05)						
CP157-06001L	8	CP157-06001S	8	11.5	4	5	M 6×1	4	CP150-06025
CP157-08001L	12	CP157-08001S	12	15.5	5	5	M 8×1.25	8	CP150-08040, CP160-08040*
CP157-12001L	18	CP157-12001S	18	24.5	8	6	M12×1.75	27	CP150-12063, CP160-12063*
CP157-16001L	22	CP157-16001S	22	31.5	10	7.5	M16×2	51	CP150-16080, CP160-16080*

### How To Use

- Can be used for mounting **CP150** Clamping Module (Flanged) on the fixture plate.
- Use Accurate Type for precise locating of a clamping module.
- Use Standard Type for rough locating of a clamping module.

### Mounting-Hole Dimension



Size	d (H7)	Lf
<b>06001</b>	8	5.5
<b>08001</b>	12	5.5
<b>12001</b>	18	6.5
<b>16001</b>	22	8

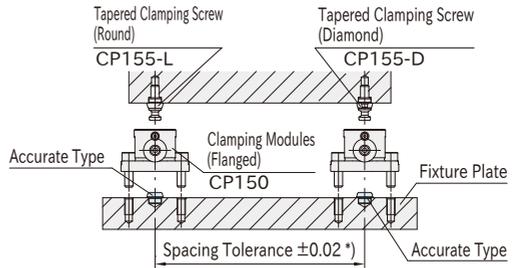
Note: The tolerance of dimension "d" for Standard Type should be  $^{+0.1}_0$ .

### Related Product

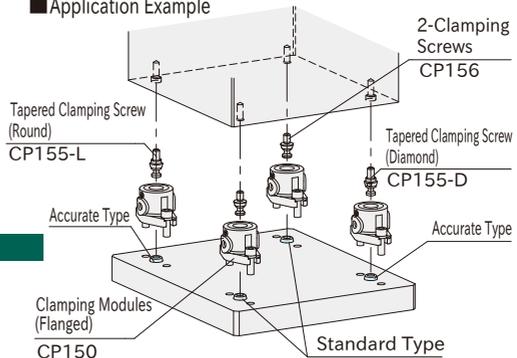
- **CP150** Clamping Modules (Flanged)
- **CP155-L** Tapered Clamping Screws
- **CP155-D** Tapered Clamping Screws
- **CP156** Clamping Screws
- **CP160** Clamping Modules (Hook)

### Spacing Tolerance

Spacing tolerance for Accurate Type should be  $\pm 0.02$ .  
\*) Spacing tolerance for Standard Type should be  $\pm 0.1$ .

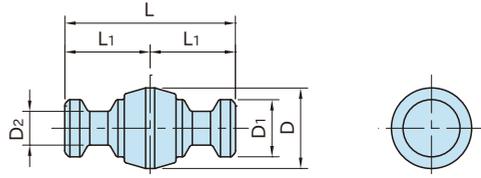


### Application Example



CP158

DOUBLE TAPERED CLAMPING PINS

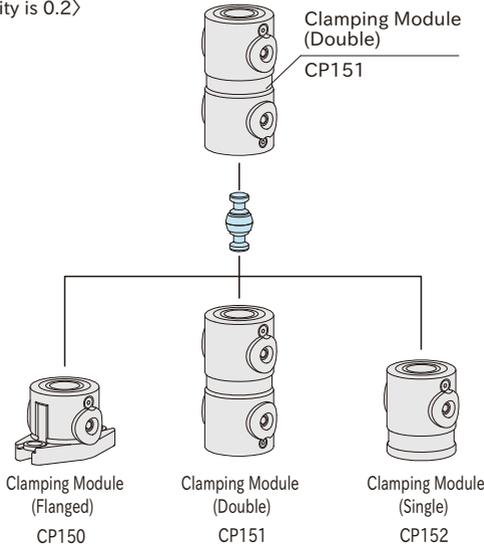


Body
SCM435 steel Quenched and tempered Black oxide finished

Part Number	D	L	D <sub>1</sub>	D <sub>2</sub>	L <sub>1</sub>	Weight (g)	CLAMPING MODULES
CP158-08001	15.5	33	11	6.5	16.5	24	CP150-08040,CP151-08080,CP152-08050
CP158-12001	24.5	50	16	9.5	25	85	CP150-12063,CP151-12125,CP152-12080
CP158-16001	31.5	66	21	13	33	190	CP150-16080,CP151-16160,CP152-16100

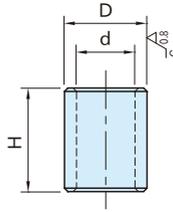
How To Use

Can be used as a coupling for CP151 Clamping Module (Double).  
 <Locating Repeatability is 0.2>



## CP159

## LOCATING BUSHINGS



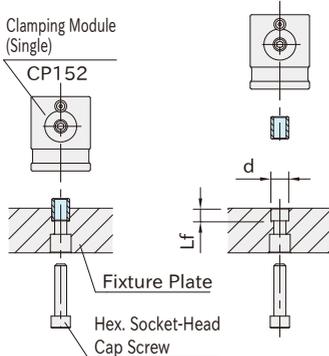
Body
SK95 steel
Quenched and tempered
Black oxide finished
Precision ground

Part Number	d	D (h6)	H	Weight (g)	CLAMPING MODULES
CP159-06001	6	8	11	2	CP152-06032
CP159-08001	8.5	12	15	7	CP152-08050
CP159-12001	12.5	18	22	22	CP152-12080
CP159-16001	16.5	22	28	35	CP152-16100

### How To Use

Can be used for locating **CP152** Clamping Module (Single) on the fixture plate.

### Mounting-Hole Dimension

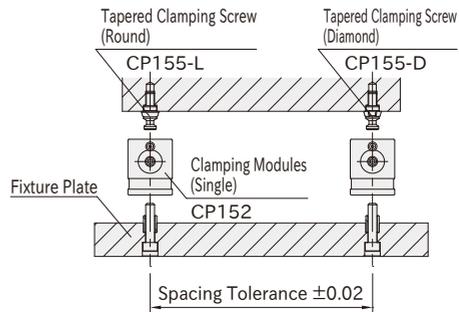


Part Number	d (H7)	Lf
CP159-06001	8	6.5
CP159-08001	12	8.5
CP159-12001	18	12.5
CP159-16001	22	16.5

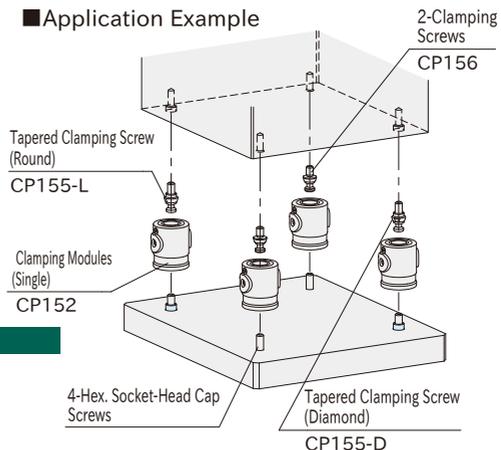
### Related Product

- **CP152** Clamping Modules (Single)
- **CP155-L** Tapered Clamping Screws
- **CP155-D** Tapered Clamping Screws
- **CP156** Clamping Screws

### Spacing Tolerance



### Application Example

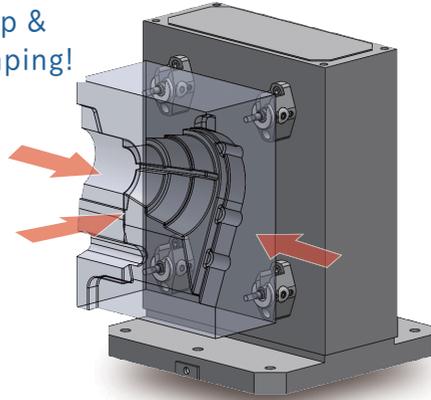




# MODULAR PULL CLAMPING SYSTEM HOOK TYPE

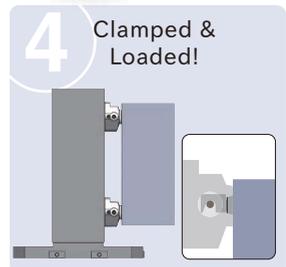
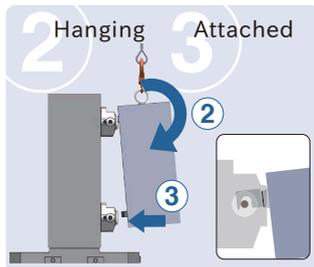
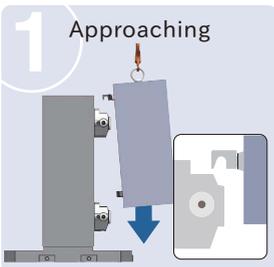
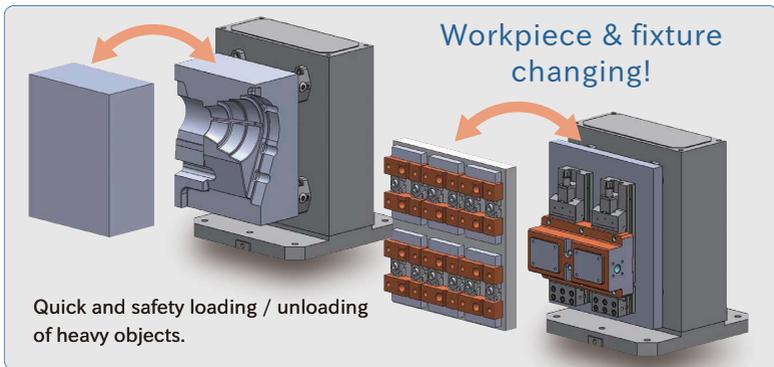


Single Setup & Quick Clamping!



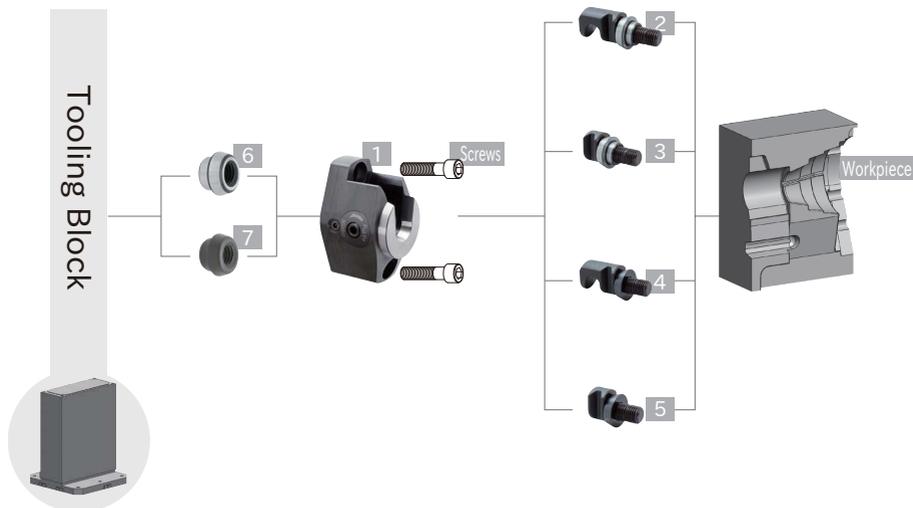
## For Horizontal Machining Center MODULAR PULL CLAMPING SYSTEM HOOK TYPE

Hook-shaped clamping screws enable to hang the workpiece before clamping!  
Quick and safety workpiece setup in vertical workholding.



# How To Use Modular Pull Clamping System Hook Type

## Assembly Chart



## Clamping Modules

### 1 Hook



Part Number		Height (mm)	Clamping Force (kN)
CP160-08040R	CP160-08040L	40	8
CP160-12063R	CP160-12063L	63	15
CP160-16080R	CP160-16080L	80	25

## Tapered Clamping Screws

### 2 With Hook



Part Number	Thread Size	Workpiece Locating Repeatability
CP165-08001LH	M 8	5μm
CP165-12001LH	M12	
CP165-16001LH	M16	

### 3 Without Hook



Part Number	Thread Size	Workpiece Locating Repeatability
CP165-08001L	M 8	5μm
CP165-12001L	M12	
CP165-16001L	M16	

## Clamping Screws

### 4 With Hook



Part Number	Thread Size
CP166-08001H	M 8
CP166-12001H	M12
CP166-16001H	M16

### 5 Without Hook



Part Number	Thread Size
CP166-08001	M 8
CP166-12001	M12
CP166-16001	M16

## Tapered Bushings

### 6 Accurate



Part Number	Clamping Module Locating Repeatability
CP157-08001L	5μm
CP157-12001L	
CP157-16001L	

### 7 Standard

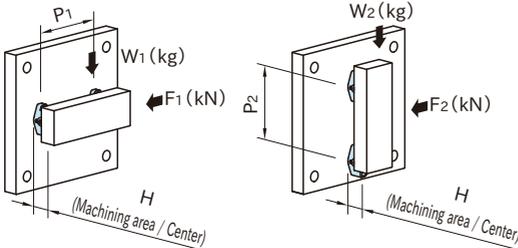


Part Number	Clamping Module Locating Repeatability
CP157-08001S	0.1mm
CP157-12001S	
CP157-16001S	

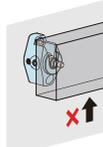
## Allowable Cutting Force & Workpiece Weight of CLAMPING MODULES (Hook)

Ensure the cutting force and the workpiece weight are within the allowable level.  
 The values below are only the strength of the body of clamping modules.  
 The rigidity of the whole fixtures and the workpiece are not considered.  
 Use the values as a guide for setting appropriate machining conditions.

### 2 Modules



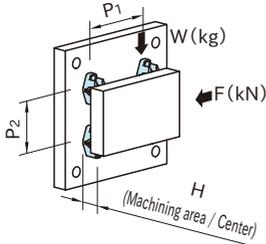
#### Note



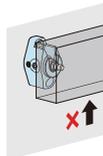
Heavy cutting force in the open direction may cause workpiece move.

Size	Allowable Cutting Force			Allowable Workpiece Weight		
	F <sub>1</sub> (kN)	F <sub>2</sub> (kN)	Max (kN)	W <sub>1</sub> (kg)	W <sub>2</sub> (kg)	Max (kg)
<b>CP160-08040</b>	$(0.24P_1 + 432)/H$	240/H	3.2	$240 \times 100/H$	$(0.24P_2 + 432) \times 100/H$	320
<b>CP160-12063</b>	$(0.50P_1 + 900)/H$	500/H	6	$500 \times 100/H$	$(0.50P_2 + 900) \times 100/H$	600
<b>CP160-16080</b>	$(1.00P_1 + 1800)/H$	1000/H	10	$1000 \times 100/H$	$(1.00P_2 + 1800) \times 100/H$	1000

### 4 Modules



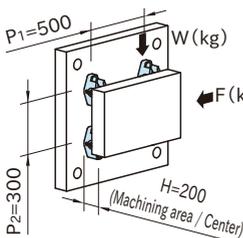
#### Caution



Heavy cutting force in the open direction may cause workpiece move.

Size	Allowable Cutting Force		Allowable Workpiece Weight	
	F (kN)	Max (kN)	W (kg)	Max (kg)
<b>CP160-08040</b>	$2 \times (0.24P_1 + 432)/H$	6.4	$2 \times (0.24P_2 + 432) \times 100/H$	640
<b>CP160-12063</b>	$2 \times (0.50P_1 + 900)/H$	12	$2 \times (0.50P_2 + 900) \times 100/H$	1200
<b>CP160-16080</b>	$2 \times (1.00P_1 + 1800)/H$	20	$2 \times (1.00P_2 + 1800) \times 100/H$	2000

### Calculation Example



- 4 pcs of CP160-12063R/L (height 63mm)
- Pitch:  
 $P_1 = 500\text{mm}$   
 $P_2 = 300\text{mm}$
- Workpiece center:  $H = 200\text{mm}$
- F direction cutting force: 5kN
- Workpiece weight: 600kg

<Allowable Cutting Force F>  
 $F = 2 \times (0.5 \times P_1 + 900) / H$   
 $= 2 \times (0.5 \times 500 + 900) / 200$   
 $= 11.5\text{kN}$

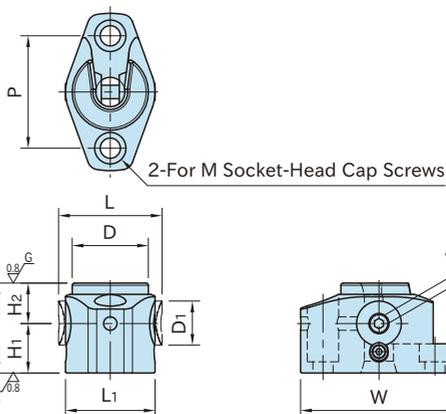
\* ) Cutting force 5kN is within allowable value (11.5kN).

<Allowable Workpiece Weight W>  
 $W = 2 \times (0.5 \times P_2 + 900) \times 100 / H$   
 $= 2 \times (0.5 \times 300 + 900) \times 100 / 200$   
 $= 1050\text{kg}$

\* ) Workpiece weight 600kg is within allowable value (1050kg).

## CP160

## CLAMPING MODULES (Hook)



Note: The drawing shows CP160-R. The hex. socket for locking screw ( $W_1$ ) is on the other side in CP160-L.

Body	Clamping Nut	Locking Screw
SCM440 steel Induction hardened Black oxide finished Precision ground	SCM440 steel Quenched and tempered Black oxide finished	SCM435 steel Quenched and tempered Black oxide finished

Part Number	D	H ( $\pm 0.01$ )	D <sub>1</sub>	L	H <sub>1</sub>	H <sub>2</sub>	W	L <sub>1</sub>	H <sub>3</sub>
<b>CP160-08040R</b>	34	40	20	46	22	18	70	40	13
<b>CP160-08040L</b>									
<b>CP160-12063R</b>	52	63	30	69	35	28	100	60	20
<b>CP160-12063L</b>									
<b>CP160-16080R</b>	70	80	40	93	44	36	140	80	26
<b>CP160-16080L</b>									

Part Number	M	P	H <sub>4</sub>	W <sub>1</sub>	Clamping Force (kN)	Allowable Screw Torque (N·m)	Weight (kg)
<b>CP160-08040R</b>	M 8	50	5	4	8	8	0.4
<b>CP160-08040L</b>							
<b>CP160-12063R</b>	M12	75	8	6	15	22	1.4
<b>CP160-12063L</b>							
<b>CP160-16080R</b>	M16	100	10	8	25	50	3.2
<b>CP160-16080L</b>							

### Technical Information

Allowable Cutting Force & Workpiece Weight of CLAMPING MODULES (Hook)

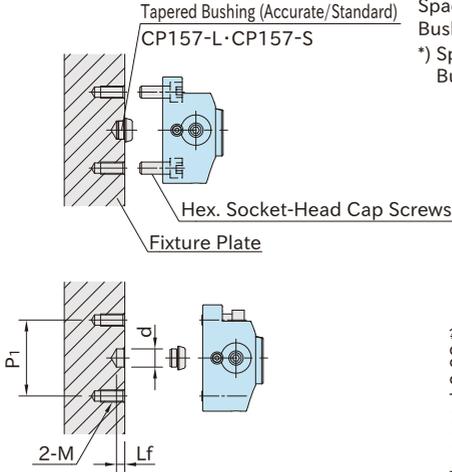
### Related Product

- [CP157](#) Tapered Bushings
- [CP165-LH](#) Tapered Clamping Screws (Hook)
- [CP165-L](#) Tapered Clamping Screws
- [CP166-H](#) Clamping Screws (Hook)
- [CP166](#) Clamping Screws

## How To Use

- Use **CP157-L** Tapered Bushing (Accurate) for precise locating.
- Use **CP157-S** Tapered Bushing (Standard) for rough locating.

### ■ Mounting-Hole Dimension



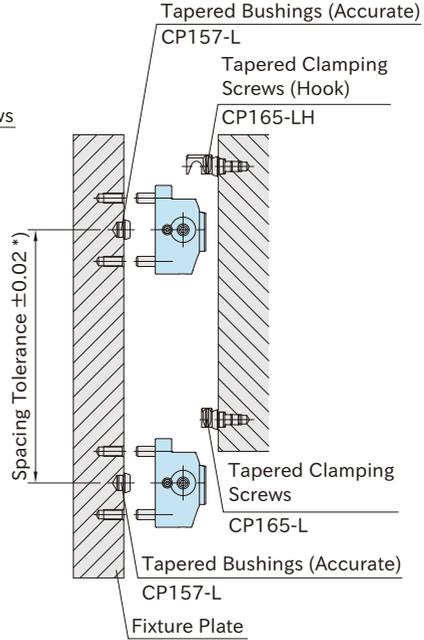
Size	d (H7)	Lf	M	P <sub>1</sub>
<b>CP160-08040</b>	12	5.5	M 8×1.25	50
<b>CP160-12063</b>	18	6.5	M12×1.75	75
<b>CP160-16080</b>	22	8	M16×2	100

Note: The tolerance of dimension "d" for Tapered Bushings (Standard) should be  $^{+0.1}$ .

### ■ Spacing Tolerance

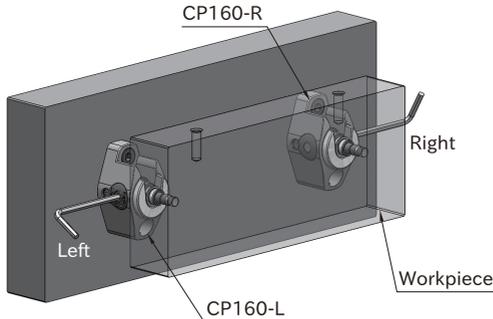
Spacing tolerance should be  $\pm 0.02$  for Tapered Bushings (Accurate).

\*) Spacing tolerance should be  $\pm 0.1$  for Tapered Bushings (Standard).



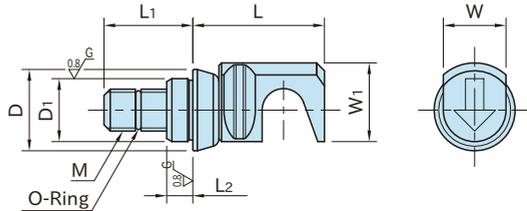
### ■ Layout

Use CP160-R for tightening from right side,  
CP160-L for left side.



## CP165-LH

## TAPERED CLAMPING SCREWS (Hook)



Tapered Bushing	Clamping Screw	O-Ring
S45C steel Black oxide finished Precision ground	SCM435 steel Quenched and tempered Black oxide finished	Nitrile rubber (NBR)

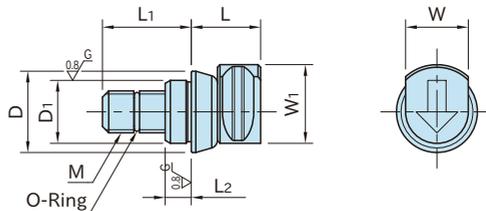
Part Number	M	D <sub>1</sub> (g6)	L <sub>2</sub>	L <sub>1</sub>	D	L	W <sub>1</sub>	W	Proper O-Ring Size	Weight (g)	Proper Clamping Module
CP165-08001LH	M 8X1.25	12	5	17	15.5	25	15	12	SS050(CS1 /ID 5)	30	CP160-08040R,CP160-08040L
CP165-12001LH	M12X1.75	18	6	24	24.5	40	23.5	19	S 8 (CS1.5/ID 7.5)	115	CP160-12063R,CP160-12063L
CP165-16001LH	M16X2	22	7.5	30	31.5	51	30	24	S 12 (CS1.5/ID11.5)	235	CP160-16080R,CP160-16080L

## Reference

Feature and How To Use in later page

## CP165-L

## TAPERED CLAMPING SCREWS



Tapered Bushing	Clamping Screw	O-Ring
S45C steel Black oxide finished Precision ground	SCM435 steel Quenched and tempered Black oxide finished	Nitrile rubber (NBR)

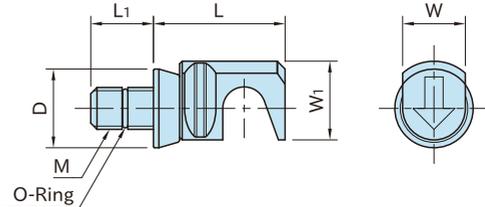
Part Number	M	D <sub>1</sub> (g6)	L <sub>2</sub>	L <sub>1</sub>	D	L	W <sub>1</sub>	W	Proper O-Ring Size	Weight (g)	Proper Clamping Module
CP165-08001L	M 8X1.25	12	5	17	15.5	13	15	12	SS050(CS1 /ID 5)	22	CP160-08040R,CP160-08040L
CP165-12001L	M12X1.75	18	6	24	24.5	21.5	23.5	19	S 8 (CS1.5/ID 7.5)	81	CP160-12063R,CP160-12063L
CP165-16001L	M16X2	22	7.5	30	31.5	27	30	24	S 12 (CS1.5/ID11.5)	170	CP160-16080R,CP160-16080L

## Reference

Feature and How To Use in later page

CP166-H

CLAMPING SCREWS (Hook)



Tapered Bushing	Clamping Screw	O-Ring
S45C steel Black oxide finished	SCM435 steel Quenched and tempered Black oxide finished	Nitrile rubber (NBR)

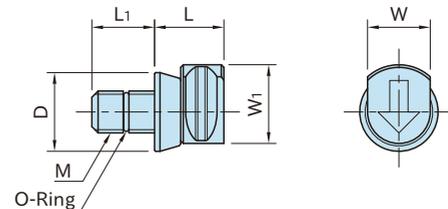
Part Number	M	L <sub>1</sub>	D	L	W <sub>1</sub>	W	Proper O-Ring Size	Weight (g)	Proper Clamping Module
CP166-08001H	M 8×1.25	12	15	25	15	12	SS050(CS1 /ID 5)	26	CP160-08040R,CP160-08040L
CP166-12001H	M12×1.75	18	24	40	23.5	19	S 8 (CS1.5/ID 7.5)	103	CP160-12063R,CP160-12063L
CP166-16001H	M16×2	22	31	51	30	24	S 12 (CS1.5/ID11.5)	213	CP160-16080R,CP160-16080L

Reference

Feature and How To Use in later page

CP166

CLAMPING SCREWS



Tapered Bushing	Clamping Screw	O-Ring
S45C steel Black oxide finished	SCM435 steel Quenched and tempered Black oxide finished	Nitrile rubber (NBR)

Part Number	M	L <sub>1</sub>	D	L	W <sub>1</sub>	W	Proper O-Ring Size	Weight (g)	Proper Clamping Module
CP166-08001	M 8×1.25	12	15	13	15	12	SS050(CS1 /ID 5)	18	CP160-08040R,CP160-08040L
CP166-12001	M12×1.75	18	24	21.5	23.5	19	S 8 (CS1.5/ID 7.5)	69	CP160-12063R,CP160-12063L
CP166-16001	M16×2	22	31	27	30	24	S 12 (CS1.5/ID11.5)	147	CP160-16080R,CP160-16080L

Reference

Feature and How To Use in later page

## Feature

- Each clamping screw has commercially available O-ring to prevent rotation and keep the direction of arrow marking.
- O-ring should be replaced by the customer when it is worn.

## How To Use

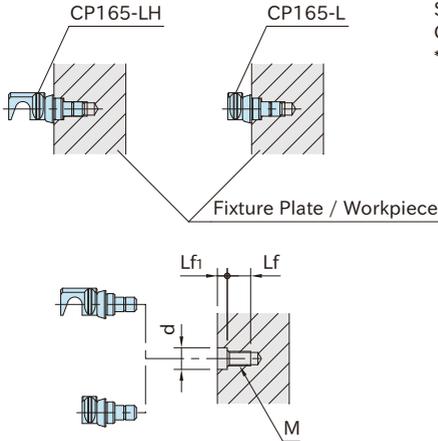
### Tapered Clamping Screws

Can be used for locating fixture plate or workpiece.

### Clamping Screws

Can be used for just clamping.

### ■ Mounting-Hole Dimension



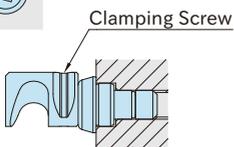
Size	d *)	Lf	Lf <sub>1</sub>	M
<b>CP165-08001</b>	12	13	5.5	M 8×1.25
<b>CP165-12001</b>	18	19	6.5	M12×1.75
<b>CP165-16001</b>	22	23	8	M16×2

\*) The hole tolerance should be  $\begin{smallmatrix} -0.010 \\ 0.025 \end{smallmatrix}$  when Tapered Clamping Screws are always mounted on the fixture plate. Fixture plate and tapered bushing fit tightly and keep the repeatability without chip incursion.

• The hole tolerance should be H7 when mounting on workpiece. Tapered bushing can be easily mounted / removed.

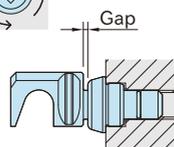
### ■ Installation

1. Fully tighten the clamping screw on fixture plate or workpiece.



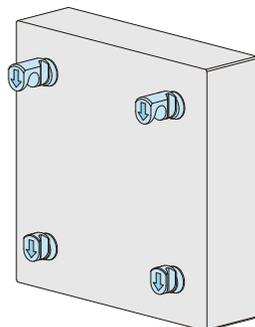
Fixture Plate / Workpiece

2. Turn the screw counterclockwise within one turn until the arrow marking points downward. (There is a gap between clamping screw and tapered bushing.)



Gap

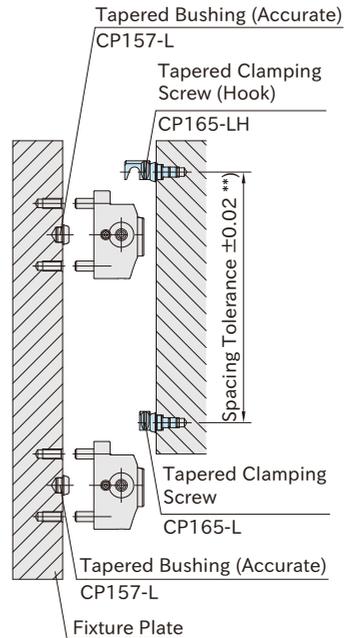
3. Install the clamping screws into the clamping modules.



### ■ Spacing Tolerance

Spacing tolerance should be  $\pm 0.02$  for Tapered Clamping Screws.

\*\*) Spacing tolerance should be  $\pm 0.2$  for Clamping Screws.



Note: Refer to the next page for the layout of the products.

## Application Example

Tighten the hook type clamping screw firstly.  
The first one becomes the reference.

The products should be positioned as shown below.

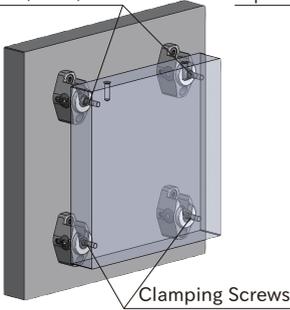
[CP165-LH](#) [CP165-L](#) Tapered Clamping Screws and [CP157-L](#) Tapered Bushings (Accurate) should be used together, and [CP166-H](#) [CP166](#) Clamping Screws and [CP157-S](#) Tapered Bushings (Standard) are also.

## Note

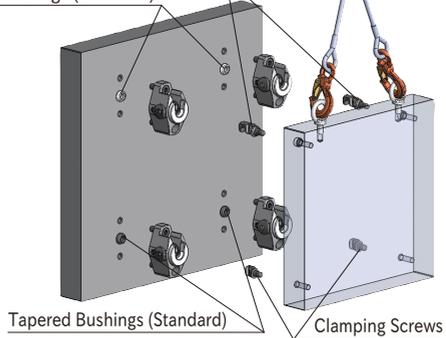
Do not remove the hoists until the unit fully clamped.

### Example 1

Tapered Clamping Screws (Hook)

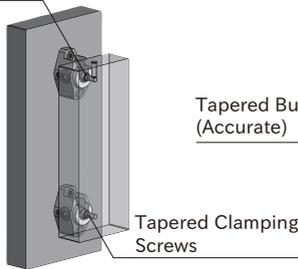


Tapered Clamping Screws (Hook)  
Tapered Bushings (Accurate)



### Example 2

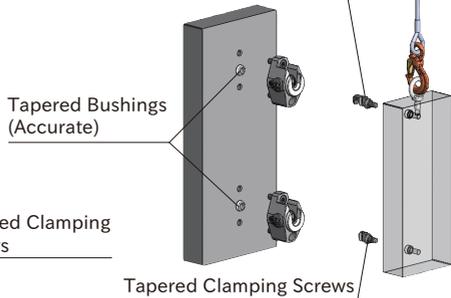
Tapered Clamping Screws (Hook)



Tapered Clamping Screws (Hook)

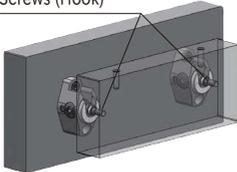
Tapered Bushings (Accurate)

Tapered Clamping Screws



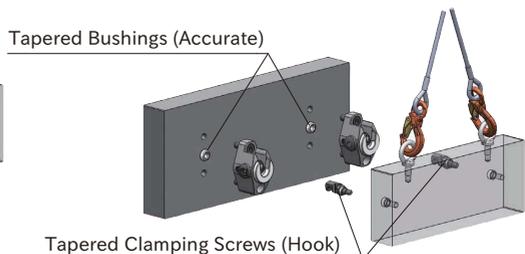
### Example 3

Tapered Clamping Screws (Hook)



Tapered Bushings (Accurate)

Tapered Clamping Screws (Hook)



Note: Use [CP166-H](#) [CP166](#) Clamping Screws when locating of workpiece is not necessary.

## Related Product

·[CP160](#) Clamping Modules (Hook)

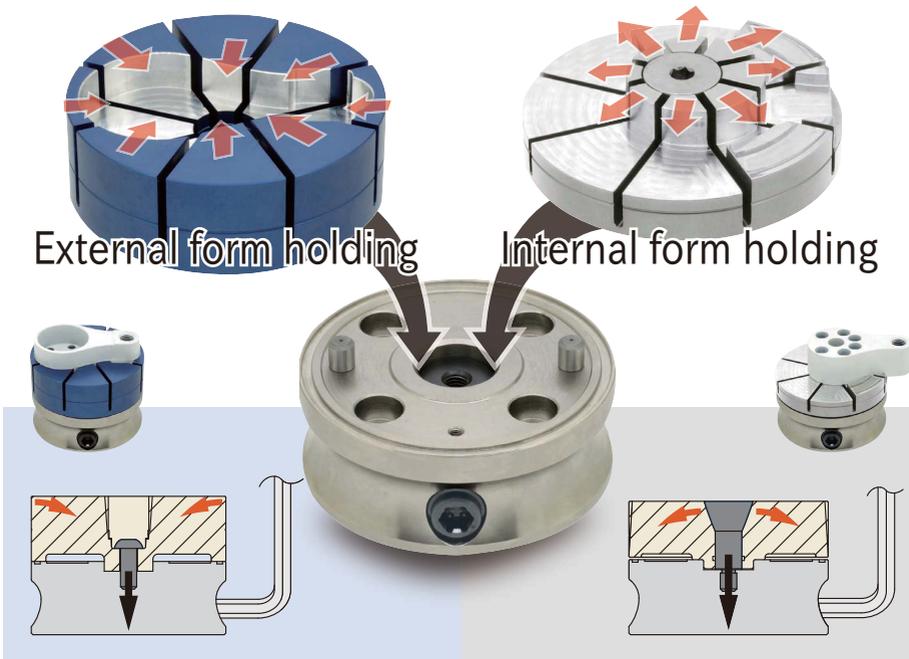
·[CP165-LH](#) Tapered Clamping Screws (Hook)

·[CP165-L](#) Tapered Clamping Screws

·[CP166-H](#) Clamping Screws (Hook)

·[CP166](#) Clamping Screws

## FORM HOLDING CLAMPS



Clamp any shape! Hold on external / internal form!

# FORM HOLDING CLAMPS

Form Holding Clamps with a machinable jaw are perfect for irregular-shaped workpieces. Simple workholding on external/internal form eliminates the need for custom fixtures.

Secure clamping for  
odd shaped workpieces



Versatile workholding  
by changing jaw



Quick clamping by  
tightening cam cylinder



1 Prepare jaw

2 Machine jaw

3 Mount workpiece

4 Tighten cam cylinder

External

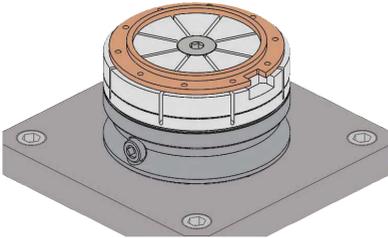


Internal



## Application Example

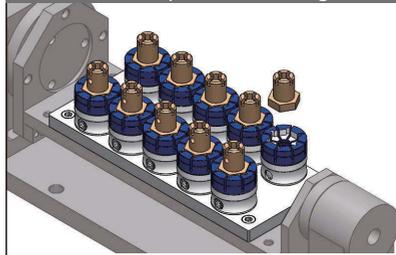
### Clamping Low Profile Workpiece



8 jaw sections distribute clamping force to workpiece for deformation prevention.

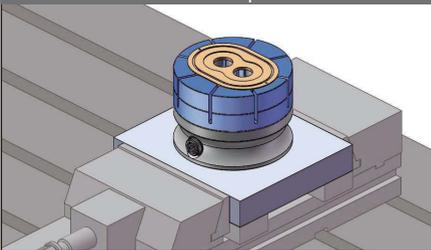
Note to control the tightening torque using adequate tools in reference to the data provided by the performance curve.

### Multipul Workholding



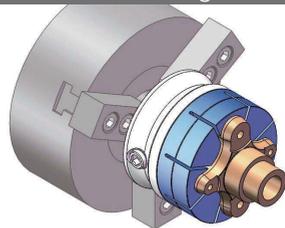
Small cylindrical body allows the multi-piece clamping in limited space.

### Fixture for Temporal Job



Can be mounted on the existing vise by attaching the clamp on plate.

### Fixture for Turning Lathe



Can clamp odd shape that a chuck does not clamp.

CP122 Mounting-on-lathe Adapter is available.

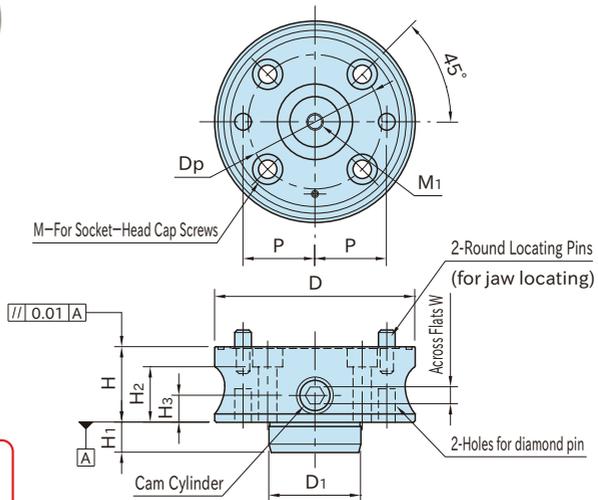
## CP125

## FORM HOLDING CLAMPS



Note: Jaw is not included.

Body	Pull Cylinder	Cam Cylinder
S45C steel Electroless nickel plated	SCM415 steel Carburized-hardened Black oxide finish	SCM435 steel Quenched & tempered Black oxide finish



## ★Key Point

Can hold on external/  
internal form.

Part Number	D	H (±0.01)	D <sub>1</sub> (g6)	H <sub>1</sub>	M	H <sub>2</sub>	D <sub>p</sub>	P (±0.02)	W	H <sub>3</sub>	M <sub>1</sub>
CP125-06501	65	35	28	12	M 6	27	42	22	8	12	M 8×1.25
CP125-09001	90	40	42	14	M 8	30	60	30		14	M10×1.5
CP125-12001	120	45	55	18	M10	33	80	43	16		
CP125-16001	160	50	63	24	M12	36	110	60	18	M12×1.75	

Part Number	Allowable Screw Torque(N·m)	Weight (kg)	Proper Jaws					
			For External Form Holding			For Internal Form Holding		
			Part Number	Clamping Force(kN)	Clamping Stroke	Part Number	Clamping Force(kN)	Clamping Stroke
CP125-06501	15	0.8	CP126-06501	4.5	φ 0.3	CP127-06501	4.5	φ 0.3
CP125-09001	25	1.7	CP126-09001	7		CP127-09001	7	
CP125-12001	40	3.5	CP126-12001	10		CP127-12001	10	
CP125-16001		7.1	CP126-16001	12		CP127-16001		

### Technical Information

- Part locating repeatability: ±0.03
- Jaw locating repeatability: ±0.02

### Note

Do not tighten the cam cylinder without the workpiece set to prevent damage and deformation. Tightening with the torque beyond the allowable screw torque will lower the durability of the jaw.

## Supplied With

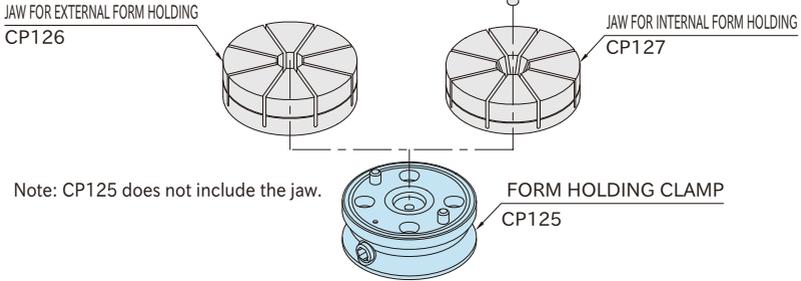
- **CP125-06501** : 1 pc. of Diamond Locating Pin (BJ722-06001)
- **CP125-09001** : 1 pc. of Diamond Locating Pin (BJ722-08001)
- **CP125-12001** : 1 pc. of Diamond Locating Pin (BJ722-10001)
- **CP125-16001** : 1 pc. of Diamond Locating Pin (BJ722-12001)

## Related Product

- **CP126** Jaws for External Form Holding
- **CP127** Jaws for Internal Form Holding
- **BJ722** Diamond Locating Pin
- **CP122** Mounting-on-lathe Adapters

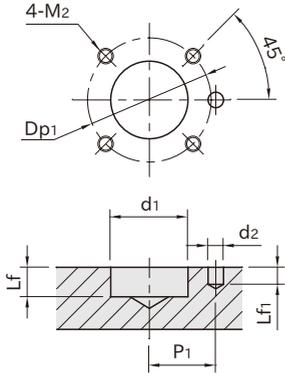
## Feature

Two optional jaws allow clamping a workpiece both on its external form and internal form.



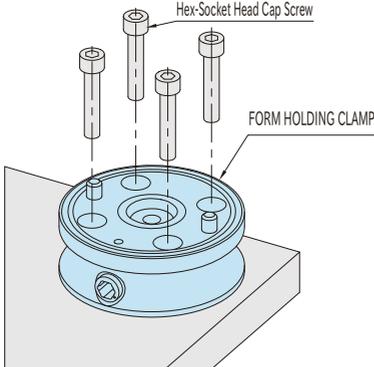
## How To Use

### Mounting Hole Dimension



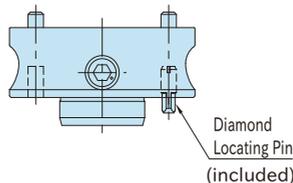
Part Number	d <sub>1</sub> (H7)	Lf	d <sub>2</sub> (G7)	Lf <sub>1</sub>	P <sub>1</sub> (±0.02)	M <sub>2</sub>	Dp <sub>1</sub>
<b>CP125-06501</b>	28	13	6	6	22	M 6×1	42
<b>CP125-09001</b>	42	15	8	8	30	M 8×1.25	60
<b>CP125-12001</b>	55	19	10	11	43	M10×1.5	80
<b>CP125-16001</b>	63	25	12	13	60	M12×1.75	110

### Installation Instruction



Insert an included diamond pin into the body for locating and secure the body to the fixture plate with 4 socket-head cap screws.

Note: Use either of the holes for diamond locating pin for your application.

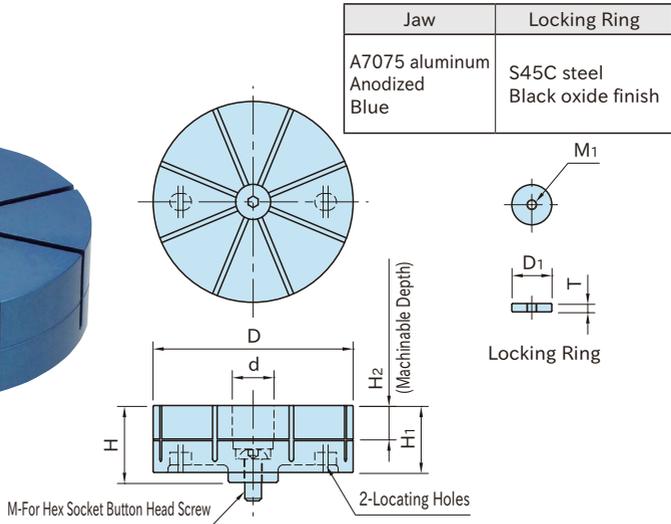


Dimension of Diamond Locating Pin

Part Number	Diameter
<b>CP125-06501</b>	φ 6h6
<b>CP125-09001</b>	φ 8h6
<b>CP125-12001</b>	φ 10h6
<b>CP125-16001</b>	φ 12h6

CP126

JAWS FOR EXTERNAL FORM HOLDING

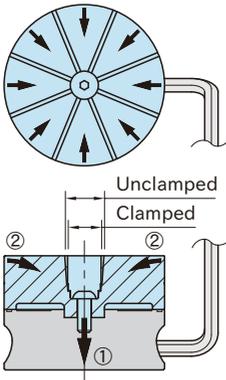


Part Number	D	d	H <sub>1</sub>	H <sub>2</sub>	M	H	M <sub>1</sub>	D <sub>1</sub>	T	Weight (kg)	Proper CP125 Clamps
CP126-06501	65	21	25	10	M 8×20L Across Flats 5	29	M5×0.8	20	4	0.2	CP125-06501
CP126-09001	90	25	35	15	M10×25L Across Flats 6	40	M6×1	24	5	0.5	CP125-09001
CP126-12001	120	25	40	20		1.1				CP125-12001	
CP126-16001	160	29	45	25	M12×25L Across Flats 8	52	M8×1.25	28	6	2.2	CP125-16001

Supplied With

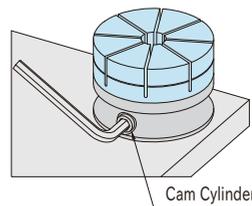
- 1 pc. of O-ring
- 1 pc. of Locking Ring
- 1 pc. of Hex Socket Button Head Screw

Feature



- The diaphragm clamping mechanism allows securely clamping a part with 8 jaw sections.
- 0.15mm clamping stroke of each jaw section is perfect for clamping of lost-wax parts, die-cast parts, extruded parts, solid-drawn parts, prefinished parts, etc.

