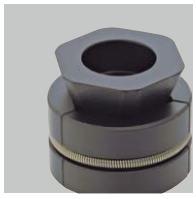
Value Creator
IMAO



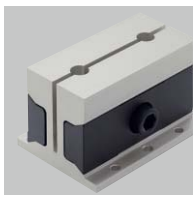
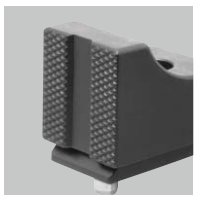



# Standard Fixture Components





**IMAO CORPORATION** offers a wide variety of quality easy-to-handle fixture components. **IMAO** unique fixture components satisfy different workholding needs, for better solutions.


IMAO CORPORATION

# Any Tools Needed? No Need!

Just Turn the Handle!

Good Design
GOOD DESIGN AWARD 2006

# ONE-TOUCH CLAMPS

for Better Efficiency and Lower Costs

## Quick Manual Clamping 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 serve for various applications in machining, assembly, testing and inspection, in different industries.**

Automobiles | Industrial Machines | Office Machines | Semiconductor Parts | Audiovisual Apparatus

**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 (Mini)

SWING CLAMPS (Mini) WITH CAM HANDLE

SWING CLAMPS WITH ADJUSTABLE HANDLE

SWING CLAMPS (Mini) FOR TORQUE CONTROL

SWING CLAMPS (Standard)

SWING CLAMPS (Heavy)

RETRACTABLE CLAMPS (Mini) WITH CAM HANDLE

RETRACTABLE CLAMPS (Mini) WITH ADJUSTABLE HANDLE

THRUST CLAMPS (Vertical)

## Side-Push

CAM EDGE CLAMPS

SIDE CLAMPS

LOW-PROFILE CAM EDGE CLAMPS

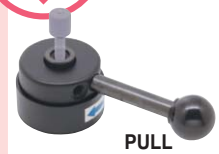
PRECISION THRUST CLAMPS

THRUST CLAMPS

SIDE CLAMPS(Standard)

CAM PUSH CLAMPS

## Pull-Down



PULL CLAMPS

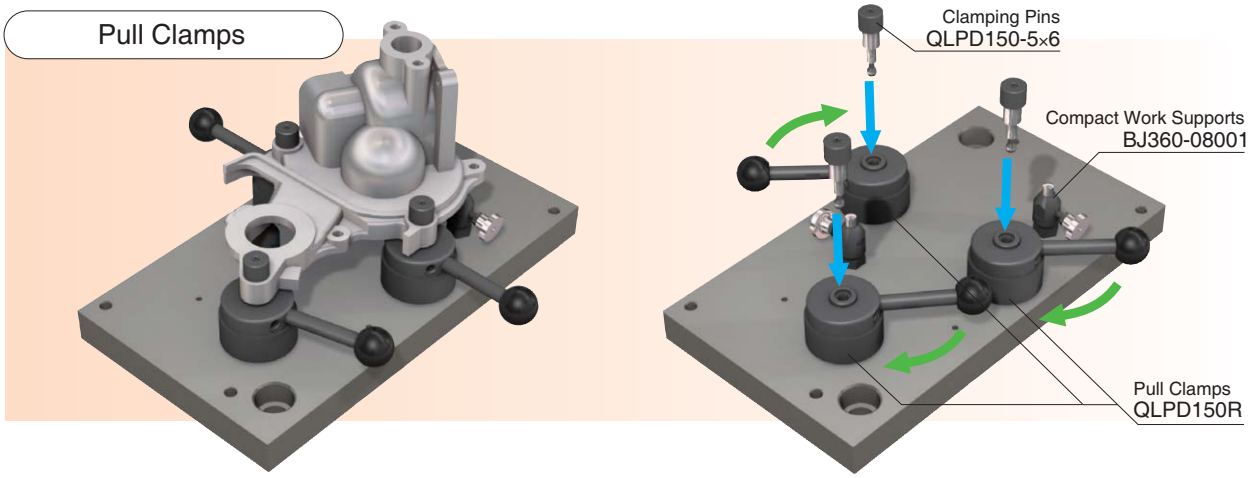
16--$-".14 )FBWZ

## Push-Up

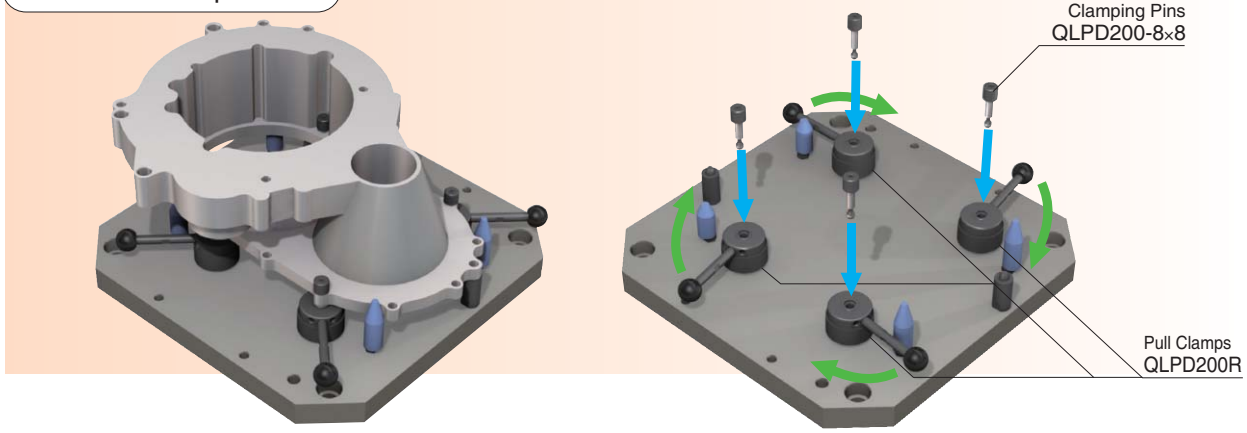
PUSH CLAMPS (Standard)

Application Examples

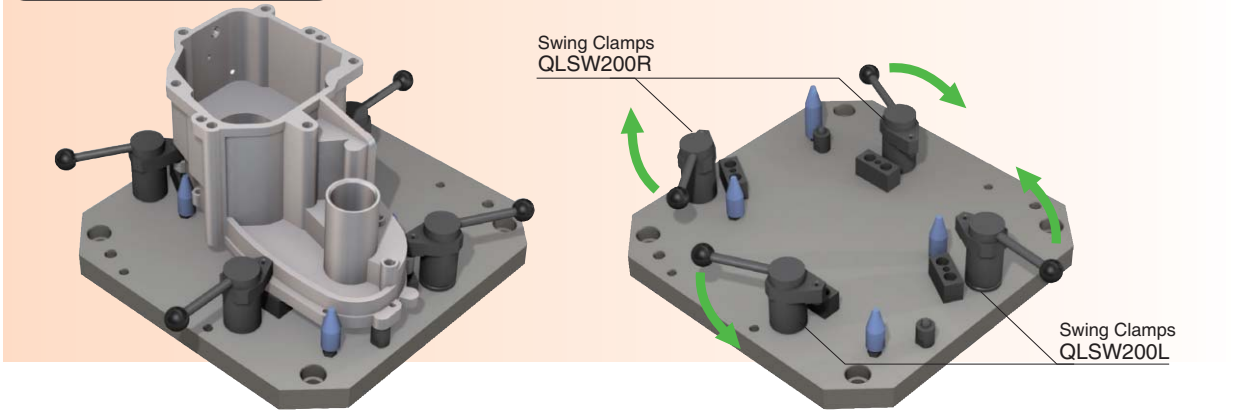
## Pull Clamps




## Pull Clamps



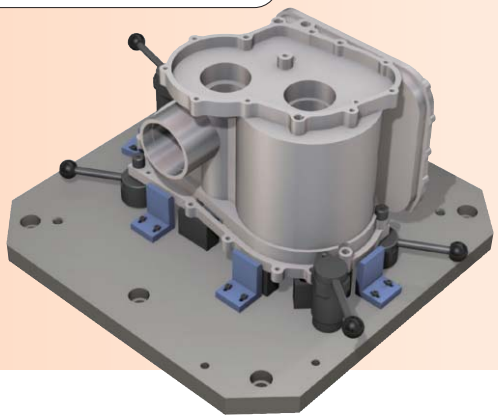

## Swing Clamps

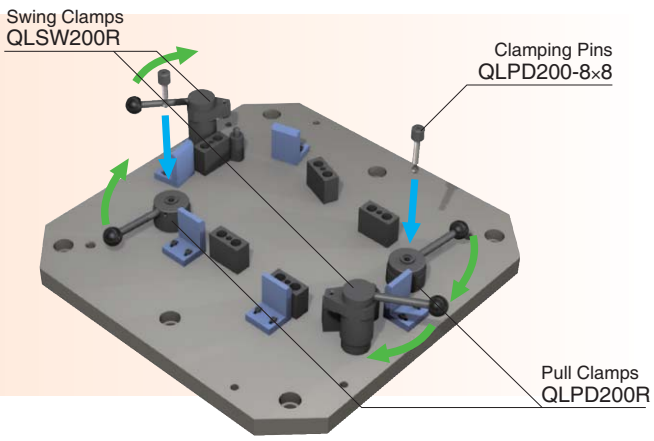



### Photos of Actual Examples Swing Clamps

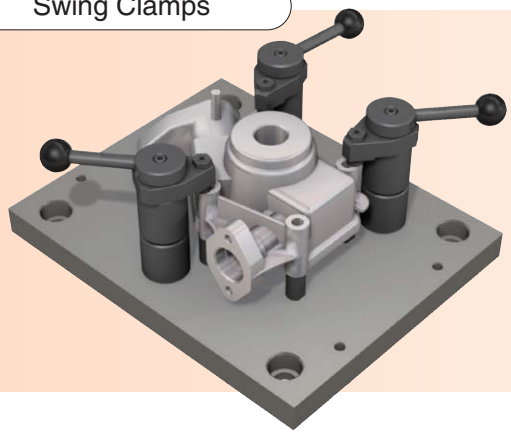
Application Examples

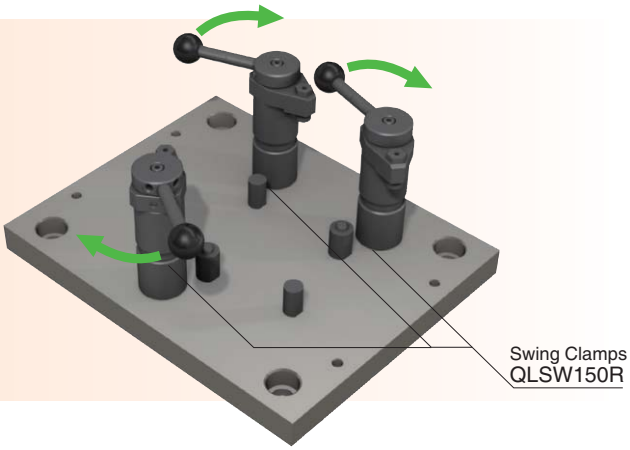
## Swing Clamps



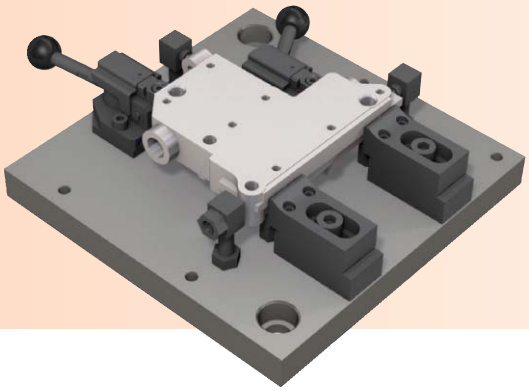


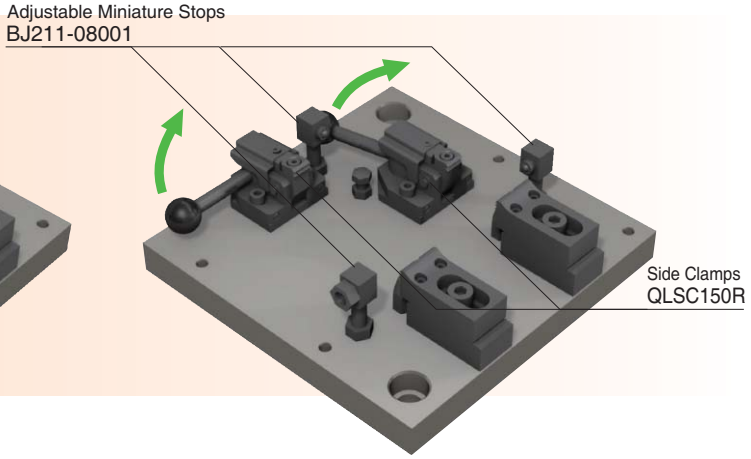

## Swing Clamps





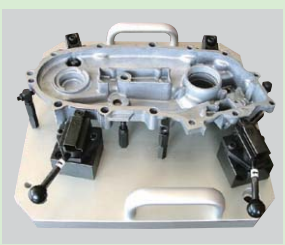

## Side Clamps

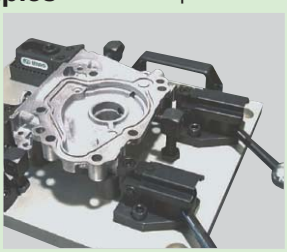





### Photos of Actual Examples Swing Clamps

### Photos of Actual Examples Side Clamps





IMAO Products

# QLSWC - Swing Clamps (Mini)

(Black Oxide Finish)

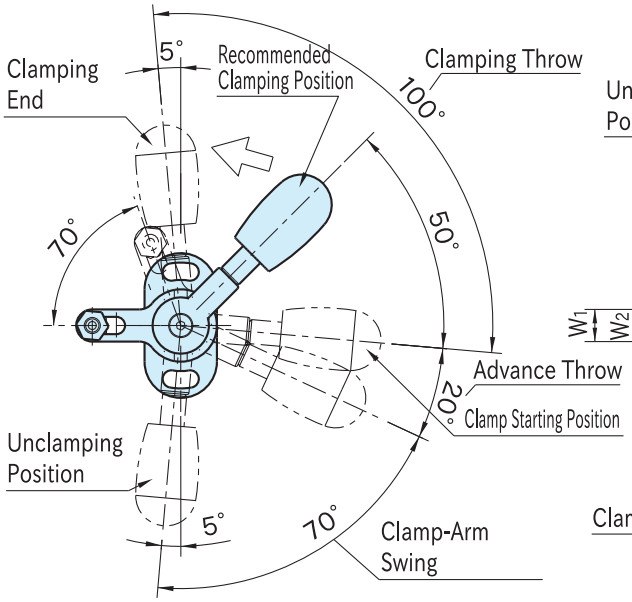
(Electroless Nickel Plated)

On Request

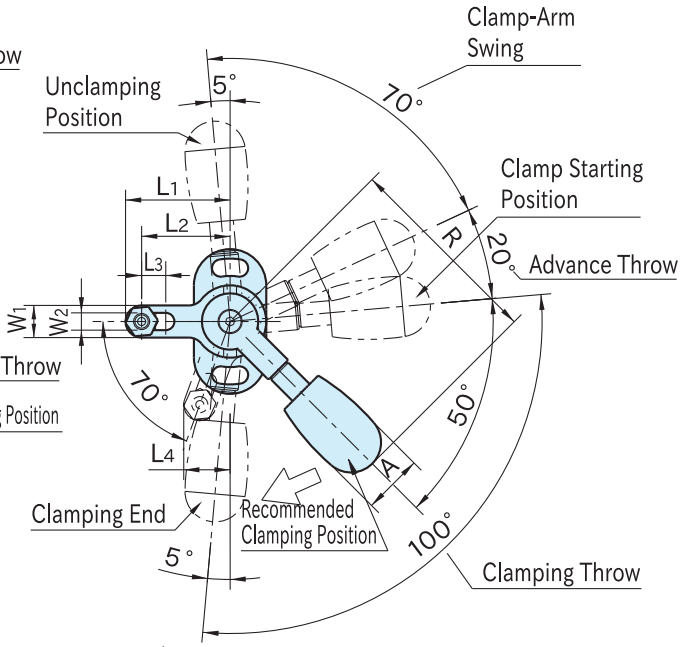
GOOD DESIGN

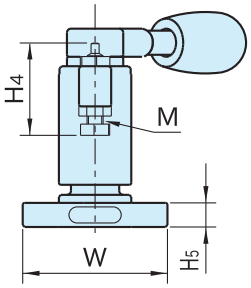
| Type | Body/Handle/Clamping Spindle | Arm | Cam Shaft | Knob |
|---|---|---|---|---|
| QLSWC | Steel (S45C)<br>Quenched and tempered<br>Black oxide finish | SCM440<br>Quenched and tempered<br>Black oxide finish | SCM415<br>Quenched and tempered<br>Black oxide finish | Phenolic plastic<br>Black |
|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

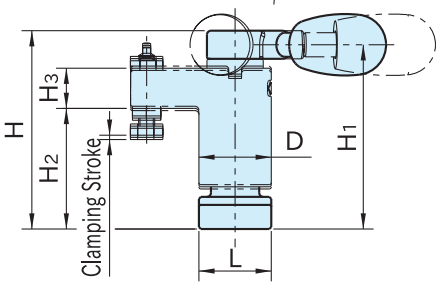
Counterclockwise Clamping

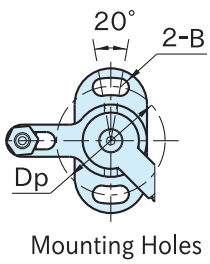



Clockwise Clamping



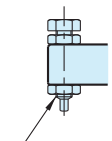



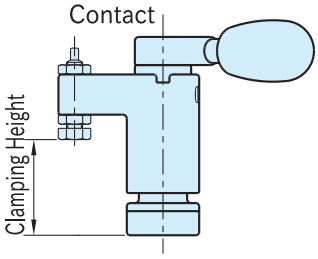



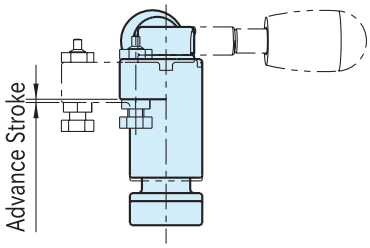

Mounting Holes

Rough Surface Contact




Finished Surface Contact




IMAO Products

Clamping Direction

| Part Number | | Clamping Height *) | | | | Clamping Stroke | Advance Stroke | $L_2$ | $L_3$ | $L_1$ | $L_4$ | W | L | $H_5$ | B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Finished Surface Contact | | Rough Surface Contact | | | | | | | | | | | |
| | | Min. | Max. | Min. | Max. | | | | | | | | | | |
| QLSWC100R | CW | 22.8 (22.3~23.3) | 24.8 (24.3~25.3) | 22.4 (21.9~22.9) | 24.4 (23.9~24.9) | 1 | 0.8 | 22 | 6 | 26 | 11.5 | 36 | 18 | 6 | 4.3 |
| QLSWC100L | CCW | | | | | | | | | | | | | | |
| QLSWC150R | CW | 31.3 (30.6~32) | 33.3 (32.6~34) | 32.2 (31.5~32.9) | 34.2 (33.5~34.9) | 1.4 | 1.1 | 30 | | 35 | 15.3 | 45 | 23 | 8 | 5.3 |
| QLSWC150L | CCW | | | | | | | | | | | | | | |
| QLSWC200R | CW | 32.5 (31.7~33.2) | 39 (38.2~39.7) | 33.5 (32.7~34.2) | 40 (39.2~40.7) | 1.5 | 1.4 | 37 | 8 | 45 | 20.7 | 65 | 30 | 12 | 8.4 |
| QLSWC200L | CCW | | | | | | | | | | | | | | |
| QLSWC300R | CW | 36.5 (35.5~37.4) | 46 (45~46.9) | 39 (38~39.9) | 48.5 (47.5~49.4) | 1.9 | 1.7 | 45 | | 55 | 25.4 | 85 | 40 | 15 | 10.5 |
| QLSWC300L | CCW | | | | | | | | | | | | | | |

| Part Number | Dp | H | D | $W_1$ | $W_2$ | $H_3$ | $H_2$ | M | $H_4$ | R | A | $H_1$ | Allowable Operating Load (N) **) | Clamping Force (N) | Clamping Mechanism |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QLSWC100R | 27 | 49 | 18 | 8 | 4.3 | 10 | 30 | M 4×0.7 | 22.8 | 50 | 15 | 45.8 | 100 | 1,100 | Spiral Cam Cam Angle:5° |
| QLSWC100L | | | | | | | | | | | | | | | |
| QLSWC150R | 34 | 66 | 23 | 10 | 5.3 | 14 | 40 | M 5×0.8 | 28.5 | 63 | 20 | 61.3 | 150 | 1,800 | |
| QLSWC150L | | | | | | | | | | | | | | | |
| QLSWC200R | 48 | 82 | 30 | 16 | 8.4 | 18 | 50 | M 8×1.25 | 45.5 | 80 | 26 | 76.5 | 200 | 2,200 | Spiral Cam Cam Angle:4° |
| QLSWC200L | | | | | | | | | | | | | | | |
| QLSWC300R | 64 | 100 | 40 | 20 | 10.4 | 22 | 60 | M10×1.5 | 57 | 100 | 33 | 93 | 300 | 3,500 | |
| QLSWC300L | | | | | | | | | | | | | | | |

*) Clamping height can be adjusted.The parenthesised values denote clamping height range.
**) Allowable load to operate the handle.

**QLSWC** (Black oxide finish)

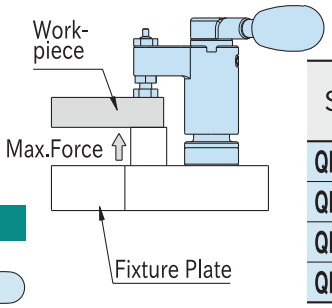
| Part Number | Weight (g) |
|---|---|
| QLSWC100R | 112 |
| QLSWC100L | |
| QLSWC150R | 250 |
| QLSWC150L | |
| QLSWC200R | 570 |
| QLSWC200L | |
| QLSWC300R | 1,200 |
| QLSWC300L | |

**QLSWC-NP** (Electroless nickel) On Request

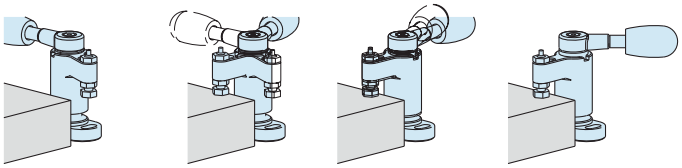
| Part Number | Weight (g) |
|---|---|
| QLSWC100R-NP | 112 |
| QLSWC100L-NP | |
| QLSWC150R-NP | 250 |
| QLSWC150L-NP | |
| QLSWC200R-NP | 570 |
| QLSWC200L-NP | |
| QLSWC300R-NP | 1,200 |
| QLSWC300L-NP | |

## 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.2,300N |
| QLSWC150 | max.3,600N |
| QLSWC200 | max.3,700N |
| QLSWC300 | max.5,600N |



1. Unclamped
Load or unload a part

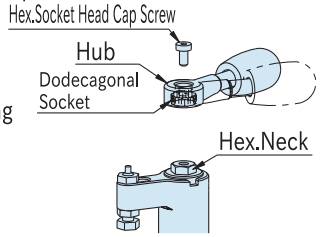
2. Arm Swing
Turn the handle to set the clamp arm in position.

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

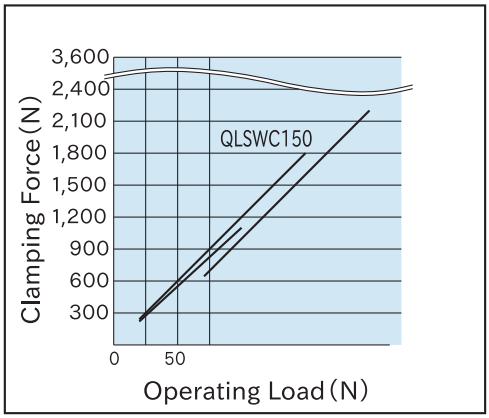
4. Clamping
Turn the handle to the recommended clamping position.

### How To Change Handle Position

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




## Performance Curve



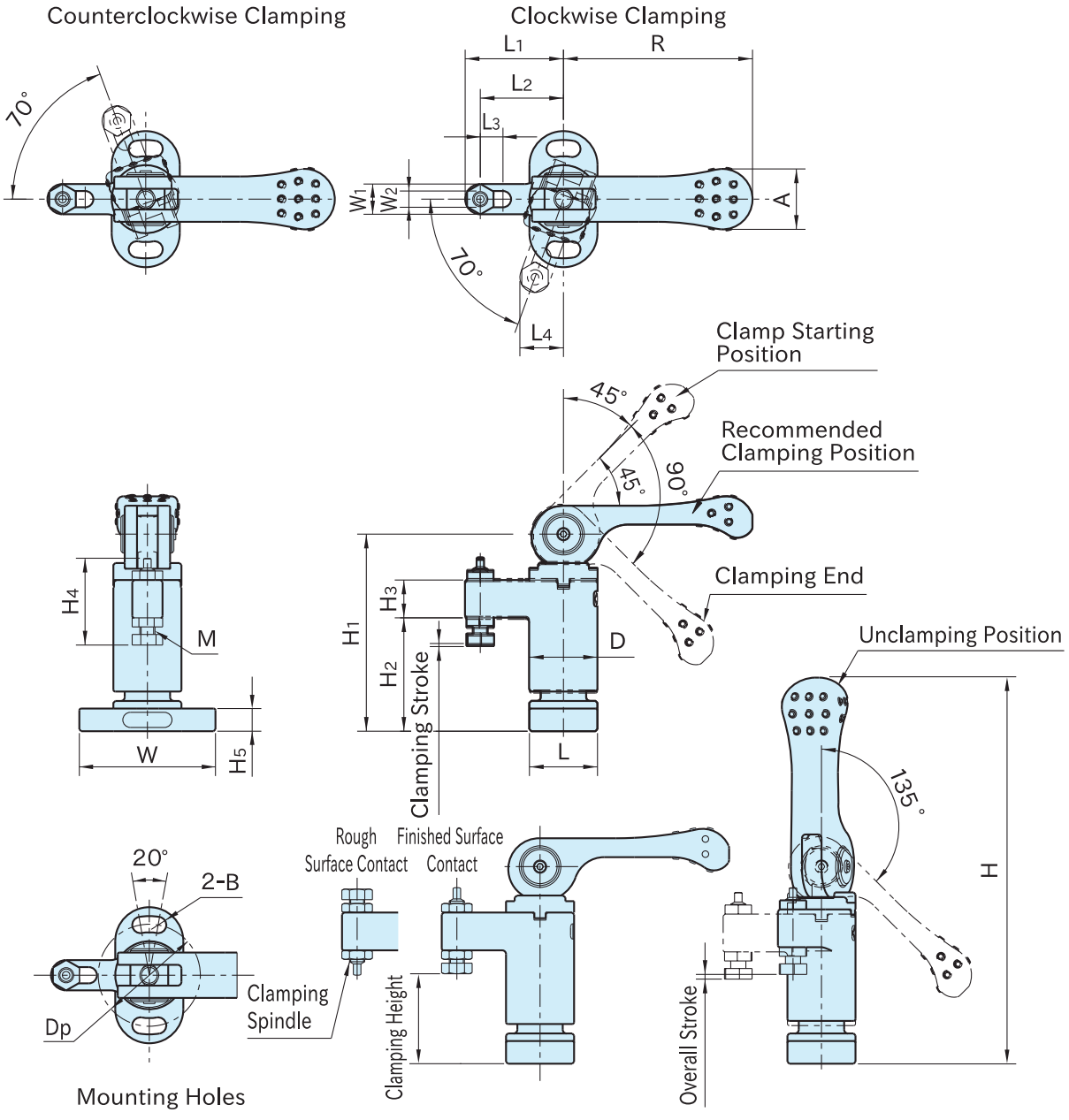
# QLSWC - Swing Clamps (Mini)
## With Cam Handle

(Black Oxide Finish)

(Electroless Nickel Plated)

On Request

| Style | Body/Washer/Clamping Spindle | Arm/Handle |
|---|---|---|
| QLSWC | Steel (S45C)<br>Quenched and tempered<br>Black oxide finish | Steel (SCM440)<br>Quenched and tempered<br>Black oxide finish |
| QLSWC-NP | Steel (S45C)<br>Quenched and tempered<br>Electroless nickel plated | Steel (SCM440)<br>Quenched and tempered<br>Electroless nickel plated |



| Part Number | Clamping Direction | Clamping Height *) Finished Surface Contact Min. | Finished Surface Contact Max. | Rough Surface Contact Min. | Rough Surface Contact Max. | Clamping Stroke | Overall Stroke | $L_2$ | $L_3$ | $L_1$ | $L_4$ | W | L | $H_5$ | B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QLSWC100VR | CW | 22.8 (22.4~23.2) | 24.8 (24.4~25.2) | 22.4 (22~22.8) | 24.4 (24~24.8) | 0.8 | 1.2 | 22 | 6 | 26 | 11.5 | 36 | 18 | 6 | 4.3 |
| QLSWC100VL | CCW | | | | | | | | | | | | | | |
| QLSWC150VR | CW | 31.3 (30.8~31.8) | 33.3 (32.8~33.8) | 32.2 (31.7~32.7) | 34.2 (33.7~34.7) | 1 | 1.5 | 30 | | 35 | 15.3 | 45 | 23 | 8 | 5.3 |
| QLSWC150VL | CCW | | | | | | | | | | | | | | |
| QLSWC200VR | CW | 32.5 (31.9~33.1) | 39 (38.4~39.6) | 33.5 (32.9~34.1) | 40 (39.4~40.6) | 1.2 | 1.8 | 37 | 8 | 45 | 20.7 | 65 | 30 | 12 | 8.4 |
| QLSWC200VL | CCW | | | | | | | | | | | | | | |
| QLSWC300VR | CW | 36.5 (35.7~37.2) | 46 (45.2~46.7) | 39 (38.2~39.7) | 48.5 (47.7~49.2) | 1.5 | 2.3 | 45 | | 55 | 25.4 | 85 | 40 | 15 | 10.5 |
| QLSWC300VL | CCW | | | | | | | | | | | | | | |

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

| Part Number | Dp | H | D | $W_1$ | $W_2$ | $H_3$ | $H_2$ | M | $H_4$ | R | A | $H_1$ | Cam Handles Part Number | Allowable Operating Load (N) **) | Clamping Force (N) | Clamping Mechanism |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QLSWC100VR | 27 | 102 | 18 | 8 | 4.3 | 10 | 30 | M 4X0.7 | 22.8 | 50 | 16 | 52 | QLCA-05 | 100 | 800 | 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 | 1,500 | |
| QLSWC150VL | | | | | | | | | | | | | | | | |
| QLSWC200VR | 48 | 167 | 30 | 16 | 8.4 | 18 | 50 | M 8X1.25 | 45.5 | 80 | 24 | 87 | QLCA-08 | 200 | 2,100 | |
| QLSWC200VL | | | | | | | | | | | | | | | | |
| QLSWC300VR | 64 | 207 | 40 | 20 | 10.4 | 22 | 60 | M10X1.5 | 57 | 100 | 30 | 107 | QLCA-10 | 300 | 2,800 | |
| QLSWC300VL | | | | | | | | | | | | | | | | |

**) Allowable load to operate the handle

**QLSWC**
(Black Oxide Finish)

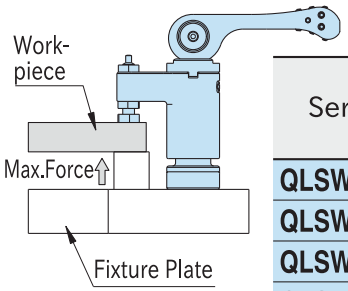
| Part Number | Weight (g) |
|---|---|
| QLSWC100VR | 134 |
| QLSWC100VL | |
| QLSWC150VR | 272 |
| QLSWC150VL | |
| QLSWC200VR | 625 |
| QLSWC200VL | |
| QLSWC300VR | 1,340 |
| QLSWC300VL | |

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

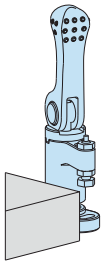
| Part Number | Weight (g) |
|---|---|
| QLSWC100VR-NP | 134 |
| QLSWC100VL-NP | |
| QLSWC150VR-NP | 272 |
| QLSWC150VL-NP | |
| QLSWC200VR-NP | 625 |
| QLSWC200VL-NP | |
| QLSWC300VR-NP | 1,340 |
| QLSWC300VL-NP | |

## Allowable Loads in Machining of Workpiece Bottom

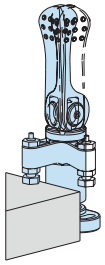
Ensure that any force more than stated below is not applied.



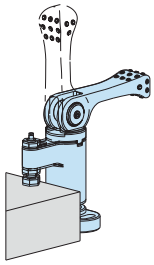

| Series | Allowable Force To Workpiece Bottom (Per Clamp) |
|---|---|
| QLSWC100 | Max.2,300N |
| QLSWC150 | Max.3,600N |
| QLSWC200 | Max.3,700N |
| QLSWC300 | Max.5,600N |



1.Unclamped
Load or unlaod a workpiece.

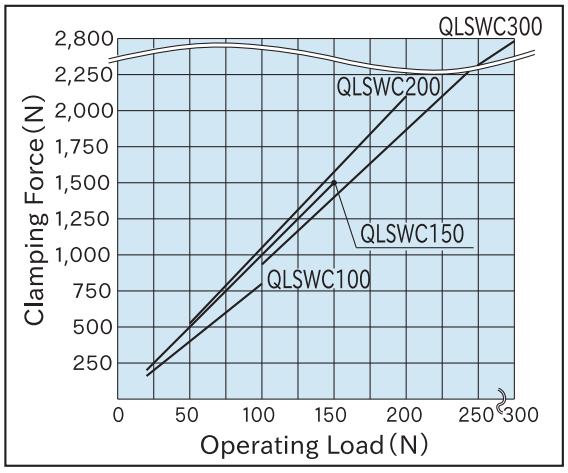


2.Arm Swing
Turn the handle to set the clamp arm in position.



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

## Performance Curve



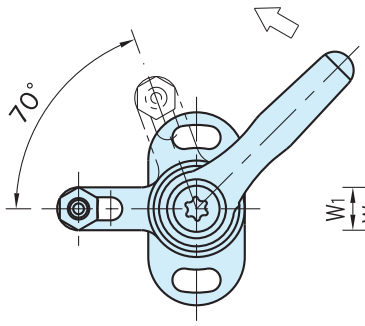

IMAO Products

# QLSWC - Swing Clamps
# With Adjustable Handle

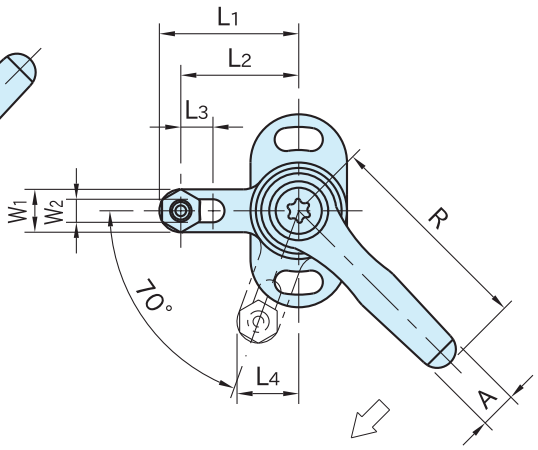
| Base/Washer/Clamping Spindle | Body | Handle |
|---|---|---|
| Steel (S45C)<br>Quenched and tempered<br>Black oxide finish | Steel (SCM440)<br>Quenched and tempered<br>Black oxide finish | ZDC1 die cast zinc<br>Coated with paint<br>Black |

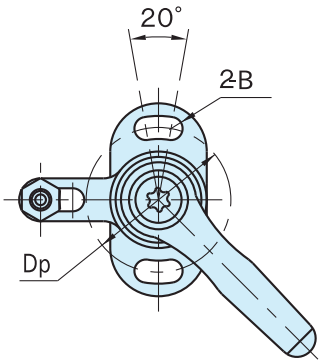
- Clamp worked by a screw-locking mechanism which allows providing longer clamping stroke and greater clamping force than a cam-locking mechanism.
- Operated by an adjustable handle that allows for flexible handle positioning.

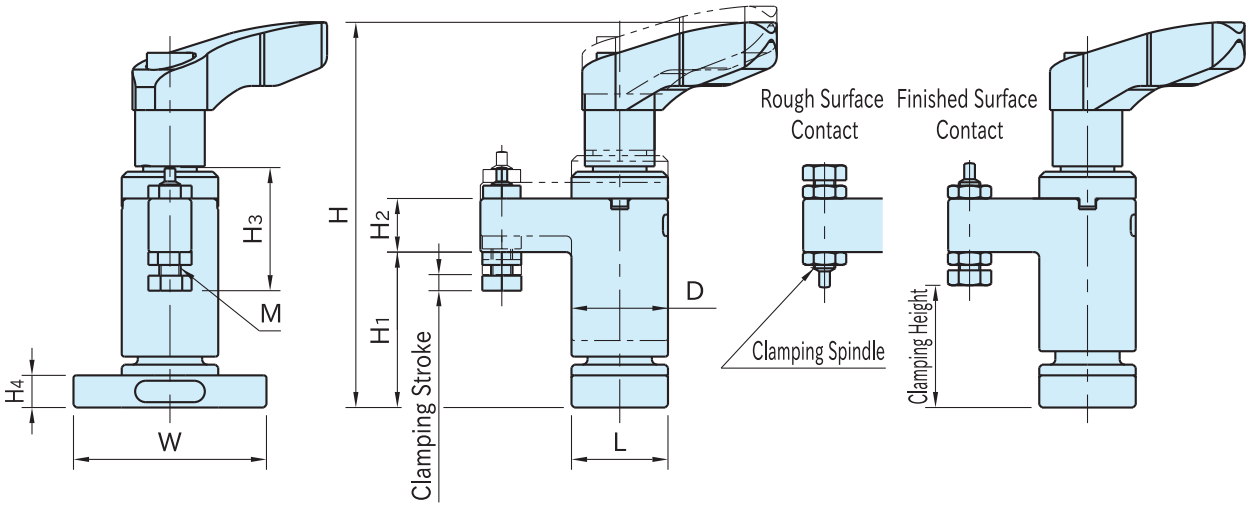
Counterclockwise Clamping




Clockwise Clamping



| Part Number | Clamping Direction | Clamping Height *) Finished Surface Contact Min. | Finished Surface Contact Max. | Rough Surface Contact Min. | Rough Surface Contact Max. | Clamping Stroke | $L_2$ | $L_3$ | $L_1$ | $L_4$ | W | L | $H_4$ | B | Dp |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QLSWC-0618KR | CW | 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 |
| QLSWC-0618KL | CCW | | | | | | | | | | | | | | |
| QLSWC-0823KR | CW | 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 |
| QLSWC-0823KL | CCW | | | | | | | | | | | | | | |
| QLSWC-1030KR | CW | 30.5 (30.5~34.5) | 37 (37~41) | 31.5 (31.5~35.5) | 38 (38~42) | | 37 | | 45 | 20.7 | 65 | 30 | 12 | 8.4 | 48 |
| QLSWC-1030KL | CCW | | | | | | | | | | | | | | |
| QLSWC-1240KR | CW | 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 |
| QLSWC-1240KL | CCW | | | | | | | | | | | | | | |

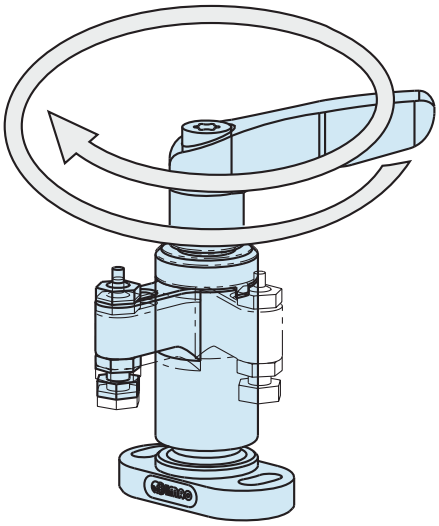
*) Clamping height can be adjusted. The parenthesised values denote clamping height range.

| Part Number | H | D | $W_1$ | $W_2$ | $H_2$ | $H_1$ | M | R | A | $H_3$ | Adjustable Handles | Allowable Operating Load (N) **) | Clamping Force (N) | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QLSWC-0618KR | 71.9 | 18 | 8 | 4.3 | 10 | 29 | M 4X0.7 | 40 | 7 | 22.8 | FKF 6-BR | 170 | 2,000 | 121 |
| QLSWC-0618KL | | | | | | | | | | | | | | |
| QLSWC-0823KR | 97.3 | 23 | 10 | 5.3 | 14 | 39 | M 5X0.8 | 65 | 9.5 | 28.5 | FKF 8-BR | | 3,200 | 276 |
| QLSWC-0823KL | | | | | | | | | | | | | | |
| QLSWC-1030KR | 122.3 | 30 | 16 | 8.4 | 18 | 48 | M 8X1.25 | 80 | 11 | 45.5 | FKF10-BR | 350 | 4,500 | 600 |
| QLSWC-1030KL | | | | | | | | | | | | | | |
| QLSWC-1240KR | 145.7 | 40 | 20 | 10.4 | 22 | 58 | M10X1.5 | 95 | 13 | 57 | FKF12-BR | 410 | 6,000 | 1,225 |
| QLSWC-1240KL | | | | | | | | | | | | | | |

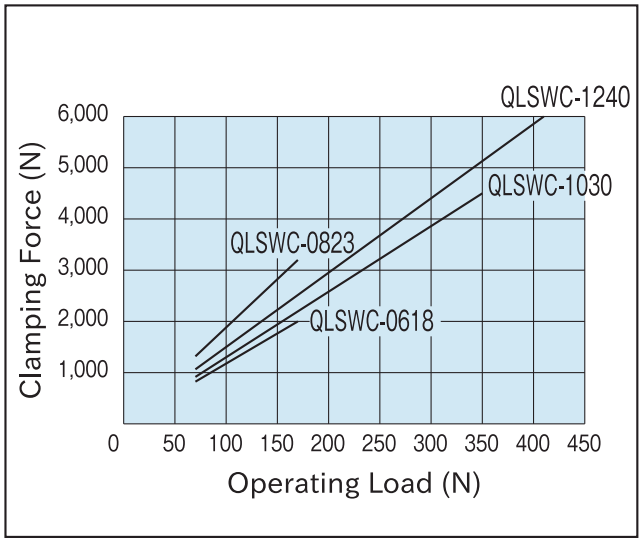
**) Allowable load to operate the handle.

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.

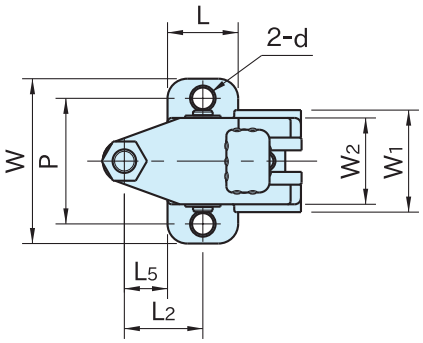


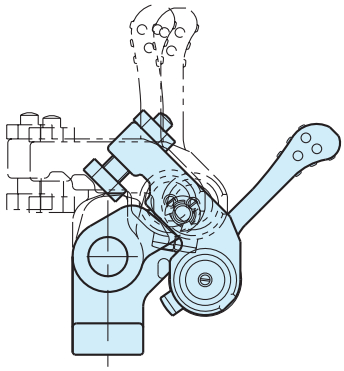
## Performance Curve



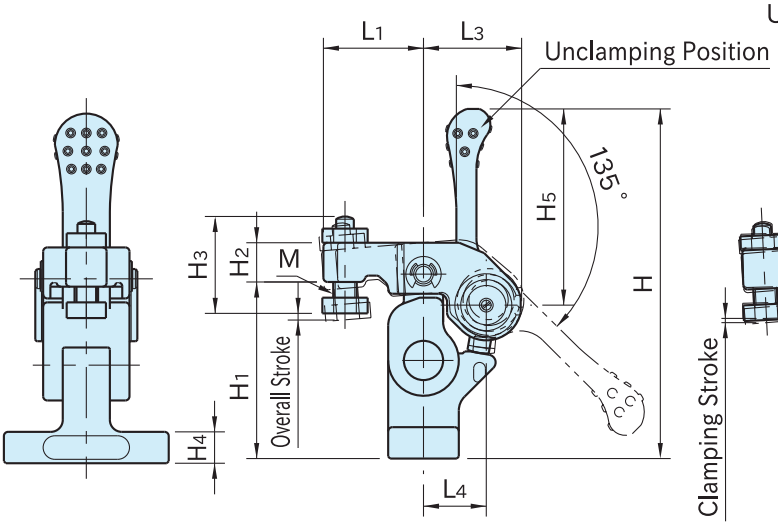
# QLRE - Retractable Clamps (Mini)
## With Cam Handle

| Body/Spindle | Arm/Joint | Cam Handle |
|---|---|---|
| Steel(S45C)<br>Quenched and tempered<br>Black oxide finish | Steel(SCM435)<br>Quenched and tempered<br>Black oxide finish | Steel(SCM440)<br>Quenched and tempered<br>Black oxide finish |

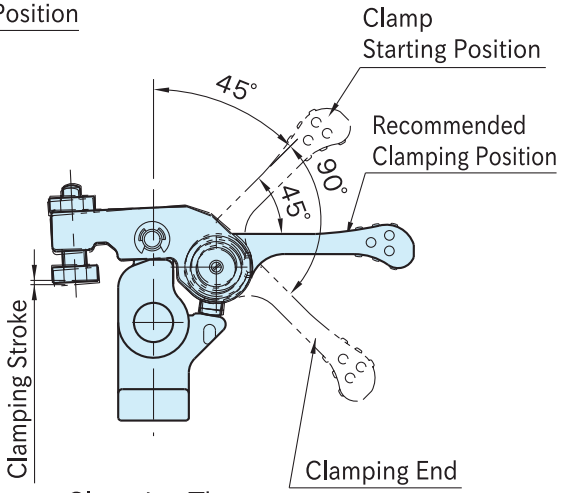


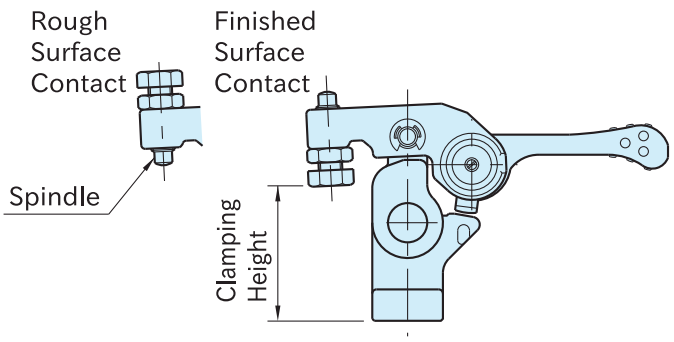
Unclamped




Clamping Position




Clamping Throw



| Part Number | Clamping Height *) | | | | Clamping Stroke | Overall Stroke | $L_2$ | $L_5$ | W | L | $H_4$ | d | P | H | $L_1$ | $L_3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Finished Surface Contact | | Rough Surface Contact | | | | | | | | | | | | | |
| | min. | max. | min. | max. | | | | | | | | | | | | |
| **QLRE100** | 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 |
| **QLRE150** | 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 |

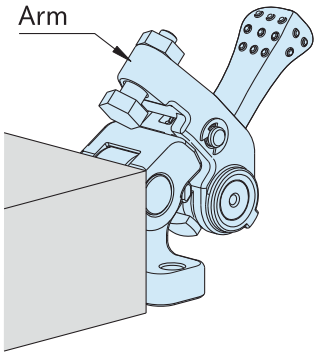
*)Clamping height can be adjusted. The parenthesised values denote actual clamping height.

| Part Number | $W_1$ | $W_2$ | $H_2$ | $H_1$ | M | $H_3$ | $H_5$ | $L_4$ | Cam Handles Part Number | Allowable Operating Load (N)**) | Clamping Force(N) | Clamping Mechanism | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **QLRE100** | 26 | 22 | 10 | 45 | M6×1 | 24 | 50 | 16 | QLCA-05 | 100 | 700 | Spiral Cam Cam Angle:4° | 244 |
| **QLRE150** | 32 | 28 | 12 | 55 | M8×1.25 | 30.5 | 63 | 20 | QLCA-06 | 150 | 1,100 | | 468 |

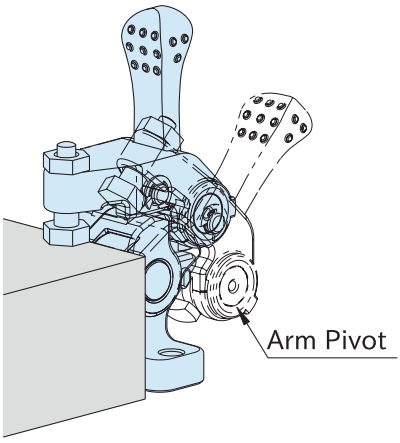
**)Allowable load to operate the handle

## How To Use

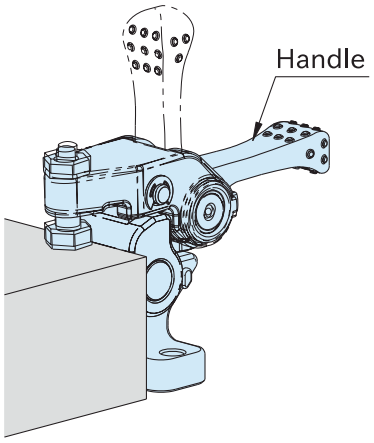
### How To Operate




1. Unclamped
Load a workpiece.




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

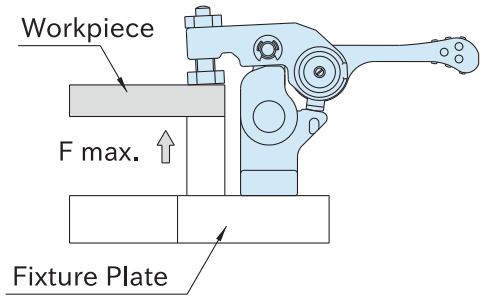



3. Clamping
Set the handle down to clamp the workpiece.
For unclamping, follow the above steps back.

## Technical Information

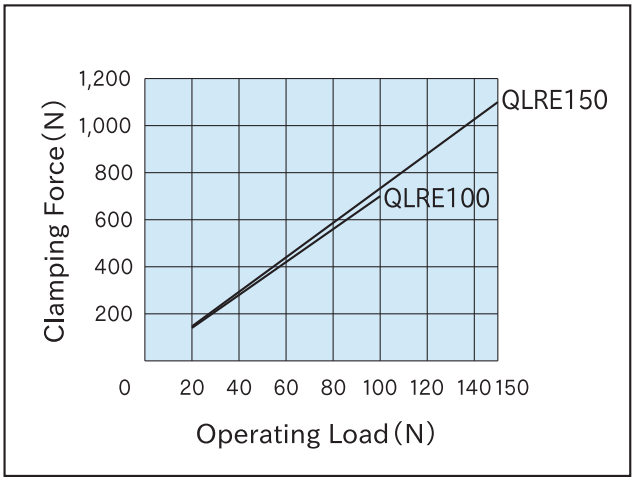
### Allowable Loads in Machining of Workpiece Bottom

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




| Part Number | Allowable Force to Workpiece Bottom (per Clamp) |
|---|---|
| **QLRE100** | max.5,000N |
| **QLRE150** | max.6,000N |

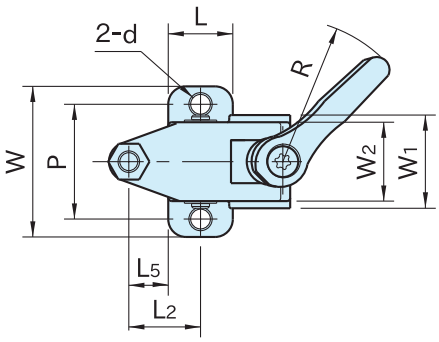
## Performance Curve

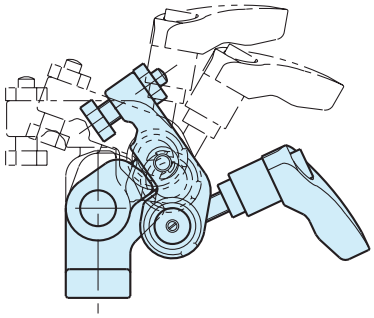


# QLRE - Retractable Clamps (Mini)
## With Adjustable Handle

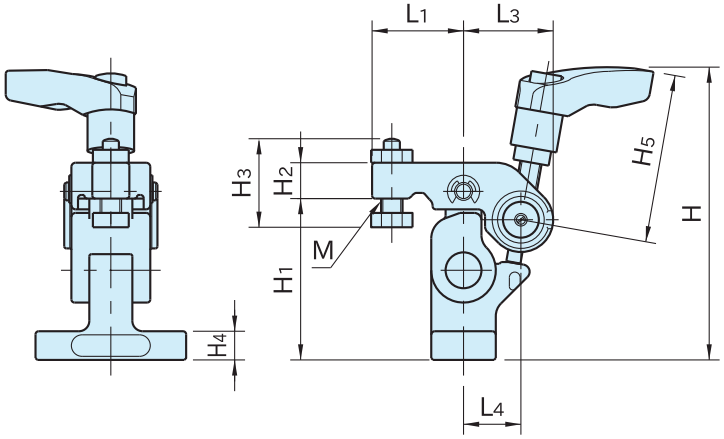
| Body/Spindle | Arm/Joint |
|---|---|
| Steel(S45C)<br>Quenched and tempered<br>Black oxide finish | Steel(SCM435)<br>Quenched and tempered<br>Black oxide finish |

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

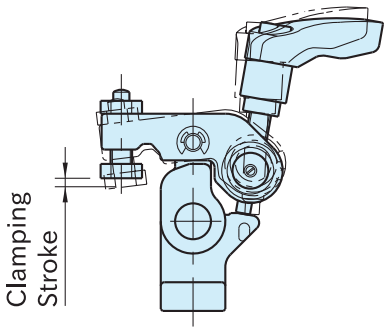


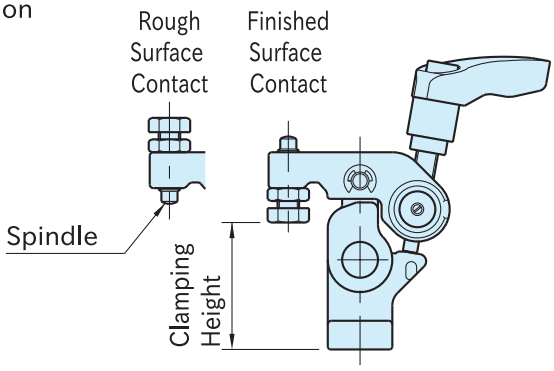
Unclamped




Clamping Position




Clamping Throw



| Part Number | Clamping Height *) | | | | Clamping Stroke | $L_2$ | $L_5$ | W | L | $H_4$ | d | P | H | $L_1$ | $L_3$ | $W_1$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Finished Surface Contact | | Rough Surface Contact | | | | | | | | | | | | | |
| | min. | max. | min. | max. | | | | | | | | | | | | |
| **QLRE-06** | 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 |
| **QLRE-08** | 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 |

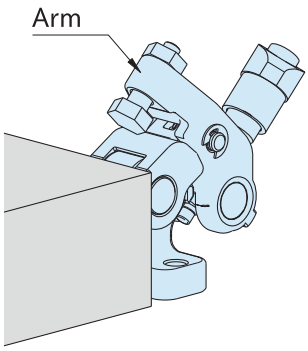
*)Clamping height can be adjusted. The parenthesised values denote actual clamping height.

| Part Number | $W_2$ | $H_2$ | $H_1$ | M | $H_3$ | R | $H_5$ | $L_4$ | Adjustable Handles | Allowable Operating Load (N)**) | Clamping Force (N) | Clamping Mechanism | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **QLRE-06** | 22 | 10 | 45 | M6×1 | 24 | 40 | 47 | 16 | FKF6-BR | 170 | 2,400 | Srew | 242 |
| **QLRE-08** | 28 | 12 | 55 | M8×1.25 | 30.5 | 65 | 63 | 20 | FKF8-BR | 210 | 4,200 | | 490 |

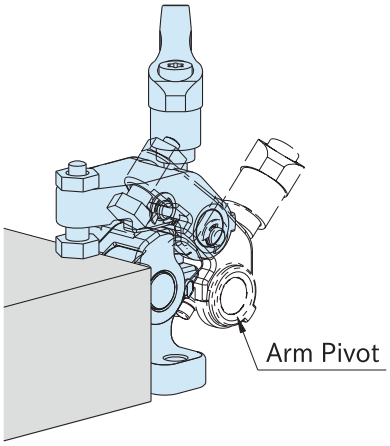
**)Allowable load to operate the handle.

## How To Use

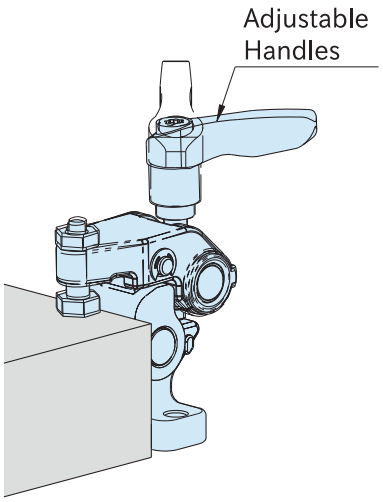
### How To Operate




1.Unclamped
Load a workpiece.




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

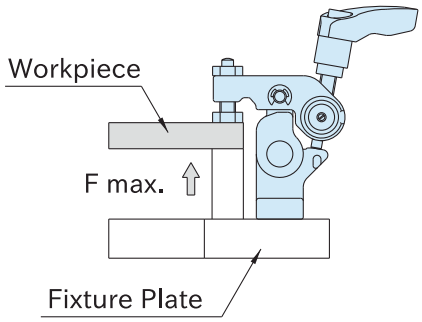



3.Clamping
Tighten the adjustable handle to clamp the workpiece.
For unclamping, follow the above steps back.

## Technical Information

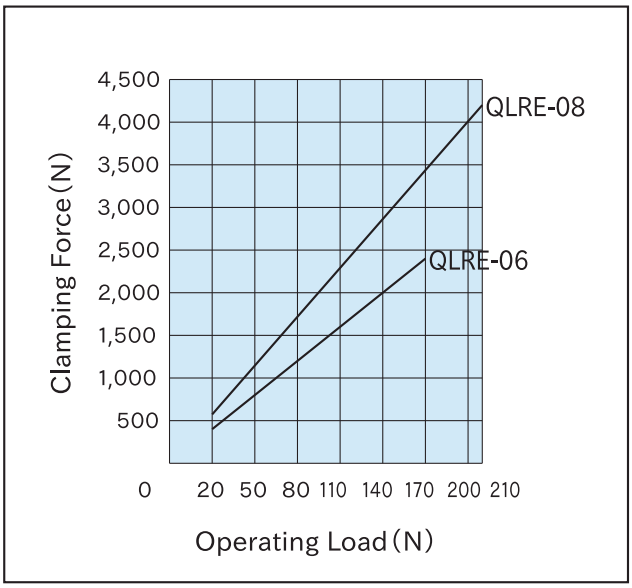
### Allowable Loads in Machining of Workpiece Bottom

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




| Part Number | Allowable Force to Workpiece Bottom (per Clamp) |
|---|---|
| **QLRE-06** | max.5,000N |
| **QLRE-08** | max.6,000N |

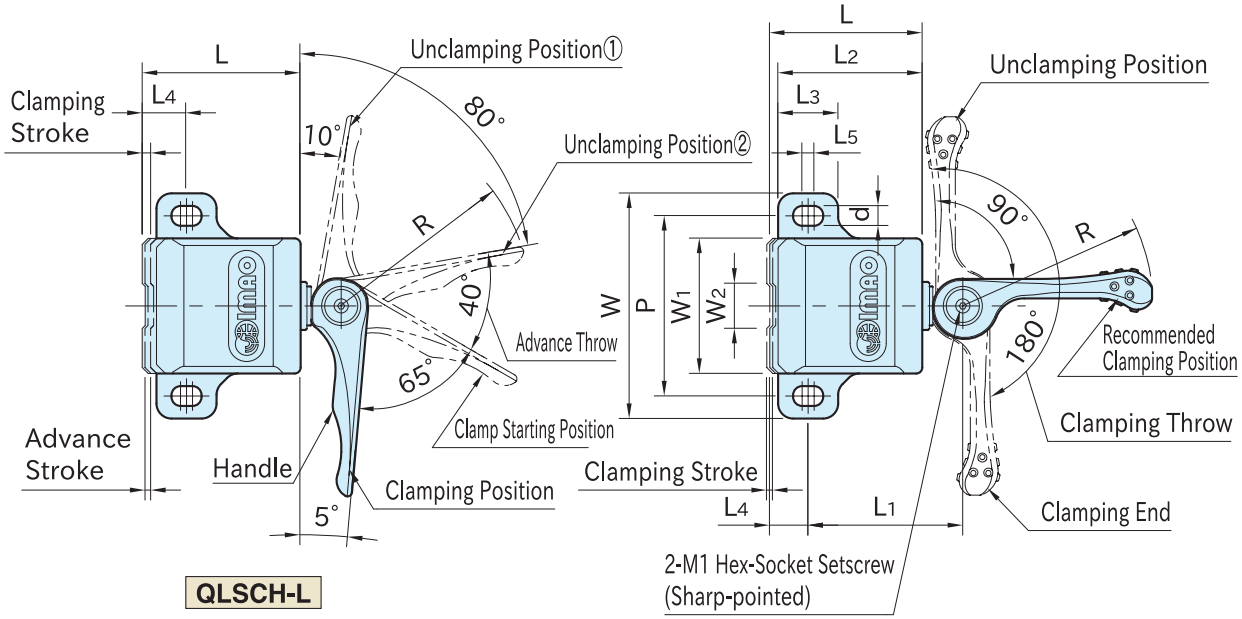
## Performance Curves



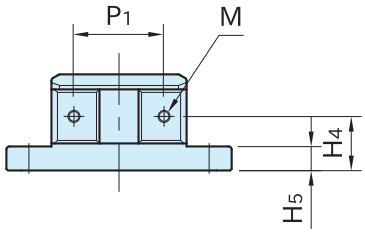
**QLSCH-L**
(Light-Duty)

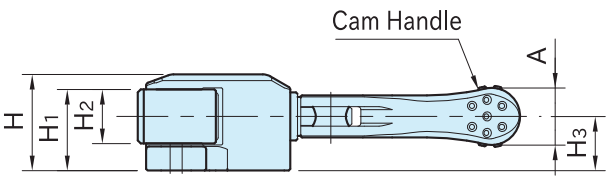
**QLSCH**
(Standard)

| Type | Body | Jaw/Handle Shaft | Handle |
|---|---|---|---|
| QLSCH-L | S45C steel<br>Black oxide finished | S45C steel<br>Quenched & tempered<br>Black oxide finished<br>Precision ground | SCM440 steel<br>Quenched & tempered<br>Electroless nickel plated |
| QLSCH | | | SCM440 steel<br>Quenched & tempered<br>Black oxide finished |




**QLSCH-L**
(Light-Duty)




**QLSCH**
(Standard)

| Size | $W_1$ | $W_2$ | $H_1$ | $H_2$ | M | $P_1$ | $H_4$ | $L_4$ | W | $L_3$ | $H_5$ | d | $L_5$ | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **QLSCH32** | 45 | 15 | 27 | 18 | M4X0.7 6deep | 30 | 18 | 13 | 75 | 20 | 8 | 6.6 | 3 | 60 |
| **QLSCH40** | 60 | 20 | 33 | 22 | M5X0.8 8deep | 40 | 22 | 17 | 100 | 26 | 10 | 8.6 | 4 | 80 |

| Size | H | L | $L_2$ | R | $L_1$ | $H_3$ | $M_1$ |
|---|---|---|---|---|---|---|---|
| **QLSCH32** | 32 | 51 | 48 | 63 | 51.5 | 18 | M4X0.7-5L |
| **QLSCH40** | 40 | 67 | 63 | 80 | 67 | 22 | M5X0.8-6L |

## ■Light-Duty Style

| Part Number | A | Clamping Stroke *) | Advance Stroke | Operating Load (N) **) | Clamping Force (N) | Weight (g) |
|---|---|---|---|---|---|---|
| **QLSCH32L** | 14 | 0.3 | 0.8 | 40 | 600 | 600 |
| **QLSCH40L** | 18 | 0.4 | | 50 | 1,200 | 1,320 |

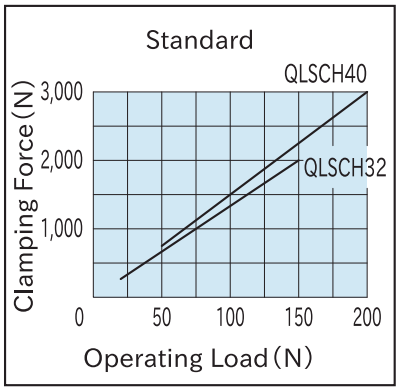
*) Dimensional variations between workpieces should be 0.1mm or less.
**) Load needed to turn the handle to clamping position

## ■Standard Style

| Part Number | A | Clamping Stroke | Handle Number | Operating Load (N) ***) | Clamping Force (N) | Weight (g) |
|---|---|---|---|---|---|---|
| **QLSCH32** | 19 | 1.6 | QLCA-06 | 150 | 2,000 | 620 |
| **QLSCH40** | 24 | 2.2 | QLCA-08 | 200 | 3,000 | 1,360 |

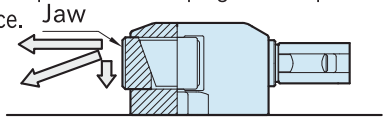
***) Allowable load to operate the handle

## Performance Curve



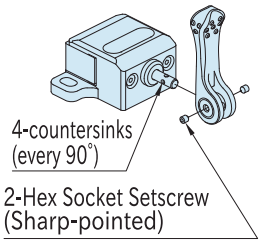

## Features

- 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

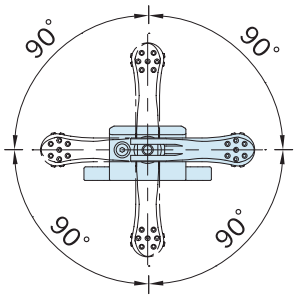



## Changing Handle Position

The handle shaft has 4 countersinks which are provided every 90°for 4 options of handle position

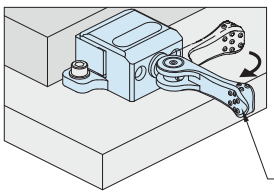



Note:The setscrews must be tightened into 2 countersinks.



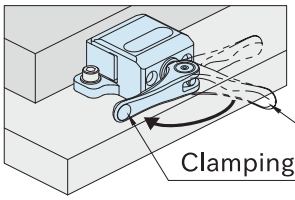

## How To Use

### ■Standard




Turning the cam handle allows the jaw to advance to the workpiece for clamping. For clamping forces, see the performance curve.

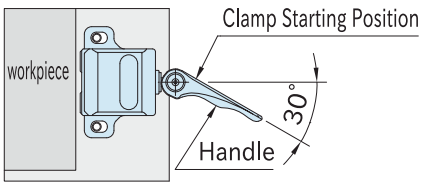
### ■Light-Duty Style



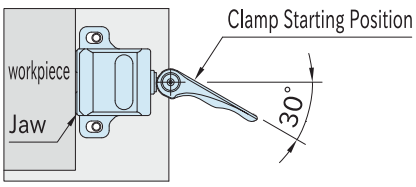

Turning the handle to the clamping position allows clamping the workpiece with constant clamping force.

## Installation Instructions for Light-Duty Style

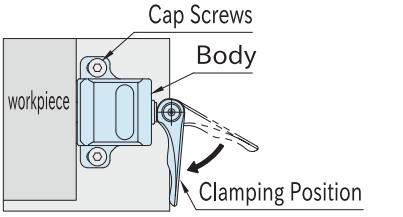
The steps below must be followed so that constant clamping force can be distributed within the clamping stroke.




Set the handle to the clamp starting position.




Contact the jaw to the workpiece.



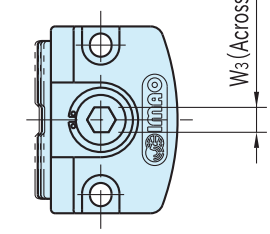

Fasten the clamp with hex socket-head cap screws, and then turn the handle to the clamping position for clamping.

# QLSCL - Low Profile
# Cam Edge Clamps

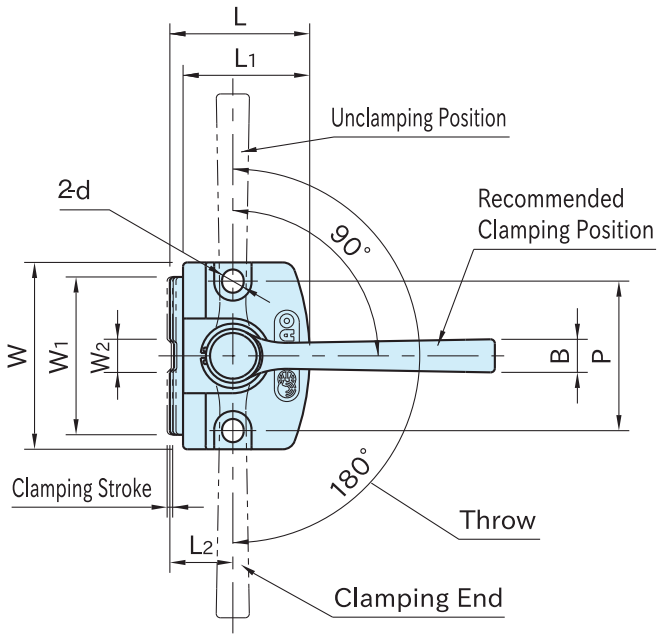
With Handle

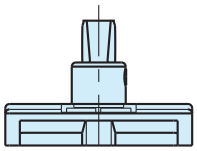
Without Handle

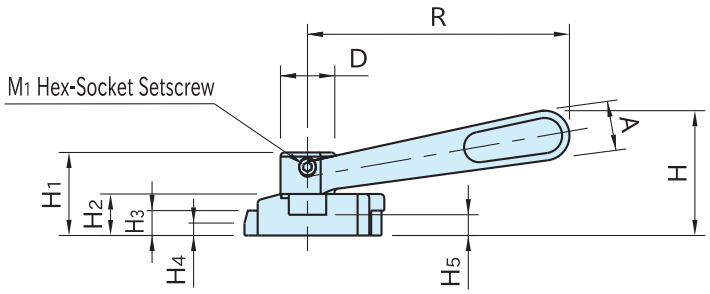
| Body | Jaw / Cam | Handle |
|---|---|---|
| Steel(S45C)<br>Black oxide finish | Steel(SCM440)<br>Quenched and tempered<br>Black oxide finish | Steel(S45C)<br>Quenched and tempered<br>Black oxide finish |




Without Handle






With Handle

| Series | Clamping Stroke | $W_1$ | $W_2$ | $H_3$ | $H_4$ | $L_2$ | W | L | $H_2$ | d | P | $H_5$ | $L_1$ | Clamping Mechanism |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **QLSCL10** | 1 | 38 | 8 | 6 | 3 | 15 | 45 | 33.5 | 10 | 5.2 | 36 | 5 | 30.5 | Spiral Cam Cam Angle : 4° |
| **QLSCL15** | 2 | 60 | 12 | 9 | 5 | 22 | 70 | 50 | 15 | 8.2 | 55 | 7 | 46 | |

With Handle

| Part Number | H | D | $H_1$ | R | A | B | $M_1$ | Allowable Operating Load(N)*) | Clamping Force (N) | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|
| **QLSCL10R** | 30 | 13 | 20 | 63 | 12 | 8 | M4×0.7-4L | 170 | 4,000 | 130 |
| **QLSCL15R** | 46 | 19 | 30 | 100 | 18 | 12 | M5×0.8-5L | 280 | 6,000 | 440 |

*) Allowable load to operate the handle

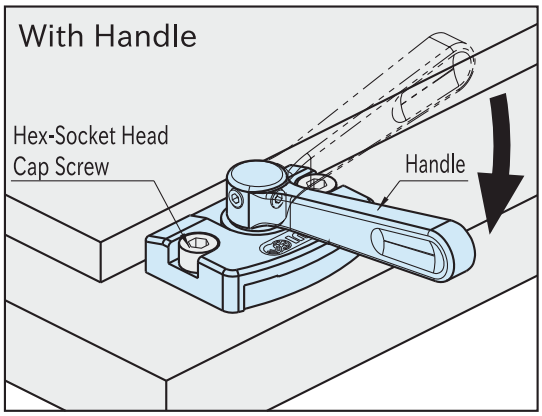
Without Handle

| Part Number | $W_3$ | Allowable Screw Torque(N m) | Clamping Force (N) | Weight (g) |
|---|---|---|---|---|
| **QLSCL10NR** | 6 | 10 | 4,000 | 85 |
| **QLSCL15NR** | 10 | 27 | 6,000 | 290 |

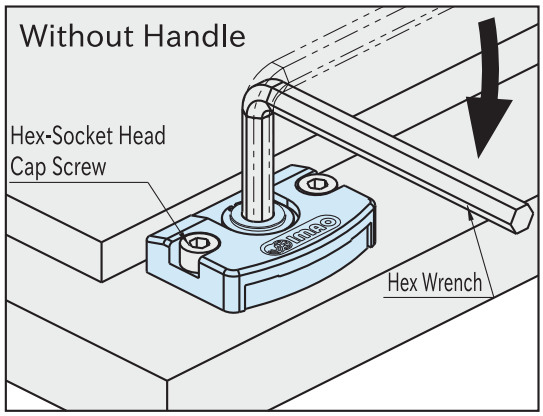
## Features

Designed to prevent part lift.

## How To Use

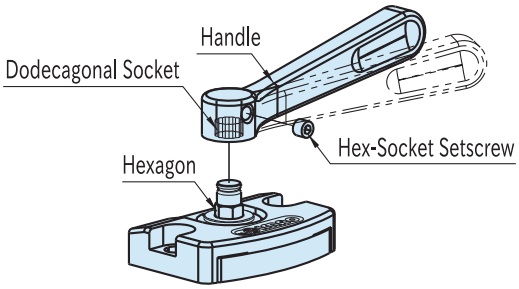



Turning the handle allows the cam to project the jaw for clamping. When the handle is turned back for unclamping, the loaded spring lets the jaw return to the original position.



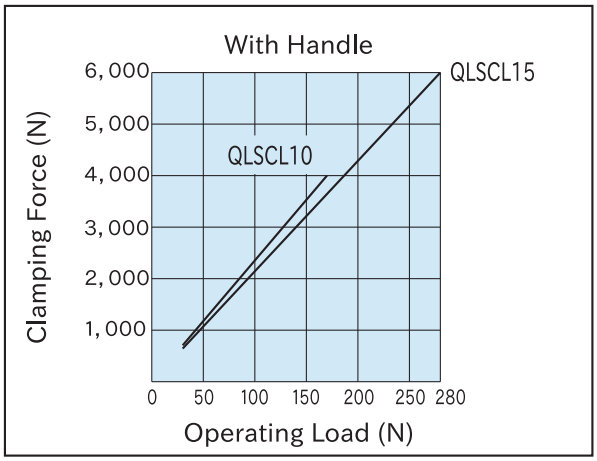

Use the without-handle style in applications where the handle lies in the way.

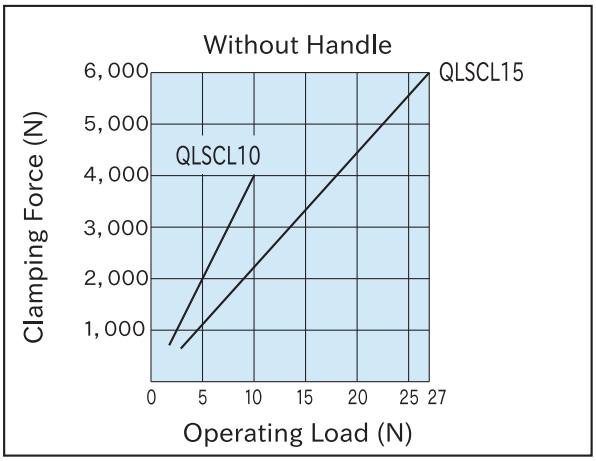
### How To Change Handle Position




The handle has the dodecagonal socket to allow changing the handle position by 30°

## Performance Curve



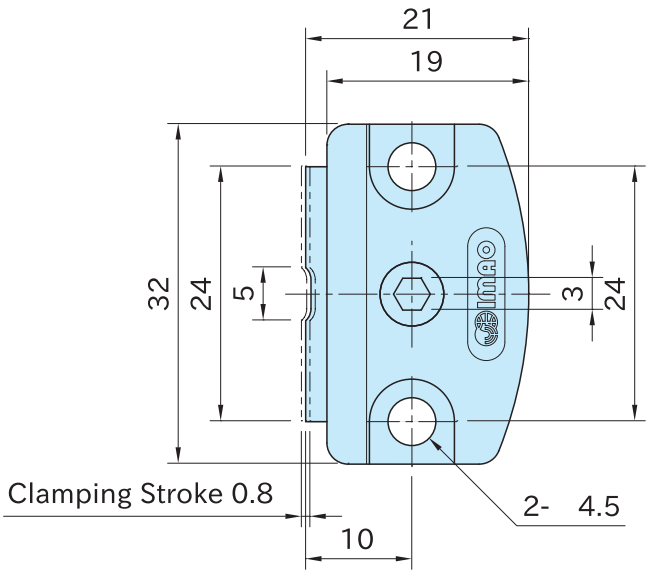



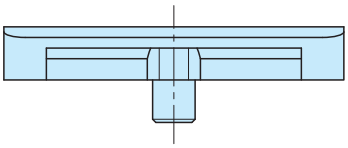

## Notes

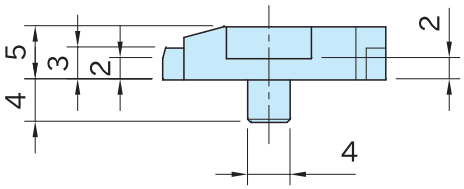
Ensure that mounting surfaces are finished to $\sqrt{6.3}$ (6.3a) or better, without any scratches or dents.

# QLSCL - Compact Low Profile
## Cam Edge Clamps

| Body | Jaw / Cam |
|---|---|
| S45C steel<br>Black oxide finished | SCM440 steel<br>Black oxide finished<br>HRC39-45 |





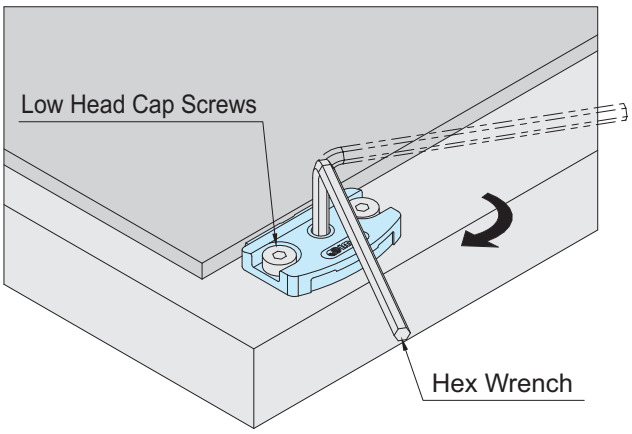

| Part Number | Allowable Screw Torque N m | Clamping Force kN | Weight g |
|---|---|---|---|
| **QLSCL05NR** | 2.1 | 1.3 | 18 |

## Feature

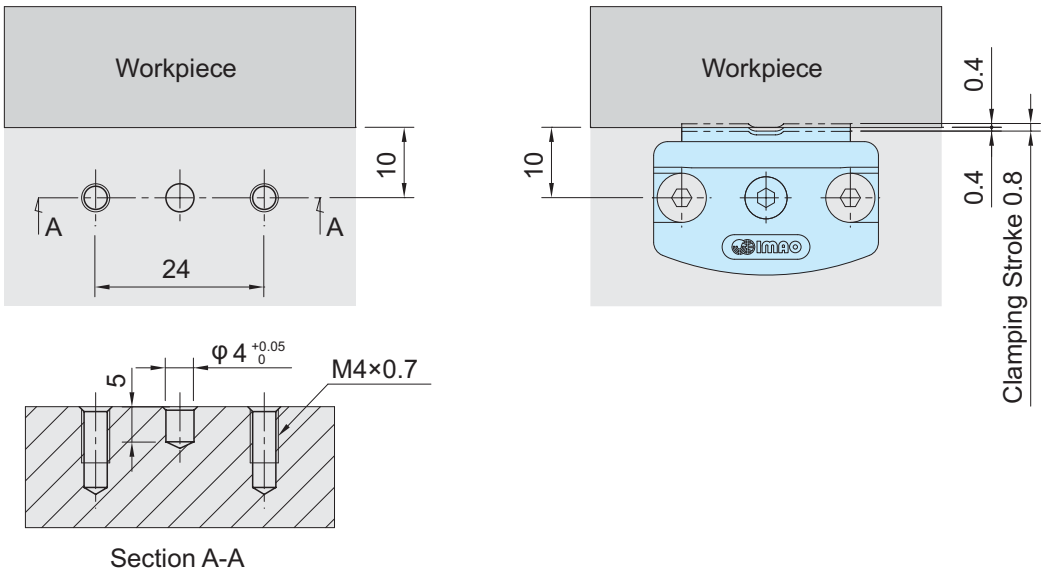
Designed to prevent part lift.

## 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.



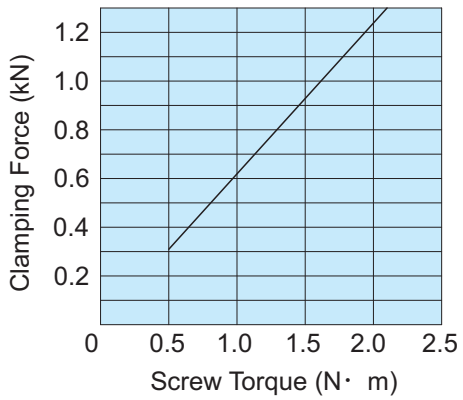

■Mounting-Hole Dimensions



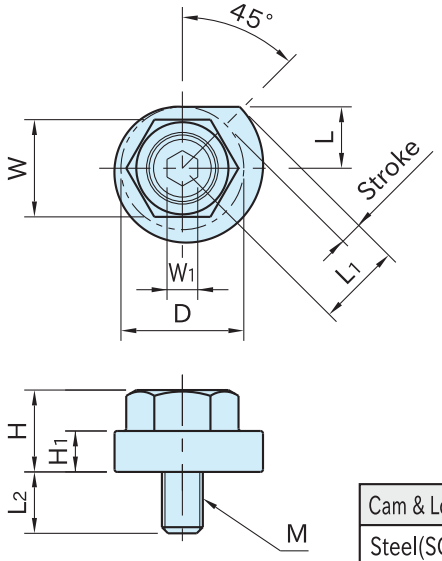

## Note

Ensure that mounting surfaces are finished to 6.3 (6.3a) or better, without any scratches or dents.

## Performance Curve



# BJ161 - Cam Clamps




| Cam & Locking Screw | Flanged Collar |
|---|---|
| Steel(SCM435)<br>Quenched and tempered<br>Black oxide finish | Steel(SK95)<br>Quenched and tempered<br>Black oxide finish |

| Part Number | Stroke | L | $L_1$ | D | $H_1$ | M | $L_2$ | H | W | $W_1$ |
|---|---|---|---|---|---|---|---|---|---|---|
| **BJ161-08001** | 4.4 | 12 | 16.4 | 24 | 8 | M 8×1.25 | 12 | 16 | 19 | 6 |
| **BJ161-10001** | 5.5 | 15 | 20.5 | 30 | 10 | M10×1.5 | 15 | 20 | 24 | 8 |
| **BJ161-12001** | 6.2 | 17 | 23.2 | 34 | 12 | M12×1.75 | 18 | 24 | 27 | 10 |

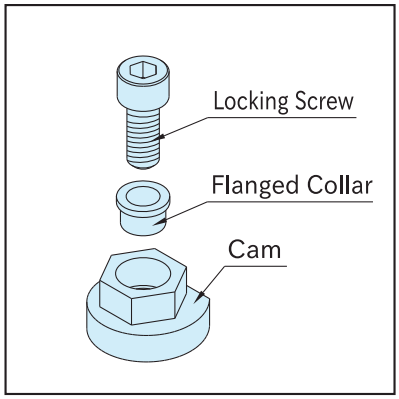
| Part Number | Allowable Screw Torque (N·m) | Clamping Force (N) | Weight (g) |
|---|---|---|---|
| **BJ161-08001** | 50 | 5,200 | 55 |
| **BJ161-10001** | 75 | 8,000 | 110 |
| **BJ161-12001** | 90 | 9,300 | 185 |

## Features:

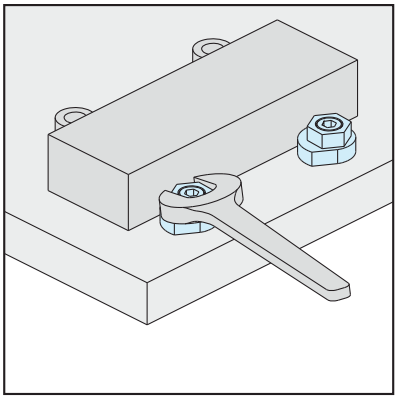
- Allows loading and unloading a part faster
- Compact design

## 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.

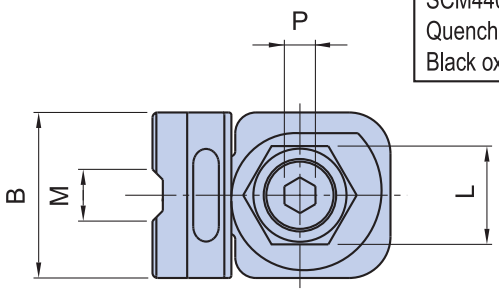


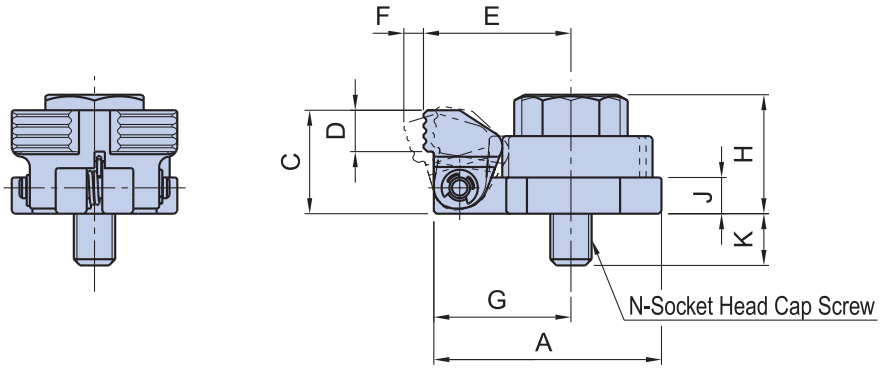

Parts Breakdown



Provides positive clamping

| Body / Nose | Cam |
|---|---|
| SCM440 steel<br>Quenched and tempered<br>Black oxide | SCM435 steel |



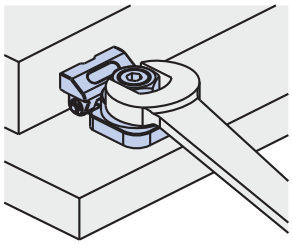



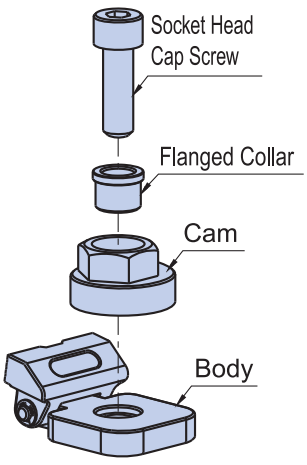

| Part Number | A | B | C | D | E | F | G | H | J | K | L | M | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BJ162-08001** | 44 | 32 | 20 | 8 | 28.5 | 4 | 26.5 | 23 | 7 | 15 | 19 | 10 | M 8×1.25 -30L |
| **BJ162-10001** | 54 | 40 | 25 | 10 | 35 | 5 | 33 | 29 | 9 | 16 | 24 | 12 | M10×1.5 -35L |
| **BJ162-12001** | 62 | 46 | 30 | 12 | 39.5 | 5.5 | 37.5 | 35 | 11 | 17 | 27 | 14 | M12×1.75 -40L |

| Part Number | P | Clamping Force (N) | Allowable Screw Torque (N·m) | Weight (g) |
|---|---|---|---|---|
| **BJ162-08001** | 6 | 3,500 | 45 | 160 |
| **BJ162-10001** | 8 | 5,500 | 55 | 310 |
| **BJ162-12001** | 10 | 7,000 | 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.



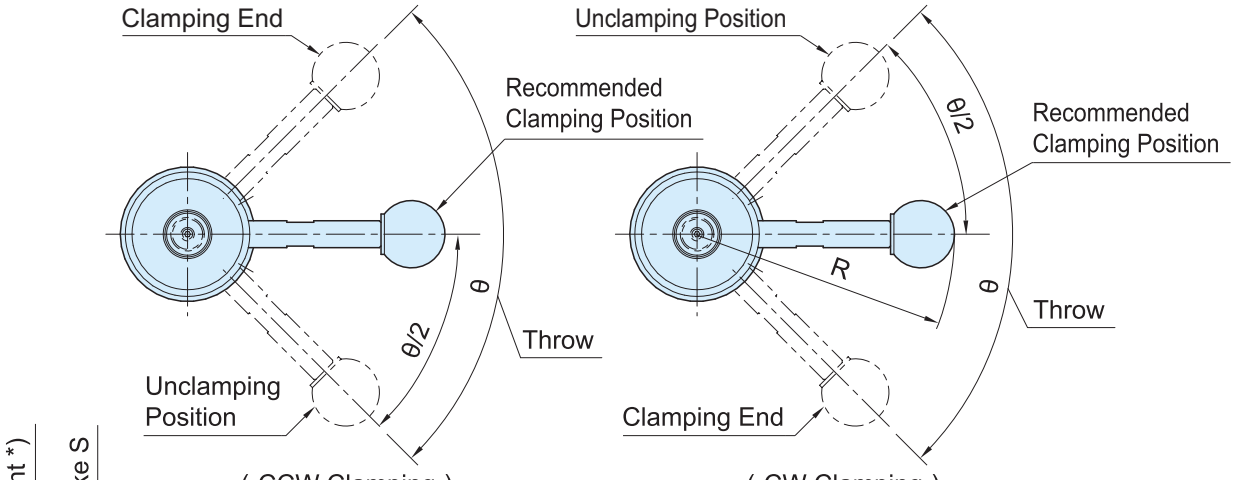


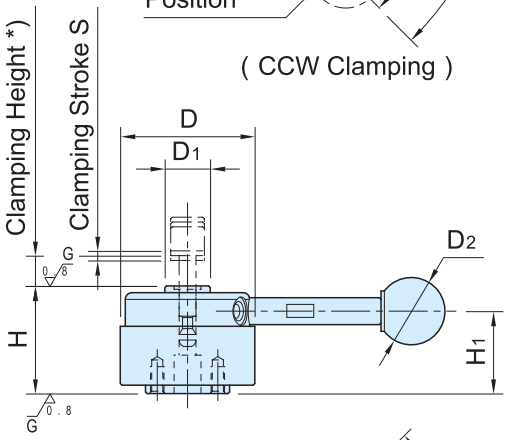
( CCW Clamping With Handle ) ( CW Clamping Without Handle ) ( CW Clamping With Handle )

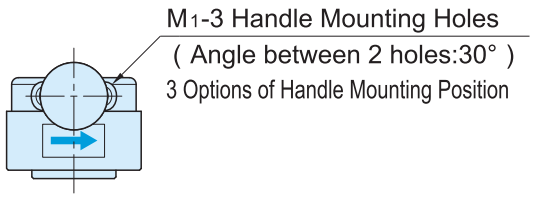
Note) Clamping Pins or Screws must be ordered separately.

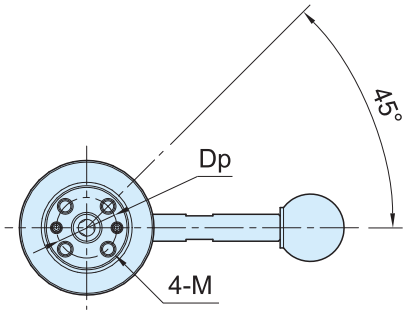
| Body & Clamp Ring | Handle Shank | Ball Knob |
|---|---|---|
| SCM440 steel<br>Quenched and tempered<br>Black oxide finish | S45C steel<br>Black oxide finish | ABS resin<br>Black |

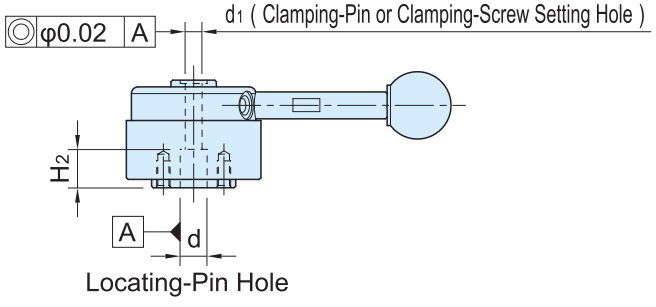
★Key Point
Easy clamping without screws.



| Type | S | d ( G6 ) | $d_1$ ( F7 ) | $H_2$ | $D_1$ | H ( ±0.01 ) | D | θ | Dp | M |
|---|---|---|---|---|---|---|---|---|---|---|
| **QLPD150** | 1.5 | 8 | 5 | 10 | 13.5 | 32 | 40 | 90° | 18 | M4×0.7 8-deep |
| **QLPD200** | 2 | 12 | 8 | 13 | 18 | 40 | 50 | 110° | 25 | M6×1 9-deep |

| Type | $M_1$ | $H_1$ | Clamping Force ( kN ) | Clamping Mechanism | Recommended Workpiece Thickness Tolerance **) |
|---|---|---|---|---|---|
| **QLPD150** | M5×0.8 | 24.5 | 0.9 | Spiral Cam Cam Angle: 4° | ±0.3 |
| **QLPD200** | M6×1 | 30.7 | 2.5 | | ±0.5 |

■With Handle

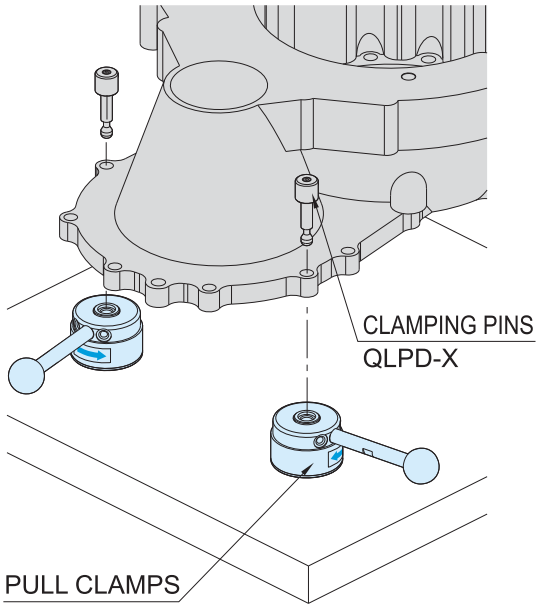
| Part Number | Clamping Direction | R | $D_2$ | Allowable Operating Load ( N ) ***) | Weight ( g ) |
|---|---|---|---|---|---|
| **QLPD150R** | CW | 76.5 | 20 | 150 | 245 |
| **QLPD150L** | CCW | | | | |
| **QLPD200R** | CW | 111.5 | 25 | 200 | 470 |
| **QLPD200L** | CCW | | | | |

■Without Handle ****)

| Part Number | Clamping Direction | Weight ( g ) |
|---|---|---|
| **QLPD150NR** | CW | 220 |
| **QLPD150NL** | CCW | |
| **QLPD200NR** | CW | 420 |
| **QLPD200NL** | CCW | |

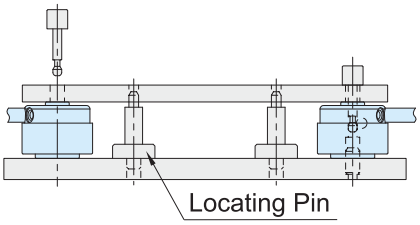
* ) Grip length of QLPD-X Clamping Pin ( workpiece thickness )
** ) Maintaining these recommended tolerances allows minimizing the variation of handle position in the clamping mode in clamping with the use of the Clamping Pin .
*** ) Allowable load to operate the handle .
**** ) The handle must be ordered separately.
- QLSL STANDARD HANDLES
- QLTL ADJUSTABLE-TORQUE HANDLES

## How To Use

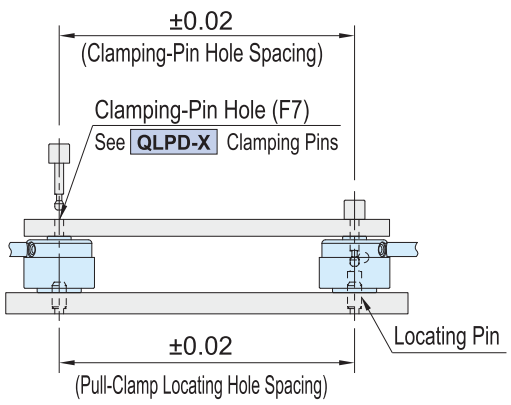



■How To Locate Workpiece

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.



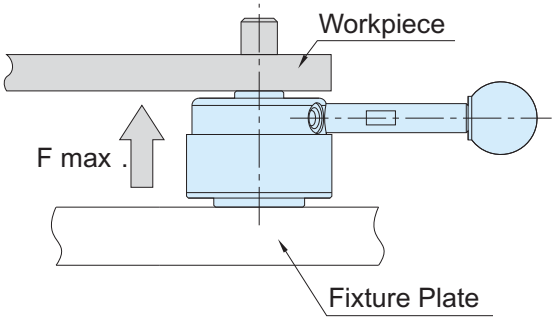

Continuing on Next Page

## Technical Information

■ Allowable Loads in Machining of Workpiece Bottom

Ensure that a force more than indicated below is not applied to the workpiece bottom.

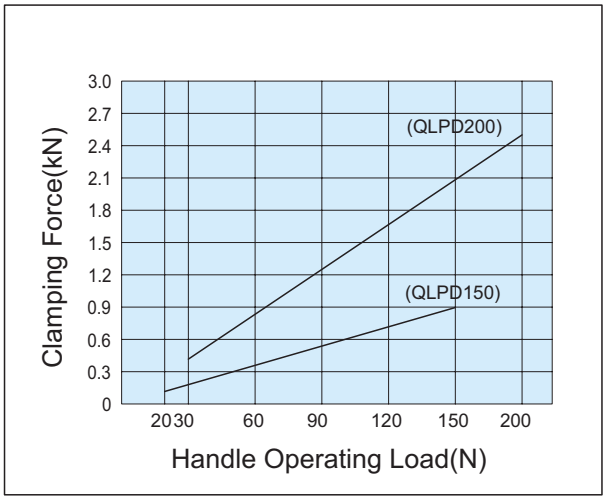
| Type | Allowable Force To Workpiece Bottom (Per Clamp) |
|---|---|
| **QLPD150** | max.2 kN |
| **QLPD200** | max.5.5kN |




## Performance Curve

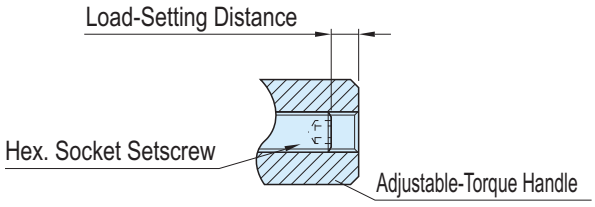
### ■QLSL STANDARD HANDLES

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

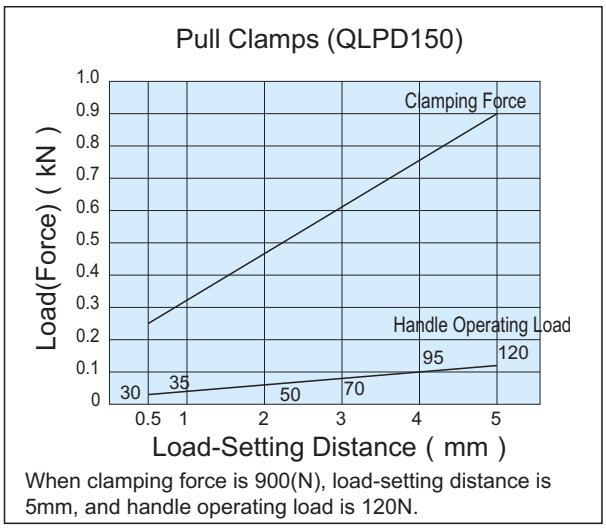



### ■QLTL ADJUSTABLE-TORQUE HANDLES

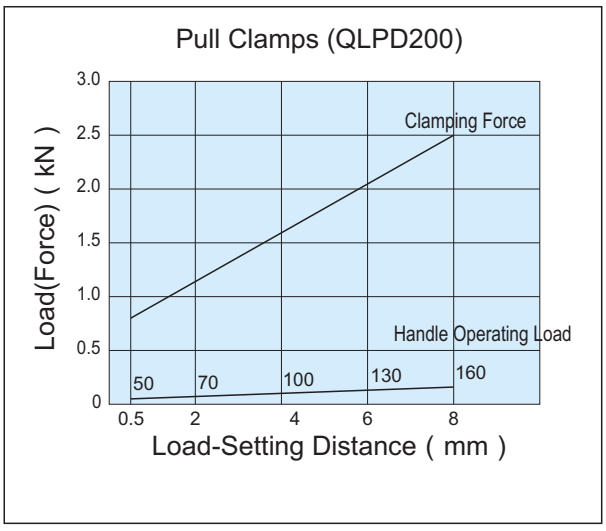
Use a force gauge when measuring handle-operating loads.




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




When clamping force is 900(N), load-setting distance is 5mm, and handle operating load is 120N.



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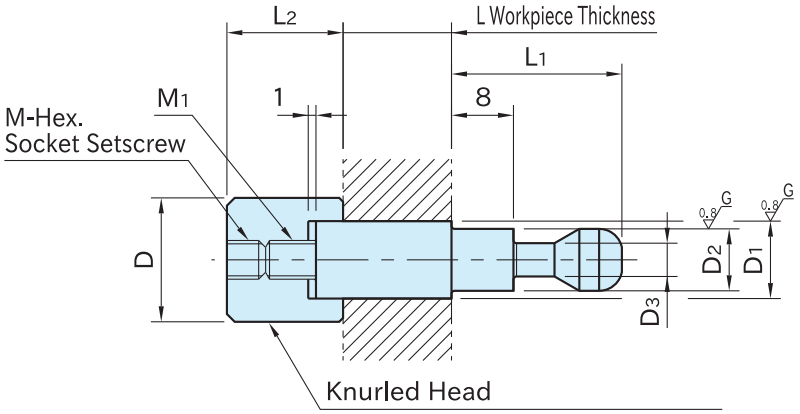
# QLPD-X - Clamping Pins (Standard)

On Request RoHS




L dimension is adjustable by +/-1mm to fit actual workpiece thickness.

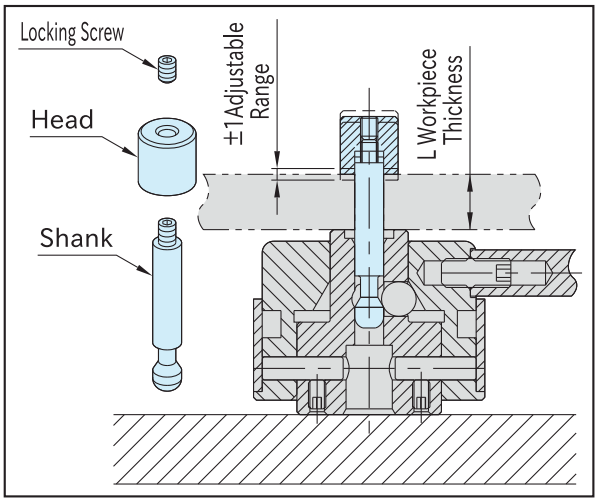
| Shank | Head |
|---|---|
| Steel (SCM435)<br>Induction hardened(taper seat)<br>Precision ground | Steel (S45C)<br>Quenched and tempered<br>Black oxide finish |

| Part Number | $D_2$ (f7) | $D_1$ (f7) | L*) (By 0.1㎜) | D | $L_2$ | $L_1$ | $D_3$ | 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 | $M_1$ | Pull Clamps | Weight (g) |
|---|---|---|---|
| QLPD150-5X 5- (L Dim. in mm) | M3×0.5 | QLPD150Series | min. 8~max.16 |
| QLPD150-5X 6- (L Dim. in mm) | | | min. 8~max.19 |
| QLPD200-8X 8- (L Dim. in mm) | M5×0.8 | QLPD200Series | min.30~max.60 |
| QLPD200-8X10- (L Dim. in mm) | | | min.31~max.77 |

*) For ordering, specify workpiece thickness.

## How To Use



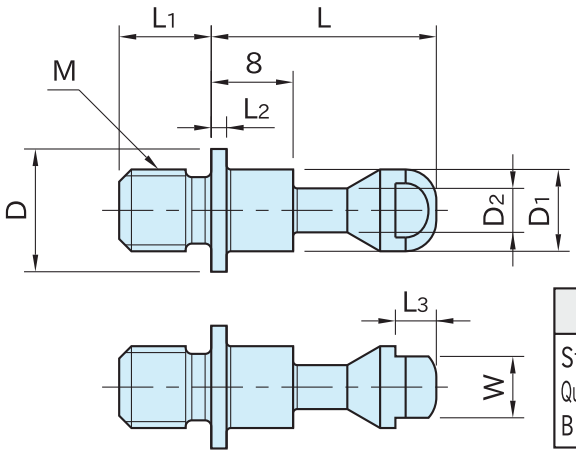

## Notes

Custom Clamping Pins are available on request.

### ■Ordering Example

**QLPD150-5X5 - 10.5**

Shank Size L Dim.




| Body |
|---|
| Steel(SCM435)<br>Quenched and tempered<br>Black oxide finish |

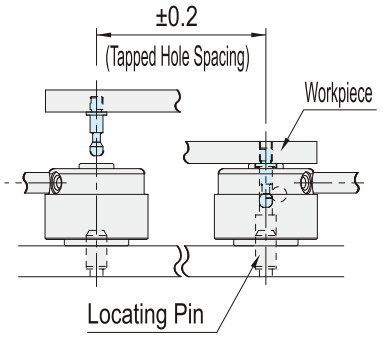
| Part Number | $D_1$ | M | $L_1$ | L | D | $L_2$ | $D_2$ | W | $L_3$ | Pull Clamps | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| QLPD150-M 5 | 5 | M 5X0.8 | 6 | 17 | 8 | 1.2 | 3 | 4 | 2.5 | QLPD150 | 3 |
| QLPD150-M 6 | | M 6X1 | 7 | | | | | | | | 4 |
| QLPD200-M 8 | 8 | M 8X1.25 | 9 | 22 | 12 | 1.5 | 4.3 | 6 | 4 | QLPD200 | 10 |
| QLPD200-M10 | | M10X1.5 | 11 | | | | | | | | 13 |

## Notes

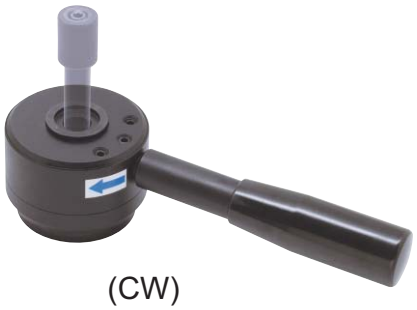
Custom Clamping Screws (different screw thread sizes) are available on request.

## How To Use

Recommended Spacing Tolerance in Use of Clamping Screws



(CCW)



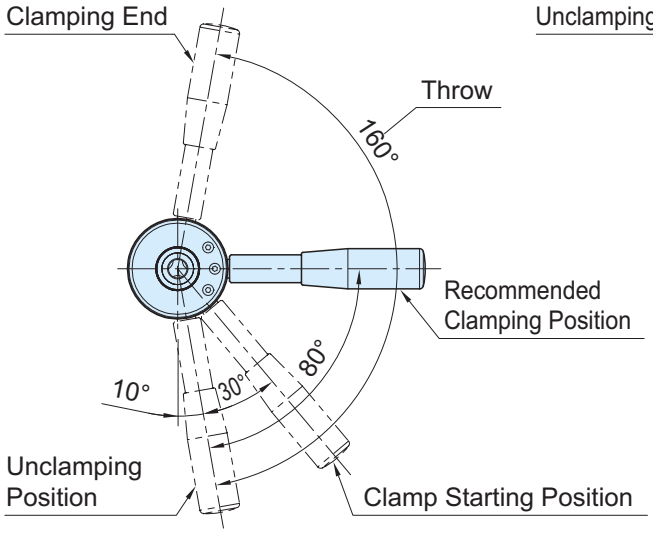
(CW)

| Body & Clamp Ring | Handle Shank | Handle |
|---|---|---|
| SCM440 steel<br>Quenched and tempered<br>Black oxide finish | S45C steel<br>Quenched and tempered<br>Black oxide finish | Phenolic plastic<br>Black |

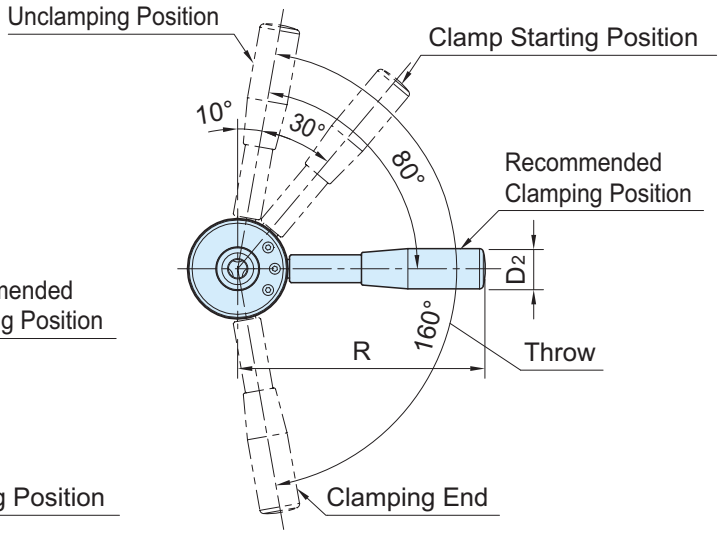
★Key Point

Easy clamping without screws.

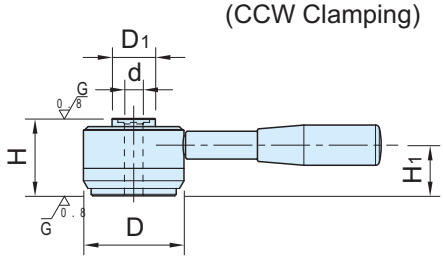
Note) Clamping Pins or Screws must be ordered separately.

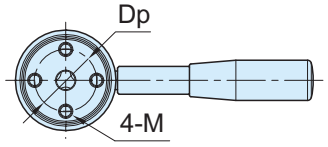


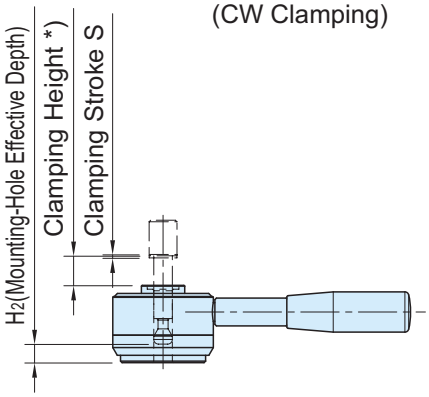

(CCW Clamping)

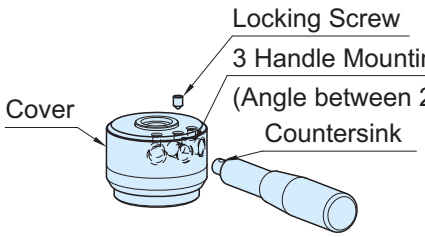



(CW Clamping)



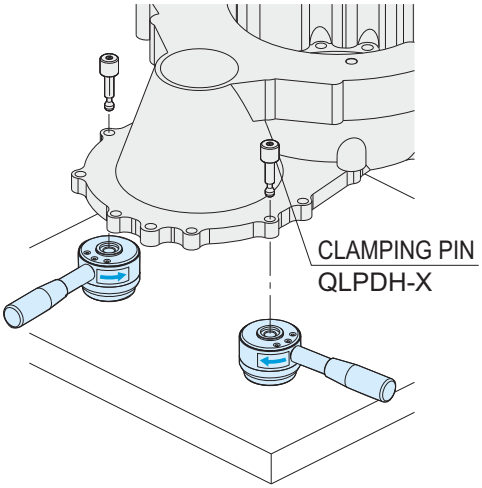

The handle can be removed by loosening the locking screw.
To keep the handle mounted permanently, make sure that the locking screw is fully tightened.
3 options of handle mounting position.

| Part Number | Clamping Direction | S | d (F7) | $H_2$ | $D_1$ | H (±0.01) | D | M | Dp | R |
|---|---|---|---|---|---|---|---|---|---|---|
| **QLPDH400R** | CW | 2 | 12 | 10 | 28 | 50 | 65 | M 8×1.25 14-deep | 40 | 160 |
| **QLPDH400L** | CCW | | | | | | | | | |
| **QLPDH500R** | CW | 2.5 | 16 | 12 | 34 | 63 | 80 | M10×1.5 18-deep | 50 | 180 |

| Part Number | $D_2$ | $H_1$ | Allowable Operating Load ( N ) **) | Clamping Force ( kN ) | Clamping Mechanism | Recommended Workpiece Thickness Tolerance ***) | Weight ( kg ) |
|---|---|---|---|---|---|---|---|
| **QLPDH400R** | 26 | 32.8 | 600 | 6 | Spiral Cam Cam Angle: 4° | ±0.5 | 1.2 |
| **QLPDH400L** | | | | | | | |
| **QLPDH500R** | 28 | 41.1 | | 8 | | ±0.8 | 2.2 |

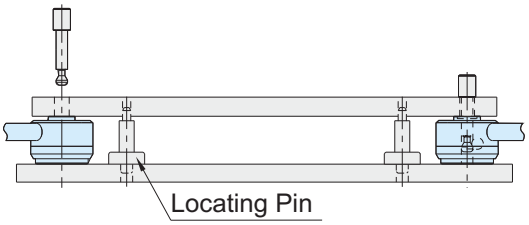
* )Grip length of QLPDH-X Clamping Pin ( workpiece thickness )
**) Allowable load to operate the handle
***) Maintaining these recommended tolerances allows minimizing the variation of handle position in the clamping mode in clamping with the use of the Clamping Pin .
****) QLPDH500 is available only with Clockwise Clamping.

## How To Use



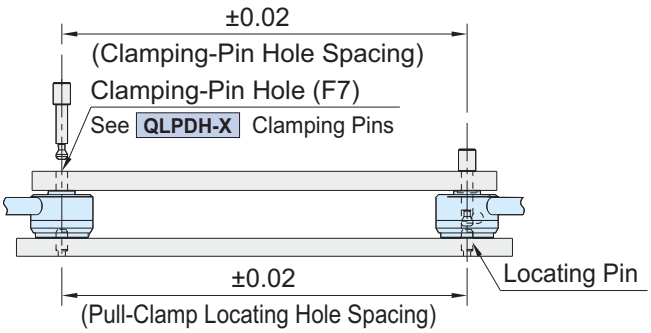

■How To Locate Workpiece

1. Basic Method




2. Method for clamping and locating a workpiece at a time

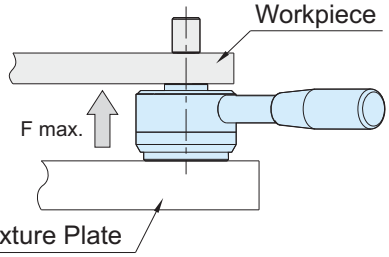
Give an accuracy shown below to the hole spacing to generate a locating accuracy of ±0.08.




## Technical Information

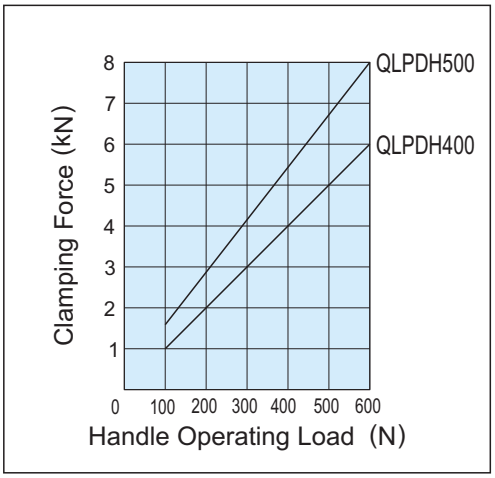
■ Allowable Loads in Machining of Workpiece Bottom

Ensure that a force more than indicated below is not applied to the workpiece bottom.