- ① When the cam cylinder is tightened, the central bottom part of the jaw is pulled down.
- ② At the same time the 8 jaw sections tilt toward the center to clamp the external form of workpiece.

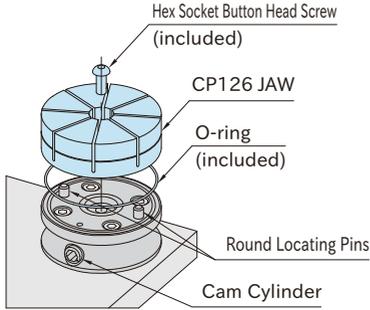


## How To Use

### 1. Jaw Mounting

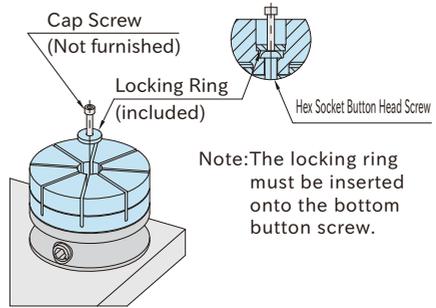
- Insert an O-ring to the groove on top surface of the Form Holding Clamp.
- Set a Jaw putting its locating holes onto the round locating pins and fix it with a hex socket button head screw.

Note: At jaw installation, ensure the cam cylinder is fully loosened by turning counterclockwise until it stops.

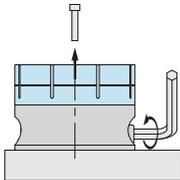


### 2. Jaw Machining

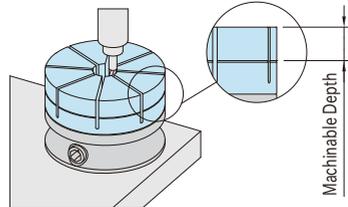
- 2-1. Set the locking ring in the jaw.  
(Using a screw facilitates setting.)



- 2-2. • Tighten the cam cylinder to clamp the locking ring. (Recommended Tightening Torque: 15N·m)  
• After clamping the screw should be removed from the locking ring.

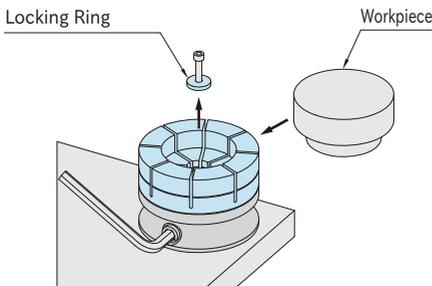


- 2-3. Machine the jaw to the contours of workpiece.  
(Do not machine the jaws beyond the machinable depth.)

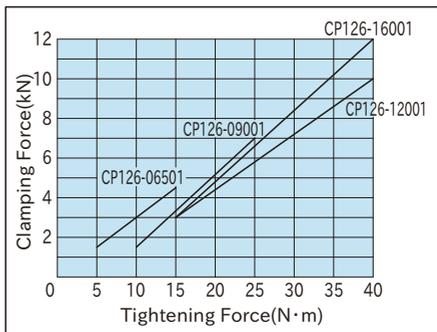


### 3. Workpiece Loading

- Loosen the cap screw to remove the locking ring.
- Load the workpiece and tighten the cam cylinder for clamping.



### Performance Curve

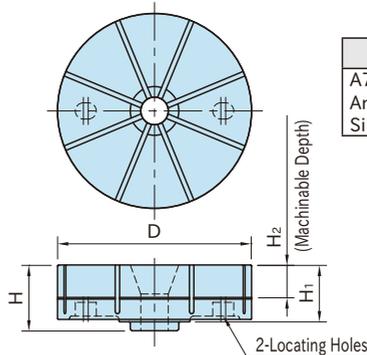


### Note

Do not tighten the cam cylinder without the workpiece set to prevent damage and deformation. Tightening with the torque beyond the allowable screw torque will lower the durability of the jaw.

## CP127

## JAWS FOR INTERNAL FORM HOLDING



IMAO

Jaw

A7075 aluminum  
Anodized  
Silver

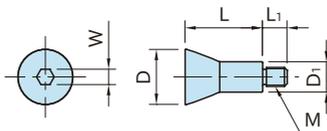
Part Number	D	H <sub>1</sub>	H <sub>2</sub>	H	Weight (kg)	Proper	
						CP125 Clamps	CP127-B Screws
CP127-06501	65	25	10	28.5	0.2	CP125-06501	CP127-06501B
CP127-09001	90	30	15	34.5	0.4	CP125-09001	CP127-09001B
CP127-12001	120	35	20	40.5	0.9	CP125-12001	CP127-12001B
CP127-16001	160	40	25	46.5	1.9	CP125-16001	CP127-16001B

Supplied With

1 pc. of O-ring

## CP127-B

## TAPERED SCREWS FOR INTERNAL FORM HOLDING



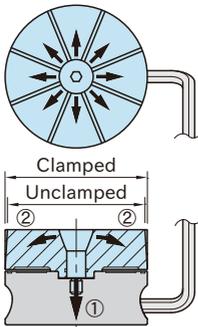
IMAO

Body

SCM435 steel  
Quenched and tempered  
Electroless nickel plated

Part Number	D	L	M	L <sub>1</sub>	D <sub>1</sub>	W	Weight (g)	Proper CP127 Jaws
CP127-06501B	22.5	29	M 8×1.25	10	13.2	6	50	CP127-06501
CP127-09001B	27	35	M10×1.5	11	16	8	80	CP127-09001
CP127-12001B	29	41		13			100	CP127-12001
CP127-16001B	33	47	M12×1.75	14	18	10	150	CP127-16001

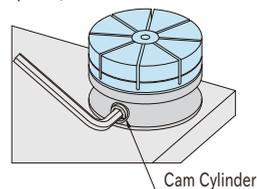
## Feature



- The tapered screw expands the jaws towards eight directions to hold different irregularly-shaped workpieces securely.
- 0.15mm clamping stroke of each jaw section is perfect for clamping of lost-wax parts, die-cast parts, extruded parts, solid-drawn parts, prefinished parts, etc.

① When the cam cylinder is tightened, the tapered screw is pulled down.

② At the same time the 8 jaw sections expand to clamp the internal form of workpiece.

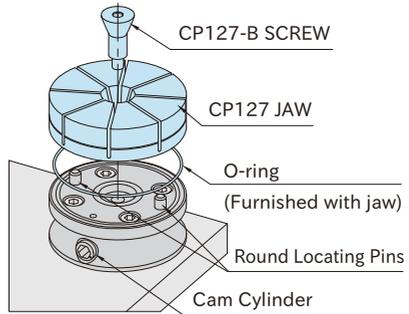


## How To Use

### 1. Jaw Mounting

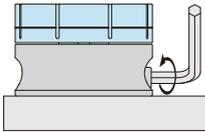
- Insert an O-ring to the groove on top surface of the Form Holding Clamp.
- Set a Jaw putting its locating holes onto the round locating pins and fix it with a tapered screw.

Note: At jaw installation, ensure the cam cylinder is fully loosened by turning counterclockwise until it stops.

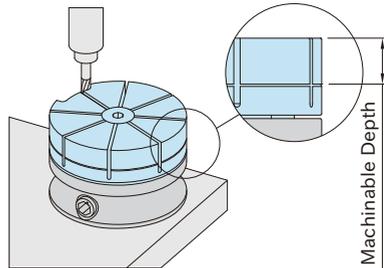


### 2. Jaw Machining

- 2-1. Loosen the cam cylinder fully and measure the dimension of the jaw for machining. Then tighten the cam cylinder until each jaw section expands 0.15mm.

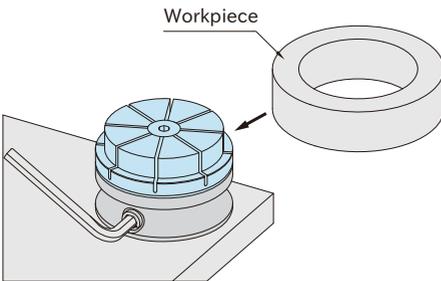


- 2-2. Machine the jaw to the contours of workpiece. (Do not machine the jaws beyond the machinable depth.)

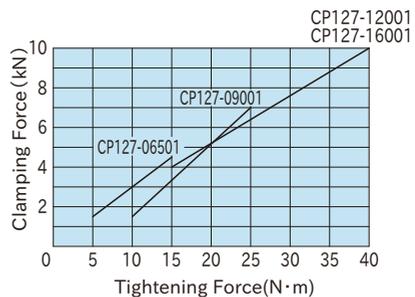


### 3. Workpiece Loading

After machining loosen the cam cylinder to set workpiece and tighten the cam cylinder again for clamping.



## Performance Curve

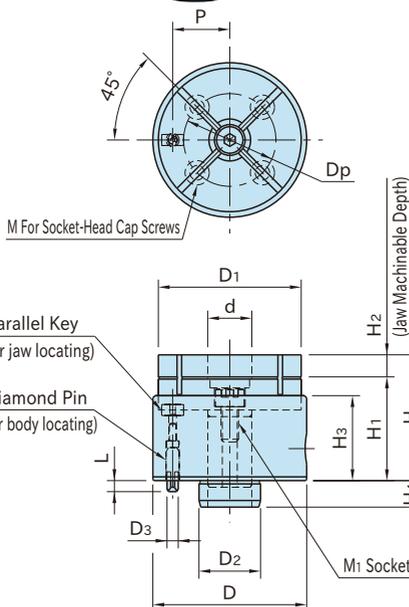


### Note

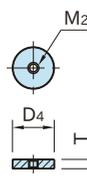
Do not tighten the cam cylinder without the workpiece set to prevent damage and deformation. Tightening with the torque beyond the allowable screw torque will lower the durability of the jaw.

## CP120

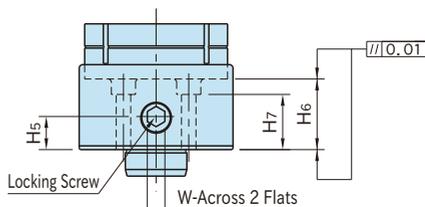
## OD HOLDING CLAMPS



Body	Jaw
S45C steel Black oxide finish	A7075 aluminum Anodized Blue
Shaft / Locking Screw	Housing / Locking Ring
SCM435 steel Black oxide finish Quenched and tempered	S45C steel Black oxide finish



Locking Ring



Part Number	D <sub>1</sub>	d	H	H <sub>2</sub>	D	H <sub>1</sub>	H <sub>3</sub>	H <sub>6</sub> (±0.01)	D <sub>2</sub> (g6)	H <sub>4</sub>	M	H <sub>7</sub>	D <sub>p</sub>	D <sub>3</sub> (h6)	L	P (±0.02)
CP120-06501	65	19	57	10	70	47	39	32	28	12	M6	25	42	6	5	26
CP120-09001	90	23	72	15	95	57	46	38	42	14	M8	28	60	8	7	36

Part Number	W	H <sub>5</sub>	M <sub>1</sub>	M <sub>2</sub>	D <sub>4</sub>	T	Clamping Force (kN)	Allowable Screw Torque (N·m)	Weight (kg)
CP120-06501	8	15	M 8X1.25-15L	M4X0.7	18	4	4	60	1.1
CP120-09001	10	17	M10X1.5 -20L	M5X0.8	22	6	6	100	2.6

### Technical Information

- Part locating repeatability: ±0.03
- Jaw locating repeatability: ±0.02

### Supplied With

- 1 of locking ring
- 1 of diamond pin
- 1 of socket-head cap screw

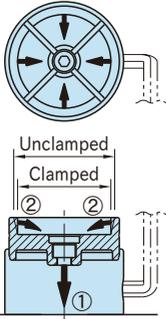
### Note

- Do not tighten the clamp screw without the workpiece set to prevent damage and deformation.
- Do not machine the jaw beyond the machinable depth.

### Related Product

- CP121 Jaws
- CP122 Mounting-on-lathe Adapters

## Feature

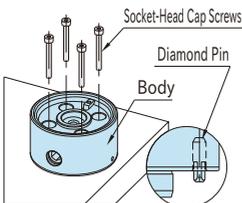


- ① When the locking screw is tightened, the central bottom part of the jaw is pulled down.
- ② At the same time the 4 jaw sections tilt toward the center to clamp the circumference of a part.

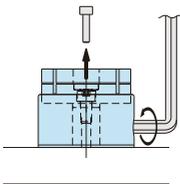
- The diaphragm clamping mechanism allows securely clamping a part with 4 jaw sections.
- Different irregularly-shaped parts can be clamped.
- 0.15mm clamping stroke of each jaw section is perfect for clamping of lost-wax parts, die-cast parts, extruded parts, solid-drawn parts, prefinished parts, etc.

## How To Use

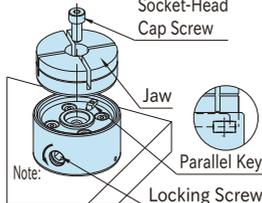
### 1. Body Mounting



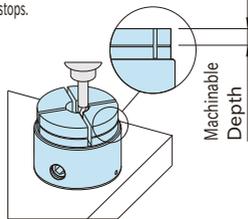
Insert an included diamond pin into the body for locating, and then secure the body to the fixture plate with 4 socket-head cap screws.



### 2. Jaw Setting

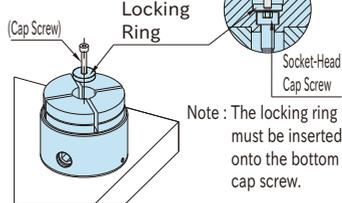


Engage the keyway on the bottom of the jaw with the parallel key on the top of the body, and then secure the jaw with an included cap screw.  
 Note: At jaw installation, ensure the locking screw is fully loosened by turning it counterclockwise until it stops.



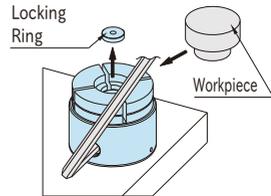
(3) Machine the jaw to the contours of workpiece.

### 3. Jaw Machining

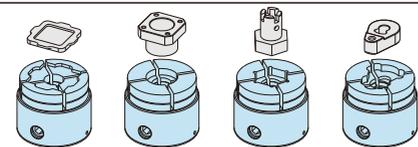


(1) Set the locking ring in the jaw. (using a cap screw facilitates setting)

### 4. Workpiece Loading

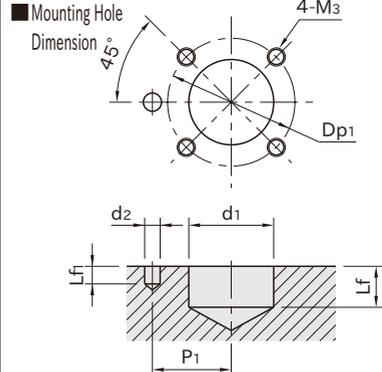


- Loosen the cap screw to remove the locking ring.
- Load the workpiece and tighten the clamping screw for clamping.



- Tightening the locking screw on the side of the body allows holding a part on its circumference.
- Machinable jaws allow clamping parts of various shapes.
- Ideal way to hold parts for machining on small-size machining centers, tapping centers, small-size 5-axis machines, CNC rotary tables, etc.

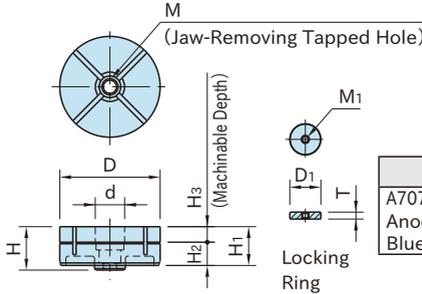
## How To Install



Part Number	d1 (H7)	Lf	d2 (G7)	Lf1	P1 (±0.02)	M3	Dp1
CP120-06501	28	13	6	6	26	M6×1	42
CP120-09001	42	15	8	8	36	M8×1.25	60

# CP121

## JAWS



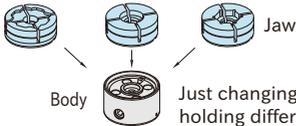
Jaw	Locking Ring
A7075 aluminum Anodized Blue	S45C steel Black oxide finish

Part Number	D	d	H <sub>1</sub>	H <sub>3</sub>	M	H	H <sub>2</sub>	M <sub>1</sub>	D <sub>1</sub>	T	Weight (g)	OD Holding Clamps	
CP121-06501	65	19	25	10	M10X1.5 (Prepared hole $\phi$ 8.5)	28	15	M4X0.7	18	4	170	CP120-06501	AMCH080-5W
CP121-09001	90	23	34	15	M12X1.75 (Prepared hole $\phi$ 10.2)	39	19	M5X0.8	22	6	470	CP120-09001	AMCH100-5W

### Note

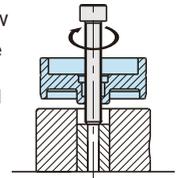
Jaw has lifecycle.

### Feature



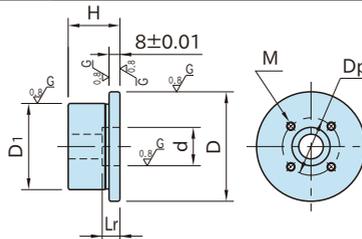
### How to Remove Jaw

When it is hard to remove the jaw by hand, screw a bolt into the jaw-removing tapped hole to push it against the body, for easier removal.



# CP122

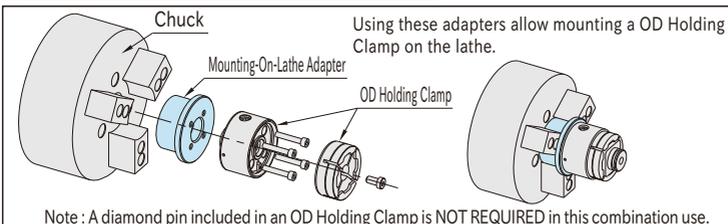
## MOUNTING-ON-LATHE ADAPTERS



Body
SCM415 steel Black oxide finish Carburized-hardened

Part Number	d (H7)	L <sub>r</sub>	D <sub>1</sub> (±0.01)	H	D	M	D <sub>p</sub>	Weight (g)	Form Holding Clamps	OD Holding Clamps
CP122-06501	28	13	63	38	80	M6X1 Depth 12	42	910	CP125-06501	CP120-06501
CP122-09001	42	15	80	43	100	M8X1.25 Depth 16	60	1600	CP125-09001	CP120-09001

### How To Use



Note : A diamond pin included in an OD Holding Clamp is NOT REQUIRED in this combination use.



CP124

OD HOLDING CLAMPS (Wedge Style/Square)

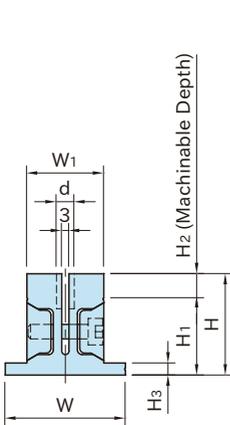


CP124-\*\*\*01

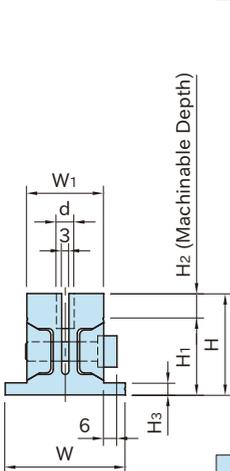
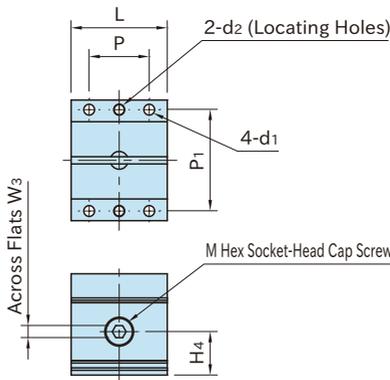


CP124-\*\*\*02

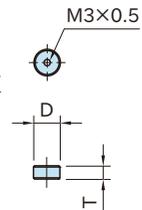
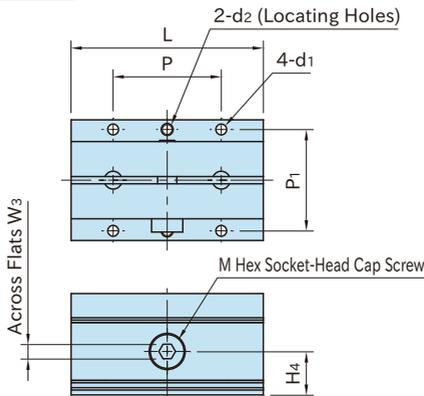
Body	Wedge
A6N01 aluminum Anodized Silver	SCM440 steel Black oxide finished Quenched & tempered



CP124-\*\*\*01



CP124-\*\*\*02



Locking Button

Part Number	W <sub>1</sub>	d	L	H	H <sub>2</sub>	W	H <sub>3</sub>	H <sub>1</sub>	d <sub>2</sub> (H7)	d <sub>1</sub>	P	P <sub>1</sub>	M
CP124-03201	32	7.4	40	42	10	50	5	32	5	4.5	25	42	M 6×1 -25L
CP124-03202			80										M 8×1.25-30L
CP124-05001	50	11.4	50	63	15	72	7	48	6	5.5	30	62	M10×1.5 -40L
CP124-05002			100										M12×1.75-45L

Part Number	W <sub>3</sub>	H <sub>4</sub>	D	T	Clamping Force (kN)	Allowable Screw torque (N·m)	Weight (kg)
CP124-03201	5	18	7	3.5	2.5	7.5	0.22
CP124-03202	6					14	0.42
CP124-05001	8	27	11	5.5	5.5	26	0.62
CP124-05002	10					46	1.29

## Technical Information

Locating Repeatability : ±0.08

## Supplied With

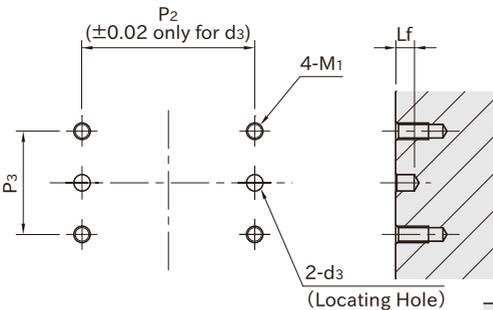
- 1 of locking button for CP124-\*\*\*01
- 2 of locking button for CP124-\*\*\*02
- 2 of parallel pin(m6 tolerance)
- φ5×10L for CP124-\*\*\*01
- φ6×15L for CP124-\*\*\*02

## Feature

- When the clamp screw is tightened, both jaws tilt toward the center to clamp the circumference of the workpiece.
- The clamping stroke is 0.5mm.
- Cutting the machinable jaw to the contour of workpiece allows holding different shapes.
- Simple and compact design permits multiple-parts holding arrangement.

## How To Use

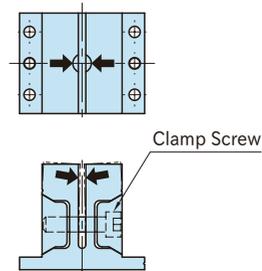
### ■ Mounting-Hole Dimension



Use the included parallel pin for locating.

## Note

- Do not tighten the clamp screw without the workpiece set to prevent damage and deformation.
- Do not machine the jaws beyond the machinable depth



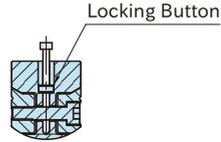
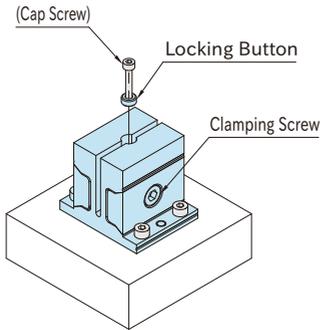
Part Number	d <sub>3</sub> (H7)	Lf	M <sub>1</sub>	P <sub>2</sub>	P <sub>3</sub>
CP124-03201	5	5	M4×0.7	42	25
CP124-03202					45
CP124-05001	6	8	M5×0.8	62	30
CP124-05002					58

Continuing to next page

## How to Machine Jaw

### 1. Setting the locking button

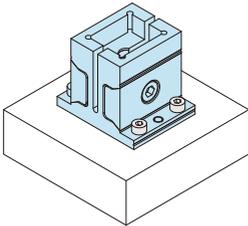
Insert the locking button into the jaw, and then tighten the clamp screw to fasten the locking button.  
(Using a cap screw facilitates setting)



Note: The locking button must be inserted onto the bottom.

### 2. Machining the jaw

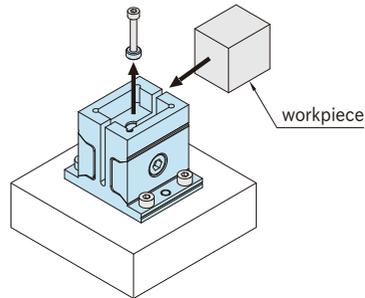
Cut the jaw to the contours of the workpiece.



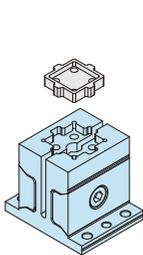
Note: Do not cut beyond the machinable depth.

### 3. Workpiece Loading

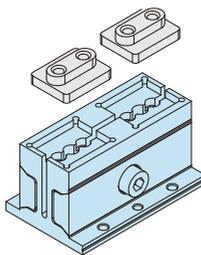
Loosen the clamp screw to remove the locking button. Load the workpiece and tighten the clamp screw for clamping.



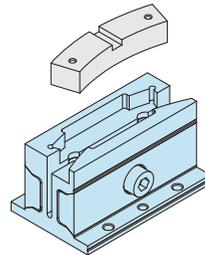
## Application Example



Single-station mode  
on the short-type clamp



Dual-station mode  
on the long-type clamp



Single-station mode  
on the long-type clamp

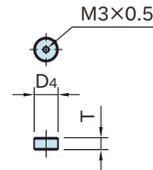
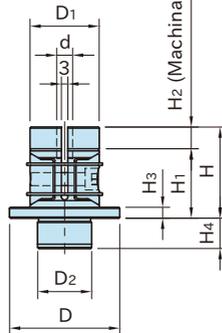
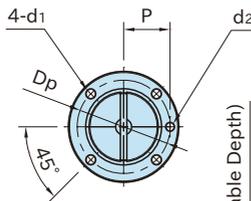


## CP123

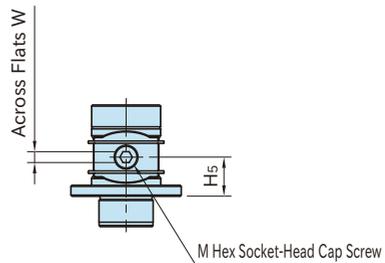
## OD HOLDING CLAMPS (Wedge Style/Round)



Body	Wedge
S45C steel Black oxide finished	S45C steel Black oxide finished Quenched & tempered



Locking Button



Part Number	D <sub>1</sub>	d	H	H <sub>2</sub>	D	H <sub>1</sub>	H <sub>3</sub>	D <sub>2</sub> (g7)	H <sub>4</sub>	d <sub>1</sub>	D <sub>p</sub>	d <sub>2</sub>	P
CP123-03201	32	7.4	42	10	51	32	5	25	14	4.5	43	5	21.5
CP123-05001	50	11.4	63	15	75	48	7	40	19	5.5	65	6	32.5

Part Number	M	W	H <sub>5</sub>	D <sub>4</sub>	T	Clamping Force (kN)	Allowable Screw Torque (N·m)	Weight (kg)
CP123-03201	M 6×1 -25L	5	18	7	3.5	3	9	0.33
CP123-05001	M10×1.5-35L	8	27	11	5.5	7	42	1.2

### Technical Information

Part Locating Repeatability ±0.08

### Supplied With

- 1 of locking button
- Spring pin  
(φ 5×10L for CP123-03201)  
(φ 6×14L for CP123-05001)

### Note

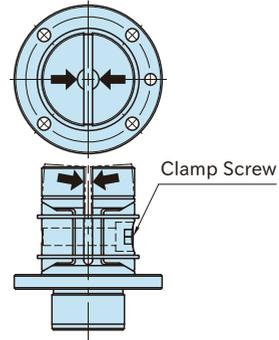
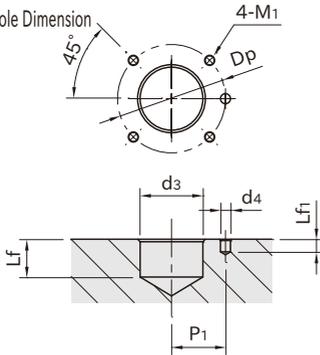
- Do not tighten the clamp screw without the workpiece set to prevent damage and deformation.
- Do not machine the jaws beyond the machinable depth.

## Feature

- When the clamp screw is tightened, both jaws tilt toward the center to clamp the circumference of the workpiece.
- The clamping stroke is 0.5mm.
- Cutting the machinable jaw to the contour of workpiece allows holding different shapes.
- Simple and compact design permits multiple-parts holding arrangement.

## How To Use

### ■ Mouting-Hole Dimension

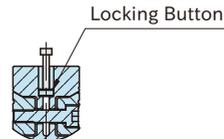
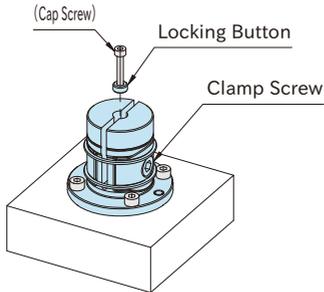


Part Number	d <sub>3</sub> (H7)	L <sub>f</sub>	d <sub>4</sub> ( $\begin{smallmatrix} +0.12 \\ 0 \end{smallmatrix}$ )	L <sub>f1</sub>	P <sub>1</sub> (±0.05)	M <sub>1</sub>	D <sub>p</sub>
CP123-03201	25	15	5	5	21.5	M4×0.7	43
CP123-05001	40	20	6	7	32.5	M5×0.8	65

### ■ How to Machine Jaw

#### 1. Setting the locking button

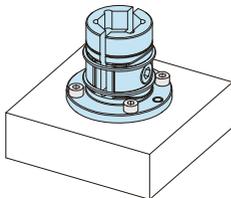
Insert the locking button into the jaw, and then tighten the clamp screw to fasten the locking button. (Using a cap screw facilitates setting)



Note: The locking button must be inserted onto the bottom.

#### 2. Machining the jaw

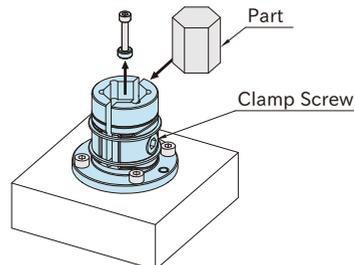
Cut the jaw to the contours of the part.



Note: Do not cut beyond the machinable depth.

#### 3. Loading the part

Loosen the clamp screw to remove the locking button. Load the part and tighten the clamp screw for clamping.



## CP131

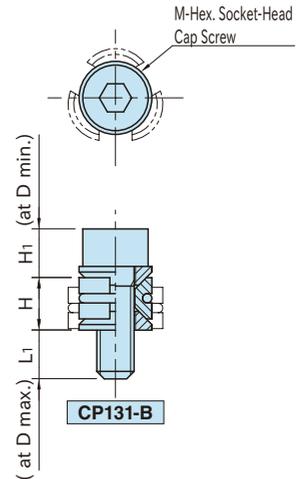
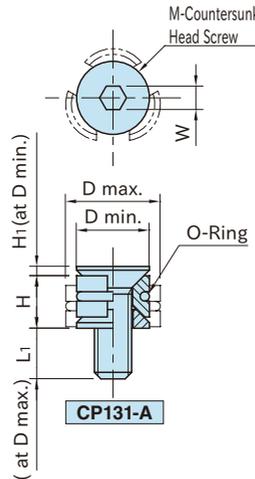
## COMPACT ID HOLDING CLAMPS



CP131-A



CP131-B



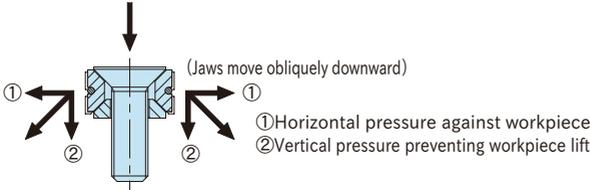
Jaw	Washer	O-Ring
SNM439 steel Black oxide finished HRC33-39	SCM435 steel Black oxide finished	Fluoro rubber

Part Number	D		H		H <sub>1</sub>	M	L <sub>1</sub>	W
	min.	max.	D min.	D max.				
CP131-04001A	8	10.3	5.5	4.6	0.9	M4×0.7 -12L	7.3	2.5
CP131-05001A	10	12.3	6.4	5.6	1.1	M5×0.8 -15L	9.1	3
CP131-06001A	12	16.3	8.6	7	1.3	M6×1 -18L	11.2	4
CP131-08001A	16	22	11.5	9.4	1.6	M8×1.25-25L	16.2	5
CP131-04001B	8	10.3	5.5	4.6	5.1	M4×0.7 -12L	7.1	3
CP131-05001B	10	12.3	6.4	5.6	6.2	M5×0.8 -15L	9	4
CP131-06001B	12	16.3	8.6	7	7.9	M6×1 -18L	10.6	5
CP131-08001B	16	22	11.5	9.4	10.4	M8×1.25-25L	15.4	6

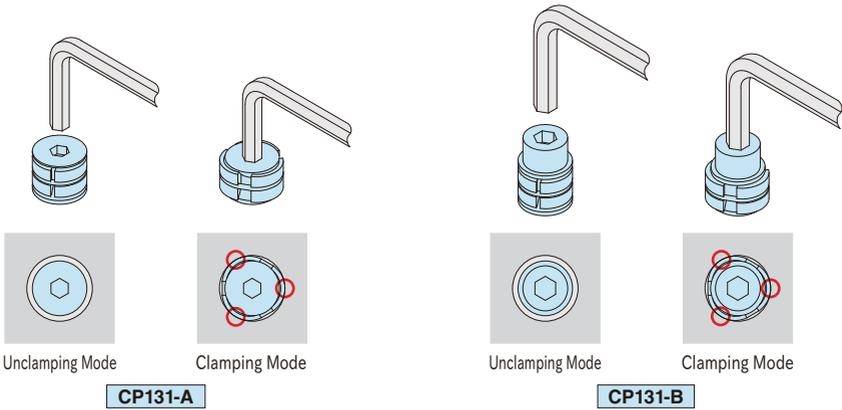
Part Number	Clamping Force (kN)	Allowable Screw Torque (N·m)	Weight (g)	Proper O-ring
CP131-04001A	0.9	2.1	3	SS050(CS1 /ID 5)
CP131-05001A	1.5	4.3	5	SS070(CS1 /ID 7)
CP131-06001A	2.1	7.3	9	S 8 (CS1.5 /ID 7.5)
CP131-08001A	4	18	22	S 12 (CS1.5 /ID11.5)
CP131-04001B	1.5	2.7	4	SS050(CS1 /ID 5)
CP131-05001B	2.5	5.4	7	SS070(CS1 /ID 7)
CP131-06001B	5	9.1	11	S 8 (CS1.5 /ID 7.5)
CP131-08001B	9	25	28	S 12 (CS1.5 /ID11.5)

## Feature

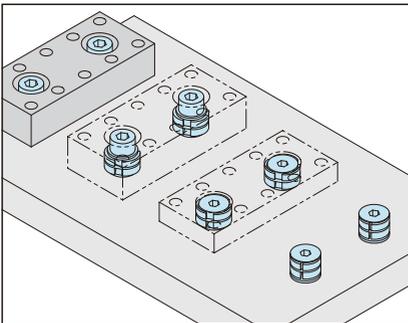
- These clamps hold the inside diameter of the workpiece.
- The wedge construction allows powerfully clamping the workpiece.
- Long clamping stroke is ideal for holding as-cast or roughly-finished holes.



## How To Use



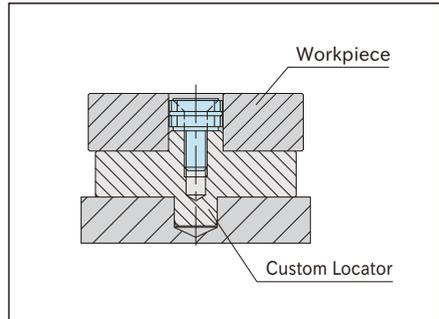
**Note:** The clamp makes a line contact with the workpiece at the clamping mode. This contact can mark the surface of the workpiece depending on its materials, and using these clamps for accurately finished holes is not recommended.



Example of application where two Compact ID Holding Clamps are used.

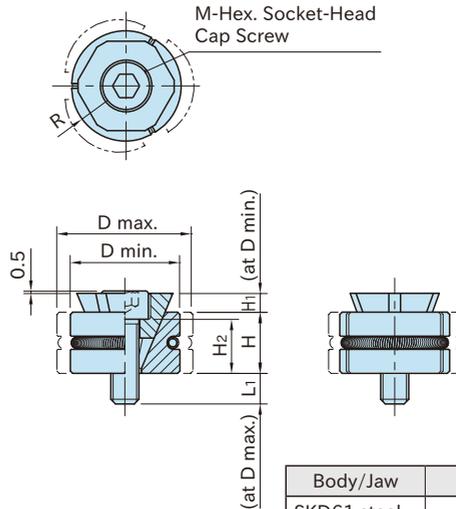
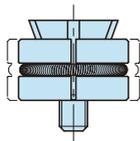
## Note

For accurate locating, use these clamps with a locator as shown below.



## CP130

## ID HOLDING CLAMPS



Body/Jaw	Spring
SKD61 steel Quenched & tempered Black oxide finished HRC47-53	SUS304 stainless steel

Part Number	D		H	H <sub>1</sub>	R	H <sub>2</sub>		L <sub>1</sub> *)	M
	min.	max.				min.	max.		
<b>CP130-04001</b>	19.5	24	9	2.5	R 9.5	8	2.6	9.4	M4×12L
<b>CP130-06001</b>	23.5	29	13	4	R11.5	11.5	5	13	M6×18L
<b>CP130-08001</b>	28.5	36	17	5.5	R14	15	6	19	M8×25L

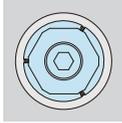
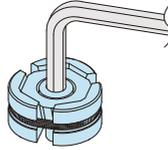
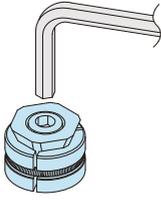
Part Number	Clamping Force (kN)	Allowable Screw Torque (N·m)	Weight (g)
<b>CP130-04001</b>	2	3.2	19
<b>CP130-06001</b>	5	10.5	43
<b>CP130-08001</b>	9	25	89

\*) The stated values are only for use of the proper cap screws.

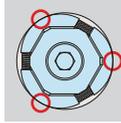
### Feature

- These clamps hold the inside diameter of the workpiece.
- The wedge construction allows powerfully clamping the workpiece.
- Long clamping stroke is ideal for holding as-cast or roughly-finished holes.

## How To Use



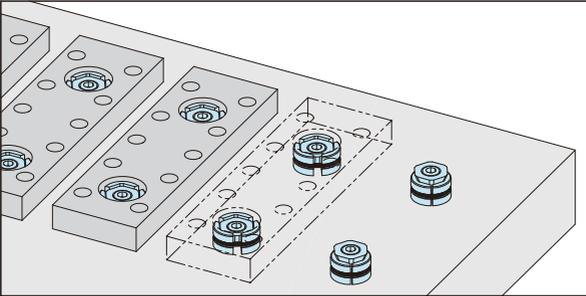
Unclamping Mode



Clamping Mode

Note: The clamp makes a line contact with the workpiece at the clamping mode.

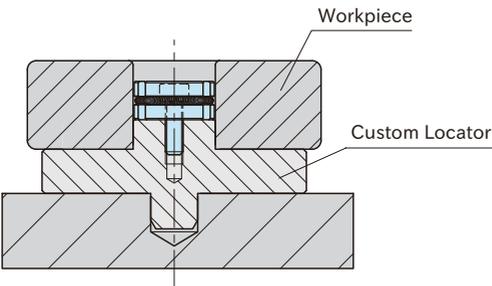
This contact can mark the surface of the workpiece depending on its materials, and using these clamps for accurately finished holes is not recommended.



Example of application where two ID Holding Clamps are used.

### Note

For accurate locating, use these clamps with a locator as shown below.



## CP135

## SPIRAL CAM CLAMPS



CP135-A

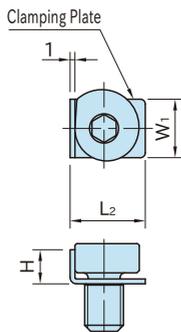


CP135

## ★Key Point

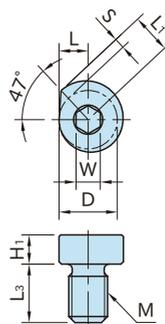
Space saving.  
Long clamping stroke.

Spiral Cam Clamp	Clamping Plate
SCM440 steel Black oxide finished HRC33-39	SUS304CSP stainless steel



CP135-A

(With Clamping Plate)



CP135

(Without Clamping Plate)

Part Number	S	L	L <sub>1</sub>	D	M	H <sub>1</sub>	L <sub>3</sub>	W	Allowable Screw Torque (N·m)	Clamping Force (kN)
CP135-06001	1.8	5	6.8	10	M 6×1	5	9	4	7.4	2.2
CP135-08001	2.2	6	8.2	12	M 8×1.25	6	12	5	18	4.7
CP135-10001	2.5	7	9.5	14	M10×1.5	7	15	6	35	7.9
CP135-12001	2.9	8	10.9	16	M12×1.75	8	18	8	60	14

## CP135-A (With Clamping Plate)

Part Number	H	W <sub>1</sub>	L <sub>2</sub>	Clamping Plate	Weight (g)
CP135-06001A	6	10	13	CP135-06001P	7
CP135-08001A	7	12	15.5	CP135-08001P	13
CP135-10001A	8	14	18	CP135-10001P	21
CP135-12001A	9	16	20	CP135-12001P	33

## CP135 (Without Clamping Plate)

Part Number	Weight (g)
CP135-06001	6
CP135-08001	11
CP135-10001	19
CP135-12001	30

## CP135-L

## SPIRAL CAM CLAMPS



One-Touch type is available.

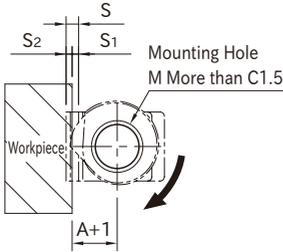
## Feature

- The spiral cam provides quick and powerful clamping.
- The simple design keeps cost low and the small size allows more workpieces per load.
- Clamping Plate avoids marring workpiece surfaces.

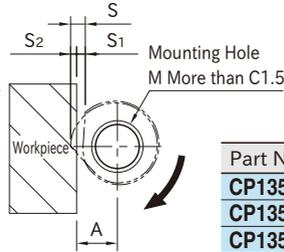
## How To Use

### ■ Mounting Hole Dimension

With Clamping Plate



Without Clamping Plate

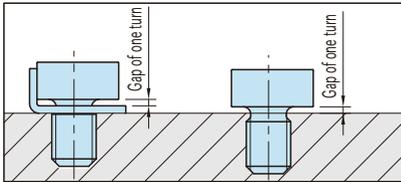


Part Number	A	S	S <sub>1</sub>	S <sub>2</sub>	M
CP135-06001	5.9	1.8	0.9	0.9	M 6X1
CP135-08001	7.1	2.2	1.1	1.1	M 8X1.25
CP135-10001	8.3	2.5	1.3	1.2	M10X1.5
CP135-12001	9.5	2.9	1.5	1.4	M12X1.75

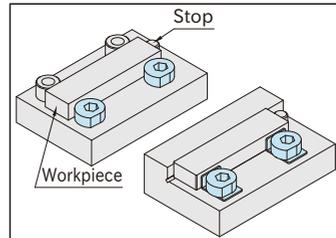
Note: Dimension A and A+1 are the recommended distances between the mounting hole and the end of the workpiece.

### Note

Tighten Spiral Cam Clamp fully and loosen it about one turn. Then mount a workpiece.



- Tighten clockwise to clamp the workpiece.
- Mount a stop on the right side of the workpiece.



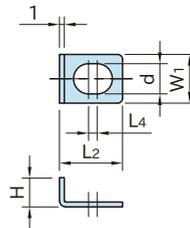
## CP135-P

## CLAMPING PLATES



Stainless Steel

IMAO



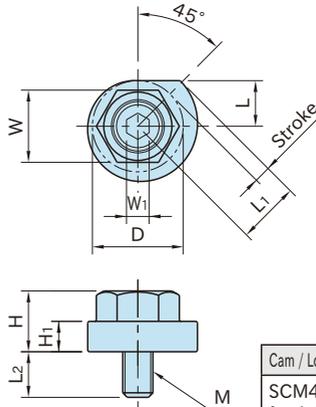
Clamping Plate

SUS304CSP  
stainless steel

Part Number	H	W <sub>1</sub>	L <sub>2</sub>	d	L <sub>4</sub>	Weight (g)
CP135-06001P	6	10	13	6.2	1.8	1
CP135-08001P	7	12	15.5	8.2	2.2	2
CP135-10001P	8	14	18	10.2	2.6	2
CP135-12001P	9	16	20	12.2	2.9	3

## BJ161

## CAM CLAMPS



Cam / Locking Screw	Flanged Collar
SCM435 steel Quenched and tempered Black oxide finish	SK95 steel Quenched and tempered Black oxide finish

Part Number	Stroke	L	L <sub>1</sub>	D	H <sub>1</sub>	M	L <sub>2</sub>	H	W	W <sub>1</sub>
<b>BJ161-08001</b>	4.4	12	16.4	24	8	M 8×1.25	12	16	19	6
<b>BJ161-10001</b>	5.5	15	20.5	30	10	M10×1.5	15	20	24	8
<b>BJ161-12001</b>	6.2	17	23.2	34	12	M12×1.75	18	24	27	10

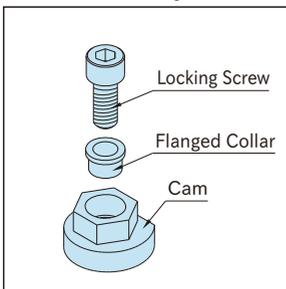
Part Number	Allowable Screw Torque (N·m)	Clamping Force (kN)	Weight (g)
<b>BJ161-08001</b>	50	5.2	55
<b>BJ161-10001</b>	75	8	110
<b>BJ161-12001</b>	90	9.3	185

### Feature

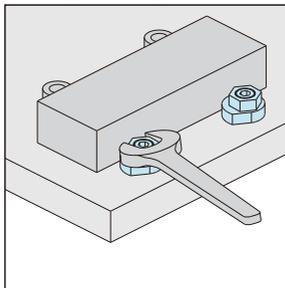
- Allows loading and unloading a part faster.
- Compact design

### How To Use

To install, lock the flanged collar into the cam using the locking screw and then tighten up the cam with a wrench.