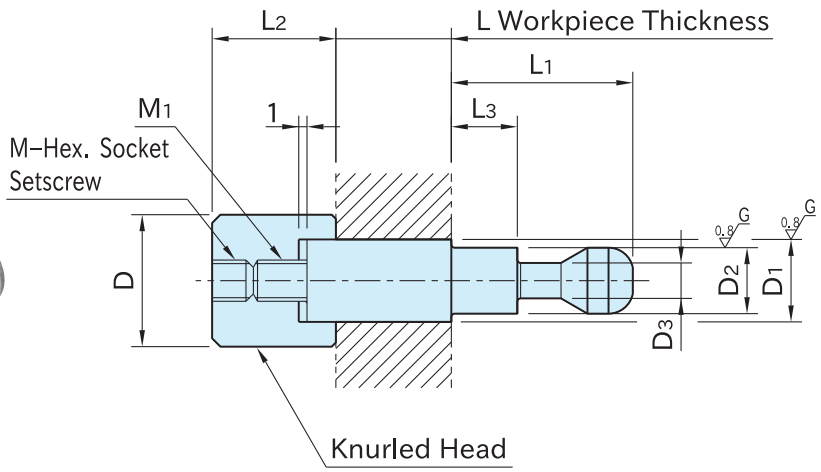

| Type | Allowable Force To Workpiece Bottom (Per Clamp) |
|---|---|
| **QLPDH400** | max. 8kN |
| **QLPDH500** | max.14kN |

## Performance Curve



# QLPDH-X - Clamping Pins (Heavy)

On Request RoHS



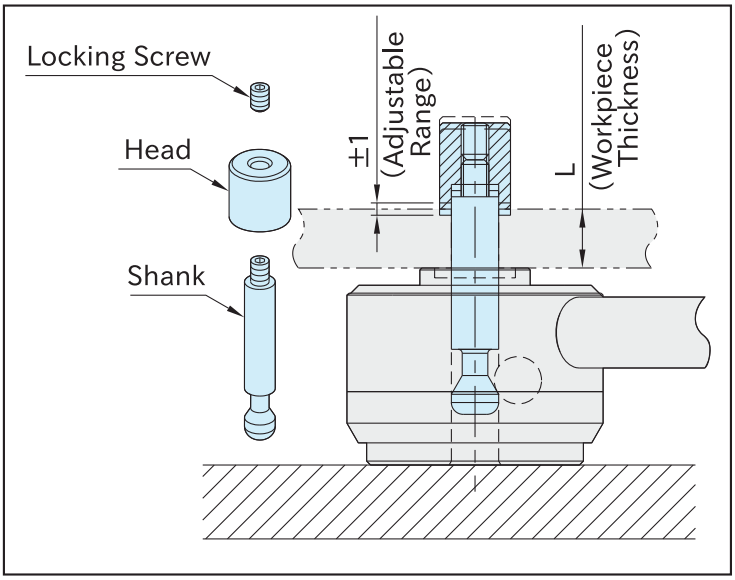

L dimension is adjustable by ± 1mm to fit actual workpiece thickness.

| Shank | Head |
|---|---|
| Steel (SCM435)<br>Induction hardened(taper seat)<br>Precision ground | Steel (S45C)<br>Quenched and tempered<br>Black oxide finish |

| Part Number | $D_2$ (f7) | $D_1$ (f7) | L*) (By 0.1mm) | D | $L_2$ | $L_1$ | $L_3$ | $D_3$ | M | $M_1$ | Pull Clamps | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QLPDH400-12-(L Dim. In mm) | 12 | 12 | 0<L≦100 | 18 | 23 | 38 | 21.5 | 6.5 | M 8X1.25- 8L | M 8X1.25 | QLPDH400R | min. 70~max.160 |
| QLPDH400-16-(L Dim. In mm) | | 16 | | 24 | | | | | | | | min.175~max.265 |
| QLPDH500-16-(L Dim. In mm) | 16 | 16 | 0<L≦120 | 24 | 29 | 48 | 28 | 9.5 | M10X1.5 -10L | M10X1.5 | QLPDH500R | min.160~max.350 |
| QLPDH500-20-(L Dim. In mm) | | 20 | | 30 | | | | | | | | min.325~max.515 |

*) For ordering, specify workpiece thickness.

## How To Use




### ■Ordering Example

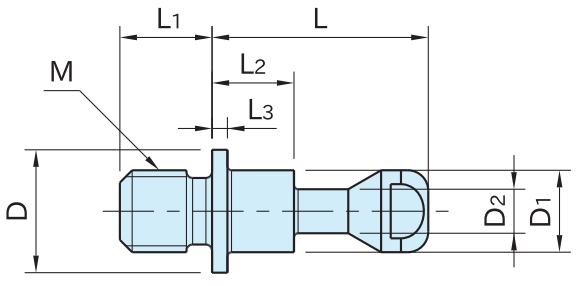
**QLPDH400-12-20.5**

Shank Size L Dim.

## Notes

Custom Clamping Pins are available on request.

IMAO Products




| Body |
|---|
| Steel(SCM435)<br>Quenched and tempered<br>Black oxide finish |

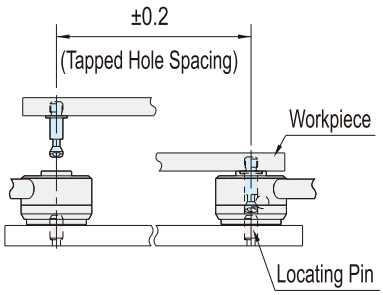
| Part Number | D1 | M | L1 | L | D | L2 | L3 | D2 | W | L4 | Pull Clamps | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QLPDH400-M12 | 12 | M12X1.75 | 13 | 38 | 20 | 21.5 | 2 | 6.5 | 10 | 4 | QLPDH400R | 40 |
| QLPDH400-M16 | | M16X2 | 17 | | | | | | | | | 55 |
| QLPDH500-M16 | 16 | | | 48 | 25 | 28 | 2.5 | 9.5 | 13 | 5 | QLPDH500R | 90 |
| QLPDH500-M20 | | M20X2.5 | 21 | | | | | | | | | 110 |

## Notes

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

## How To Use

Recommended Spacing Tolerance in Use of Clamping Screws



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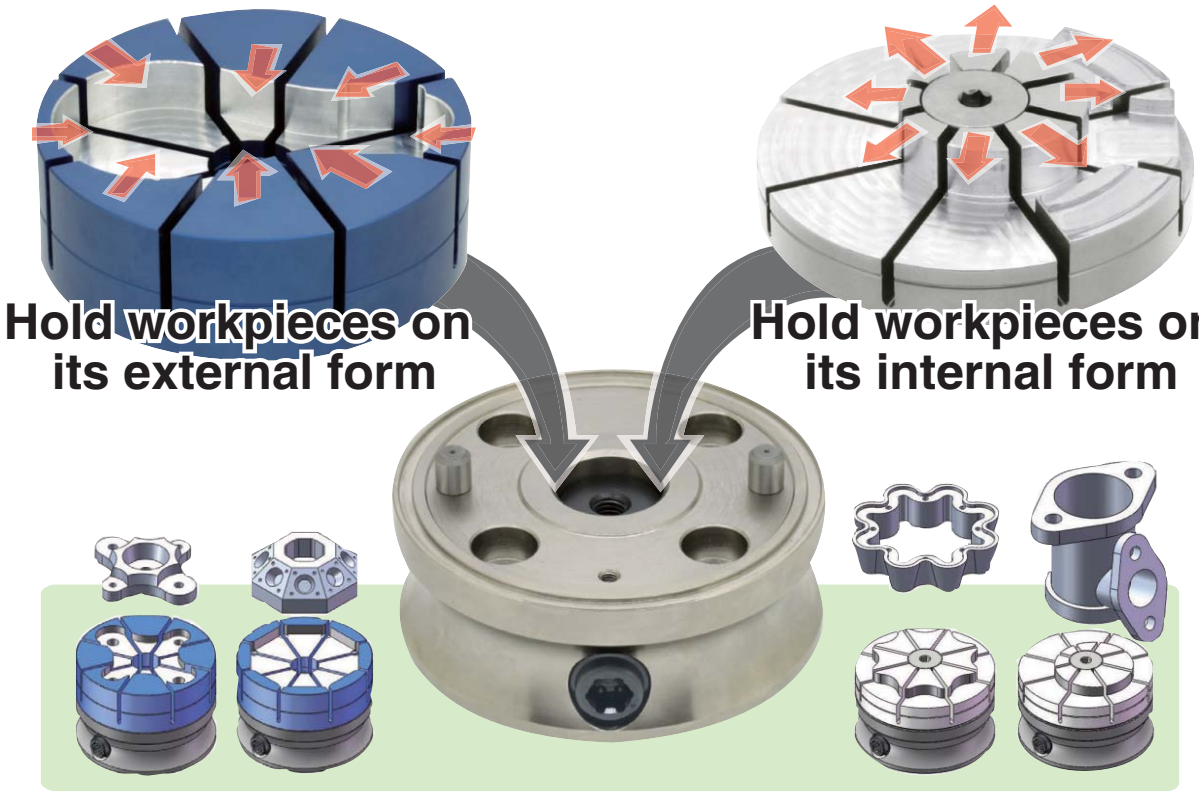
## FORM HOLDING CLAMPS




# For holding on external / internal form!

# FORM HOLDING CLAMPS

Form Holding Clamps that have a machinable jaw to hold irregular-shaped workpieces.Two optional jaws allow clamping workpieces both on its external form and internal form.

1 Prepare the jaw → 2 Machine the jaw → 3 Mount a workpiece → 4 Tighten the cam cylinder

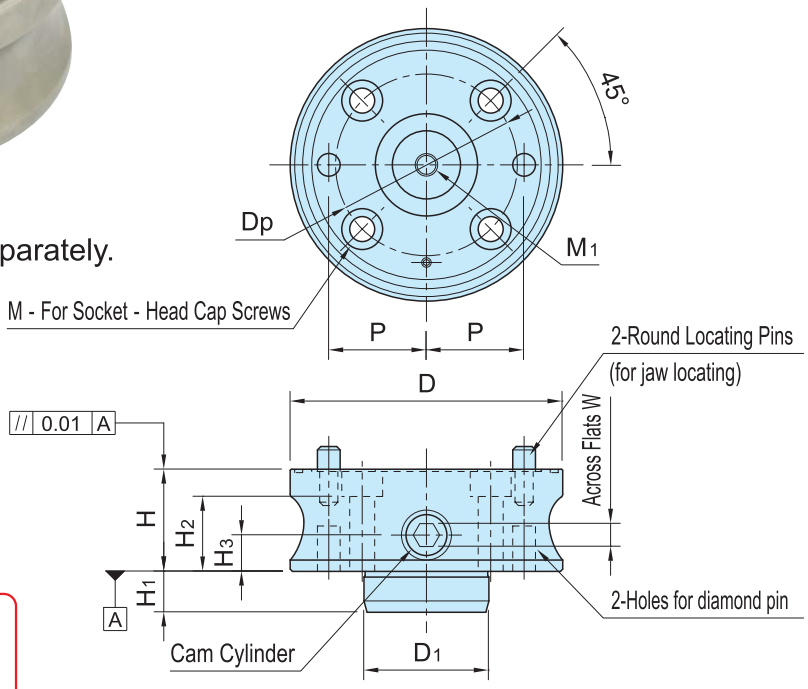
**For external form holding**

**For internal form holding**

# CP125 - Form Holding Clamps

| Body | Pull Cylinder | Cam Cylinder |
|---|---|---|
| S45C Steel<br>Electroless nickel plated | SCM415 Steel<br>Carburized-hardened<br>Black oxide finish | SCM435 Steel<br>Quenched & tempered<br>Black oxide finish |

Note: Jaws must be ordered separately.




★Key Point

Can hold on external/ internal form.

| Part Number | D | H ( ±0.01 ) | D1 (g 6) | H1 | M | H2 | Dp | P ( ±0.02 ) | W | H3 | M1 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 10 | 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 | φ0.3 | CP127-06501 | 4.5 | φ0.3 |
| 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

## Notes

Do not actuate clamping without a workpiece to avoid damage and deformation.Tightening with torque greater than the allowable screw torque will lower the durability of the jaw.

IMAO Products

## Furnished Parts

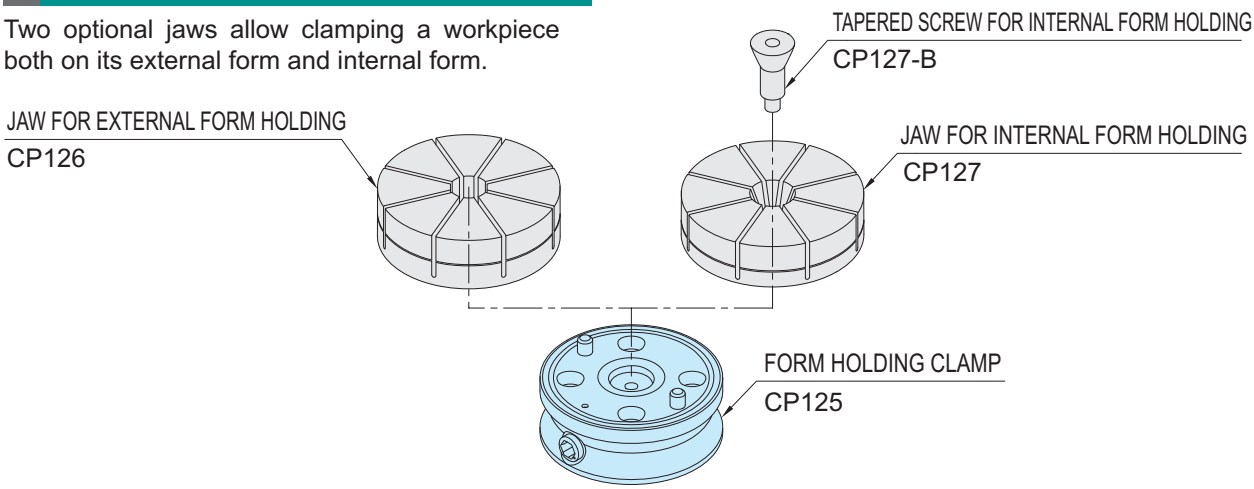
- CP125-06501 : 1 pc. of Diamond Locating Pin (BJ722-06001)
- CP125-09001 : 1 pc. of Diamond Locating Pin (BJ722-08001)
- CP125-12001 : 1 pc. of Diamond Locating Pin (BJ722-10001)
- CP125-16001 : 1 pc. of Diamond Locating Pin (BJ722-12001)

## Related Products

- CP126 Jaws for External Form Holding
- CP127 Jaws for Internal Form Holding
- BJ722 Diamond Locating Pin

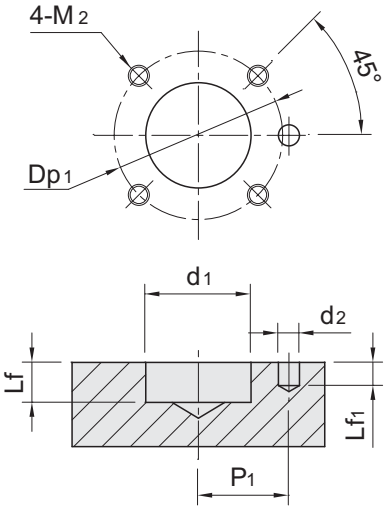
## Feature

Two optional jaws allow clamping a workpiece both on its external form and internal form.




## How To Use

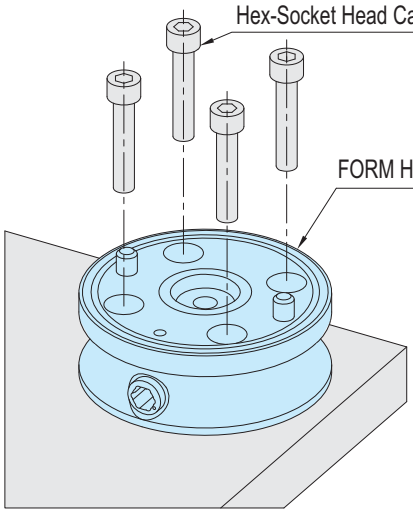
### ■Mounting-Hole Dimensions

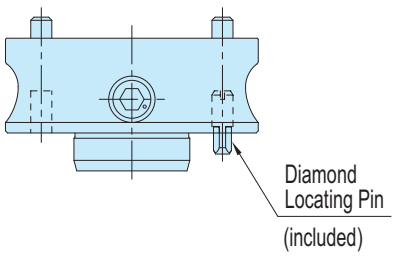



| Part Number | d1 (H7) | Lf | d2 (G7) | Lf1 | P1 (±0.02) | M2 | Dp1 |
|---|---|---|---|---|---|---|---|
| CP125-06501 | 28 | 13 | 6 | 6 | 22 | M 6×1 | 42 |
| CP125-09001 | 42 | 15 | 8 | 8 | 30 | M 8×1.25 | 60 |
| CP125-12001 | 55 | 19 | 10 | 11 | 43 | M10×1.5 | 80 |
| CP125-16001 | 63 | 25 | 12 | 13 | 60 | M12×1.75 | 110 |

### ■Installation Instructions

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.



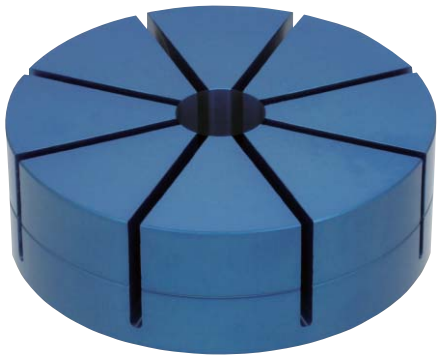



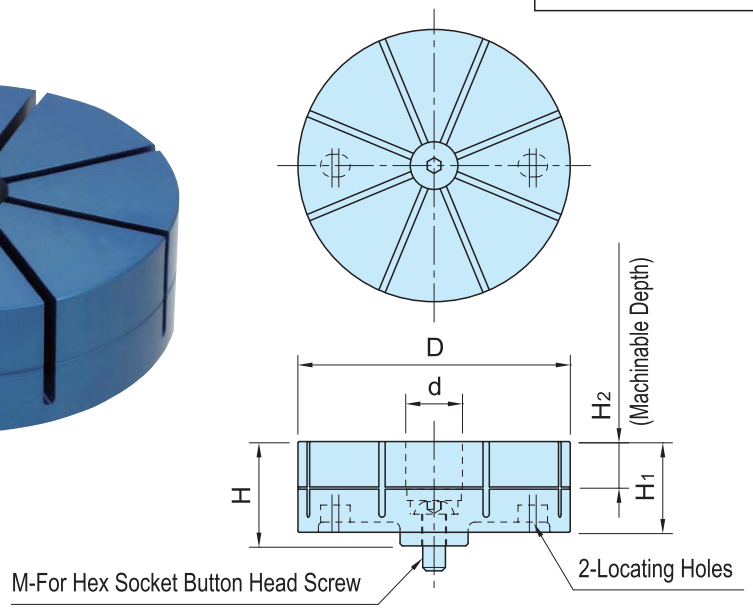

Dimensions of Diamond Locating Pin

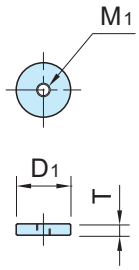
| Part Number | Diameter |
|---|---|
| CP125-06501 | φ 6h6 |
| CP125-09001 | φ 8h6 |
| CP125-12001 | φ10h6 |
| CP125-16001 | φ12h6 |

# CP126 - Jaws For External Form Holding

| Jaw | Locking Ring |
|---|---|
| A7075 Aluminum<br>Blue | S45C Steel<br>Black oxide finish |





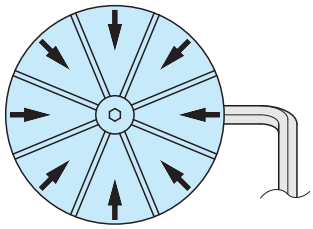




| Part Number | D | d | H1 | H2 | M | H | M1 | D1 | T | Weight (kg) | Proper CP125 Clamps |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **CP126-06501** | 65 | 21 | 25 | 10 | M 8×20L Across Flats5 | 29 | M5×0.8 | 20 | 4 | 0.2 | CP125-06501 |
| **CP126-09001** | 90 | 25 | 35 | 15 | M10×20L Across Flats6 | 40 | M6×1 | 24 | 5 | 0.5 | CP125-09001 |
| **CP126-12001** | 120 | 25 | 40 | 20 | M10×25L Across Flats6 | 46 | | | | 1.1 | CP125-12001 |
| **CP126-16001** | 160 | 29 | 45 | 25 | M12×25L Across Flats8 | 52 | M8×1.25 | 28 | 6 | 2.2 | CP125-16001 |

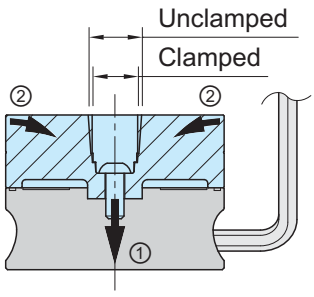
## Furnished Parts

- 1 pc. of O-ring
- 1 pc. of Locking Ring
- 1 pc. of Hex Socket Button Head Screw

## Features

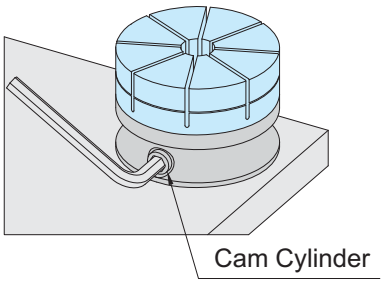


- The diaphragm clamping mechanism allows securely clamping a part with 8 jaw sections.
- 0.15mm clamping stroke of each jaw section is perfect for clamping of lost-wax parts, die-cast parts, extruded parts, solid-drawn parts, prefinished parts, etc.




①When the cam cylinder is tightened, the central bottom part of the jaw is pulled down.

②At the same time the 8 jaw sections tilt toward the center to clamp the external form of a part.

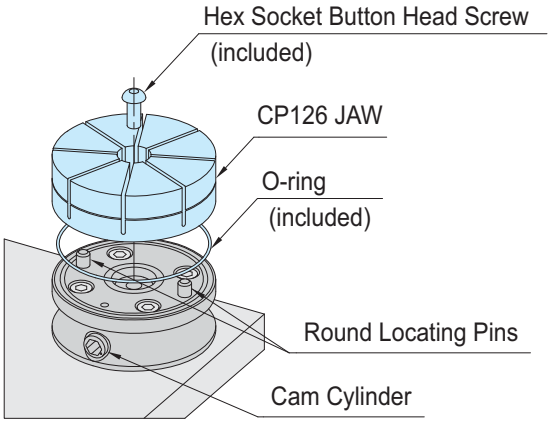


## How To Use

①Jaw Mounting

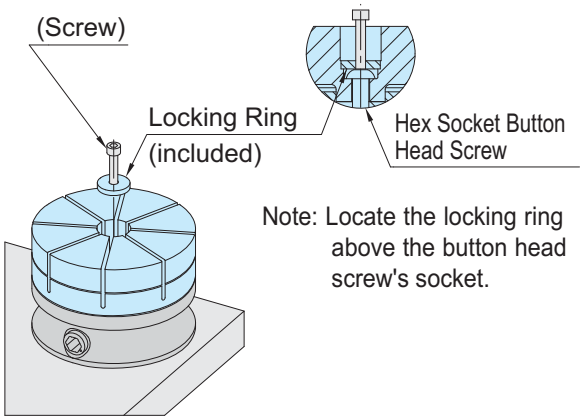
- Insert an O-ring to the groove on top surface of the Form Holding Clamp.
- Set a Jaw putting its locating holes onto the round locating pins and fix it with a hex socket button head screw.

Note: At jaw installation, ensure the cam cylinder is fully loosened by turning counterclockwise until it stops.



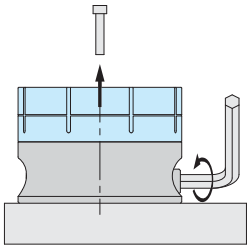

②Jaw Machining

(2-1) Set the locking ring in the jaw.
(Using a screw facilitates setting.)

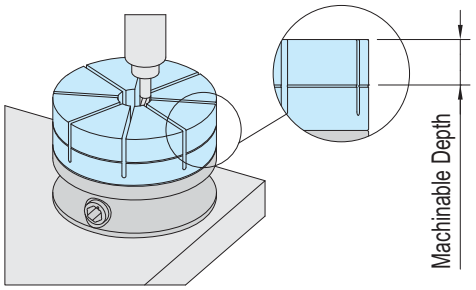



Note: Locate the locking ring above the button head screw's socket.

(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.

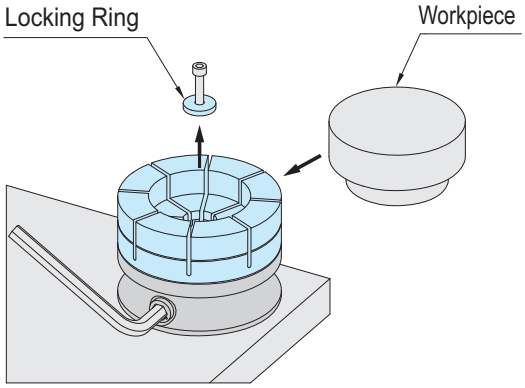


(2-3) Machine the jaw to the contours of a part.
Note: Do not machine the jaw deeper than allowed.

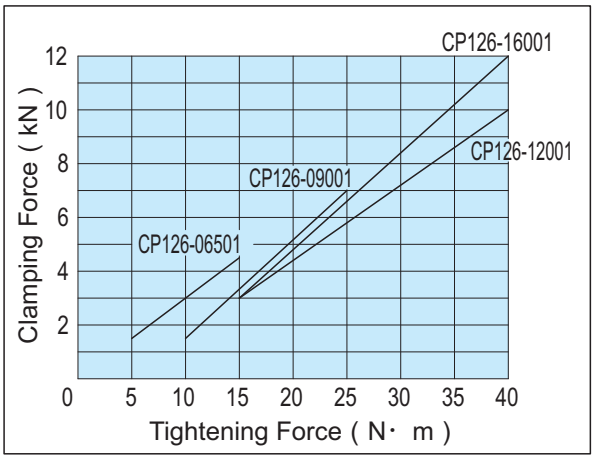



③Workpiece Setting

- After machining loosen the cam cylinder to take out the locking ring.
- Mount a workpiece and tighten the cam cylinder for clamping.



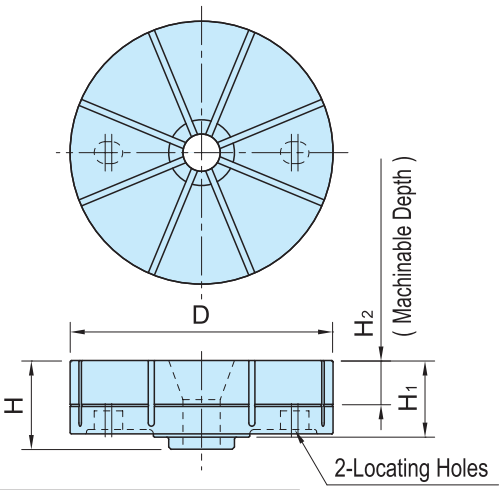

## Performance Curve




## Notes

Do not actuate clamping without a workpiece to avoid damage and deformation.Tightening with torque greater than the allowable screw torque will lower the durability of the jaw.

# CP127 - Jaws For Internal Form Holding



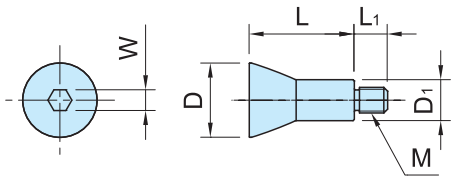

| Jaw |
|---|
| A7075 Aluminum<br>Silver |

| Part Number | D | $H_1$ | $H_2$ | H | Weight (kg) | Proper CP125 Clamps | Proper 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 |

**Furnished Part**

1 pc. of O-ring

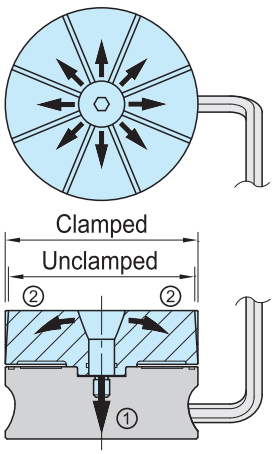
# CP127-B - Tapered Screws For Internal Form Holding




| Body |
|---|
| SCM435 Steel<br>Quenched and tempered<br>Electroless nickel plated |

| Part Number | D | L | M | $L_1$ | $D_1$ | 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 |

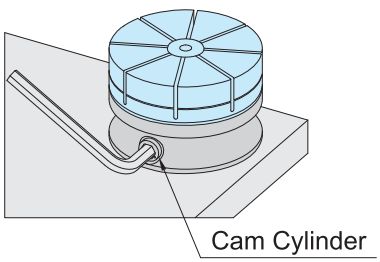
**Features**




- The tapered screw expands the jaws towards eight directions to hold different irregularly-shaped parts 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.

①When the cam cylinder is tightened, the tapered screw is pulled down.

②At the same time the 8 jaw sections expand to clamp the internal form of a part.

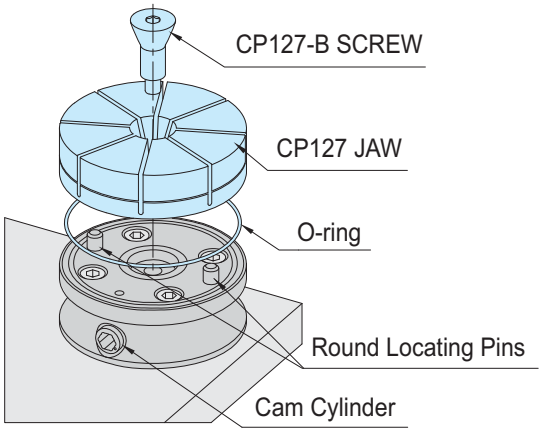


## How To Use

①Jaw Mounting

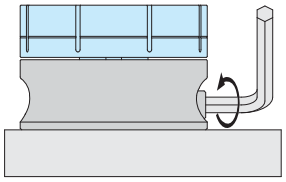
- Insert an O-ring to the groove on top surface of the Form Holding Clamp.
- Set a Jaw putting its locating holes onto the round locating pins and fix it with a tapered screw.

Note: At jaw installation, ensure the cam cylinder is fully loosened by turning counterclockwise until it stops.

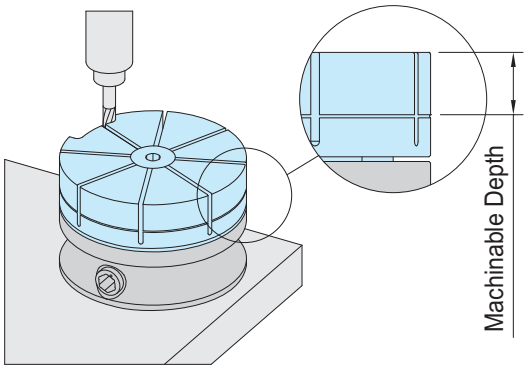



②Jaw Machining

(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.

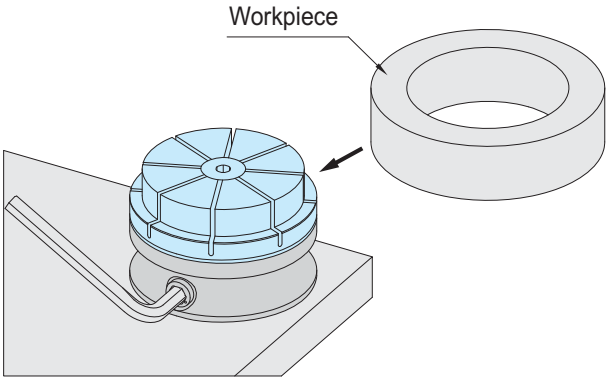


(2-2) Machine the jaw to the contours of a part.
Note: Do not machine the jaw deeper than allowed.

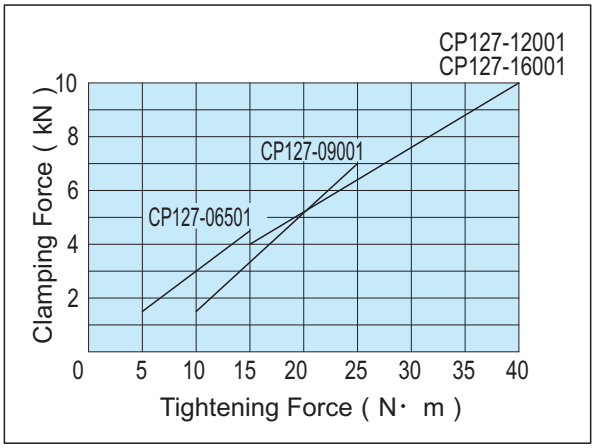



③Workpiece Setting

After machining loosen the cam cylinder to set a part and tighten the cam cylinder again for clamping.




## Performance Curve

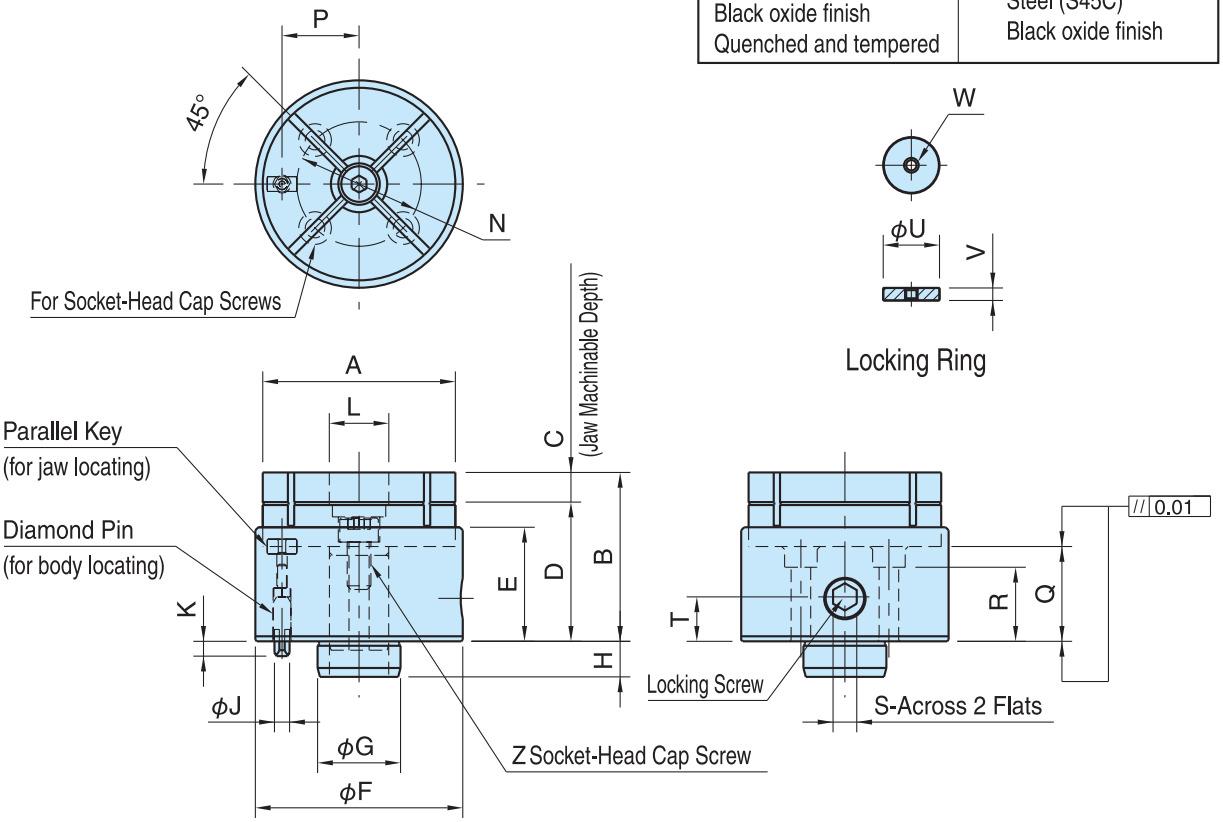



## Notes

Do not actuate clamping without a workpiece to avoid damage and deformation. Tightening with torque greater than the allowable screw torque will lower the durability of the jaw.

# CP120 - OD Holding Clamps

| Body | Jaw |
|---|---|
| Steel (S45C)<br>Black oxide finish | Aluminum (A7075)<br>Blue |
| Shaft / Locking Screw | Housing / Locking Ring |
| Steel (SCM435)<br>Black oxide finish<br>Quenched and tempered | Steel (S45C)<br>Black oxide finish |




| Part Number | A | B | C | D | E | F | G (g6) | H | J (h6) | K | L | M | N | P (±0.02) | Q (±0.01) | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CP120-06501** | 65 | 57 | 10 | 47 | 39 | 70 | 28 | 12 | 6 | 5 | 19 | M6 | 42 | 26 | 32 | 25 |
| **CP120-09001** | 90 | 72 | 15 | 57 | 46 | 95 | 42 | 14 | 8 | 7 | 23 | M8 | 60 | 36 | 38 | 28 |

| Part Number | S | T | U | V | W | Z | Clamping Force (N) | Allowable Screw Torque (N·m) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|
| **CP120-06501** | 8 | 15 | 18 | 4 | M4x0.7 | M 8x1.25-15L | 4,000 | 60 | 1.1 |
| **CP120-09001** | 10 | 17 | 22 | 6 | M5x0.8 | M10x1.5 -20L | 6,000 | 100 | 2.6 |

## Technical Data:

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

## Included:

- 1 of locking ring
- 1 of diamond pin
- 1 of socket-head cap screw

## Notes:

- Never tighten the locking screw without a part mounted, to avoid damage and deformation.
- Do not machine the jaw deeper than allowed.

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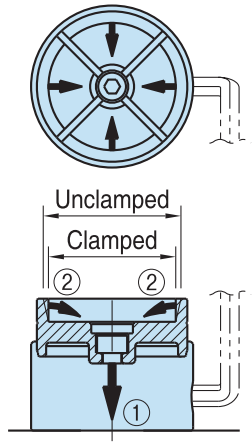
## Features:

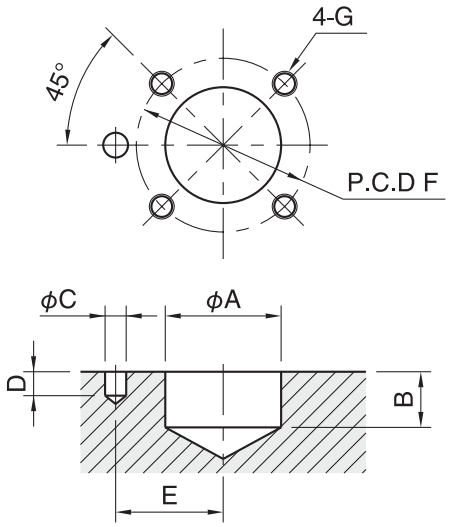



①When the locking screw is tightened, the central bottom part of the jaw is pulled down.

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

- The diaphragm claming 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.

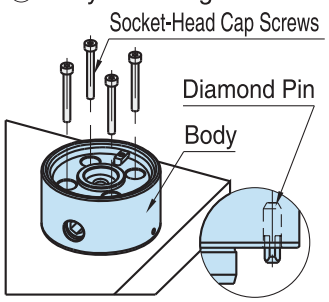
## Hole Preparation




| Part Number | A (H7) | B | C (G7) | D | E (±0.02) | F (P.C.D) | G |
|---|---|---|---|---|---|---|---|
| CP120-06501 | 28 | 13 | 6 | 6 | 26 | 42 | M6X1 |
| CP120-09001 | 42 | 15 | 8 | 8 | 36 | 60 | M8X1.25 |

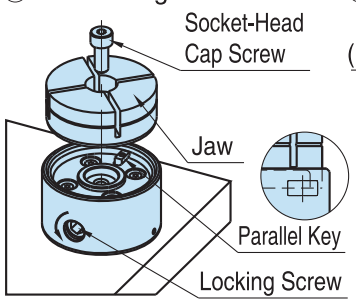
## How To Use

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.

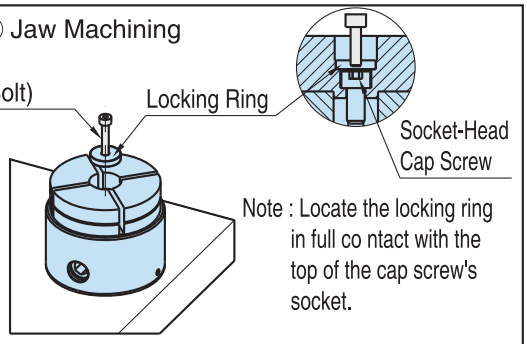
② Jaw Setting




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.

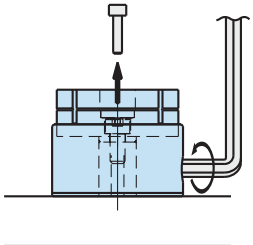
Note : At jaw installation, ensure the locking screw is fully loosened by turning counterclockwise until it stops.

③ Jaw Machining

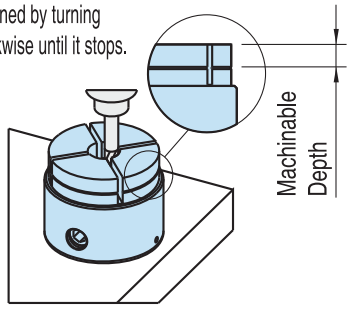



Note : Locate the locking ring in full co ntact with the top of the cap screw's socket.

(1)Set the locking ring in the jaw. (using a bolt facilitates setting)

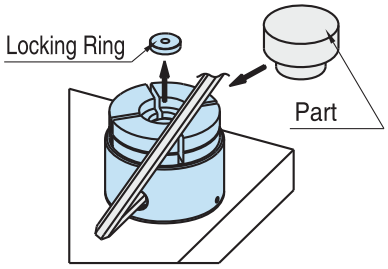


(2)Tighten the locking screw to clamp the locking ring(after clamping the bolt will be removed from the locking ring).

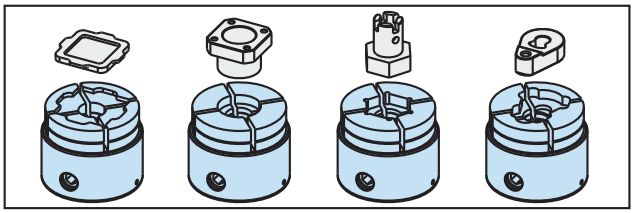



(3)Machine the jaw to the contours of a part.

④ Part Setting




- After machining loosen the locking screw to take out the locking ring.
- Mount a part and then tighten the locking 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.

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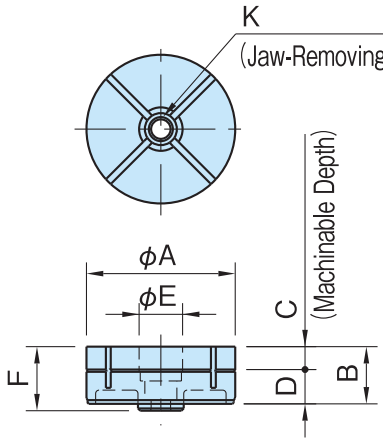
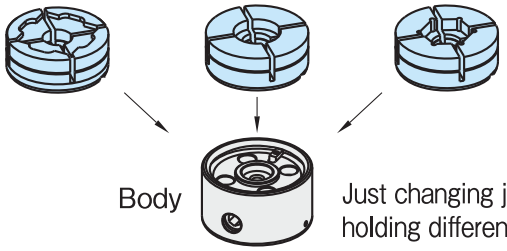



| Jaw | Locking Ring |
|---|---|
| Aluminum (A7075)<br>Blue | Steel (S45C)<br>Black oxide finish |

| Part Number | A | B | C | D | E | F | G | H | J | K | Weight (g) | OD Holding Clamps | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CP121-06501** | 65 | 25 | 10 | 15 | 19 | 28 | 18 | 4 | M4×0.7 | M10×1.5 (Prepared hole φ 8.5) | 170 | CP120-06501 | AMCH080-5W |
| **CP121-09001** | 90 | 34 | 15 | 19 | 23 | 39 | 22 | 6 | M5×0.8 | M12×1.75(Prepared hole φ10.2) | 470 | CP120-09001 | AMCH100-5W |

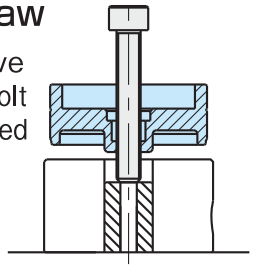
## Feature:

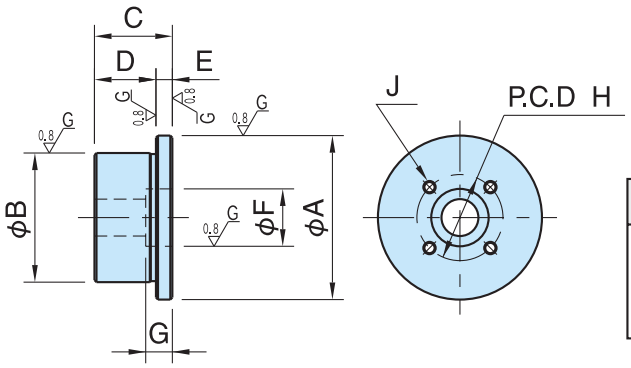



Just changing jaws allows holding different parts.

## 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.

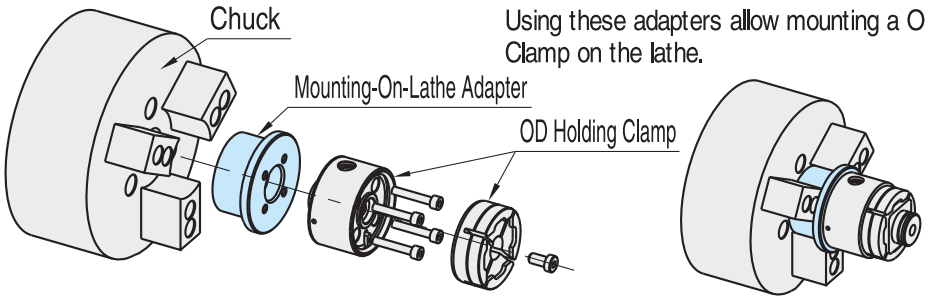





| Body |
|---|
| Steel (SCM415)<br>Black oxide finish<br>Carburized-hardened |

| Part Number | A | B (±0.01) | C | D | E (±0.01) | F (H7) | G | H | J | Weight (g) | OD Holding Clamps |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **CP122-06501** | 80 | 63 | 38 | 30 | 8 | 28 | 13 | 42 | M6×1 12 deep | 910 | **CP120-06501** |
| **CP122-09001** | 100 | 80 | 43 | 35 | | 42 | 15 | 60 | M8×1.25 16 deep | 1,600 | **CP120-09001** |

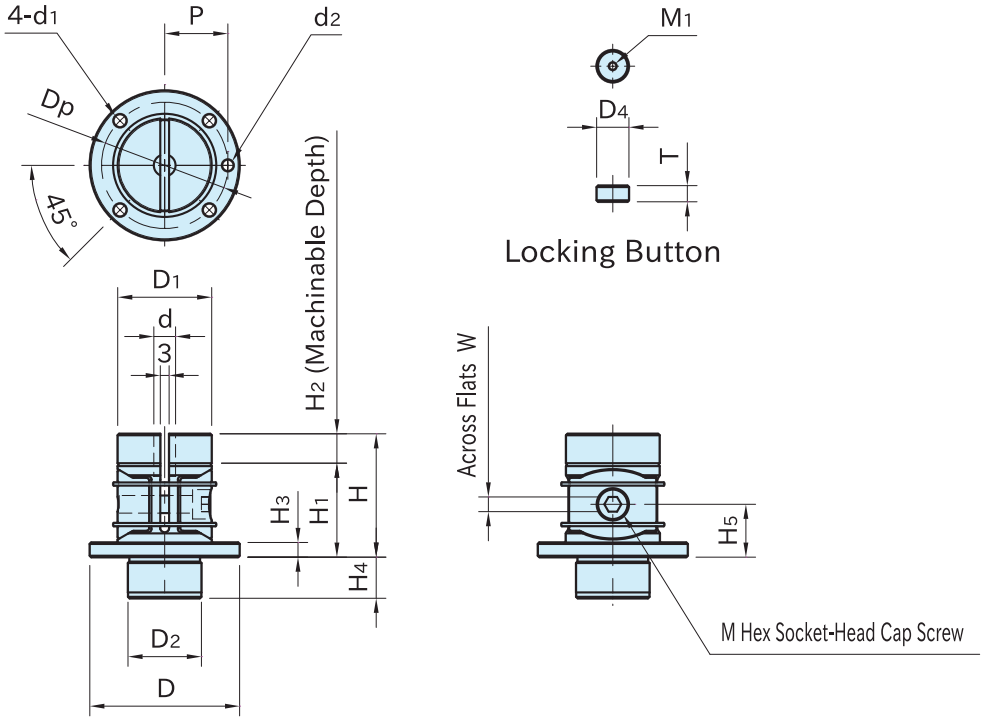
## How To Use:




Note : A diamond pin included with an OD Holding Clamp is not required in this combination use.

# CP123 - OD Holding Clamps (Wedge Style/Round)

| Body | Wedge |
|---|---|
| Steel(S45C)<br>Black oxide finished | Steel(S45C)<br>Black oxide finished<br>Quenched & tempered |




| Part Number | D1 | d | H | H2 | D | H1 | H3 | D2 (g7) | H4 | d1 | Dp | d2 | 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 | H5 | M1 | D4 | T | Clamping Force (N) | Allowable Screw Torque (N·m) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|
| CP123-03201 | M 6×1 -25L | 5 | 18 | M3×0.5 | 7 | 3.5 | 3,000 | 9 | 0.33 |
| CP123-05001 | M10×1.5-35L | 8 | 27 | | 11 | 5.5 | 7,000 | 42 | 1.2 |

## Technical Information

- Locating Repeatability ±0.08

## Furnished Parts

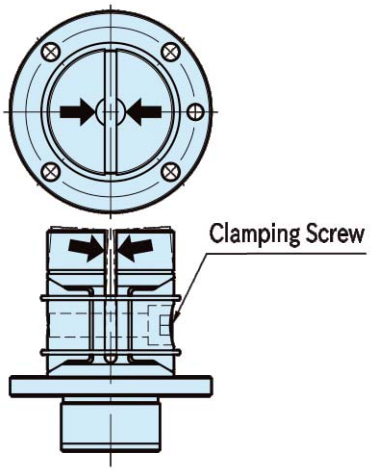
- 1 of locking button
- Spring pin
  (φ5×10L for CP123-03201)
  (φ6×14L for CP123-05001)

## Notes:

- Do not tighten the clamping screw without the workpiece set to prevent damage and deformation.
- Do not machine the jaws beyond the machinable depth.

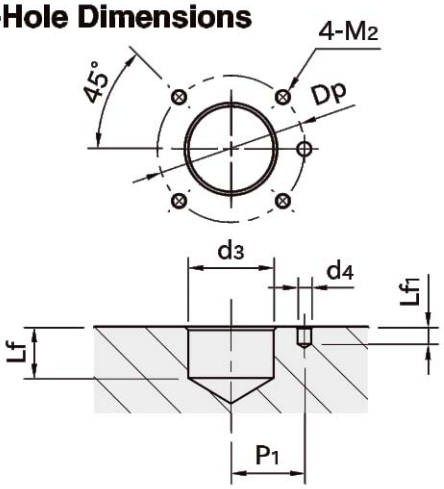
## Features:

- 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 contours of parts allows holding parts of different shapes.
- Simple and compact design permits multiple-parts holding arrangement.




## How To Use

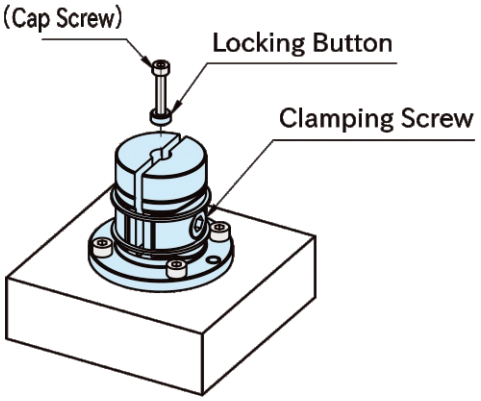
### Mouting-Hole Dimensions

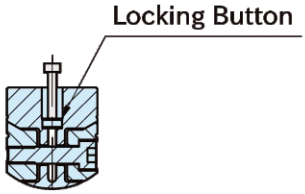



| Part Number | $d_3$ (H7) | Lf | $d_4$ ($^{+0.12}_{0}$) | $Lf_1$ | $P_1$ (±0.05) | $M_2$ | Dp |
|---|---|---|---|---|---|---|---|
| CP123-03201 | 25 | 15 | 5 | 5 | 21.5 | M4×0.7 | 43 |
| CP123-05001 | 40 | 20 | 6 | 7 | 32.5 | M5×0.8 | 65 |

### How To Machine Jaws

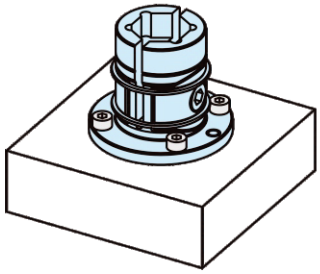
①Setting the locking button
Insert the locking button into the jaw, and then tighten the clamp screw to fasten the locking button. (Using a cap screw facilitates setting)



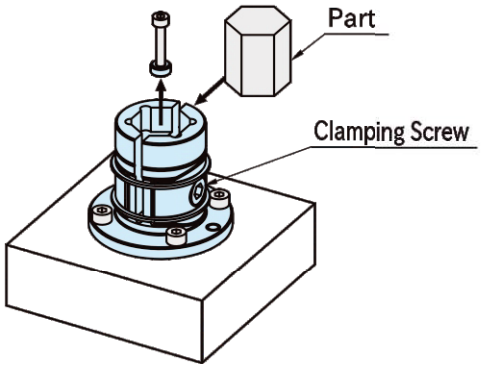

Note:The locking button must be inserted onto the bottom.

②Machining the jaw
Cut the jaw to the contours of the part.



Note:Do not cut beyond the machinable depth.

③Loading the part
Looen the clamping screw to remove the locking button. Load the part and tighten the clamping screw for clamping.

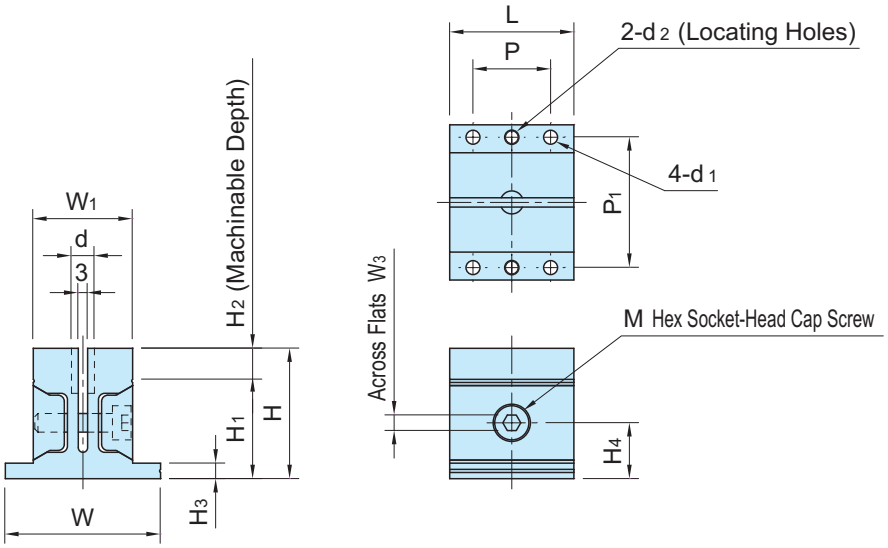


# CP124 - OD Holding Clamps
## (Wedge Style/Square)

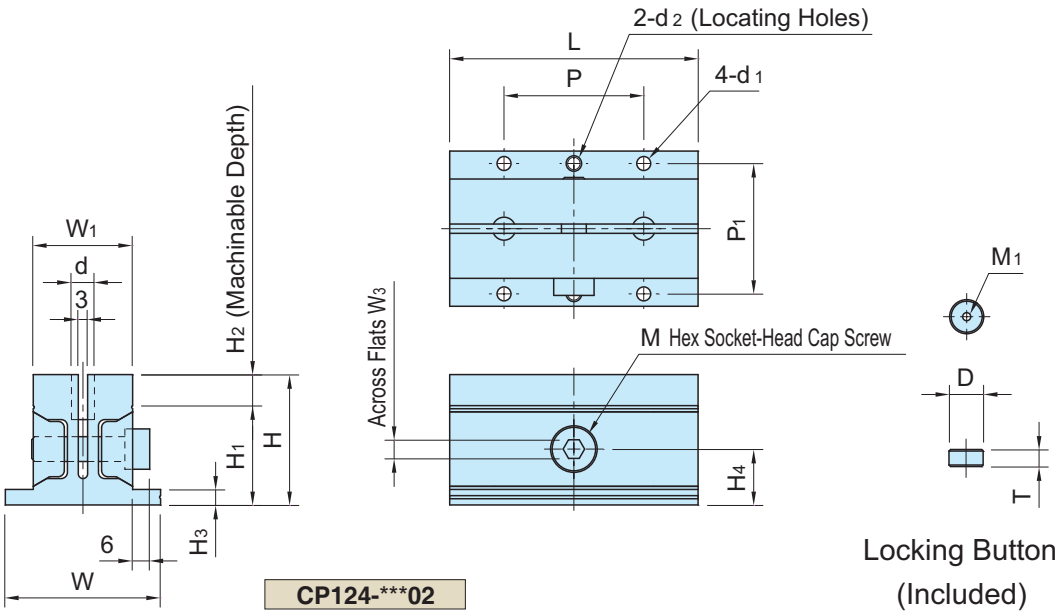
CP124-***01

CP124-***02

| Body | Wedge |
|---|---|
| Aluminum(A6N01)<br>Anodized<br>Natural color | Steel(SCM440)<br>Black oxide finished<br>Quenched & tempered |




CP124-***01




CP124-***02

Locking Button
(Included)

| Part Number | $W_1$ | d | L | H | $H_2$ | W | $H_3$ | $H_1$ | $d_2$ ( H7 ) | $d_1$ | P | $P_1$ | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CP124-03201 | 32 | 7.4 | 40 | 42 | 10 | 50 | 5 | 32 | 5 | 4.5 | 25 | 42 | M 6× 1 25L |
| CP124-03202 | | | 80 | | | | | | | | 45 | | 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 | | | | | | | | 58 | | M12× 1.75 45L |

| Part Number | $W_3$ | $H_4$ | $M_1$ | D | T | Clamping Force ( N ) | Allowable Screw torque ( N· m ) | Weight ( kg ) |
|---|---|---|---|---|---|---|---|---|
| CP124-03201 | 5 | 18 | M3× 0.5 | 7 | 3.5 | 2,500 | 7.5 | 0.22 |
| CP124-03202 | 6 | | | | | | 14 | 0.42 |
| CP124-05001 | 8 | 27 | | 11 | 5.5 | 5,500 | 26 | 0.62 |
| CP124-05002 | 10 | | | | | | 46 | 1.29 |

## Technical Information

Locating Repeatability : ±0.08

## Furnished Parts

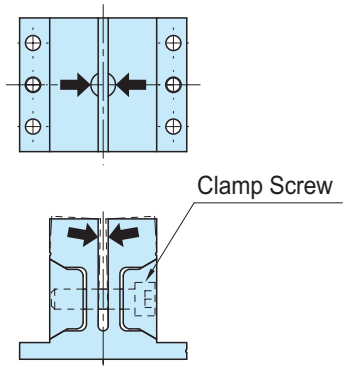
- 1 of locking button for CP124-***01
  2 of locking button for CP124-***02
- 2 of parallel pin(m6 tolerance)
  φ5×10L for CP124-***01
  φ6×15L for CP124-***02

## Features:

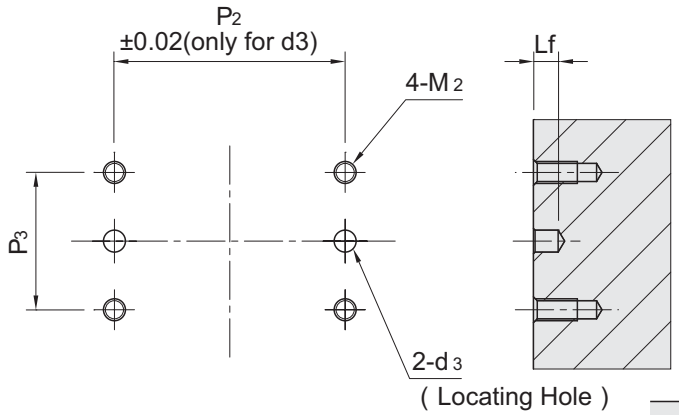
- When the clamp screw is tightened, both jaws tilt toward the center to clamp the circumference of the workpiece.
- The clamping stroke is 0.5mm.
- Cutting the machinable jaw to the contours of parts allows holding parts of different shapes.
- Simple and compact design permits multiple-parts holding arrangement.

## Notes:

- Do not tighten the clamp screw without the workpiece set to prevent damage and deformation.
- Do not machine the jaws beyond the machinable depth




## Mounting-Hole Preparation



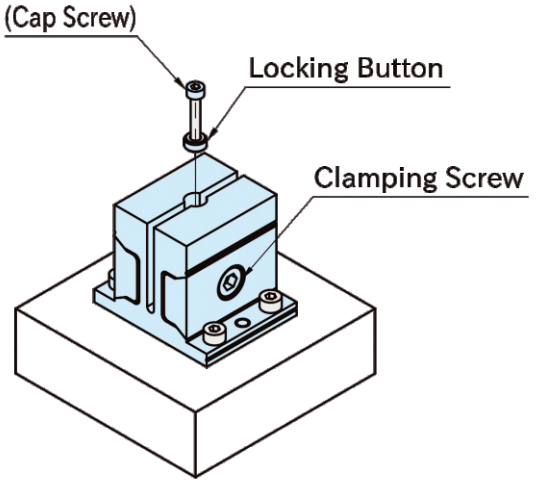

Use the included parallel pin for locating.

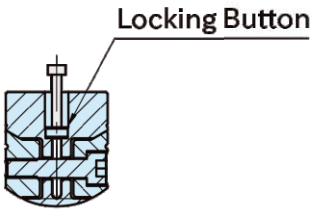
| Part Number | $d_3$ ( H7 ) | Lf | $M_2$ | $P_2$ | $P_3$ |
|---|---|---|---|---|---|
| CP124-03201 | 5 | 5 | M4×0.7 | 42 | 25 |
| CP124-03202 | | | | | 45 |
| CP124-05001 | 6 | 8 | M5×0.8 | 62 | 30 |
| CP124-05002 | | | | | 58 |

Continuing on Next Page

## How To Machine Jaws

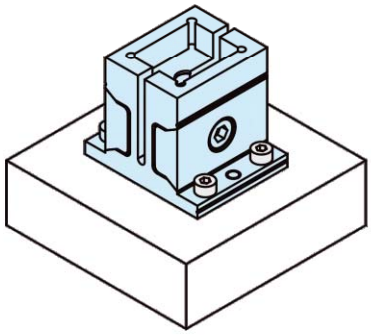
①Setting the locking button
Insert the locking button into the jaw, and then tighten the clamp screw to fasten the locking button.
(Using a cap screw facilitates setting)



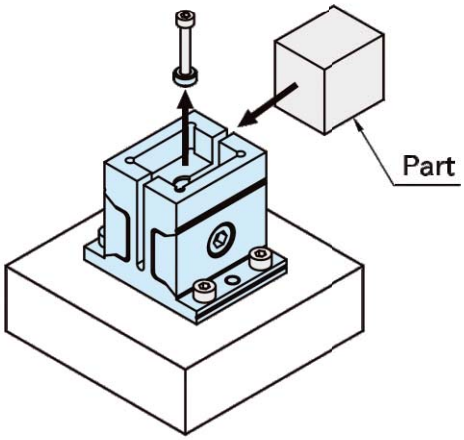

Note:The locking button must be inserted onto the bottom.

②Machining the jaw
Cut the jaw to the contours of the part.

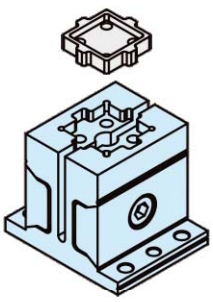


Note:Do not cut beyond the machinable depth.

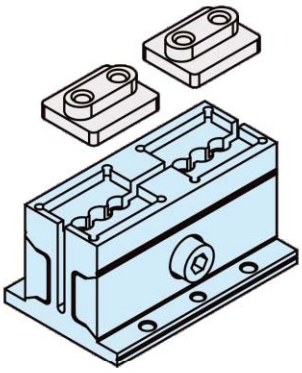
③Loading the part
Looen the clamping screw to remove the locking button. Load the part and tighten the clamping screw for clamping.



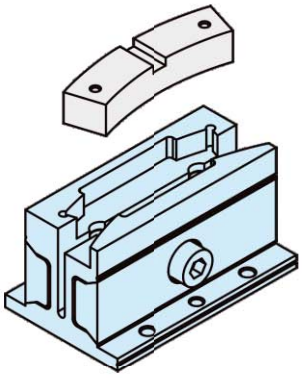

## Application Examples



Single-station mode on the short-type clamp



Dual-station mode on the long-type clamp



Single-station mode on the long-type clamp

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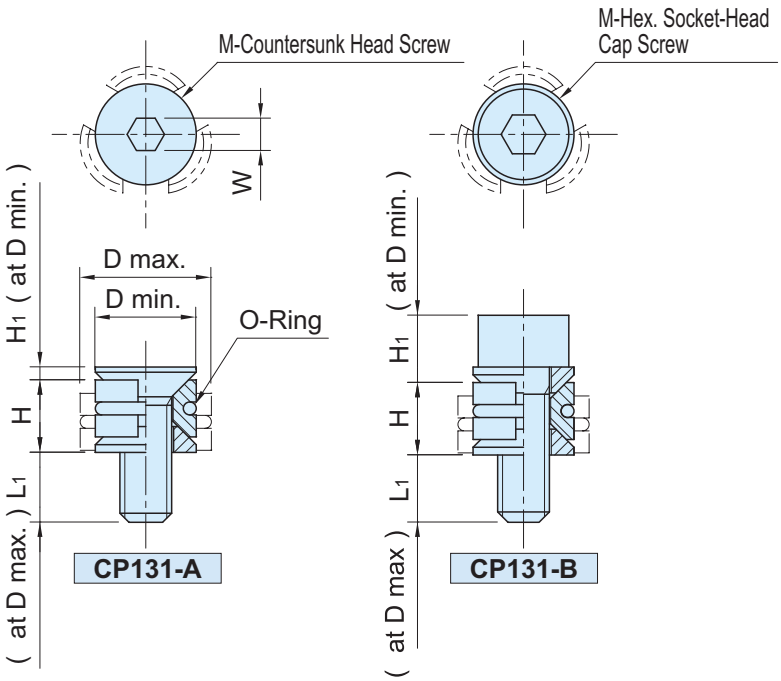
CAD downloads or movie data.

# CP131 - Compact ID Holding Clamps

CP131-A

CP131-B



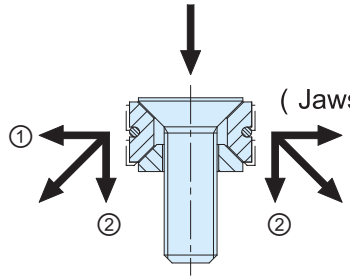

| Jaw | Washer | O-Ring |
|---|---|---|
| SNCM439 steel<br>Black oxide finished<br>HRC33-39 | SCM435 steel<br>Black oxide finished | Fluoro rubber |

| Part Number | D | | H | | $H_1$ | M | $L_1$ | 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 ) |
|---|---|---|---|
| **CP131-04001A** | 0.9 | 2.1 | 3 |
| **CP131-05001A** | 1.5 | 4.3 | 5 |
| **CP131-06001A** | 2.1 | 7.3 | 9 |
| **CP131-08001A** | 4 | 18 | 22 |
| **CP131-04001B** | 1.5 | 2.7 | 4 |
| **CP131-05001B** | 2.5 | 5.4 | 7 |
| **CP131-06001B** | 5 | 9.1 | 11 |
| **CP131-08001B** | 9 | 25 | 28 |

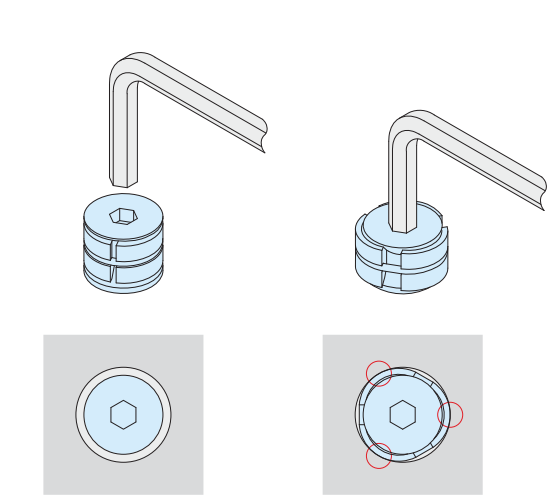
## Features

- 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.



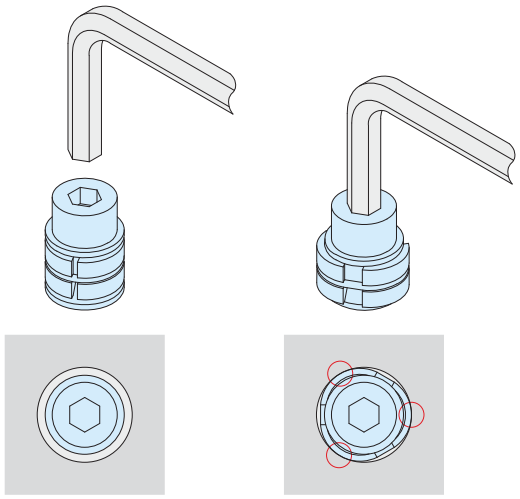

① Horizontal pressure against workpiece
② Vertical pressure preventing workpiece lift

## How To Use



Unclamping Mode Clamping Mode

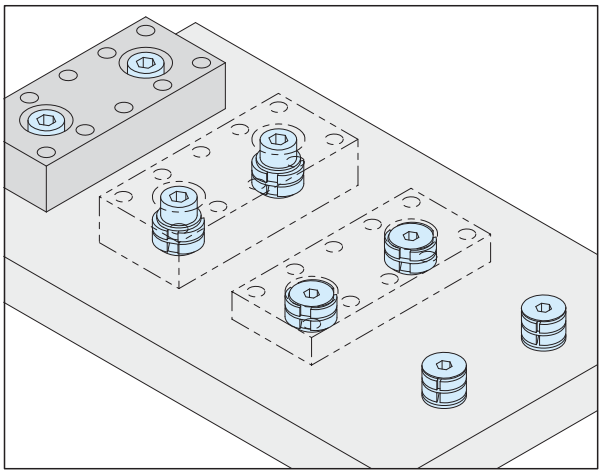
**CP131-A**



Unclamping Mode Clamping Mode

**CP131-B**

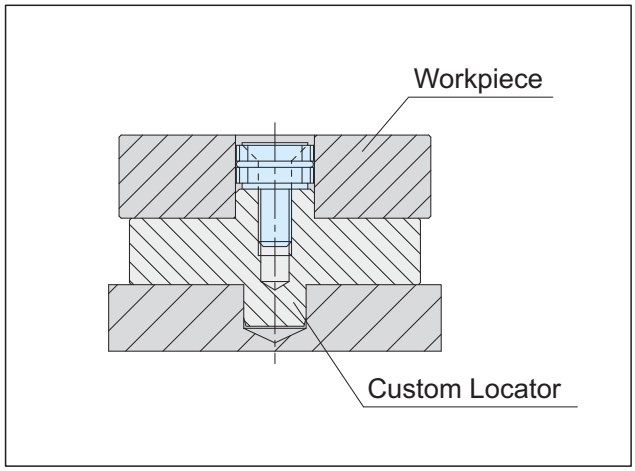
Note: The clamp makes a line contact with the workpiece at the clamping mode.
This contact can mark the surface of the workpiece depending on its materials, and using these clamps for accurately finished holes is not recommended.



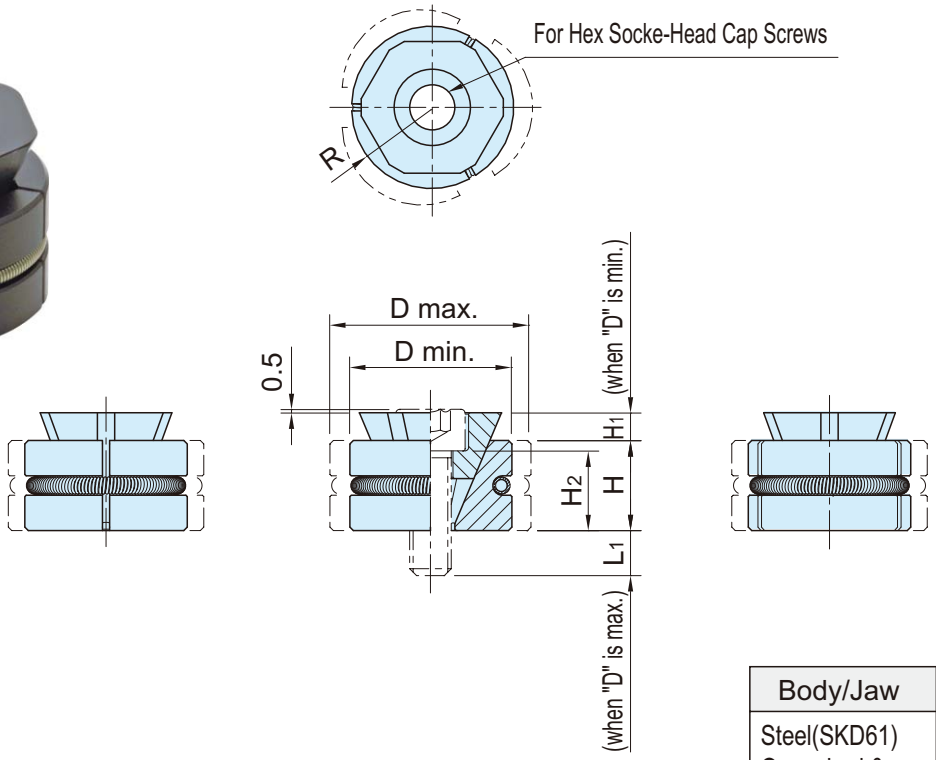
Example of application where two Compact ID Holding Clamps are used.

## Note

For accurate locating, use these clamps with a locator as shown below.



# CP130 - ID Holding Clamps




| Body/Jaw | Spring |
|---|---|
| Steel(SKD61) Quenched & tempered(HRC47-53) Black oxide finished | Stainless Steel (SUS304) |

| Part Number | D | | H | $H_1$ | R | $H_2$ | | $L_1$ *) | Proper Cap Screws | Clamping Force ( N ) |
|---|---|---|---|---|---|---|---|---|---|---|
| | min. | max. | | | | min. | max. | | | |
| **CP130-04001** | 19.5 | 24 | 9 | 2.5 | R 9.5 | 8 | 2.6 | 9.4 | M4×12L | 2,000 |
| **CP130-06001** | 23.5 | 29 | 13 | 4 | R11.5 | 11.5 | 5 | 13 | M6×18L | 5,000 |
| **CP130-08001** | 28.5 | 36 | 17 | 5.5 | R14 | 15 | 6 | 19 | M8×25L | 9,000 |

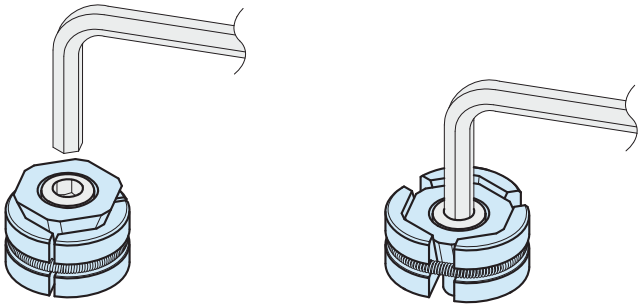
| Part Number | Allowable Screw Torque ( N· m ) | Weight ( g ) |
|---|---|---|
| **CP130-04001** | 3.2 | 17 |
| **CP130-06001** | 10.5 | 37 |
| **CP130-08001** | 25.0 | 75 |

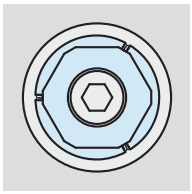
*) The stated values are only for use of the proper cap screws.

## Features

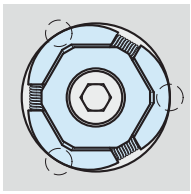
- These clamps hold the inside diameter of the workpiece.
- The wedge construction allows powerfully clamping the workpiece.
- Long clamping stroke is ideal for holding as-cast or roughly-finished holes.

## How To Use



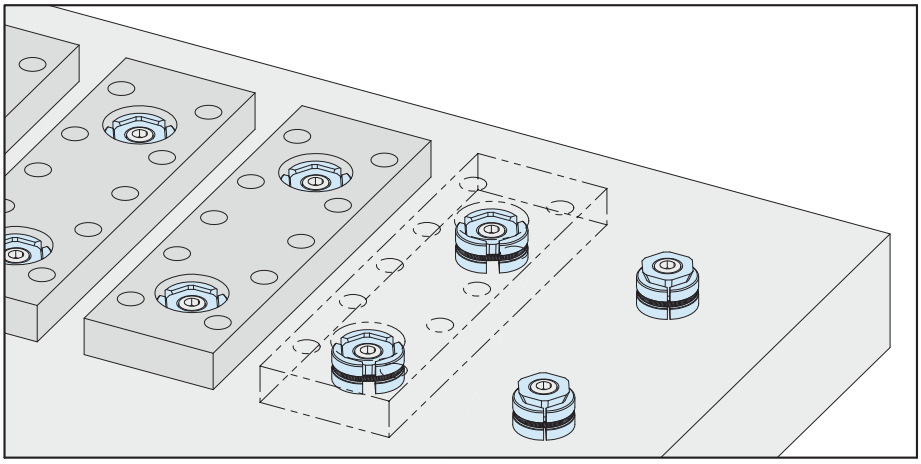


Unclamping Mode



Clamping Mode

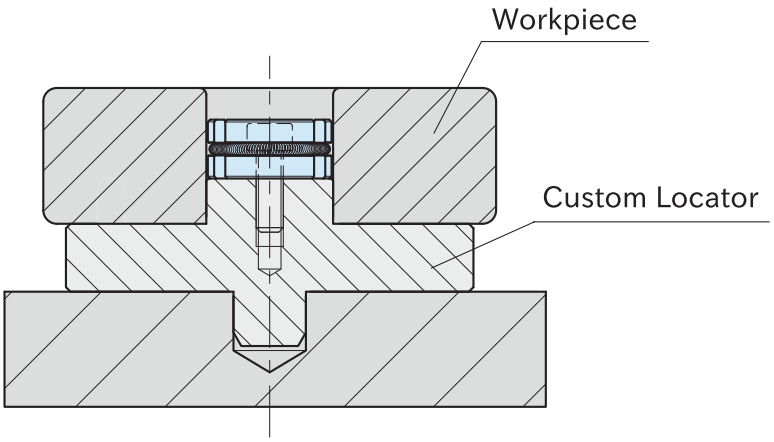
Note:The clamp makes a line contact with the workpiece at the clamping mode. This contact can mark the surface of the workpiece depending on its materials, and using these clamps for accurately finished holes is not recommended.



Example of application where two I.D. Holding Clamps are used.

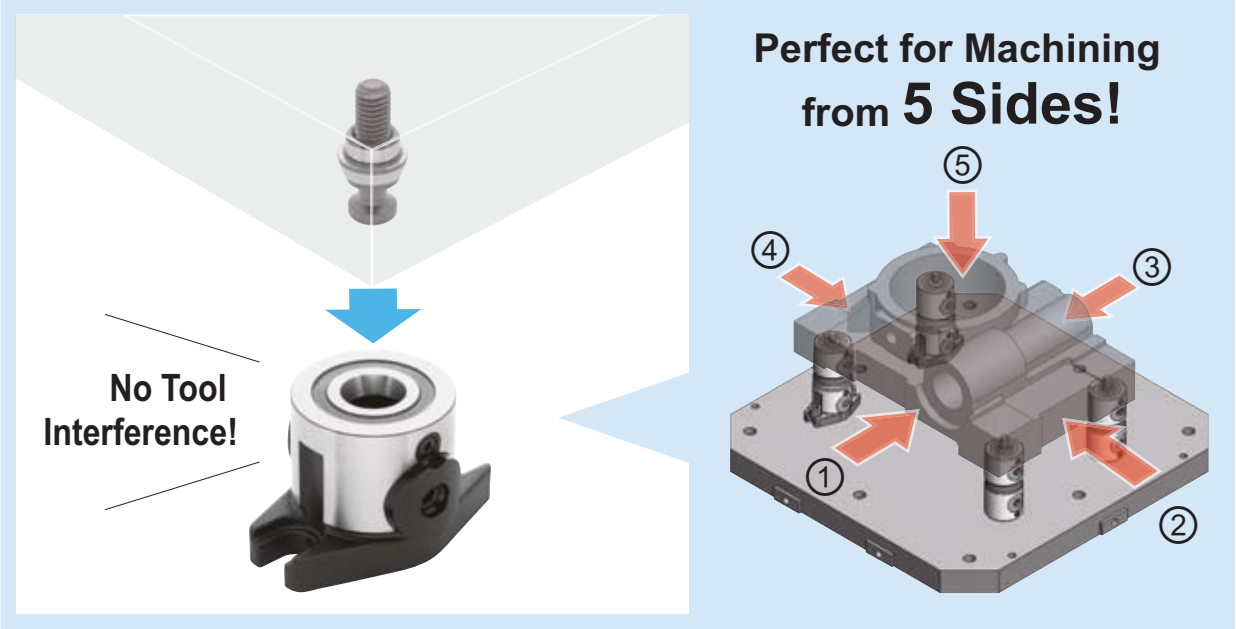
## Note

For accurate locating, use these clamps with a locator as shown below.



New Style of Pull Clamps!

# MODULAR PULL CLAMPING SYSTEM

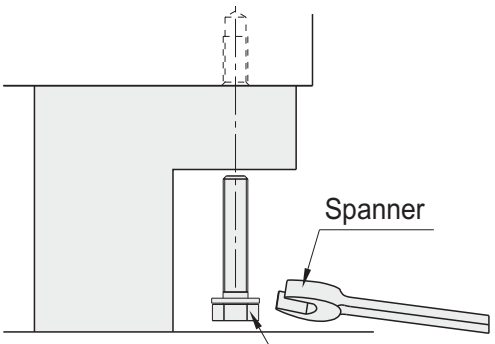



- The cylindrical body allows machining from 5 sides without tool interference.
- Precise dual contact of tapered surfaces provides the excellent locating repeatability at 8μm!

## Flexible Workholding!

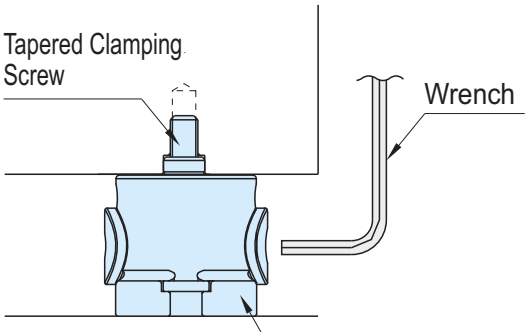

3 Sizes in 3 Types **9 options are available!**

**Conventional**




Clamping under the workpiece is troublesome.

**Modular Pull Clamping System**




Sideways clamping style increases operating efficiency!

## Modular Pull Clamping System provides simple workholding!

### Time Saving

- Shorter workpiece setup time
- Shorter fixture preparation time

### Cost Saving

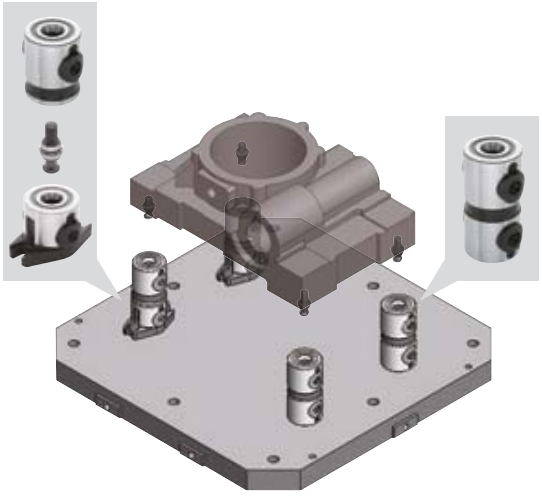
- Lower fixturing cost

### Space Saving

- Smaller fixture storage
- Smaller quantity of fixtures

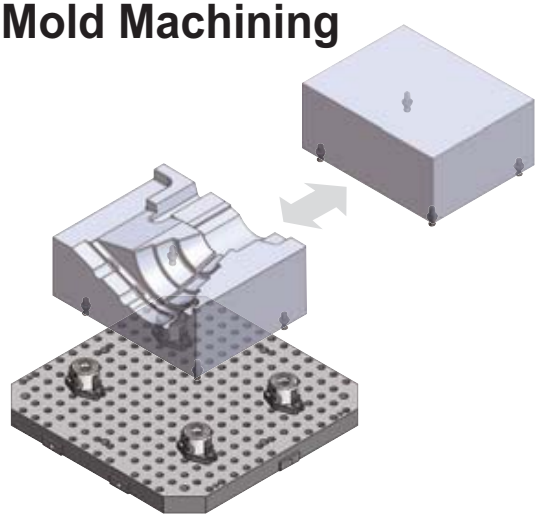
**Application Examples**

## Part Machining



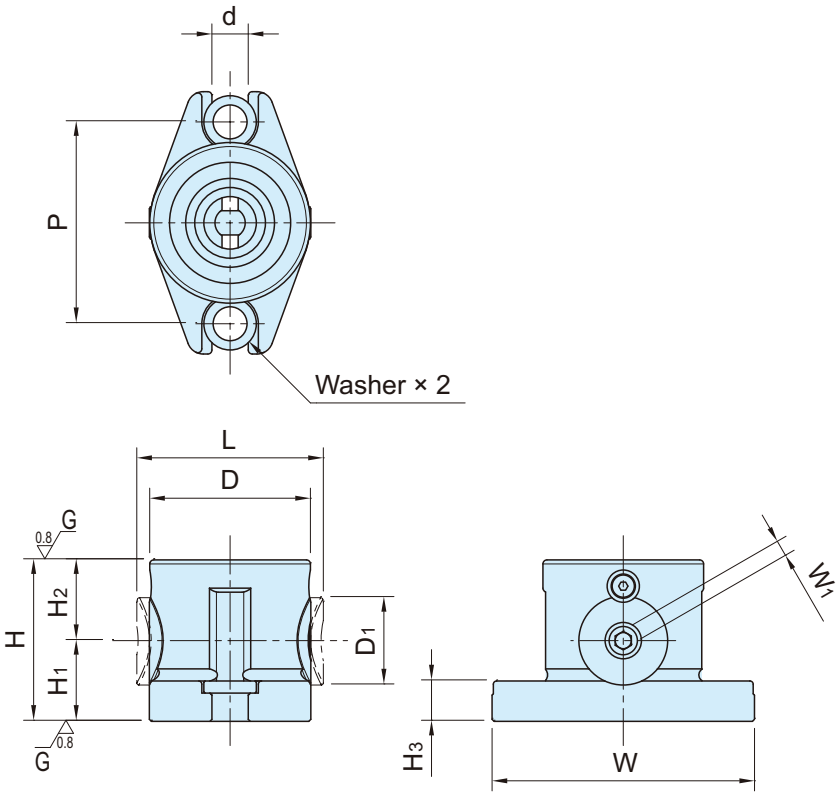
Easy height adjustment by simple coupling of the clamping modules.

## Mold Machining



Versatile fixture is possible by standardizing the hole positions for clamping screws.

# CP150 - Clamping Modules (Flanged)




| Body | Clamping Nut | Locking Screw |
|---|---|---|
| SCM440 steel<br>Induction hardened<br>Black oxide finished<br>Precision ground | SCM440 steel<br>Quenched and tempered<br>Black oxide finished | SCM435 steel<br>Quenched and tempered<br>Black oxide finished |

| Part Number | D | H ( ±0.01 ) | $D_1$ | L | $H_1$ | $H_2$ | W | $H_3$ | d | P | $W_1$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **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 ) |
|---|---|---|---|
| **CP150-08040** | 8 | 8 | 0.3 |
| **CP150-12063** | 15 | 22 | 1.4 |
| **CP150-16080** | 25 | 50 | 3.3 |

## Furnished Parts

2 pcs. of flat washer

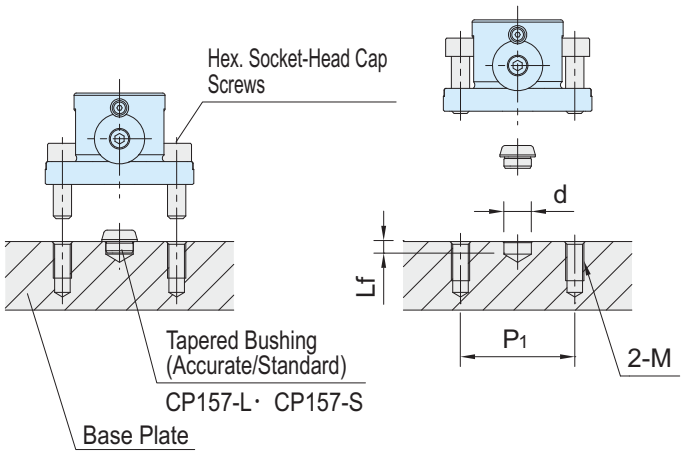
## Related Products

- CP155-L Tapered Clamping Screws (Round)
- CP155-D Tapered Clamping Screws (Diamond)
- CP156 Clamping Screws
- CP157 Tapered Bushings

## How To Use

- Use CP157-L Tapered Bushing (Accurate) for precise locating.
- Use CP157-S Tapered Bushing (Standard) for rough locating.

### ■Mounting-Hole Dimensions

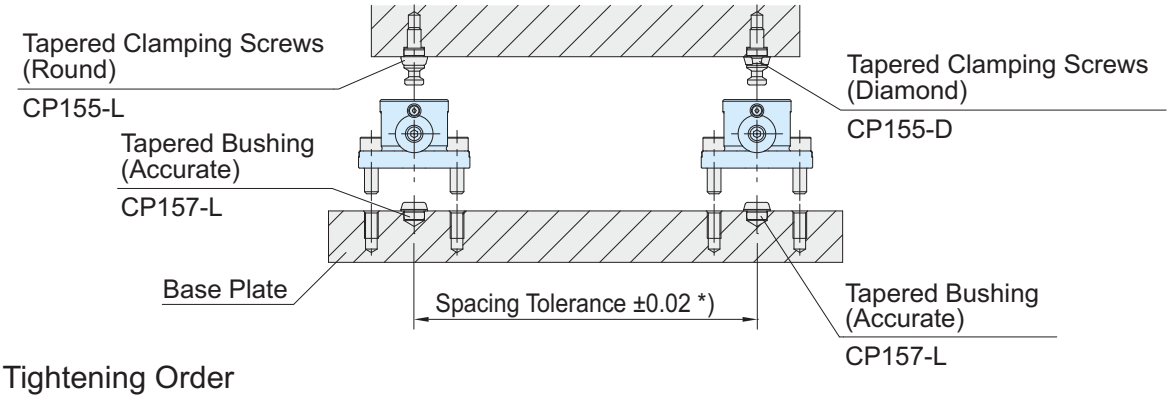



| Part Number | d (H7) | Lf | M | $P_1$ |
|---|---|---|---|---|
| **CP150-08040** | 12 | 5.5 | M 8×1.25 | 50 |
| **CP150-12063** | 18 | 6.5 | M12×1.75 | 75 |
| **CP150-16080** | 22 | 8 | M16×2 | 100 |

Note: The tolerance of dimension "d" for Tapered Bushing (Standard) should be $^{+0.1}_{0}$.

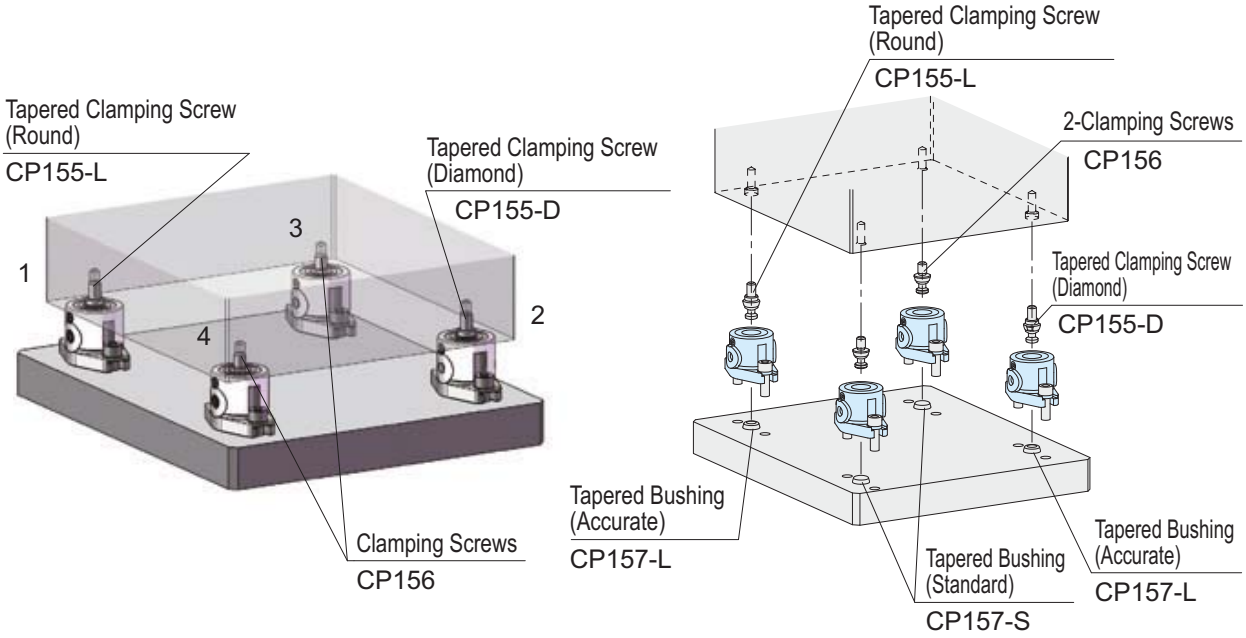
### ■Spacing Tolerance

Spacing tolerance for CP157-L Tapered Bushings (Accurate) should be ±0.02.
*) Spacing tolerance for CP157-S Tapered Bushings (Standard) should be ±0.1.

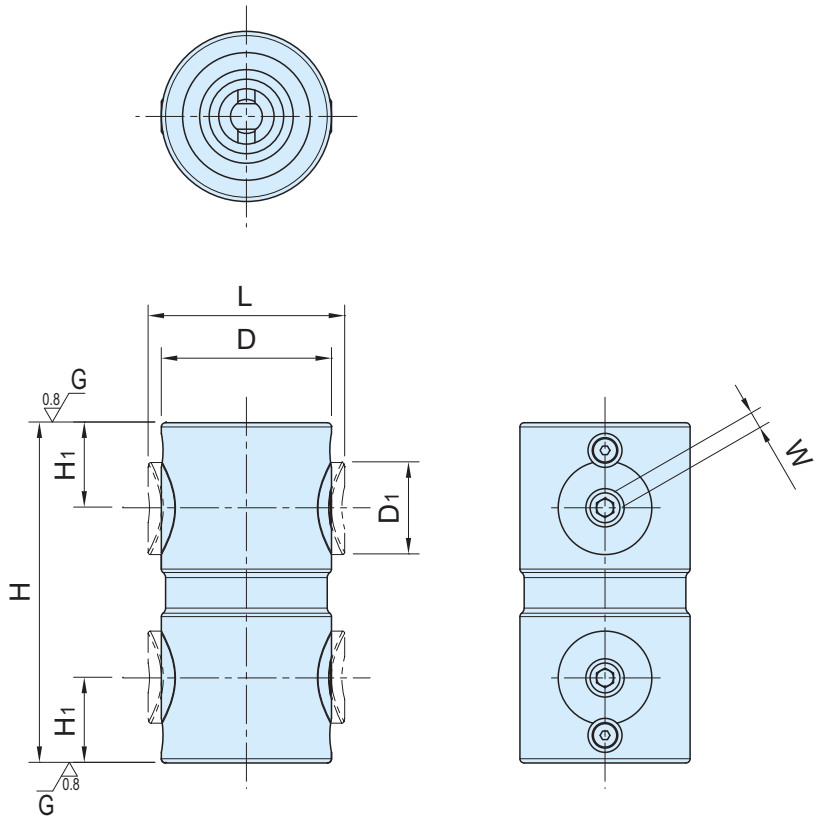



### ■Tightening Order

Tighten the locking screws in order of 1(Round Tapered Clamping Screw)→ 2(Diamond Tapered Clamping Screw)→3(Clamping Screw)→4(Clamping Screw).



# CP151 - Clamping Modules (Double)




| Body | Clamping Nut | Locking Screw |
|---|---|---|
| SCM440 steel<br>Induction hardened<br>Black oxide finished<br>Precision ground | SCM440 steel<br>Quenched and tempered<br>Black oxide finished | SCM435 steel<br>Quenched and tempered<br>Black oxide finished |

| Part Number | D | H ( ±0.01 ) | $D_1$ | L | $H_1$ | W | Clamping Force ( kN ) | Allowable Screw Torque ( N· m ) | Weight ( kg ) |
|---|---|---|---|---|---|---|---|---|---|
| **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 |

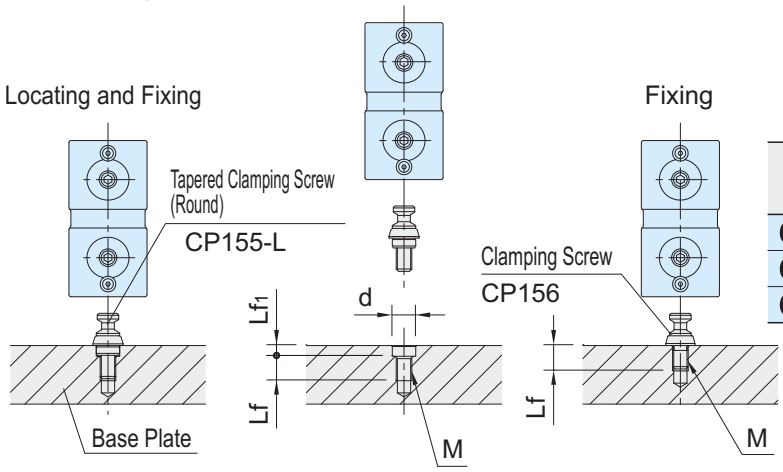
## Related Products

- CP150 Clamping Modules (Flanged)
- CP152 Clamping Modules (Single)
- CP155-L Tapered Clamping Screws (Round)
- CP155-D Tapered Clamping Screws (Diamond)
- CP156 Clamping Screws

## How To Use

- Use CP155-L Tapered Clamping Screw (Round) for precise locating.
- Use CP156 Clamping Screw just for fixing.

### ■Mounting-Hole Dimensions

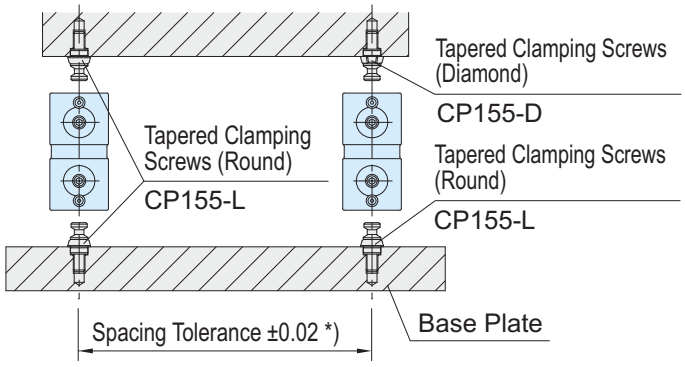



| Part Number | d (H7) | Lf | Lf1 | M |
|---|---|---|---|---|
| CP151-08080 | 12 | 13 | 5.5 | M 8×1.25 |
| CP151-12125 | 18 | 19 | 6.5 | M12×1.75 |
| CP151-16160 | 22 | 23 | 8 | M16×2 |

Note: Only tapped hole is required for CP156 Clamping Screw.

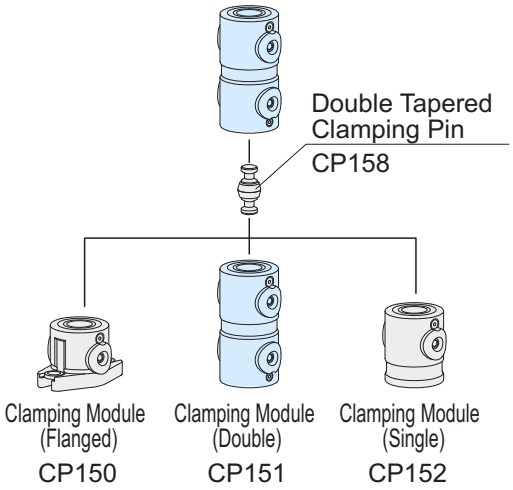
### ■Spacing Tolerance

Spacing tolerance for CP155-L Tapered Clamping Screws (Accurate) should be ±0.02.
*) Spacing tolerance for CP156 Clamping Screws should be ±0.2.



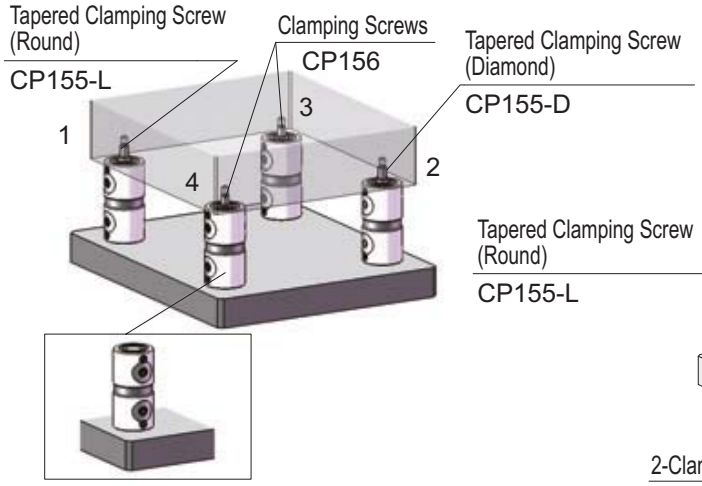

### ■ Coupling With Other Clamping Modules

Can be coupled with each Clamping Module.
〈Locating Repeatability is 0.2〉

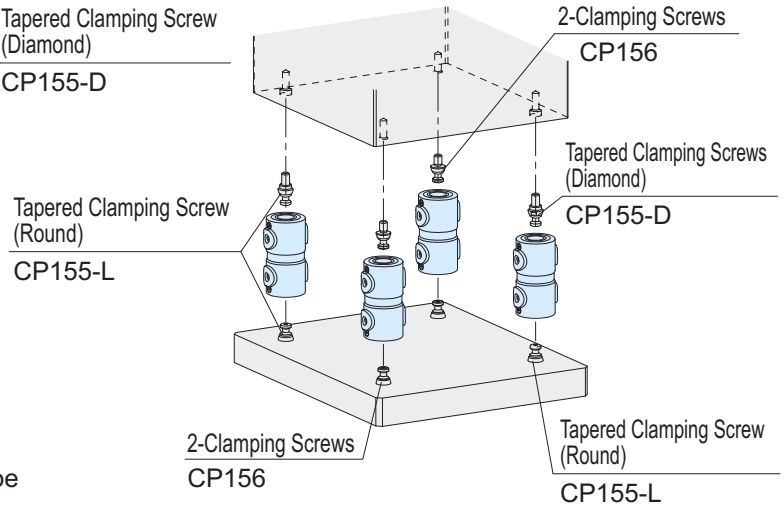



### ■Tightening Order

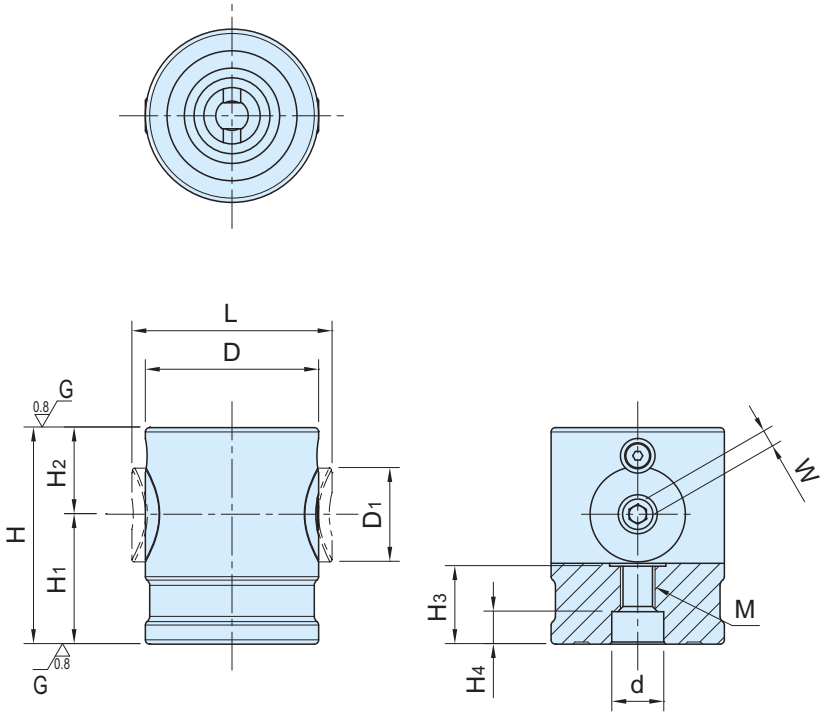
Tighten the locking screws in order of 1(Round Tapered Clamping Screw)→ 2(Diamond Tapered Clamping Screw)→3(Clamping Screw)→4(Clamping Screw).




The direction of Clamping Module can be changed for easy operation.



# CP152 - Clamping Modules (Single)




| Body | Clamping Nut | Locking Screw |
|---|---|---|
| SCM440 steel<br>Induction hardened<br>Black oxide finished<br>Precision ground | SCM440 steel<br>Quenched and tempered<br>Black oxide finished | SCM435 steel<br>Quenched and tempered<br>Black oxide finished |

| Part Number | D | H ( ±0.01 ) | $D_1$ | L | $H_1$ | $H_2$ | $H_3$ | d ( H7 ) | $H_4$ | M | W |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **CP152-08050** | 40 | 50 | 22 | 46 | 30 | 20 | 18 | 12 | 7.5 | M 8×1.25 | 4 |
| **CP152-12080** | 60 | 80 | 32 | 69 | 50 | 30 | 25 | 18 | 10.5 | M12×1.75 | 6 |
| **CP152-16100** | 80 | 100 | 44 | 91 | 60 | 40 | 31 | 22 | 12.5 | M16×2 | 8 |

| Part Number | Clamping Force ( kN ) | Allowable Screw Torque ( N· m ) | Weight ( kg) |
|---|---|---|---|
| **CP152-08050** | 8 | 8 | 0.5 |
| **CP152-12080** | 15 | 22 | 1.6 |
| **CP152-16100** | 25 | 50 | 3.8 |

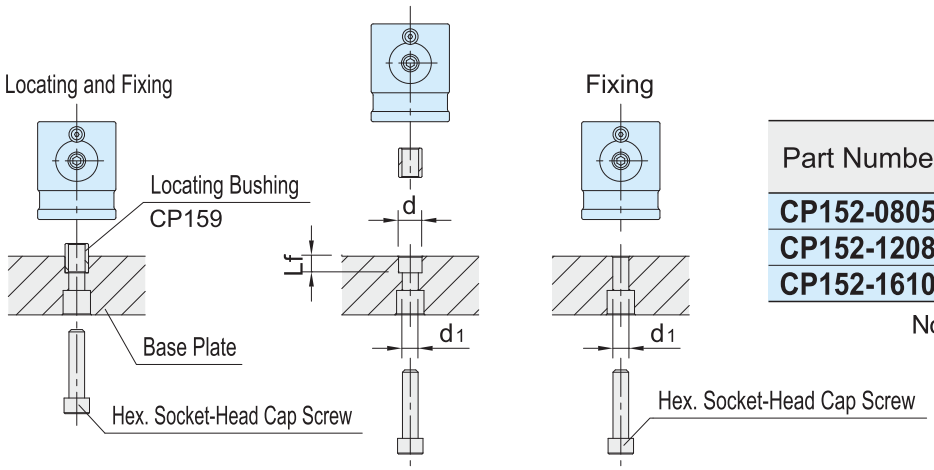
## Related Products

- CP150 Clamping Modules (Flanged)
- CP151 Clamping Modules (Double)
- CP155-L Tapered Clamping Screws (Round)
- CP155-D Tapered Clamping Screws (Diamond)
- CP156 Clamping Screws
- CP159 Locating Bushings

## How To Use

- Use CP159 Locating Bushing for precise locating.
- Use only hex. socket-head cap screw just for fixing.

### ■Mounting-Hole Dimensions

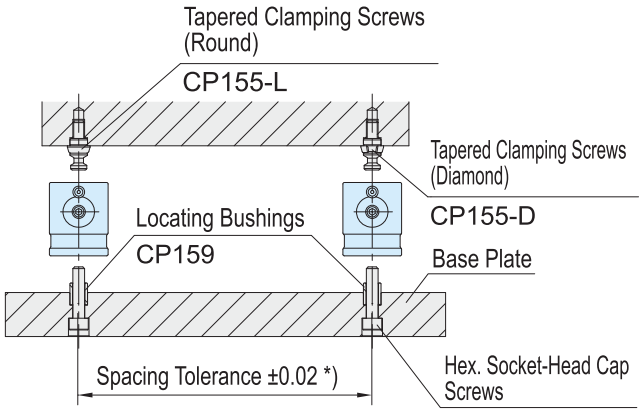



| Part Number | d (H7) | Lf | $d_1$ ($^{+0.2}_{0}$) |
|---|---|---|---|
| CP152-08050 | 12 | 8.5 | 8 |
| CP152-12080 | 18 | 12.5 | 12 |
| CP152-16100 | 22 | 16.5 | 16 |

Note: Only c'bored hole is required just for fixing.

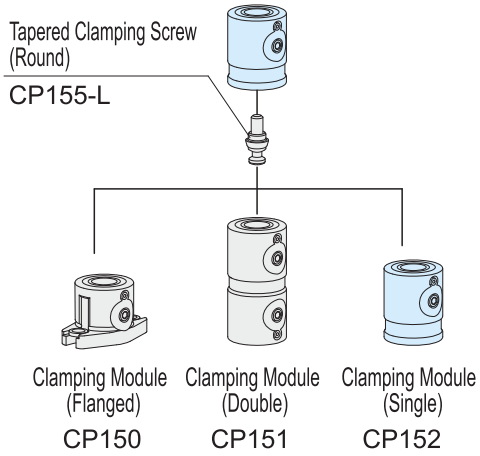
### ■Spacing Tolerance

Spacing tolerance for CP159 Locating Bushings should be ±0.02.
*) Spacing tolerance for hex. socket-head cap screw should be ±0.1.



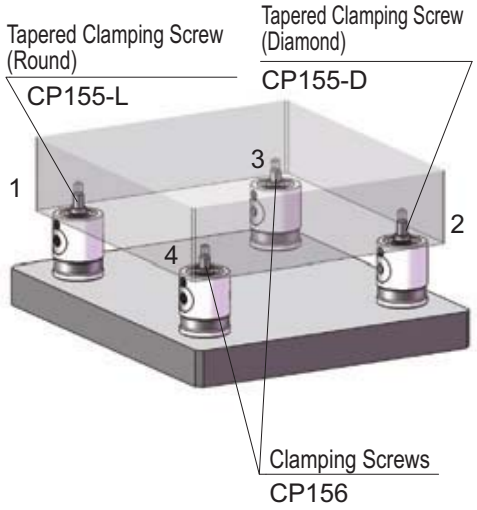

### ■ Coupling With Other Clamping Modules

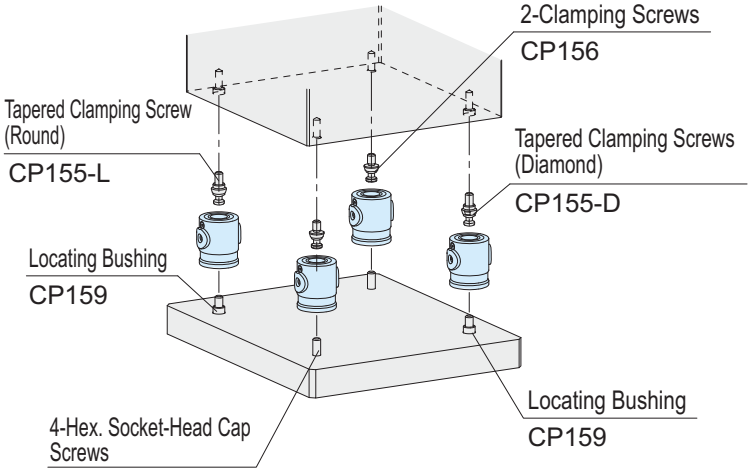
Can be coupled with each Clamping Module.
〈Locating Repeatability is 8μm〉



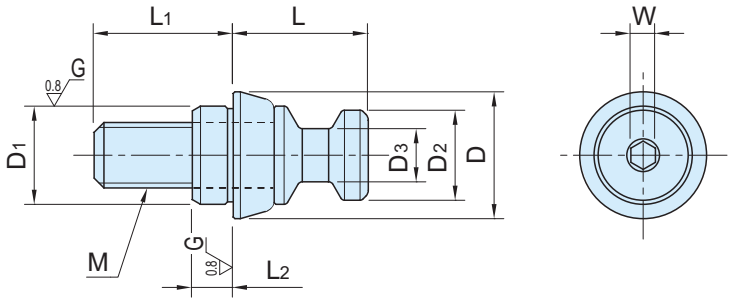

### ■Tightening Order

Tighten the locking screws in order of 1(Round Tapered Clamping Screw)→ 2(Diamond Tapered Clamping Screw)→3(Clamping Screw)→4(Clamping Screw).



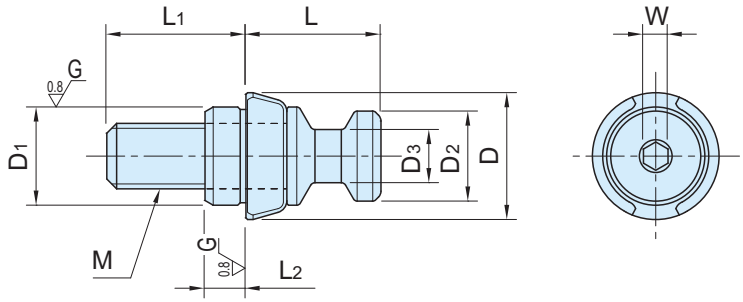
# CP155-L - Tapered Clamping Screws (Round)




| Tapered Bushing | Clamping Screw |
|---|---|
| S45C steel<br>Black oxide finished<br>Precision ground | SCM435 steel<br>Quenched and tempered<br>Black oxide finished |

| Part Number | M | $D_1$ (g6) | $L_2$ | $L_1$ | D | L | $D_2$ | $D_3$ | W | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|
| **CP155-08001L** | M 8×1.25 | 12 | 5 | 17 | 15.5 | 16.5 | 11 | 6.5 | 3 | 20 |
| **CP155-12001L** | M12×1.75 | 18 | 6 | 24 | 24.5 | 25 | 16 | 9.5 | 5 | 70 |
| **CP155-16001L** | M16×2 | 22 | 7.5 | 30 | 31.5 | 33 | 21 | 13 | 6 | 150 |

# CP155-D - Tapered Clamping Screws (Diamond)




| Tapered Bushing | Clamping Screw |
|---|---|
| S45C steel<br>Black oxide finished<br>Precision ground | SCM435 steel<br>Quenched and tempered<br>Black oxide finished |

| Part Number | M | $D_1$ (g6) | $L_2$ | $L_1$ | D | L | $D_2$ | $D_3$ | W | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|
| **CP155-08001D** | M 8×1.25 | 12 | 5 | 17 | 15.5 | 16.5 | 11 | 6.5 | 3 | 20 |
| **CP155-12001D** | M12×1.75 | 18 | 6 | 24 | 24.5 | 25 | 16 | 9.5 | 5 | 70 |
| **CP155-16001D** | M16×2 | 22 | 7.5 | 30 | 31.5 | 33 | 21 | 13 | 6 | 150 |

## How To Use

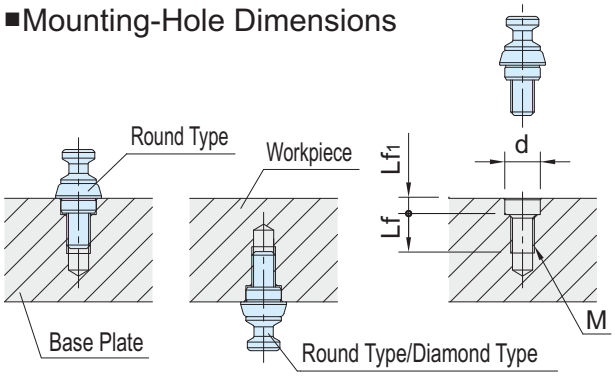
### Round Type

- Can be used for locating CP151 Clamping Module (Double).
- Can be used for locating a workpiece with diamond type.

### Diamond Type

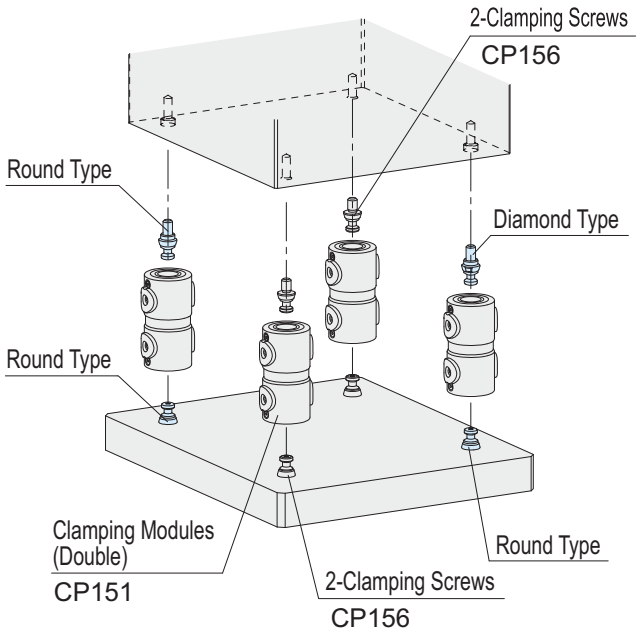
- Can be used for locating a workpiece with round type.
- Fix the tapered bushing of diamond type after deciding the direction.