Parts Breakdown



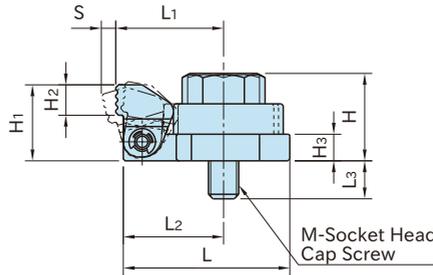
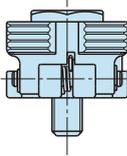
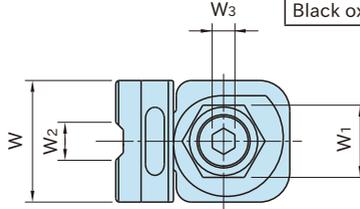
Provides positive clamping

## BJ162

## CAM EDGE CLAMPS



Body / Jaw	Cam
SCM440 steel Quenched and tempered Black oxide	SCM435 steel Quenched and tempered Black oxide



Part Number	H <sub>1</sub>	S	W	W <sub>2</sub>	H <sub>2</sub>	L <sub>1</sub>	L	L <sub>2</sub>	H <sub>3</sub>	M	L <sub>3</sub>	H	W <sub>1</sub>
<b>BJ162-08001</b>	20	4	32	10	8	28.5	44	26.5	7	M 8×1.25-30L	15	23	19
<b>BJ162-10001</b>	25	5	40	12	10	35	54	33	9	M10×1.5 -35L	16	29	24
<b>BJ162-12001</b>	30	5.5	46	14	12	39.5	62	37.5	11	M12×1.75-40L	17	35	27

Part Number	W <sub>3</sub>	Clamping Force (kN)	Allowable Screw Torque (N·m)	Weight (g)
<b>BJ162-08001</b>	6	3.5	45	160
<b>BJ162-10001</b>	8	5.5	55	310
<b>BJ162-12001</b>	10	7	70	490

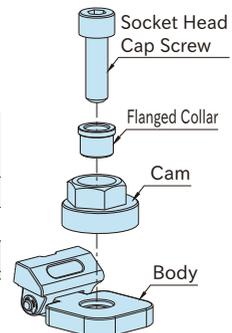
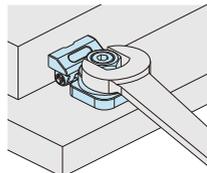
### How To Use

Secure the body and the flanged collar with a socket head cap screw, and then turn the the cam with a wrench to clamp a workpiece.

### Related Product



One-Touch type is available.  
[QLSC](#) CAM EDGE CLAMPS

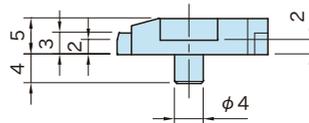
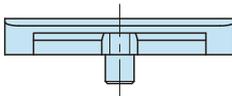
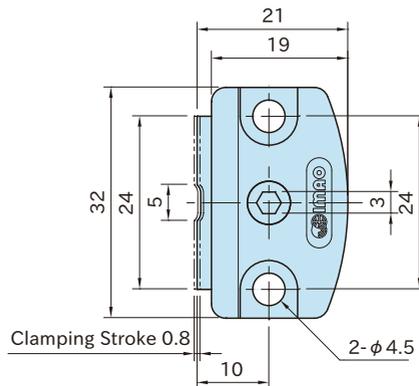


## QLSCL

## COMPACT LOW-PROFILE CAM EDGE CLAMPS



Body	Jaw / Cam
S45C steel Black oxide finished	SCM440 steel Black oxide finished HRC39-45



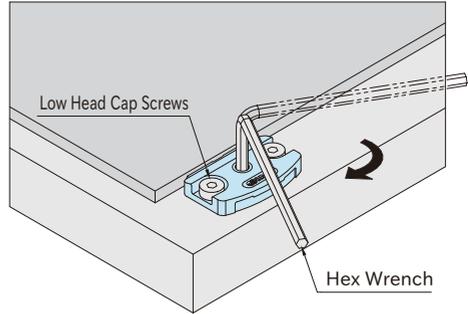
Part Number	Allowable Screw Torque (N·m)	Clamping Force (kN)	Weight (g)
<b>QLSCL05NR</b>	2.1	1.3	18

## Feature

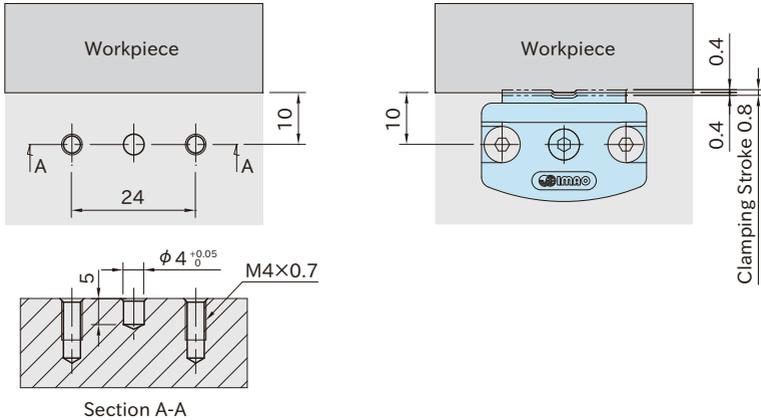
Designed to prevent part lift.

## How To Use

- Low head cap screws do not project from the body.
- Turning the cam with a hex wrench allows the cam to project the jaw for clamping. When the cam is turned back for unclamping, the loaded spring lets the jaw return to the original position.



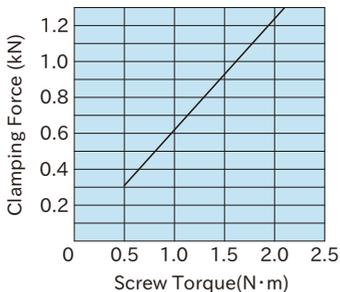
## Mounting-Hole Dimension



## Note

Ensure that mounting surfaces are finished to  $\sqrt{6.3}/(6.3a)$  or better, without any scratches or dents.

## Performance Curve

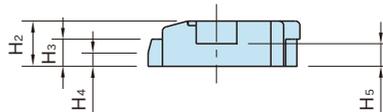
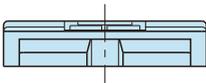
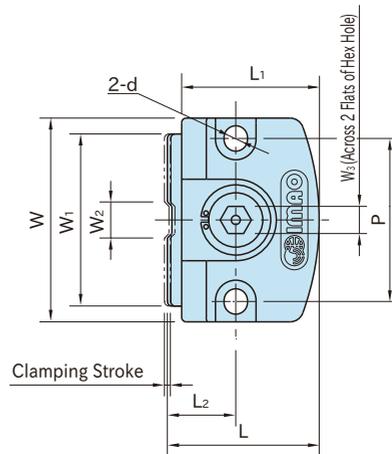


## QLSCL-NR

## LOW-PROFILE CAM EDGE CLAMPS



Body	Jaw / Cam
S45C steel Black oxide finish	SCM440 steel Quenched and tempered Black oxide finish



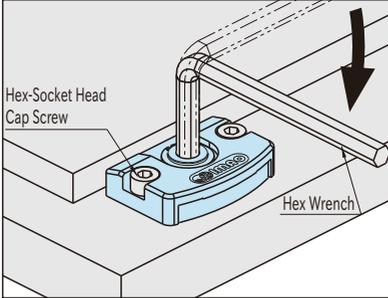
Part Number	Clamping Stroke	W <sub>1</sub>	W <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>	L <sub>2</sub>	W	L	H <sub>2</sub>	d	P	H <sub>5</sub>	L <sub>1</sub>	Clamping Mechanism
<b>QLSCL10NR</b>	1	38	8	6	3	15	45	33.5	10	5.2	36	5	30.5	Spiral Cam
<b>QLSCL15NR</b>	2	60	12	9	5	22	70	50	15	8.2	55	7	46	Cam Angle : 4°

Part Number	W <sub>3</sub>	Allowable Screw Torque (N·m)	Clamping Force (kN)	Weight (g)
<b>QLSCL10NR</b>	6	10	4	85
<b>QLSCL15NR</b>	10	27	6	290

## Feature

Designed to prevent part lift.

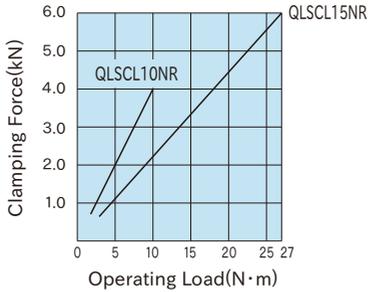
## How To Use



Turning the wrench allows the cam to project the jaw for clamping.

When the wrench is turned back for unclamping, the loaded spring lets the jaw return to the original position.

## Performance Curve



## Note

Ensure that mounting surfaces are finished to  $\sqrt{6.3}$  (6.3a) or better, without any scratches or dents.

## QLSCL-R

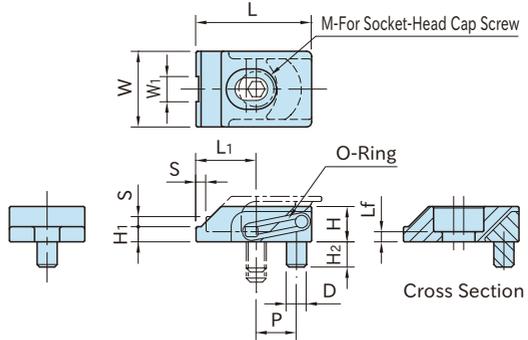
### LOW-PROFILE CAM EDGE CLAMPS



One-Touch type is available.

CP133

COMPACT TOE CLAMPS

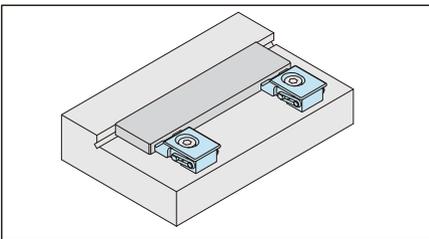


Body	O-Ring
SCM440 steel Black oxide finished HRC33-39	Fluoro rubber

Part Number	S	W	W <sub>1</sub>	H <sub>1</sub>	L <sub>1</sub>	P	D	H <sub>2</sub>	M	L <sub>f</sub>	L	H
<b>CP133-04007</b>	2	15	5	3	12	8	4	5	M4	2	23	7
<b>CP133-05009</b>	2.5	19	7	4	14	10	5	6	M5	3	28	9

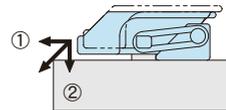
Part Number	Clamping Force (kN)	Allowable Screw Torque (N·m)	Weight (g)	Proper O-ring
<b>CP133-04007</b>	2	2.7	13	SS060(CS1 / ID6)
<b>CP133-05009</b>	3	5.4	27	S 8 (CS1.5 / ID7.5)

How To Use

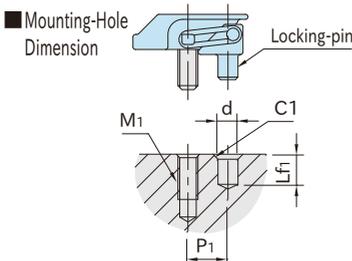


Feature

(Jaw moves obliquely downward)



- ① Horizontal pressure against workpiece
- ② Vertical pressure preventing workpiece lift

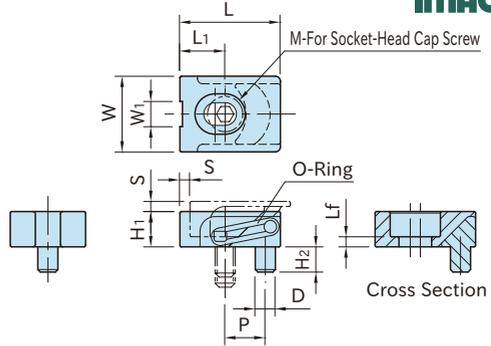


Drill a tapped hole and a locking-pin hole as specified below.

Part Number	M <sub>1</sub>	d <sub>(+0.3 / 0)</sub>	L <sub>f1</sub>	P <sub>1</sub>
<b>CP133-04007</b>	M4	4	6	8
<b>CP133-05009</b>	M5	5	7	10

## CP134

## COMPACT SIDE CLAMPS

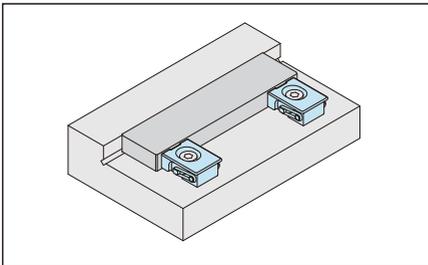


Body	O-Ring
SCM440 steel Black oxide finished HRC33-39	Fluoro rubber

Part Number	S	W	W <sub>1</sub>	H <sub>1</sub>	L <sub>1</sub>	P	D	H <sub>2</sub>	M	L <sub>f</sub>	L
<b>CP134-04007</b>	2	15	5	7	9	8	4	5	M4	2	20
<b>CP134-05009</b>	2.5	19	7	9	11	10	5	6	M5	3	25

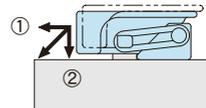
Part Number	Clamping Force (kN)	Allowable Screw Torque (N·m)	Weight (g)	Proper O-ring
<b>CP134-04007</b>	2.5	2.7	13	SS060 (CS1 / ID6)
<b>CP134-05009</b>	3.5	5.4	26	S 8 (CS1.5 / ID7.5)

### How To Use



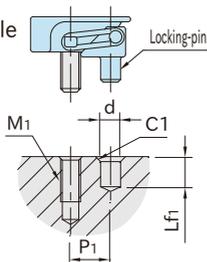
### Feature

(Jaw moves obliquely downward)



- ① Horizontal pressure against workpiece
- ② Vertical pressure preventing workpiece lift

### Mounting-Hole Dimension

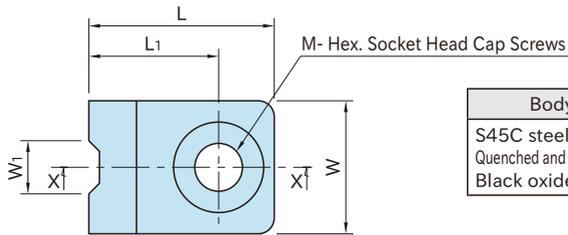


Drill a tapped hole and a locking-pin hole as specified below.

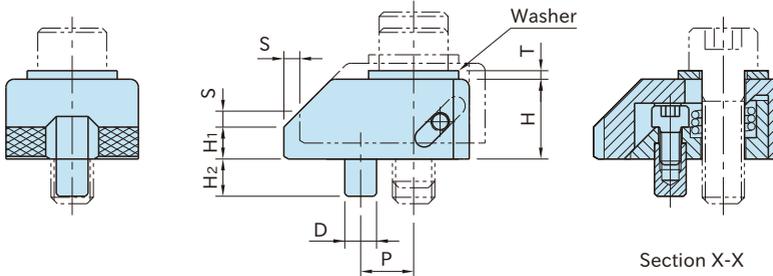
Part Number	M <sub>1</sub>	d (+0.3 / 0)	L <sub>f</sub>	P <sub>1</sub>
<b>CP134-04007</b>	M4	4	6	8
<b>CP134-05009</b>	M5	5	7	10

CP106

TOE CLAMPS



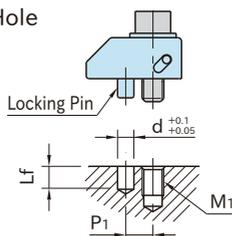
Body
S45C steel
Quenched and tempered
Black oxide finish



Part Number	S	W	W <sub>1</sub>	H <sub>1</sub>	L <sub>1</sub>	P	D (h7)	H <sub>2</sub>	M	L	H	T	Clamping Force(kN)	Allowable Screw Torque(N·m)	Weight (g)	
CP106-08015	3	25	10	6	24.5	10	6	7	M 8	8	35	15	1.6	5.6	20	100
CP106-10019	4	30	11	8	29	12			M10	43	19	2	6.8	40	185	
CP106-12023	5	35	12	9	37	16	8	10	M12	54	23	2.3	16	70	320	
CP106-16025	6	40	14	10	45	20			M16	65	25	3.2	22	110	520	

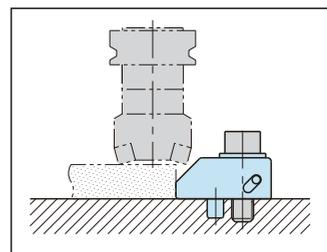
How To Use

■ Mounting-Hole Dimension



Part Number	M <sub>1</sub>	d	L <sub>f</sub>	P <sub>1</sub>
CP106-08015	M 8	6	8	10
CP106-10019	M10			12
CP106-12023	M12	8	11	16
CP106-16025	M16			20

Drill a tapped hole and a pin hole as specified on the above.

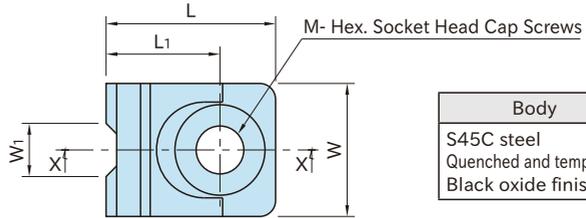


Supplied With

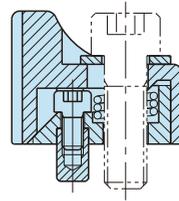
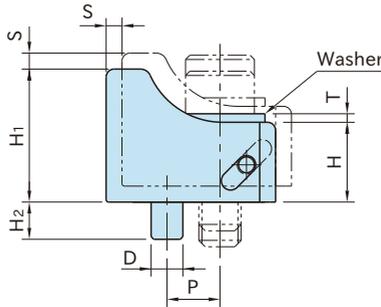
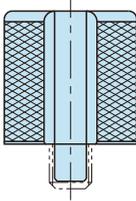
One flat washer

## CP107

## SIDE CLAMPS



Body
S45C steel Quenched and tempered Black oxide finish

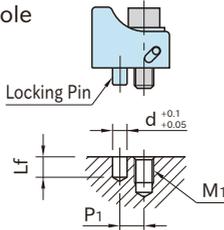


Section X-X

Part Number	S	W	W <sub>1</sub>	H <sub>1</sub>	L <sub>1</sub>	P	D (h7)	H <sub>2</sub>	M	L	H	T	Clamping Force(kN)	Allowable Screw Torque(N·m)	Weight (g)
CP107-08015	3	25	10	25	21.5	10	6	7	M 8	32	15	1.6	5.6	20	115
CP107-10019	4	30	11	32	26	12		7	M10	40	19	2	6.8	40	225
CP107-12023	5	35	12	38	33	16	10	10	M12	50	23	2.3	16	70	390
CP107-16025	6	40	14	45	40	20		10	M16	60	25	3.2	22	110	640

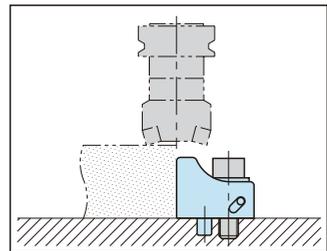
### How To Use

#### ■ Mounting-Hole Dimension



Part Number	M <sub>1</sub>	d	L <sub>f</sub>	P <sub>1</sub>
CP107-08015	M 8	6	8	10
CP107-10019	M10		12	
CP107-12023	M12	8	11	16
CP107-16025	M16	10		20

Drill a tapped hole and a pin hole as specified on the above.



#### Supplied With

One flat washer

## CP104

## TOE CLAMPS

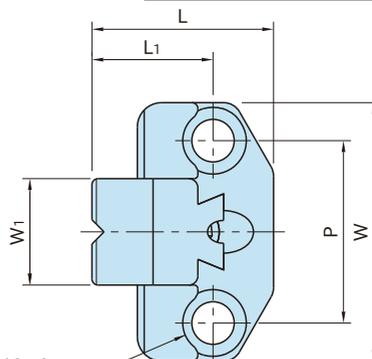


Serrated Nose

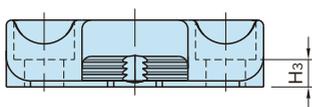


Smooth Nose

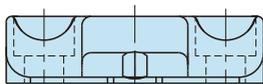
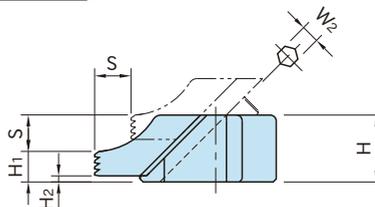
Body	Sliding Nose
SCM440 steel Quenched and tempered Black oxide finish	SCM440 steel Induction hardened (clamping face) Black oxide finish Precision ground (smooth nose)



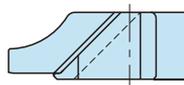
M-For Hex. Socket Head Cap Screws



Serrated Nose



Smooth Nose



Nose	Part Number	S	W <sub>1</sub>	H <sub>1</sub>	H <sub>2</sub>	L <sub>1</sub>	W	L	M	H <sub>3</sub>	P	H	W <sub>2</sub>	Clamping Force(kN)	Allowable Screw Torque(N·m)	Weight (g)
Serrated	CP104-08016	7	25	7.5	1.5	25	65	39.5	M 8	7	45	16	4	4	8	160
	CP104-12022	12	35	10	2	40	85	60	M12	9	60	22	6	9	26	450
	CP104-16030	14	40	14		50	100	77	M16	13	70	30	8	17	60	900
Smooth	CP104-08116	7	25	7.5	1.5	25	65	39.5	M 8	7	45	16	4	4	8	160
	CP104-12122	12	35	10	2	40	85	60	M12	9	60	22	6	9	26	450
	CP104-16130	14	40	14		50	100	77	M16	13	70	30	8	17	60	900

## Related Product

BJ101-02 Clamping Screws

## CP105

## SIDE CLAMPS

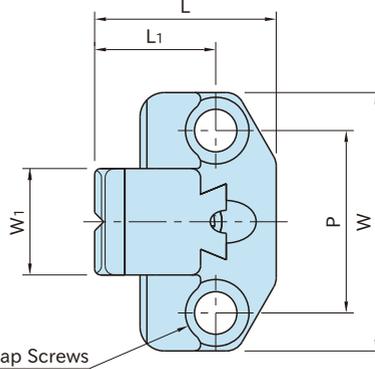


Serrated Nose

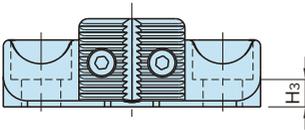


Smooth Nose

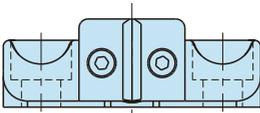
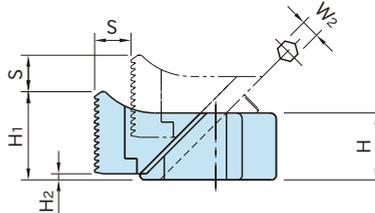
Body/Sliding Nose	Jaw
SCM440 steel Quenched and tempered Black oxide finish	SCM440 steel Quenched and tempered Black oxide finish Precision ground (smooth nose)



M-For Hex. Socket Head Cap Screws



Serrated Jaw



Smooth Jaw

Nose	Part Number	S	W <sub>1</sub>	H <sub>1</sub>	H <sub>2</sub>	L <sub>1</sub>	W	L	M	H <sub>3</sub>	P	H	W <sub>2</sub>	Clamping Force(kN)	Allowable Screw Torque(N·m)	Weight (g)
Serrated	CP105-08016	7	25	19.5	1.5	25	65	39.5	M 8	7	45	16	4	4	8	180
	CP105-12022	12	35	29	2	40	85	60	M12	9	60	22	6	9	26	500
	CP105-16030	14	40	38		50	100	77	M16	13	70	30	8	17	60	1010
Smooth	CP105-08116	7	25	19.5	1.5	25	65	39.5	M 8	7	45	16	4	4	8	180
	CP105-12122	12	35	29	2	40	85	60	M12	9	60	22	6	9	26	510
	CP105-16130	14	40	38		50	100	77	M16	13	70	30	8	17	60	1020

### Related Product

[BJ101-02](#) Clamping Screws

## QLSCH-H

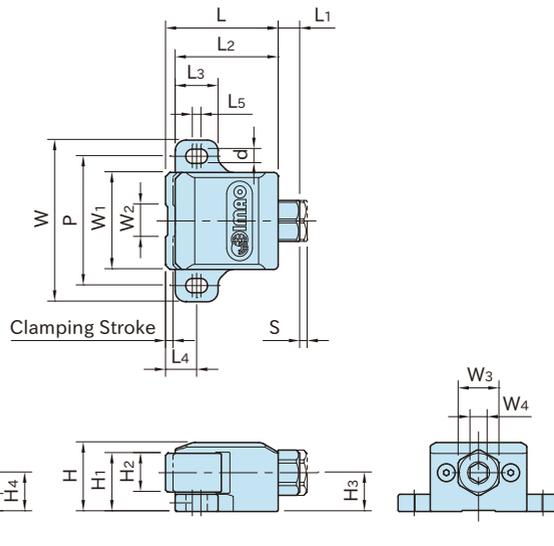
## SIDE CLAMPS



## ★Key Point

Compact free vise that prevents lifting up of the part.

Body	Jaw	Shaft	Screw
S45C steel Black oxide finished	S45C steel Quenched & tempered Black oxide finished Precision ground	SCM440 steel Black oxide finished	SCM435 steel Quenched & tempered Black oxide finished



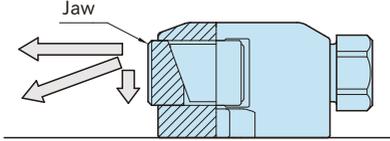
M1 Hex-Socket Setscrew

Part Number	Clamping Stroke	W <sub>1</sub>	W <sub>2</sub>	H <sub>1</sub>	H <sub>2</sub>	M	P <sub>1</sub>	H <sub>4</sub>	L <sub>4</sub>	W	L <sub>3</sub>	H <sub>5</sub>	d	L <sub>5</sub>
QLSCH32H	3	45	15	27	18	M4×0.7 Depth 6	30	18	14	75	20	8	6.6	3
QLSCH40H	4	60	20	33	22	M5×0.8 Depth 8	40	22	19	100	26	10	8.6	4

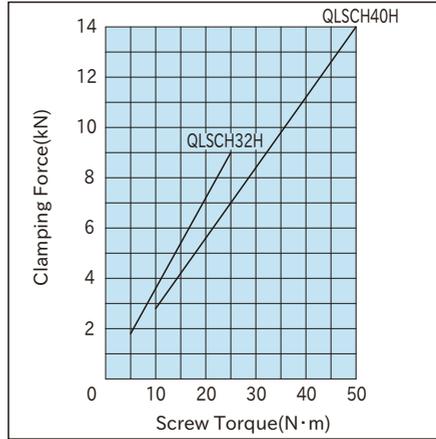
Part Number	P	H	L	L <sub>2</sub>	L <sub>1</sub>	H <sub>3</sub>	S	W <sub>3</sub>	W <sub>4</sub>	M <sub>1</sub>	Allowable Screw Torque(N·m)	Clamping Force(kN)	Weight (g)
QLSCH32H	60	32	52	48	10	18	3	19	8	M4×0.7-6L	25	9	560
QLSCH40H	80	40	69	63	13	22	4	24	10	M5×0.8-8L	50	14	1240

## Feature

- A screw type clamping mechanism provides long clamping stroke and firm clamping.
- Precision-ground jaw is perfect for clamping the workpiece on its finished surface.
- In clamping, the jaw provides downward force to prevent part lift.

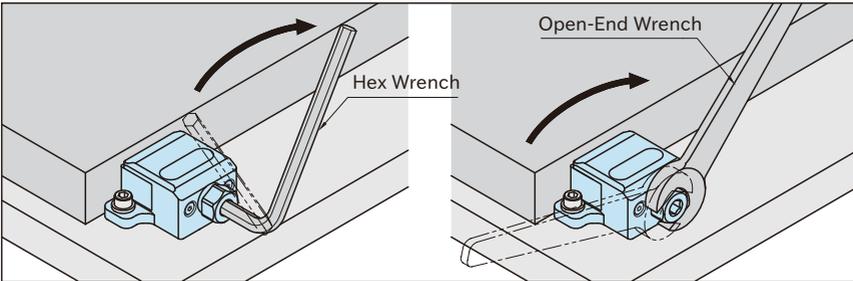


## Performance Curve

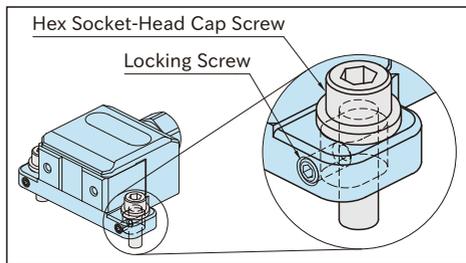


## How To Use

- Can be clamped with both of hex wrench and open-end wrench.



- The locking screw must be screwed onto the hex socket-head cap screw to prevent the body sliding backwards when clamping.



## QLSCH

## CAM EDGE CLAMPS



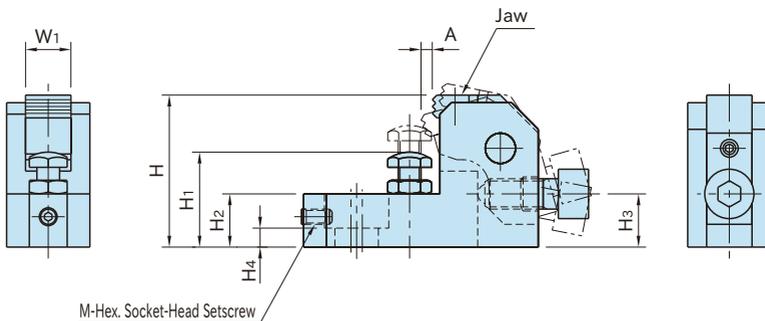
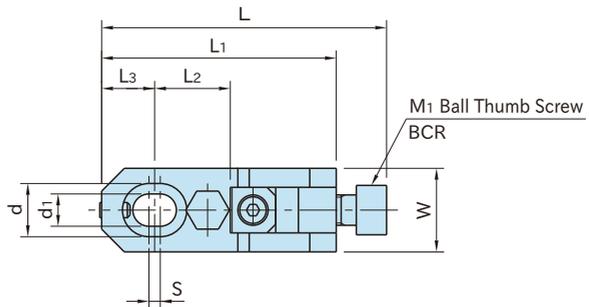
One-Touch type is available.

CP100

SIDE CLAMPS



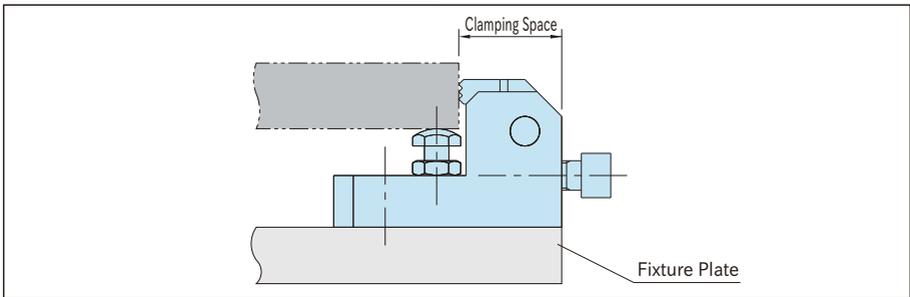
Body / Arm	Jaw	Support Screw
S45C steel Quenched and tempered Black oxide finish	SKH51 steel Quenched and tempered Black oxide finish	S45C steel Induction hardened (Ball head part)



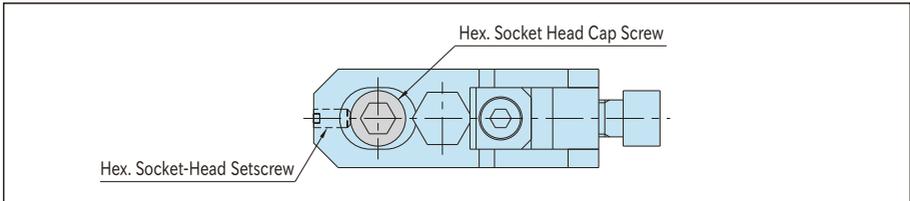
Part Number	A	W <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	H	H <sub>1</sub>	W	L	L <sub>1</sub>	d <sub>1</sub>	d	S	H <sub>2</sub>	H <sub>4</sub>
CP100-08040	3	12	20	14	40	25~32	22	75.5	62	8.5	14	3	14	5
CP100-10050	3.7	16	25	18	50	32~40	25	95	78	11	17.5	4	18	7
CP100-12060	4.5	20	30	21	60	40~48	32	113	93	13	20	5	21	8
CP100-16080	6	25	40	28	80	50~65	38	151	124	17	26	6	27	10

Part Number	M	M <sub>1</sub>	H <sub>3</sub>	Clamping Force(kN)	Allowable Screw Torque(N·m)	Weight (kg)	Proper Jaws
CP100-08040	M4×0.7 - 8L	M 8×1.25-20L	14	9	15	0.23	HSE-9126-SS
CP100-10050	M5×0.8 -10L	M10×1.5 -25L	17.5	15	30	0.41	HSE-9166-SS
CP100-12060	M6×1 -12L	M12×1.75-30L	21	25	65	0.75	HSE-9200-SS
CP100-16080	M8×1.25-16L	M16×2 -40L	28	38	100	1.57	HSE-9250-SS

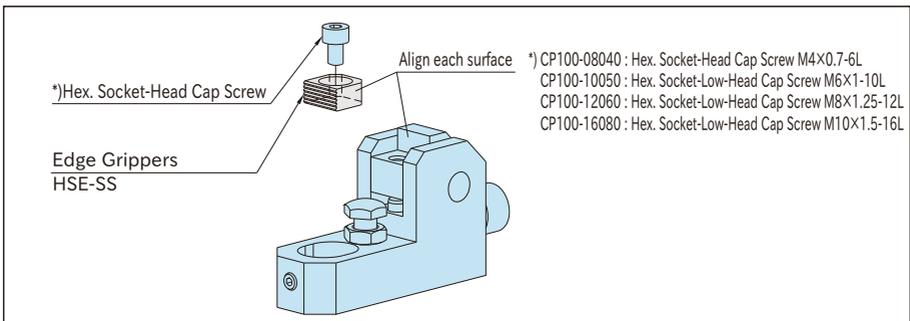
## How To Use



Smaller clamping space allows clamping a larger workpiece.



The hex. socket-head setscrew works to prevent the clamp from sliding back if screwed in until it contacts the cap screw.



Jaw is replaceable.

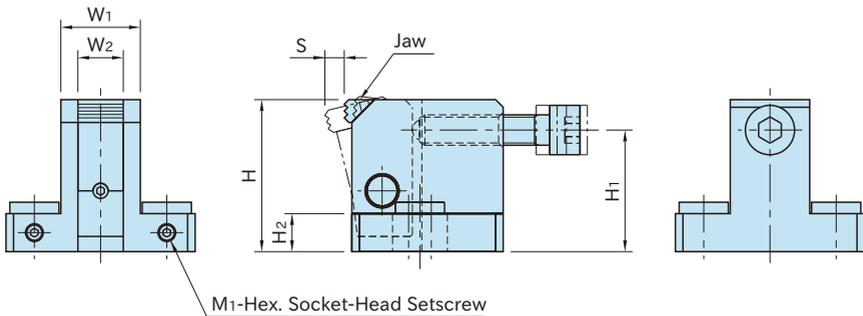
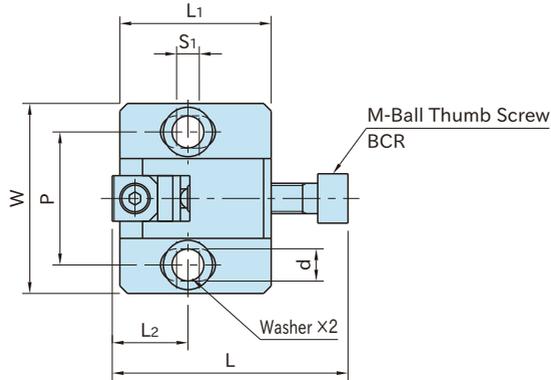
For installing, use a hex.socket-head cap screw. Fit the jaw onto a pocket of the side clamp arm.

CP101

SIDE CLAMPS



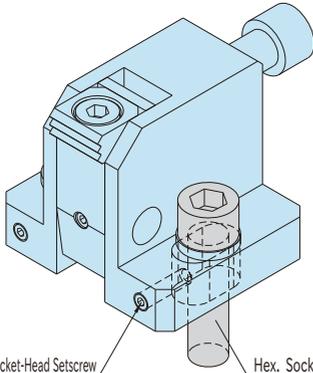
Body	Arm	Jaw
S45C steel Black oxide finish	S45C steel Quenched and tempered Black oxide finish	SKH51 steel Quenched and tempered Black oxide finish



Part Number	S	W <sub>2</sub>	L <sub>2</sub>	H	W	L	W <sub>1</sub>	L <sub>1</sub>	d	S <sub>1</sub>	H <sub>2</sub>	P	M <sub>1</sub>
<b>CP101-08040</b>	5.3	12	20	40	50	62.5	21	40	8.5	6	10	35	M4×0.7-10L
<b>CP101-10050</b>	7.1	16	25	50	65	74	27	50	11	8	12	45	M4×0.7-12L
<b>CP101-12060</b>	8	20	30	60	70	91	31	60	13	10	15	50	M5×0.8-15L
<b>CP101-16080</b>	10.2	25	40	80	90	115	39	80	17	15	20	65	M6×1 -20L

Part Number	M	H <sub>1</sub>	Clamping Force(kN)	Allowable Screw Torque(N·m)	Weight (kg)	Proper Jaws
<b>CP101-08040</b>	M 8×1.25-35L	32	15	25	0.33	HSE-9126-SS
<b>CP101-10050</b>	M10×1.5 -40L	40	27	50	0.66	HSE-9166-SS
<b>CP101-12060</b>	M12×1.75-50L	48	38	90	1.06	HSE-9200-SS
<b>CP101-16080</b>	M16×2 -60L	64	46	130	2.38	HSE-9250-SS

## How To Use



The hex. socket-head setscrew works to prevent the clamp from sliding back if screwed in until it contacts the cap screw.

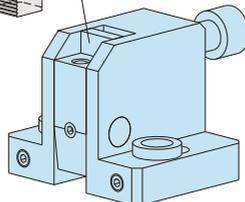
Hex. Socket-Head Setscrew

Hex. Socket-Head Cap Screw

\*)Hex. Socket-Head Cap Screw

Align each surface

Edge Grippers  
HSE-SS



\*) CP101-08040 : Hex. Socket-Head Cap Screw M4×0.7-6L  
 CP101-10050 : Hex. Socket-Low-Head Cap Screw M6×1-10L  
 CP101-12060 : Hex. Socket-Low-Head Cap Screw M8×1.25-12L  
 CP101-16080 : Hex. Socket-Low-Head Cap Screw M10×1.5-16L

Jaw is replaceable. For installing, use a hex. socket-head cap screw.  
 Fit the jaw onto a pocket of the side clamp arm.

## Supplied With

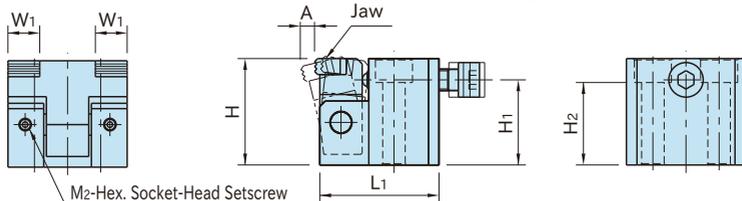
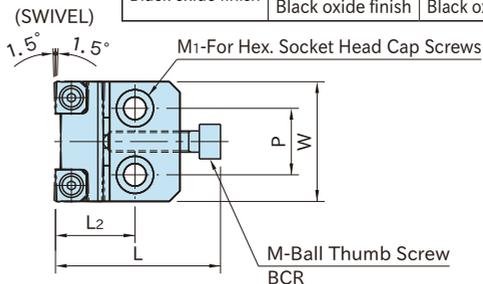
Two flat washers

## CP102

## WIDE-JAW SIDE CLAMPS

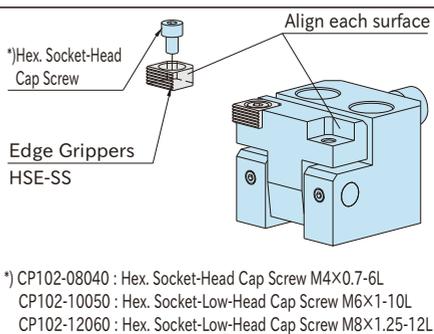


Body	Arm	Jaw
S45C steel Black oxide finish	S45C steel Quenched and tempered Black oxide finish	SKH51 steel Quenched and tempered Black oxide finish

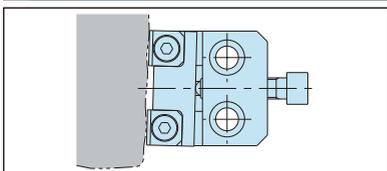


Part Number	A	W <sub>1</sub>	L <sub>2</sub>	H	W	L	L <sub>1</sub>	M <sub>1</sub>	H <sub>2</sub>	P	M <sub>2</sub>	M	H <sub>1</sub>	Clamping Force(kN)
CP102-08040	5.3	12	30	40	45	62.5	45	M 8	31	25	M4×0.7-4L	M 8X1.25-35L	32	15
CP102-10050	7.1	16	40	50	55	74	55	M10	39	30		M10×1.5 -40L	40	27
CP102-12060	8	20	45	60	65	91	65	M12	47	35		M5×0.8-5L	M12×1.75-50L	48

Part Number	Allowable Screw Torque (N·m)	Weight (kg)	Proper Jaws
CP102-08040	25	0.55	HSE-9126-SS
CP102-10050	50	1	HSE-9166-SS
CP102-12060	90	1.69	HSE-9200-SS



## How To Use



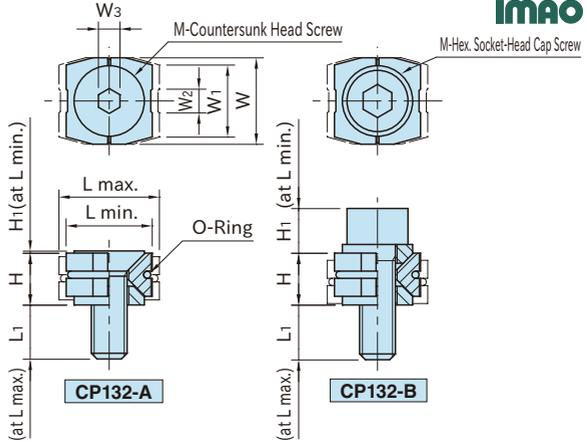
The jaw swivels to fit an unmachined surface of the workpiece.

Jaw is replaceable. For installing, use a hex. socket-head cap screw. Fit the jaw onto a pocket of the side clamp arm.

## CP132

## COMPACT WEDGE CLAMPS


**CP132-A**

**CP132-B**


### ★Key Point

Can clamp 2 workpieces in small space.

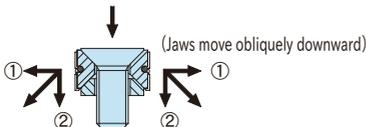
Jaw	Washer	O-Ring
SNCM439 steel Black oxide finished HRC33-39	SCM435 steel Black oxide finished	Fluoro rubber

Part Number	L		W	H		W <sub>1</sub>	W <sub>2</sub>	H <sub>1</sub>	M	L <sub>1</sub>	W <sub>3</sub>
	min.	max.		L min.	L max.						
<b>CP132-05001A</b>	12	14	12	7.2	6.2	10	3.3	0.3	M5×0.8 -15L	9.5	3
<b>CP132-06001A</b>	15	17	14.8	8.5	7.5	12	4	0.2	M6×1 -16L	9.3	4
<b>CP132-08001A</b>	18.5	21.5	18.4	11.4	9.9	16	5.3	0.4	M8×1.25-20L	11.3	5
<b>CP132-05001B</b>	12	14	12	7.2	6.2	10	3.3	6.2	M5×0.8 -16L	9.6	4
<b>CP132-06001B</b>	15	17	14.8	8.5	7.5	12	4	7.3	M6×1 -18L	10.2	5
<b>CP132-08001B</b>	18.5	21.5	18.4	11.4	9.9	16	5.3	9.8	M8×1.25-25L	14.9	6

Part Number	Clamping Force (kN)	Allowable Screw Torque (N·m)	Weight (g)	Proper O-ring
<b>CP132-05001A</b>	2	4.3	8	SS080(CS1 / ID 8)
<b>CP132-06001A</b>	3.5	7.3	13	S 12 (CS1.5 / ID11.5)
<b>CP132-08001A</b>	5	18	27	S 14 (CS1.5 / ID13.5)
<b>CP132-05001B</b>	3	5.4	9	SS080(CS1 / ID 8)
<b>CP132-06001B</b>	4.5	9.1	17	S 12 (CS1.5 / ID11.5)
<b>CP132-08001B</b>	9	22	30	S 14 (CS1.5 / ID13.5)

### Feature

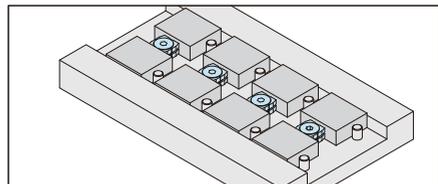
- The wedge construction allows powerfully clamping the workpiece.
- Can hold two workpieces with equilateral clamping action by using a hex wrench.



- ① Horizontal pressure against workpiece
- ② Vertical pressure preventing workpiece lift

### How To Use

Compact design allows to utilize machining area and clamp multiple workpieces.