### ■Mounting-Hole Dimensions

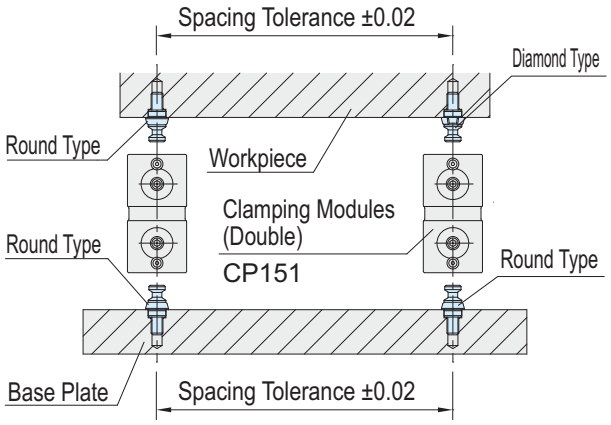



| Part Number | d (H7) | Lf | Lf1 | M |
|---|---|---|---|---|
| CP155-08001D | 12 | 13 | 5.5 | M 8×1.25 |
| CP155-12001D | 18 | 19 | 6.5 | M12×1.75 |
| CP155-16001D | 22 | 23 | 8 | M16×2 |

### ■Application Example

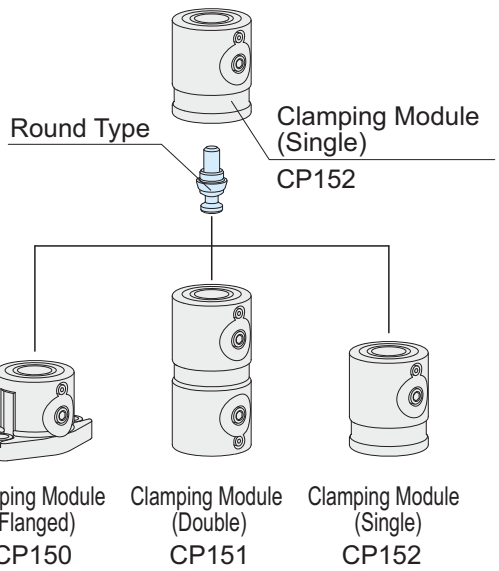



### ■Spacing Tolerance




### ■Coupling of Clamping Module (Single)

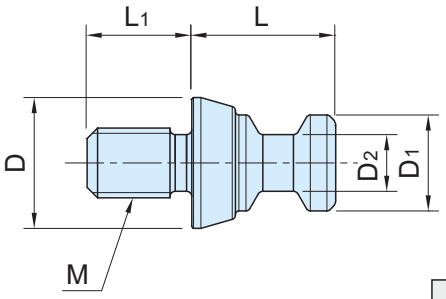
Round type can be used as a coupling for Clamping Module (Single).
〈Locating Repeatability is 8μm〉




## Related Products

- CP150 Clamping Modules (Flanged)
- CP151 Clamping Modules (Double)
- CP152 Clamping Modules (Single)
- CP156 Clamping Screws

# CP156 - Clamping Screws

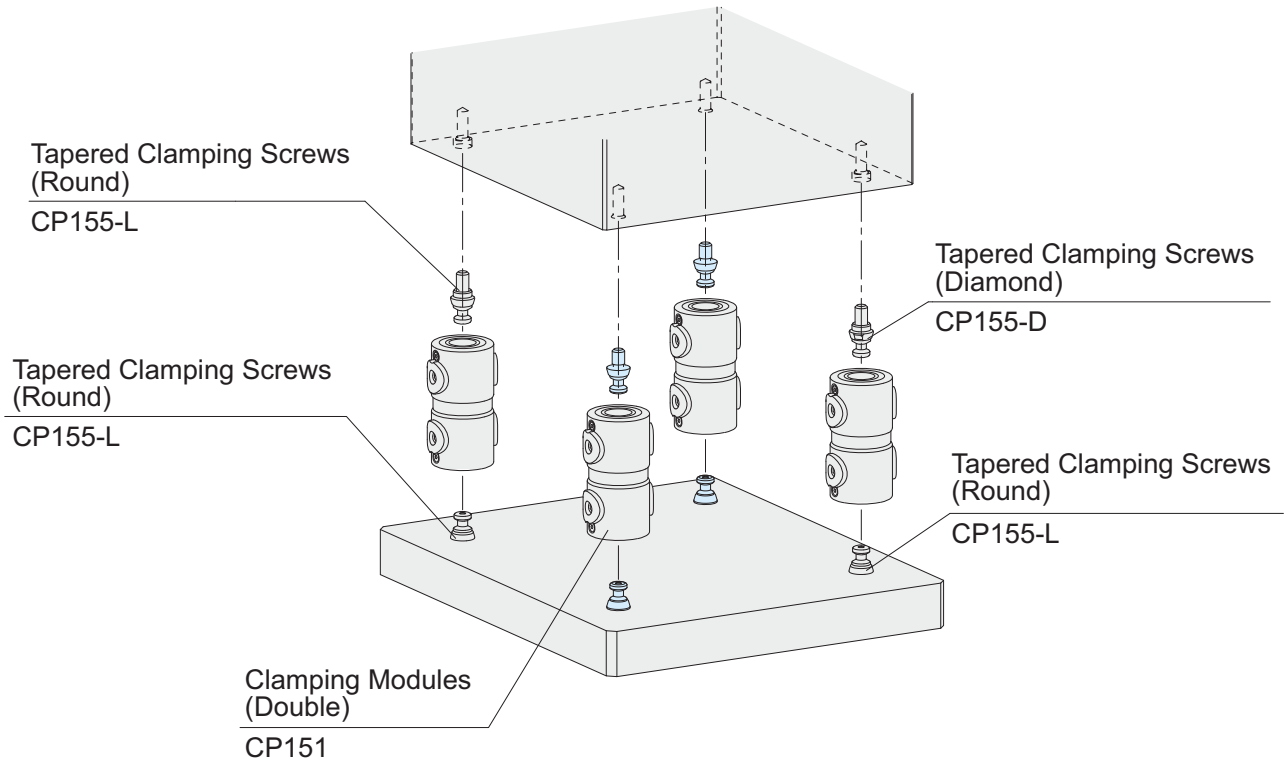



| Body |
|---|
| SCM435 steel<br>Quenched and tempered<br>Black oxide finished |

| Part Number | M | $L_1$ | D | L | $D_1$ | $D_2$ | W | Weight ( g ) |
|---|---|---|---|---|---|---|---|---|
| CP156-08001 | M 8×1.25 | 12 | 15 | 16.5 | 11 | 6.5 | 3 | 16 |
| CP156-12001 | M12×1.75 | 18 | 24 | 25 | 16 | 9.5 | 5 | 57 |
| CP156-16001 | M16×2 | 22 | 31 | 33 | 21 | 13 | 6 | 125 |

## How To Use

- Can be used for mounting CP151 Clamping Module (Double) on the base plate.
- Can be installed on the workpiece.
- No locating function.
- Spacing tolerance of the tapped holes should be ±0.2.

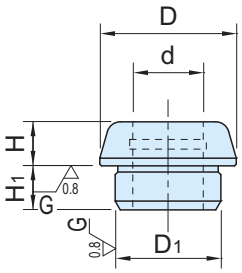


CP157-L

( Accurate )

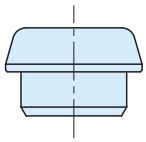
CP157-S

( Standard )




CP157-L

(Accurate)



CP157-S

(Standard)

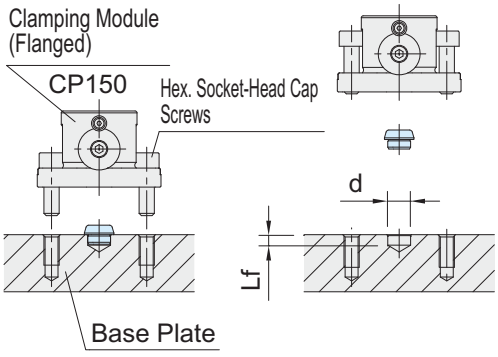
| Part Number | D | H | D1 | | H1 | d | Weight (g) |
|---|---|---|---|---|---|---|---|
| CP157-08001L | 15.5 | 5 | 12 | g6 | 5 | 8 | 6 |
| CP157-12001L | 24.5 | 8 | 18 | | 6 | 12 | 24 |
| CP157-16001L | 31.5 | 10 | 22 | | 7.5 | 16 | 45 |
| CP157-08001S | 15.5 | 5 | 12 | - 0.02 - 0.05 | 5 | - | 11 |
| CP157-12001S | 24.5 | 8 | 18 | | 6 | - | 37 |
| CP157-16001S | 31.5 | 10 | 22 | | 7.5 | - | 75 |

| Accurate | Standard |
|---|---|
| S45C steel<br>Black oxide finished<br>Precision ground | S45C steel<br>Black oxide finished |

## How To Use

- Can be used for mounting CP150 Clamping Module (Flanged) on the base plate.
- Use Accurate Type for precise locating of a clamping module.
- Use Standard Type for rough locating of a clamping module.

### ■Mounting-Hole Dimensions

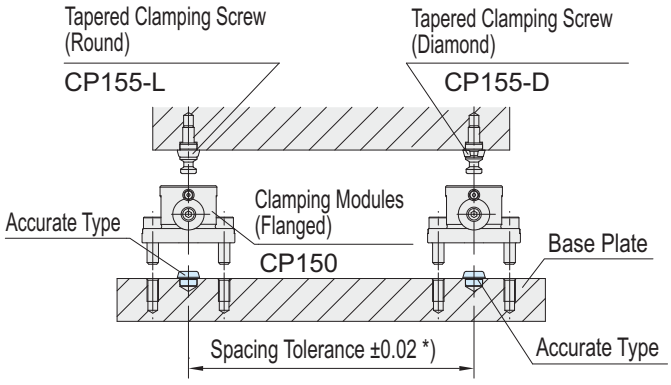



| Size | | d (H7) | Lf |
|---|---|---|---|
| CP157 | 08001 | 12 | 5.5 |
| | 12001 | 18 | 6.5 |
| | 16001 | 22 | 8 |

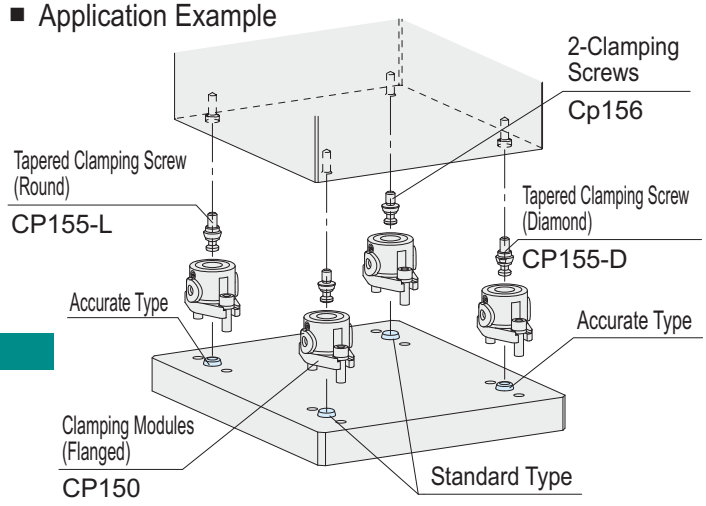
Note: The tolerance of dimension "d" for Standard Type should be $^{+0.1}_{0}$

### ■Spacing Tolerance

Spacing tolerance for Accurate Type should be ±0.02.
*) Spacing tolerance for Standard Type should be ±0.1.



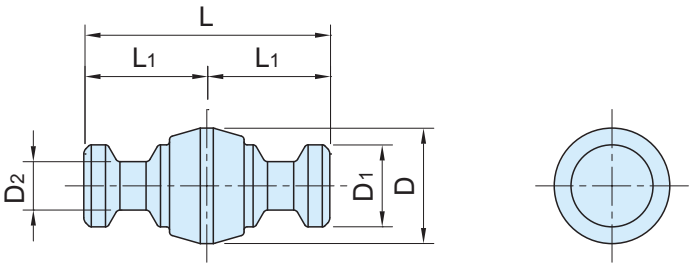

### ■ Application Example




## Related Products

- CP150 Clamping Modules (Flanged)
- CP155-L Tapered Clamping Screws (Round)
- CP155-D Tapered Clamping Screws (Diamond)
- CP156 Clamping Screws

# CP158 - Double Tapered Clamping Pins

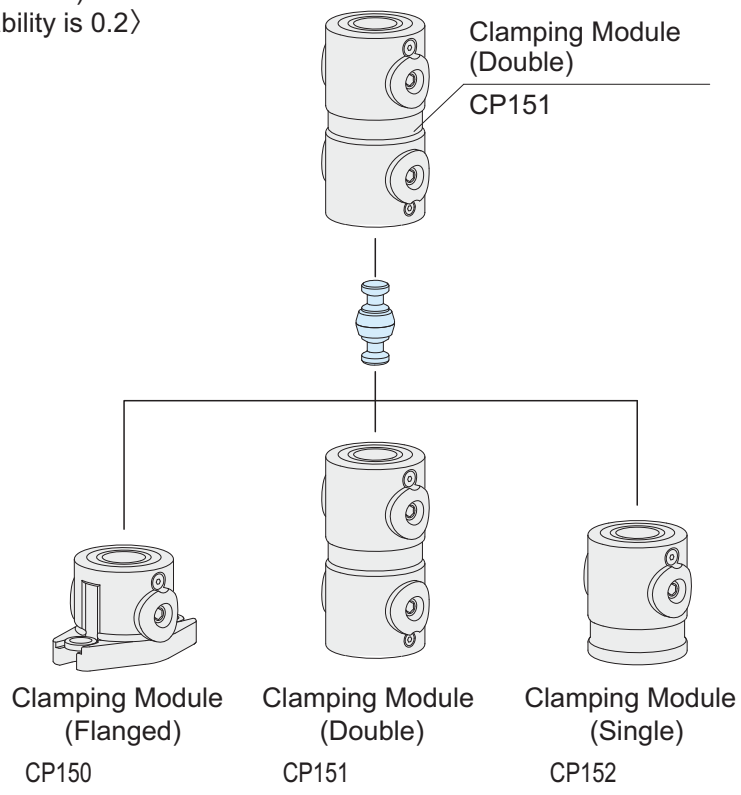


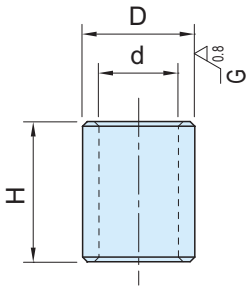

| Body |
|---|
| SCM435 steel<br>Quenched and tempered<br>Black oxide finished |

| Part Number | D | L | $D_1$ | $D_2$ | $L_1$ | Weight (g) |
|---|---|---|---|---|---|---|
| **CP158-08001** | 15.5 | 33 | 11 | 6.5 | 16.5 | 24 |
| **CP158-12001** | 24.5 | 50 | 16 | 9.5 | 25 | 85 |
| **CP158-16001** | 31.5 | 66 | 21 | 13 | 33 | 190 |

## How To Use

Can be used as a coupling for CP151
Clamping Module (Double).
〈Locating Repeatability is 0.2〉





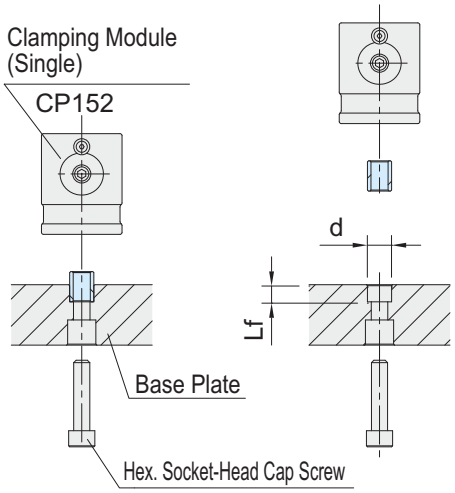

| Body |
|---|
| SCM435 steel<br>Quenched and tempered<br>Black oxide finished |

| Part Number | d | D (h6) | H | Weight (g) |
|---|---|---|---|---|
| **CP159-08001** | 8.5 | 12 | 15 | 7 |
| **CP159-12001** | 12.5 | 18 | 22 | 22 |
| **CP159-16001** | 16.5 | 22 | 28 | 35 |

## How To Use

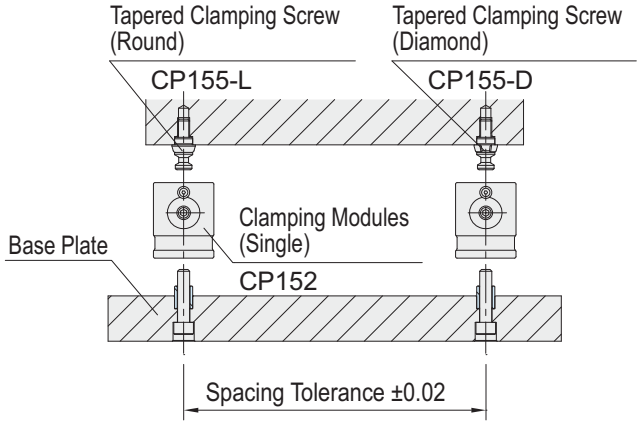
Can be used for locating CP152 Clamping Module (Single) on the base plate.

### ■Mounting-Hole Dimensions

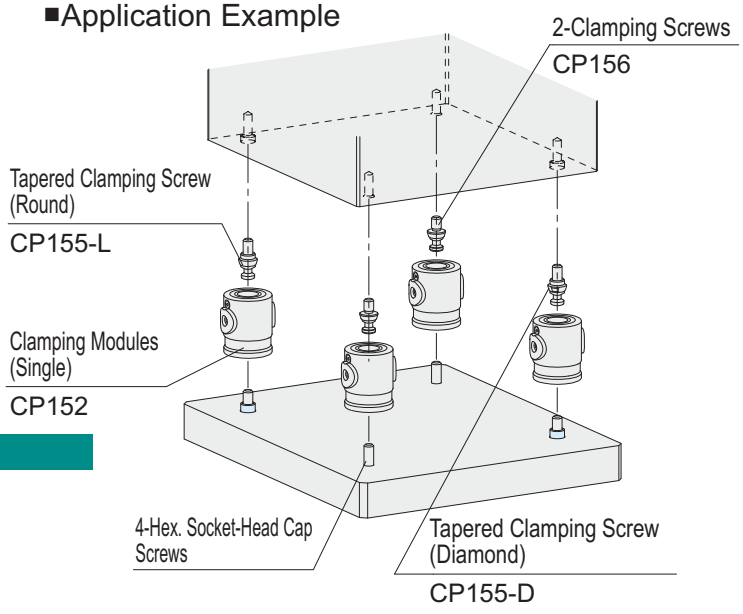



| Part Number | d (H7) | Lf |
|---|---|---|
| **CP159-08001** | 12 | 8.5 |
| **CP159-12001** | 18 | 12.5 |
| **CP159-16001** | 22 | 16.5 |

### ■Spacing Tolerance




### ■Application Example



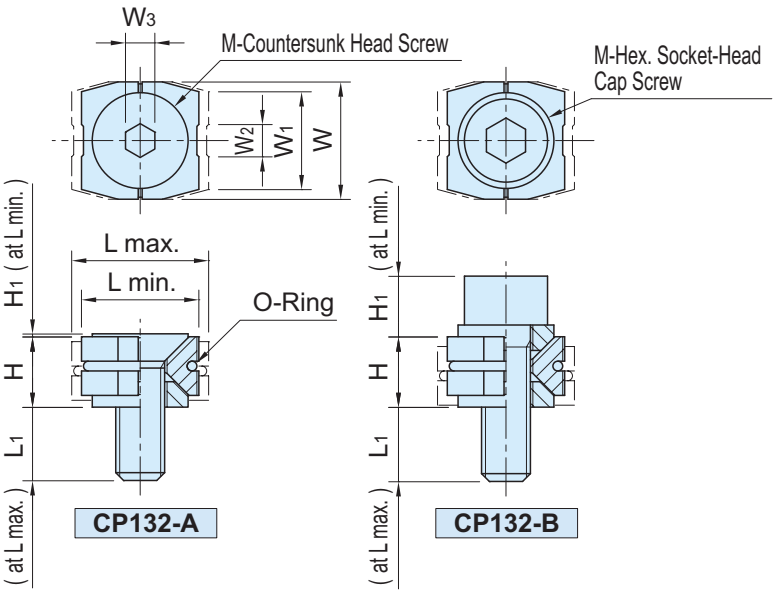

## Related Products

- CP152 Clamping Modules (Single)
- CP155-L Tapered Clamping Screws (Round)
- CP155-D Tapered Clamping Screws (Diamond)
- CP156 Clamping Screws

# CP132 - Compact Wedge Clamps

CP132-A

CP132-B




| Jaw | Washer | O-Ring |
|---|---|---|
| SNCM439 steel<br>Black oxide finished<br>HRC33-39 | SCM435 steel<br>Black oxide finished | Fluoro rubber |

## ★Key Point

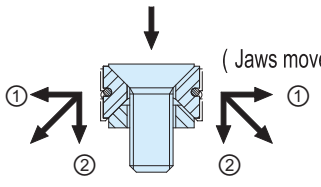
Can clamp 2 workpieces in small space.

| Part Number | L | | W | H | | $W_1$ | $W_2$ | $H_1$ | M | $L_1$ | $W_3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | min. | max. | | L min. | L max. | | | | | | |
| **CP132-05001A** | 12 | 14 | 12 | 7.2 | 6.2 | 10 | 3.3 | 0.3 | M5×0.8 -15L | 9.5 | 3 |
| **CP132-06001A** | 15 | 17 | 14.8 | 8.5 | 7.5 | 12 | 4 | 0.2 | M6×1 -16L | 9.3 | 4 |
| **CP132-08001A** | 18.5 | 21.5 | 18.4 | 11.4 | 9.9 | 16 | 5.3 | 0.4 | M8×1.25-20L | 11.3 | 5 |
| **CP132-05001B** | 12 | 14 | 12 | 7.2 | 6.2 | 10 | 3.3 | 6.2 | M5×0.8 -16L | 9.6 | 4 |
| **CP132-06001B** | 15 | 17 | 14.8 | 8.5 | 7.5 | 12 | 4 | 7.3 | M6×1 -18L | 10.2 | 5 |
| **CP132-08001B** | 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 ) |
|---|---|---|---|
| **CP132-05001A** | 2 | 4.3 | 8 |
| **CP132-06001A** | 3.5 | 7.3 | 13 |
| **CP132-08001A** | 5 | 18 | 27 |
| **CP132-05001B** | 3 | 5.4 | 9 |
| **CP132-06001B** | 4.5 | 9.1 | 17 |
| **CP132-08001B** | 9 | 22 | 30 |

## Features

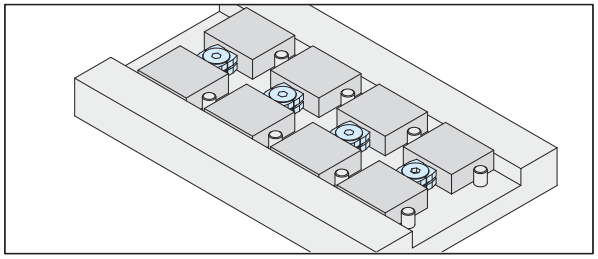
- The wedge construction allows powerfully clamping the workpiece.
- Can hold two workpieces with equilateral clamping action by using a hex wrench.



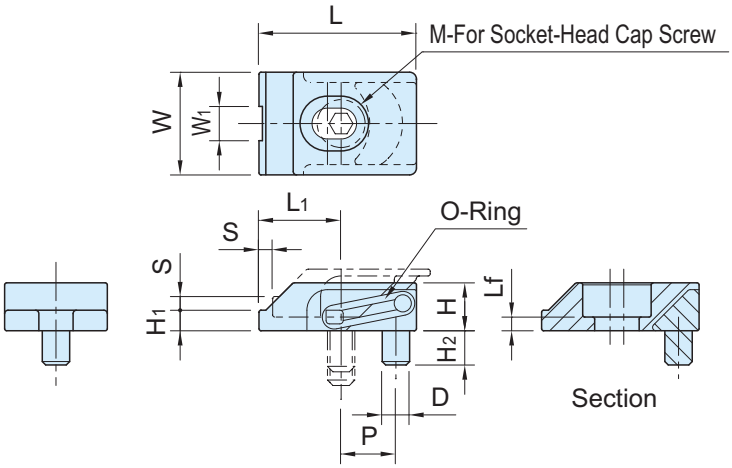

① Horizontal pressure against workpiece
② Vertical pressure preventing workpiece lift

## How To Use

Compact design allows to utilize machining area and clamp multiple workpieces.



IMAO Products

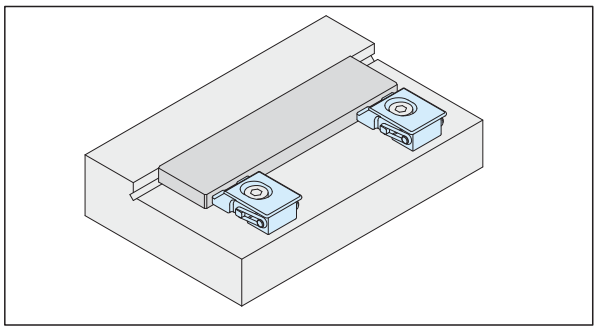



| Body | O-Ring |
|---|---|
| SCM440 steel<br>Black oxide finished<br>HRC33-39 | Fluoro rubber |

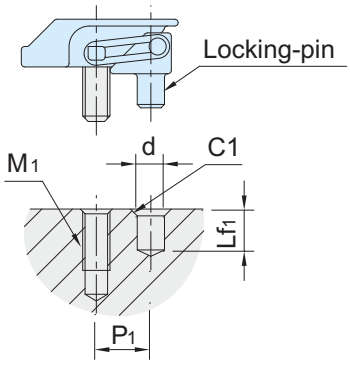
| Part Number | S | W | W1 | H1 | L1 | P | D | H2 | M | Lf | L | H |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CP133-04007** | 2 | 15 | 5 | 3 | 12 | 8 | 4 | 5 | M4 | 2 | 23 | 7 |
| **CP133-05009** | 2.5 | 19 | 7 | 4 | 14 | 10 | 5 | 6 | M5 | 3 | 28 | 9 |

| Part Number | Clamping Force ( kN ) | Allowable Screw Torque (N·m) | Weight ( g ) |
|---|---|---|---|
| **CP133-04007** | 2 | 2.7 | 13 |
| **CP133-05009** | 3 | 5.4 | 27 |

## How To Use

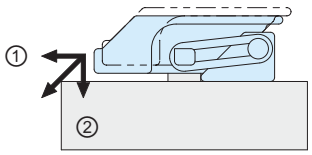


■Mounting-Hole Dimensions




## Features

( Jaw moves obliquely downward )

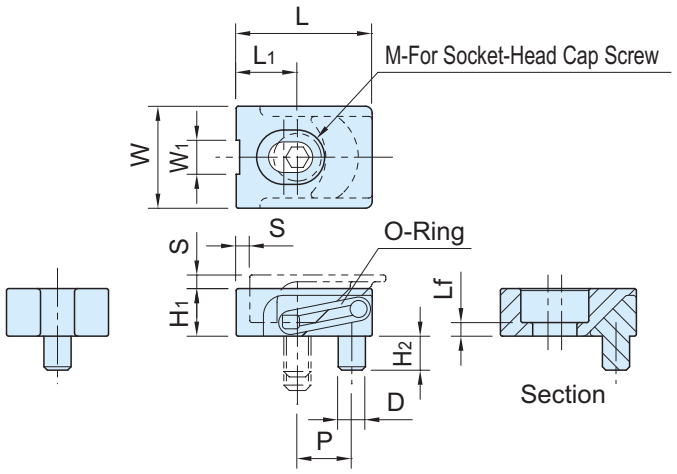



① Horizontal pressure against workpiece
② Vertical pressure preventing workpiece lift

Drill a tapped hole and a locking-pin hole as specified below .

| Part Number | M1 | d (+0.3 0) | Lf1 | P1 |
|---|---|---|---|---|
| **CP133-04007** | M4 | 4 | 6 | 8 |
| **CP133-05009** | M5 | 5 | 7 | 10 |

# CP134 - Compact Side Clamps

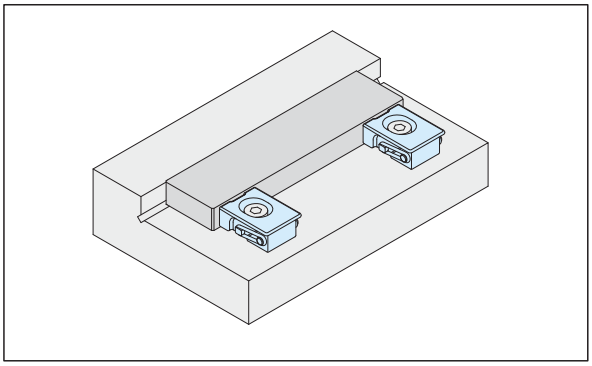



| Body | O-Ring |
|---|---|
| SCM440 steel<br>Black oxide finished<br>HRC33-39 | Fluoro rubber |

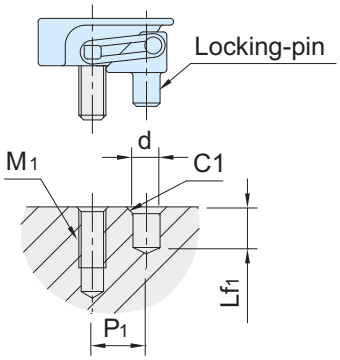
| Part Number | S | W | W1 | H1 | L1 | P | D | H2 | M | Lf | L |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **CP134-04007** | 2 | 15 | 5 | 7 | 9 | 8 | 4 | 5 | M4 | 2 | 20 |
| **CP134-05009** | 2.5 | 19 | 7 | 9 | 11 | 10 | 5 | 6 | M5 | 3 | 25 |

| Part Number | Clamping Force ( kN ) | Allowable Screw Torque ( N· m ) | Weight ( g ) |
|---|---|---|---|
| **CP134-04007** | 2.5 | 2.7 | 13 |
| **CP134-05009** | 3.5 | 5.4 | 26 |

## How To Use

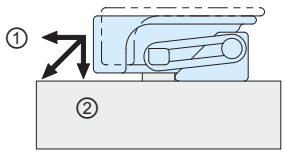


■Mounting-Hole Dimensions




## Features

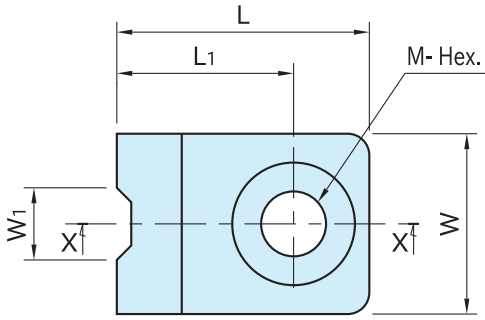
( Jaw moves obliquely downward )



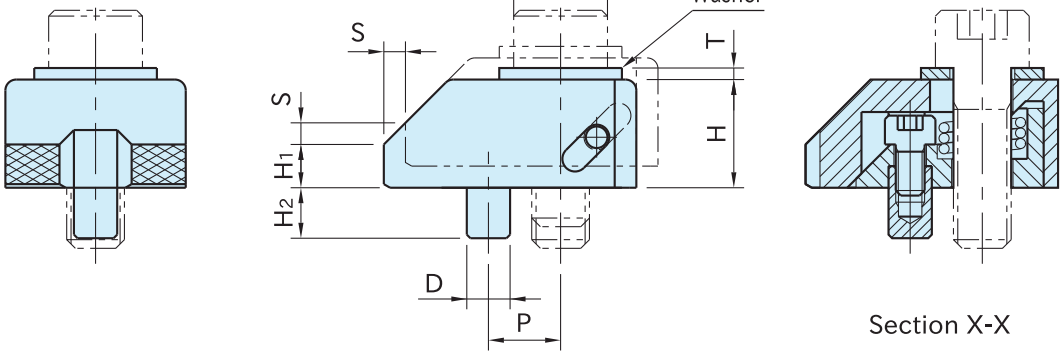

① Horizontal pressure against workpiece
② Vertical pressure preventing workpiece lift

Drill a tapped hole and a locking-pin hole as specified below .

| Part Number | M1 | d (+0.3 0) | Lf1 | P1 |
|---|---|---|---|---|
| **CP134-04007** | M4 | 4 | 6 | 8 |
| **CP134-05009** | M5 | 5 | 7 | 10 |

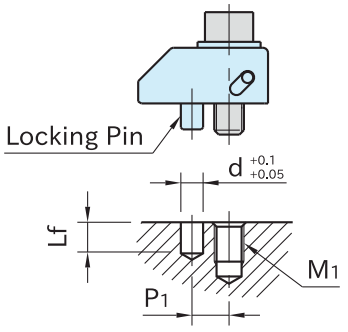



| Body |
|---|
| Steel (S45C)<br>Quenched and tempered<br>Black oxide finish |



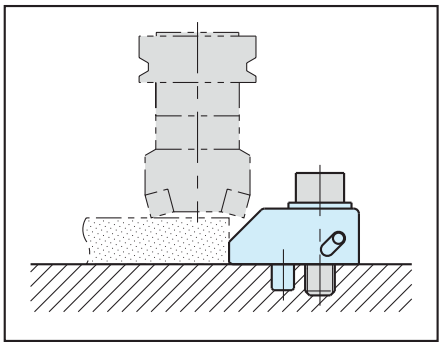

Section X-X

| Part Number | S | W | W1 | H1 | L1 | P | D (h7) | H2 | M | L | H | T | Clamping Force (N) | Allowable Screw Torque (N·m) | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CP106-08015** | 3 | 25 | 10 | 6 | 24.5 | 10 | 6 | 7 | M 8 | 35 | 15 | 1.6 | 7,000 | 25 | 100 |
| **CP106-10019** | 4 | 30 | 11 | 8 | 29 | 12 | | | M10 | 43 | 19 | 2 | 8,500 | 50 | 185 |
| **CP106-12023** | 5 | 35 | 12 | 9 | 37 | 16 | 8 | 10 | M12 | 54 | 23 | 2.3 | 20,000 | 90 | 320 |
| **CP106-16025** | 6 | 40 | 14 | 10 | 45 | 20 | 10 | | M16 | 65 | 25 | 3.2 | 30,000 | 150 | 520 |




| Part Number | M1 | d | Lf | P1 |
|---|---|---|---|---|
| **CP106-08015** | M 8 | 6 | 8 | 10 |
| **CP106-10019** | M10 | | | 12 |
| **CP106-12023** | M12 | 8 | 11 | 16 |
| **CP106-16025** | M16 | 10 | | 20 |

Drill a cap-screw hole and a locking-pin hole as specified on the left.

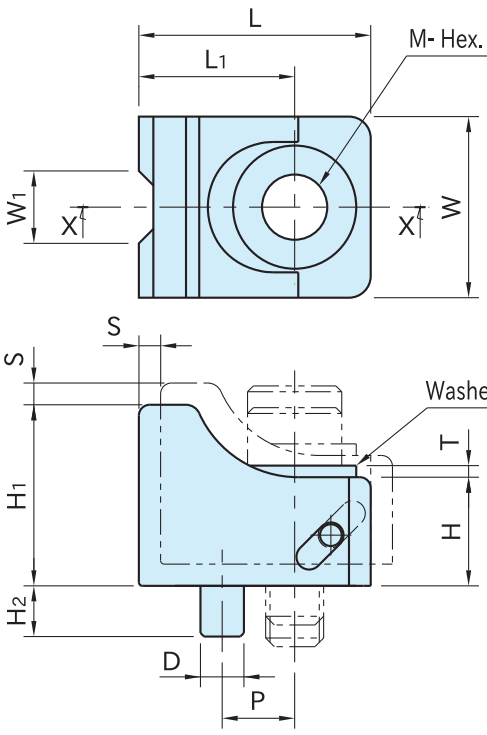


## Furnished With

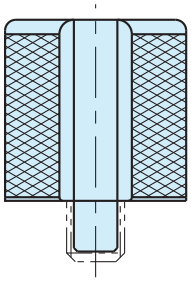
One flat washer is included.

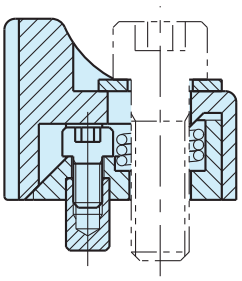
IMAO Products

# CP107 - Side Clamps



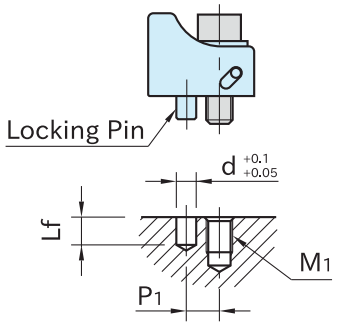

| Body |
|---|
| Steel (S45C)<br>Quenched and tempered<br>Black oxide finish |





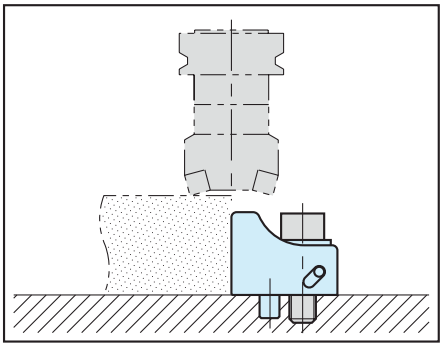
Section X-X

| Part Number | S | W | W1 | H1 | L1 | P | D (h7) | H2 | M | L | H | T | Clamping Force (N) | Allowable Screw Torque (N·m) | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CP107-08015** | 3 | 25 | 10 | 25 | 21.5 | 10 | 6 | 7 | M 8 | 32 | 15 | 1.6 | 7,000 | 25 | 115 |
| **CP107-10019** | 4 | 30 | 11 | 32 | 26 | 12 | | | M10 | 40 | 19 | 2 | 8,500 | 50 | 225 |
| **CP107-12023** | 5 | 35 | 12 | 38 | 33 | 16 | 8 | 10 | M12 | 50 | 23 | 2.3 | 20,000 | 90 | 390 |
| **CP107-16025** | 6 | 40 | 14 | 45 | 40 | 20 | 10 | | M16 | 60 | 25 | 3.2 | 30,000 | 150 | 640 |




| Part Number | M1 | d | Lf | P1 |
|---|---|---|---|---|
| **CP107-08015** | M 8 | 6 | 8 | 10 |
| **CP107-10019** | M10 | | | 12 |
| **CP107-12023** | M12 | 8 | 11 | 16 |
| **CP107-16025** | M16 | 10 | | 20 |

Drill a cap-screw hole and a locking-pin hole as specified on the left.



## Furnished With

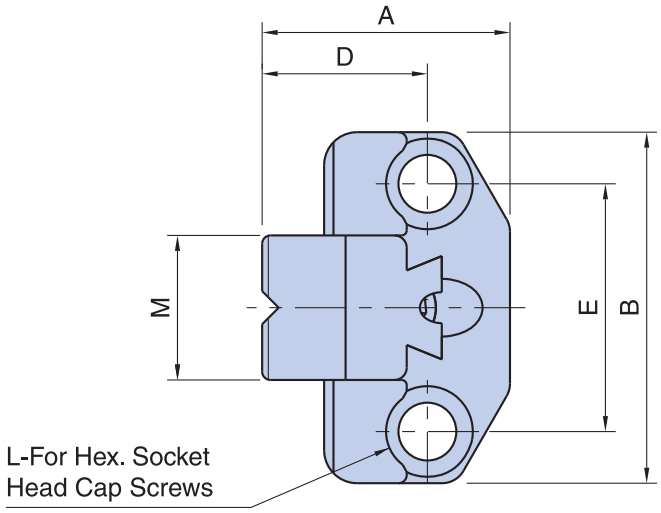
One flat washer is included.

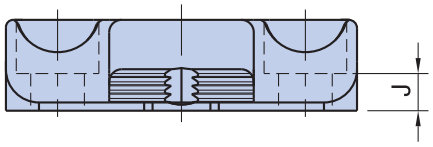
Serrated Nose

Smooth Nose

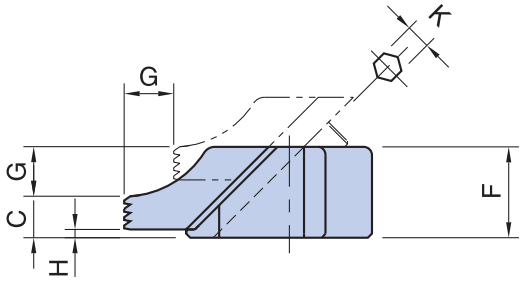
[Body]
Material : SCM440 steel
Heat Treat : Quenched and tempered
Finish : Black oxide

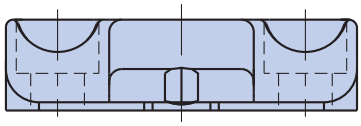
[Sliding Nose]
Material : SCM440 steel
Heat Treat : Induction hardened on contact surface
Finish : Black oxide
Precision ground (smooth nose)

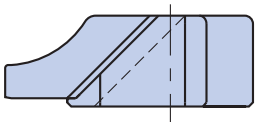



Serrated Nose





Smooth Nose

| Nose | Part Number | A | B | C | D | E | F | G | H | J | K | L | M | Clamping Force(N) | Allowable Screw Torque (N•m) | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Serrated | **CP104-08016** | 39.5 | 65 | 7.5 | 25 | 45 | 16 | 7 | 1.5 | 7 | 4 | M 8 | 25 | 4,000 | 8 | 160 |
| | **CP104-12022** | 60 | 85 | 10 | 40 | 60 | 22 | 12 | 2 | 9 | 6 | M12 | 35 | 9,000 | 26 | 450 |
| | **CP104-16030** | 77 | 100 | 14 | 50 | 70 | 30 | 14 | | 13 | 8 | M16 | 40 | 17,000 | 60 | 900 |
| Smooth | **CP104-08116** | 39.5 | 65 | 7.5 | 25 | 45 | 16 | 7 | 1.5 | 7 | 4 | M 8 | 25 | 4,000 | 8 | 160 |
| | **CP104-12122** | 60 | 85 | 10 | 40 | 60 | 22 | 12 | 2 | 9 | 6 | M12 | 35 | 9,000 | 26 | 450 |
| | **CP104-16130** | 77 | 100 | 14 | 50 | 70 | 30 | 14 | | 13 | 8 | M16 | 40 | 17,000 | 60 | 900 |

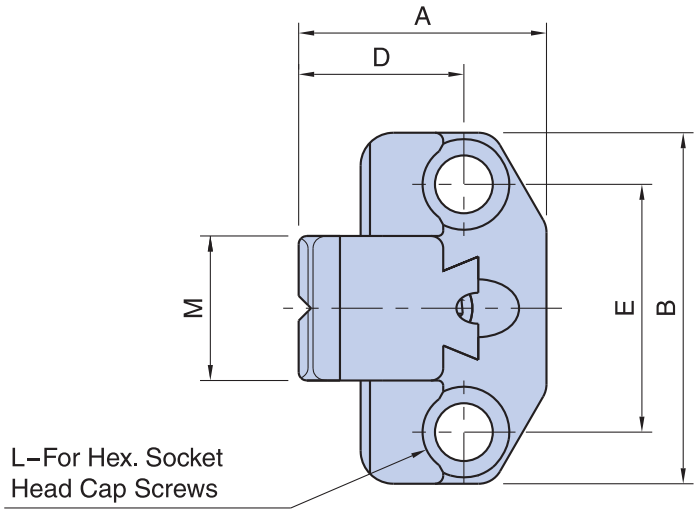
# CP105 - Side Clamps

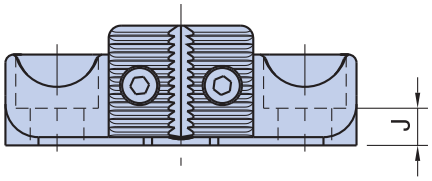
Serrated Nose

Smooth Nose

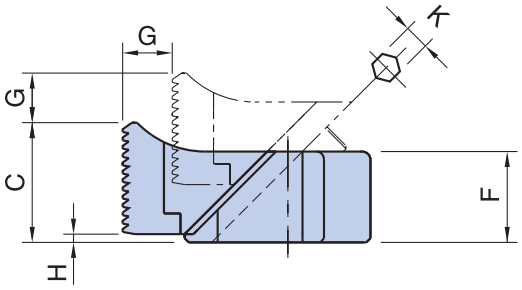
[Body & Jaw Carrier]
Material : SCM440 steel
Finish : Black oxide
Heat Treat : Quenched and tempered

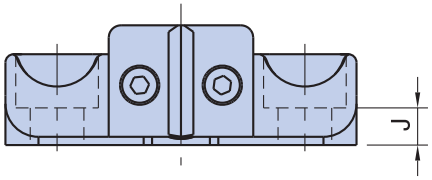
[Jaw]
Material : SCM440 steel
Finish : Black oxide
Heat Treat : Quenched and tempered
Precision ground (smooth nose)



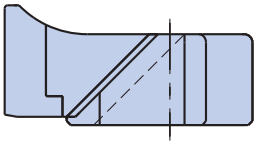




Serrated Nose




Smooth Nose



| Nose | Part Number | A | B | C | D | E | F | G | H | J | K | L | M | Clamping Force (N) | Allowable Screw Torque (N·m) | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Serrated | **CP105-08016** | 39.5 | 65 | 19.5 | 25 | 45 | 16 | 7 | 1.5 | 7 | 4 | M 8 | 25 | 4,000 | 8 | 180 |
| | **CP105-12022** | 60 | 85 | 29 | 40 | 60 | 22 | 12 | 2 | 9 | 6 | M12 | 35 | 9,000 | 26 | 500 |
| | **CP105-16030** | 77 | 100 | 38 | 50 | 70 | 30 | 14 | | 13 | 8 | M16 | 40 | 17,000 | 60 | 1,010 |
| Smooth | **CP105-08116** | 39.5 | 65 | 19.5 | 25 | 45 | 16 | 7 | 1.5 | 7 | 4 | M 8 | 25 | 4,000 | 8 | 180 |
| | **CP105-12122** | 60 | 85 | 29 | 40 | 60 | 22 | 12 | 2 | 9 | 6 | M12 | 35 | 9,000 | 26 | 510 |
| | **CP105-16130** | 77 | 100 | 38 | 50 | 70 | 30 | 14 | | 13 | 8 | M16 | 40 | 17,000 | 60 | 1,020 |

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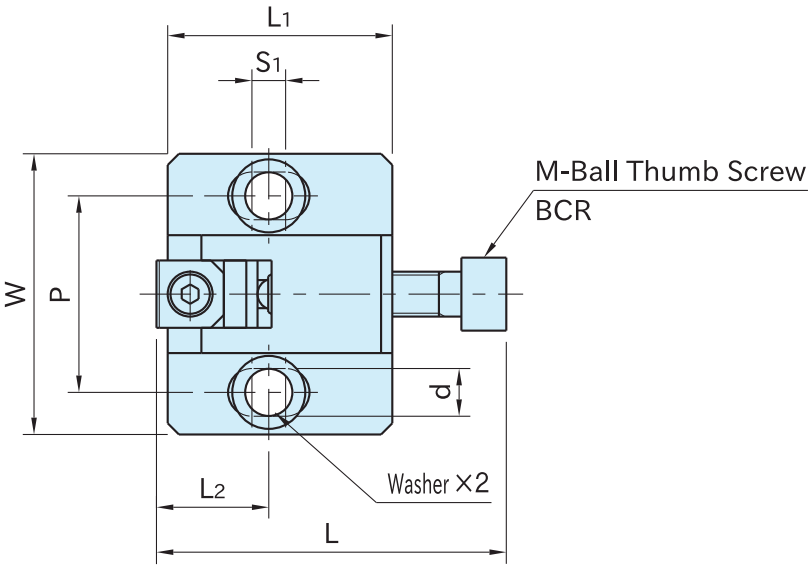
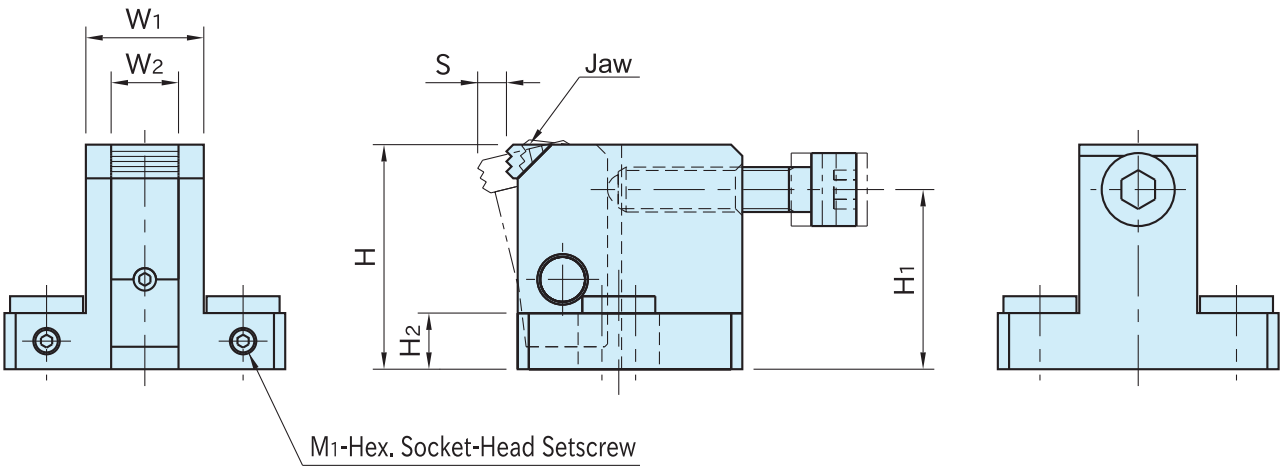
# CP101 - Side Clamps

| Body | Arm | Jaw |
|---|---|---|
| Steel (S45C)<br>Black oxide finish | Steel (S45C)<br>Quenched and tempered<br>Black oxide finish | Steel (SKH51)<br>Quenched and tempered<br>Black oxide finish |

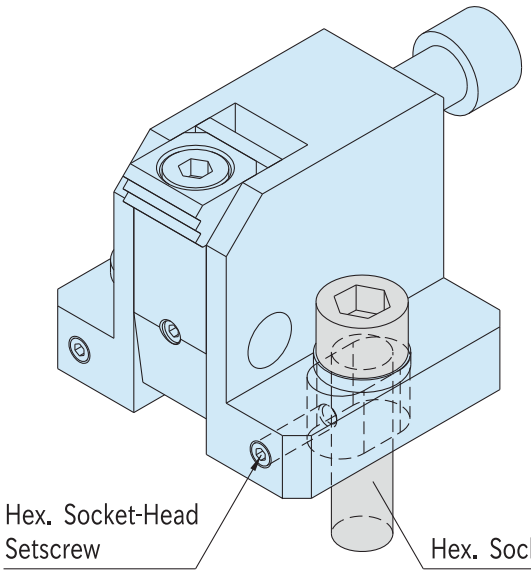


| Part Number | S | $W_2$ | $L_2$ | H | W | L | $W_1$ | $L_1$ | d | $S_1$ | $H_2$ | P | $M_1$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CP101-08040** | 5.3 | 12 | 20 | 40 | 50 | 62.5 | 21 | 40 | 8.5 | 6 | 10 | 35 | M4×0.7-10L |
| **CP101-10050** | 7.1 | 16 | 25 | 50 | 65 | 74 | 27 | 50 | 11 | 8 | 12 | 45 | M4×0.7-12L |
| **CP101-12060** | 8 | 20 | 30 | 60 | 70 | 91 | 31 | 60 | 13 | 10 | 15 | 50 | M5×0.8-15L |
| **CP101-16080** | 10.2 | 25 | 40 | 80 | 90 | 115 | 39 | 80 | 17 | 15 | 20 | 65 | M6×1 -20L |

| Part Number | M | $H_1$ | Clamping Force (N) | Allowable Screw Torque (N·m) | Weight (kg) | Jaw |
|---|---|---|---|---|---|---|
| **CP101-08040** | M 8×1.25-35L | 32 | 15,000 | 25 | 0.33 | HSE-9126-SS |
| **CP101-10050** | M10×1.5 -40L | 40 | 27,000 | 50 | 0.66 | HSE-9166-SS |
| **CP101-12060** | M12×1.75-50L | 48 | 38,000 | 90 | 1.06 | HSE-9200-SS |
| **CP101-16080** | M16×2 -60L | 64 | 46,000 | 130 | 2.38 | HSE-9250-SS |

## How To Install

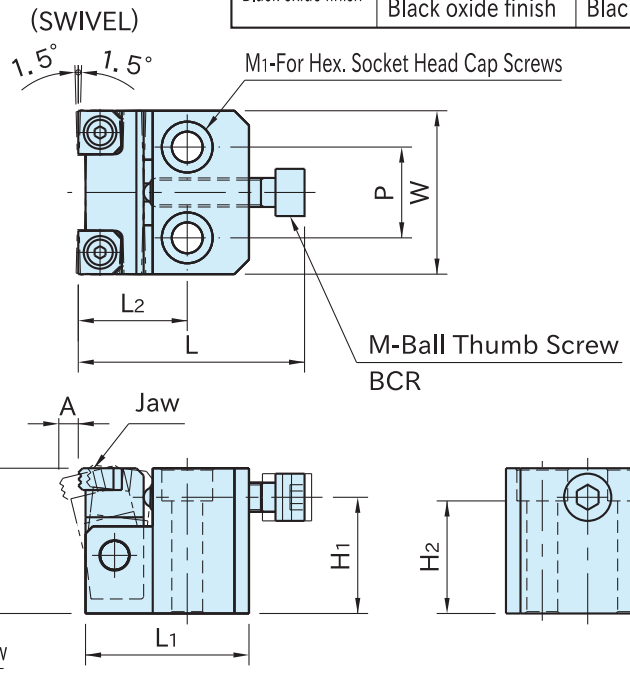



The hex. socket-head setscrew works to prevent the clamp from sliding back if screwedin until it contacts the cap screw.

## Furnished With

Two flat washers are included.

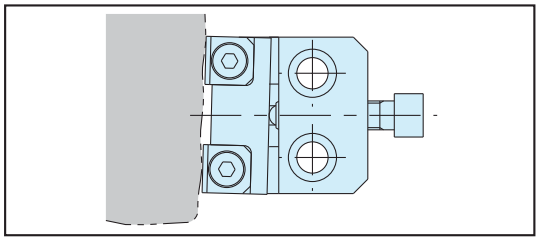
| Body | Arm | Jaw |
|---|---|---|
| Steel (S45C)<br>Black oxide finish | Steel (S45C)<br>Quenched and tempered<br>Black oxide finish | Steel (SKH51)<br>Quenched and tempered<br>Black oxide finish |



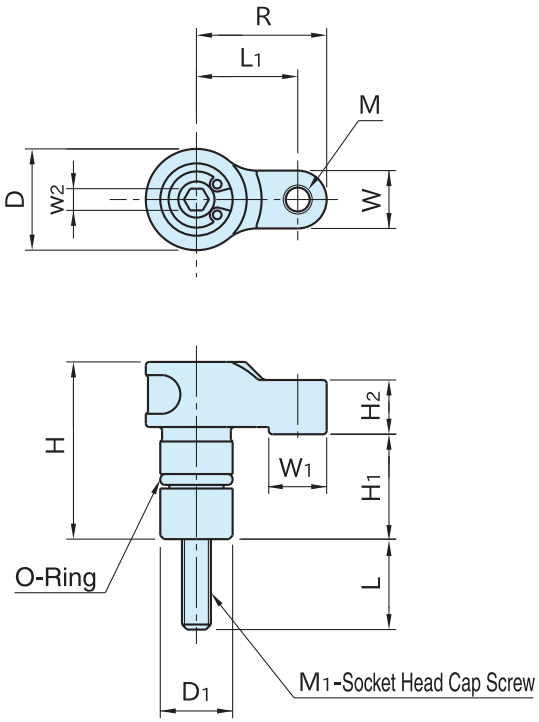

| Part Number | A | $W_1$ | $L_2$ | H | W | L | $L_1$ | $M_1$ | $H_2$ | P | $M_2$ | M | $H_1$ | Clamping Force (N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CP102-08040** | 5.3 | 12 | 30 | 40 | 45 | 62.5 | 45 | M 8 | 31 | 25 | M4×0.7-4L | M 8×1.25-35L | 32 | 15,000 |
| **CP102-10050** | 7.1 | 16 | 40 | 50 | 55 | 74 | 55 | M10 | 39 | 30 | | M10×1.5 -40L | 40 | 27,000 |
| **CP102-12060** | 8 | 20 | 45 | 60 | 65 | 91 | 65 | M12 | 47 | 35 | M5×0.8-5L | M12×1.75-50L | 48 | 38,000 |

| Part Number | Allowable Screw Torque (N·m) | Weight (kg) | jaw |
|---|---|---|---|
| **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.




| Body / Arm |
|---|
| SCM440 steel<br>Quenched and tempered<br>Black oxide |

| Part Number | W1 | M | L1 | R | D1 (−0.02 −0.10) | H1 | M1 | L | H | D | W | H2 | w2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BJ132-04018** | 8 | M4×0.7 | 14 | 18 | 10 | 14.5 | M4×0.7-30L | 12.5 | 24.5 | 14 | 8 | 7.5 | 3 |
| **BJ132-06022** | 10 | M5×0.8 | 17 | 22 | 12 | 17.5 | M6×1 -35L | 13.5 | 30.5 | 16 | 10 | 9.5 | 5 |

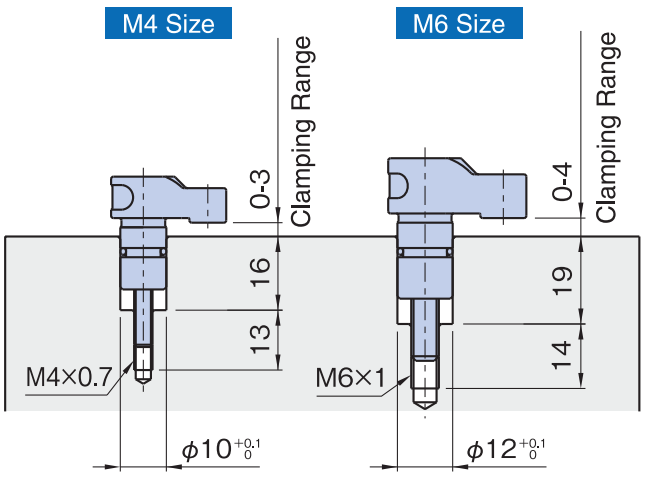
| Part Number | Clamping Force (N) | Allowable Screw Torque (N·m) | Weight (g) |
|---|---|---|---|
| **BJ132-04018** | 2,000 | 2.7 | 25 |
| **BJ132-06022** | 3,500 | 7 | 45 |

## Features:

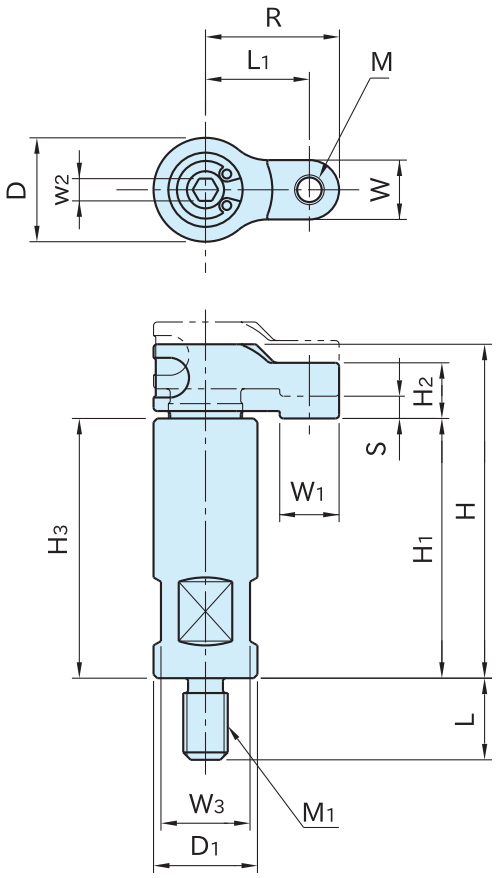
- Compact design for applications in limited space
- BJ530 Hook-Clamp Holders are available.
- Clamp that is designed to move up and down in conjunction with the tightening screw, for prevention of galling.