QLSWC

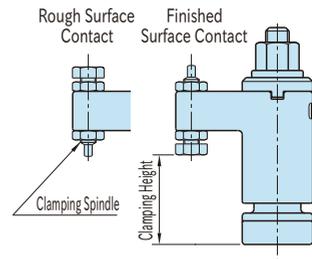
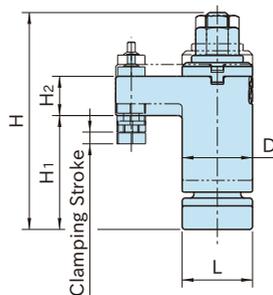
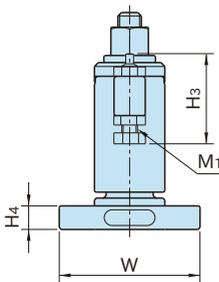
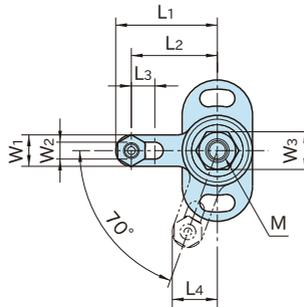
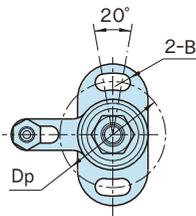
SWING CLAMPS FOR TORQUE CONTROL



Base/Washer/Flange Nut/Clamping Spindle	Body
S45C steel Quenched and tempered Black oxide finish	SCM440 steel Quenched and tempered Black oxide finish

Feature

- Designed for clamping-force control with a torque wrench.
- Screw-locking mechanism allows for longer clamping stroke and greater clamping force than a cam-locking mechanism.



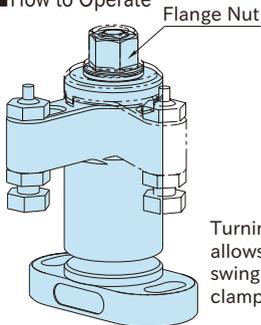
Part Number	Clamping Height *)				Clamping Stroke	L <sub>2</sub>	L <sub>3</sub>	L <sub>1</sub>	L <sub>4</sub>	W	L	H <sub>4</sub>	B	Dp
	Finished Surface Contact		Rough Surface Contact											
	Min.	Max.	Min.	Max.										
<b>QLSWC-0618</b>	21.8 (21.8~24.8)	23.8 (23.8~26.8)	21.4 (21.4~24.4)	23.4 (23.4~26.4)	3	22	6	26	11.5	36	18	6	4.3	27
<b>QLSWC-0823</b>	30.3 (30.3~34.3)	32.3 (32.3~36.3)	31.2 (31.2~35.2)	33.2 (33.2~37.2)	4	30	8	35	15.3	45	23	8	5.3	34
<b>QLSWC-1030</b>	30.5 (30.5~34.5)	37 (37~41)	31.5 (31.5~35.5)	38 (38~42)										
<b>QLSWC-1240</b>	34.5 (34.5~39.5)	44 (44~49)	37 (37~42)	46.5 (46.5~51.5)	5	45		55	25.4	85	40	15	10.5	64

\*) Clamping height can be adjusted. The parenthesised values denote clamping height range.

Part Number	H	D	W <sub>1</sub>	W <sub>2</sub>	H <sub>2</sub>	H <sub>1</sub>	M <sub>1</sub>	H <sub>3</sub>	W <sub>3</sub>	M	Clamping Force(kN)	Allowable Screw Torque(N·m)	Weight (g)
<b>QLSWC-0618</b>	56.5	18	8	4.3	10	29	M 4×0.7	22.8	10	M 6×1	2.3	6	94
<b>QLSWC-0823</b>	73.5	23	10	5.3	14	39	M 5×0.8	28.5	13	M 8×1.25	3.6	10.5	210
<b>QLSWC-1030</b>	91	30	16	8.4	18	48	M 8×1.25	45.5	17	M10×1.5	6	30	515
<b>QLSWC-1240</b>	114	40	20	10.4	22	58	M10×1.5	57	19	M12×1.75	7.5	45	1100

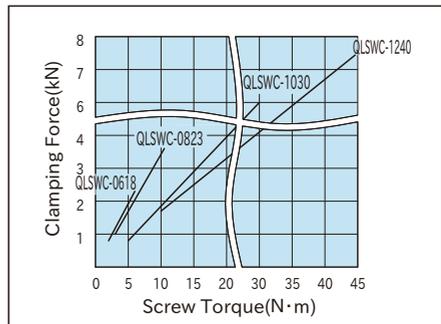
## How To Use

### How to Operate



Turning the flange nut allows the clamp arm to swing into position for clamping.

## Performance Curve



### Note

Do not use a power tool (impact wrench etc.) to turn the flange nut, for damage prevention.

## QLSWC

SWING CLAMPS WITH ADJUSTABLE HANDLE



One-Touch type is available.

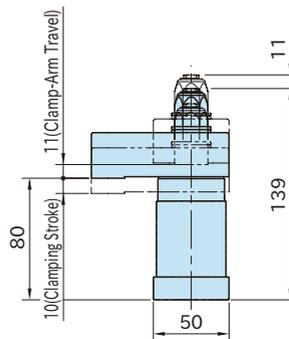
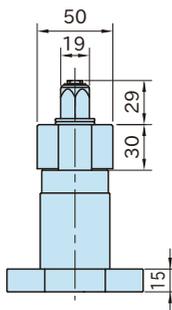
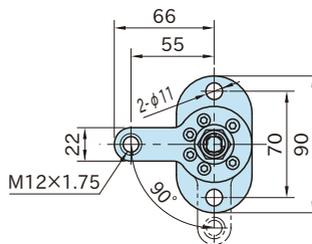
PTSW1

SWING CLAMPS (Quick-Acting)



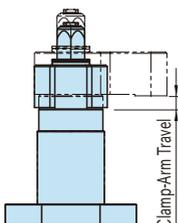
Without Clamp Arm

Body / Clamp-Arm Holder / Hex. Head	Clamp Arm
SCM440 steel Quenched and tempered Black oxide finish	S45C steel Quenched and tempered Black oxide finish



Feature

- The clamp arm swings in swift response to the turning speed of an impact wrench, for quick clamping.
- A short clamp-arm travel allows quick clamping.



Note: For robotized production lines, use Spiral-Acting Swing Clamps.

## ■ With Clamp Arm

Part Number	Clamping Force(kN)	Allowable Screw Torque (N·m)	Clamping Direction	Weight (kg)
<b>PTSW1-12R</b>	6	28	CW	1.6

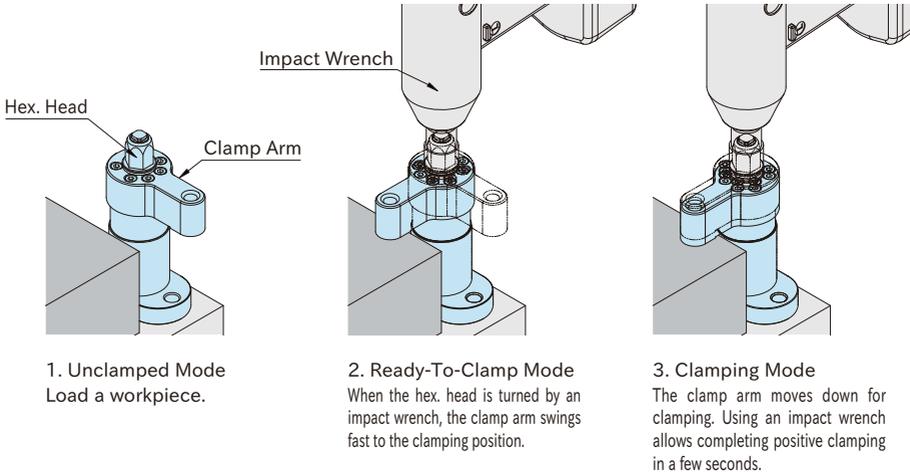
## ■ Without Clamp Arm

Part Number	Clamping Force(kN)	Allowable Screw Torque (N·m)	Clamping Direction	Weight (kg)
<b>PTSW1-12NR</b>	6	28	CW	1.2

Note: If you prepare a custom clamp arm, contact us for the dimensional information on its mounting section.  
Note that custom clamp arms made by yourselves may cause clamping force to be increased or decreased.



## How To Use



1. Unclamped Mode  
Load a workpiece.

2. Ready-To-Clamp Mode  
When the hex. head is turned by an impact wrench, the clamp arm swings fast to the clamping position.

3. Clamping Mode  
The clamp arm moves down for clamping. Using an impact wrench allows completing positive clamping in a few seconds.

## Note

- Do not use applying higher torque than allowable for a long period of time, to avoid damage. Using a torque-settable impact wrench is recommended.
- Use **PTSW2** in robotized production lines.

PTSW2

SWING CLAMPS (Spiral-Acting)

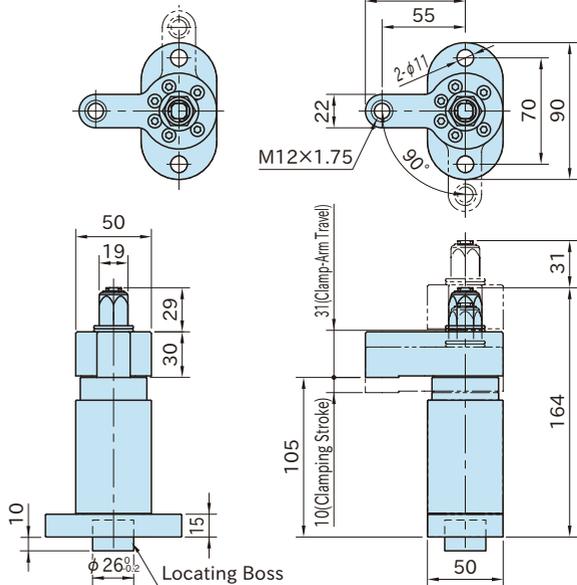


Without Clamp Arm

Body / Clamp-Arm Holder / Hex. Head	Clamp Arm
SCM440 steel Quenched and tempered Black oxide finish	S45C steel Quenched and tempered Black oxide finish

Counterclockwise Clamping

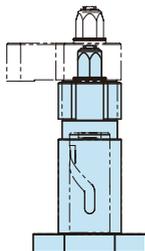
Clockwise Clamping



Note: Use when locating clamps is required in the robotized production line.

Feature

The inside spiral groove allows the clamp arm to swing positively.



## ■ With Clamp Arm

Part Number	Clamping Force (kN)	Allowable Screw Torque (N·m)	Clamping Direction	Weight (kg)
PTSW2-12NR	6	28	CW	2
PTSW2-12L			CCW	

## ■ Without Clamp Arm

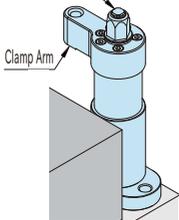
Part Number	Clamping Force (kN)	Allowable Screw Torque (N·m)	Clamping Direction	Weight (kg)
PTSW2-12NR	6	28	CW	1.6
PTSW2-12NL			CCW	

Note: If you prepare a custom clamp arm, contact us for the dimensional information on its mounting section. Note that custom clamp arms made by yourselves may cause clamping force to be increased or decreased.

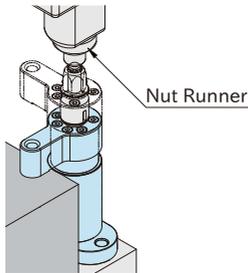


### How To Use

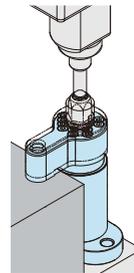
Hex. Head



1. Unclamped Mode  
Load or unload a workpiece.



2. Ready-To-Clamp Mode  
When the hex. head is turned by a nut runner, the clamp arm swings fast to the clamping position.



3. Clamping Mode  
The clamp arm moves down for clamping. Using a nut runner allows completing positive clamping in a few seconds.

### Note

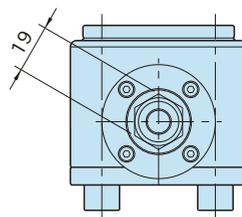
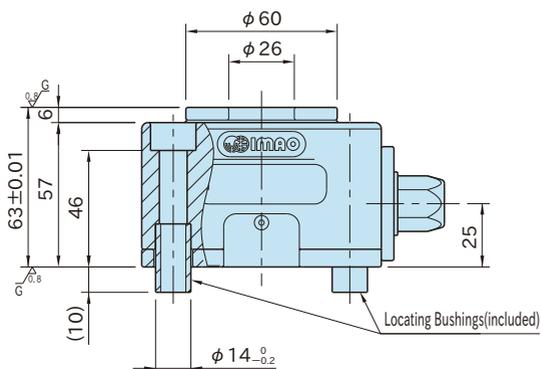
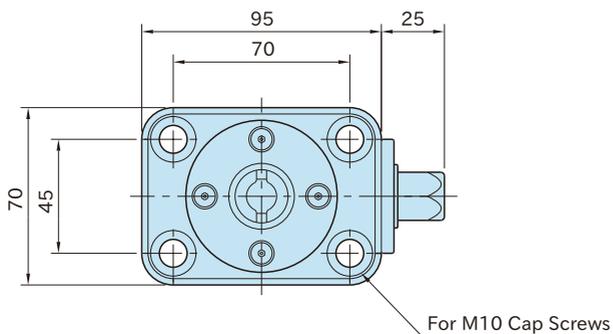
A torque-settable impact wrench may also be used to operate these clamps.

## PTPD

## BLOCK PULL CLAMPS



Body	Contact Pad	Locating Bushing
S45C steel Black oxide finish	SCM440 steel Quenched and tempered Black oxide finish	SCM435 steel Quenched and tempered Black oxide finish



Part Number	Weight (kg)
<b>PTPD12</b>	2.3

Options of Operating Tool	Clamping Force (kN)	Allowable Screw Torque(N·m)
<b>Spanner or Socket Wrench</b>	12	40
<b>Nut Runner (for robotization)</b>		
<b>Impact Wrench</b>	6	20

**Note**

Do not use applying a greater torque than allowable for a long period of time, to avoid damage. When an impact wrench is used, the torque-settable type is recommended.

**Related Product**

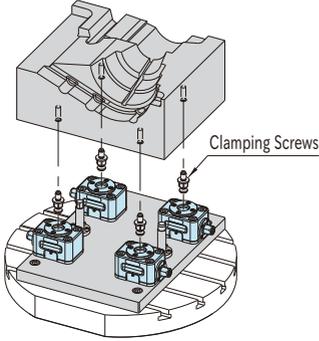
**PTPD-M** Clamping Screws

## Feature

Clamp the workpiece from bottom.

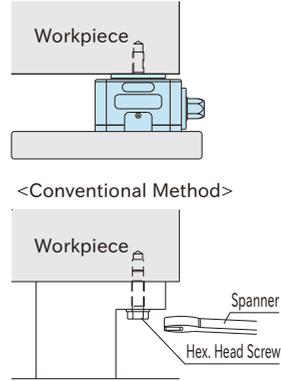
### ■ Ideal for 5-Axis Machining

Block Pull Clamps mount under a workpiece making its surfaces to be machined fully open for the cutting tool. This allows completing multiple machining processes at a time.



### ■ Better Workability

Block Pull Clamps allow fastening a workpiece easily, unlike the conventional method of fastening with hexagon head screws from below.



## How To Use

In addition to tightening with wrench, this clamp can be operated with nut runner for automation and impact wrench for lower workload.

A 3D perspective diagram of a workpiece mounted on a machine table. Four blue Block Pull Clamps are positioned underneath the workpiece. Vertical lines with arrows point from the clamps to the workpiece, labeled 'Clamping Screws'. The workpiece is a complex, curved metal part.

### ■ Spacing Between Two Clamping-Screw Holes

A diagram showing a cross-section of a workpiece with four tapping holes. A dimension line indicates the spacing between two holes, labeled 'Recommended Tolerance : ±0.3 (Tapped Hole)'. Below this, a diagram shows two blue Block Pull Clamps mounted on the workpiece, with arrows pointing to the holes, labeled '(Locating Pins)'.

Locating repeatability in using Block Pull Clamps alone is ±0.3.

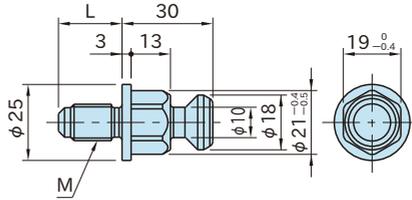
Note: Install locating pins for better accuracy, as shown above.

A diagram showing an 'Air Gun' being used to blow metal chips from a blue Block Pull Clamp. The clamp is mounted on a surface. An arrow points to the side cover, labeled '\*Cover Removal'.

\*) To remove metal chips in the mechanism, take off the side covers and blow air from above.

**PTPD-M**

**CLAMPING SCREWS for BLOCK PULL CLAMPS**

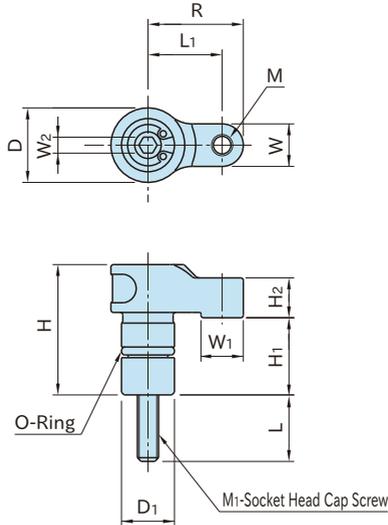


Body
SCM435 steel
Quenched and tempered
Black oxide finish

Part Number	M	L	Weight (g)	Proper Block Pull Clamp
<b>PTPD12-M10</b>	M10×1.5	18	69	PTPD12
<b>PTPD12-M12</b>	M12×1.75	21	75	
<b>PTPD12-M16</b>	M16×2	28	98	

## BJ132

## HOOK CLAMPS



Body
SCM440 steel
Quenched and tempered
Black oxide

Part Number	W <sub>1</sub>	M	L <sub>1</sub>	R	D <sub>1</sub> ( $_{-0.021}^{-0.10}$ )	H <sub>1</sub>	M <sub>1</sub>	L	H	D	W	H <sub>2</sub>	W <sub>2</sub>
<b>BJ132-04018</b>	8	M4×0.7	14	18	10	14.5	M4×0.7-30L	12.5	24.5	14	8	7.5	3
<b>BJ132-06022</b>	10	M5×0.8	17	22	12	17.5	M6×1 -35L	13.5	30.5	16	10	9.5	5

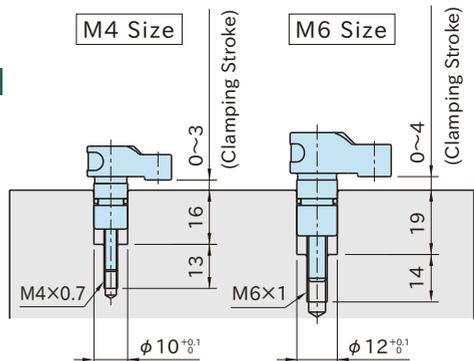
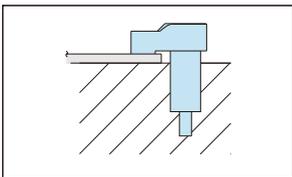
Part Number	Clamping Force (kN)	Allowable Screw Torque (N·m)	Weight (g)
<b>BJ132-04018</b>	2	2.7	25
<b>BJ132-06022</b>	3.5	7	45

### Feature

- Compact design for applications in limited space
- **BJ530** Hook-Clamp Holders are available.
- Clamp that is designed to move up and down in conjunction with the tightening screw, for prevention of galling.

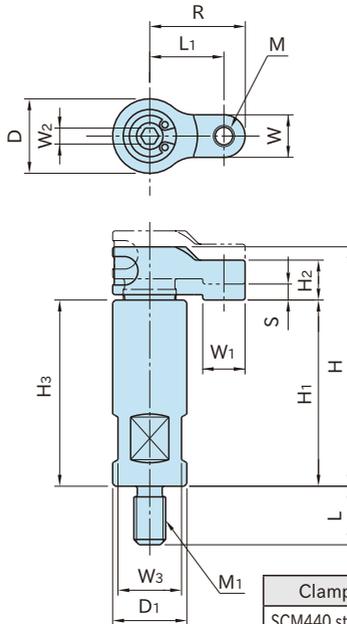
### How To Use

Instead of being used with Hook-Clamp Holders, these Hook Clamps can be plugged into a custom block with receiving holes as specified on the right.



**BJ132-A**

**HOOK-CLAMP ASSEMBLIES**



Clamp Body	Holder
SCM440 steel Quenched and tempered Black oxide finished	S45C steel Quenched and tempered Black oxide finished

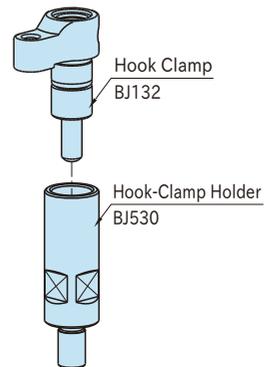
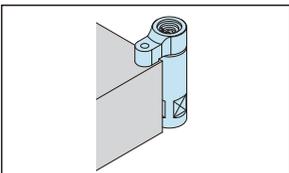
Part Number	H <sub>1</sub>	S (Clamping Stroke)	W <sub>1</sub>	M	L <sub>1</sub>	R	D <sub>1</sub>	H <sub>3</sub>	M <sub>1</sub>	L	H	D	W	H <sub>2</sub>	W <sub>2</sub>	W <sub>3</sub>
<b>BJ132-04018A</b>	35	3	8	M4×0.7	14	18	14	35	M6×1	11	45	14	8	7.5	3	12
<b>BJ132-06022A</b>	40	4	10	M5×0.8	17	22	16	40	M8×1.25	14	53	16	10	9.5	5	13

Part Number	Clamping Force (kN)	Allowable Screw Torque (N·m)	Weight (g)
<b>BJ132-04018A</b>	2	2.7	55
<b>BJ132-06022A</b>	3.5	7	90

**Feature**

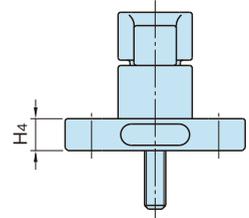
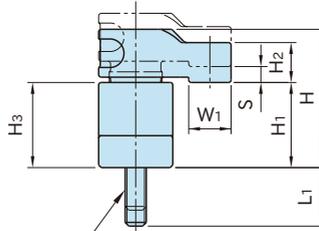
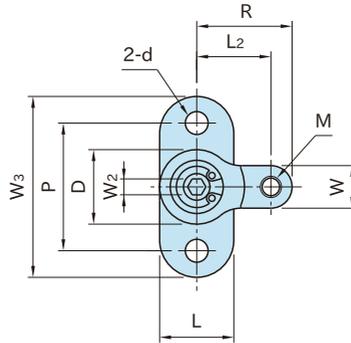
The hook clamp is designed to move up and down in conjunction with the tightening screw, for prevention of galling in the hook-clamp holder.

**How To Use**



## BJ132-B

### HOOK-CLAMP ASSEMBLIES WITH FLANGED HOLDER



M1 Socket-Head Cap Screw

Clamp Body	Holder
SCM440 steel	S45C steel
Quenched and tempered	Quenched and tempered
Black oxide finished	Black oxide finished

Part Number	H <sub>1</sub>	S (Clamping Stroke)	W <sub>1</sub>	M	L <sub>2</sub>	R	W <sub>3</sub>	L	M <sub>1</sub>	L <sub>1</sub> (max)	d	H <sub>4</sub>	P	H	H <sub>3</sub>	D	W	H <sub>2</sub>	W <sub>2</sub>
<b>BJ132-04018B</b>	16	3	8	M4×0.7	14	18	34	14	M4×0.7-30L	11	4.3	6	24	26	16	14	8	7.5	3
<b>BJ132-06022B</b>	19	4	10	M5×0.8	17	22	40	16	M6×1 -35L	12	5.3	8	28	32	19	16	10	9.5	5

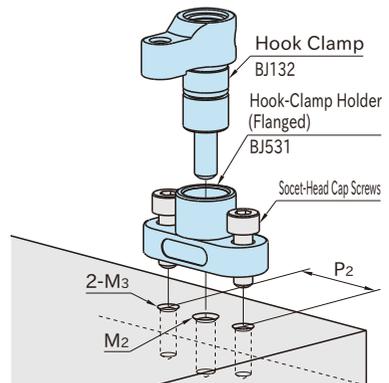
Part Number	Clamping Force (kN)	Allowable Screw Torque (N·m)	Weight (g)
<b>BJ132-04018B</b>	2	2.7	45
<b>BJ132-06022B</b>	3.5	7	75

#### Feature

- Ideal for low height clamping.
- The hook clamp is designed to move up and down in conjunction with the tightening screw, for prevention of galling in the hook-clamp holder.

Part Number	M <sub>2</sub>	M <sub>3</sub>	P <sub>2</sub>
<b>BJ132-04018B</b>	M4×0.7 Depth 13	M4×0.7	24
<b>BJ132-06022B</b>	M6×1 Depth 14	M5×0.8	28

#### How To Use



**BJ130**

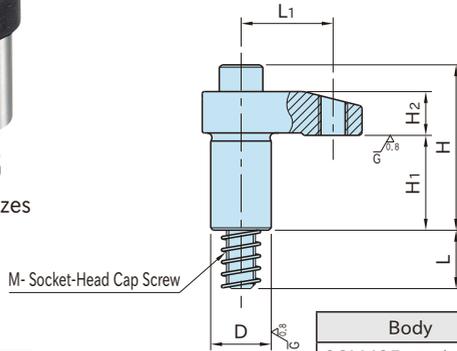
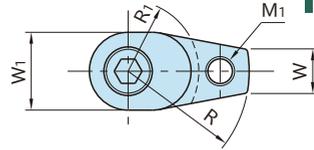
**HOOK CLAMPS**



M8 Size



M10-M16 Sizes



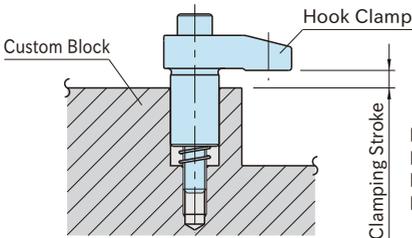
M- Socket-Head Cap Screw

Body
SCM435 steel
Quenched & tempered
Black oxide finished
Precision ground

**Related Product**

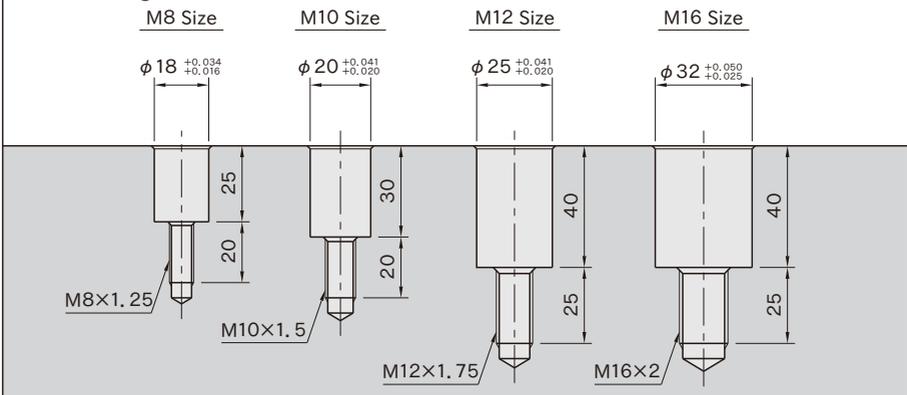
BJ530 Hook-Clamp Holders

**How To Use**



- BJ130-08\*\*\*(M 8 size) : 10mm
- BJ130-10\*\*\*(M10 size) : 12mm
- BJ130-12\*\*\*(M12 size) : 15mm
- BJ130-16\*\*\*(M16 size) : 15mm

**Machining Instruction for Custom Blocks**



Hook Clamps can be plugged directly into custom blocks with receiving holes as specified above.

Part Number	R	R <sub>1</sub>	M <sub>1</sub>	L <sub>1</sub>	D (h7)	H <sub>1</sub>	M	L	H		
<b>BJ130-08020</b>	20	15	—	—	18	23	M 8×1.25-50L	21	37		
<b>BJ130-08025</b>	25										
<b>BJ130-08030</b>	30										
<b>BJ130-10030</b>	30	20	—	—	20	30	M10×1.5 -65L	21	54		
<b>BJ130-10040</b>	40	25									
<b>BJ130-12040</b>	40	25								—	—
<b>BJ130-12050</b>	50		24	68							
<b>BJ130-12060</b>	60		26	66							
<b>BJ130-12140</b>	40		M12×1.75	31	24	68					
<b>BJ130-12150</b>	50			38							
<b>BJ130-12160</b>	60			46							
<b>BJ130-16040</b>	40	25	—	—	32	39	M16×2 -85L	26	75		
<b>BJ130-16050</b>	50										
<b>BJ130-16060</b>	60										
<b>BJ130-16150</b>	50									M12×1.75	38
<b>BJ130-16160</b>	60										46

Part Number	W <sub>1</sub>	W	H <sub>2</sub>	Clamping Force(kN)	Allowable Screw Torque(N·m *)	Weight (g)		
<b>BJ130-08020</b>	22	10	12	15	38	90		
<b>BJ130-08025</b>				12	33	100		
<b>BJ130-08030</b>				10	30	105		
<b>BJ130-10030</b>	25	12	15	13	38	165		
<b>BJ130-10040</b>				10	32	180		
<b>BJ130-12040</b>	32	18	16	18	60	305		
<b>BJ130-12050</b>				18	14	50	360	
<b>BJ130-12060</b>					12	46	380	
<b>BJ130-12140</b>				18	16	18	60	295
<b>BJ130-12150</b>					14	50	350	
<b>BJ130-12160</b>					12	46	370	
<b>BJ130-16040</b>	36	22	21	38	170	530		
<b>BJ130-16050</b>				31	150	580		
<b>BJ130-16060</b>				26	130	625		
<b>BJ130-16150</b>				31	150	565		
<b>BJ130-16160</b>				26	130	610		

\*) Values for use in conjunction with custom holder blocks.

For use in conjunction with [BJ530](#) Hook-Clamp Holders, apply allowable screw torques given on the [BJ530](#) page.

### Note

Please put grease on sliding surface to prevent galling when using in dry condition.

## BJ130-A

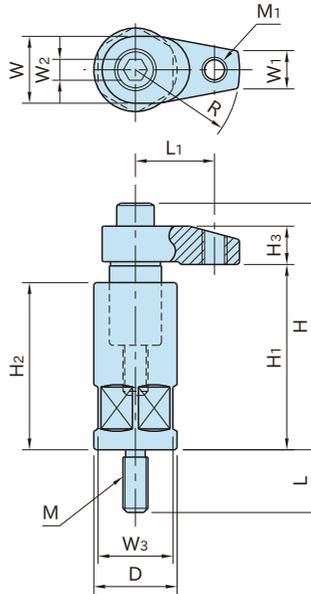
## HOOK-CLAMP ASSEMBLIES



M8 Size



M12 Size



Clamp Body
SCM435 steel
Quenched and tempered
Black oxide finish
Precision ground
Holder
S45C steel
Black oxide finish

Part Number	H <sub>1</sub>	M <sub>1</sub>	L <sub>1</sub>	R	D	H <sub>2</sub>	M	L	H
BJ130-08020A1	55~65	—	—	20	24	55	M 8x1.25	19	69~ 79
BJ130-08025A1				25					
BJ130-08030A1				30					
BJ130-10030A1	63~75	—	—	30	32	63	M12x1.75	30	87~ 99
BJ130-10030A2	80~92					80			104~116
BJ130-10040A1	63~75			63		87~ 99			
BJ130-10040A2	80~92			80		104~116			

Part Number	W	W <sub>1</sub>	H <sub>3</sub>	W <sub>2</sub>	W <sub>3</sub>	Clamping Force(kN)	Allowable Screw Torque(N·m)	Weight (kg)
BJ130-08020A1	22	10	12	6	22	12	30	0.23
BJ130-08025A1						11		0.24
BJ130-08030A1						10		0.25
BJ130-10030A1	25	12	15	8	30	13	38	0.60
BJ130-10030A2						10		0.70
BJ130-10040A1						10	32	0.61
BJ130-10040A2						10		0.71

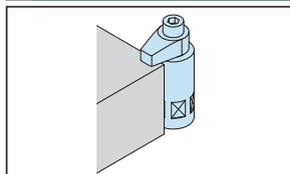
## Related Product

Use [BJ600](#) Cylindrical Risers for additional height.

## Note

Please put grease on sliding surface to prevent galling when using in dry condition.

## How To Use

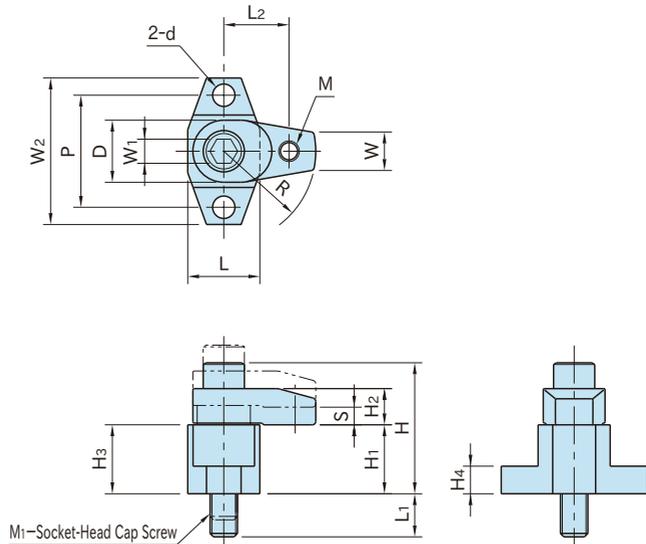


Part Number	H <sub>1</sub>	M <sub>1</sub>	L <sub>1</sub>	R	D	H <sub>2</sub>	M	L	H						
BJ130-12040A1	80~95	—	—	40	40	80	M12x1.75	30	107~122						
BJ130-12040A2	100~115					100			127~142						
BJ130-12050A1	80~95					80			109~124						
BJ130-12050A2	100~115					100			129~144						
BJ130-12060A1	80~95					80			109~124						
BJ130-12060A2	100~115					100			129~144						
BJ130-12140A1	80~95			M12x1.75		31			40	80	107~122				
BJ130-12140A2	100~115									100	127~142				
BJ130-12150A1	80~95									38	50	80	109~124		
BJ130-12150A2	100~115											100	129~144		
BJ130-12160A1	80~95											46	60	80	109~124
BJ130-12160A2	100~115													100	129~144
BJ130-16040A1	80~95	—	—		40	80	M16x2	30	116~131						
BJ130-16040A2	100~115					100			136~151						
BJ130-16050A1	80~95					50			50	80	116~131				
BJ130-16050A2	100~115									100	136~151				
BJ130-16060A1	80~95									60	60	80	116~131		
BJ130-16060A2	100~115											100	136~151		
BJ130-16150A1	80~95			M12x1.75	38							50	80	116~131	
BJ130-16150A2	100~115												100	136~151	
BJ130-16160A1	80~95					46			60				80	116~131	
BJ130-16160A2	100~115												100	136~151	

Part Number	W	W <sub>1</sub>	H <sub>3</sub>	W <sub>2</sub>	W <sub>3</sub>	Clamping Force (kN)	Allowable Screw Torque (N·m)	Weight (kg)			
BJ130-12040A1	32	18	16	10	36	15	50	1.36			
BJ130-12040A2						1.56					
BJ130-12050A1						18		14	1.39		
BJ130-12050A2									1.59		
BJ130-12060A1									12	46	1.43
BJ130-12060A2											1.63
BJ130-12140A1			50				50				1.36
BJ130-12140A2											1.56
BJ130-12150A1						18		14			1.39
BJ130-12150A2											1.59
BJ130-12160A1									12	46	1.43
BJ130-12160A2											1.63
BJ130-16040A1	36	22	21	14	46		18				2.11
BJ130-16040A2							2.42				
BJ130-16050A1						16.5	80	2.16			
BJ130-16050A2								2.47			
BJ130-16060A1								16	2.22		
BJ130-16060A2									2.53		
BJ130-16150A1									16.5	2.16	
BJ130-16150A2										2.47	
BJ130-16160A1						16	2.22				
BJ130-16160A2							2.53				

## BJ130-B1

## HOOK-CLAMP ASSEMBLIES (Flanged)



Clamp Body	Holder
SCM435 steel Quenched and tempered Black oxide finish Precision ground	S45C steel Black oxide finish

Part Number	H <sub>1</sub>	S (Clamping Stroke)	M	L <sub>2</sub>	R	W <sub>2</sub>	L	M <sub>1</sub>	L <sub>1</sub> (max)	d	H <sub>4</sub>	P
BJ130-08020B1	25	10	—	—	20	50	24	M 8×1.25-50L	19	6.6	10	38
BJ130-08025B1					25							
BJ130-08030B1					30							
BJ130-10030B1	30	12	—	—	30	60	28	M10×1.5 -65L	21	9	12	45
BJ130-10040B1					40							

Part Number	H	H <sub>3</sub>	D	W	H <sub>2</sub>	W <sub>1</sub>	Clamping Force(kN)	Allowable Screw Torque(N·m)	Weight (g)
BJ130-08020B1	39	25	22	10	12	6	15	38	175
BJ130-08025B1							12	33	185
BJ130-08030B1							10	30	190
BJ130-10030B1	54	30	25	12	15	8	13	38	315
BJ130-10040B1							10	32	330

Part Number	H <sub>1</sub>	S (Clamping Stroke)	M	L <sub>2</sub>	R	W <sub>2</sub>	L	M <sub>1</sub>	L <sub>1</sub> (max)	d	H <sub>4</sub>	P		
BJ130-12040B1	40	15	—	—	40	75	35	M12×1.75-80L	25	11	14	55		
BJ130-12050B1					50				23					
BJ130-12060B1					60				25					
BJ130-12140B1					31				40				23	
BJ130-12150B1					38				50					
BJ130-12160B1					46				60					
BJ130-16040B1	40	15	—	—	40	85	42	M16×2 -85L	25	13	16	65		
BJ130-16050B1					50									
BJ130-16060B1					60									
BJ130-16150B1					38								50	
BJ130-16160B1					46								60	

Part Number	H	H <sub>3</sub>	D	W	H <sub>2</sub>	W <sub>1</sub>	Clamping Force(kN)	Allowable Screw Torque(N·m)	Weight (g)
BJ130-12040B1	67	40	32	18	16	10	18	60	595
BJ130-12050B1	69				18		50	650	
BJ130-12060B1					12		46	675	
BJ130-12140B1	67				16		60	585	
BJ130-12150B1					14		50	640	
BJ130-12160B1	69				18		46	665	
BJ130-16040B1	76	40	36	22	21	14	38	170	930
BJ130-16050B1							31	150	980
BJ130-16060B1							26	130	1025
BJ130-16150B1							31	150	965
BJ130-16160B1							26	130	1010

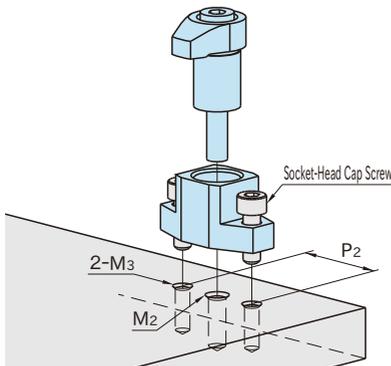
## Feature

Perfect for low-height clamping.

## Note

Please put grease on sliding surface to prevent galling when using in dry condition.

## How To Use



Part Number	M <sub>2</sub>	M <sub>3</sub>	P <sub>2</sub>
BJ130-08020B1	M 8×1.25 Depth 20	M 6×1	38
BJ130-08025B1			
BJ130-08030B1			
BJ130-10030B1	M10×1.5 Depth 21	M 8×1.25	45
BJ130-10040B1			
BJ130-12040B1	M12×1.75 Depth 25	M10×1.5	55
BJ130-12050B1			
BJ130-12060B1			
BJ130-12140B1			
BJ130-12150B1			
BJ130-12160B1			
BJ130-16040B1	M16×2 Depth 25	M12×1.75	65
BJ130-16050B1			
BJ130-16060B1			
BJ130-16150B1			
BJ130-16160B1			



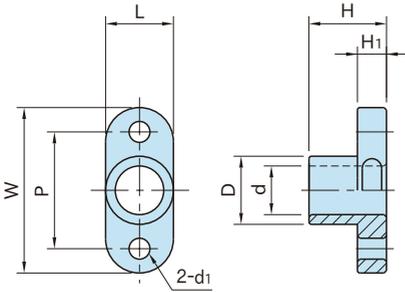
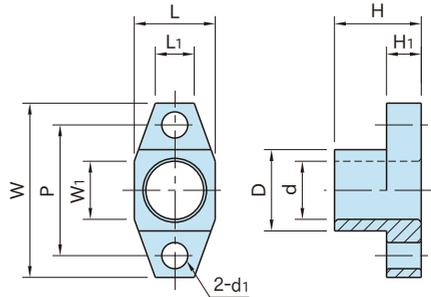
## BJ531

## HOOK-CLAMP HOLDERS (Flanged)


**BJ531** -04016, 06019

**BJ531** -08025~16040

Type	Body
<b>BJ531</b> -04016, 06019	S45C steel Quenched and tempered Black oxide finish
<b>BJ531</b> -08025~16040	S45C steel Black oxide finish


**BJ531** -04016, 06019

**BJ531** -08025~16040

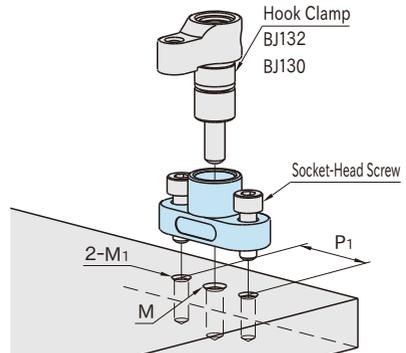
Part Number	H	W	L	d *)	d <sub>1</sub>	H <sub>1</sub>	P	D	W <sub>1</sub>	L <sub>1</sub>	Weight (g)
<b>BJ531-04016</b>	16	34	14	10	4.3	6	24	14	—	—	20
<b>BJ531-06019</b>	19	40	16	12	5.3	8	28	16	—	—	30
<b>BJ531-08025</b>	25	50	24	18	6.6	10	38	24	15	11.3	85
<b>BJ531-10030</b>	30	60	28	20	9	12	45	28	20	13.4	150
<b>BJ531-12040</b>	40	75	35	25	11	14	55	35		15	290
<b>BJ531-16040</b>		85	42	32	13	16	65	42	25	20.2	400

\*) Tolerance of d Diameter **BJ531-04016** **BJ531-06019** :  $\begin{matrix} +0.1 \\ 0 \end{matrix}$   
**BJ531-08025** **BJ531-10030** **BJ531-12040** **BJ531-16040** : F7

### Feature

Suitable for low-height clamping.

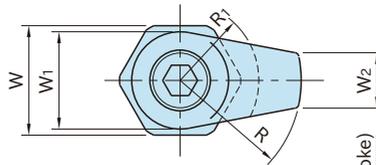
### How To Use



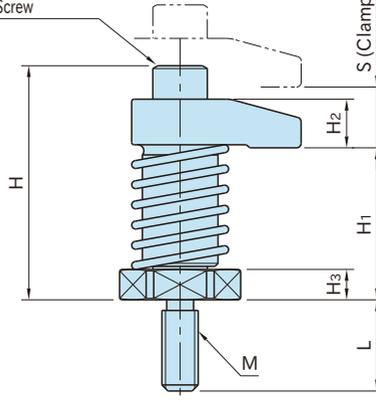
Part Number	M	M <sub>1</sub>	P <sub>1</sub>
<b>BJ531-04016</b>	M 4×0.7 Depth 13	M 4×0.7	24
<b>BJ531-06019</b>	M 6×1 Depth 14	M 5×0.8	28
<b>BJ531-08025</b>	M 8×1.25 Depth 20	M 6×1	38
<b>BJ531-10030</b>	M10×1.5 Depth 21	M 8×1.25	45
<b>BJ531-12040</b>	M12×1.75 Depth 25	M10×1.5	55
<b>BJ531-16040</b>	M16×2 Depth 25	M12×1.75	65

## BJ131

## HOOK CLAMPS



M1 Hex.Socket-Head  
Cap Screw



Body
SCM435 steel
Heat treated
Black oxide finish
Precision ground

Part Number	H <sub>1</sub>	S	R	R <sub>1</sub>	M	L	H	W <sub>1</sub>	W <sub>2</sub>	H <sub>2</sub>	W
<b>BJ131-08020</b>	35	10	20	15	M 8×1.25	19	49	22	10	12	22
<b>BJ131-08025</b>			25								
<b>BJ131-08030</b>			30	15 *)							
<b>BJ131-08120</b>	45	10	20	15	M 8×1.25	19	59	22	10	12	22
<b>BJ131-08125</b>			25								
<b>BJ131-08130</b>			30	15 *)							
<b>BJ131-12040</b>	50	15	40	26	M12×1.75	30	77	32	18	16	36
<b>BJ131-12050</b>			50				79			16	
<b>BJ131-12060</b>			60				92			16	
<b>BJ131-12140</b>	65	15	40	26	M12×1.75	30	94	32	18	16	36
<b>BJ131-12150</b>			50							18	
<b>BJ131-12160</b>			60								
<b>BJ131-16040</b>	50	15	40	26	M16×2	30	86	36	22	21	36
<b>BJ131-16050</b>			50								
<b>BJ131-16060</b>			60								
<b>BJ131-16140</b>	65	15	40	26	M16×2	30	101	36	22	21	36
<b>BJ131-16150</b>			50								
<b>BJ131-16160</b>			60								

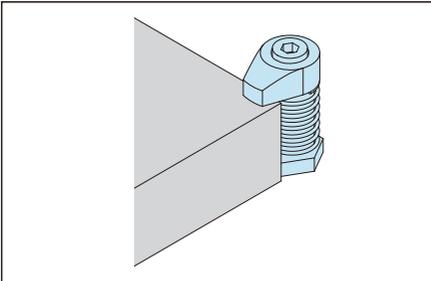
\*) The center of R<sub>1</sub> is located in 5mm outside from the center of the body.