## How To Use

Instead of being used with Hook-Clamp Holders, these Hook Clamps may be plugged into a custom block with receiving holes as specified on the right.



# BJ132-A - Hook-Clamp Assemblies




[Hook Clamp]
Material : SCM440 steel
Heat Treat : Quenched and tempered
Finish : Black oxide

[Hook-Clamp Holder]
Material : S45C steel
Heat Treat : Quenched and tempered
Finish : Black oxide

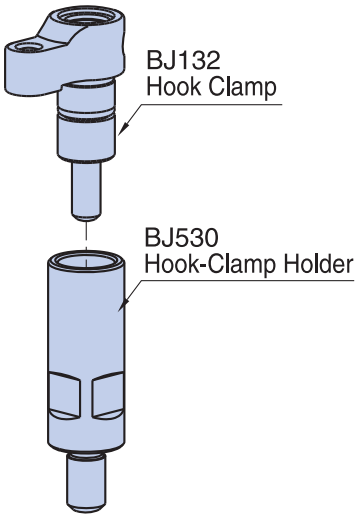
| Part Number | $H_1$ | S (Clamping Range) | $W_1$ | M | $L_1$ | R | $D_1$ | $H_3$ | $M_1$ | L | H | D | W | $H_2$ | $w_2$ | $W_3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BJ132-04018A** | 35 | 3 | 8 | M4×0.7 | 14 | 18 | 14 | 35 | M6×1 | 11 | 45 | 14 | 8 | 7.5 | 3 | 12 |
| **BJ132-06022A** | 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 (N) | Allowable Screw Torque (N·m) | Weight (g) |
|---|---|---|---|
| **BJ132-04018A** | 2,000 | 2.7 | 55 |
| **BJ132-06022A** | 3,500 | 7 | 90 |

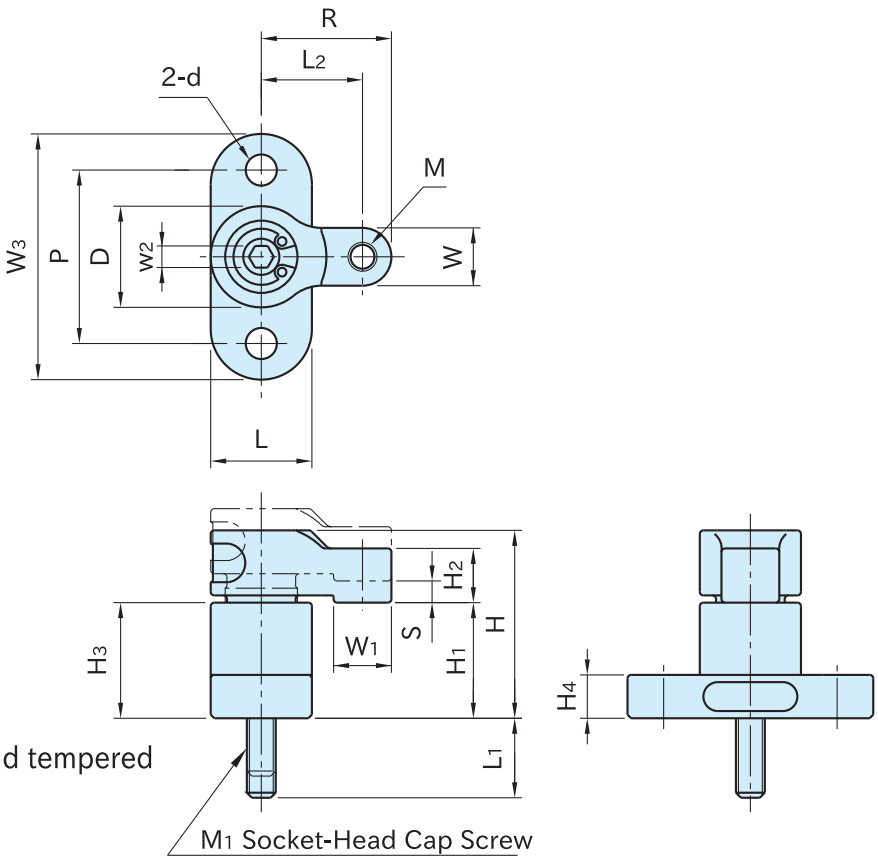
## Feature:

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




IMAO Products




[Hook Clamp]
Material : SCM440 steel
Heat Treat : Quenched and tempered
Finish : Black oxide

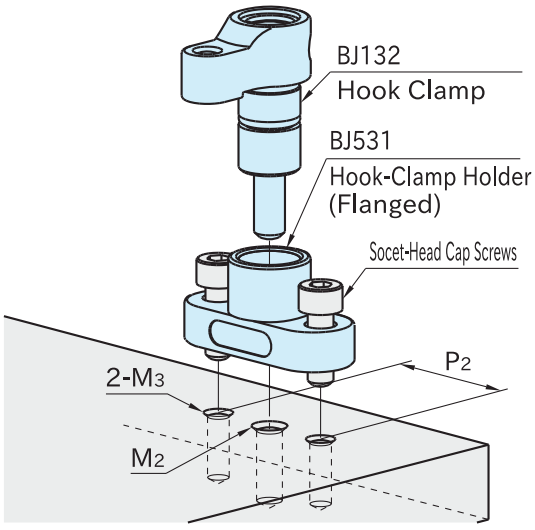
[Hook-Clamp Holder]
Material : S45C steel
Heat Treat : Quenched and tempered
Finish : Black oxide

| Part Number | H1 | S (Clamping Range) | W1 | M | L2 | R | W3 | L | M1 | L1 (max) | d | H4 | P | H | H3 | D | W | H2 | w2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BJ132-04018B** | 16 | 3 | 8 | M4X0.7 | 14 | 18 | 34 | 14 | M4X0.7-30L | 11 | 4.3 | 6 | 24 | 26 | 16 | 14 | 8 | 7.5 | 3 |
| **BJ132-06022B** | 19 | 4 | 10 | M5X0.8 | 17 | 22 | 40 | 16 | M6X1 -35L | 12 | 5.3 | 8 | 28 | 32 | 19 | 16 | 10 | 9.5 | 5 |

| Part Number | Clamping Force (N) | Allowable Screw Torque (N·m) | Weight (g) |
|---|---|---|---|
| **BJ132-04018B** | 2,000 | 2.7 | 45 |
| **BJ132-06022B** | 3,500 | 7 | 75 |

Ideal for clamping at low height.
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.

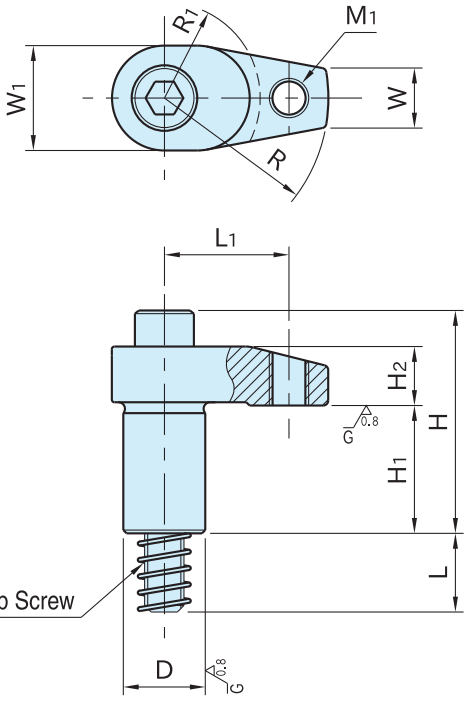
| Part Number | M2 | M3 | P2 |
|---|---|---|---|
| **BJ132-04018B** | M4X0.7 13 deep | M4X0.7 | 24 |
| **BJ132-06022B** | M6X1 14 deep | M5X0.8 | 28 |



# BJ130 - Hook Clamps

M8 Size

M10-M16 Sizes

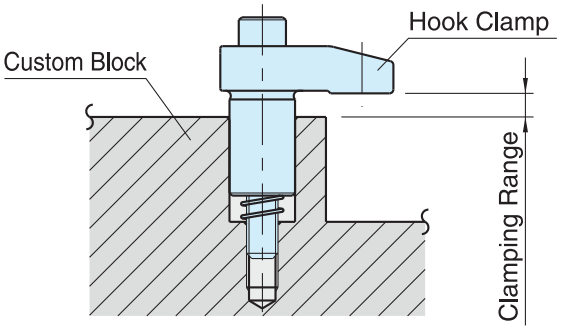



Material : SCM435 steel
Heat treated
Black oxide finish
Precision ground

## Related Product Page

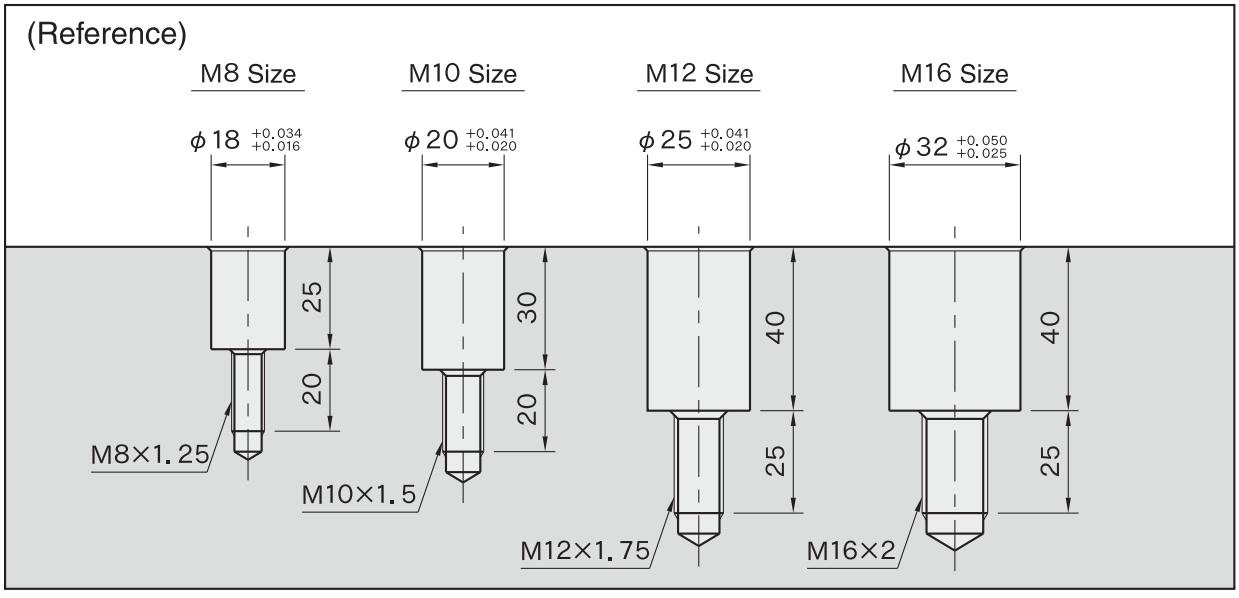
Use with a BJ530 Hook-Clamp Holder.

## How To Use




When a Hook Clamp is plugged into a custom block, ensure that the clamping range does not exceed the values stated below.

BJ130-08***(M 8 size) : 10mm
BJ130-10***(M10 size) : 12mm
BJ130-12***(M12 size) : 15mm
BJ130-16***(M16 size) : 15mm




Hook Clamps can be plugged directly into custom blocks with receiving holes as specified above.

IMAO Products

| Part Number | R | $R_1$ | $M_1$ | $L_1$ | D (h7) | $H_1$ | M | L | H |
|---|---|---|---|---|---|---|---|---|---|
| **BJ130-08020** | 20 | 15 | - | - | 18 | 23 | M 8×1.25-50L | 21 | 37 |
| **BJ130-08025** | 25 | | | | | | | | |
| **BJ130-08030** | 30 | 20 | | | | | | | |
| **BJ130-10030** | 30 | 20 | - | - | 20 | 30 | M10×1.5 -65L | 21 | 54 |
| **BJ130-10040** | 40 | 25 | | | | | | | |
| **BJ130-12040** | 40 | 25 | - | - | 25 | 39 | M12×1.75-80L | 26 | 66 |
| **BJ130-12050** | 50 | | | | | | | 24 | 68 |
| **BJ130-12060** | 60 | | | | | | | | |
| **BJ130-12140** | 40 | | M12×1.75 | 31 | | | | 26 | 66 |
| **BJ130-12150** | 50 | | | 38 | | | | 24 | 68 |
| **BJ130-12160** | 60 | | | 46 | | | | | |
| **BJ130-16040** | 40 | 25 | - | - | 32 | 39 | M16×2 -85L | 26 | 75 |
| **BJ130-16050** | 50 | | | | | | | | |
| **BJ130-16060** | 60 | | | | | | | | |
| **BJ130-16150** | 50 | | M12×1.75 | 38 | | | | | |
| **BJ130-16160** | 60 | | | 46 | | | | | |

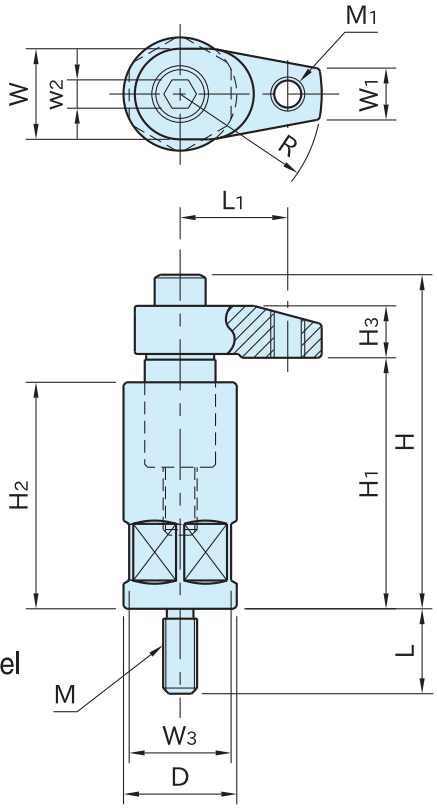
| Part Number | $W_1$ | W | $H_2$ | Clamping Force (N) | Allowable Screw Torque (N·m) *) | Weight (g) |
|---|---|---|---|---|---|---|
| **BJ130-08020** | 22 | 10 | 12 | 15,000 | 38 | 90 |
| **BJ130-08025** | | | | 12,000 | 33 | 100 |
| **BJ130-08030** | | | | 10,000 | 30 | 105 |
| **BJ130-10030** | 25 | 12 | 15 | 13,000 | 38 | 165 |
| **BJ130-10040** | | | | 10,000 | 32 | 180 |
| **BJ130-12040** | 32 | 18 | 16 | 18,000 | 60 | 305 |
| **BJ130-12050** | | | 18 | 14,000 | 50 | 360 |
| **BJ130-12060** | | | | 12,000 | 46 | 380 |
| **BJ130-12140** | | | 16 | 18,000 | 60 | 295 |
| **BJ130-12150** | | | 18 | 14,000 | 50 | 350 |
| **BJ130-12160** | | | | 12,000 | 46 | 370 |
| **BJ130-16040** | 36 | 22 | 21 | 38,000 | 170 | 530 |
| **BJ130-16050** | | | | 31,000 | 150 | 580 |
| **BJ130-16060** | | | | 26,000 | 130 | 625 |
| **BJ130-16150** | | | | 31,000 | 150 | 565 |
| **BJ130-16160** | | | | 26,000 | 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.

# BJ130-A - Hook-Clamp Assemblies

M8 Size

M12 Size



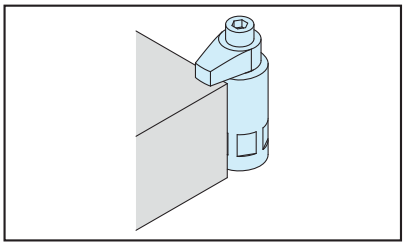

[Hook Clamp]
Material : SCM435 steel
Heat Treat : Quenched and tempered
Finish : Black oxide
Precision ground

[Holder]
Material : S45C steel
Finish : Black oxide

| Part Number | $H_1$ | $M_1$ | $L_1$ | R | D | $H_2$ | M | L | H |
|---|---|---|---|---|---|---|---|---|---|
| **BJ130-08020A1** | 55~65 | - | - | 20 | 24 | 55 | M 8×1.25 | 19 | 69~ 79 |
| **BJ130-08025A1** | | | | 25 | | | | | |
| **BJ130-08030A1** | | | | 30 | | | | | |
| **BJ130-10030A1** | 63~75 | - | - | 30 | 32 | 63 | M12×1.75 | 30 | 87~ 99 |
| **BJ130-10030A2** | 80~92 | | | | | 80 | | | 104~116 |
| **BJ130-10040A1** | 63~75 | | | 40 | | 63 | | | 87~ 99 |
| **BJ130-10040A2** | 80~92 | | | | | 80 | | | 104~116 |

| Part Number | W | $W_1$ | $H_3$ | $w_2$ | $W_3$ | Clamping Force (N) | Allowable Screw Torque (N·m) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|
| **BJ130-08020A1** | 22 | 10 | 12 | 6 | 22 | 12,000 | 30 | 0.23 |
| **BJ130-08025A1** | | | | | | 11,000 | | 0.24 |
| **BJ130-08030A1** | | | | | | 10,000 | | 0.25 |
| **BJ130-10030A1** | 25 | 12 | 15 | 8 | 30 | 13,000 | 38 | 0.60 |
| **BJ130-10030A2** | | | | | | | | 0.70 |
| **BJ130-10040A1** | | | | | | 10,000 | 32 | 0.61 |
| **BJ130-10040A2** | | | | | | | | 0.71 |

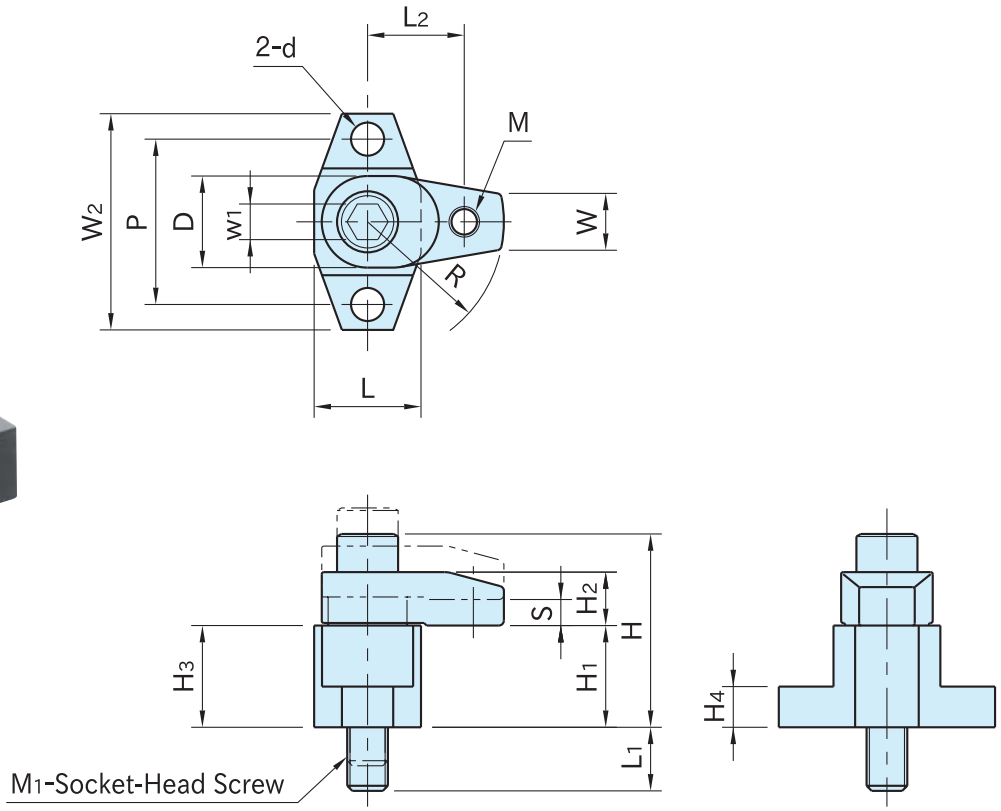
Use BJ600 Riser Cylinders for additional height.



| Part Number | $H_1$ | $M_1$ | $L_1$ | R | D | $H_2$ | 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 | | | 50 | | 80 | | | 109～124 |
| **BJ130-12050A2** | 100～115 | | | | | 100 | | | 129～144 |
| **BJ130-12060A1** | 80～ 95 | | | 60 | | 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 | 50 | 80 | M16X2 | 30 | 116～131 |
| **BJ130-16040A2** | 100～115 | | | | | 100 | | | 136～151 |
| **BJ130-16050A1** | 80～ 95 | | | 50 | | 80 | | | 116～131 |
| **BJ130-16050A2** | 100～115 | | | | | 100 | | | 136～151 |
| **BJ130-16060A1** | 80～ 95 | | | 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 | $W_1$ | $H_3$ | $w_2$ | $W_3$ | Clamping Force (N) | Allowable Screw Torque (N·m) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|
| **BJ130-12040A1** | 32 | 18 | 16 | 10 | 36 | 15,000 | 50 | 1.36 |
| **BJ130-12040A2** | | | | | | | | 1.56 |
| **BJ130-12050A1** | | | 18 | | | 14,000 | | 1.39 |
| **BJ130-12050A2** | | | | | | | | 1.59 |
| **BJ130-12060A1** | | | | | | 12,000 | 46 | 1.43 |
| **BJ130-12060A2** | | | | | | | | 1.63 |
| **BJ130-12140A1** | | | 16 | | | 15,000 | 50 | 1.36 |
| **BJ130-12140A2** | | | | | | | | 1.56 |
| **BJ130-12150A1** | | | 18 | | | 14,000 | | 1.39 |
| **BJ130-12150A2** | | | | | | | | 1.59 |
| **BJ130-12160A1** | | | | | | 12,000 | 46 | 1.43 |
| **BJ130-12160A2** | | | | | | | | 1.63 |
| **BJ130-16040A1** | 36 | 22 | 21 | 14 | 46 | 18,000 | 80 | 2.11 |
| **BJ130-16040A2** | | | | | | | | 2.42 |
| **BJ130-16050A1** | | | | | | 16,500 | | 2.16 |
| **BJ130-16050A2** | | | | | | | | 2.47 |
| **BJ130-16060A1** | | | | | | 16,000 | | 2.22 |
| **BJ130-16060A2** | | | | | | | | 2.53 |
| **BJ130-16150A1** | | | | | | 16,500 | | 2.16 |
| **BJ130-16150A2** | | | | | | | | 2.47 |
| **BJ130-16160A1** | | | | | | 16,000 | | 2.22 |
| **BJ130-16160A2** | | | | | | | | 2.53 |

# BJ130-B1 - Hook-Clamp Assemblies
## Flanged




| Clamp Body | Holder |
|---|---|
| Steel (SCM435)<br>Quenched and tempered<br>Black oxide finish<br>Precision ground | Steel (S45C)<br>Black oxide finish |

| Part Number | H1 | S (Clamping Stroke) | M | L2 | R | W2 | L | M1 | L1 (max) | d | H4 | 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 | H3 | D | W | H2 | w1 | Clamping Force (N) | Allowable Screw Torque (N·m) | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|
| BJ130-08020B1 | 39 | 25 | 22 | 10 | 12 | 6 | 15,000 | 38 | 175 |
| BJ130-08025B1 | | | | | | | 12,000 | 33 | 185 |
| BJ130-08030B1 | | | | | | | 10,000 | 30 | 190 |
| BJ130-10030B1 | 54 | 30 | 25 | 12 | 15 | 8 | 13,000 | 38 | 315 |
| BJ130-10040B1 | | | | | | | 10,000 | 32 | 330 |

## Flanged

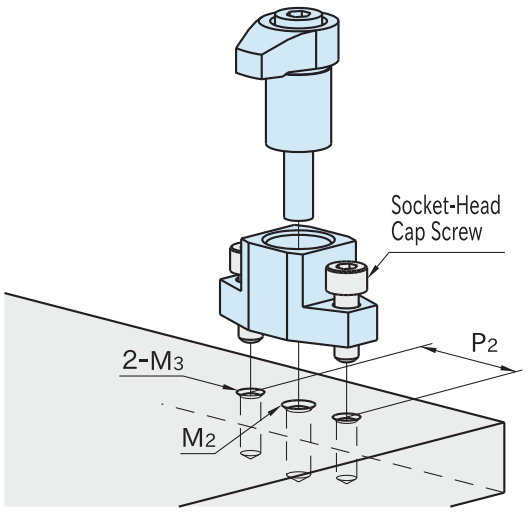
| Part Number | $H_1$ | S (Clamping Stroke) | M | $L_2$ | R | $W_2$ | L | $M_1$ | $L_1$ (max) | d | $H_4$ | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BJ130-12040B1** | 40 | 15 | - | - | 40 | 75 | 35 | M12×1.75-80L | 25 | 11 | 14 | 55 |
| **BJ130-12050B1** | | | | | 50 | | | | 23 | | | |
| **BJ130-12060B1** | | | | | 60 | | | | | | | |
| **BJ130-12140B1** | | | M12×1.75 | 31 | 40 | | | | 25 | | | |
| **BJ130-12150B1** | | | | 38 | 50 | | | | 23 | | | |
| **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** | | | M12×1.75 | 38 | 50 | | | | | | | |
| **BJ130-16160B1** | | | | 46 | 60 | | | | | | | |

| Part Number | H | $H_3$ | D | W | $H_2$ | $w_1$ | Clamping Force (N) | Allowable Screw Torque (N·m) | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|
| **BJ130-12040B1** | 67 | 40 | 32 | 18 | 16 | 10 | 18,000 | 60 | 595 |
| **BJ130-12050B1** | 69 | | | | 18 | | 14,000 | 50 | 650 |
| **BJ130-12060B1** | | | | | | | 12,000 | 46 | 675 |
| **BJ130-12140B1** | 67 | | | | 16 | | 18,000 | 60 | 585 |
| **BJ130-12150B1** | 69 | | | | 18 | | 14,000 | 50 | 640 |
| **BJ130-12160B1** | | | | | | | 12,000 | 46 | 665 |
| **BJ130-16040B1** | 76 | 40 | 36 | 22 | 21 | 14 | 38,000 | 170 | 930 |
| **BJ130-16050B1** | | | | | | | 31,000 | 150 | 980 |
| **BJ130-16060B1** | | | | | | | 26,000 | 130 | 1,025 |
| **BJ130-16150B1** | | | | | | | 31,000 | 150 | 965 |
| **BJ130-16160B1** | | | | | | | 26,000 | 130 | 1,010 |

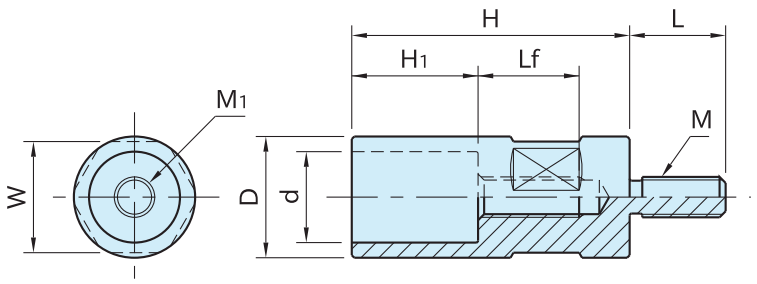
### Feature:

Perfect for low-height clamping.

### How To Use:




| Part Number | $M_2$ | $M_3$ | $P_2$ |
|---|---|---|---|
| **BJ130-08020B1** | M 8×1.25 20-deep | M 6×1 | 38 |
| **BJ130-08025B1** | | | |
| **BJ130-08030B1** | | | |
| **BJ130-10030B1** | M10×1.5 21-deep | M 8×1.25 | 45 |
| **BJ130-10040B1** | | | |
| **BJ130-12040B1** | M12×1.75 25-deep | M10×1.5 | 55 |
| **BJ130-12050B1** | | | |
| **BJ130-12060B1** | | | |
| **BJ130-12140B1** | | | |
| **BJ130-12150B1** | | | |
| **BJ130-12160B1** | | | |
| **BJ130-16040B1** | M16×2 25-deep | M12×1.75 | 65 |
| **BJ130-16050B1** | | | |
| **BJ130-16060B1** | | | |
| **BJ130-16150B1** | | | |
| **BJ130-16160B1** | | | |




BJ530-04 BJ530-06 BJ530-08 BJ530-10 BJ530-12 BJ530-16

| Body |
|---|
| Steel (S45C)<br>Black oxide finish |

| Part Number | H | D | d *) | H1 | M1 | Lf | M | L | W | Allowable Screw Torque (N·m) | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BJ530-04035 | 35 | 14 | 10 | 16 | M 4×0.7 | 13 | M 6×1 | 11 | 12 | 2.7 | 30 |
| BJ530-06040 | 40 | 16 | 12 | 19 | M 6×1 | 14 | M 8×1.25 | 14 | 13 | 7 | 45 |
| BJ530-08055 | 55 | 24 | 18 | 25 | M 8×1.25 | 20 | M 8×1.25 | 19 | 22 | 30 | 140 |
| BJ530-10063 | 63 | 32 | 20 | 30 | M10×1.5 | 21 | M12×1.75 | 30 | 30 | 38 (32 **) | 400 |
| BJ530-10080 | 80 | | | | | 23 | | | | | 500 |
| BJ530-12080 | 80 | 40 | 25 | 40 | M12×1.75 | 25 | M12×1.75 | 30 | 36 | 50 (46 ***) | 600 |
| BJ530-12100 | 100 | | | | | | | | | | 800 |
| BJ530-16080 | 80 | 50 | 32 | 40 | M16×2 | 25 | M16×2 | 30 | 46 | 80 | 930 |
| BJ530-16100 | 100 | | | | | | | | | | 1,230 |

*) Tolerances of d Diameter

BJ530-04 BJ530-06 : $^{+0.1}_{0}$

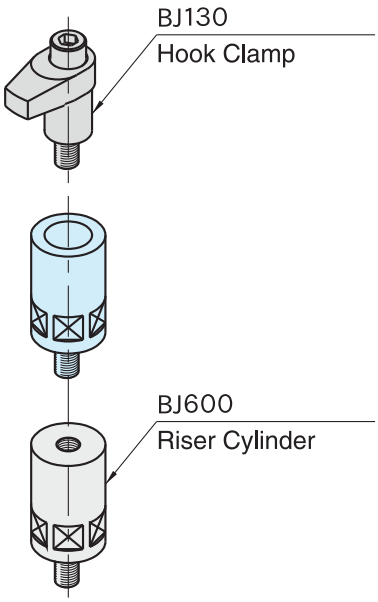
BJ530-08 BJ530-10 BJ530-12 BJ530-16 : F7

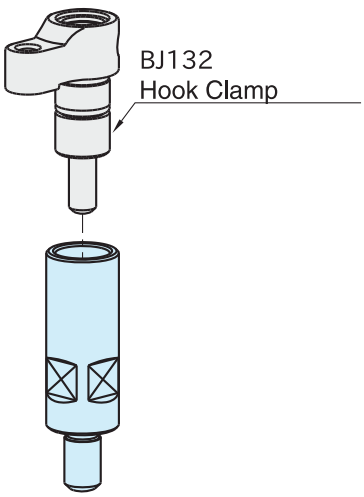
**) The value when BJ530 is used with BJ130-10030.

***) The value when BJ530 is used with BJ130-12060 or BJ130-12160.

The above screw torque values are effective for installation of Hook Clamps.

BJ130 BJ132

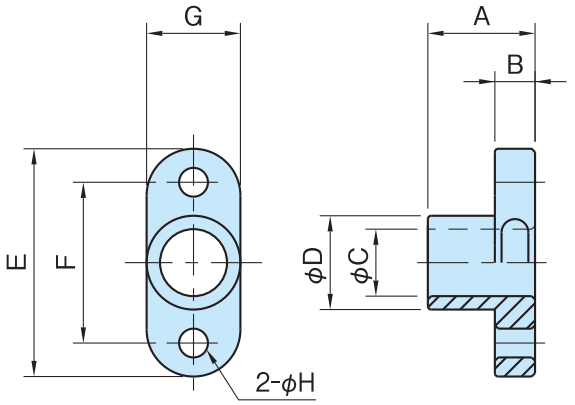


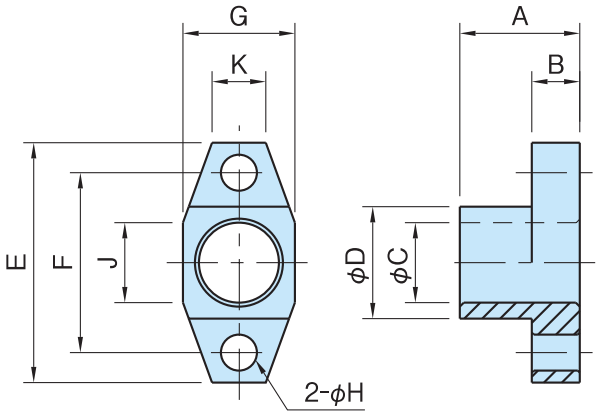
RoHS

| Type | Body |
|---|---|
| BJ531-04016,06019 | Steel (S45C)<br>Quenched and tempered<br>Black oxide finish |
| BJ531-08025~16040 | Steel (S45C)<br>Black oxide finish |

BJ531-04016,06019 BJ531-08025~16040



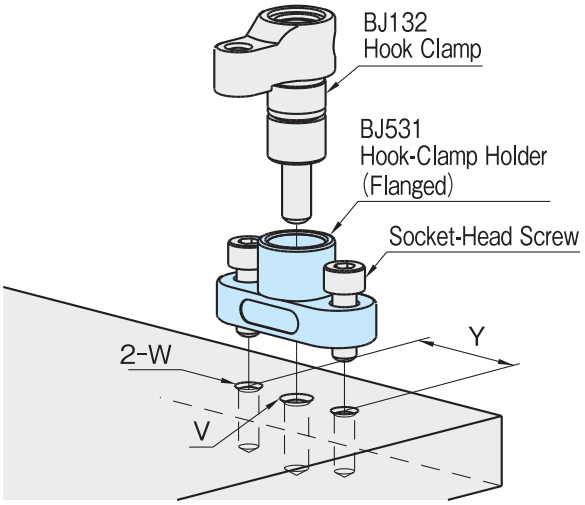

BJ531-04016,06019




BJ531-08025~16040

| Part Number | A | B | C (+0.1 0) | D | E | F | G | H | J | K | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **BJ531-04016** | 16 | 6 | 10 | 14 | 34 | 24 | 14 | 4.3 | - | - | 20 |
| **BJ531-06019** | 19 | 8 | 12 | 16 | 40 | 28 | 16 | 5.3 | - | - | 30 |
| **BJ531-08025** | 25 | 10 | 18 | 24 | 50 | 38 | 24 | 6.6 | 15 | 11.3 | 85 |
| **BJ531-10030** | 30 | 12 | 20 | 28 | 60 | 45 | 28 | 9 | 20 | 13.4 | 150 |
| **BJ531-12040** | 40 | 14 | 25 | 35 | 75 | 55 | 35 | 11 | | 15 | 290 |
| **BJ531-16040** | | 16 | 32 | 42 | 85 | 65 | 42 | 13 | 25 | 20.2 | 400 |

## How To Use

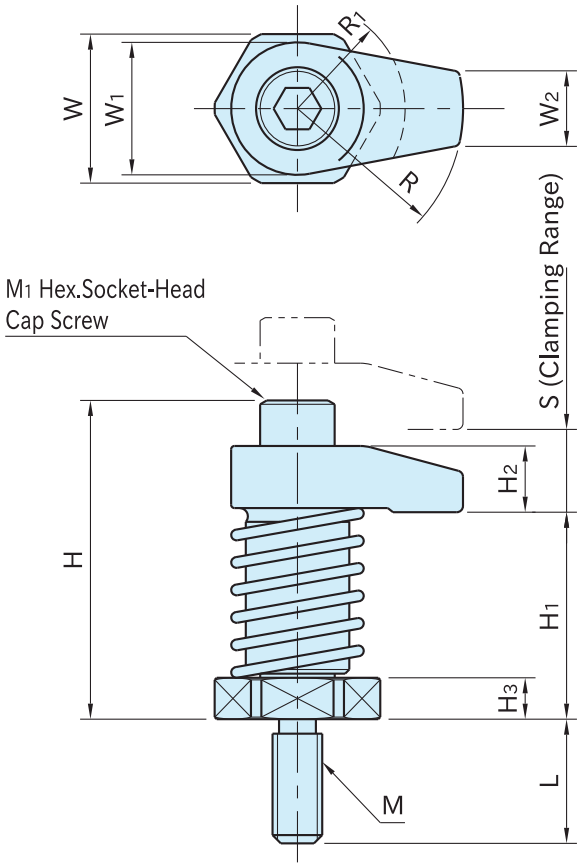



## Feature:

Suitable for low-height clamping.

| Part Number | V | W | Y |
|---|---|---|---|
| **BJ531-04016** | M 4×0.7 13 deep | M 4×0.7 | 24 |
| **BJ531-06019** | M 6×1 14 deep | M 5×0.8 | 28 |
| **BJ531-08025** | M 8×1.25 20 deep | M 6×1 | 38 |
| **BJ531-10030** | M10×1.5 21 deep | M 8×1.25 | 45 |
| **BJ531-12040** | M12×1.75 25 deep | M10×1.5 | 55 |
| **BJ531-16040** | M16×2 25 deep | M12×1.75 | 65 |

# BJ131 - Hook Clamps




| Body |
|---|
| Steel(SCM435) |
| Heat treated |
| Black oxide finish |
| Precision ground |

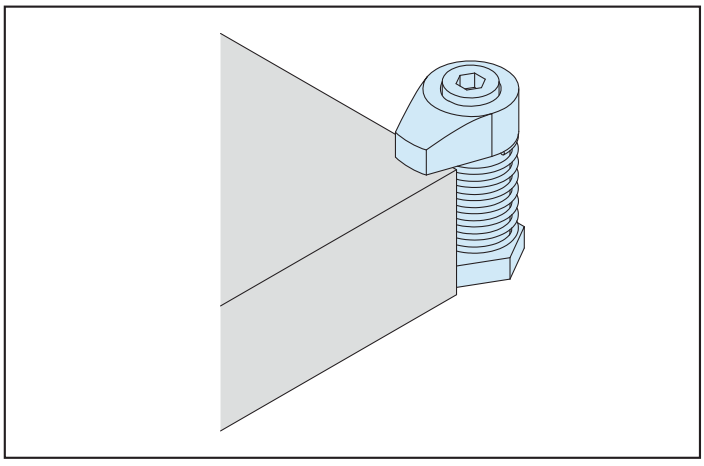
| Part Number | H1 | S | R | R1 | M | L | H | W1 | W2 | H2 | W |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BJ131-08020 | 35 | 10 | 20 | 15 | M 8×1.25 | 19 | 49 | 22 | 10 | 12 | 22 |
| BJ131-08025 | | | 25 | | | | | | | | |
| BJ131-08030 | | | 30 | 15 *) | | | | | | | |
| BJ131-08120 | 45 | | 20 | 15 | | | 59 | | | | |
| BJ131-08125 | | | 25 | | | | | | | | |
| BJ131-08130 | | | 30 | 15 *) | | | | | | | |
| BJ131-12040 | 50 | 15 | 40 | 26 | M12×1.75 | 30 | 77 | 32 | 18 | 16 | 36 |
| BJ131-12050 | | | 50 | | | | 79 | | | 18 | |
| BJ131-12060 | | | 60 | | | | | | | | |
| BJ131-12140 | 65 | | 40 | | | | 92 | | | 16 | |
| BJ131-12150 | | | 50 | | | | 94 | | | 18 | |
| BJ131-12160 | | | 60 | | | | | | | | |
| BJ131-16040 | 50 | 15 | 40 | 26 | M16×2 | 30 | 86 | 36 | 22 | 21 | 36 |
| BJ131-16050 | | | 50 | | | | | | | | |
| BJ131-16060 | | | 60 | | | | | | | | |
| BJ131-16140 | 65 | | 40 | | | | 101 | | | | |
| BJ131-16150 | | | 50 | | | | | | | | |
| BJ131-16160 | | | 60 | | | | | | | | |

*) The center of R1 is located in 5mm outside from the center of the body.

| Part Number | $H_3$ | $M_1$ | Clamping Force(N) | Allowable Screw Torque (N·m) | Weight (g) |
|---|---|---|---|---|---|
| **BJ131-08020** | 6 | M 8×1.25-30L | 7,900 | 20 | 125 |
| **BJ131-08025** | | | 7,300 | | 130 |
| **BJ131-08030** | | | 6,700 | | 135 |
| **BJ131-08120** | 16 | | 7,900 | | 160 |
| **BJ131-08125** | | | 7,300 | | 165 |
| **BJ131-08130** | | | 6,700 | | 170 |
| **BJ131-12040** | 10 | M12×1.75-45L | 13,500 | 45 | 450 |
| **BJ131-12050** | | | 12,600 | | 480 |
| **BJ131-12060** | | | 11,700 | | 520 |
| **BJ131-12140** | 25 | | 13,500 | | 600 |
| **BJ131-12150** | | | 12,600 | | 630 |
| **BJ131-12160** | | | 11,700 | | 670 |
| **BJ131-16040** | 10 | M16×2 -55L | 13,400 | 60 | 630 |
| **BJ131-16050** | | | 12,400 | | 680 |
| **BJ131-16060** | | | 12,000 | | 740 |
| **BJ131-16140** | 25 | | 13,400 | | 780 |
| **BJ131-16150** | | | 12,400 | | 830 |
| **BJ131-16160** | | | 12,000 | | 890 |

**BJ600** Riser Cylinders are available for additional height.

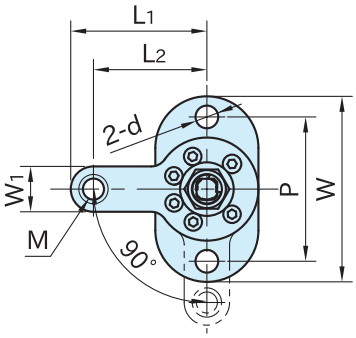
## HOW TO USE

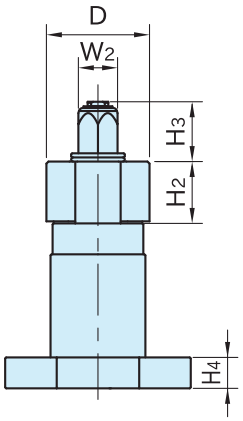


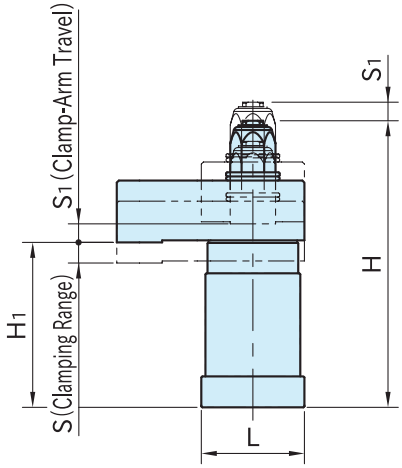
# PTSW1 - Swing Clamps (Quick-Acting)

Without Clamp Arm

| Body / Clamp-Arm Holder / Hex. Head | Clamp Arm |
|---|---|
| Steel(SCM440)<br>Quenched and tempered<br>Black oxide finish | Steel(S45C)<br>Quenched and tempered<br>Black oxide finish |

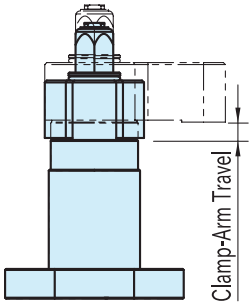



## Features

- 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.




For robotized production lines, use Spiral-Acting Swing Clamps.

| Series | $H_1$ | S (Clamping Range) | $S_1$ (Clamp-Arm Travel) | M | $L_2$ | $L_1$ | W | L | $H_4$ | d | P | H | D | $W_1$ | $H_2$ | $W_2$ | $H_3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PTSW1-12** | 80 | 10 | 11 | M12×1.75 | 55 | 66 | 90 | 50 | 15 | 11 | 70 | 139 | 50 | 22 | 30 | 19 | 29 |
| **PTSW1-16** | 95 | | 15 | M16×2 | 65 | 79 | 100 | 60 | 20 | 13 | 80 | 165 | 60 | 28 | 35 | 24 | 35 |

With Clamp Arm

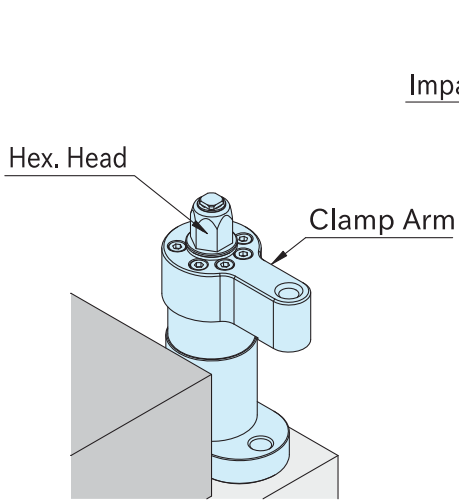
| Part Number | Clamping Force (N) | Allowable Screw Torque(N·m) | Clamping Direction | Weight (kg) |
|---|---|---|---|---|
| **PTSW1-12R** | 6,000 | 28 | Clockwise | 1.6 |
| **PTSW1-16R** | 10,000 | 55 | | 2.9 |

Without Clamp Arm

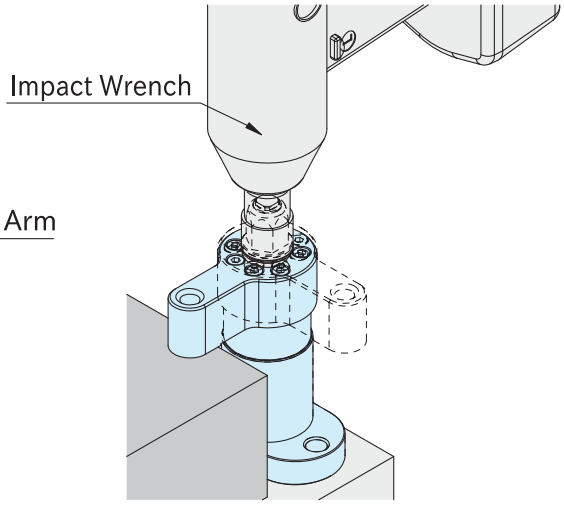
| Part Number | Clamping Force (N) | Allowable Screw Torque(N·m) | Clamping Direction | Weight (kg) |
|---|---|---|---|---|
| **PTSW1-12NR** | 6,000 | 28 | Clockwise | 1.2 |
| **PTSW1-16NR** | 10,000 | 55 | | 2.2 |

If you prepare custom clamp arms, contact us for the dimensional information on their mounting section. Bear in mind that such clamp arms can cause higher or lower clamping force than stated above.

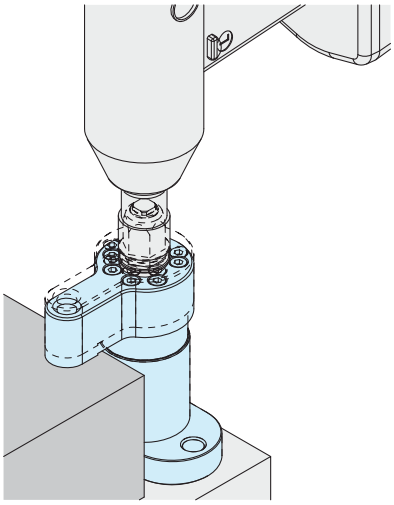
## How To Use




**Unclamped Mode**
Load a work piece.




**Ready-To-Clamp Mode**
When the hex. head is turned by an impact wrench, the clamp arm swings fast to the clamping position.



**Clamping Mode**
The clamp arm moves down for clamping. Using an impact wrench allows completing positive clamping in a few seconds.

## Notes

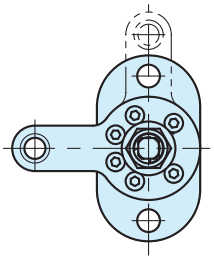
- Do not use applying higher torque than allowable for a long period of time, to avoid damage. Using a torque-settable impact wrench is recommended.

# PTSW2 - Swing Clamps (Spiral-Acting)

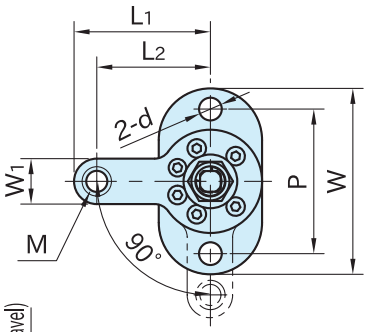
Without Clamp Arm

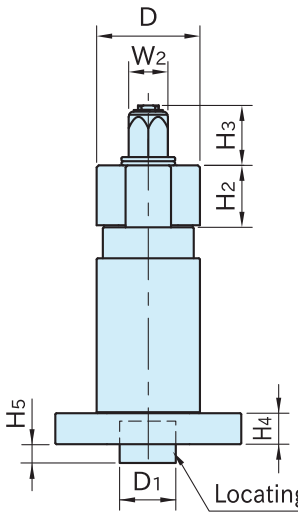
| Body / Clamp-Arm Holder / Hex. Head | Clamp Arm |
|---|---|
| Steel(SCM440)<br>Quenched and tempered<br>Black oxide finish | Steel(S45C)<br>Quenched and tempered<br>Black oxide finish |

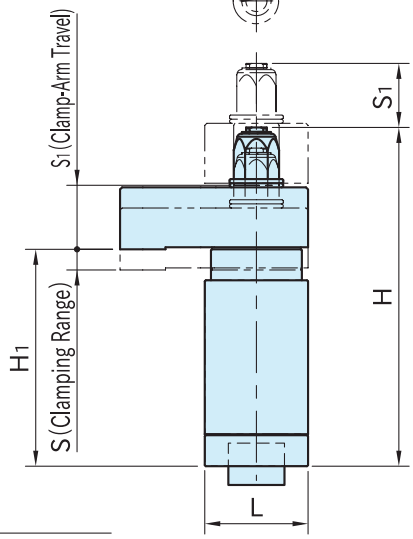
Counterclockwise Clamping



Clockwise Clamping



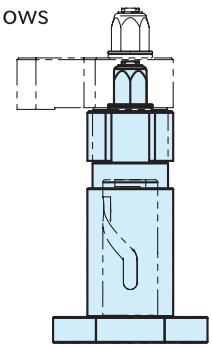




Locating Boss
Use when locating clamps is required in the robotized production line.

## Features

The inside spiral groove allows the clamp arm to swing positively.



| Series | $H_1$ | S (Clamping Range) | $S_1$ (Clamp-Arm Travel) | M | $L_2$ | $L_1$ | $D_1$ $(^{0}_{-0.2})$ | $H_5$ | W | L | $H_4$ | d | P | H | D | $W_1$ | $H_2$ | $W_2$ | $H_3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PTSW2-12** | 105 | 10 | 31 | M12×1.75 | 55 | 66 | 26 | 10 | 90 | 50 | 15 | 11 | 70 | 164 | 50 | 22 | 30 | 19 | 29 |
| **PTSW2-16** | 120 | | 36 | M16×2 | 65 | 79 | 30 | 12 | 100 | 60 | 20 | 13 | 80 | 190 | 60 | 28 | 35 | 24 | 35 |

## With Clamp Arm

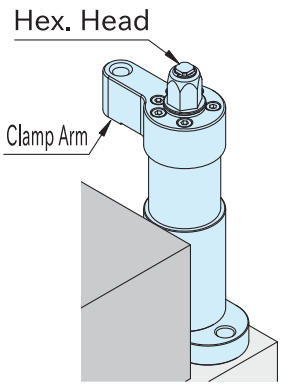
| Part Number | Clamping Force(N) | Allowable Screw Torque(N·m) | Clamping Direction | Weight (kg) |
|---|---|---|---|---|
| **PTSW2-12R** | 6,000 | 28 | Clockwise | 2 |
| **PTSW2-12L** | | | Counterclockwise | |
| **PTSW2-16R** | 10,000 | 55 | Clockwise | 3.2 |
| **PTSW2-16L** | | | Counterclockwise | |

## Without Clamp Arm

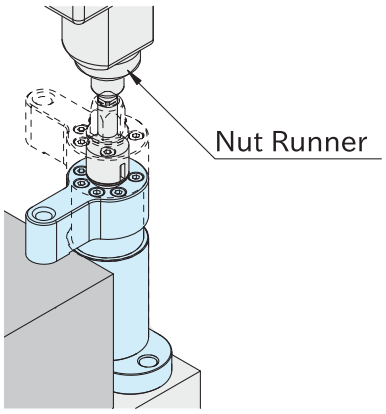
| Part Number | Clamping Force(N) | Allowable Screw Torque(N·m) | Clamping Direction | Weight (kg) |
|---|---|---|---|---|
| **PTSW2-12NR** | 6,000 | 28 | Clockwise | 1.6 |
| **PTSW2-12NL** | | | Counterclockwise | |
| **PTSW2-16NR** | 10,000 | 55 | Clockwise | 2.5 |
| **PTSW2-16NL** | | | Counterclockwise | |

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.

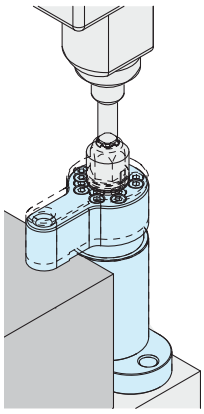
## How To Use




**Unclamped Mode**
Load or unload a work piece.




**Ready-To-Clamp Mode**
When the hex. head is turned by a nut runner, the clamp arm swings fast to the clamping position.

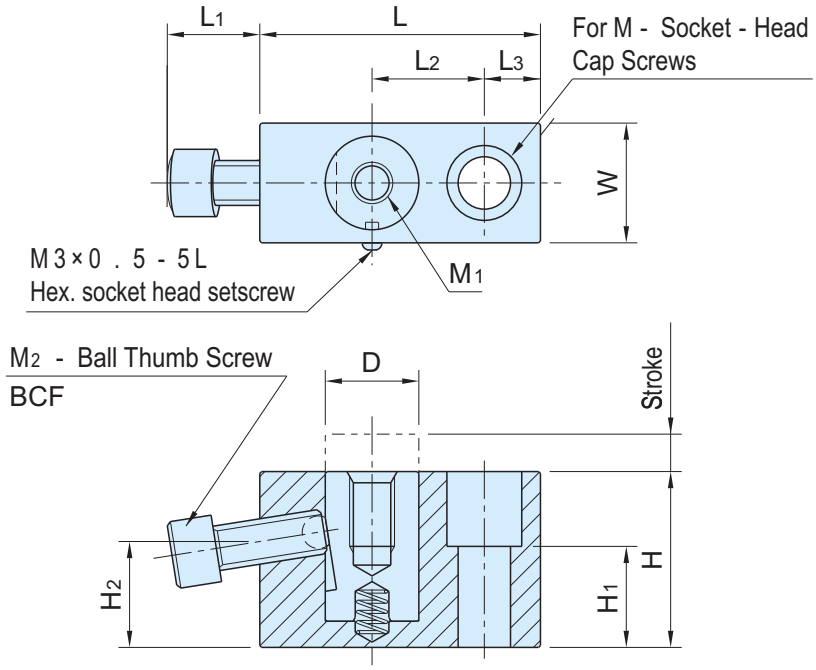


**Clamping Mode**
The clamp arm moves down for clamping. Using a nut runner allows completing positive clamping in a few seconds.

## Notes

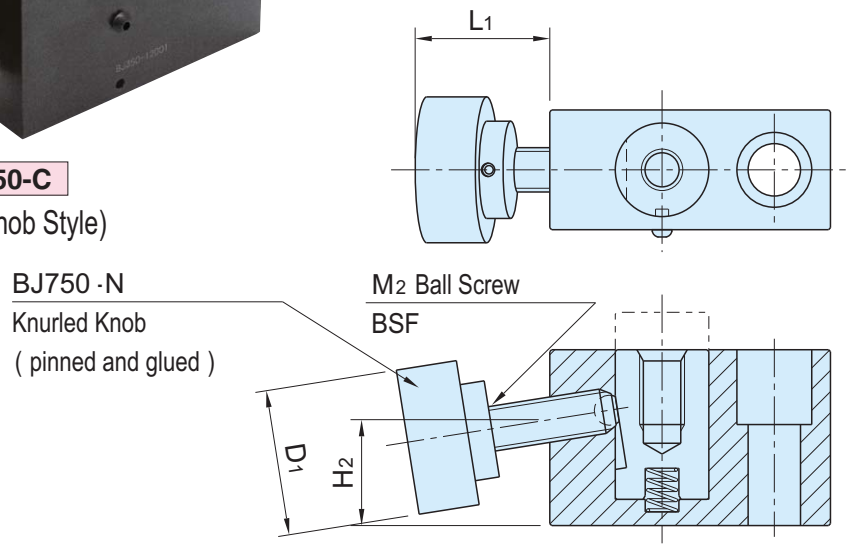
A torque-settable impact wrench may also be used to operate these clamps.

**BJ350**
(Ball-Thumb-Screw Style)




**BJ350**
(Ball-Thumb-Screw Style)

**BJ350-C**
(Knurled-Knob Style)




**BJ350-C**
(Knurled-Knob Style)

| Body | Piston |
|---|---|
| Steel (S 4 5 C)<br>Black oxide finish | Steel (SK 9 5 )<br>Quenched and tempered<br>Black oxide finish |

| Size | | H | S | M1 | D | L | W | M | L2 | L3 | H1 | H2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BJ350<br>BJ350-C | 06001 | 29 | 6 | M 6×1 10 -deep | 12 | 38 | 19 | M 6 | 15 | 8 | 15 | 17.6 |
| | 08001 | 37 | 10 | M 8×1.25 15 -deep | 16 | 50 | 22 | M 8 | 20 | 10 | 20 | 21.6 |
| | 10001 | 42 | | M10×1.5 15 -deep | 19 | 65 | 25 | M10 | 25 | 15 | | 24.6 |
| | 12001 | 47 | | M12×1.75 20 -deep | 25 | 75 | 32 | M12 | 30 | | 27 | 28.3 |

**BJ350** (Ball-Thumb-Screw Style)

| Part Number | $L_1$ | $M_2$ | Screw Torque(N·m) | Support Capacity ( N ) | Piston Spring Force ( N ) | Weight ( g ) |
|---|---|---|---|---|---|---|
| **BJ350-06001** | 12 | M 6×1 -16L | 7.5 | 4,000 | 0～ 6 | 150 |
| **BJ350-08001** | 15 | M 8×1.25-20L | 14 | 6,000 | 0～ 7 | 285 |
| **BJ350-10001** | 18.5 | M10×1.5 -25L | 18 | 7,500 | 1～11 | 480 |
| **BJ350-12001** | 23 | M12×1.75-30L | 22 | 9,000 | | 800 |

**BJ350-C** (Knurled-Knob Style)

| Part Number | $L_1$ | $D_1$ | $M_2$ | Screw Torque(N·m) | Support Capacity ( N ) | Piston Spring Force ( N ) | Weight ( g ) |
|---|---|---|---|---|---|---|---|
| **BJ350-06001C** | 20.7 | 24 | M 6×1 | 1 | 600 | 0～ 6 | 180 |
| **BJ350-08001C** | 23.6 | 30 | M 8×1.25 | 1.2 | 700 | 0～ 7 | 340 |
| **BJ350-10001C** | 26.2 | 36 | M10×1.5 | 1.5 | | 1～11 | 500 |
| **BJ350-12001C** | 31.3 | 40 | M12×1.75 | 2 | 800 | | 950 |

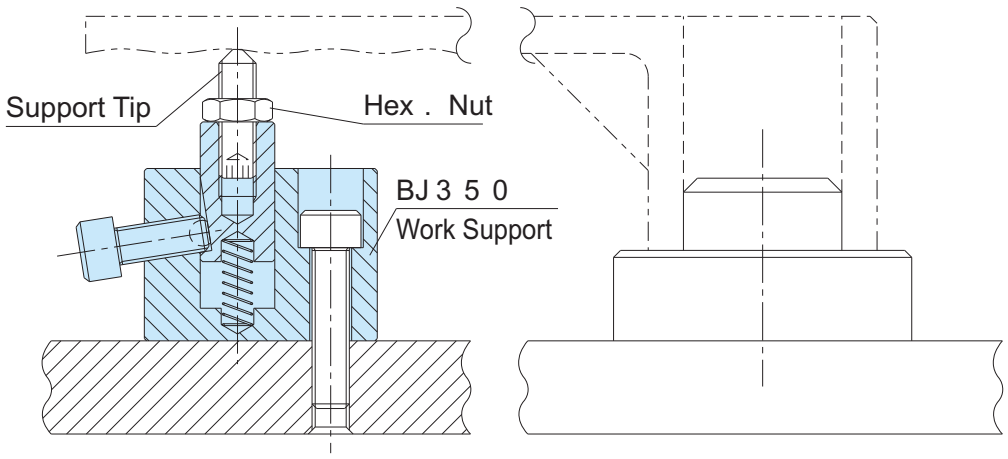
## Feature:

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.

## Application Example

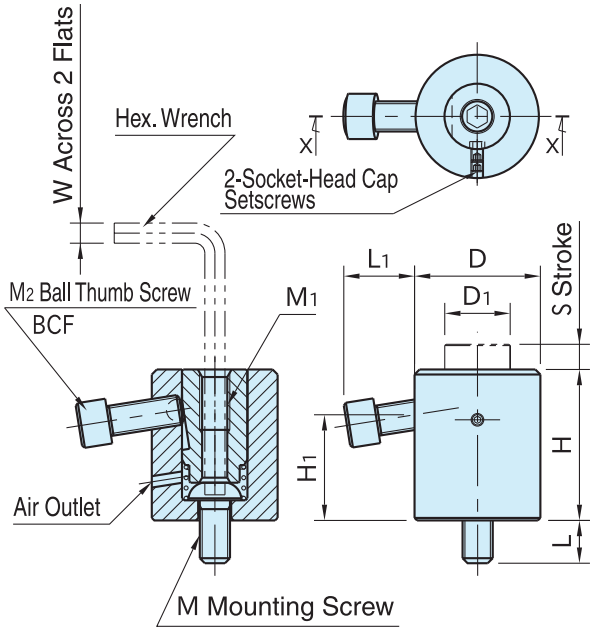



Ideal for preventing the workpiece from chattering and deflecting .

**BJ351**
(Ball-Thumb-Screw Style)

**BJ351-C**
(Knurled-Knob Style)

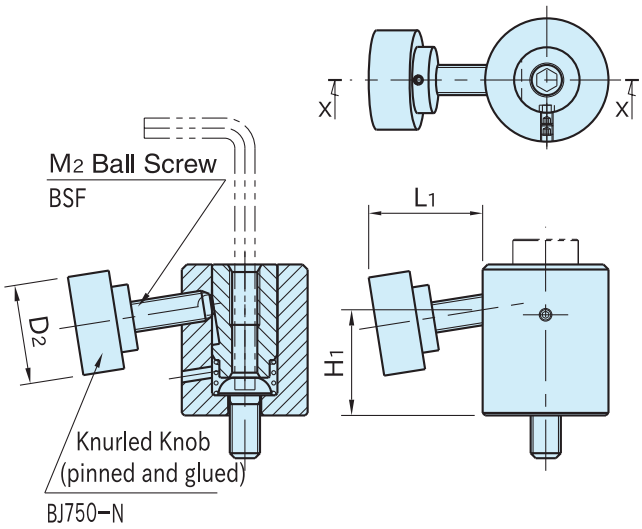
| Body | Piston |
|---|---|
| Steel (S45C)<br>Black Oxide Finish | Steel (SK95)<br>Quenched and tempered<br>Black Oxide Finish |




Section X-X

To install, insert a hex. wrench through the piston into the mounting screw.

**BJ351**
(Ball-Thumb-Screw Style)




Section X-X

**BJ351-C**
(Knurled-Knob Style)

| Size | | H | S | M1 | D1 | D | M | L | W | H1 |
|---|---|---|---|---|---|---|---|---|---|---|
| BJ351<br>BJ351-C | 06001 | 33 | 6 | M 6×1 12 deep | 14 | 28 | M 6×1 | 10 | 4 | 22.2 |
| | 08001 | 42 | 10 | M 8×1.25 16 deep | 19 | 35 | M 8×1.25 | 14 | 5 | 27.5 |
| | 10001 | 50 | | M10×1.5 20 deep | 22 | 42 | M10×1.5 | | 6 | 34 |
| | 12001 | 60 | | M12×1.75 24 deep | 26 | 50 | M12×1.75 | 16 | 8 | 42.1 |
| | 16001 | 70 | | M16×2 32 deep | 33 | 60 | M16×2 | 22 | 10 | 47.4 |

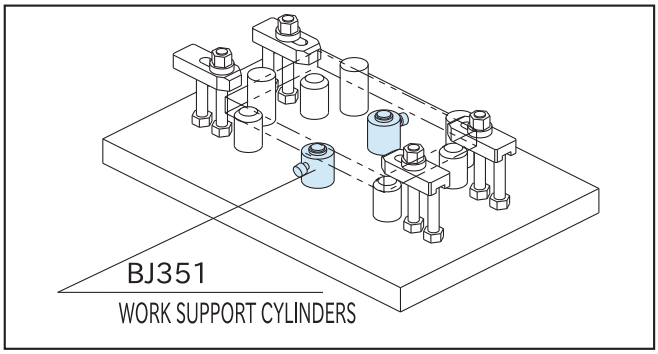
**BJ351** (Ball-Thumb-Screw Style)

| Part Number | $L_1$ | $M_2$ | Allowable Screw Torque (N·m) | Support Capacity (N) | Piston Spring Force (N) | Weight (g) |
|---|---|---|---|---|---|---|
| **BJ351-06001** | 13.1 | M 6X1 -16L | 7.5 | 4,000 | 10~22 | 150 |
| **BJ351-08001** | 17.2 | M 8X1.25-20L | 14 | 6,000 | 10~27 | 300 |
| **BJ351-10001** | 24 | M10X1.5 -25L | 18 | 7,500 | 14~28 | 540 |
| **BJ351-12001** | 28.1 | M12X1.75-30L | 22 | 9,000 | 15~30 | 865 |
| **BJ351-16001** | 26.6 | | 25 | | 15~35 | 1,390 |

**BJ351-C** (Knurled-Knob Style)

| Part Number | $L_1$ | $D_2$ | $M_2$ | Allowable Screw Torque (N·m) | Support Capacity (N) | Piston Spring Force (N) | Weight (g) |
|---|---|---|---|---|---|---|---|
| **BJ351-06001C** | 22.7 | 24 | M 6X1 | 1 | 600 | 10~22 | 185 |
| **BJ351-08001C** | 27.7 | 30 | M 8X1.25 | 1.2 | 700 | 10~27 | 360 |
| **BJ351-10001C** | 31.8 | 36 | M10X1.5 | 1.5 | | 14~28 | 620 |
| **BJ351-12001C** | 36.8 | 40 | M12X1.75 | 2 | 800 | 15~30 | 1,020 |

## How To Use

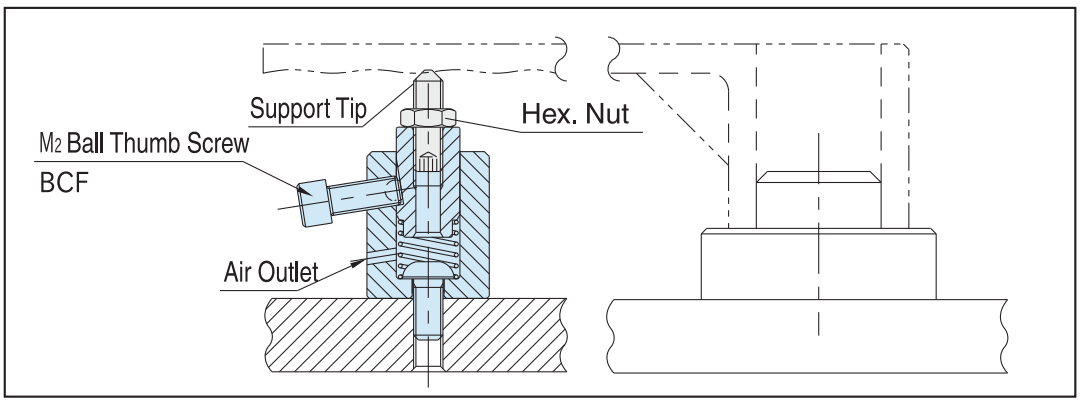



## Feature:

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.

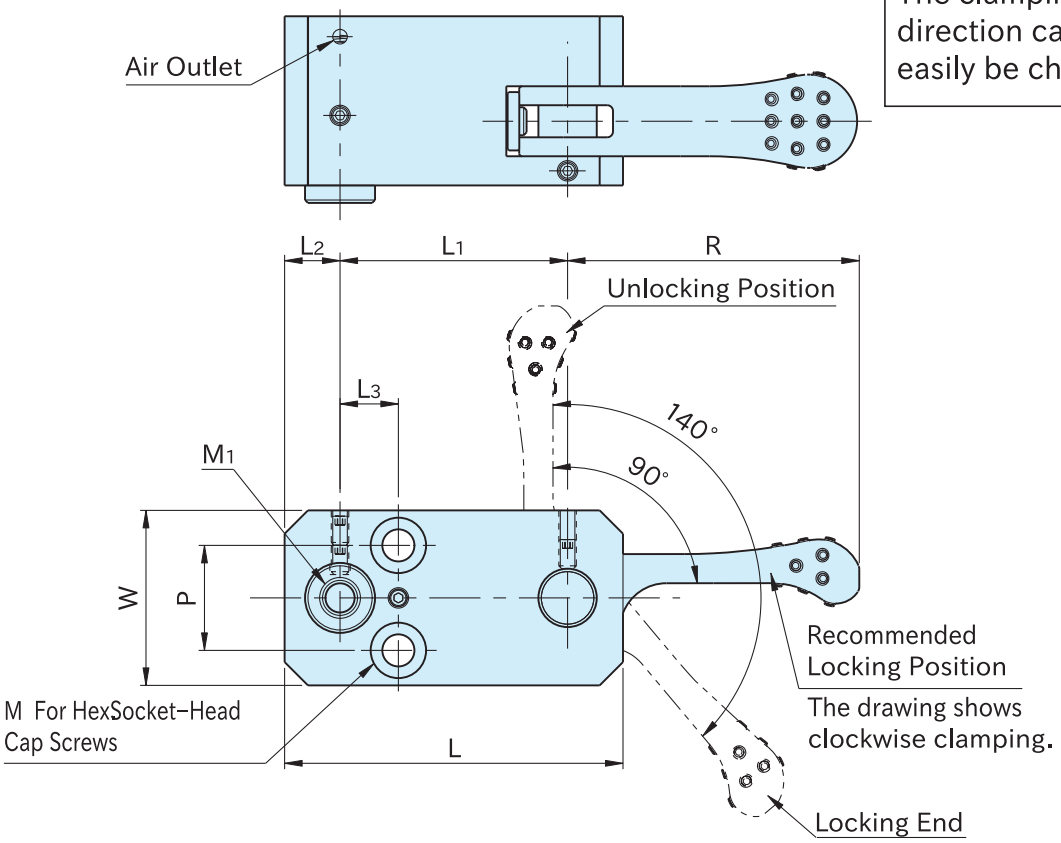


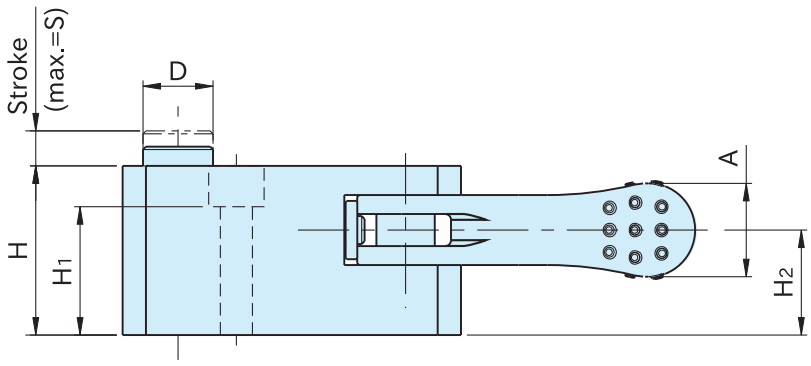

Ideal for preventing the workpiece from chattering and deflecting.

# BJ352 - Work Supports With Cam Handle

| Body | Piston | Locking Pin | Handle |
|---|---|---|---|
| Steel (S45C)<br>Black oxide finish | Steel (SK95)<br>Quenched and tempered<br>Black oxide finish | Steel (S45C)<br>Quenched and tempered<br>Black oxide finish | Steel (SCM440)<br>Quenched and tempered<br>Black oxide finish |

The clamping direction can easily be changed.

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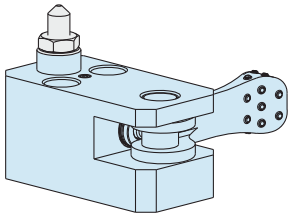
| Part Number | H | S | $M_1$ | D | L | W | R | A | $H_2$ | M | $H_1$ | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BJ352-05001** | 24 | 5 | M 5X0.8 8deep | 10 | 52 | 25 | 40 | 14 | 14 | M4 | 19 | 15 |
| **BJ352-06001** | 29 | 6 | M 6X1 10deep | 12 | 58 | 30 | 50 | 16 | 18 | M5 | 22 | 18 |
| **BJ352-08001** | 37 | 8 | M 8X1.25 15 deep | 16 | 75 | 38 | 63 | 19 | 23 | M6 | 25 | 24 |
| **BJ352-10001** | 42 | 10 | M10X1.5 15 deep | 19 | 85 | 45 | 80 | 24 | 26 | M8 | 30 | 28 |

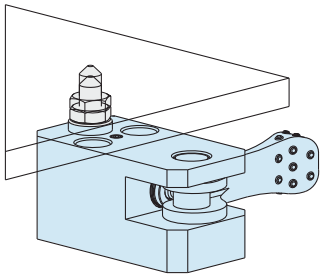
| Part Number | $L_1$ | $L_2$ | $L_3$ | Cam Handles Part Number | Allowable Operating Load (N)*) | Support Capacity (N) | Piston Spring Force (N) | Locking Mechanism | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|
| **BJ352-05001** | 36 | 8 | 8 | QLCA-04 | 80 | 500 | 0~ 6 | Spiral Cam Cam Angle: 4° | 213 |
| **BJ352-06001** | 39 | 9.5 | 10 | QLCA-05 | 100 | 700 | 0~ 6 | | 335 |
| **BJ352-08001** | 51 | 12 | 12 | QLCA-06 | 150 | 900 | 0~ 7 | | 738 |
| **BJ352-10001** | 56 | 14.5 | 15 | QLCA-08 | 200 | 1,200 | 1~11 | | 1,110 |

*)Allowable load to operate the handle

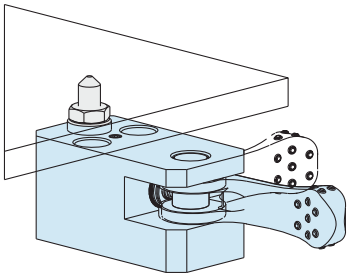
## How To Operate



1. Unlocked
No workpiece loaded

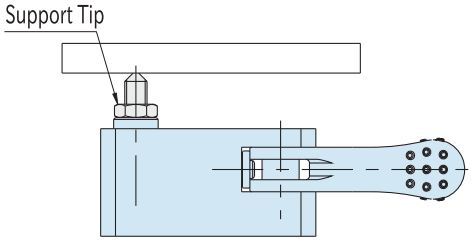


2. Workpiece Loading
Load a workpiece,
and the piston lowers.



3. Clamping
Turn the handle
to lock the piston.

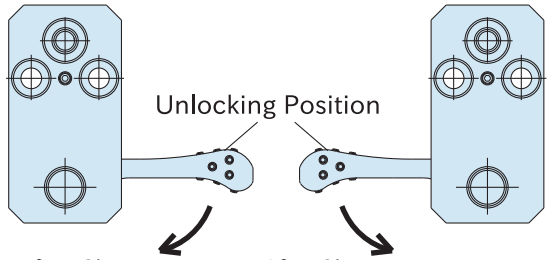
### Adjusting Handle Locking Position




When the projection amount from the body is ½ 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.

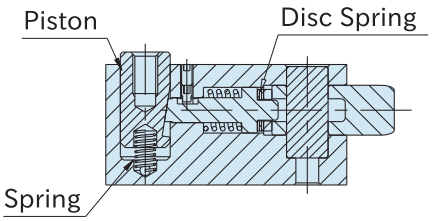
### Changing Clamping Direction

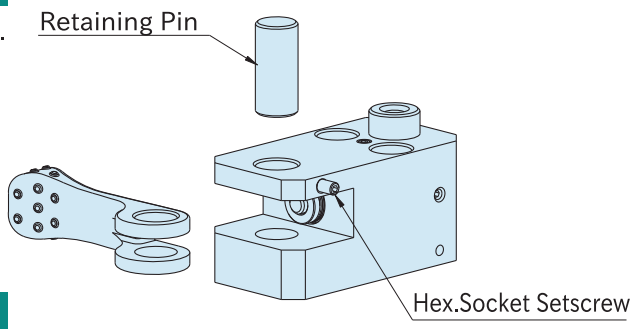
Loosen the hex. socket setscrew to remove the retaining pin. Turn the handle upside down and put it in position again.




## Feature

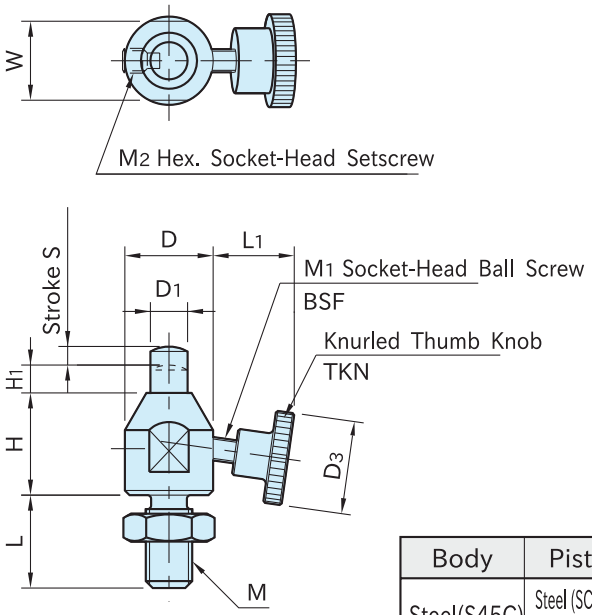
The built-in disc spring prevents loosened locking.




## Notes

When you attach a support tip to the tapped hole through the shaft, tighten the shaft and fix it to prevent damage.



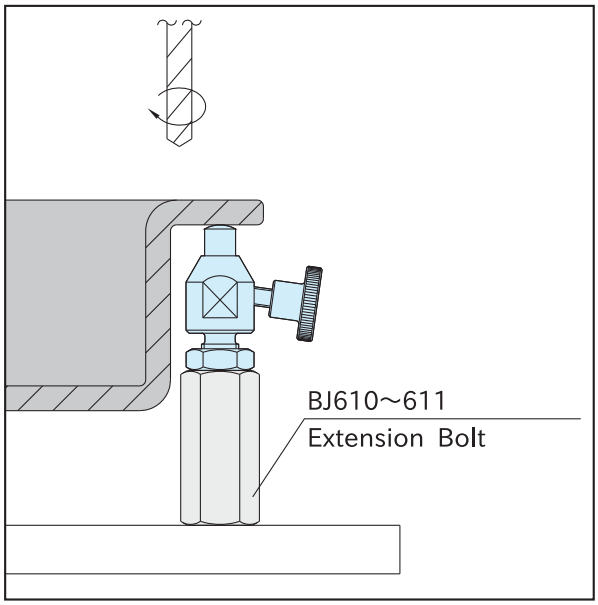

Note) The socket-head ball screw is glued to the knurled thumb knob.

| Body | Piston |
|---|---|
| Steel(S45C) Black oxide | Steel (SCM440) Heat treated Black oxide |

| Part Number | H | H1 | S | D1 | D | M | L | W | D3 | M1 |
|---|---|---|---|---|---|---|---|---|---|---|
| **BJ360-08001** | 18 | 5 | 3 | 6 | 15 | M 8X1.25 | 16 | 13 | 16 | M4X0.7-16L |
| **BJ360-10001** | 22 | 6 | 4 | 8 | 19 | M10X1.5 | 20 | 17 | 20 | M5X0.8-20L |
| **BJ360-12001** | 25 | | | 10 | 22 | M12X1.75 | 24 | 19 | 24 | M6X1 -25L |

| Part Number | L1 | M2 | Piston Spring Force(N) | Support Capacity (N) | Weight (g) |
|---|---|---|---|---|---|
| **BJ360-08001** | 13.2 | M4X0.7-6L | 1.5~3.0 | 200 | 36 |
| **BJ360-10001** | 16.3 | | 1.8~3.0 | 300 | 72 |
| **BJ360-12001** | 22.3 | | | 400 | 150 |

## How To Use



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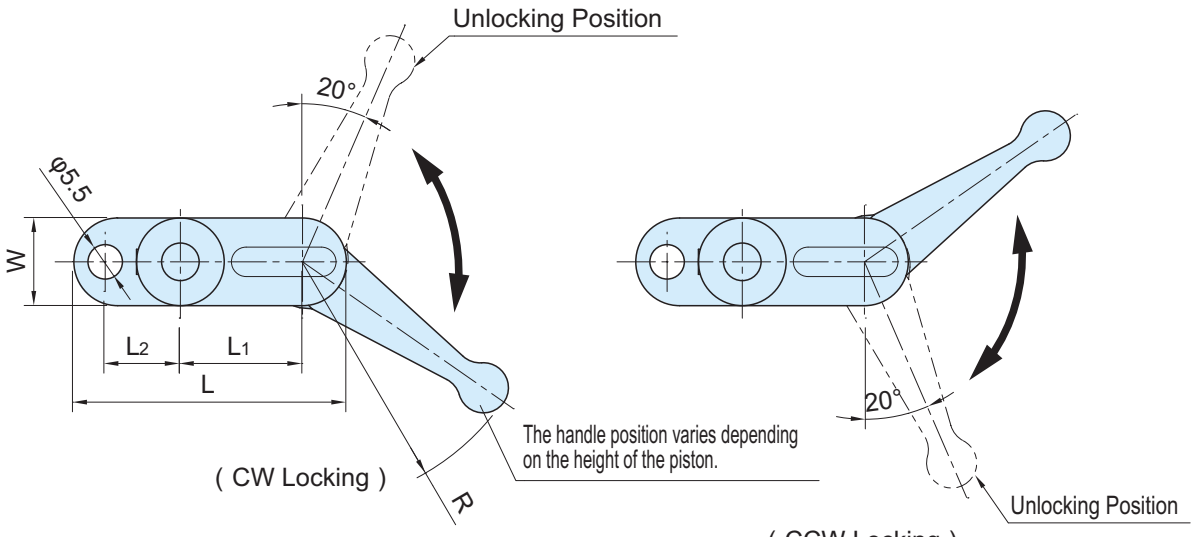
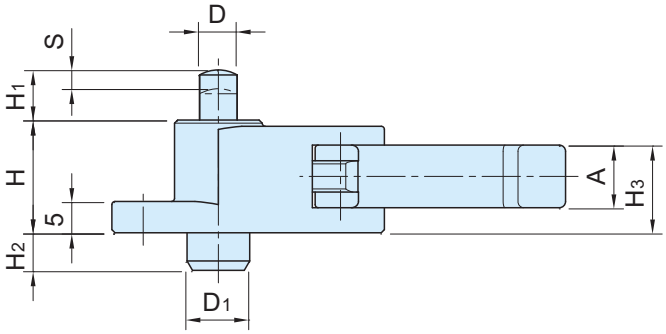
# BJ362 - Compact Work Supports With Cam Handle

★Key Point

Prevent chattering and deflection.

| Body/Pin | Piston | Cam Handle |
|---|---|---|
| S45C steel<br>Black oxide finished | SCM440 steel<br>Black oxide finished<br>HRC50-55 | Die-cast zinc<br>Chrome plated |

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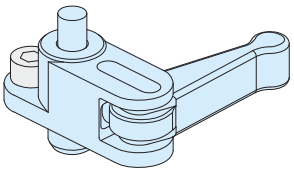
| Part Number | Locking Direction | H | $H_1$ | S | D | L | W | R | A | $H_3$ | $D_1$ | $H_2$ | $L_1$ | $L_2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BJ362-06001R** | CW | 18 | 8 | 3 | 6 | 43.5 | 14 | 39 | 10 | 14 | 10 | 6 | 19.5 | 12 |
| **BJ362-06001L** | CCW | | | | | | | | | | | | | |
| **BJ362-10001R** | CW | 25 | 10 | 4 | 10 | 50.4 | 18 | 50 | 13 | 18.5 | 14 | 9.5 | 22.4 | 14 |
| **BJ362-10001L** | CCW | | | | | | | | | | | | | |

| Part Number | Allowable Operating Load ( N ) * ) | Support Capacity ( N ) | Piston Spring Force ( N ) | Locking Mechanism | Weight (g ) |
|---|---|---|---|---|---|
| **BJ362-06001R** | 80 | 200 | 1.5 ~ 3 | Spiral Cam<br>Cam Angle: 4° | 76 |
| **BJ362-06001L** | | | | | |
| **BJ362-10001R** | 100 | 400 | 1.8 ~ 3 | | 140 |
| **BJ362-10001L** | | | | | |

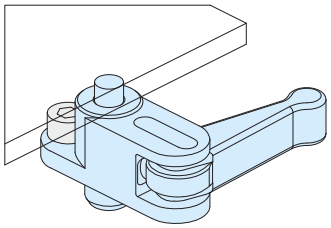
*)Allowable load to operate the handle.

## How To Use

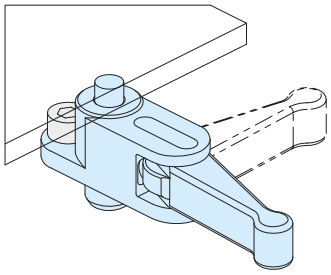
■How To Operate



① Unlocked
No workpiece loaded.

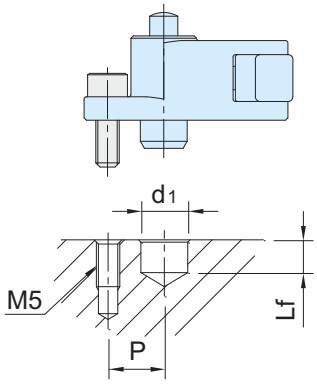


② Workpiece Loading
Load a workpiece,
and the piston lowers.



③ Locking
Turn the handle to lock the piston.

■Mounting-Hole Dimensions

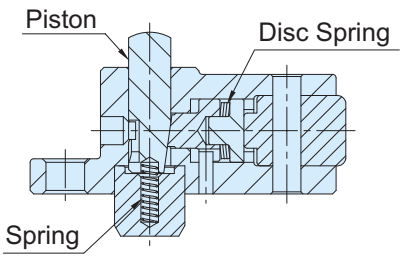



Drill a tapped hole and a locating-pin hole as specified below .

| Size | $d_1$ $(^{+0.3}_{0})$ | Lf | P |
|---|---|---|---|
| **BJ362-06001** | 10 | 7 | 12 |
| **BJ362-10001** | 14 | 10.5 | 14 |

## Feature

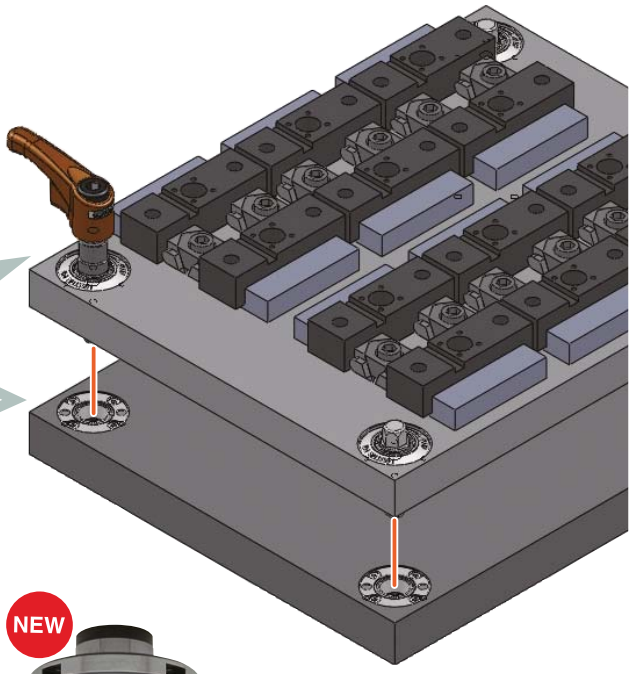
The built-in disc spring prevents loosened locking.



# FLEX LOCATORS

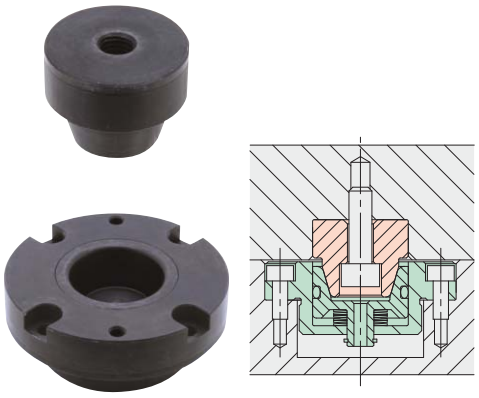
## Expanded product lineup of Flex Locators!

Flex Locators provide "precise locating" and "easy operation" by movable tapered pin or bushing.



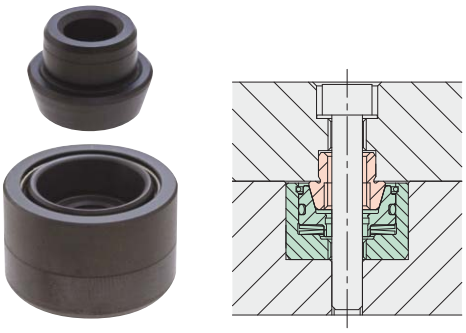

## FLEX LOCATORS

Simple and low cost types with only locating function



### Standard

| | |
|---|---|
| Locating Repeatability | 10μm |



### Through Hole

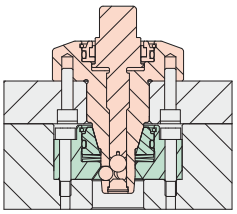
| | |
|---|---|
| Locating Repeatability | 10μm |

## ONE-TOUCH FLEX LOCATORS

Locating and clamping functions

NEW

High clamping force by screw



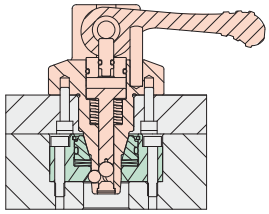
(Adjustable-torque wrenches are available to control clamping force.)

### Hexagon Head

| | |
|---|---|
| Locating Repeatability | 8μm |
| Clamping Force | 1700N, 3000N, 4500N |

NEW

Quick operation by handle

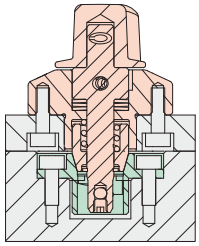


### Cam Handle

| | |
|---|---|
| Locating Repeatability | 8μm |
| Clamping Force | 600N,1200N,1800N |

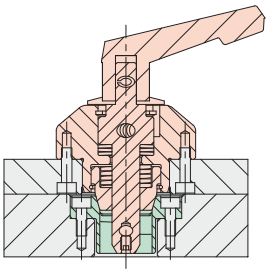
NEW

Quick and easy operation by knob



### Knob

| | |
|---|---|
| Locating Repeatability | 10μm |
| Clamping Force | 350N,600N |



### Handle

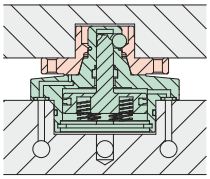
| | |
|---|---|
| Locating Repeatability | 10μm |
| Clamping Force | 600N,700N |

## PNEUMATIC FLEX LOCATORS

Easier and faster pneumatic operation

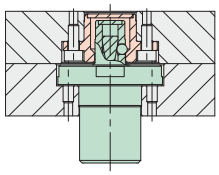
High clamping force by spring and air

NEW



Flange diameter φ70 / φ85

| | |
|---|---|
| Locating Repeatability | 3μm |
| Clamping Force | 4kN,6.3kN |

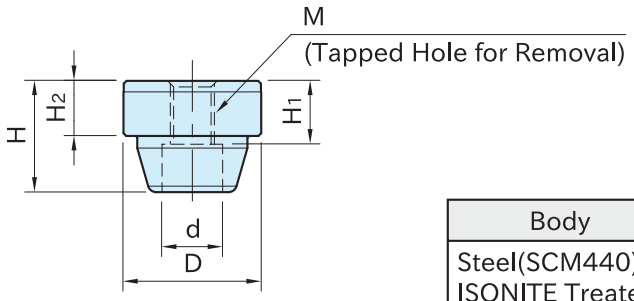


Flange diameter φ40 / φ51

| | |
|---|---|
| Locating Repeatability | ±10μm |
| Clamping Force | 250N,350N |

IMAO Products

# CP720 - Flex Locator Pins

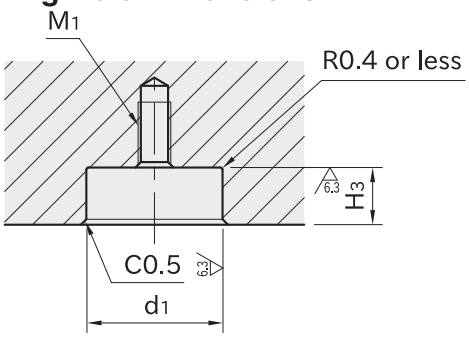



| Body |
|---|
| Steel(SCM440)<br>ISONITE Treated<br>(Nitrocarburized) |

| Part Number | D (g6) | $H_2$ | H | M | $H_1$ | 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 |

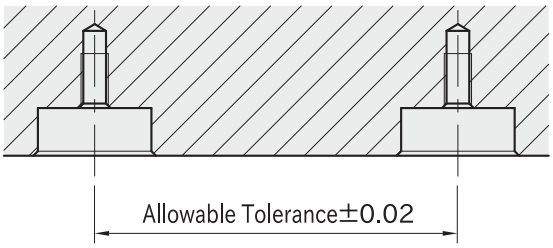
## How To Use

### Mouting Hole Dimensions

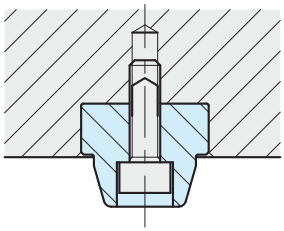



| Part Number | $d_1$ (H7) | $H_3$ (±0.05) | $M_1$ |
|---|---|---|---|
| **CP720-16032** | 16 | 6 | M 4X0.7 |
| **CP720-25050** | 25 | 10.5 | M 6X1 |
| **CP720-38070** | 38 | 15.5 | M 8X1.25 |
| **CP720-56095** | 56 | 22.5 | M12X1.75 |

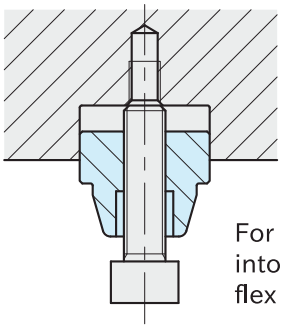
### Spacing Tolerance




### How to Install and Remove



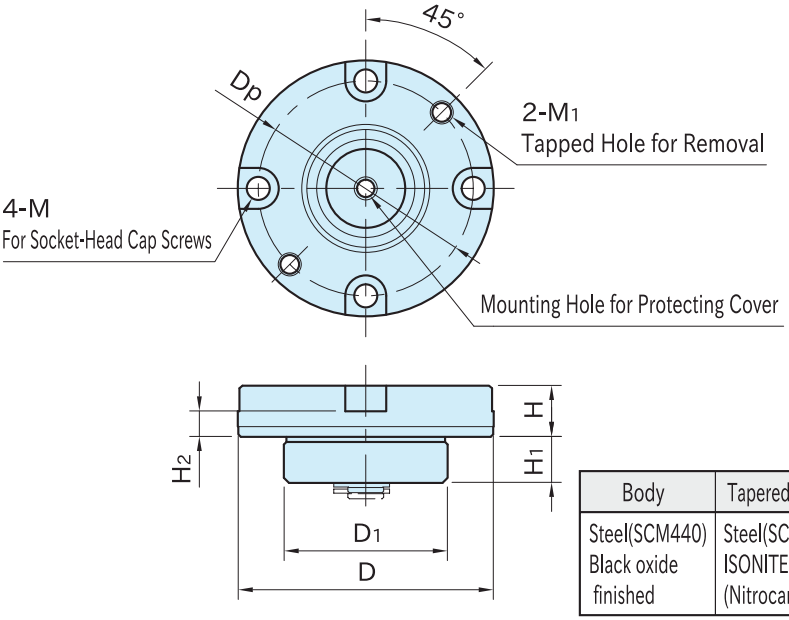
Use a socket-head cap screw to fix the flex locator pin.



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)



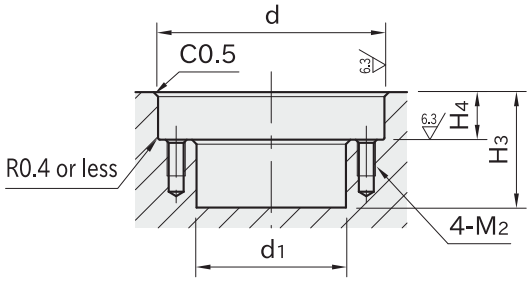

| Body | Tapered Bushing |
|---|---|
| Steel(SCM440) Black oxide finished | Steel(SCM440) ISONITE Treated (Nitrocarburized) |

| Part Number | D (g6) | H | D1 | H1 | M | H2 | M1 | Dp | Lifting Force (N) (*) | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|
| **CP725-16032** | 32 | 6.5 | 20 | 7 | M3 | 3 | M3×0.5 | 25.5 | 110 | 60 |
| **CP725-25050** | 50 | 10 | 32 | 9 | M4 | 5 | M4×0.7 | 42 | 180 | 160 |
| **CP725-38070** | 70 | 15 | 48 | 14 | M5 | 9 | M5×0.8 | 60 | 400 | 508 |
| **CP725-56095** | 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.

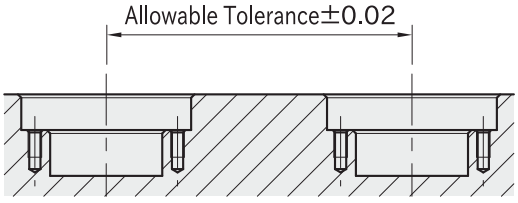
## How To Use

### Mouting Hole Dimensions

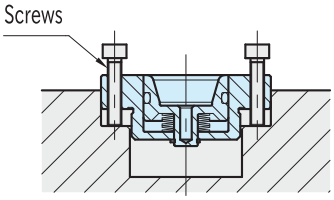



| Part Number | d (H7) | H4 (±0.05) | d1 | H3 | M2 |
|---|---|---|---|---|---|
| **CP725-16032** | 32 | 7 | 21 | 18 | M3×0.5 |
| **CP725-25050** | 50 | 10.5 | 33 | 24 | M4×0.7 |
| **CP725-38070** | 70 | 15.5 | 49 | 35 | M5×0.8 |
| **CP725-56095** | 95 | 22.5 | 71 | 51 | M6×1 |

### Spacing Tolerance




### How to Remove

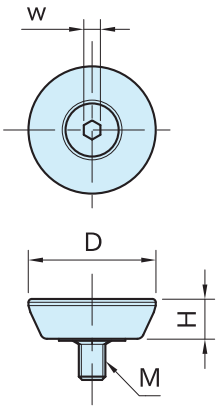



For removal, insert screws into the tapped holes and screw it.

## Reference

- How To Install FLEX LOCATORS (Blind)
- How To Use FLEX LOCATORS (Blind)

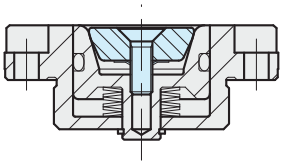
# CP725-P - Flex Locator Protecting Covers




| Body | Screw |
|---|---|
| A5056<br>Red | Steel(SCM435)<br>Black oxide finished |

| Part Number | D | H | M | w | Weight (g) | Proper Flex Locator Bushings |
|---|---|---|---|---|---|---|
| CP725-16032P | 12 | 4 | M3X0.5 | 2 | 3 | CP725-16032 |
| CP725-25050P | 19 | 6 | M4X0.7 | 2.5 | 5 | CP725-25050 |
| CP725-38070P | 29 | 7 | M5X0.8 | 3 | 14 | CP725-38070 |
| CP725-56095P | 44 | 8 | M6X1 | 4 | 35 | CP725-56095 |

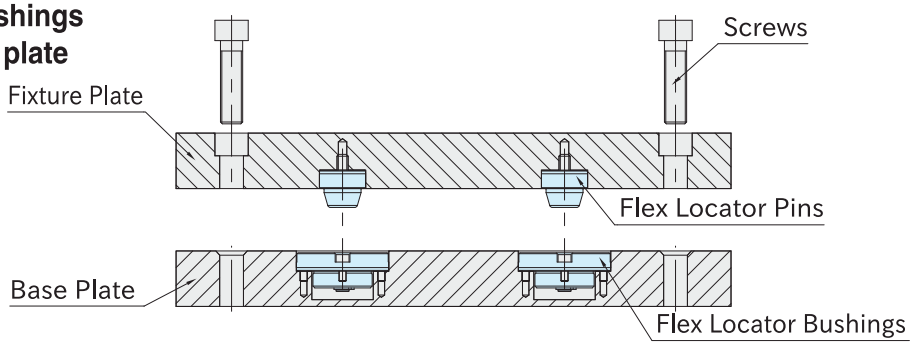
## How to Install



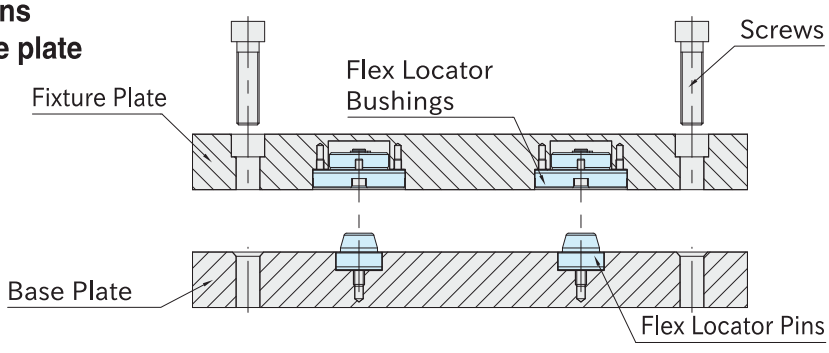
Mount on Flex Locator Bushings using
the tapped hole and use it as a protective cover.

# How To Install FLEX LOCATORS (Blind)

**When the flex locator bushings are installed on the base plate**




**When the flex locator pins are installed on the base plate**

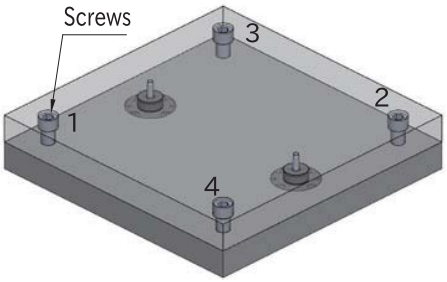


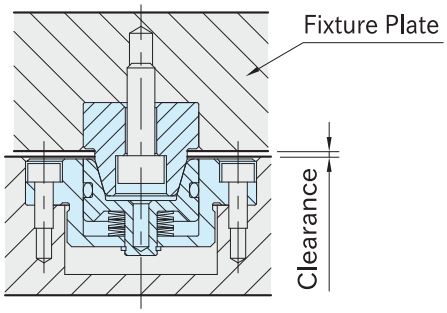
# How To Use FLEX LOCATORS (Blind)

## Tightening Order of Screws

1. Ensure that each plates is in close contact with each other.(*)
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.

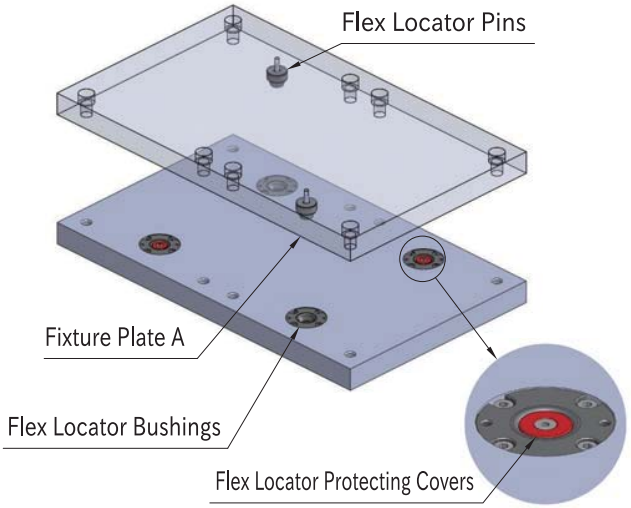


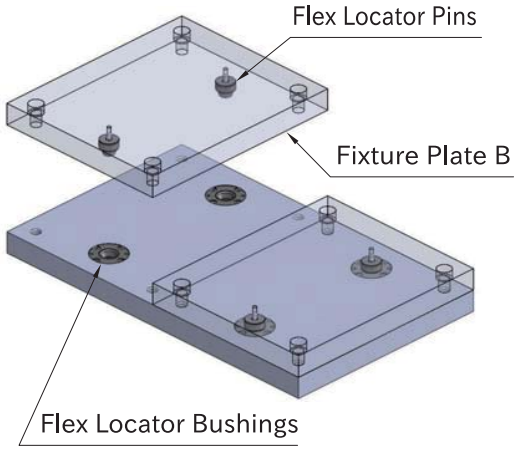




If the screws are not tightened in the correct order, the locating repeatability may exceed 10 μm.

## How To Use

### Horizontal Assembly of Base Plate and Fixture Plate



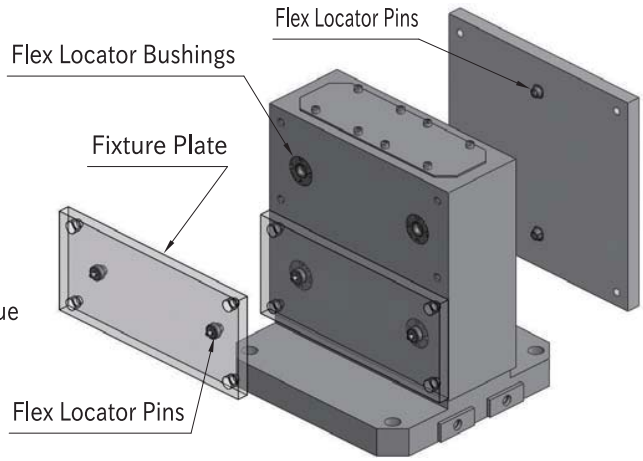

### Vertical Assembly of Tooling Block and Fixture Plate

If the total load exceeds the maximum loading capacity, the locating repeatability may exceed 10 μm.

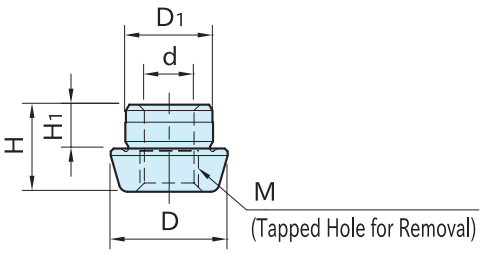
| Size | | Maximum Loading Capacity (N) |
|---|---|---|
| CP720 / CP725 | 25050 | 1,200 |
| | 38070 | 2,000 |
| | 56095 | 2,200 |

*) The maximum load is the entire sum of the load of fixture plates, fixtures and workpieces.

*) The maximum loading capacity shown is the value when two sets of CP720 Flex Locator Pins and CP725 Flex Locator Bushings are used.



# CP721 - Flex Locator Pins



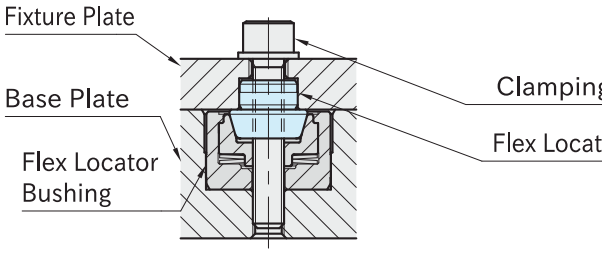

| Body |
|---|
| Steel(SCM440)<br>ISONITE Treated<br>(Nitrocarburized) |

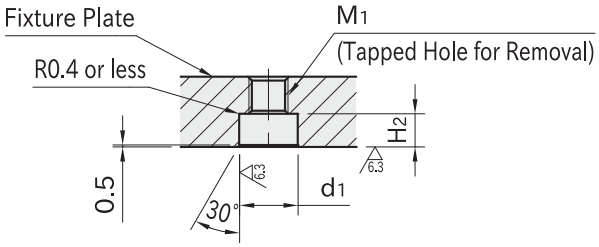
| Part Number | D1 (p6) | H1 | D | H | M | d | Weight (g) | Proper Flex Locator Bushings |
|---|---|---|---|---|---|---|---|---|
| **CP721-12025** | 12 | 4.5 | 15 | 10 | M10×1.5 Depth3.5 | 8.5 | 6 | CP726-12025 |
| **CP721-15032** | 15 | 7.5 | 20 | 15 | M12×1.75Depth4.5 | 10.2 | 16 | CP726-15032 |
| **CP721-20045** | 20 | 10 | 30 | 20 | M16×2 Depth5.5 | 14 | 47 | CP726-20045 |

## How To Use

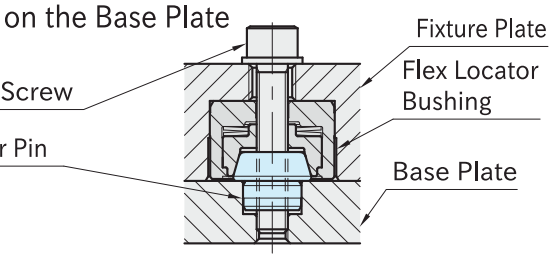
### ■Mounting Hole Dimensions for Press Fit

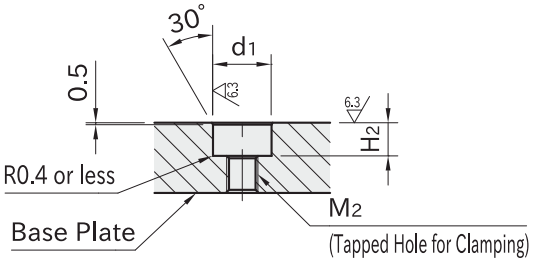
Installation of the Flex Locator Pins on the Fixture Plate




Installation of the Flex Locator Pins on the Base Plate



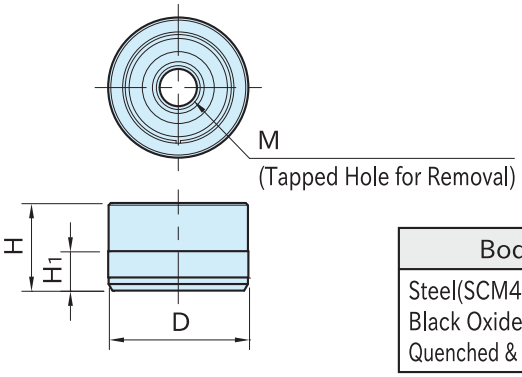




### ■Spacing Tolerance


| Part Number | d1 (H6) | H2 | M1 | M2 |
|---|---|---|---|---|
| **CP721-12025** | 12 | 5.5 | M 8×1.25 | M 6×1 |
| **CP721-15032** | 15 | 8.5 | M10×1.5 | M 8×1.25 |
| **CP721-20045** | 20 | 11 | M14×1.5 | M12×1.75 |

## Reference

- How To Install FLEX LOCATORS (Through)
- How To Use FLEX LOCATORS (Through)




| Body | Tapered Bushing |
|---|---|
| Steel(SCM440)<br>Black Oxide Finished<br>Quenched & Tempered | Steel(SCM440)<br>ISONITE Treated<br>(Nitrocarburized) |

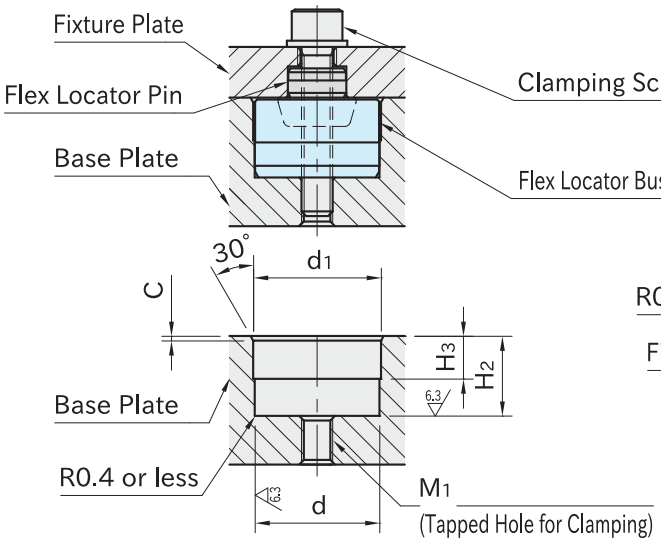
| Part Number | D | H | H1 | M | Lifting Force (N) (*) | Weight (g) |
|---|---|---|---|---|---|---|
| **CP726-12025** | 25 $^{+0.028}_{+0.018}$ | 16 | 8 | M 8X1.25(Prepared Hole ϕ 6.8) | 540 | 46 |
| **CP726-15032** | 32 $^{+0.031}_{+0.021}$ | 20 | 9 | M10X1.5 (Prepared Hole ϕ 8.5) | 600 | 92 |
| **CP726-20045** | 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.

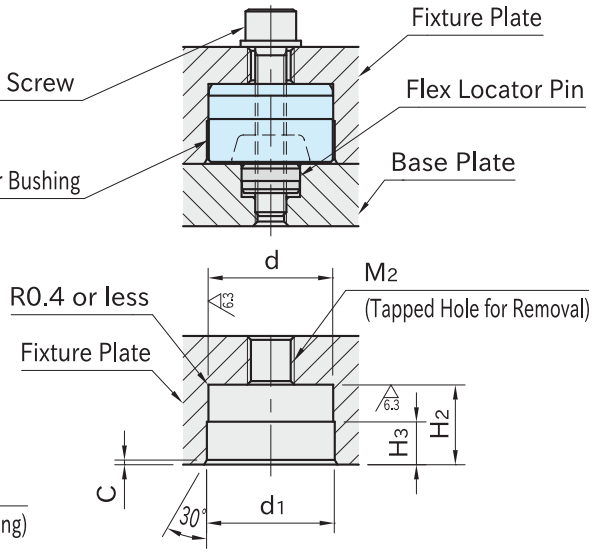
## How To Use

### ■Mounting Hole Dimensions for Press Fit

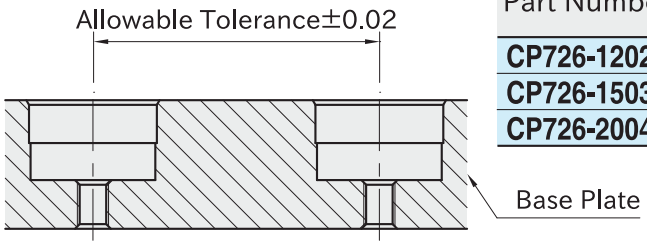
Installation of the Bushings on the Base Plate




Installation of the Bushings on the Fixture Plate




### ■Spacing Tolerance

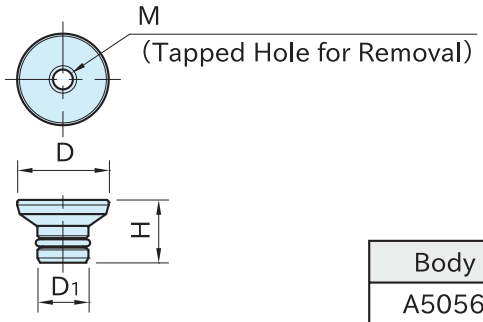



| Part Number | d (H6) | H2 (±0.05) | d1 | H3 | C | M1 | M2 |
|---|---|---|---|---|---|---|---|
| **CP726-12025** | 25 | 16.5 | 25.2 | 8 | 1 | M 6X1 | M10X1.5 |
| **CP726-15032** | 32 | 20.5 | 32.2 | 11 | 1.2 | M 8X1.25 | M12X1.75 |
| **CP726-20045** | 45 | 26.5 | 45.2 | 15 | 1.5 | M12X1.75 | M16X2 |

## Reference

- How To Install FLEX LOCATORS (Through)
- How To Use FLEX LOCATORS (Through)

# CP726-P - Flex Locator
## Protecting Covers



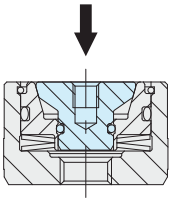

| Body | O-Ring |
|---|---|
| A5056 Red | NBR |

| Part Number | D | H | $D_1$ | 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

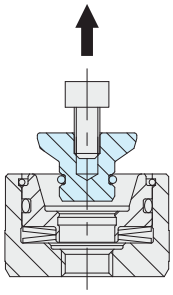
■How to Install

Insert the product to the center hole of the Flex Locator Bushings and use it as a protective cover.



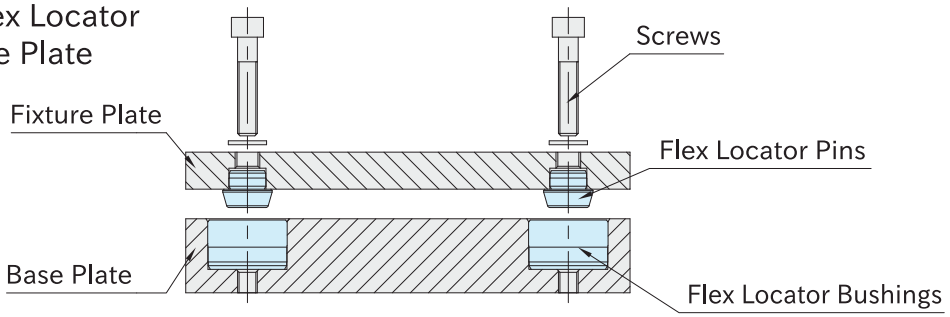
■How to Remove

Insert a screw into the tapped hole and pull it out.