Part Number	H <sub>3</sub>	M <sub>1</sub>	Clamping Force(kN)	Allowable Screw Torque(N·m)	Weight (g)		
<b>BJ131-08020</b>	6	M 8×1.25-30L	7.9	20	125		
<b>BJ131-08025</b>			7.3		130		
<b>BJ131-08030</b>			6.7		135		
<b>BJ131-08120</b>			7.9		160		
<b>BJ131-08125</b>			7.3		165		
<b>BJ131-08130</b>			6.7		170		
<b>BJ131-12040</b>	10	M12×1.75-45L	13.5	45	450		
<b>BJ131-12050</b>			12.6		480		
<b>BJ131-12060</b>			11.7		520		
<b>BJ131-12140</b>	25	M12×1.75-45L	13.5	45	600		
<b>BJ131-12150</b>			12.6		630		
<b>BJ131-12160</b>			11.7		670		
<b>BJ131-16040</b>	10	M16×2 -55L	13.4	60	630		
<b>BJ131-16050</b>			12.4		680		
<b>BJ131-16060</b>			12		740		
<b>BJ131-16140</b>			13.4		780		
<b>BJ131-16150</b>			25		M16×2 -55L	12.4	830
<b>BJ131-16160</b>						12	890

## Related Product

**BJ600** Cylindrical Risers are available for additional height.

## How To Use

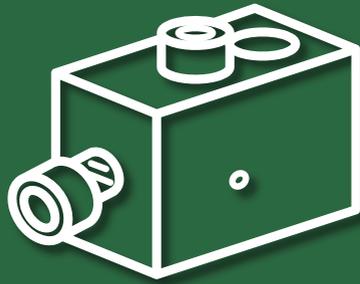


## Note

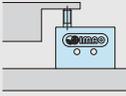
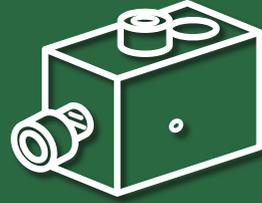
Please put grease on sliding surface to prevent galling when using in dry condition.



# WORK SUPPORTS

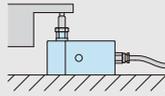


# WORK SUPPORTS



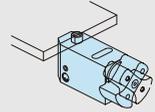
COMPACT PNEUMATIC WORK SUPPORTS

Part No. AMNS-S



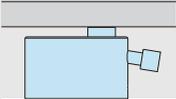
PNEUMATIC WORK SUPPORTS

Part No. BJ370



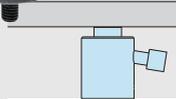
PRECISION WORK SUPPORT

Part No. BJ371



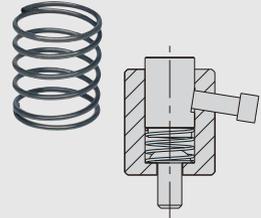
WORK SUPPORTS

Part No. BJ350



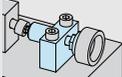
CYLINDRICAL WORK SUPPORTS

Part No. BJ351



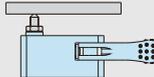
COIL SPRINGS FOR CYLINDRICAL WORK SUPPORTS

Part No. BJ351-C



REMOTE-CONTROL UNITS

Part No. BJ650



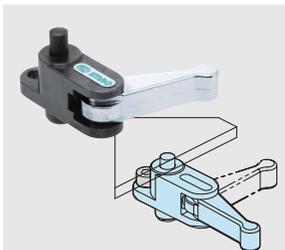
WORK SUPPORTS WITH CAM HANDLE

Part No. BJ352



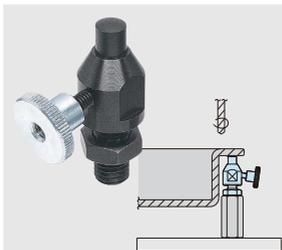
HORIZONTAL WORK SUPPORTS

Part No. BJ351-A



COMPACT WORK SUPPORTS  
WITH CAM HANDLE

Part No. BJ362



COMPACT  
WORK SUPPORTS

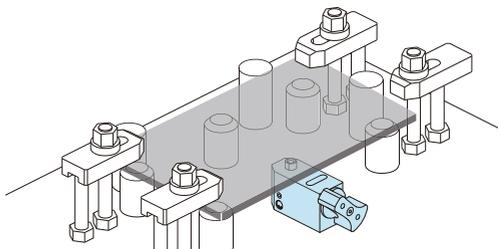
Part No. BJ360

# WORK SUPPORTS

IMAO's Work Supports

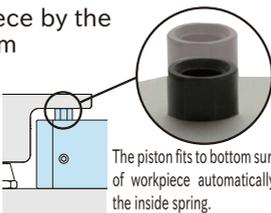
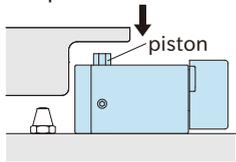
## Solutions for workpiece chattering !!

during machining low-profile part

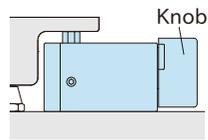


### Easy Setup

- 1 Support a workpiece by the piston from bottom



- 2 Lock the piston by turning the knob \*)



\*) The piston locking element differs by work support's type, such as screws or handles. We also provide air operated types.

## PRECISION WORK SUPPORT



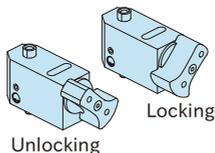
For machining highly accurate workpiece

### PRECISION WORK SUPPORT

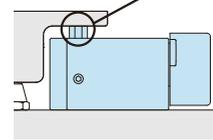
**Ideal for**

Preventing chattering during light cutting of workpiece.

One-touch operation & Stable support capacity



The displacement of the piston does not exceed 3 μm when locked

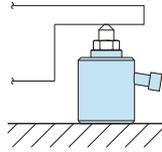
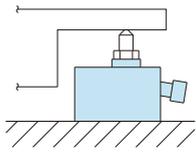
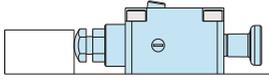


Remote control is possible.\*)

\*) Components for remote control are not available from us.

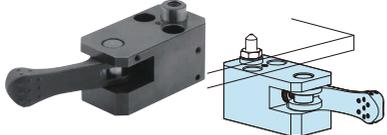
**OTHER WORK SUPPORTS**

**For Higher Holding Capacity**



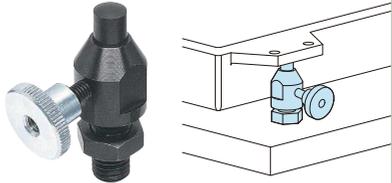
**For Frequent Set-ups**

Toolless operation  
WORK SUPPORTS  
WITH CAM HANDLE



**For Tight Space**

Assist you also in small space!  
COMPACT WORK SUPPORTS



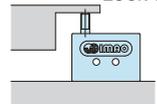
**For Frequent Set-ups in Tight Space**

Hybrid of  
Toolless & Compact!  
COMPACT WORK SUPPORTS  
WITH CAM HANDLE

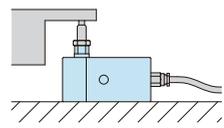


**Pneumatic Types**

Lock the piston by air supply



COMPACT PNEUMATIC WORK SUPPORTS



PNEUMATIC WORK SUPPORTS

# AMNS-S

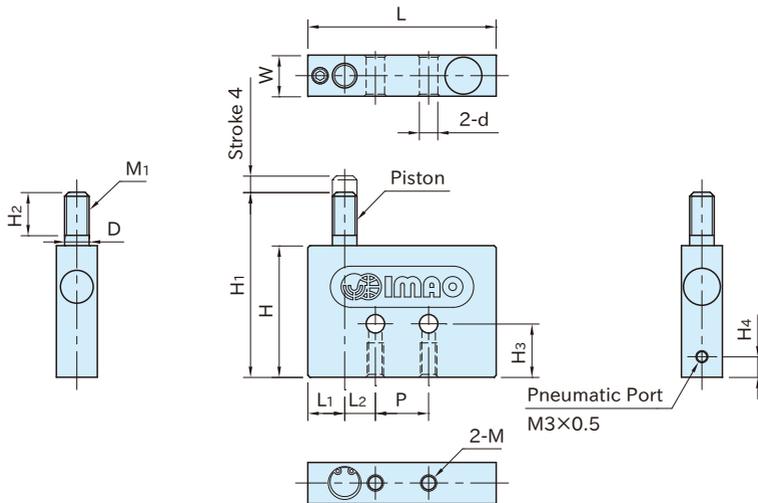
## COMPACT PNEUMATIC WORK SUPPORTS



★Key Point

Provide high support capacity even with small body.

Body	Piston / Locking Shaft	Cylinder
A5052 aluminum Anodized	S45C steel Electroless nickel plated	A5056 aluminum Anodized



Part Number	H	H <sub>1</sub>	M <sub>1</sub>	H <sub>2</sub>	D	L	W	d	M	L <sub>1</sub>
<b>AMNS06-S</b>	25	33	M4×0.7	7	4	36	8	3.4	M3×0.5 Depth 6	7
<b>AMNS08-S</b>	32	44	M6×1	10.5	6	46	10	4.5	M4×0.7 Depth 8	9

Part Number	L <sub>2</sub>	P	H <sub>3</sub>	H <sub>4</sub>	Operating Air Pressure (MPa)	Support Capacity(N)	Piston Spring Force(N)	Weight (g)
<b>AMNS06-S</b>	6	10	10	3	0.4~0.7	20~40	0.2~0.3	22
<b>AMNS08-S</b>	7.5	13	13	5		40~70	0.3~0.4	49

## Feature

- The piston can be locked/unlocked by air operation.
- This compact work support can be used as a support in surface mounter.

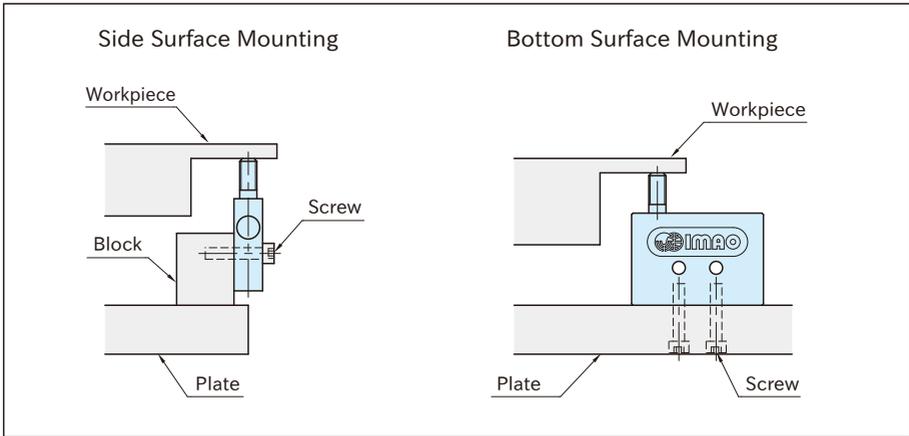
## How To Use

### ■ Operating Instructions

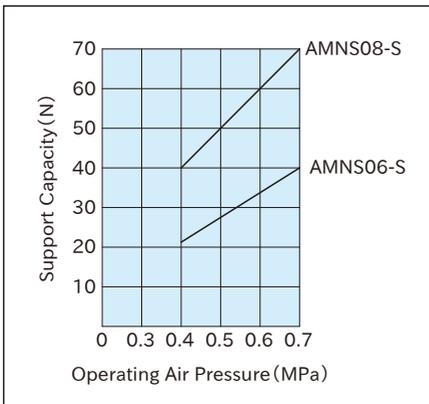
1. Load a workpiece on the support.
2. The piston strokes to fit the workpiece by the inner spring.
3. Clamp the workpiece.
4. Apply air to the pneumatic port.
5. The piston is locked.
6. The piston is unlocked when the air is released.

### ■ Installation Instructions

Side or bottom surface mounting is possible.

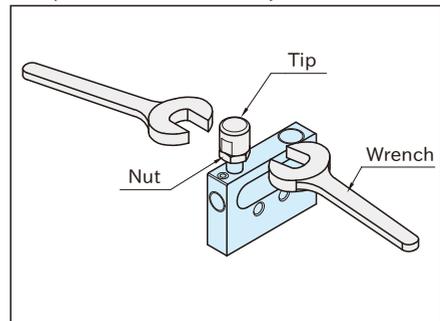


## Performance Curve



## Note

- Use a nut to attach a tip on the piston as directed below.
- The piston rotates 360° freely.



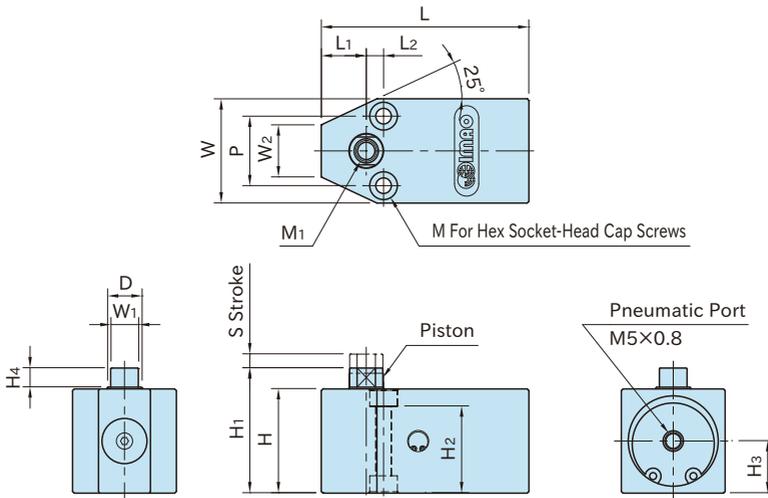
- In machining applications, use clean coolant without sludge to prevent trouble.

**BJ370**

**PNEUMATIC WORK SUPPORTS**



Body	Piston	Locking Shaft
A5052 aluminum Anodized	SK95 steel Quenched & tempered Black oxide finished	S45C steel Electroless nickel plated



Part Number	H	H <sub>1</sub>	S	M <sub>1</sub>	D	L	W	M	H <sub>2</sub>	P	H <sub>3</sub>	W <sub>1</sub>	H <sub>4</sub>
<b>BJ370-05001</b>	25	30	3	M5x0.8 Depth10	8	50	25	M3	21	16	12.5	7	4.5
<b>BJ370-06001</b>	30	36	4	M6x1 Depth12	10	60	30	M4	25	20	15	8	5.5

Part Number	L <sub>1</sub>	L <sub>2</sub>	W <sub>2</sub>	Operating Air Pressure (MPa)	Support Capacity (N)	Piston Spring Force (N)	Weight (g)
<b>BJ370-05001</b>	11	4	12	0.3~1.0	300~500	1~1.9	92
<b>BJ370-06001</b>	13	5	15		500~700	1~2.2	165

## Feature

The piston can be locked/unlocked by air operation.

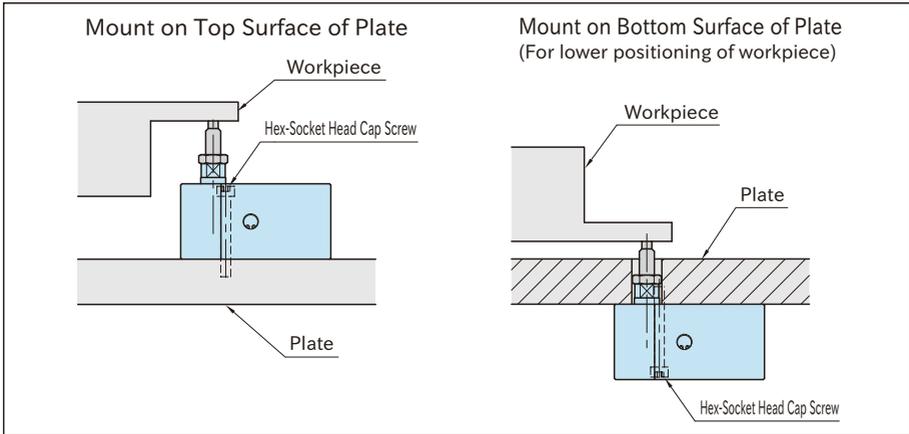
## How To Use

### ■ Operating Instructions

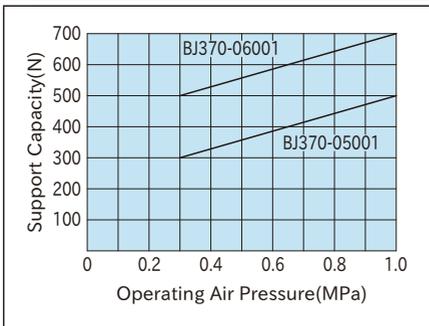
1. Load a workpiece on the support.
2. The piston strokes to fit the workpiece by the inner spring.
3. Clamp the workpiece.
4. Apply air to the pneumatic port.
5. The piston is locked.
6. The piston is unlocked when the air pressure is released.

### ■ Installation Instructions

Can be mounted on both top surface and bottom surface of plate with hex-socket head cap screws.

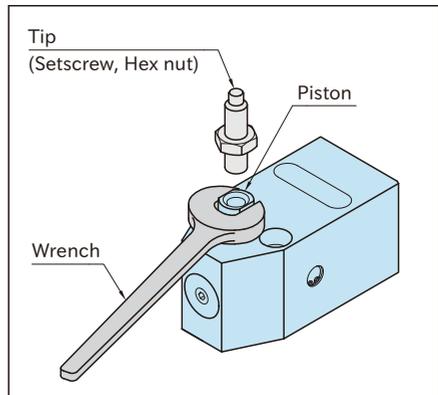


## Performance Curve



## ■ Note

- When installing a tip on the piston, lock the piston using a wrench to prevent it from receiving any torque.



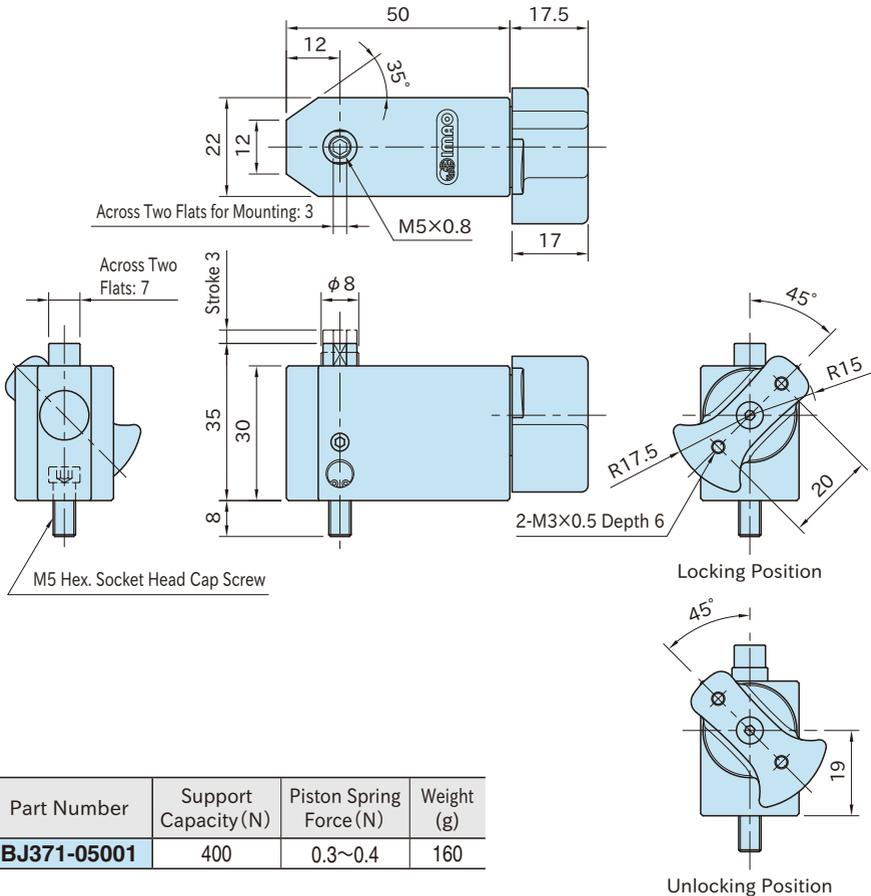
- In machining applications, use clean coolant without sludge to prevent trouble.

**BJ371**

**PRECISION WORK SUPPORT**



Body	Piston	Locking Shaft	Knob
A5052 aluminum Anodized	SK95 steel Quenched & tempered Black oxide finished	S45C steel Electroless nickel plated	SUS303 stainless steel



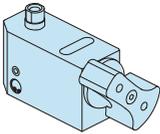
Part Number	Support Capacity (N)	Piston Spring Force (N)	Weight (g)
<b>BJ371-05001</b>	400	0.3~0.4	160

## Feature

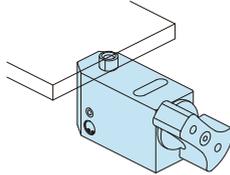
- The piston can be locked/unlocked with one-touch operation and keeps stable support capacity.
- The displacement of the piston is not exceeding  $3\ \mu\text{m}$  when it is locked. This helps keep the accuracy of the workpiece height.
- Can be used by remote control.

## How To Use

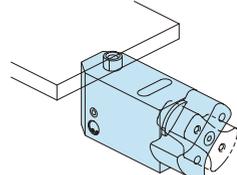
### ■ Operating Instruction



1. No workpiece loaded.



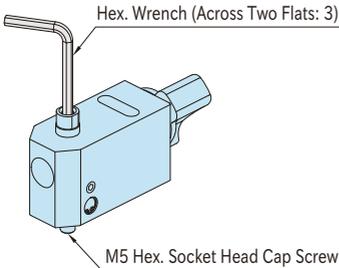
2. Load a workpiece, and the piston lowers.



3. Lock the piston by turning the knob.

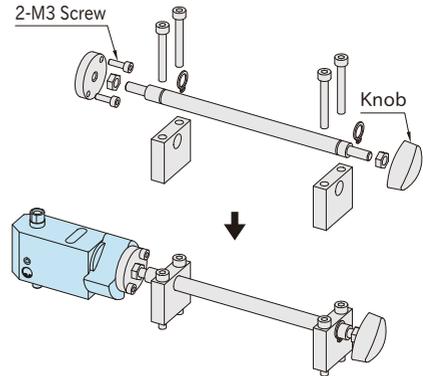
### ■ Installation Instruction

Tighten the M5 hex. socket head cap screw with a hex. wrench (Across Two Flats: 3).



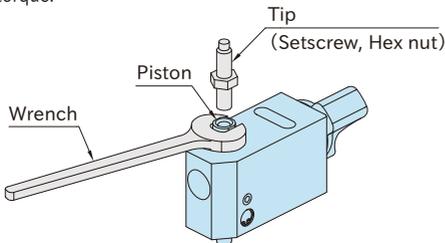
### ■ Application Example for Remote Control

Components for remote control are not available from us.



### 🔧 Note

- When installing a tip on the piston, lock the piston using a wrench to prevent it from receiving any torque.



- In machining applications, use clean coolant without sludge to prevent trouble.

**BJ350**

**WORK SUPPORTS**



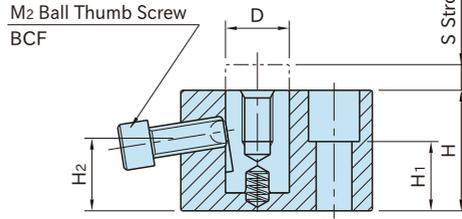
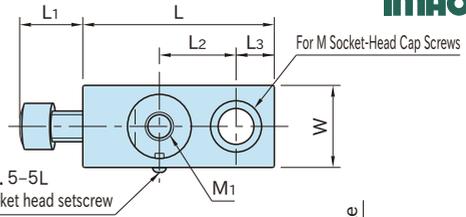
**BJ350**

(Ball-Thumb-Screw Style)



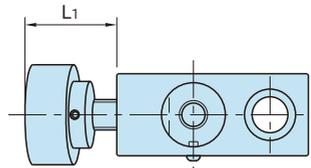
**BJ350-C**

(Knurled-Knob Style)

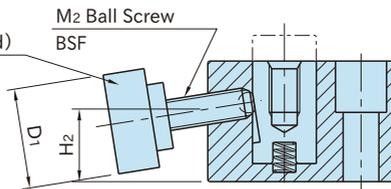


**BJ350**

(Ball-Thumb-Screw Style)



Knurled Knob  
(pinned and glued)  
BJ750-N



**BJ350-C**

(Knurled-Knob Style)

Body	Piston
S45C steel Black oxide finish	SK95 steel Quenched and tempered Black oxide finish

Size	H	S	M <sub>1</sub>	D	L	W	M	L <sub>2</sub>	L <sub>3</sub>	H <sub>1</sub>	H <sub>2</sub>
<b>BJ350</b> 06001	29	6	M 6X1 Depth 10	12	38	19	M 6	15	8	15	17.6
<b>BJ350</b> 08001	37	10	M 8X1.25 Depth 15	16	50	22	M 8	20	10	20	21.6
<b>BJ350-C</b> 10001	42		M10X1.5 Depth 15	19	65	25	M10	25	15		24.6
<b>BJ350-C</b> 12001	47		M12X1.75 Depth 20	25	75	32	M12	30		27	28.3

### BJ350 (Ball-Thumb-Screw Style)

Part Number	L <sub>1</sub>	M <sub>2</sub>	Screw Torque (N·m)	Support Capacity (kN)	Piston Spring Force (N)	Weight (g)
<b>BJ350-06001</b>	12	M 6×1 -16L	7.5	4	0~ 6	150
<b>BJ350-08001</b>	15	M 8×1.25-20L	14	6	0~ 7	285
<b>BJ350-10001</b>	18.5	M10×1.5 -25L	18	7.5	1~11	480
<b>BJ350-12001</b>	23	M12×1.75-30L	22	9		800

### BJ350-C (Knurled-Knob Style)

Part Number	L <sub>1</sub>	D <sub>1</sub>	M <sub>2</sub>	Screw Torque (N·m)	Support Capacity (kN)	Piston Spring Force (N)	Weight (g)
<b>BJ350-06001C</b>	20.7	24	M 6×1	1	0.6	0~ 6	180
<b>BJ350-08001C</b>	23.6	30	M 8×1.25	1.2	0.7	0~ 7	340
<b>BJ350-10001C</b>	26.2	36	M10×1.5	1.5		1~11	500
<b>BJ350-12001C</b>	31.3	40	M12×1.75	2	0.8		950

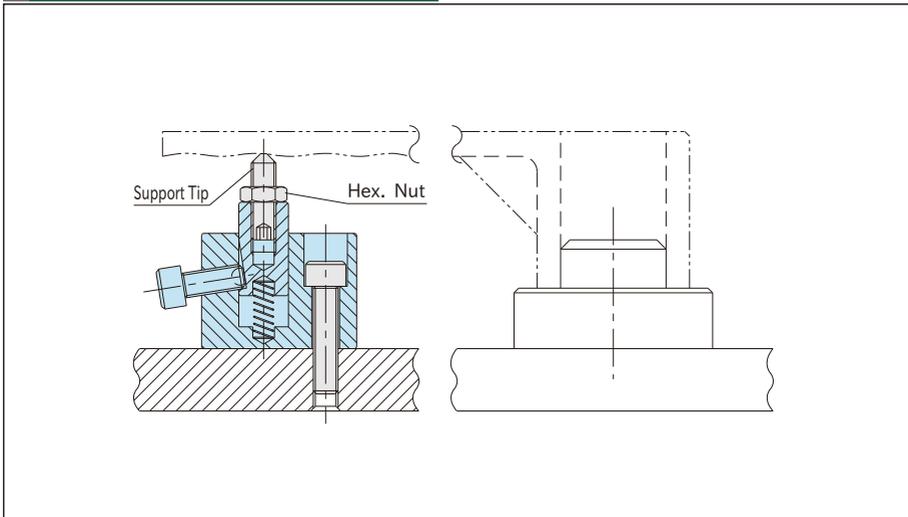
#### Feature

The positive locking mechanism allows the ball-thumb-screw style to offer high support capacities.

#### Note

When you attach a support tip to the tapped hole through the shaft, tighten the shaft and fix it to prevent damage.

#### How To Use



Ideal for preventing the workpiece from chattering and deflecting.

**BJ351**

**CYLINDRICAL WORK SUPPORTS**



**BJ351**

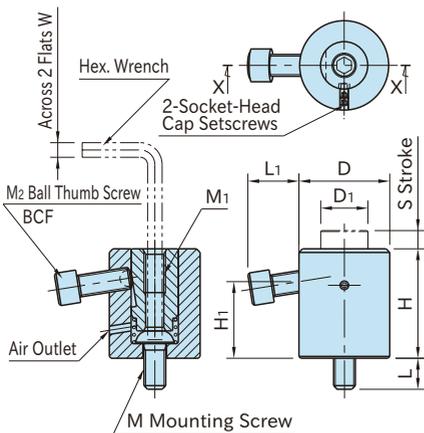
(Ball-Thumb-Screw Style)



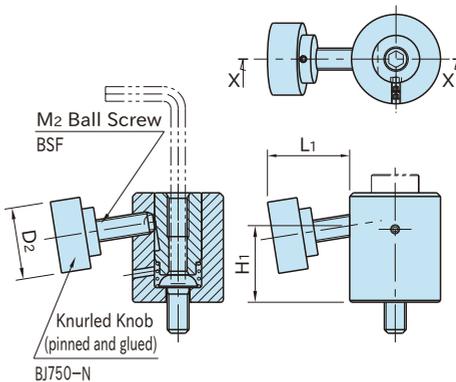
**BJ351-C**

(Knurled-Knob Style)

Body	Piston
S45C steel Black oxide finish	SK95 steel Quenched and tempered Black oxide finish



Section X-X



Section X-X

Note: To install, insert a hex. wrench through the piston into the mounting screw.

**BJ351**

(Ball-Thumb-Screw Style)

**BJ351-C**

(Knurled-Knob Style)

Size	H	S	M <sub>1</sub>	D <sub>1</sub>	D	M	L	W	H <sub>1</sub>	
<b>BJ351</b>	<b>06001</b>	33	6	M 6×1 Depth 12	14	28	M 6×1	10	4	22
	<b>08001</b>	42	10	M 8×1.25 Depth 16	19	35	M 8×1.25	15	5	28.5
<b>BJ351-C</b>	<b>10001</b>	50		M10×1.5 Depth 20	22	42	M10×1.5	14	6	34
<b>12001</b>	60	M12×1.75 Depth 24		26	50	M12×1.75	17	8	42	
<b>16001</b>	70	M16×2 Depth 32		33	60	M16×2	22	10	47	

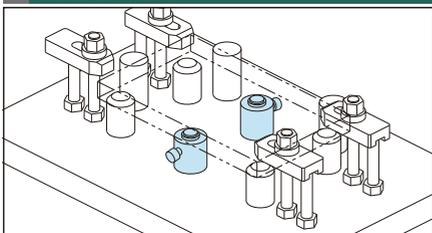
## BJ351 (Ball-Thumb-Screw Style)

Part Number	L <sub>1</sub>	M <sub>2</sub>	Allowable Screw Torque (N·m)	Support Capacity (kN)	Piston Spring Force (N)	Weight (g)
<b>BJ351-06001</b>	14.1	M 6×1 -16L	7.5	4	10~22	150
<b>BJ351-08001</b>	18.8	M 8×1.25-20L	14	6	10~27	300
<b>BJ351-10001</b>	23.8	M10×1.5 -25L	18	7.5	14~28	540
<b>BJ351-12001</b>	28.5	M12×1.75-30L	22	9	15~30	865
<b>BJ351-16001</b>	26.5		25		15~35	1390

## BJ351-C (Knurled-Knob Style)

Part Number	L <sub>1</sub>	D <sub>2</sub>	M <sub>2</sub>	Allowable Screw Torque (N·m)	Support Capacity (kN)	Piston Spring Force (N)	Weight (g)
<b>BJ351-06001C</b>	22.7	24	M 6×1	1	0.6	10~22	185
<b>BJ351-08001C</b>	27.7	30	M 8×1.25	1.2	0.7	10~27	360
<b>BJ351-10001C</b>	31.8	36	M10×1.5	1.5		14~28	620
<b>BJ351-12001C</b>	36.8	40	M12×1.75	2	0.8	15~30	1020

### How To Use

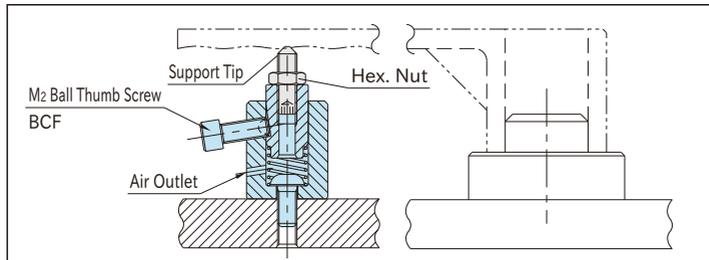


### Feature

The positive locking mechanism allows the ball-thumb-screw style to offer high support capacities.

### Note

When you attach a support tip to the tapped hole through the shaft, tighten the shaft and fix it to prevent damage.



Ideal for preventing the workpiece from chattering and deflecting.

## BJ351-C

## COIL SPRINGS FOR CYLINDRICAL WORK SUPPORTS



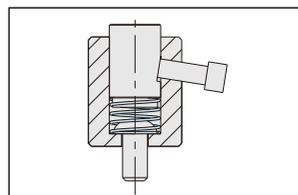
Body

SWPA steel

### How To Use

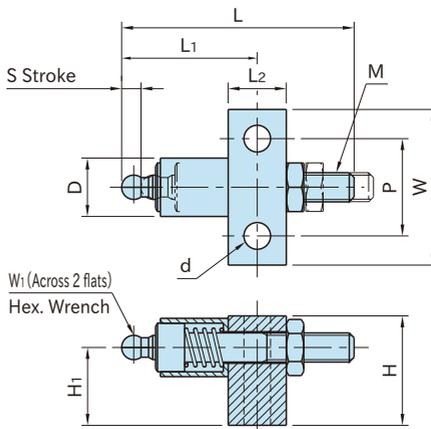
Replacement springs to set the piston spring force lower.

Part Number	Piston Spring Force (N)	Cylindrical Work Supports
<b>BJ351-06001-C1</b>	3~ 7	BJ351-06001
<b>BJ351-08001-C1</b>		BJ351-08001
<b>BJ351-10001-C1</b>	5~ 9	BJ351-10001
<b>BJ351-12001-C1</b>	6~11	BJ351-12001
<b>BJ351-16001-C1</b>	7~14	BJ351-16001



# BJ650

# REMOTE-CONTROL UNITS



### BJ650-\*\*\*\*1 (Short)

Part Number	L	W	H	L <sub>1</sub>	L <sub>2</sub>	D	S	H <sub>1</sub>	d	P
BJ650-06001	48	32	22	30	12	12	4	16	5.5	20
BJ650-08001	57		27	34		15		19.2		
BJ650-10001	76	44	32	45	16	18	5	22.2	9	30
BJ650-12001	86		36	50		20		25.2		

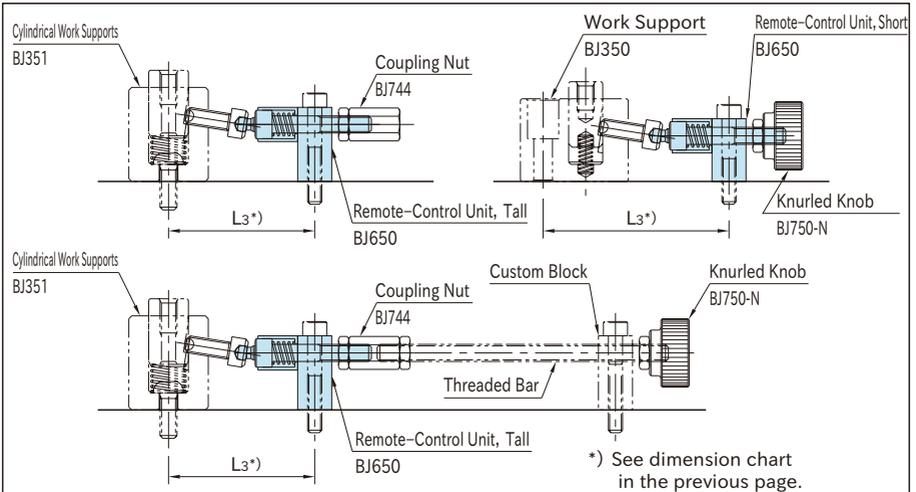
Part Number	W <sub>1</sub>	M	L <sub>3</sub> : Recommended Distance between Work Supprt and Remote-Control Unit	Weight (g)	Work Supports
BJ650-06001	5	M 6X1 -35L	66	75	BJ350-06001
BJ650-08001	6	M 8X1.25-40L	81	100	BJ350-08001
BJ650-10001	8	M10X1.5 -55L	103	210	BJ350-10001
BJ650-12001	10	M12X1.75-60L	121	250	BJ350-12001

### BJ650-\*\*\*\*2 (Tall)

Part Number	L	W	H	L <sub>1</sub>	L <sub>2</sub>	D	S	H <sub>1</sub>	d	P
BJ650-06002	48	32	26	30	12	12	4	20	5.5	20
BJ650-08002	57		33	34		15		25.2		
BJ650-10002	76	44	40	45	16	18	5	30.7	9	30
BJ650-12002	86		49	50		20		38.2		
BJ650-16002		54	43.7							

Part Number	W <sub>1</sub>	M	L <sub>3</sub> : Recommended Distance between Work Supprt and Remote-Control Unit	Weight (g)	Work Supports
BJ650-06002	5	M 6X1 -35L	52	85	BJ351-06001
BJ650-08002	6	M 8X1.25-40L	62	115	BJ351-08001
BJ650-10002	8	M10X1.5 -55L	79	240	BJ351-10001
BJ650-12002	10	M12X1.75-60L	92	310	BJ351-12001
BJ650-16002			95	335	BJ351-16001

### How To Use



Suitable for controlling work supports from a distance.

### Note

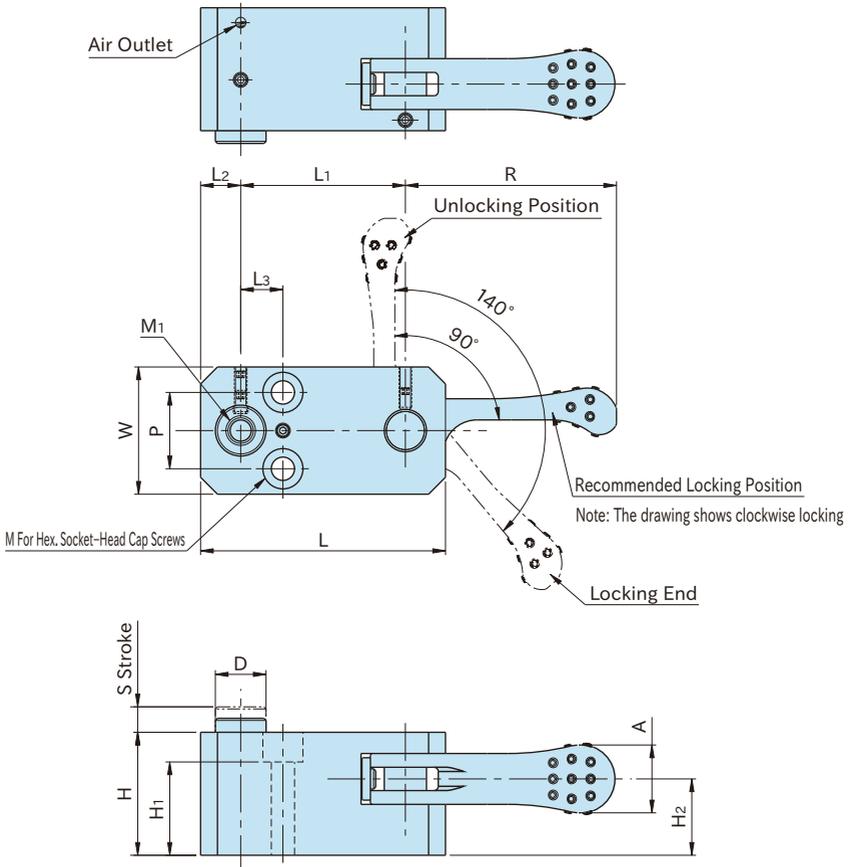
When used with a BJ650 Remote-Control Unit, a BJ350 or BJ351 Work Support can provide the support capacity as given in the catalog if the screw torque is fully applied by using a tool like wrench. If the screw torque is fully applied by hand (using a knob), the support capacity will be reduced to approx. 20% of the catalog value.

**BJ352**

**WORK SUPPORTS WITH CAM HANDLE**



Body	Piston	Locking Pin	Handle
S45C steel Black oxide finish	SK95 steel Quenched and tempered Black oxide finish	S45C steel Quenched and tempered Black oxide finish	SCM440 steel Quenched and tempered Black oxide finish



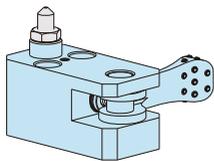
Part Number	H	S	M <sub>1</sub>	D	L	W	R	A	H <sub>2</sub>	M	H <sub>1</sub>	P
<b>BJ352-05001</b>	24	5	M 5X0.8 Depth 8	10	52	25	40	14	14	M4	19	15
<b>BJ352-06001</b>	29	6	M 6X1 Depth 10	12	58	30	50	16	18	M5	22	18
<b>BJ352-08001</b>	37	8	M 8X1.25 Depth 15	16	75	38	63	19	23	M6	25	24
<b>BJ352-10001</b>	42	10	M10X1.5 Depth 15	19	85	45	80	24	26	M8	30	28

Part Number	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	Cam Handles Part Number	Allowable Operating Load (N)*	Support Capacity (kN)	Piston Spring Force (N)	Locking Mechanism	Weight (g)
<b>BJ352-05001</b>	36	8	8	QLCA-04	80	0.5	0~6	Spiral Cam Cam Angle: 4°	213
<b>BJ352-06001</b>	39	9.5	10	QLCA-05	100	0.7	0~6		335
<b>BJ352-08001</b>	51	12	12	QLCA-06	150	0.9	0~7		738
<b>BJ352-10001</b>	56	14.5	15	QLCA-08	200	1.2	1~11		1110

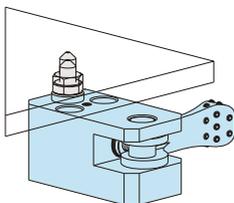
\*Allowable load to operate the handle

### How To Use

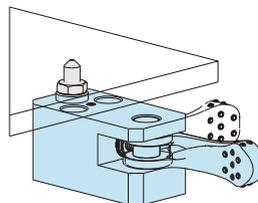
#### Operating Instruction



1. Unlocked  
No workpiece loaded

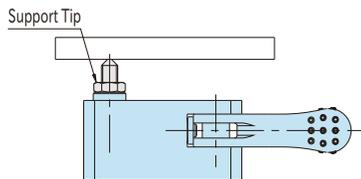


2. Workpiece Loading  
Load a workpiece,  
and the piston lowers.



3. Locking  
Turn the handle to lock the piston.

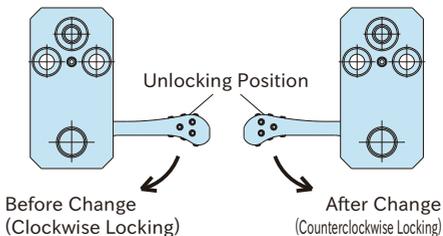
#### Adjusting Handle Locking Position



When the projection amount from the body is  $\frac{1}{2}$  of the stroke S, the handle comes to the recommended locking position. Design your application as the support tip contacts the workpiece at this position.

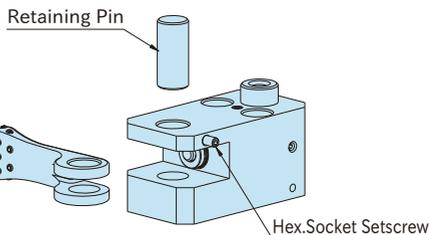
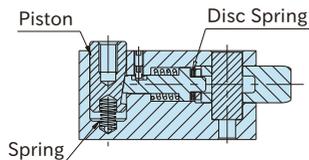
#### Changing Locking Direction

Loosen the hex. socket setscrew to remove the retaining pin. Turn the handle upside down and put it in position again.



### Feature

The built-in disc spring prevents loosened locking.



### Note

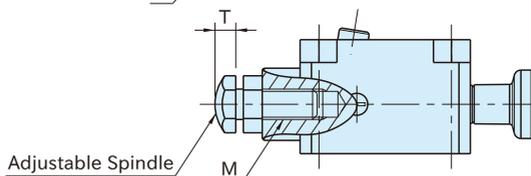
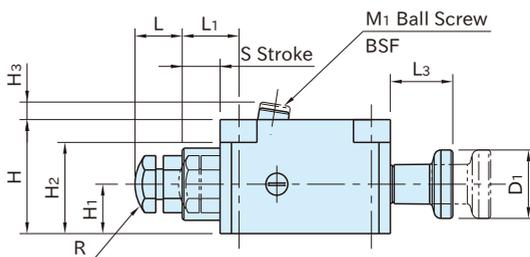
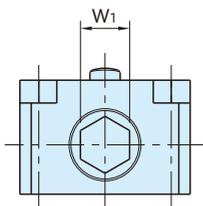
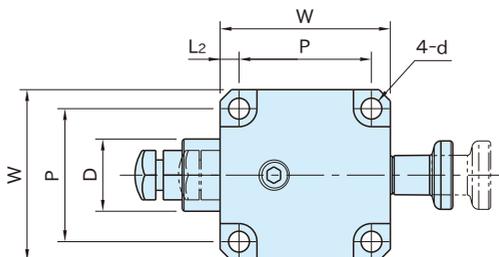
When you attach a support tip to the tapped hole through the shaft, tighten the shaft and fix it to prevent damage.

**BJ351-A**

**HORIZONTAL WORK SUPPORTS**



Body	Piston	Adjustable Spindle	Knob
S45C steel Black oxide finish	SK4 steel Quenched and tempered Black oxide finish	S45C steel Heat treated on edge Black oxide finish	Polyamide plastic Black

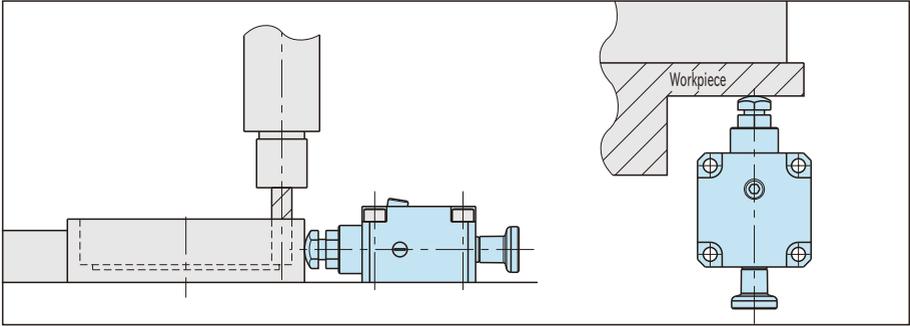


Internal structure of the piston part

Part Number	L	L <sub>1</sub>	S	L <sub>2</sub>	H <sub>1</sub>	D	W	H	d	H <sub>2</sub>	P	W <sub>1</sub>	T	R	M
<b>BJ351-06001A</b>	8~13	10	6	4	10	14	38	24	4.5	19	30	10	4	10	M 6x1 Depth 12
<b>BJ351-08001A</b>	11~18	15	10	5	13	19	45	30	5.5	24	35	13	5.5	12	M 8x1.25 Depth 16
<b>BJ351-12001A</b>	16~26	17.5		7.5	20	26	60	45	9	36	45	19	8	20	M12x1.75 Depth 24

Part Number	M <sub>1</sub>	H <sub>3</sub>	D <sub>1</sub>	L <sub>3</sub>	Screw Torque(N·m)	Support Capacity(kN)	Piston Spring Force(N)	Weight(g)
<b>BJ351-06001A</b>	M 6x1 -10L Across 2 Flats 3	3	16	14	3.5	1.5	0~ 6	260
<b>BJ351-08001A</b>	M 8x1.25-12L Across 2 Flats 4	5	18	16.5	8	2.5	1~ 6	450
<b>BJ351-12001A</b>	M12x1.75-20L Across 2 Flats 6	8	21	19	22	5	1~11	1160

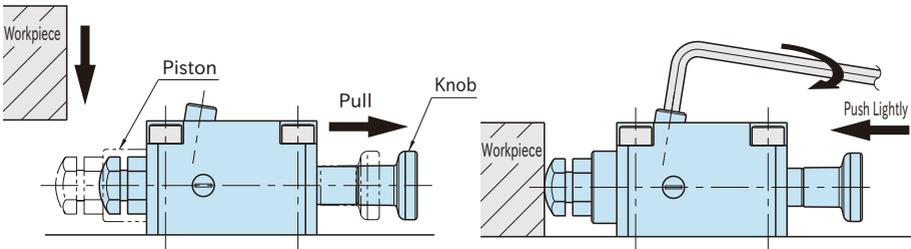
## How To Use



Ideal for preventing the thin workpiece from chattering and deflecting.

### ■ Operating Instruction

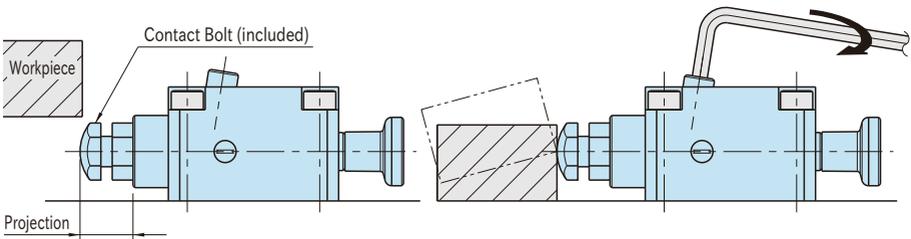
1. To set a workpiece with the piston retracted,



1. Set the piston retracted by pulling the knob.  
The internal plunger allows retaining the piston at the retracted position.

2. Load the workpiece and then push the knob lightly to let the adjustable spindle contact the workpiece. Tighten the ball thumb screw to lock the piston.

2. To set a workpiece without retracting the piston,



1. Adjust the projection of the adjustable spindle to let the bottom edge of workpiece contact the radius of the adjustable spindle when loading the workpiece.

2. Snap in the workpiece, and then tighten the ball thumb screw to lock the piston.

### 🔧 Note

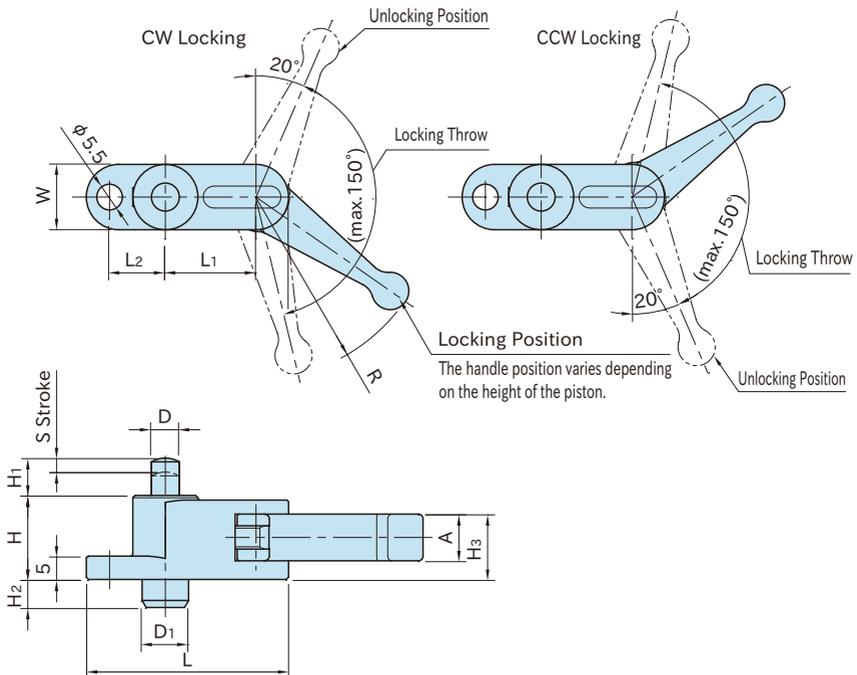
When you attach a support tip to the tapped hole through the shaft, tighten the shaft and fix it to prevent damage.

**BJ362**

COMPACT WORK SUPPORTS WITH CAM HANDLE



Body/Pin	Piston	Cam Handle
S45C steel Black oxide finished	SCM440 steel Black oxide finished HRC50-55	Die-cast zinc Chrome plated



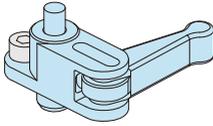
Part Number	Locking Direction	H	H <sub>1</sub>	S	D	L	W	R	A	H <sub>3</sub>	D <sub>1</sub>	H <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>
<b>BJ362-06001R</b>	CW	18	8	3	6	43.5	14	39	10	14	10	6	19.5	12
<b>BJ362-06001L</b>	CCW													
<b>BJ362-10001R</b>	CW	25	10	4	10	50.4	18	50	13	18.5	14	9.5	22.4	14
<b>BJ362-10001L</b>	CCW													

Part Number	Allowable Operating Load (N)*	Support Capacity (N)	Piston Spring Force (N)	Locking Mechanism	Weight (g)
<b>BJ362-06001R</b>	80	200	1.5~3	Spiral Cam Cam Angle: 4°	76
<b>BJ362-06001L</b>					
<b>BJ362-10001R</b>	100	400	1.8~3		140
<b>BJ362-10001L</b>					

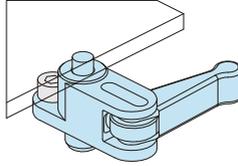
\*Allowable load to operate the handle.

## How To Use

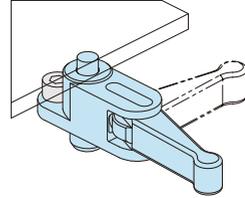
### Operating Instruction



1. Unlocked  
No workpiece loaded.

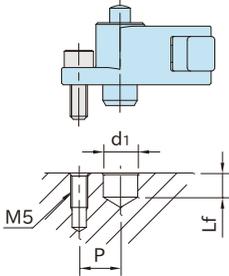


2. Workpiece Loading  
Load a workpiece,  
and the piston lowers.



3. Locking  
Turn the handle to lock the piston.

### Mounting-Hole Dimension

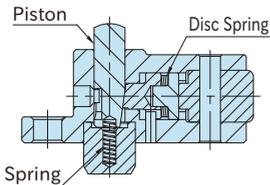


Drill a tapped hole and a locating-pin hole as specified below.

Size	d <sub>1</sub> ( <sup>+0.3</sup> / <sub>0</sub> )	Lf	P
<b>BJ362-06001</b>	10	7	12
<b>BJ362-10001</b>	14	10.5	14

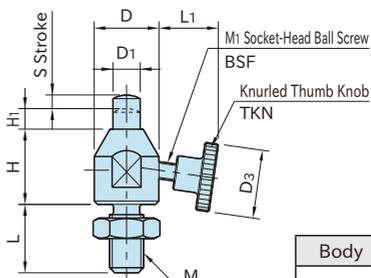
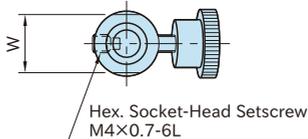
### Feature

The built-in disc spring prevents loosened locking.



**BJ360**

**COMPACT WORK SUPPORTS**



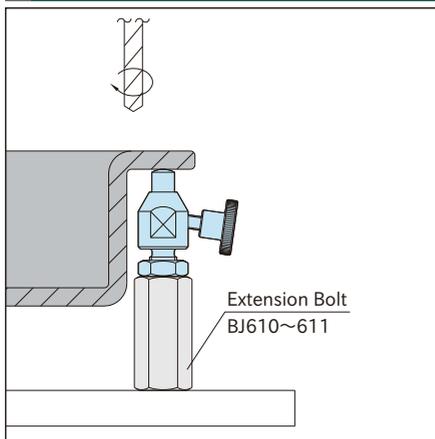
Note: The socket-head ball screw is glued to the knurled thumb knob.

Body	Piston
S45C steel Black oxide	SCM440 steel Heat treated Black oxide

Part Number	H	H <sub>1</sub>	S	D <sub>1</sub>	D	M	L	W	D <sub>3</sub>	M <sub>1</sub>	L <sub>1</sub>
<b>BJ360-08001</b>	18	5	3	6	15	M 8x1.25	16	13	16	M4x0.7-16L	13.2
<b>BJ360-10001</b>	22	6	4	8	19	M10x1.5	20	17	20	M5x0.8-20L	16.3
<b>BJ360-12001</b>	25			10	22	M12x1.75	24	19	24	M6x1 -25L	22.3

Part Number	Piston Spring Force (N)	Support Capacity (kN)	Weight (g)
<b>BJ360-08001</b>	1.5~3.0	0.2	36
<b>BJ360-10001</b>	1.8~3.0	0.3	72
<b>BJ360-12001</b>		0.4	150

**How To Use**



# FIXTURE CHANGING SYSTEM



**FLEX LOCATORS**

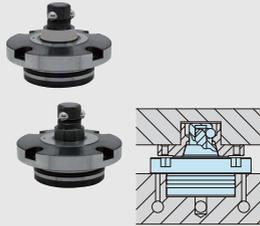
**FLEX ZERO BASES**

**QUICK ZERO SETTING DEVICE**

# FIXTURE CHANGING SYSTEM

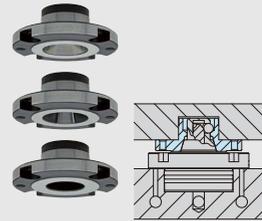


## FLEX LOCATORS



PNEUMATIC FLEX LOCATOR PINS

Part No. AMWF-W



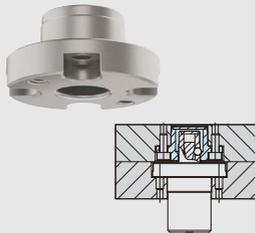
PNEUMATIC FLEX LOCATOR BUSHINGS

Part No. AMWF-BU



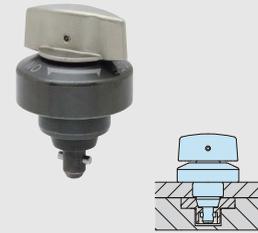
PNEUMATIC FLEX LOCATOR PINS

Part No. AMWF-L-S



PNEUMATIC FLEX LOCATOR BUSHINGS

Part No. AMWF-BU



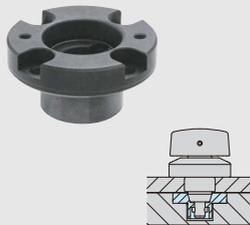
ONE-TOUCH FLEX LOCATOR CLAMPERS (Knob)

Part No. CP723



ONE-TOUCH FLEX LOCATOR CLAMPERS

Part No. CP722



ONE-TOUCH FLEX LOCATOR BUSHINGS

Part No. CP727



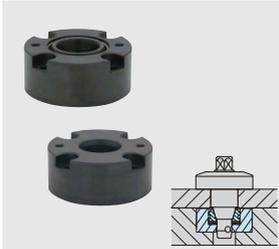
ONE-TOUCH FLEX LOCATOR CLAMPERS (Hexagon Head)

Part No. CP730



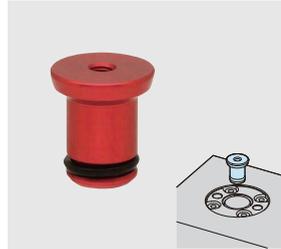
**ONE-TOUCH FLEX LOCATOR CLASPERS (Cam Handle)**

Part No. CP731



**ONE-TOUCH FLEX LOCATOR BUSHINGS**

Part No. CP735



**ONE-TOUCH FLEX LOCATOR PROTECTING COVERS**

Part No. CP735-P



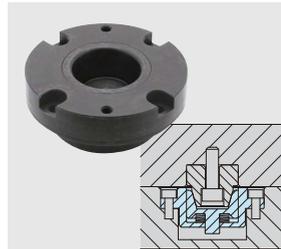
**ADJUSTABLE-TORQUE WRENCHES**

Part No. CP-TCW



**FLEX LOCATOR PINS**

Part No. CP720



**FLEX LOCATOR BUSHINGS (Blind)**

Part No. CP725



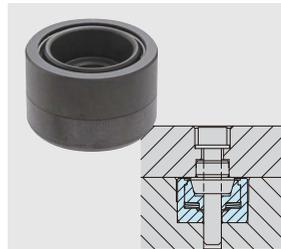
**FLEX LOCATOR PROTECTING COVERS**

Part No. CP725-P



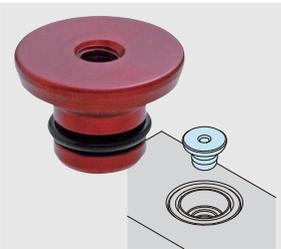
**FLEX LOCATOR PINS**

Part No. CP721



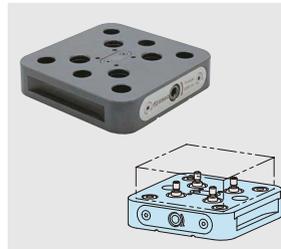
**FLEX LOCATOR BUSHINGS (Through)**

Part No. CP726



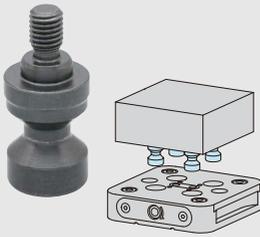
**FLEX LOCATOR PROTECTING COVERS**

Part No. CP726-P



**FLEX ZERO BASES**

Part No. CP180



CLAMPING PINS

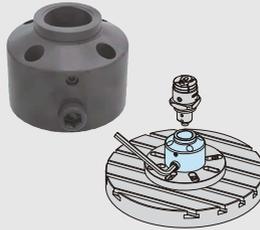
Part No. CP185



PROTECTING COVER

Part No. CP185-P

**QUICK  
ZERO  
SETTING  
DEVICE**



BASE  
(QUICK ZERO SETTING DEVICE)

Part No. QZSD-C6-B



HOLDER  
(QUICK ZERO SETTING DEVICE)

Part No. QZSD-C6-H

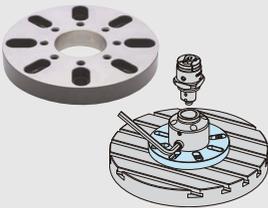


PLATE  
(QUICK ZERO SETTING DEVICE)

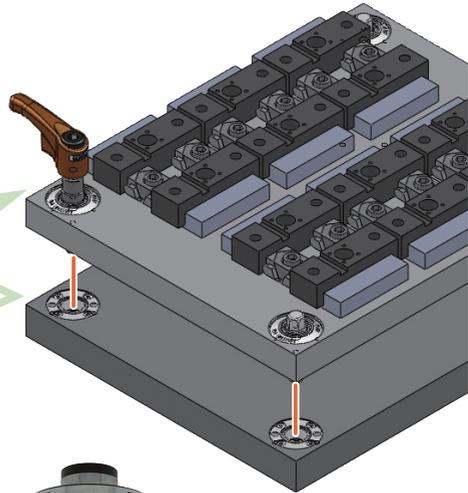
Part No. QZSD-C6-P



## FLEX LOCATORS

# FLEX LOCATORS

Flex Locators provide "precise locating" and "easy operation" by movable tapered pin or bushing.



Hexagon Head

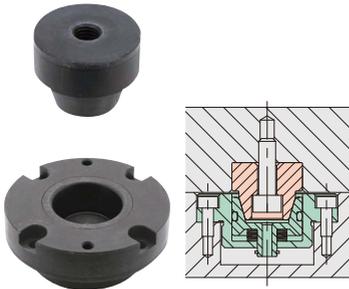
Cam Handle

Knob

Pneumatic

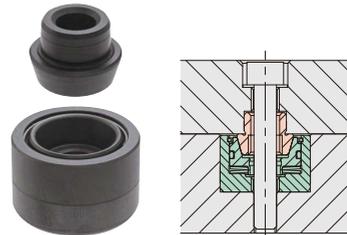
### FLEX LOCATORS

Simple and low cost types with only locating function



Standard

Locating Repeatability | 10 $\mu$ m



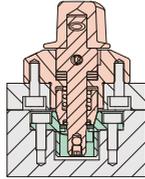
Through Hole

Locating Repeatability | 10 $\mu$ m

## ONE-TOUCH FLEX LOCATORS

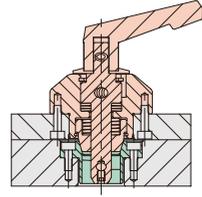
### Locating and clamping functions

Quick and easy operation by knob



Knob

Locating Repeatability	10 $\mu$ m
Clamping Force	350N, 600N



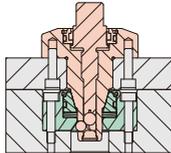
Handle

Locating Repeatability	10 $\mu$ m
Clamping Force	600N, 700N

High clamping force by hex head



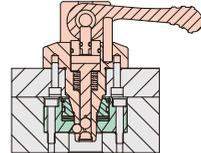
(Adjustable-torque wrenches are available to control clamping force.)



Hexagon Head

Locating Repeatability	8 $\mu$ m
Clamping Force	1700N, 3000N, 4500N

Quick operation by handle



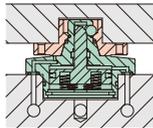
Cam Handle

Locating Repeatability	8 $\mu$ m
Clamping Force	600N, 1200N, 1800N

## PNEUMATIC FLEX LOCATORS

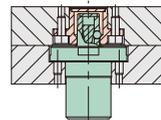
### Easier and faster pneumatic operation

High clamping force by spring and air



Flange diameter  
 $\phi$  70 /  $\phi$  85

Locating Repeatability	3 $\mu$ m
Clamping Force	4kN, 6.3kN



Flange diameter  
 $\phi$  40 /  $\phi$  51

Locating Repeatability	$\pm$ 10 $\mu$ m
Clamping Force	250N, 350N

# AMWF-W

# PNEUMATIC FLEX LOCATOR PINS

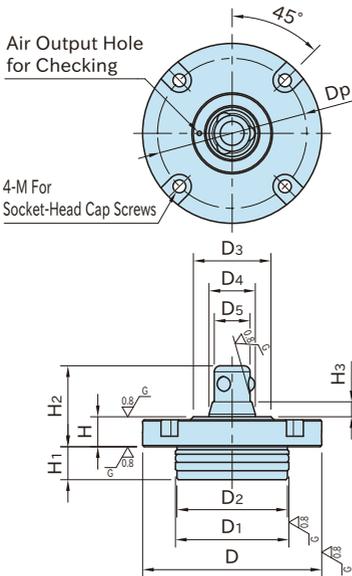


(Tapered Type)

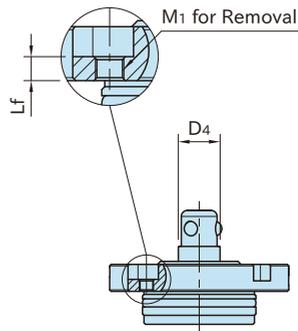


(Straight Type)

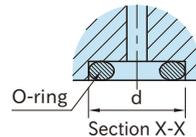
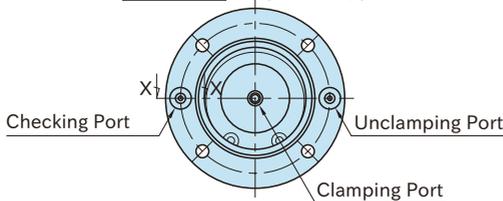
Body	Cylinder	Ball
SCM440 steel Induction hardened Black oxide finished Precision ground	S45C steel Induction hardened Electroless nickel plated	SUS440C stainless steel



**AMWF-W-T** (Tapered Type)



**AMWF-W-S** (Straight Type)



### Reference

- How To Use PNEUMATIC FLEX LOCATORS
- How To Install PNEUMATIC FLEX LOCATORS

### Note

- Use clean air by removing dust with filter or draining with dryer.
- Impure compressed air may cause malfunction of the products.
- Using lubricator is recommended.

Size	D <sub>1</sub> (g6)	D <sub>2</sub>	H <sub>1</sub>	D	D <sub>3</sub>	H (±0.003)	M	H <sub>3</sub>	D <sub>5</sub> (-0.085 -0.15)	H <sub>2</sub>	Lf	M <sub>1</sub>	Dp	
<b>AMWF-W-T</b>	<b>40</b>	48	47.5	15	70	38	12	M5	8	16	35	5	M6×1 (Drilled Hole φ5.2)	60
<b>AMWF-W-S</b>	<b>50</b>	58	57.5	19	85	48	15	M6	10	20	44	6	M8×1.25(Drilled Hole φ6.8)	72

Size	d	Furnished O-ring	Operating Air Pressure(MPa *)	Clamping Force(kN)
<b>AMWF-W-T</b>	<b>40</b>	7.2	P4	0.5
<b>AMWF-W-S</b>	<b>50</b>	8.2	P5	
				6.3

### Related Product

**AMWF-BU** PNEUMATIC FLEX LOCATOR BUSHINGS

\*) At least 0.45 MPa is required for unclamping.  
The maximum operating air pressure is 1 MPa.

### AMWF-W-T (Tapered Type)

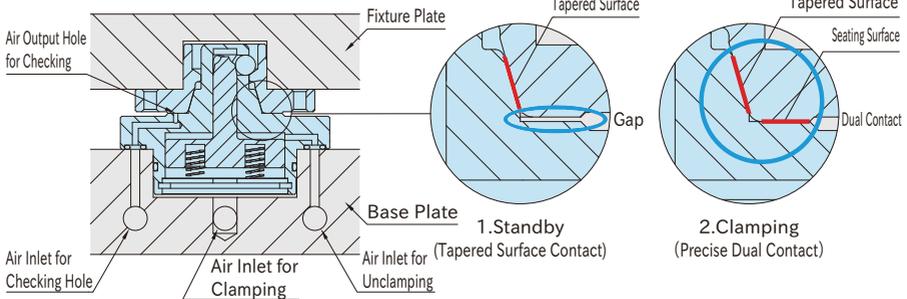
Part Number	D <sub>4</sub>	Weight (g)
<b>AMWF40-W-T</b>	24.5	450
<b>AMWF50-W-T</b>	31.5	820

### AMWF-W-S (Straight Type)

Part Number	D <sub>4</sub>	Weight (g)
<b>AMWF40-W-S</b>	20	440
<b>AMWF50-W-S</b>	26	810

### Feature

#### Structure and Locating Mechanism



· When the air pressure is lowered by an air leakage, the wedge mechanism and the spring prevent prompt lowering of the clamping force.

Clamping Force at 0 Mpa Air Pressure (Clamping Force of Spring)

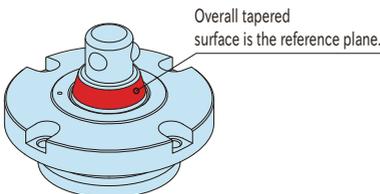
- AMWF40Type...1.2kN
- AMWF50Type...1.8kN

· Can check if the fixture plate is clamped properly by applying air through the checking hole.

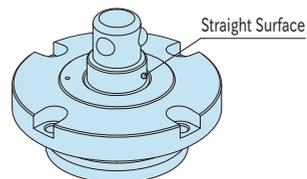
· Precise dual contact provides excellent locating repeatability at 3 μm.

#### Functions

Locating with Tapered Type



Clamping with Straight Type



# AMWF-BU

## PNEUMATIC FLEX LOCATOR BUSHINGS



(Tapered Type)

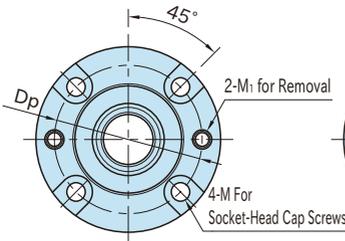
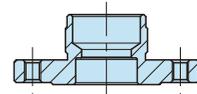
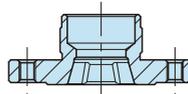
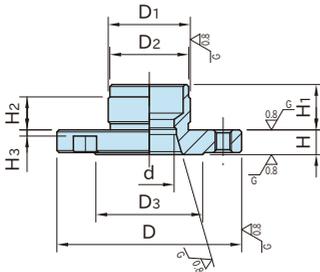


(Diamond Type)

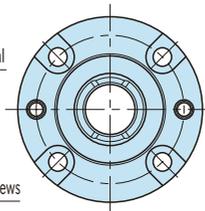


(Straight Type)

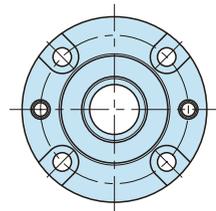
Body
SCM440 steel
Quenched & tempered
Black oxide finish
Precision ground



**AMWF-BU-T**  
(Tapered Type)



**AMWF-BU-D**  
(Diamond Type)



**AMWF-BU-S**  
(Straight Type)

Size	D <sub>1</sub> (g6)	H <sub>2</sub>	D <sub>2</sub>	H <sub>1</sub>	M	H <sub>3</sub>	D	D <sub>3</sub>	H (±0.003)	d (+0.15 +0.05)	M <sub>1</sub>	D <sub>p</sub>
<b>AMWF-BU-T</b>	<b>40</b>	28	10	27.5	15	M5	60	38	8	16	M5×0.8	50
<b>AMWF-BU-D</b>												
<b>AMWF-BU-S</b>												
	<b>50</b>	36	14	35.5	19	M6	75	48	10	20	M6×1	62

### AMWF-BU-T (Tapered Type)

Part Number	Weight (g)
AMWF40-BU-T	160
AMWF50-BU-T	323

### AMWF-BU-D (Diamond Type)

Part Number	Weight (g)
AMWF40-BU-D	159
AMWF50-BU-D	322

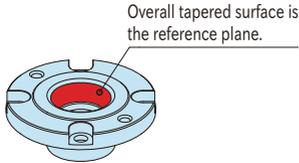
### AMWF-BU-S (Straight Type)

Part Number	Weight (g)
AMWF40-BU-S	163
AMWF50-BU-S	330

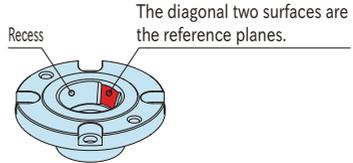
## Feature

### Function

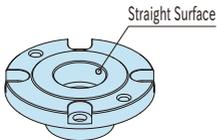
Locating with Tapered Type  
For setting reference position



Locating with Diamond Type  
For locating reference at rotational direction



Clamping with Straight Type



## Related Product

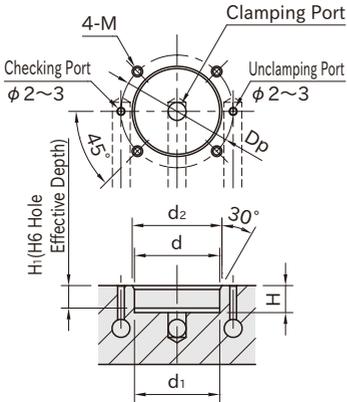
AMWF-W|PNEUMATIC FLEX LOCATOR PINS

## Reference

- How To Use PNEUMATIC FLEX LOCATORS
- How To Install PNEUMATIC FLEX LOCATORS

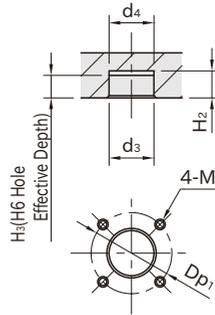
# How To Install PNEUMATIC FLEX LOCATORS

## ■ Mounting Hole Dimensions for Pins



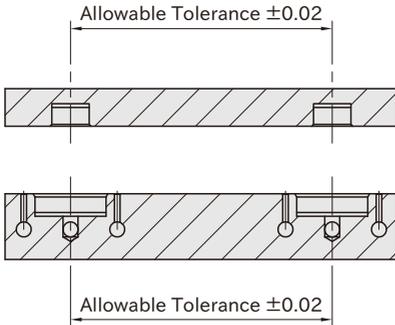
Size	d (H6)	H <sub>1</sub>	d <sub>1</sub> ( <sup>-0.1</sup> / <sub>-0.3</sub> )	H	d <sub>2</sub>	M	Dp
AMWF40-W	48	12	48	16	50	M5×0.8	60
AMWF50-W	58	16	58	20	60	M6×1	72

## ■ Mounting Hole Dimensions for Bushings



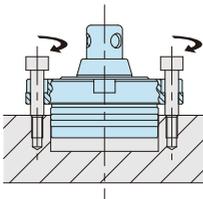
Size	d <sub>3</sub> (H6)	H <sub>3</sub>	d <sub>4</sub> ( <sup>-0.1</sup> / <sub>-0.3</sub> )	H <sub>2</sub>	M <sub>1</sub>	Dp <sub>1</sub>
AMWF40-BU	28	12	28	16	M5×0.8	50
AMWF50-BU	36	16	36	20	M6×1	62

## ■ Spacing Tolerance



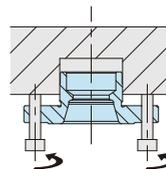
## ■ How to Remove Pins

For easier removal, insert screws into the tapped holes and screw them.



## ■ How to Remove Bushings

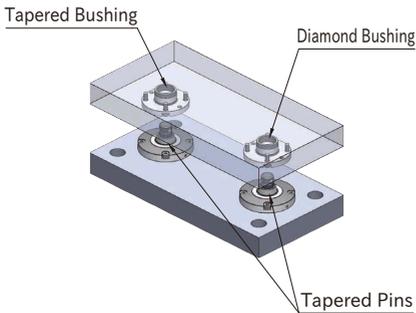
For easier removal, insert screws into the tapped holes and screw them.



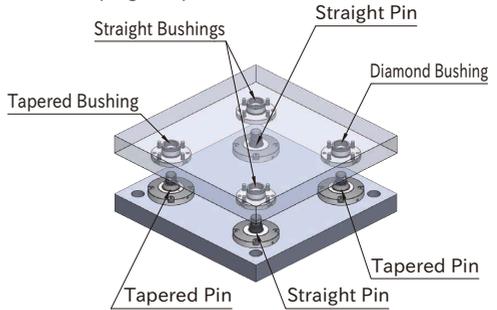
# How To Use PNEUMATIC FLEX LOCATORS

## Application Example

For clamping at 2 points



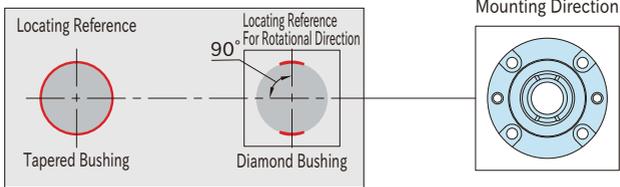
For clamping at 4 points



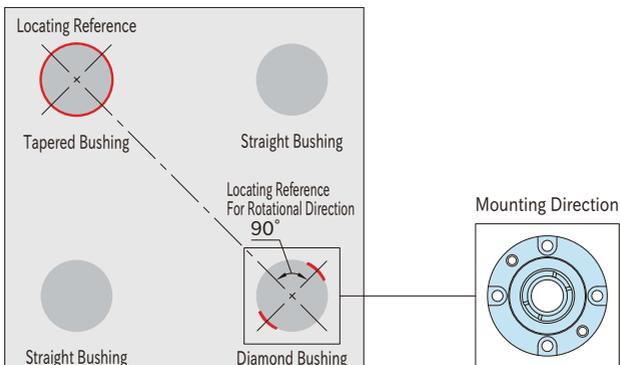
### Positioning Order of Bushings

Mount the Tapered Bushings and Diamond Bushings as in the figure below for locating fixture plates. Pay attention to the mounting direction of the Diamond Bushings, since the direction for use at 2 points and the direction for use at 4 points differ.

For clamping at 2 points



For clamping at 4 points



# AMWF-L-S

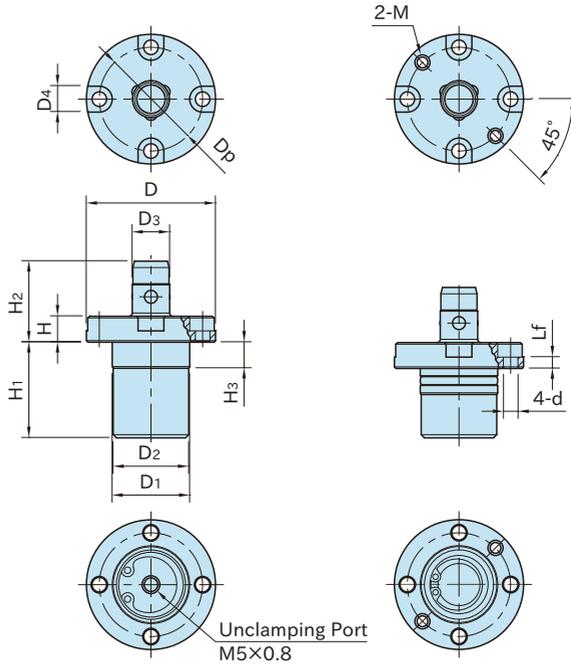
## PNEUMATIC FLEX LOCATOR PINS



AMWF-L-S



AMWF-L-S-G



AMWF-L-S (Port Style)

AMWF-L-S-G (Direct Style)

Body	Ball	Coiled Spring
S45C steel Electroless nickel plated	SUS440C stainless steel	SUS304WPB stainless steel

Part Number	D <sub>1</sub> (g6)	H <sub>3</sub>	D <sub>2</sub>	H <sub>1</sub>	D	H	D <sub>3</sub> (h8)	H <sub>2</sub>	d	Lf	D <sub>4</sub>	Dp
AMWF18L-4S	24	8	23.4	29.5	40	8	12	25	4.5	3.5	8	32
AMWF26L-4S	32	8.5	31.4	31.7	51	9.5	16	28.5	5.5	4	9.5	41
AMWF18L-4S-G	24	8	23.4	24.5	40	8	12	25	4.5	3.5	8	32
AMWF26L-4S-G	32	8.5	31.4	25.5	51	9.5	16	28.5	5.5	4	9.5	41

Part Number	M	Air Pressure (MPa)	Clamping Force (N)	Weight (g)
AMWF18L-4S	—	0.5	250	154
AMWF26L-4S	—		350	289
AMWF18L-4S-G	M4x0.7		250	136
AMWF26L-4S-G	M5x0.8		350	252

### Reference

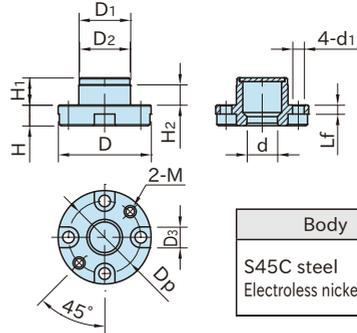
- How To Install PNEUMATIC FLEX LOCATORS
- How To Use PNEUMATIC FLEX LOCATORS

### Related Product

[AMWF-BU](#) PNEUMATIC FLEX LOCATOR BUSHINGS

# AMWF-BU

# PNEUMATIC FLEX LOCATOR BUSHINGS



Body
S45C steel
Electroless nickel plated

Part Number	D <sub>1</sub> (g6)	H <sub>2</sub>	D <sub>2</sub>	H <sub>1</sub>	D	H	d (E7)	d <sub>1</sub>	Lf	D <sub>3</sub>	M	Dp	Weight (g)
<b>AMWF18-BU</b>	20	7.5	19.6	10.5	36	8	12.1	4.5	3.5	8	M4×0.7	28	57
<b>AMWF26-BU</b>	25	7	24.6	11	44	9.5	16.1	5.5	4	9.5	M5×0.8	34	97

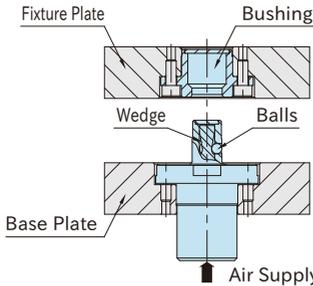
### Reference

- How To Install PNEUMATIC FLEX LOCATORS
- How To Use PNEUMATIC FLEX LOCATORS

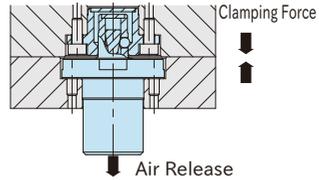
### Related Product

**AMWF-L-S** PNEUMATIC FLEX LOCATOR PINS

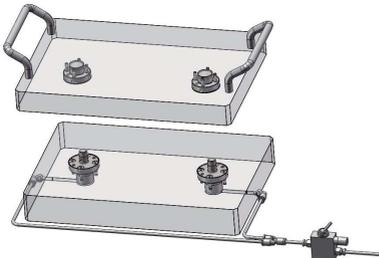
### Feature



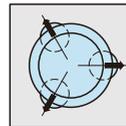
Supply air for unclamping.  
The wedge goes up and releases the balls.



Release air for clamping. The wedge goes down and pushes the balls to pull down the bushing.  
Can keep clamped without air supply.



Quick clamping and unclamping reduce set-up time in production equipment.



Locating Repeatability :  $\pm 10 \mu\text{m}$   
The bushing is centered and clamped when the 3 balls are pushed out to gain high locating repeatability.

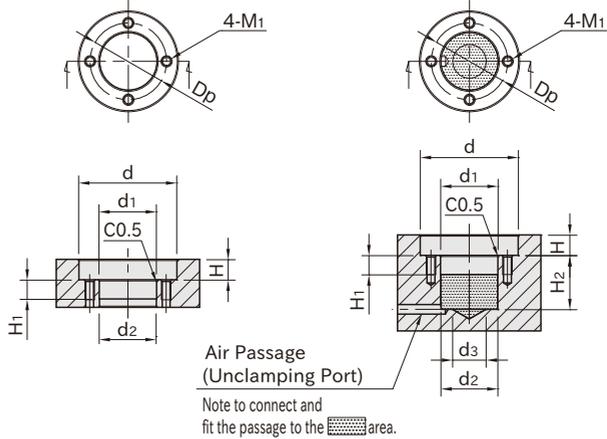
# How To Install PNEUMATIC FLEX LOCATORS

## ■ Mounting Hole Dimensions

· Pins

**AMWF-L-S** (Port Style)

**AMWF-L-S-G** (Direct Style)



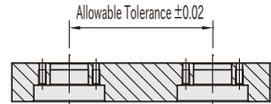
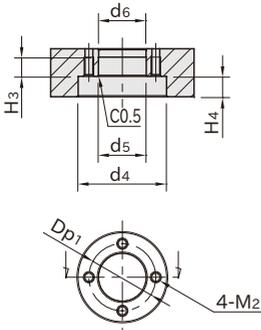
Part Number	d <sub>1</sub> (H7)	H <sub>1</sub>	d <sub>2</sub>	H <sub>2</sub>	d <sub>3</sub>	d	H (±0.05)	M <sub>1</sub>	D <sub>p</sub>
<b>AMWF18L-4S</b>	24	8.5	23.8	—	—	41	8.5	M4×0.7 Depth 8	32
<b>AMWF26L-4S</b>	32	9	31.8	—	—	52	10	M5×0.8 Depth10	41
<b>AMWF18L-4S-G</b>	24	8.5	23.8	25.5	14	41	8.5	M4×0.7 Depth 8	32
<b>AMWF26L-4S-G</b>	32	9	31.8	26.5	20	52	10	M5×0.8 Depth10	41

· Bushings

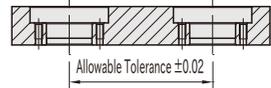
## ■ Spacing Tolerance

**AMWF-BU** (Bushing)

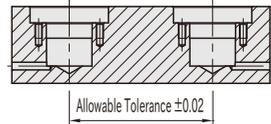
**AMWF-BU** (Bushing)



**AMWF-L-S** (Port Style)



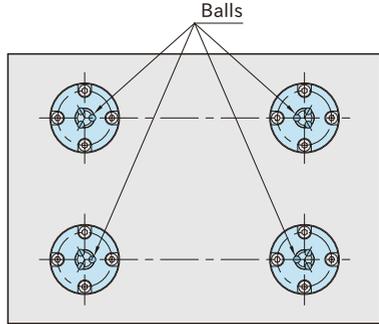
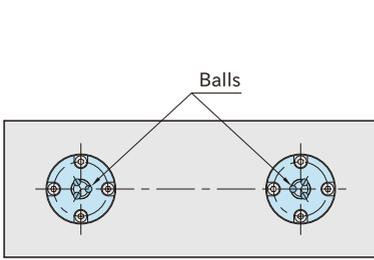
**AMWF-L-S-G** (Direct Style)



Part Number	d <sub>5</sub> (H7)	H <sub>3</sub>	d <sub>6</sub>	d <sub>4</sub>	H <sub>4</sub> (±0.05)	M <sub>2</sub>	D <sub>p1</sub>
<b>AMWF18-BU</b>	20	8	19.8	37	8.5	M4×0.7 Depth 8	28
<b>AMWF26-BU</b>	25	7.5	24.8	45	10	M5×0.8 Depth10	34

# How To Use PNEUMATIC FLEX LOCATORS

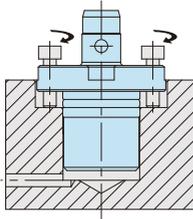
## How to Use



The pins should be mounted in the direction shown in the above figures.

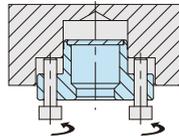
## How to Remove (Direct Style Pins)

For easier removal, insert screws into the tapped holes and screw them.



## How to Remove (Bushings)

For easier removal, insert screws into the tapped holes and screw them.



## Note

Size	Max. Loading Weight (kg)
<b>AMWF18</b>	40
<b>AMWF26</b>	56

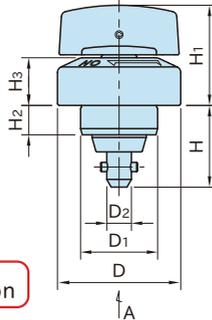
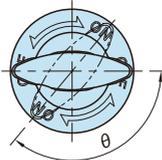
- If the total weight exceeds the maximum loading weight, the locating repeatability may exceed  $\pm 10 \mu\text{m}$ .
- In vertical use, the locating repeatability may exceed  $\pm 10 \mu\text{m}$ .
- Pins and Bushings should be positioned equally against the center of the fixture plate.
- For Port Style Pins, use with air joint that is available commercially.

Note: The maximum loading weight is the entire sum of the weight of fixture plates, fixtures and workpieces.

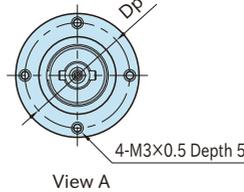
Note: The maximum loading weight shown is the value when two sets each of **AMWF-L-S** Pins and **AMWF-BU** Bushings are used.

# CP723

## ONE-TOUCH FLEX LOCATOR CLAMPERS (Knob)



Body / Shank	Tapered Pin	Knob	Pin
SCM440 steel Black oxide finished	SCM440 steel Nitrocarburized	SCS13 stainless steel (Equivalent to SUS304)	SUS304 stainless steel



★ **Key Point**  
Space saving operation

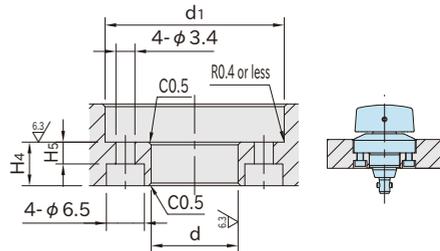
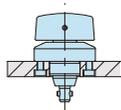
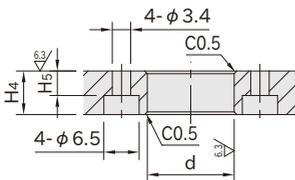
Part Number	D <sub>1</sub> (g6)	H <sub>2</sub>	D	H <sub>1</sub>	H <sub>3</sub>	D <sub>2</sub>	H	θ	D <sub>p</sub>
<b>CP723-0632R-04</b>	16	7.5	32	27	12	5.5	22	120°	25.5
<b>CP723-0840R-06</b>	25	9.5	40	32	15.5	8	26	130°	34

Part Number	Clamping Force(N)	Lifting Force (N) *)	Weight (g)	Proper One-Touch Flex Locator Bushing
<b>CP723-0632R-04</b>	350	30	96	CP727-0632R
<b>CP723-0840R-06</b>	600	100	211	CP727-0840R

\*) The lifting force is the power of the inner spring of the body to push up the movable tapered bushing.

### How To Use

#### ■ Mounting Hole Dimension



Part Number	d (H7)	H <sub>4</sub> (±0.05)	d <sub>1</sub>	H <sub>5</sub>
<b>CP723-0632R-04</b>	16	8	33	4
<b>CP723-0840R-06</b>	25	10	41	6

### Supplied With

- **CP723-0632R-04**: Four pieces of hex. socket-head cap screws M3×0.5-8L
- **CP723-0840R-06**: Four pieces of hex. socket-head cap screws M3×0.5-10L

### Reference

How To Use ONE-TOUCH FLEX LOCATORS  
(Handle / Knob)

**CP722**

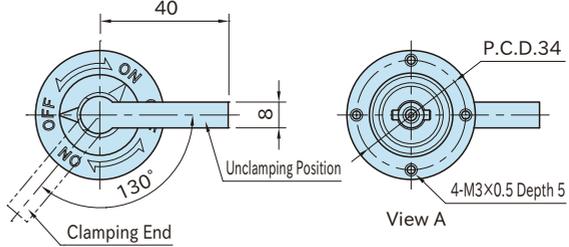
**ONE-TOUCH FLEX LOCATOR CLAMPERS**



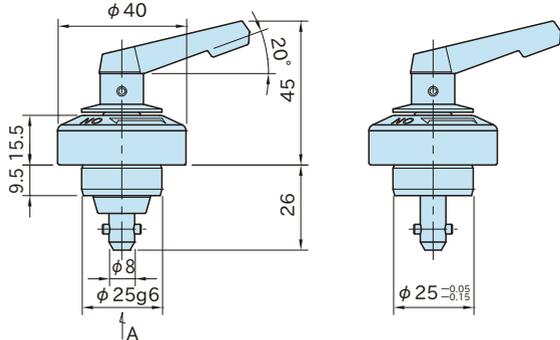
Body / Shank	Tapered Pin	Handle	Pin
SCM440 steel Black Oxide Finished	SCM440 Nitrocarburized	ZDC1 die-cast zinc Silver-gray painted	SUS303 stainless steel



**CP722-0840R-06**



**CP722-0840R-06N**



**CP722-0840R-06**

**CP722-0840R-06N**

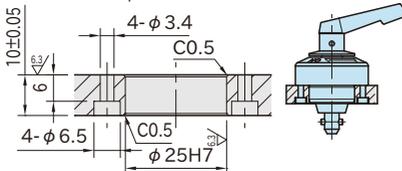
Part Number	Tapered Pin	Clamping Force (N)	Lifting Force (N)*	Weight (g)	Proper One-Touch Flex Locator Bushing
<b>CP722-0840R-06</b>	With	600	100	220	<b>CP727-0840R</b>
<b>CP722-0840R-06N</b>	Without	700	—	215	

\*) The lifting force is the power of the inner spring of the body to push up the movable tapered pin.

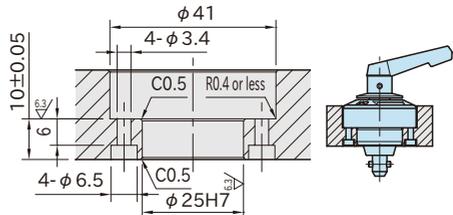
**How To Use**

**Mounting Hole Dimension**

Can be used with plates of 10mm ~ 22mm thickness.



Installation on 10mm-thick Plate



Installation on 10mm-22mm Thick Plate  
Drill a counterbored hole.

**Reference**

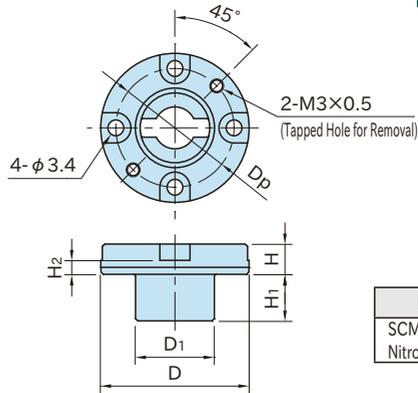
How To Use ONE-TOUCH FLEX LOCATORS  
(Handle / Knob)

**Supplied With**

4 of M3×0.5-10L Hex Socket-Head Cap Screw

# CP727

## ONE-TOUCH FLEX LOCATOR BUSHINGS

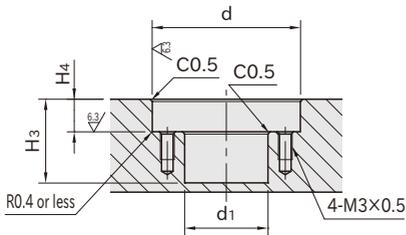


Body
SCM440 steel
Nitrocarburized

Part Number	D (g6)	H	D <sub>1</sub>	H <sub>1</sub>	H <sub>2</sub>	D <sub>p</sub>	Weight (g)
CP727-0632R	28	5.5	12.5	8	2	21.5	20
CP727-0840R	32	6.5	17	10	3	25.5	32

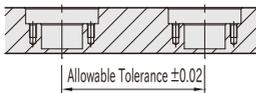
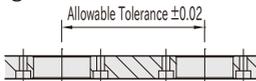
### How To Use

#### ■ Mounting Hole Dimension



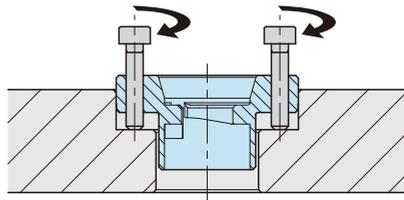
Part Number	d (H7)	H <sub>4</sub> (±0.05)	d <sub>1</sub>	H <sub>3</sub>
CP727-0632R	28	6	13.5	15
CP727-0840R	32	7	18	18

#### ■ Spacing Tolerance



#### ■ How to Remove

Insert screws into the tapped holes to lift up the bushing for removal.



### Related Product

- [CP722](#) ONE-TOUCH FLEX LOCATOR CLAMPERS
- [CP723](#) ONE-TOUCH FLEX LOCATOR CLAMPERS(Knob)

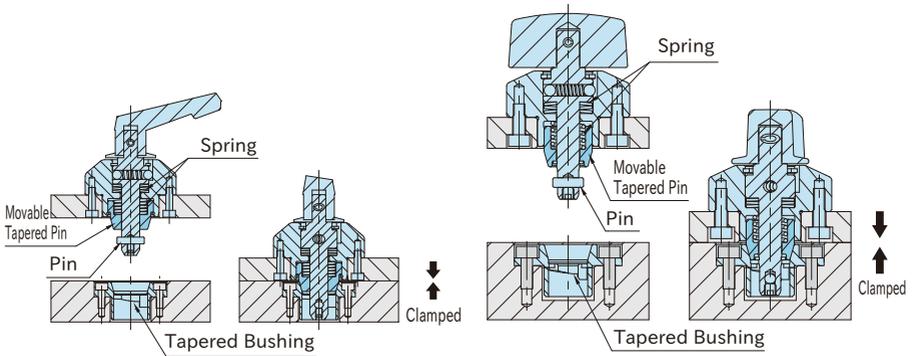
### Reference

How To Use ONE-TOUCH FLEX LOCATORS (Handle / Knob)



## How To Use ONE-TOUCH FLEX LOCATORS (Handle / Knob)

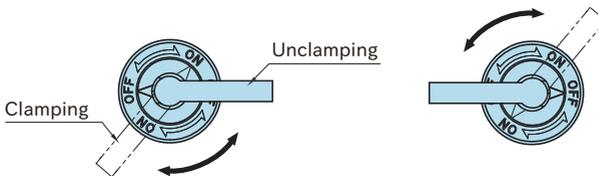
### Feature



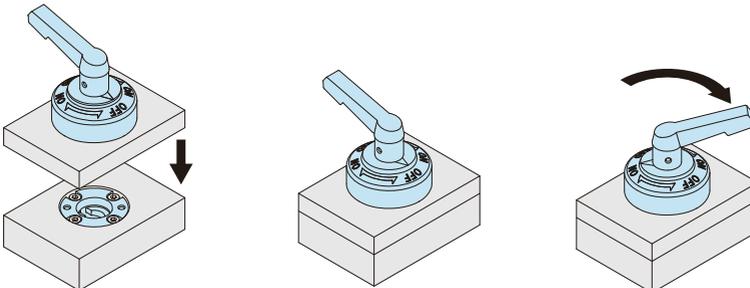
- The plates are located by fitting of the tapered pin and the tapered bushing.
- The pin contacts the cam surface inside the bushing, and it compresses the inner spring, then the plates are clamped.

Note: [CP722-0840R-06N](#) does not have locating function.

Two pair of clamping and unclamping positions of handle can be chosen for [CP722](#).



### How To Operate

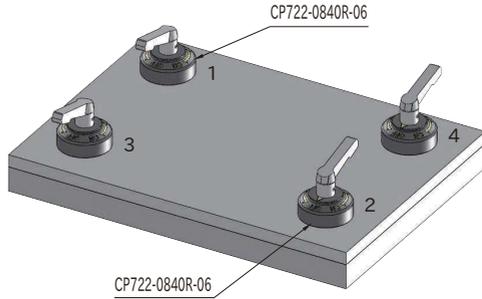


1. Ensure the handle is positioned at "OFF" mark.
2. Insert the clamping plate to the bushing.
3. Turn the handle to "ON" mark for clamping.

- \*) Follow back these steps for unclamping.
- \*) Same operation for Knob style.

## Tightening Order

1. Ensure the handle is positioned at "OFF" mark and lift down the fixture plate.
  2. Turn the handle and clamp in order of 1→2→3→4.
- \*) For unclamping, ensure the handle is positioned at "OFF" mark and disassemble the fixture plate.

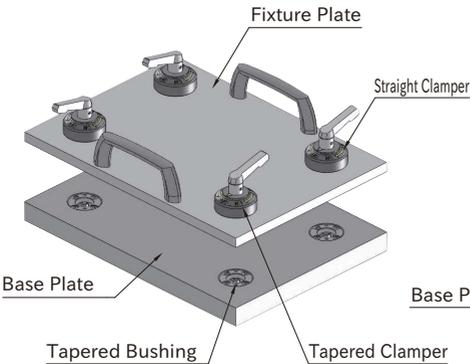


If the handles are not tightened in the correct order, the locating repeatability may exceed 10 μm.

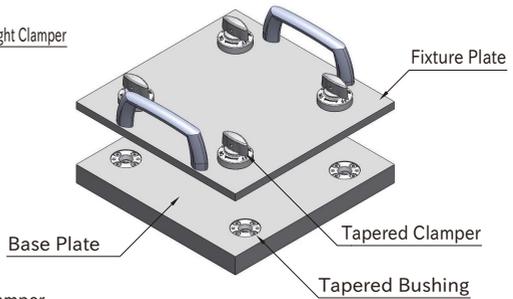
## How To Use

### Horizontal Assembly of Fixture Plate

Note: Ensure not to lift the fixture plate up and down with gripping the handle of the clampers.



CP722



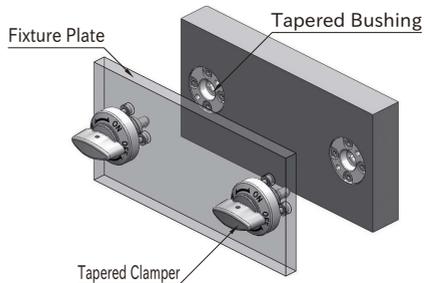
CP723

### Vertical Assembly of Fixture Plate

Locating repeatability is 20 μm.

Size	Max. Loading Weight(kg)
CP722 CP727	0840R 40

Size	Max. Loading Weight(kg)
CP723	0632R 12
CP727	0840R 40



Note: The maximum loading weight is the entire sum of the weight of fixture plates, fixtures and workpieces.

Note: The maximum loading weight shown is the value when two sets of tapered clamper and tapered bushing are used.

# CP730

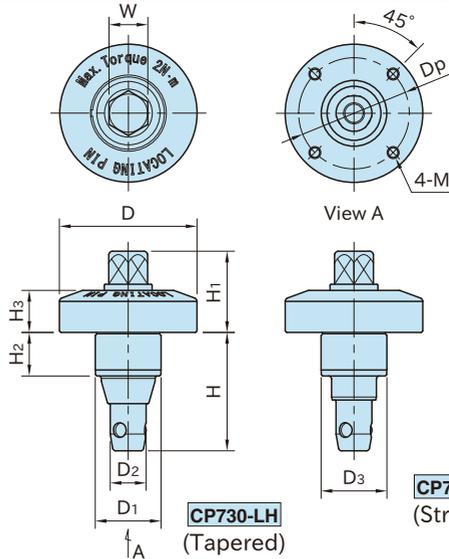
## ONE-TOUCH FLEX LOCATOR CLAMPERS (Hexagon Head)



**CP730-LH**  
(Tapered)



**CP730-SH**  
(Straight)



Body	Clamping Screw	Ball
SCM440 steel Nitrocarburized	SCM435 steel Black oxide finished Quenched & tempered	SUJ2 steel

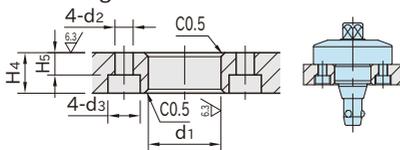
Part Number	D <sub>1</sub> (g6)	D <sub>3</sub> (-0.02/-0.06)	H <sub>2</sub>	D	H <sub>1</sub>	H <sub>3</sub>	D <sub>2</sub>	H	W	M	D <sub>p</sub>
<b>CP730-0939LH</b>	18	—	9.5	39	22	12	9	30	10	M4×0.7 Depth 6	30
<b>CP730-0939SH</b>	—	18									
<b>CP730-1246LH</b>	22	—	14.5	46	27	14	12	40	13		M5×0.8 Depth 7
<b>CP730-1246SH</b>	—	22									
<b>CP730-1656LH</b>	28	—	19.5	56	34	16	16	51	17	M5×0.8 Depth 7	
<b>CP730-1656SH</b>	—	28									

Part Number	Clamping Force (N)	Allowable Screw Torque (N·m*)	Weight (g)	Proper Bushing
<b>CP730-0939LH</b>	1700	2	134	<b>CP735-0939L</b>
<b>CP730-0939SH</b>			133	<b>CP735-0939S</b>
<b>CP730-1246LH</b>	3000	4	241	<b>CP735-1246L</b>
<b>CP730-1246SH</b>			239	<b>CP735-1246S</b>
<b>CP730-1656LH</b>	4500	7	457	<b>CP735-1656L</b>
<b>CP730-1656SH</b>			453	<b>CP735-1656S</b>

\*)Do not apply greater torque than allowable screw torque.  
Do not use a power tool (impact wrench etc.) to turn the hex head, for damage prevention.

### How To Use

#### ■ Mounting Hole Dimension



#### Supplied With

- **CP730-0939**: Four pieces of hex. socket-head cap screws M4×0.7-10L
- **CP730-1246**: Four pieces of hex. socket-head cap screws M4×0.7-15L
- **CP730-1656**: Four pieces of hex. socket-head cap screws M5×0.8-20L

Size	d <sub>1</sub> (H7)	H <sub>4</sub> (±0.05)	d <sub>2</sub>	H <sub>5</sub>	d <sub>3</sub>
<b>CP730-0939</b>	18	10	4.5	5	8
<b>CP730-1246</b>	22	15		10	
<b>CP730-1656</b>	28	20	5.5	14	10

#### Reference

How To Use ONE-TOUCH FLEX LOCATORS (Hexagon Head / Cam Handle)

#### Related Product

**CP-TCW** ADJUSTABLE-TORQUE WRENCHES are available for tightening.

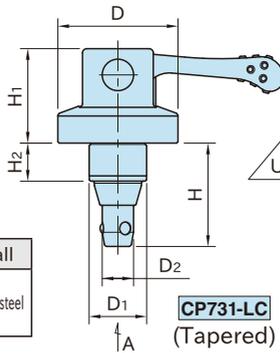
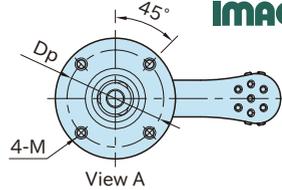
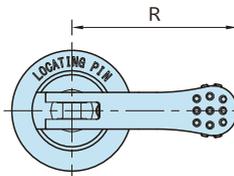
CP731

ONE-TOUCH FLEX LOCATOR CLAMPERS (Cam Handle)

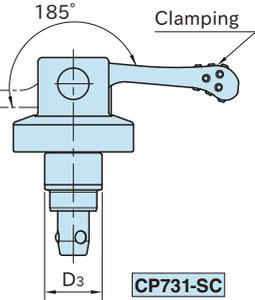


CP731-LC (Tapered)

CP731-SC (Straight)



CP731-LC (Tapered)



CP731-SC (Straight)

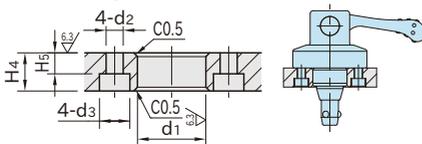
Body	Cam Handle	Ball
SCM440 steel Nitrocarburized	SCM440 steel Black oxide finished Quenched & tempered	SUJ2 steel

Part Number	D <sub>1</sub> (g6)	D <sub>3</sub> (-0.02 / -0.06)	H <sub>2</sub>	D	H <sub>1</sub>	D <sub>2</sub>	H	M	D <sub>p</sub>	R	Cam Handle
CP731-0939LC	18	—	9.5	39	30	9	30	M4x0.7 Depth 6	30	50	QLCA-05
CP731-0939SC	—	18									QLCA-06
CP731-1246LC	22	—									QLCA-06
CP731-1246SC	—	22	14.5	46	36	12	40		37	63	QLCA-06
CP731-1656LC	28	—									QLCA-08
CP731-1656SC	—	28									QLCA-08

Part Number	Clamping Force (N)	Operating Load (N)	Weight (g)	Proper Bushing
CP731-0939LC	600	60	191	CP735-0939L
CP731-0939SC			189	CP735-0939S
CP731-1246LC	1200	130	297	CP735-1246L
CP731-1246SC			294	CP735-1246S
CP731-1656LC	1800	160	654	CP735-1656L
CP731-1656SC			648	CP735-1656S

How To Use

■ Mounting Hole Dimension



Size	d <sub>1</sub> (H7)	H <sub>4</sub> (±0.05)	d <sub>2</sub>	H <sub>5</sub>	d <sub>3</sub>
CP731-0939	18	10	4.5	5	8
CP731-1246	22	15		10	
CP731-1656	28	20	5.5	14	

Supplied With

- CP731-0939: Four pieces of hex. socket-head cap screws M4x0.7-10L
- CP731-1246: Four pieces of hex. socket-head cap screws M4x0.7-15L
- CP731-1656: Four pieces of hex. socket-head cap screws M5x0.8-20L

Reference

How To Use ONE-TOUCH FLEX LOCATORS (Hexagon Head / Cam Handle)

CP735

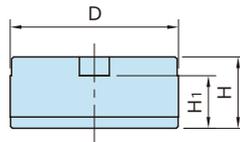
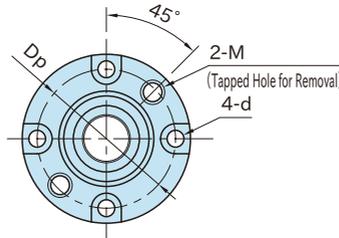
ONE-TOUCH FLEX LOCATOR BUSHINGS



(Tapered Type)



(Straight Type)



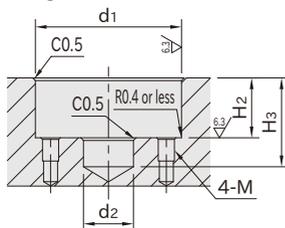
Type	Body	Tapered Bushing
CP735-L	SCM440 steel Black oxide finished	SCM440 steel Nitrocarburized
CP735-S	Quenched & tempered	-

Part Number	Type	D (g6)	H	d	H <sub>1</sub>	D <sub>p</sub>	M	Lifting Force (N)*	Weight (g)
CP735-0939L	Tapered	38	15	4.5	10	30	M5×0.8	300	100
CP735-0939S	Straight							-	101
CP735-1246L	Tapered	45	19	4.5	14	37	M6×1	450	179
CP735-1246S	Straight							-	184
CP735-1656L	Tapered	55	24	5.5	18	45	M6×1	680	337
CP735-1656S	Straight							-	341

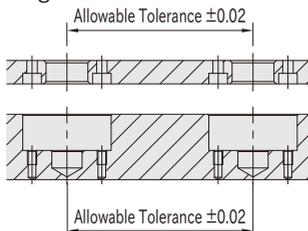
\*) The lifting force is the power of the inner spring of the body to push up the movable tapered bushing.

How To Use

■ Mounting Hole Dimension



■ Spacing Tolerance



Size	d <sub>1</sub> (H7)	H <sub>2</sub> (±0.05)	d <sub>2</sub>	H <sub>3</sub>	M
CP735-0939	38	15.5	13	23	M4×0.7
CP735-1246	45	19.5	16	28	
CP735-1656	55	24.5	20	34	M5×0.8

Related Product

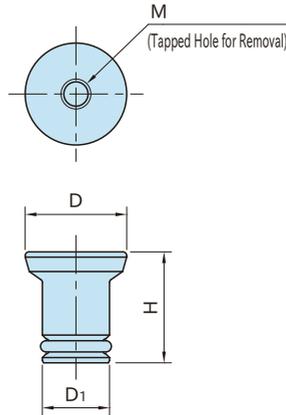
- CP730 ONE-TOUCH FLEX LOCATOR CLAMPERS (Hexagon Head)
- CP731 ONE-TOUCH FLEX LOCATOR CLAMPERS (Cam Handle)
- CP735-P ONE-TOUCH FLEX LOCATOR (PROTECTING COVERS)

Reference

How To Use ONE-TOUCH FLEX LOCATORS (Hexagon Head / Cam Handle)

**CP735-P**

**ONE-TOUCH FLEX LOCATOR PROTECTING COVERS**



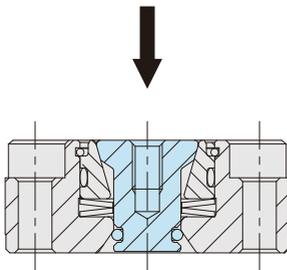
Body	O-Ring
A5052 aluminum Red	NBR nitrile rubber

Part Number	D	H	D <sub>1</sub>	M	Weight (g)	Proper Bushing	
<b>CP735-0939P</b>	13.5	15	9	M4×0.7	3	CP735-0939L	CP735-0939S
<b>CP735-1246P</b>	17	19	12		6	CP735-1246L	CP735-1246S
<b>CP735-1656P</b>	23	22.5	16	M5×0.8	14	CP735-1656L	CP735-1656S

**How To Use**

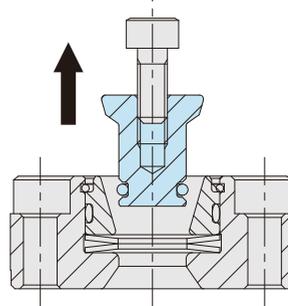
■ **How to Install**

Insert the product to the center hole of the Flex Locator Bushings and use it as a protective cover.



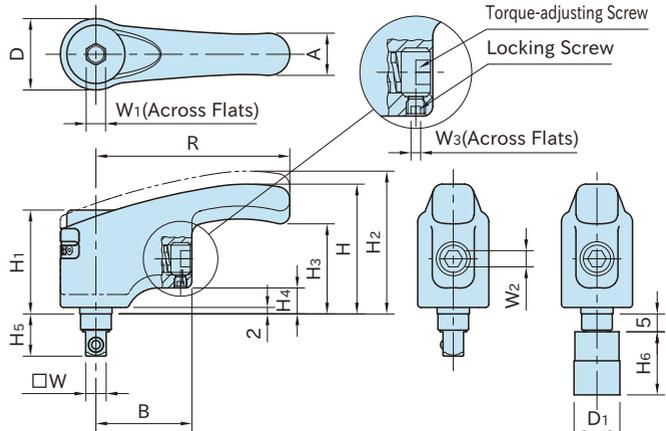
■ **How to Remove**

Insert a screw into the tapped hole and pull it out.



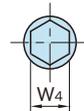
CP-TCW

ADJUSTABLE-TORQUEWRENCHES



Without Socket

With Socket



Socket Dimension

Type	Handle	Ratchet	Adapter	Socket
CP-TCW	SCM440 steel Quenched & tempered	SCM415 steel Carburized-hardened	SCM435 steel Quenched & tempered	-
CP-TCW-S	Painted Orange	Black oxide finished	Black oxide finished	Cr-V chrome-vanadium steel Chrome plated

Size	W	R	H	D	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>	H <sub>5</sub>	A	B	W <sub>1</sub>	W <sub>2</sub>	W <sub>3</sub>	
CP-TCW	6	6.3	60	40	22	32	44	27.5	8	13	30	6	5	2	
	8		75	48	26	38	52.5	33	9						
CP-TCW-S	10	9.5	90	57	32	45	62.5	39.5	10.5	16.5	18	39	10	6	2.5

Size	Torque Range (N·m)	
CP-TCW	6	1~3.5
CP-TCW-S	8	2~5.4
	10	3~8

■ Without Socket

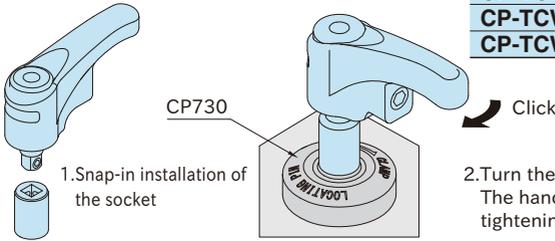
Part Number	Weight (g)
CP-TCW 6	166
CP-TCW 8	284
CP-TCW10	467

■ With Socket

Part Number	W <sub>4</sub>	D <sub>1</sub>	H <sub>6</sub>	Weight (g)
CP-TCW 6-S	10	13.8	25	183
CP-TCW 8-S	13	17.8		314
CP-TCW10-S	17	23.8	30	529

## How To Use

Can be used as a tightening tool for **CP730** ONE-TOUCH FLEX LOCATOR CLAMPERS (Hexagon Head).

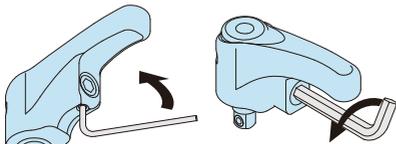


1. Snap-in installation of the socket

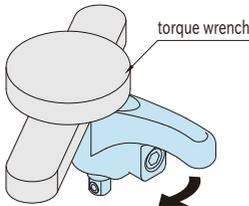
2. Turn the handle to clamp.  
The handle clicks to indicate completed tightening at desired torque.

## How To Set Torque

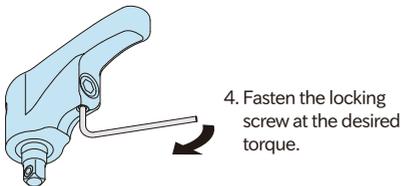
The preset torque is roughly set to its maximum tightening torque.



1. Loosen the locking screw.    2. Turn the hex key CCW to fine adjust the depth of torque-adjusting screw.



3. Measure the torque with a torque wrench.  
• Connect a torque wrench on the Adjustable-Torque Wrench.  
• Turn the handle in the tightening direction and fine adjust the depth of torque-adjusting screw to reach to the handle clicking position at desired torque.



4. Fasten the locking screw at the desired torque.

## Reference

See **ATCL** ADJUSTABLE-TORQUE HANDLES page for further information.

## Related Product

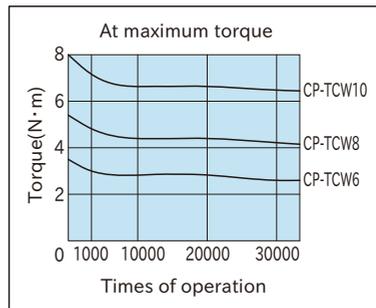
**CP730** ONE-TOUCH FLEX LOCATOR CLAMPERS (Hexagon Head)

Part Number	Proper ONE-TOUCH FLEX LOCATOR CLAMPERS	
<b>CP-TCW 6-S</b>	CP730-0939LH	CP730-0939SH
<b>CP-TCW 8-S</b>	CP730-1246LH	CP730-1246SH
<b>CP-TCW 10-S</b>	CP730-1656LH	CP730-1656SH

## Technical Information

- For initial several thousand operations, the tightening torque will decrease. (See the graph below)  
Measure the torque regularly, and fine adjust the depth of torque-adjusting screw as needed.
- The tightening torque can vary. (Max.±15%)  
Not recommended for precise torque management.

Torque Performance Graph



## Note

- Do not overtighten or overloosen the torque-adjusting screw.

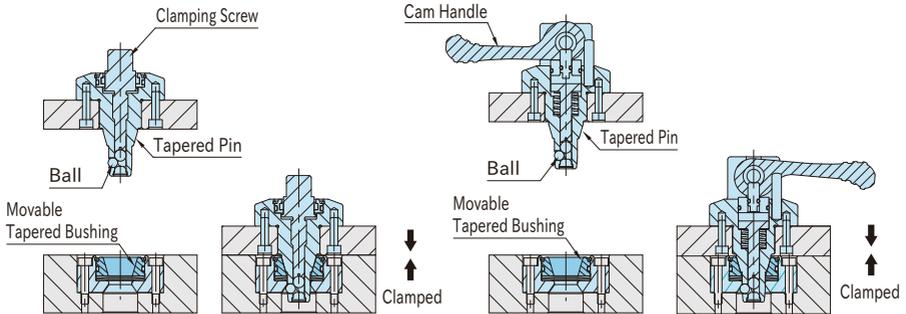
## Reference Torque Adjusting Range

	Size	Rotation
Minimum torque position tightening end with roughly detectable touch	<b>CP-TCW</b> 6	3/4
	<b>CP-TCW-S</b> 8	1
	10	3/4

- To reach approx. the min torque, loosen the torque adjusting screw to the same end surface level of the body, then tighten it until you feel light touch of stop. (Ensure that the torque adjusting screw does not protrude from the body when loosening it.)
- To reach approx. the max torque, rotate the torque adjusting screw depending on the above table from the approx. min torque as instructed previously.

## How To Use ONE-TOUCH FLEX LOCATORS (Hexagon Head / Cam Handle)

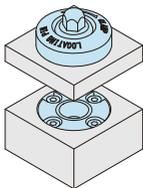
### Feature



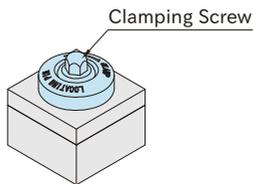
- The plate is located by fitting of the tapered parts.
- When the clamping screw or the cam handle is tightened, the balls goes out and the movable tapered bushing goes down. The fixture plate contacts with the base plate.
- For clamping screw, 2 turns tightening is enough.

Note: No locating function on the combination of straight pin and straight bushing.

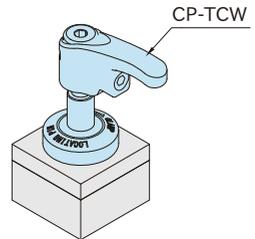
### How To Operate



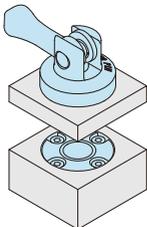
1. Ensure the balls are retracted.



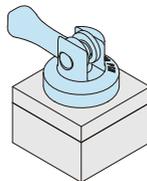
2. Insert the clamping screw to the bushing.



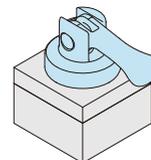
3. Tighten the clamping screw within the allowable torque.  
Note: For unclamping, follow back these steps.



1. Ensure that the cam handle is loosened.

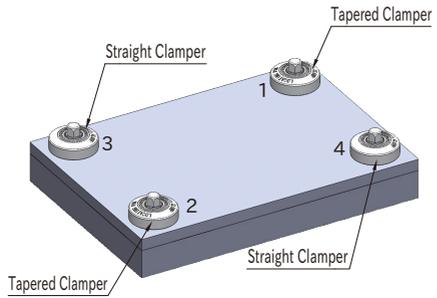


2. Insert the clamping screw to the bushing.



3. Tighten the cam handle.  
Note: For unclamping, follow back these steps.

## Tightening Order



### CP730

1. Ensure that each plate is in close contact. \*)
2. Tighten the screws temporarily in order of 1 → 2 → 3 → 4. For temporary tightening, the tightening torque should be approximately 50% of the final tightening.
3. Tighten the screws finally in order of 1 → 2 → 3 → 4.

\*) The fixture plate may be pushed up by the lifting force of the tapered bushing. In such cases, tighten the screws loosely in order of 1 → 2 → 3 → 4, and make each plate be in close contact with each other. Then tighten the screws temporarily. For the lifting force, see the measurement table of [CP735](#) ONE-TOUCH FLEX LOCATOR BUSHINGS.

### CP731

- Tighten the cam handles in order of 1 → 2 → 3 → 4.

If the screws are not tightened in the correct order, the locating repeatability may exceed  $8 \mu\text{m}$ .

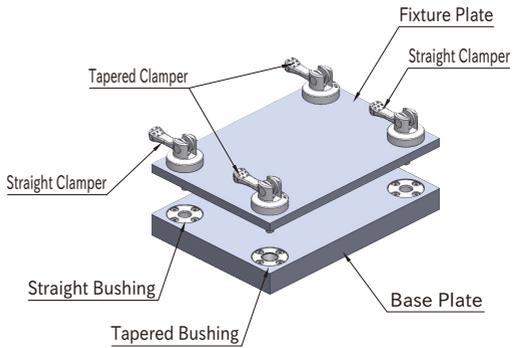
## How To Use

### Horizontal Assembly

Two sets of tapered pin and straight pin

Use tapered or straight pin and bush as a set.

Note: Ensure not to lift the fixture plate up and down with gripping the cam handle of the clampers.



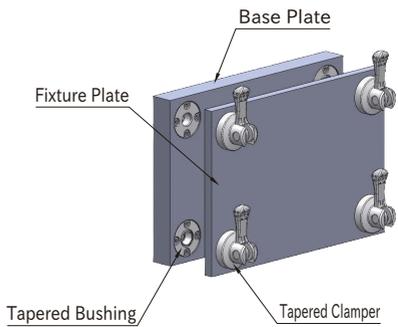
### Vertical Assembly

In vertical assembly, the locating repeatability is  $10 \mu\text{m}$ .

Size		Max. Loading Weight(kg)
CP730	0939	40
	1246	60
CP735	1656	100

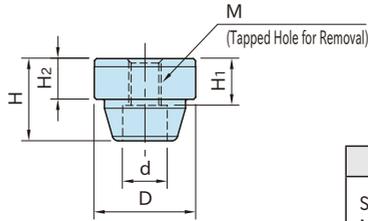
Size		Max. Loading Weight(kg)
CP731	0939	25
	1246	40
CP735	1656	60



Note: The maximum loading weight is the entire sum of the weight of fixture plates, fixtures and workpieces.  
 Note: The maximum loading weight shown is the value when two sets of tapered clammer and tapered bushing are used.

# CP720

## FLEX LOCATOR PINS

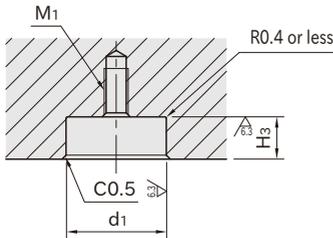


Body
SCM440 steel Nitrocarburized

Part Number	D (g6)	H <sub>2</sub>	H	M	H <sub>1</sub>	d	Weight (g)	Proper Flex Locator Bushings
CP720-16032	16	5.5	11.5	M 5X0.8 (Prepared Hole φ 4.2)	6	8	18	CP725-16032
CP720-25050	25	10	20	M 8X1.25 (Prepared Hole φ 6.8)	11.5	11	49	CP725-25050
CP720-38070	38	15	29.5	M10X1.5 (Prepared Hole φ 8.5)	18	14	176	CP725-38070
CP720-56095	56	22	43.5	M16X2 (Prepared Hole φ 14)	28.5	20	569	CP725-56095

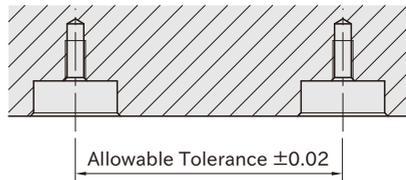
### How To Use

#### ■ Mounting Hole Dimension

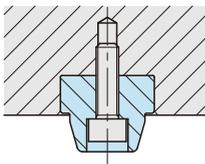


Part Number	d <sub>1</sub> (H7)	H <sub>3</sub> (±0.05)	M <sub>1</sub>
CP720-16032	16	6	M 4X0.7
CP720-25050	25	10.5	M 6X1
CP720-38070	38	15.5	M 8X1.25
CP720-56095	56	22.5	M12X1.75

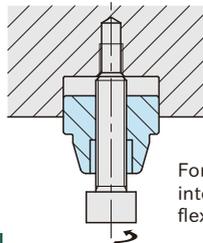
#### ■ Spacing Tolerance



#### ■ How to Install and Remove



Use a socket-head cap screw to fix the flex locator pin.

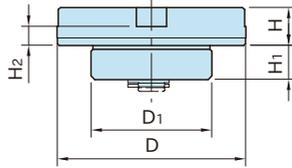
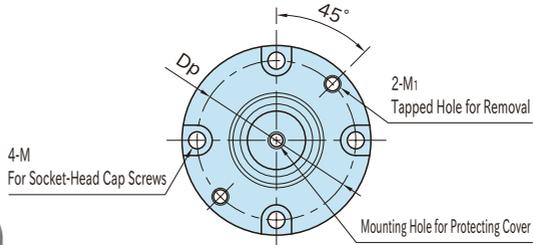


For removal, insert a screw into the tapped hole of the flex locator pin and screw it.

### Reference

- How To Install FLEX LOCATORS (Blind)
- How To Use FLEX LOCATORS (Blind)

**CP725 FLEX LOCATOR BUSHINGS (Blind)**



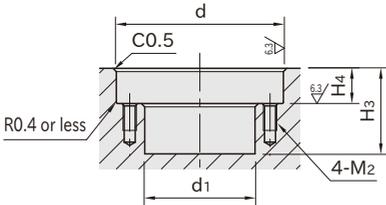
Body	Tapered Bushing
SCM440 steel Black oxide finished	SCM440 steel Nitrocarburized

Part Number	D (g6)	H	D <sub>1</sub>	H <sub>1</sub>	M	H <sub>2</sub>	M <sub>1</sub>	D <sub>p</sub>	Lifting Force (N)*	Weight (g)
<b>CP725-16032</b>	32	6.5	20	7	M3	3	M3×0.5	25.5	110	60
<b>CP725-25050</b>	50	10	32	9	M4	5	M4×0.7	42	180	160
<b>CP725-38070</b>	70	15	48	14	M5	9	M5×0.8	60	400	508
<b>CP725-56095</b>	95	22	70	21	M6	15	M6×1	84	690	1451

\*) The lifting force is the power of the inner spring of the body to push up up the movable tapered bushing.

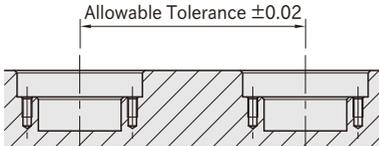
**How To Use**

■ Mouting Hole Dimension

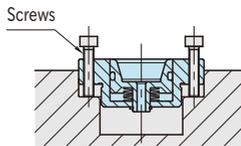


Part Number	d (H7)	H <sub>4</sub> (±0.05)	d <sub>1</sub>	H <sub>3</sub>	M <sub>2</sub>
<b>CP725-16032</b>	32	7	21	18	M3×0.5
<b>CP725-25050</b>	50	10.5	33	24	M4×0.7
<b>CP725-38070</b>	70	15.5	49	35	M5×0.8
<b>CP725-56095</b>	95	22.5	71	51	M6×1

■ Spacing Tolerance



■ How to Remove



For removal, insert screws into the tapped holes and screw it.

**Reference**

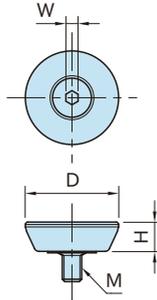
- How To Install FLEX LOCATORS (Blind)
- How To Use FLEX LOCATORS (Blind)

**Related Product**

**CP720** FLEX LOCATOR PINS

# CP725-P

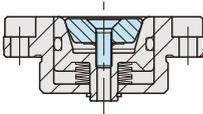
## FLEX LOCATOR PROTECTING COVERS



Body	Screw
A5056 aluminum Red	SCM435 steel Black oxide finished

Part Number	D	H	M	W	Weight (g)	Proper Flex Locator Bushings
CP725-16032P	12	4	M3×0.5	2	3	CP725-16032
CP725-25050P	19	6	M4×0.7	2.5	5	CP725-25050
CP725-38070P	29	7	M5×0.8	3	14	CP725-38070
CP725-56095P	44	8	M6×1	4	35	CP725-56095

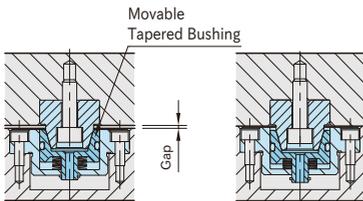
### How to Install



Mount on Flex Locator Bushings onto the tapped hole as a protective cover.

## How To Install FLEX LOCATORS (Blind)

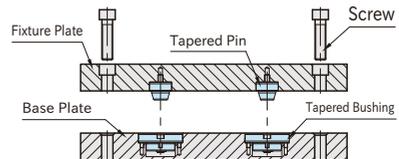
### Feature



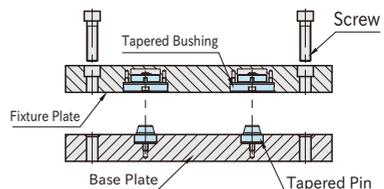
- Fixture plate is lifted down, and tapered pin engages with tapered bushing.
- Movable tapered bushing goes down, and fixture plate contacts with base plate.

### How To Install

#### Bushings on Base Plate



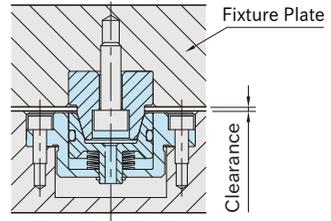
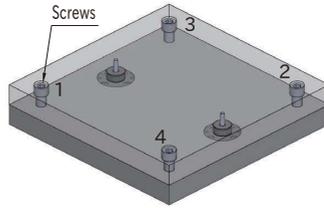
#### Pins on Base Plate



# How To Use FLEX LOCATORS (Blind)

## Tightening Order

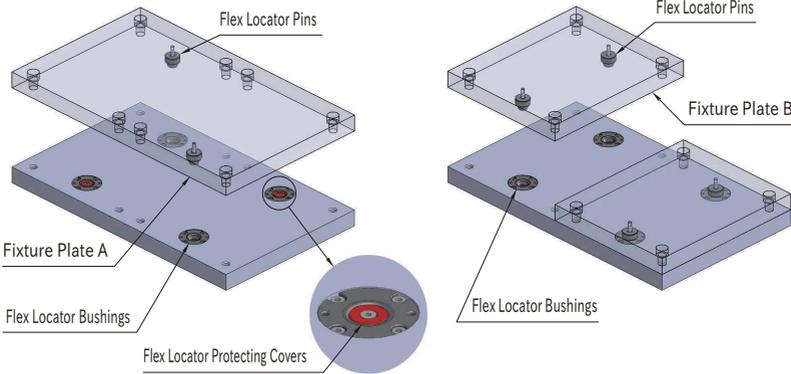
1. Ensure that each plate is in close contact.\*)
  2. Tighten the screws temporarily in order of 1→2→3→4.  
For temporary tightening, the tightening torque should be approximately 50% of the final tightening.
  3. Tighten the screws finally in order of 1→2→3→4.
- \*) The fixture plate may be pushed up by the lifting force of **CP725** Flex Locator Bushings.  
In such cases, tighten the screws loosely in order of 1→2→3→4, and make the each plate be in close contact with each other.  
Then tighten the screws temporarily.  
For the lifting force, see the measurement table of **CP725** Flex Locator Bushings.



If the screws are not tightened in the correct order, the locating repeatability may exceed 10 μm.

## How To Use

### Horizontal Assembly of Base Plate and Fixture Plate



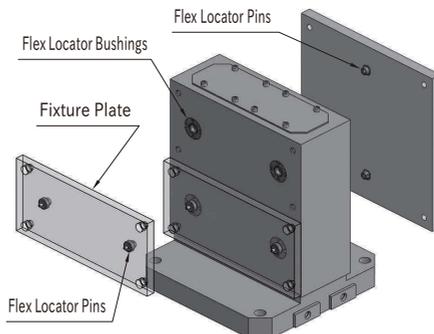
### Vertical Assembly of Tooling Block and Fixture Plate

If the total weight exceeds the maximum loading weight, the locating repeatability may exceed 10 μm.

Size	Max. Loading Weight(kg)	
	<b>16032</b>	80
<b>CP720</b>	<b>25050</b>	120
<b>CP725</b>	<b>38070</b>	200
	<b>56095</b>	220

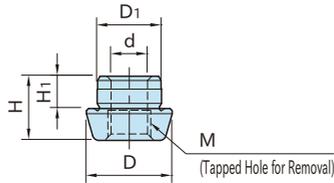
Note: The maximum loading weight is the entire sum of the weight of fixture plates, fixtures and workpieces.

Note: The maximum loading weight shown is the value when two sets of **CP720** Flex Locator Pins and **CP725** Flex Locator Bushings are used.



# CP721

## FLEX LOCATOR PINS



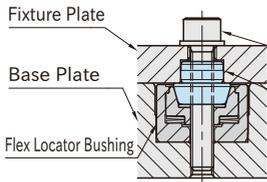
Body
SCM440 steel Nitrocarburized

Part Number	D <sub>1</sub> (p6)	H <sub>1</sub>	D	H	M	d	Weight (g)	Proper Flex Locator Bushings
<b>CP721-12025</b>	12	4.5	15	10	M10×1.5 Depth 3.5	8.5	6	CP726-12025
<b>CP721-15032</b>	15	7.5	20	15	M12×1.75Depth 4.5	10.2	16	CP726-15032
<b>CP721-20045</b>	20	10	30	20	M16×2 Depth 5.5	14	47	CP726-20045

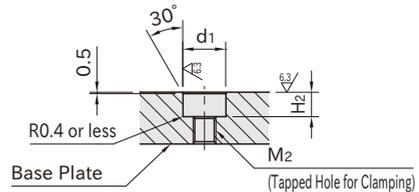
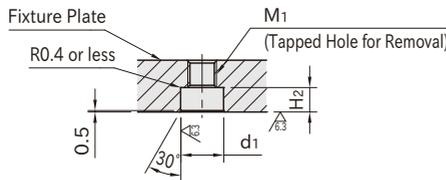
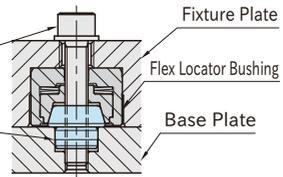
### How To Use

#### ■ Mounting Hole Dimensions for Press Fit

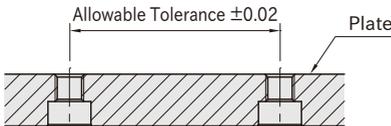
Installation of the Flex Locator Pins on the Fixture Plate



Installation of the Flex Locator Pins on the Base Plate



#### ■ Spacing Tolerance

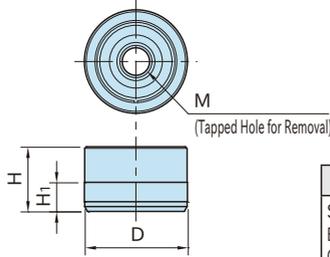


Part Number	d <sub>1</sub> (H6)	H <sub>2</sub>	M <sub>1</sub>	M <sub>2</sub>
<b>CP721-12025</b>	12	5.5	M 8×1.25	M 6×1
<b>CP721-15032</b>	15	8.5	M10×1.5	M 8×1.25
<b>CP721-20045</b>	20	11	M14×1.5	M10×1.5 M12×1.75

### Reference

- How To Install FLEX LOCATORS (Through)
- How To Use FLEX LOCATORS (Through)

**CP726**    **FLEX LOCATOR BUSHINGS (Through)**



Body	Tapered Bushing
SCM440 steel Black Oxide Finished Quenched & Tempered	SCM440 steel Nitrocarburized

Part Number	D	H	H <sub>1</sub>	M	Lifting Force (N)*	Weight (g)
<b>CP726-12025</b>	25 (+0.028 / +0.018)	16	8	M 8X1.25 (Prepared Hole φ 6.8)	540	46
<b>CP726-15032</b>	32 (+0.031 / +0.021)	20	9	M10X1.5 (Prepared Hole φ 8.5)	600	92
<b>CP726-20045</b>	45 (+0.031 / +0.021)	26	11	M14X1.5 (Prepared Hole φ 12.5)	780	230

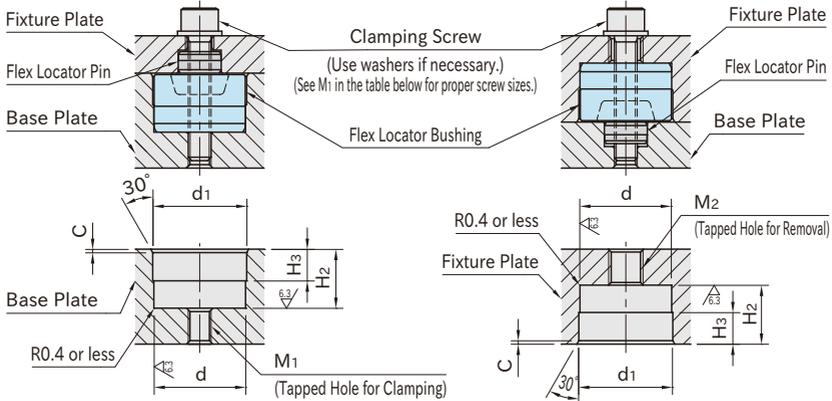
\* ) The lifting force is the power of the inner spring of the body to push up the movable tapered bushing.

**How To Use**

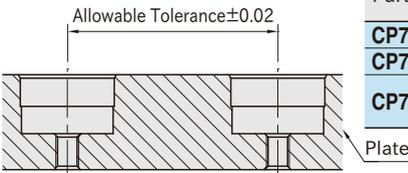
■ Mounting Hole Dimension for Press Fit

Installation of the Bushings on the Base Plate

Installation of the Bushings on the Fixture Plate



■ Spacing Tolerance



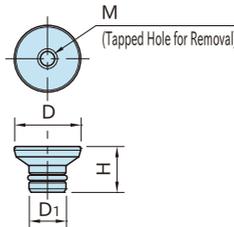
Part Number	d (H6)	H <sub>2</sub> (±0.05)	d <sub>1</sub>	H <sub>3</sub>	C	M <sub>1</sub>	M <sub>2</sub>
<b>CP726-12025</b>	25	16.5	25.2	8	1	M 6X1	M10X1.5
<b>CP726-15032</b>	32	20.5	32.2	11	1.2	M 8X1.25	M12X1.75
<b>CP726-20045</b>	45	26.5	45.2	15	1.5	M10X1.5 M12X1.75	M16X2

**Reference**

- How To Install FLEX LOCATORS (Through)
- How To Use FLEX LOCATORS (Through)

# CP726-P

## FLEX LOCATOR PROTECTING COVERS



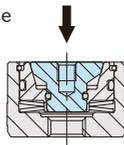
Body	O-Ring
A5056 aluminum Red	NBR nitrile rubber

Part Number	D	H	D <sub>1</sub>	M	Weight (g)	Proper Flex Locator Bushings
CP726-12025P	15	10	9	M4×0.7	2	CP726-12025
CP726-15032P	19	13	11	M5×0.8	5	CP726-15032
CP726-20045P	29	18	16	M6×1	17	CP726-20045

### How To Use

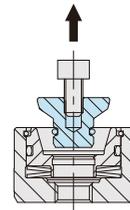
#### How to Install

Insert the product to the center hole of the Flex Locator Bushings and use it as a protective cover.



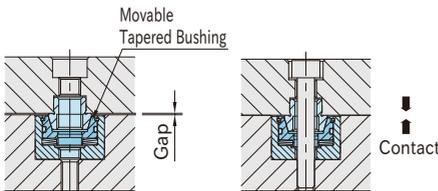
#### How to Remove

Insert a screw into the tapped hole and pull it out.



## How To Install FLEX LOCATORS (Through)

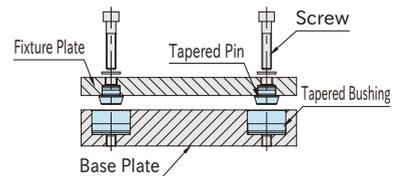
### Feature



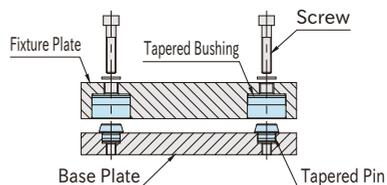
- When the fixture plate is lifted down, the tapered pin engages with the tapered receiver bushing.
- The movable tapered receiver bushing goes down by screwing the clamping screw and the fixture plate contacts with the base plate.

### How To Install

#### Bushings on Base Plate



#### Pins on Base Plate



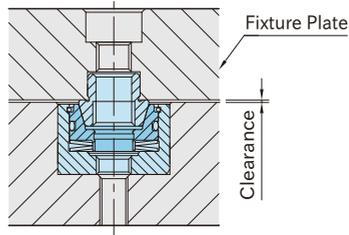
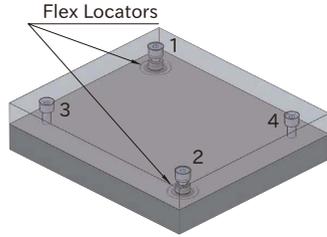
# How To Use FLEX LOCATORS (Through)

## Tightening Order

- 1.Ensure that each plate is in close contact. \*)
- 2.Tighten the screws temporarily in order of 1→2→3→4.  
For temporary tightening, the tightening torque should be approximately 50% of the final tightening.
- 3.Tighten the screws finally in order of 1→2→3→4.

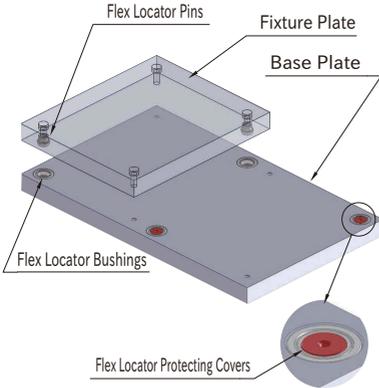
\*) The fixture plate may be pushed up by the lifting force of **CP726** Flex Locator Bushings. In such cases, tighten the screws loosely in order of 1→2→3→4, and make the each plate be in close contact with each other. Then tighten the screws temporarily. For the lifting force, see the measurement table of **CP726** Flex Locator Bushings.

If the screws are not tightened in the correct order, the locating repeatability may exceed 10 μm.

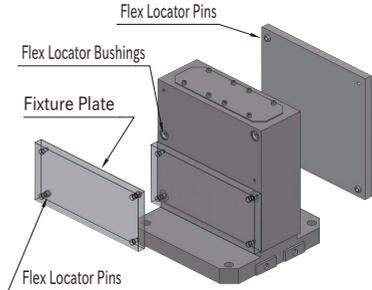


## How To Use

### Horizontal Assembly of Base Plate and Fixture Plate



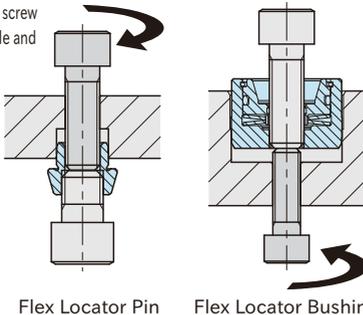
### Vertical Assembly of Base Plate and Fixture Plate



In vertical assembly, the locating repeatability may exceed 10 μm if the total weight exceeds the maximum loading weight

### How to Remove

For removal, insert screw into the tapped hole and screw it.



	Size	Max. Loading Weight(kg)
<b>CP721</b>	<b>12025</b>	150
<b>CP726</b>	<b>15032</b>	200
	<b>20045</b>	240

Note: The maximum loading weight is the entire sum of the weight of fixture plates, fixtures and workpieces.

Note: The maximum loading weight shown is the value when two sets of **CP721** Flex Locator Pins and **CP726** Flex Locator Bushings are used.



## FLEX ZERO BASES

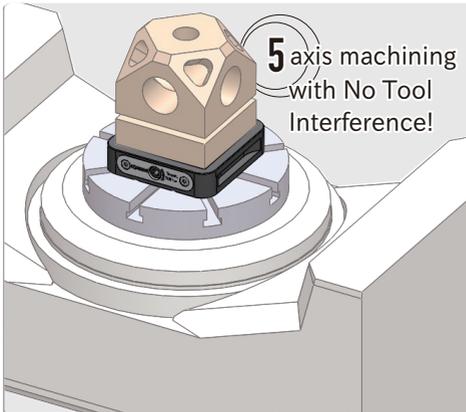


**12 kN**  
Clamping Force

**5 μm**  
Repeatability

# FLEX ZERO BASES

Powerfully clamp both workpiece or fixture.  
Pull clamp mechanism maximizes machining area.



CP180

FLEX ZERO BASES



CP180-1515-35

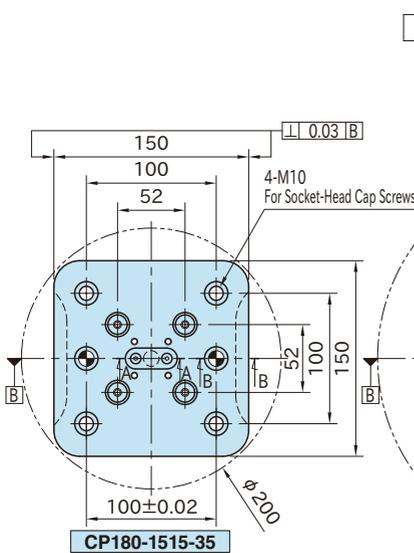


CP180-2424-35

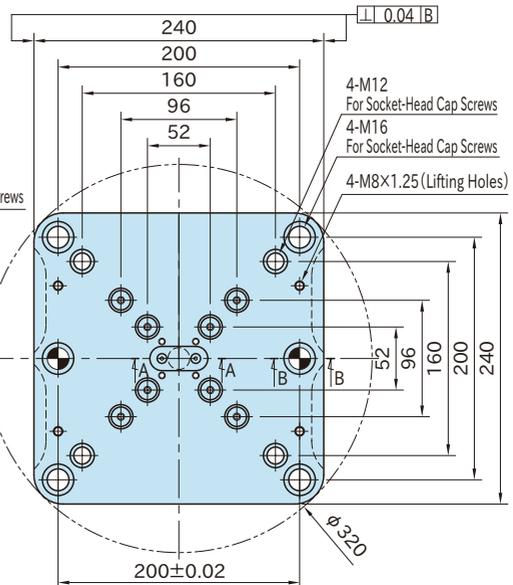
★Key Point

Clamp the fixture by single operation!

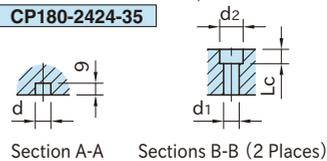
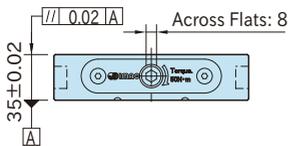
Body	Threaded Spindle	Clamping Socket
S50C steel Nitrocarburized HV 400 (Effective depth 0.1mm)	SCM440 steel Black oxide finished	S45C steel Black oxide finished



CP180-1515-35



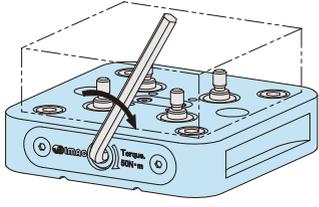
CP180-2424-35



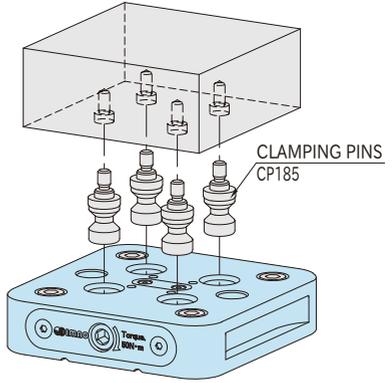
Part Number	d (H9)	d <sub>1</sub> (H9)	d <sub>2</sub>	Lc	Clamping Force (kN)	Allowable Tightening Torque (N·m)	Weight (kg)
CP180-1515-35	12	12	18	11	12	50	5
CP180-2424-35	18	18	26	17.5			13.5

## Feature

- Can be clamped by one operation.
- Pins are fully clamped by approx. 3 rotations of the clamping socket.

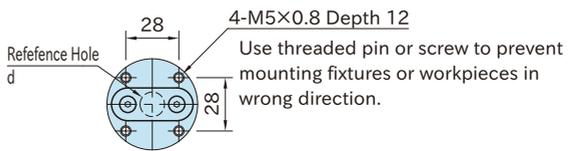
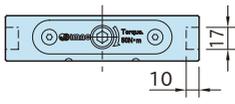
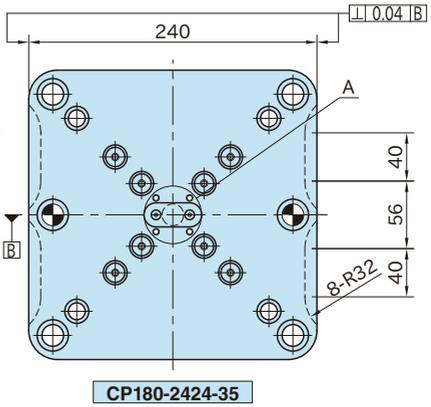
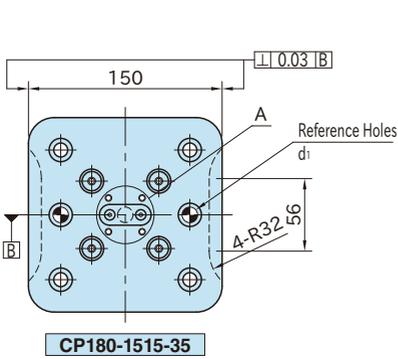


## How To Use



## How To Locate

Can be positioned by reference holes or finished side surfaces.

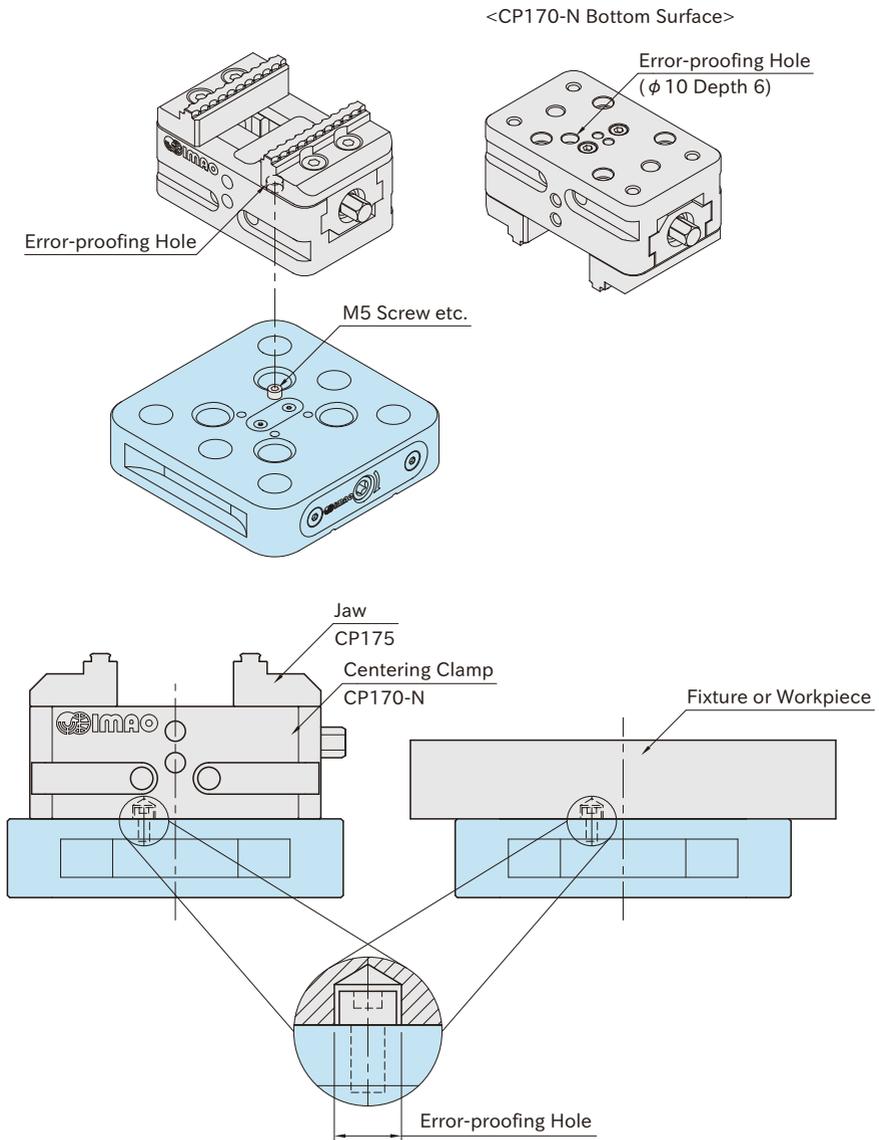


Enlarged View:A

Continuing on Next Page

## ■ Usage Example of Error-proofing Hole

Prepare a screw etc. on M5x0.8 Depth 12 hole on [CP180](#) Flex Zero Base to prevent mounting [CP170-N](#) Centering Clamp in wrong direction.



### Technical Information

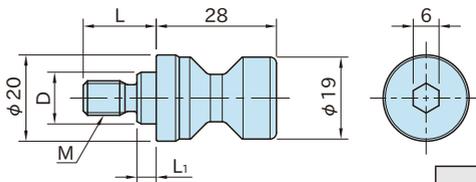
Repeatability: 5 μm

### Related Product

- [CP185](#) CLAMPING PINS
- [CP185-P](#) PROTECTING COVER
- [CP170-N](#) CENTERING CLAMPS

# CP185

# CLAMPING PINS



Body
SCM440 steel
Nitrocarburized

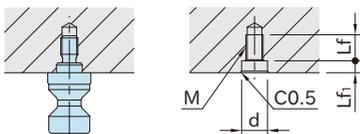
Part Number	M	D ( $-0.01$ $-0.03$ )	L <sub>1</sub>	L	Weight (g)
CP185-08001	M 8×1.25	12	4.5	17	57
CP185-10001	M10×1.5	16	5.5	20.5	66

### Note

Use 4 pins as a set for mounting.

### How To Use

#### ■ Mounting Hole Dimension



Part Number	d (H7)	Lf <sub>1</sub>	M	Lf
CP185-08001	12	5.5	M 8×1.25	12
CP185-10001	16	6.5	M10×1.5	16

### Related Product

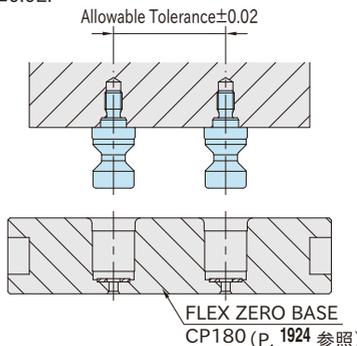
Can be used in combination with [CP170-N](#) CENTERING CLAMPS. (P. 2038 参照)



Usage example  
(CP170-08013N, CP185-08001x4pcs.)

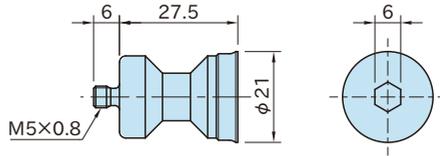
#### ■ Spacing Tolerance

Allowable tolerance of the mounting holes should be  $\pm 0.02$ .



**CP185-P**

**PROTECTING COVER**



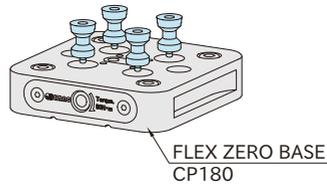
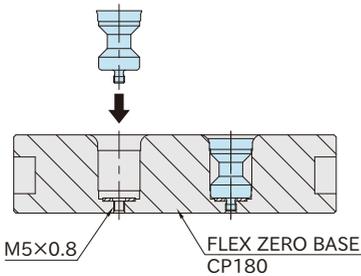
Body
S45C steel Electroless Nickel Plated

Part Number	Weight (g)
<b>CP185-2424P</b>	45

**How To Use**

**How To Mount**

Mount on the unused grid of FLEX ZERO BASE by hex. key as a protective cover.





## Quick Zero Setting Device



### Quick Zero Setting Device

Ideal dual-contact coupling with a polygonal taper saves manufacturing costs and improves your productivity.



High  
Precision

High  
Rigidity

Quick  
Change

#### Usabilities

- Precise fixture changes for wide-variety low-volume productions
- Precise machinings that require intermediate measurements

#### Usable on

- 5-axis machine
- Vertical M/C
- CNC Rotary table

**High Rigidity**

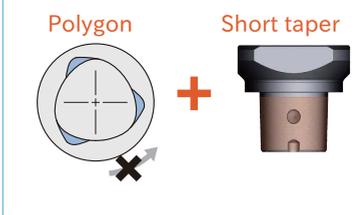
Ideal dual-contact of a polygonal taper provides high bending rigidity and high torsional rigidity.

Compared to HSK shank(HSK-A63)  
Bending/torsional rigidity is **more than double!**

Bending rigidity



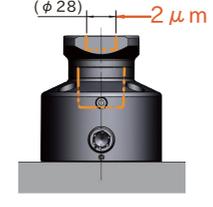
Torsional rigidity



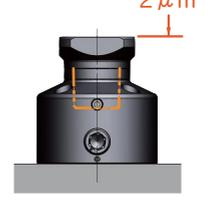
**High Precision**

Provides accurate positioning with high repeatability and no need of centering.

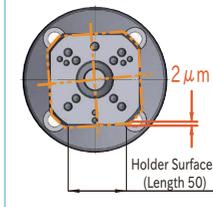
Center



Height



Angle



**Quick Change**

Holder can be locked/ unlocked with a hex wrench. Easy settings for everyone. Saves lots of time for setups.

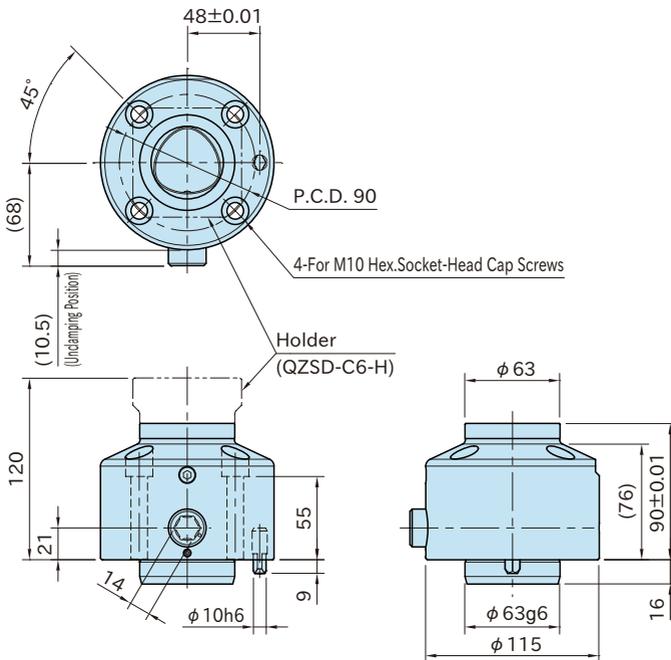


## QZSD-C6-B

## BASE (QUICK ZERO SETTING DEVICE)



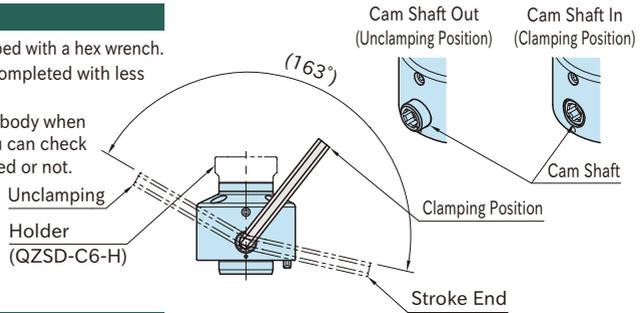
Body	Cam Shaft
SCM420 steel	SCM435 steel
Carburized-hardened	Quenched and tempered
Black oxide finished	Black oxide finished



Part Number	Clamping Force(kN)	Allowable Tightening Torque(N·m)	Weight (kg)
QZSD-C6-B	30	100	5.2

## Feature

- Holder can be clamped / unclamped with a hex wrench.
- Tightening / loosening can be completed with less than 180° turn.
- The cam shaft comes out of the body when the holder is unclamped. So you can check visually if the holder is unclamped or not.

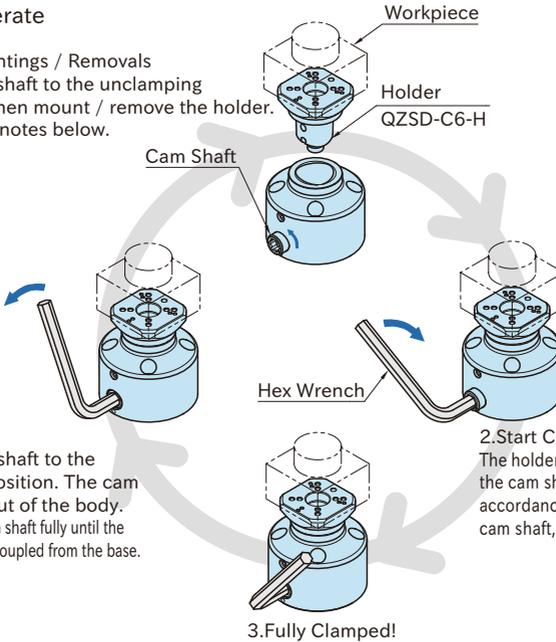


## How To Use

### How to Operate

#### 1. Holder Mountings / Removes

Turn the cam shaft to the unclamping position and then mount / remove the holder.  
Note: See the notes below.



#### 4. Unclamping

Turn the cam shaft to the unclamping position. The cam shaft comes out of the body.  
Note: Turn the cam shaft fully until the holder is uncoupled from the base.

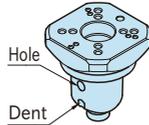
#### 2. Start Clamping

The holder is clamped by tightening the cam shaft with a hex wrench. In accordance with tightening of the cam shaft, it comes in the body.

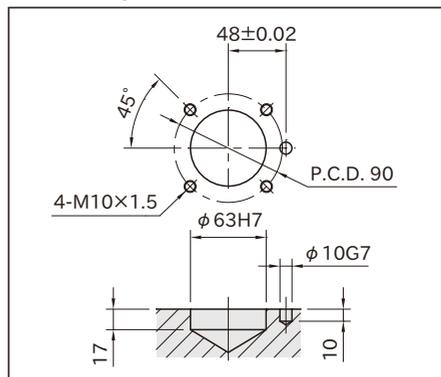
3. Fully Clamped!

### <Notes for Mountings/ Removals of Holder>

- Ensure that the cam shaft is come out of the body.
- Note to mount the holder by aligning its hole and dent to the cam shaft of the base.



### Mounting-Hole Dimension

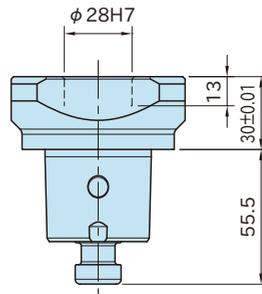
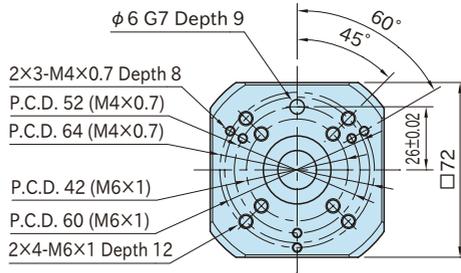


## Related Product

- **QZSD-C6-H** HOLDER (QUICK ZERO SETTING DEVICE)
- **QZSD-C6-P** PLATE (QUICK ZERO SETTING DEVICE)

# QZSD-C6-H

# HOLDER (QUICK ZERO SETTING DEVICE)



Body	Clamping Screw
SCM420 steel	SCM435 steel
Carburized-hardened	Quenched and tempered
Black oxide finished	Black oxide finished

Part Number	Weight (kg)
<b>QZSD-C6-H</b>	1.3

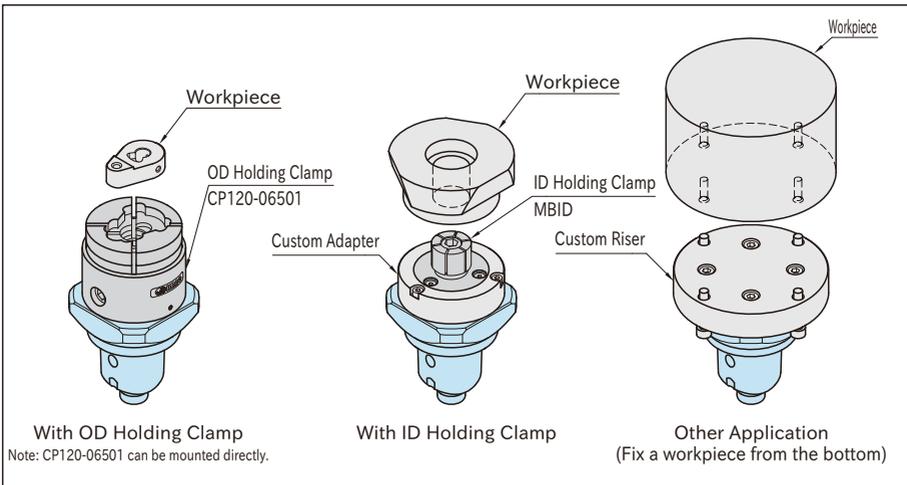
### Feature

- Tapped holes for mounting fixtures on the top face.
- **CP120**-06501 OD HOLDING CLAMPS can be mounted directly.

### Related Product

- **CP120** OD HOLDING CLAMP
- **MBID** ID HOLDING CLAMP
- **QZSD-C6-B** BASE (QUICK ZERO SETTING DEVICE)
- **QZSD-C6-P** PLATE (QUICK ZERO SETTING DEVICE)

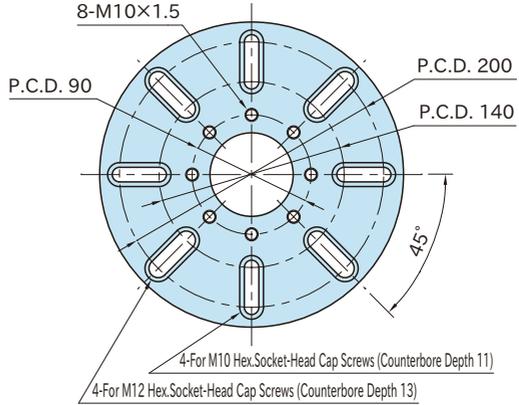
### Application Example



**QZSD-C6-P**

**PLATE (QUICK ZERO SETTING DEVICE)**

On Request 



<b>Body</b>
S45C steel
Black oxide finished
Precision ground

<b>Part Number</b>	<b>Weight (kg)</b>
QZSD-C6-P	6.3

**Feature**

- For mounting the device on machine tables with T-Slots.
- Mouning holes are M10 and M12 sizes.
- Custom plates are available on request.

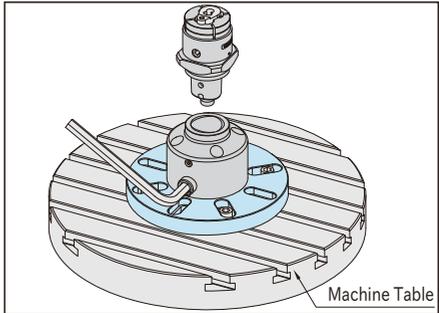
**Related Product**

- [QZSD-C6-B](#) BASE (QUICK ZERO SETTING DEVICE)
- [QZSD-C6-H](#) HOLDER (QUICK ZERO SETTING DEVICE)

**Note**

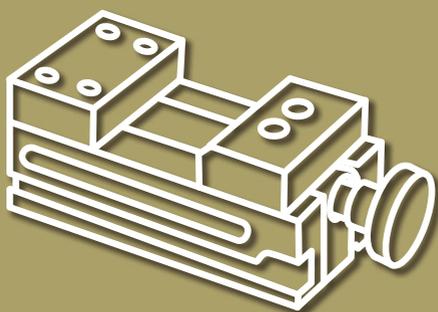
This plate is a non-stock item.

**How To Use**

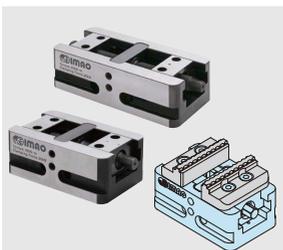
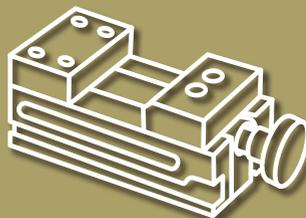




# VICES

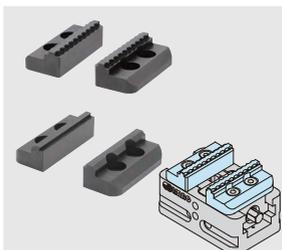


# VICES



CENTERING CLAMPS

Part No. CP170-N



JAWS

Part No. CP175

CENTERING CLAMP

Perfect Workholding for  
5-axis Machining!

**NEW**  
Short size of  
**130mm**  
is newly  
available!



**IMAO**  
Torque. 100N·m  
Clamping Force. 20kN

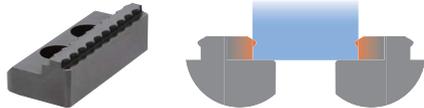
**NEW**  
**Reversible  
jaws**  
enable clamping  
various workpiece  
sizes!

Clamping unit for machining full sides of the workpiece  
Ideal for 5-axis machining center or rotary table!

CENTERING CLAMP



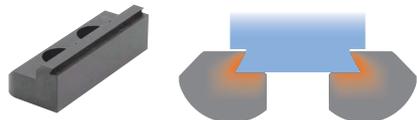
Serrated Jaw



The jaw has serrated edges on both sides.



Dovetail Jaw



# CP170-N

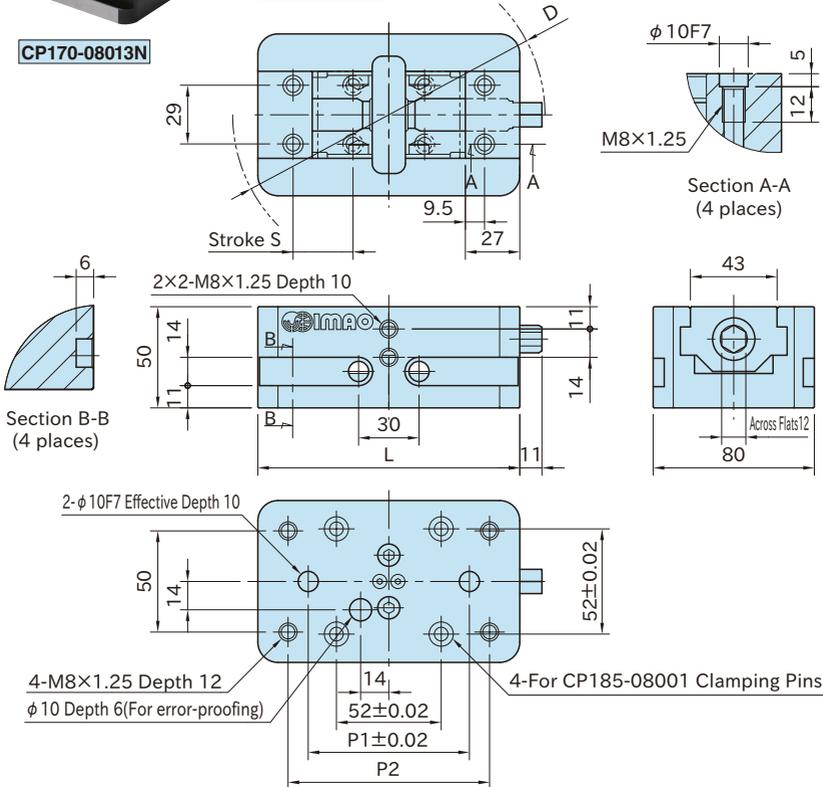
# CENTERING CLAMPS



Body	Jaws Bases
SCM440 steel Induction hardened Black oxide finished Precision ground	SCM440 steel Black oxide finished

**CP170-08013N**

**CP170-08017N**



Part Number	D	L	P <sub>1</sub>	P <sub>2</sub>	S	Allowable Tightening Torque (Nm)	Weight (kg)
<b>CP170-08013N</b>	160	130	80	100	29.7	100	3.1
<b>CP170-08017N</b>	195	170	120	120	49.7		3.9

Part Number	Proper Jaws			
	Serrated Jaws		Dovetail Jaws	
	Part Number	Clamping Force (kN)	Part Number	Clamping Force (kN)
<b>CP170-08013N</b>	<b>CP175-08001RS</b>	20	<b>CP175-08001D</b>	20
<b>CP170-08017N</b>				

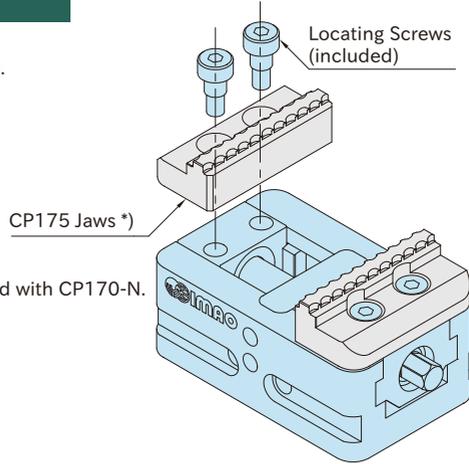
## Feature

Manual compact self-centering vise.  
Recommended machining allowance is 0.4mm or more per side of the workpiece.

## How To Use

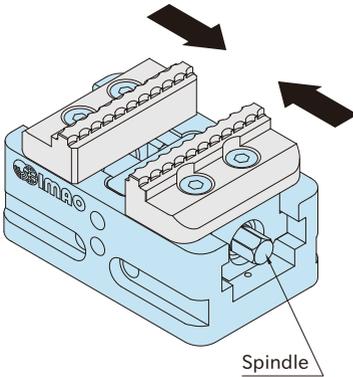
### How to Mount Jaws

- Mount Jaws to the jaw bases of CP170-N.
- Use included locating screws to fix Jaws.



\*) Jaws are not supplied with CP170-N.

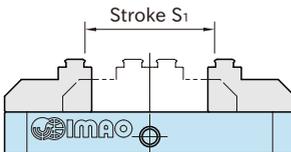
### How to Operate



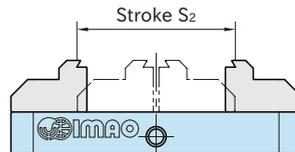
- Both jaws move inward to the center by turning the spindle clockwise.
- Both jaws move outward from the center by turning the spindle counterclockwise.

### Stroke

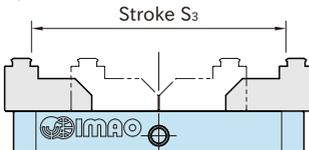
With CP175-08001RS Serrated Jaws



With CP175-08001D Dovetail Jaws



With Reversely (Inside-out) Mounted CP175-08001RS Serrated Jaws



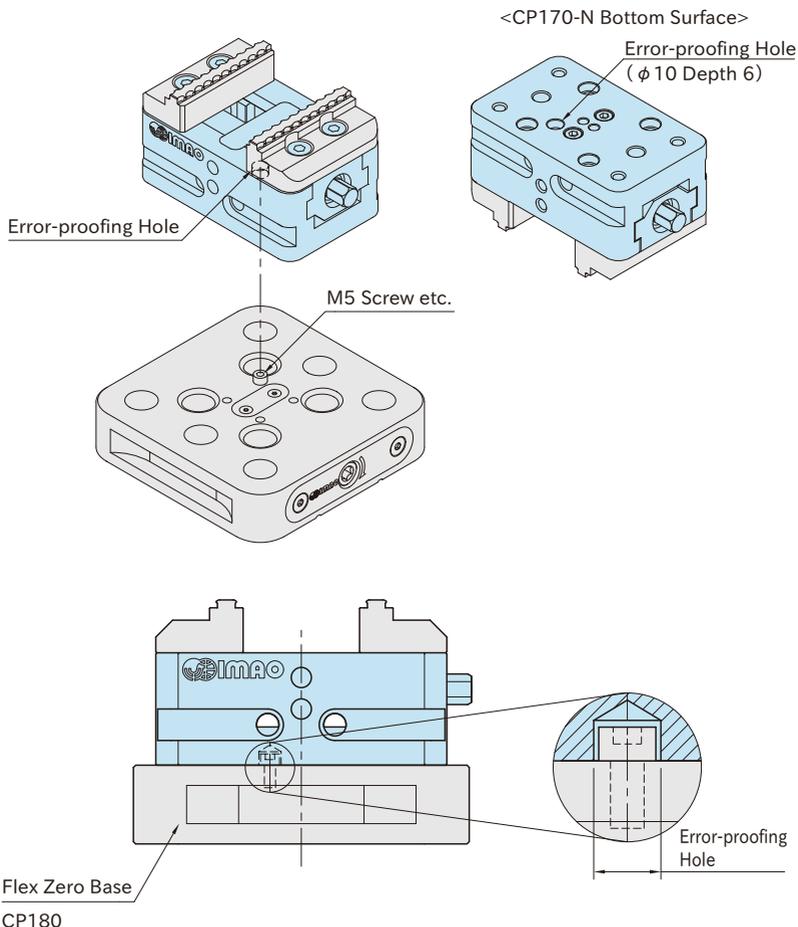
Part Number	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>
<b>CP170-08013N</b>	6 - 58	11.5 - 71	54.5 - 114
<b>CP170-08017N</b>	6 - 98	11.5 - 111	54.5 - 154

\*) The maximum rotation diameter is the dimension D in the chart on previous page.

Continuing on Next Page

■ Usage Example of Error-proofing Hole

Prepare a screw etc. on M5x0.8 Depth 12 hole on **CP180** Flex Zero Base to prevent mounting **CP170-N** Centering Clamp in wrong direction.



**Supplied With**

4 of Locating Screw for jaw mounting.

**Related Product**

- **CP175** JAWS
- **CP180** FLEX ZERO BASES
- **CP185** CLAMPING PINS

CP175

JAWS

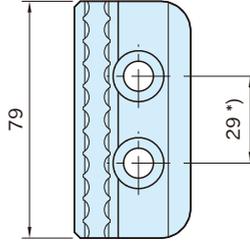


CP175-08001RS (Serrated)

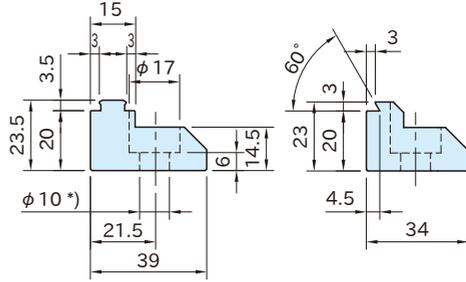


CP175-08001D (Dovetail)

Part Number	Type	Weight (g)
CP175-08001RS	Serrated	710
CP175-08001D	Dovetail	600



Body
SCM440 steel
Quenched & tempered
Black oxide finished



CP175-08001RS

(Serrated)(2 pcs. as a set)

CP175-08001D

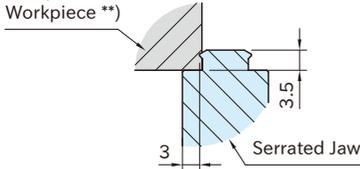
(Dovetail)(2 pcs. as a set)

How To Use

Use as jaws of CP170-N Centering Clamps.

Serrated Jaw

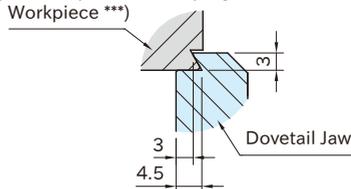
The serrated tips bite into workpiece and clamp powerfully.



\*\*) Workpiece hardness should be HRC38 or less for use of serrated jaw.

Dovetail Jaw

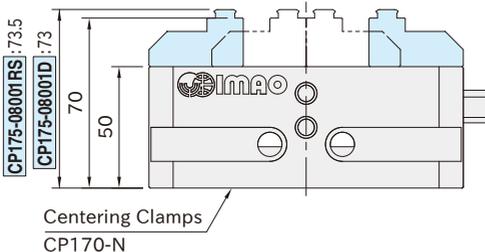
Dovetail jaw holds workpiece at two surfaces and provides positive clamping.



\*\*\*) Preparation of dovetail groove on workpieces is required. Usable as edge clamping jaws without dovetail preparation.

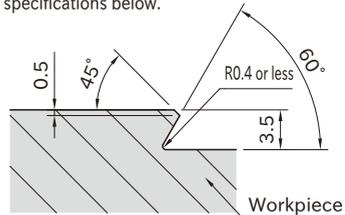
Technical Information

Dimensions of Centering Clamps with Jaws



Dovetail groove preparation

Machine dovetail grooves on workpiece to the specifications below.





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