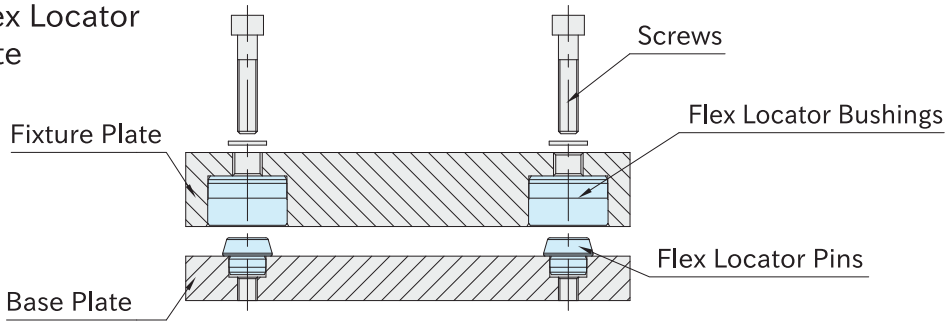


## How To Install FLEX LOCATORS (Through)

Installation of the Flex Locator Bushings on the Base Plate




Installation of the Flex Locator Pins on the Base Plate



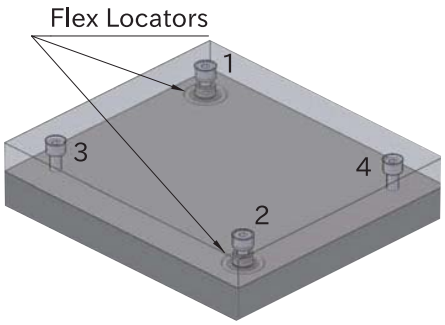
# How To Use FLEX LOCATORS (Through)

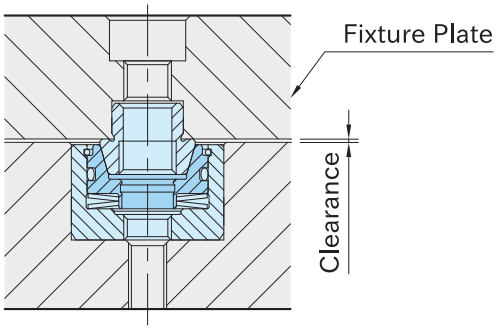
## Tightening Order of Screws

1. Ensure that each plate is in close contact with each other. (*)
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.

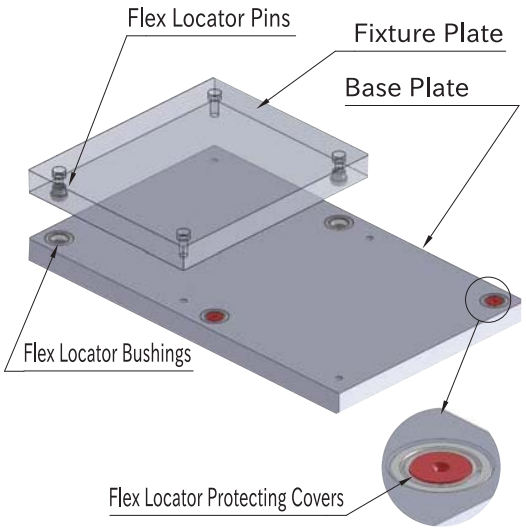
If the screws are not tightened in the correct order, the locating repeatability may exceed 10 μm.



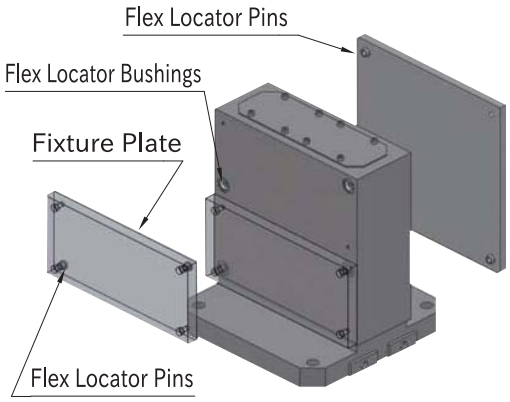




## How To Use

### ■Horizontal Assembly of Base Plate and Fixture Plate



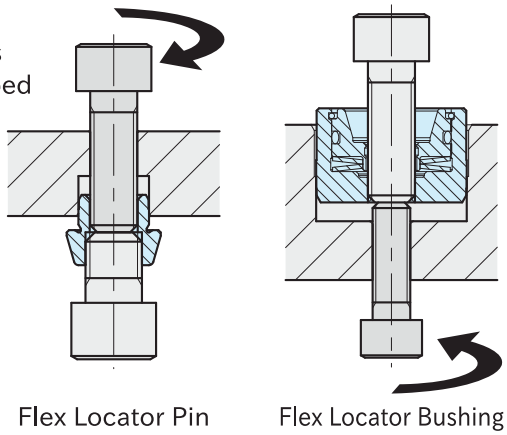

### ■Vertical Assembly of Base Plate and Fixture Plate




In vertical assembly, the locating repeatability may exceed 10 μm if the total load exceeds the maximum loading capacity.

### ■How to Remove

For removal, insert screws into the tapped holes and screw it.



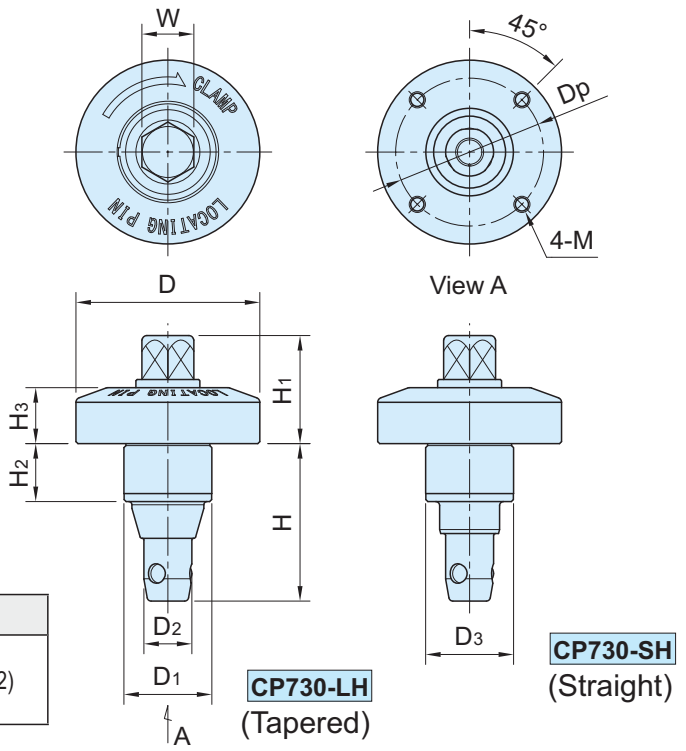

| Size | | Maximum Loading Capacity (N) |
|---|---|---|
| CP721 / CP726 | 12025 | 1500 |
| | 15032 | 2000 |
| | 20045 | 2400 |

*) The maximum load is the entire sum of the load of fixture plates, fixtures and workpieces.
*) The maximum loading capacity shown is the value when two sets of CP721 Flex Locator Pins and CP726 Flex Locator Bushings are used.

# CP730 - One-Touch Flex Locator
## Clampers (Hexagon Head)

**CP730-LH**
(Tapered)

**CP730-SH**
(Straight)




| Body | Clamping Screw | Ball |
|---|---|---|
| Steel (SCM440)<br>ISONITE Treated<br>(Nitrocarburized) | Steel (SCM435)<br>Black oxide finished<br>Quenched & tempered | Steel (SUJ2) |

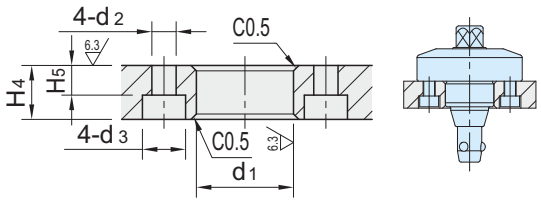
| Part Number | $D_1$ (g6) | $D_3$ ($^{-0.02}_{-0.06}$) | $H_2$ | D | $H_1$ | $H_3$ | $D_2$ | H | W | M | Dp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **CP730-0939LH** | 18 | - | 9.5 | 39 | 22 | 12 | 9 | 30 | 10 | M4×0.7 Depth 6 | 30 |
| **CP730-0939SH** | - | 18 | | | | | | | | | |
| **CP730-1246LH** | 22 | - | 14.5 | 46 | 27 | 14 | 12 | 40 | 13 | | 37 |
| **CP730-1246SH** | - | 22 | | | | | | | | | |
| **CP730-1656LH** | 28 | - | 19.5 | 56 | 34 | 16 | 16 | 51 | 17 | M5×0.8 Depth 7 | 45 |
| **CP730-1656SH** | - | 28 | | | | | | | | | |

| Part Number | Clamping Force (N) | Allowable Screw Torque (N· m)*) | Weight (g) | Proper Bushing |
|---|---|---|---|---|
| **CP730-0939LH** | 1700 | 2 | 134 | CP735-0939L |
| **CP730-0939SH** | | | 133 | CP735-0939S |
| **CP730-1246LH** | 3000 | 4 | 241 | CP735-1246L |
| **CP730-1246SH** | | | 239 | CP735-1246S |
| **CP730-1656LH** | 4500 | 7 | 457 | CP735-1656L |
| **CP730-1656SH** | | | 453 | CP735-1656S |

*) 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 Dimensions




| Size | $d_1$ (H7) | $H_4$ (±0.05) | $d_2$ | $H_5$ | $d_3$ |
|---|---|---|---|---|---|
| **CP730-0939** | 18 | 10 | 4.5 | 5 | 8 |
| **CP730-1246** | 22 | 15 | | 10 | |
| **CP730-1656** | 28 | 20 | 5.5 | 14 | 10 |

## 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

## Reference

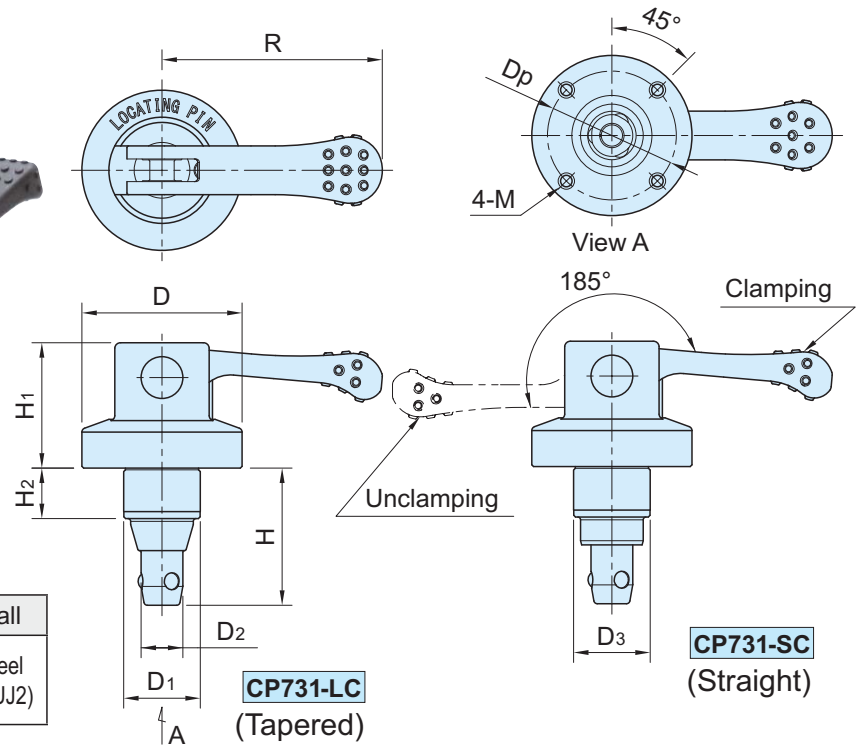
How To Use ONE-TOUCH FLEX LOCATORS (Hexagon Head / Cam Handle)

## Related Product

**CP-TCW** ADJUSTABLE-TORQUE WRENCHES are available for tightening.

IMAO Products

**CP731-LC** (Tapered) **CP731-SC** (Straight)



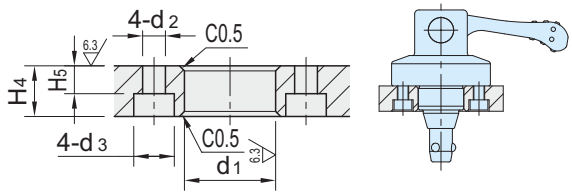

| Body | Cam Handle | Ball |
|---|---|---|
| Steel (SCM440) ISONITE Treated (Nitrocarburized) | Steel (SCM440) Black oxide finished Quenched & tempered | Steel (SUJ2) |

| Part Number | $D_1$ (g6) | $D_3$ ($^{-0.02}_{-0.06}$) | $H_2$ | D | $H_1$ | $D_2$ | H | M | Dp | R | Cam Handle |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **CP731-0939LC** | 18 | - | 9.5 | 39 | 30 | 9 | 30 | M4×0.7 Depth 6 | 30 | 50 | QLCA-05 |
| **CP731-0939SC** | - | 18 | | | | | | | | | |
| **CP731-1246LC** | 22 | - | 14.5 | 46 | 36 | 12 | 40 | | 37 | 63 | QLCA-06 |
| **CP731-1246SC** | - | 22 | | | | | | | | | |
| **CP731-1656LC** | 28 | - | 19.5 | 56 | 42 | 16 | 51 | M5×0.8 Depth 7 | 45 | 80 | QLCA-08 |
| **CP731-1656SC** | - | 28 | | | | | | | | | |

| 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 Dimensions




| Size | $d_1$ (H7) | $H_4$ (±0.05) | $d_2$ | $H_5$ | $d_3$ |
|---|---|---|---|---|---|
| **CP731-0939** | 18 | 10 | 4.5 | 5 | 8 |
| **CP731-1246** | 22 | 15 | | 10 | |
| **CP731-1656** | 28 | 20 | 5.5 | 14 | 10 |

## Supplied With

- **CP731-0939** : Four pieces of hex. socket-head cap screws M4×0.7-10L
- **CP731-1246** : Four pieces of hex. socket-head cap screws M4×0.7-15L
- **CP731-1656** : Four pieces of hex. socket-head cap screws M5×0.8-20L

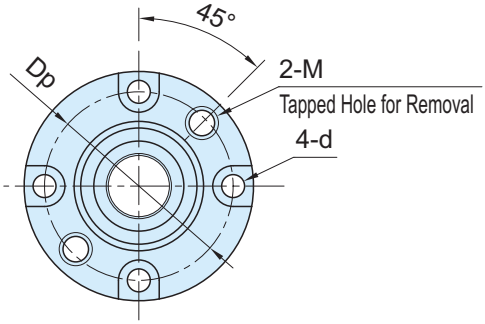
## Reference

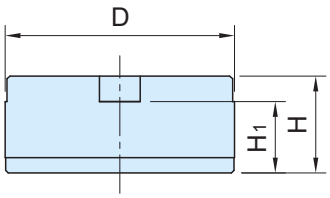
How To Use ONE-TOUCH FLEX LOCATORS (Hexagon Head / Cam Handle)

# CP735 - One-Touch Flex Locator Bushings

(Tapered Bushing)

(Straight Bushing)



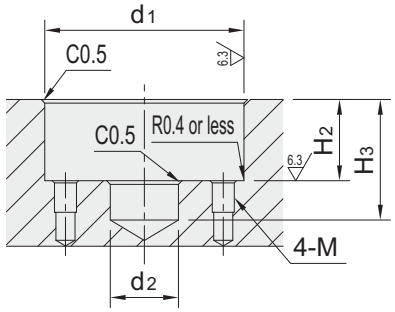

| Type | Body | Tapered Bushing |
|---|---|---|
| CP735-L | Steel (SCM440) Black oxide finished Quenched & tempered | Steel (SCM440) ISONITE Treated (Nitrocarburized) |
| CP735-S | | - |

| Part Number | Type | D (g6) | H | d | $H_1$ | Dp | M | Lifting Force (N) *) | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|
| CP735-0939L | Tapered Bushing | 38 | 15 | 4.5 | 10 | 30 | M5×0.8 | 300 | 100 |
| CP735-0939S | Straight Bushing | | | | | | | - | 101 |
| CP735-1246L | Tapered Bushing | 45 | 19 | | 14 | 37 | M6×1 | 450 | 179 |
| CP735-1246S | Straight Bushing | | | | | | | - | 184 |
| CP735-1656L | Tapered Bushing | 55 | 24 | 5.5 | 18 | 45 | | 680 | 337 |
| CP735-1656S | Straight Bushing | | | | | | | - | 341 |

*) The lifting force is the power of the inner spring of the body to push up the movable tapered bushing.

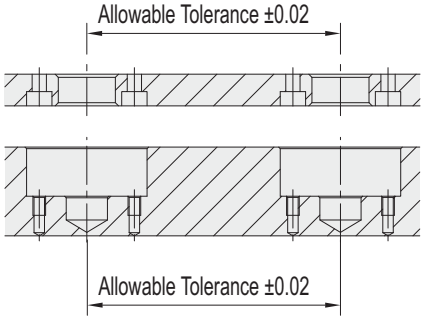
## How To Use

■Mounting Hole Dimensions




| Size | $d_1$ (H7) | $H_2$ (±0.05) | $d_2$ | $H_3$ | 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 |

■Spacing Tolerance

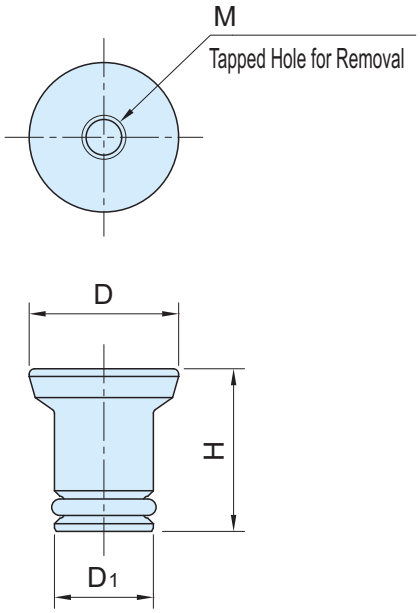



## Related Products

- 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)



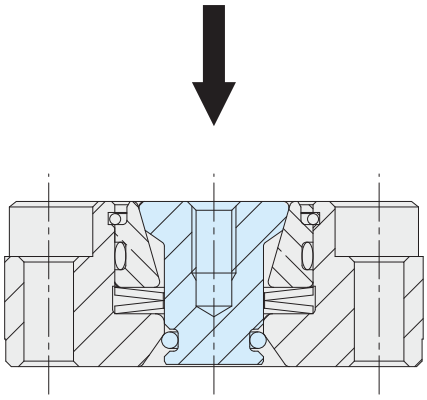

| Body | O-Ring |
|---|---|
| A5052 Red | NBR |

| Part Number | D | H | $D_1$ | M | Weight (g) | Proper Bushing | |
|---|---|---|---|---|---|---|---|
| **CP735-0939P** | 13.5 | 15.0 | 9 | M4×0.7 | 3 | CP735-0939L | CP735-0939S |
| **CP735-1246P** | 17.0 | 19.0 | 12 | | 6 | CP735-1246L | CP735-1246S |
| **CP735-1656P** | 23.0 | 22.5 | 16 | M5×0.8 | 14 | CP735-1656L | CP735-1656S |

## How To Use

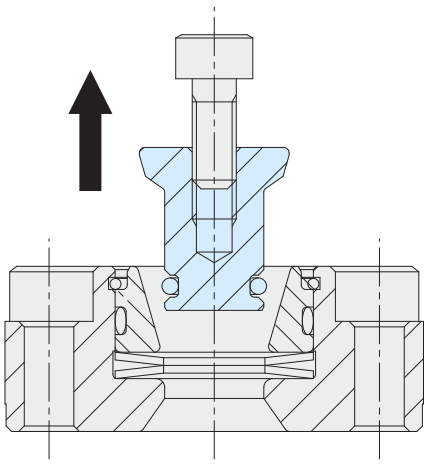
■How to Install

Insert the product to the center hole of the Flex Locator Bushings and use it as a protective cover.



■How to Remove

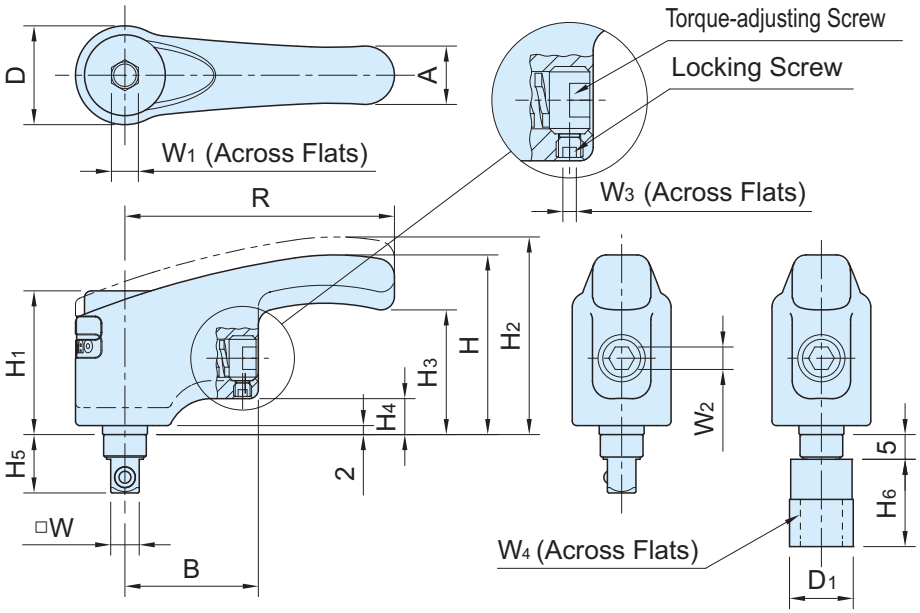
Insert a screw into the tapped hole and pull it out.



# CP-TCW
## Adjustable Torque Wrenches

Without Socket

With Socket




Without Socket

With Socket

| Type | Handle | Ratchet | Adapter | Socket |
|---|---|---|---|---|
| CP-TCW | Steel (SCM440)<br>Quenched & tempered<br>Painted<br>Orange | Steel (SCM415)<br>Carburized-hardened<br>Black oxide finished | Steel (SCM435)<br>Quenched & tempered<br>Black oxide finished | - |
| CP-TCW-S | | | | Chrome-vanadium steel (Cr-V)<br>Chrome plated |

| Size | | W | R | H | D | H1 | H2 | H3 | H4 | H5 | A | B | W1 | W2 | W3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CP-TCW<br>CP-TCW-S | 6 | 6.3 | 60 | 40 | 22 | 32 | 44 | 27.5 | 8 | 13 | 13 | 30 | 6 | 5 | 2 |
| | 8 | | 75 | 48 | 26 | 38 | 52.5 | 33 | 9 | | 15 | 37 | 8 | 6 | 2.5 |
| | 10 | 9.5 | 90 | 57 | 32 | 45 | 62.5 | 39.5 | 10.5 | 16.5 | 18 | 39 | 10 | | |

| Size | | Torque Range (N·m) |
|---|---|---|
| CP-TCW<br>CP-TCW-S | 6 | 1 ~ 3.5 |
| | 8 | 2 ~ 5.4 |
| | 10 | 3 ~ 8 |

■Without Socket

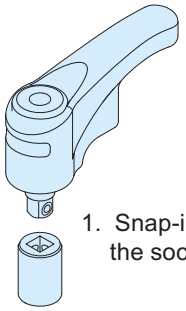
| Part Number | Weight (g) |
|---|---|
| CP-TCW 6 | 166 |
| CP-TCW 8 | 284 |
| CP-TCW10 | 467 |

■With Socket

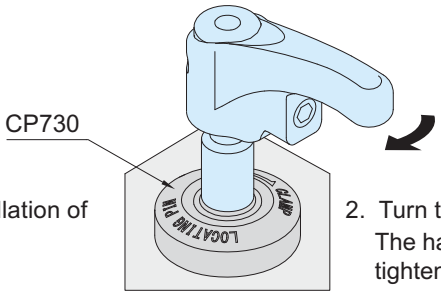
| Part Number | W4 | D1 | H6 | Weight (g) |
|---|---|---|---|---|
| CP-TCW 6-S | 10 | 13.8 | 25 | 183 |
| CP-TCW 8-S | 13 | 17.8 | | 314 |
| CP-TCW10-S | 17 | 23.8 | 30 | 529 |

## How To Use

Can be used as a tightening tool for **CP730**
ONE-TOUCH FLEX LOCATOR CLAMPERS (Hexagon Head).



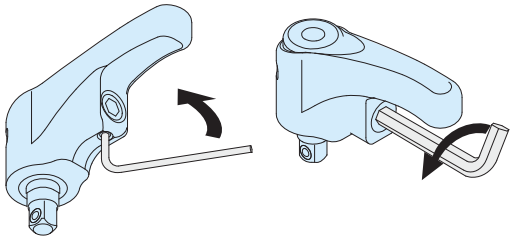
1. Snap-in installation of the socket



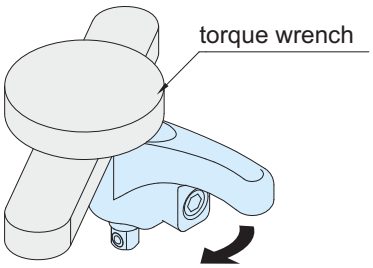

2. Turn the handle to clamp.
The handle clicks to indicate completed tightening at desired torque.

## How To Set Torque

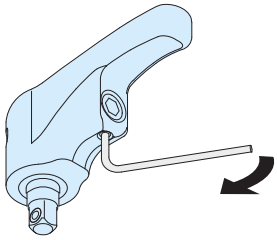
The preset torque is roughly its maximum tightening torque.



1. Loosen the locking screw.
2. Adjust the torque by turning the torque-adjusting screw.




3. Measure the torque with a torque wrench.
- Connect a torque wrench to the Adjustable-Torque Wrench.
- 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.

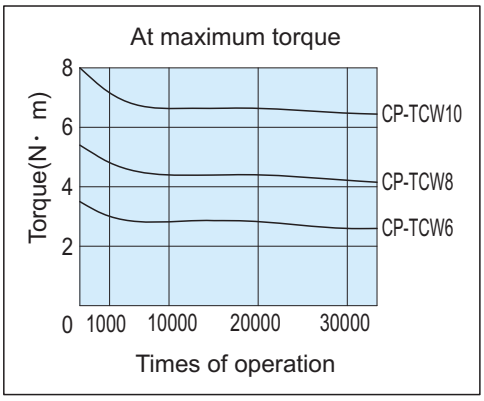
## Related Product

**CP730** ONE-TOUCH FLEX LOCATOR CLAMPERS (Hexagon Head)

## 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.±15%) Not recommended for applications where precise tightening torque is required.

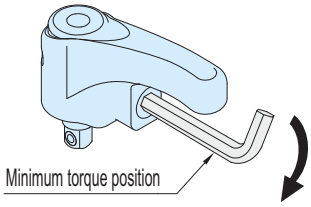
Torque Performance Graph




## Note

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

### ■Guide for Torque Adjusting

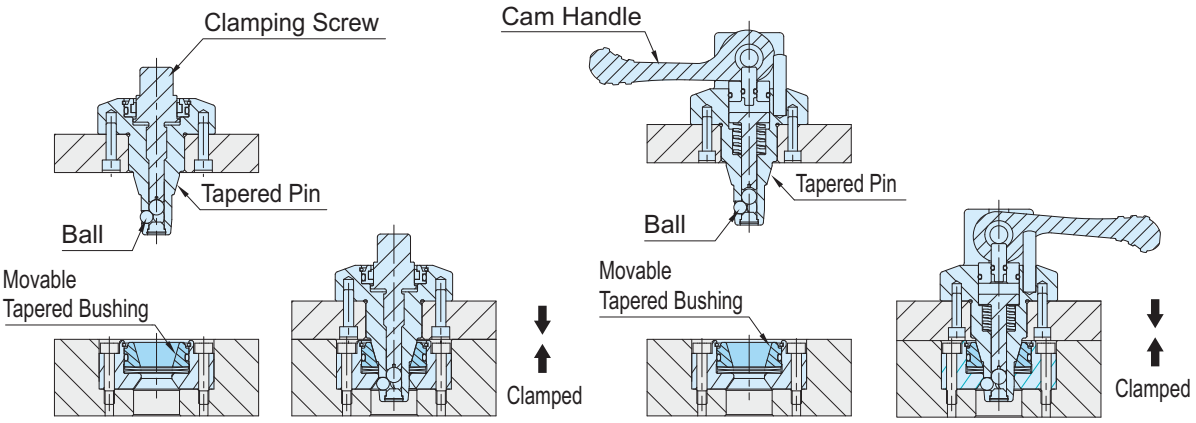



| Size | | Rotation |
|---|---|---|
| CP-TCW / CP-TCW-S | 6 | 3/4 |
| | 8 | 1 |
| | 10 | 3/4 |

- To reach approximately the minimum torque, tighten the torque adjusting screw until you feel kind of touch from the loosened position, where the torque adjusting screw is on the same level to the body.(Ensure that the torque adjusting screw does not protrude from the body, when loosening it.)
- To reach approximately the maximum torque, tighten the torque adjusting screw for the above listed rotations from the position at the minimum torque.

# How To Use ONE-TOUCH FLEX LOCATORS (Hexagon Head / Cam Handle)

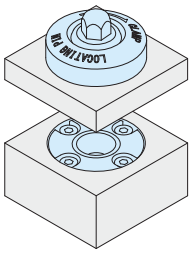
## Features



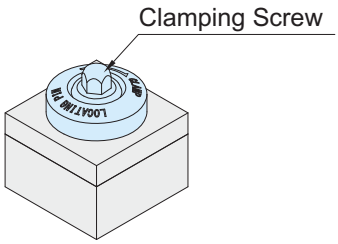

- The plate is located by fitting of the tapered parts.
- When the clamping screw or the cam handle is tightened, the balls goes out and the movable tapered bushing goes down. The fixture plate contacts with the base plate.
- For clamping screw, 2 turns tightening is enough.

Note: No locating function on the combination of straight pin and straight bushing.

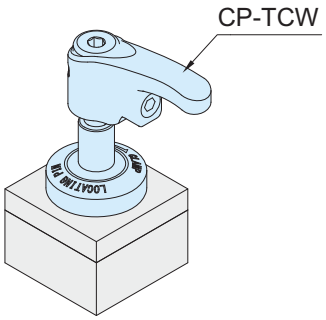
## How To Operate



1. Ensure the balls are retracted.

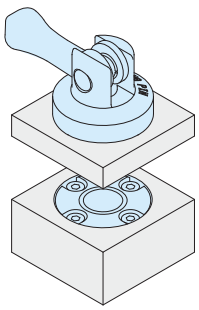



2. Insert the clamper to the bushing.

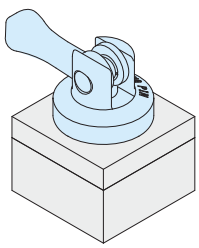



3. Tighten the clamping screw within the allowable torque.

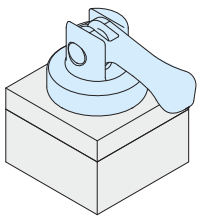
Note: For unclamping, follow back these steps.



1. Ensure that the cam handle is loosened.



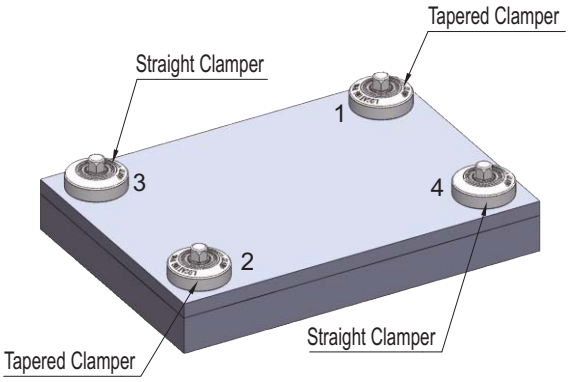
2. Insert the clamper to the bushing.



3. Tighten the cam handle.

Note: For unclamping, follow back these steps.

## Tightening Order




**CP730**

1. Ensure that each plates is in close contact with each other. *)
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 the 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.

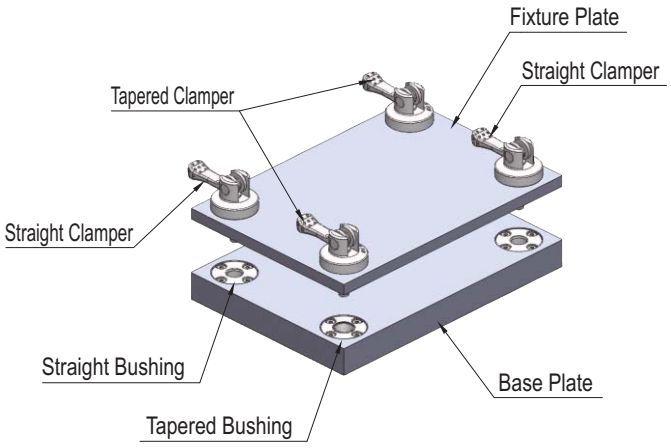
If the screws are not tightened in the correct order, the locating repeatability may exceed 8μm.

## How To Use

■Horizontal Assembly

Two sets of tapered pin and straight pin

Note: Ensure not to lift the fixture plate up and down with gripping the cam handle of the clampers.

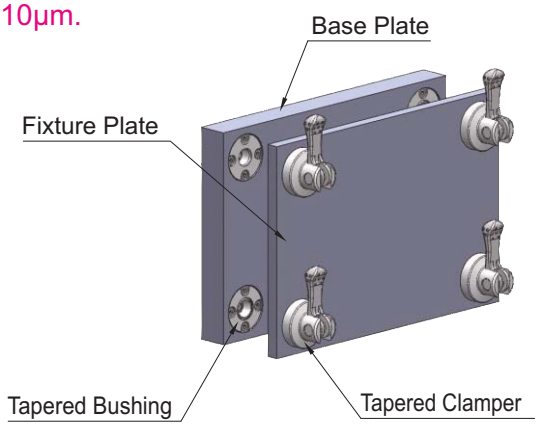



■Vertical Assembly

In vertical assembly, the locating repeatability is 10μm.

| Size | | Maximum Loading Capacity (N) |
|---|---|---|
| CP730 CP735 | 0939 | 400 |
| | 1246 | 600 |
| | 1656 | 1000 |

| Size | | Maximum Loading Capacity (N) |
|---|---|---|
| CP731 CP735 | 0939 | 250 |
| | 1246 | 400 |
| | 1656 | 600 |



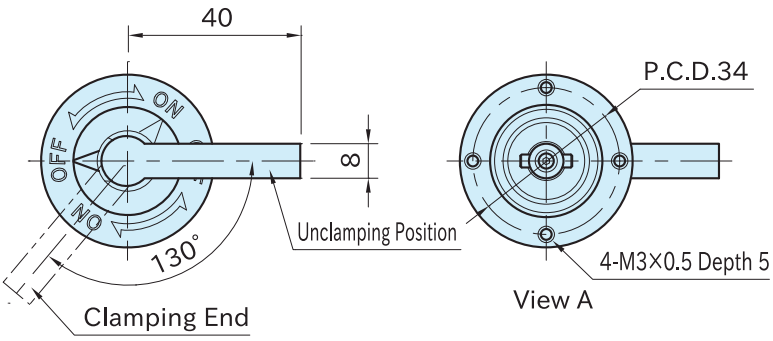

Note: The maximum load is the entire sum of the load of fixture plates, fixtures and workpieces.

Note: The maximum loading capacity shown is the value when two sets of tapered clamper and tapered bushing are used.

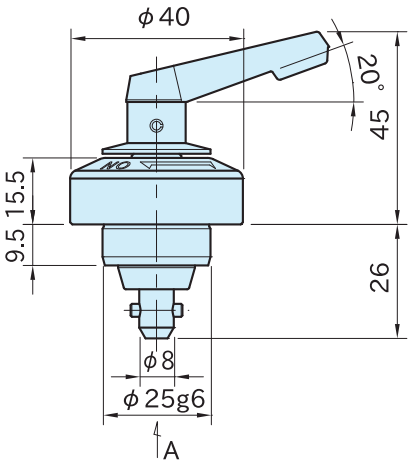
# CP722 - One Touch Flex Locator Clampers

| Body / Shank | Tapered Pin | Handle | Pin |
|---|---|---|---|
| Steel(SCM440)<br>Black Oxide Finished | SCM440<br>ISONITE Treated<br>(Nitrocarburized) | Die cast zinc(ZDC1)<br>ZDC1<br>Silver-gray painted | SUS303<br>Stainless steel |

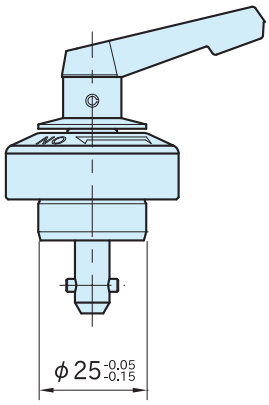
CP722-0840R-06




CP722-0840R-06N




CP722-0840R-06




CP722-0840R-06N

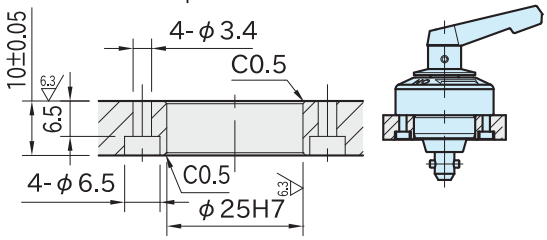
| Part Number | Tapered Pin | Clamping Force (N) | Lifting Force (N) (*) | Weight (g) | Proper One-Touch Flex Locator Bushing |
|---|---|---|---|---|---|
| CP722-0840R-06 | With | 600 | 100 | 220 | CP727-0840R |
| CP722-0840R-06N | Without | 700 | — | 215 | |

*) The lifting force is the power of the inner spring of the body to push up the movable tapered pin.

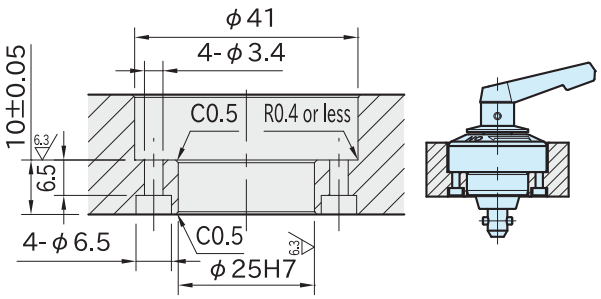
## How To Use

### Mounting Hole Dimensions

Can be used with plates of 10mm - 22mm thickness.




Installation on 10mm-thick Plate




Installation on 10mm-22mm Thick Plate
Drill a counterbored hole.

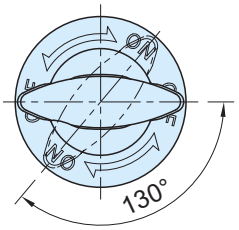
## Reference

・How To Use ONE-TOUCH FLEX LOCATORS

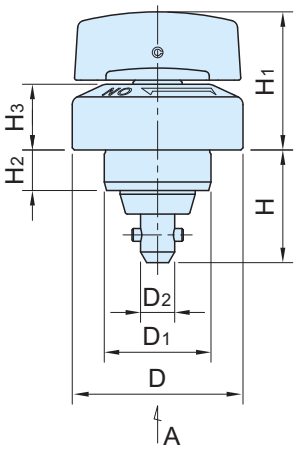
## Furnished Part:

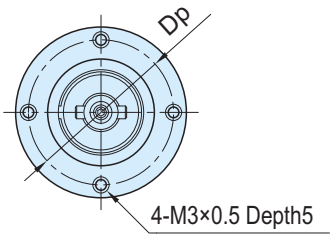
4 of M3×0.5-10L Hex Socket-Head Cap Screw

IMAO Products




| Body / Shank | Tapered Pin | Knob | Pin |
|---|---|---|---|
| Steel (SCM440) Black oxide finished | Steel (SCM440) ISONITE Treated (Nitrocarburized) | Stainless steel (SCS13) (Equivalent to SUS304) | Stainless steel (SUS304) |



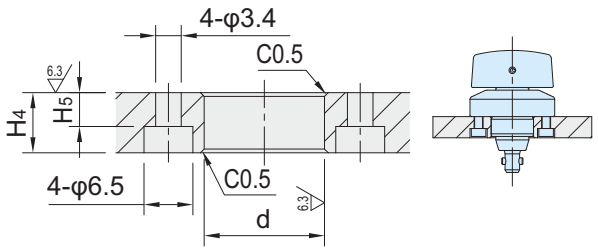

| Part Number | $D_1$ (g6) | $H_2$ | D | $H_1$ | $H_3$ | $D_2$ | H | Dp |
|---|---|---|---|---|---|---|---|---|
| **CP723-0632R-04** | 16 | 7.5 | 32 | 27 | 12.0 | 5.5 | 22 | 25.5 |
| **CP723-0840R-06** | 25 | 9.5 | 40 | 32 | 15.5 | 8.0 | 26 | 34.0 |

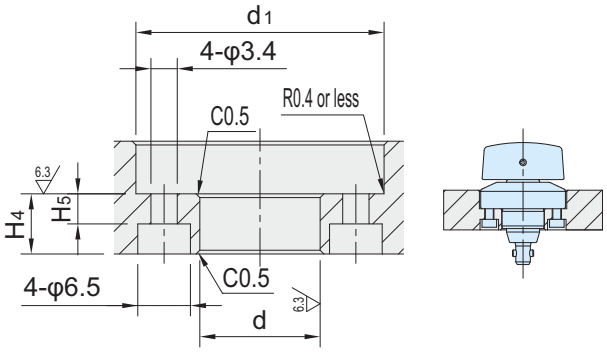
| Part Number | Clamping Force (N) | Lifting Force (N) *) | Weight (g) | Proper Bushing |
|---|---|---|---|---|
| **CP723-0632R-04** | 350 | 30 | 96 | CP727-0632R |
| **CP723-0840R-06** | 600 | 100 | 211 | CP727-0840R |

*) 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 Dimensions




| Part Number | d (H7) | $H_4$ (±0.05) | $d_1$ | $H_5$ |
|---|---|---|---|---|
| **CP723-0632R-04** | 16 | 8 | 33 | 4.0 |
| **CP723-0840R-06** | 25 | 10 | 41 | 6.5 |

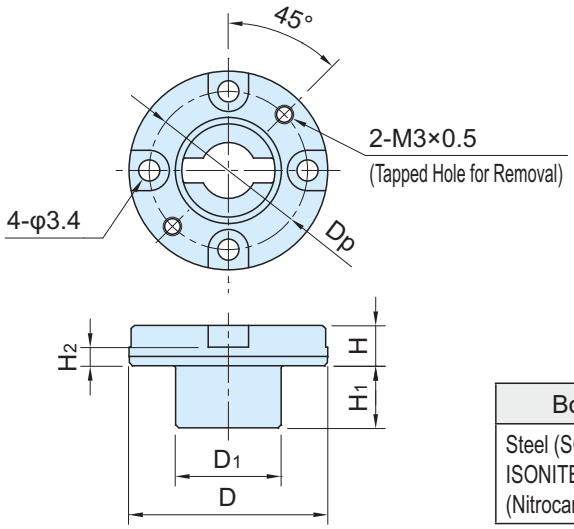
## Supplied With

- **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

- Features of ONE-TOUCH FLEX LOCATOR BUSHINGS
- How To Use ONE-TOUCH FLEX LOCATORS (Knob)

# CP727 - One-Touch Flex Locator Bushings

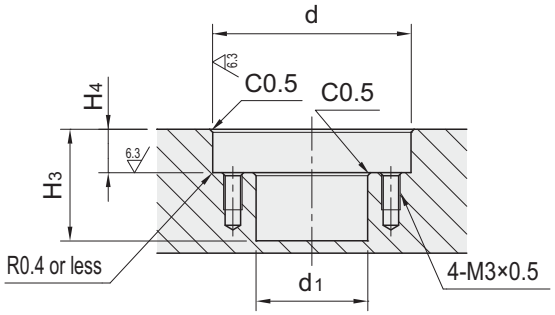



| Body |
|---|
| Steel (SCM440)<br>ISONITE Treated<br>(Nitrocarburized) |

| Part Number | D (g6) | H | $D_1$ | $H_1$ | $H_2$ | Dp | 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 |

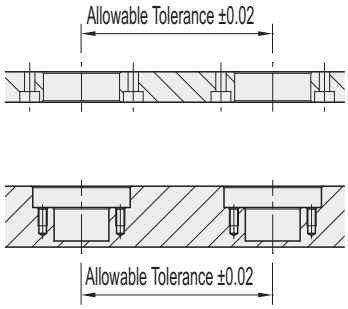
## How To Use

■Mounting Hole Dimensions

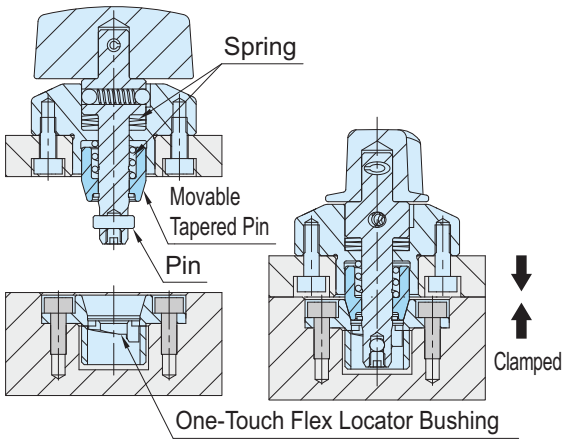



| Part Number | d (H7) | $H_4$ (±0.05) | $d_1$ | $H_3$ |
|---|---|---|---|---|
| **CP727-0632R** | 28 | 6 | 13.5 | 15 |
| **CP727-0840R** | 32 | 7 | 18 | 18 |

■Spacing Tolerance




## Features




- The plate is located by fitting of the tapered parts.
- The pin contacts the cam surface inside the One-Touch Flex Locator Bushing, and it compresses the inner spring, then the plate is clamped.

## Related Product

- **CP722** ONE-TOUCH FLEX LOCATOR CLAMPERS
- **CP723** ONE-TOUCH FLEX LOCATOR CLAMPERS (Knob)

## Reference

<CP722>
- Mechanism of FLEX LOCATORS
- How To Use ONE-TOUCH FLEX LOCATORS

<CP723>
- How To Use ONE-TOUCH FLEX LOCATORS (Knob)

IMAO Products

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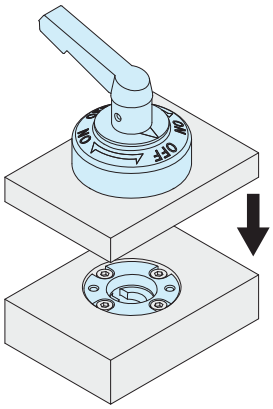
http://**www.imao.biz/en/**

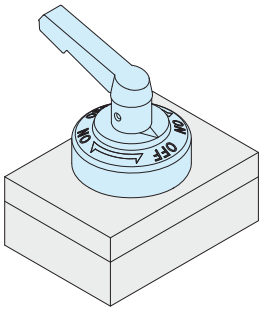
for more details of our latest information,
CAD downloads or movie data.

# How To Use ONE-TOUCH FLEX LOCATORS

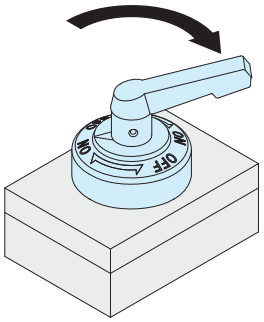
## How To Operate




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



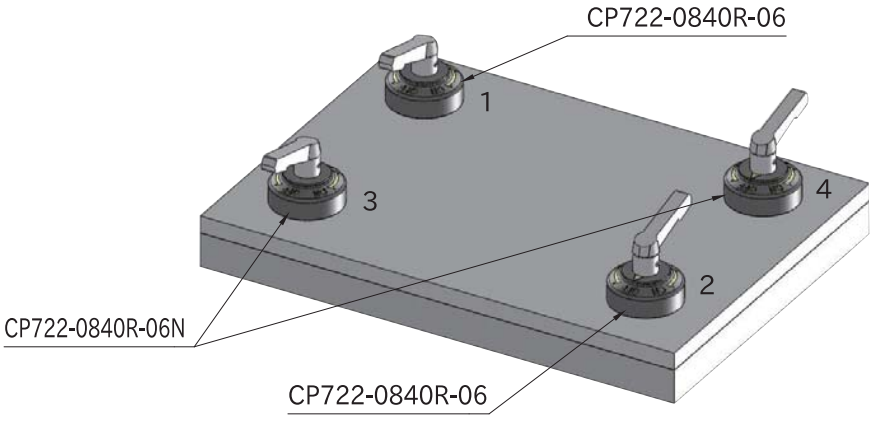

2. Insert the clamper to the receiver bushing.




3. Turn the handle to the "ON" mark for clamping.
※For unclamping, follow back these steps.

## Tightening Order of Handles

①Ensure that the handle is positioned at the "OFF" mark and lift down the fixture plate.
②Turn the handle and clamp in order of 1→2→3→4.
※For unclamping, ensure that the handle is positioned at the "OFF" mark and disassemble the fixture plate.

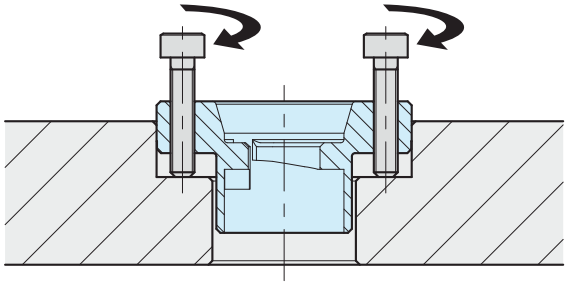



If the handles are not tightened in the correct order, the locating repeatability may exceed 10 μm.

## How To Use

■How to Remove the One-Touch Flex Locator Bushing

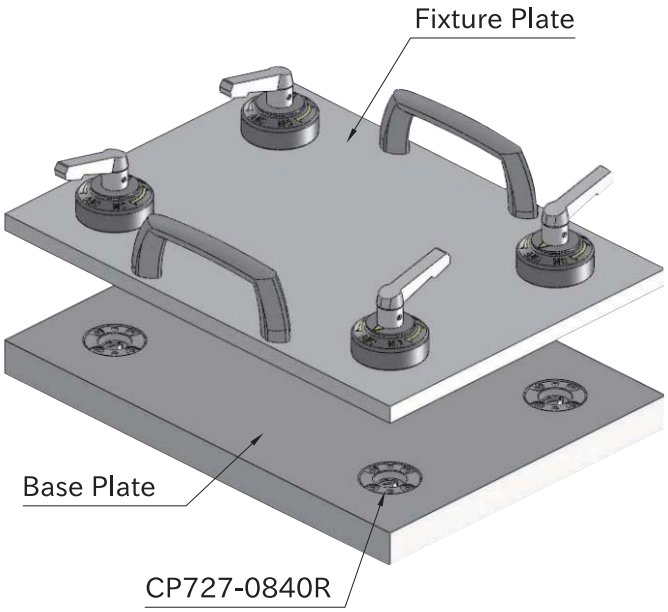
For removal, insert the screws into the tapped holes and screw it.

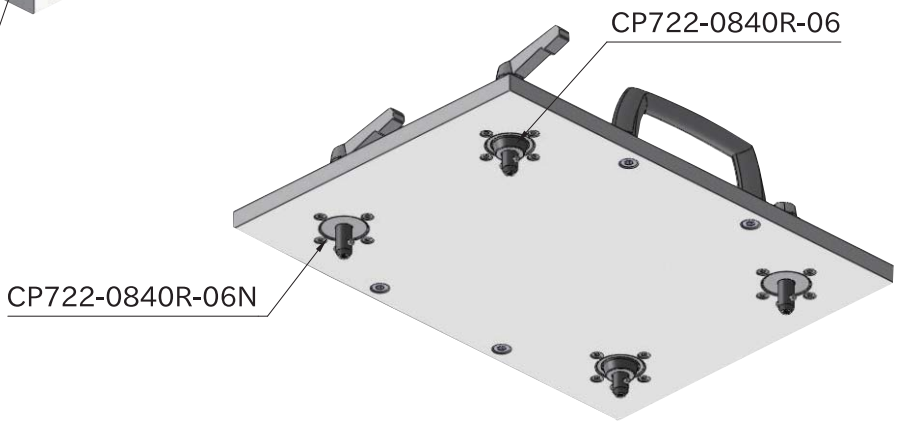


## ■Horizontal Assembly of Fixture Plate

Assemble with 2 pcs. each of CP722-0840R-06 and CP722-0840R-06N.

※Ensure not to lift the fixture plate up and down with gripping the handle of the clampers.



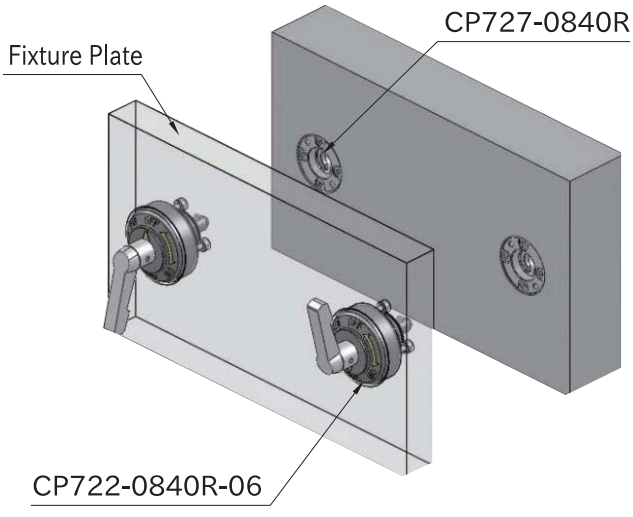




## ■Vertical Assembly of Fixture Plate

In vertical assembly, the locating repeatability is 20 μm.

| Size | | Maximum Loading Capacity (N) |
|---|---|---|
| CP722<br>CP727 | 0840R | 400 |

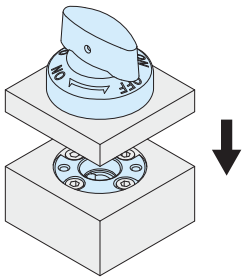
*) The maximum load is the entire sum of the load of fixture plates, fixtures and workpieces.
*) The maximum loading capacity shown is the value when two sets of CP722-0840R-06 and CP727-0840R are used.



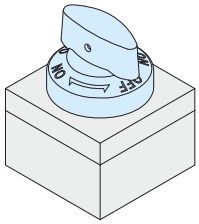

Continuing on Next Page

# How To Use ONE-TOUCH FLEX LOCATORS (Knob)

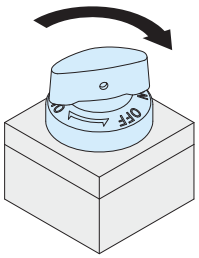
## How To Operate




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




2. Insert the clamper to the bushing.



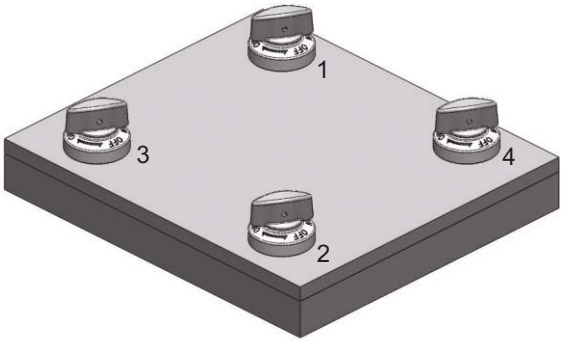

3 .Turn the knob to the "ON" mark for clamping.

Note: For unclamping, follow back these steps.

## Tightening Order of Knobs

1. Ensure that the knob is positioned at the "OFF" mark and lift down the fixture plate.
2. Turn the handle and clamp in order of 1→2→3→4.

Note: For unclamping, ensure that the knob is positioned at the "OFF" mark and disassemble the fixture plate.

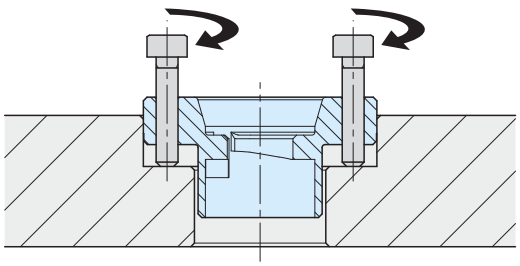



If the knobs are not tightened in the correct order, the locating repeatability may exceed 10μm.

## How To Use

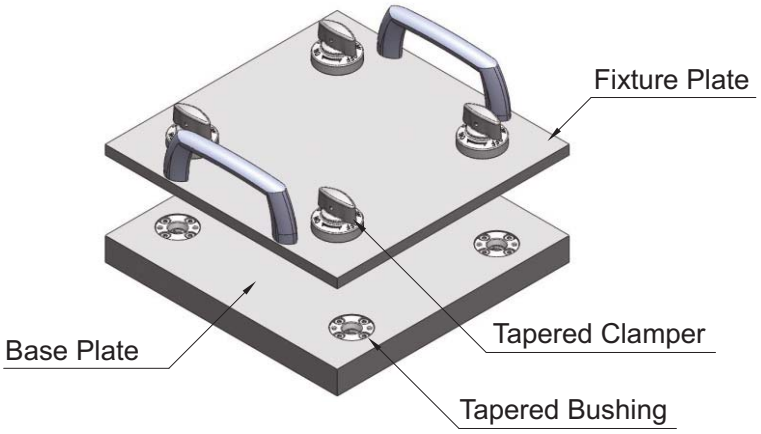
■ How to Remove the One-Touch Flex Locator Bushing

For removal, insert the screws into the tapped holes and screw them.



## ■Horizontal Assembly

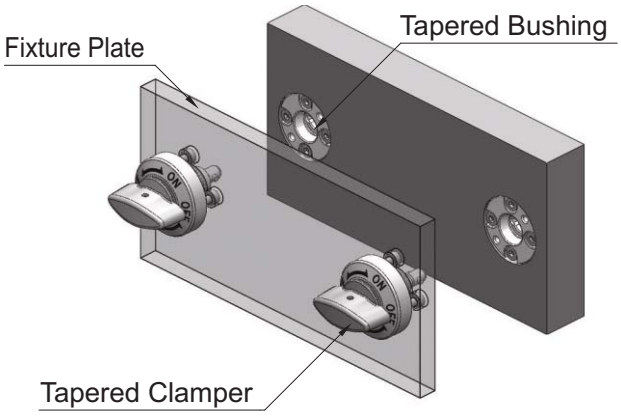
Note: Ensure not to lift the fixture plate up and down with gripping the knob of the clampers.




## ■Vertical Assembly

In vertical assembly, the locating repeatability is 20μm.

| Size | | Maximum Loading Capacity (N) |
|---|---|---|
| CP723 | 0632R | 120 |
| CP727 | 0840R | 400 |




Note: The maximum load is the entire sum of the load of fixture plates, fixtures and workpieces.

Note: The maximum loading capacity shown is the value when two sets of tapered clamper and tapered bushing are used.

# ONE-TOUCH FASTENERS

Additional line-ups!

## Easy to mount!

Only

Tapped Hole or Through Hole

is required!

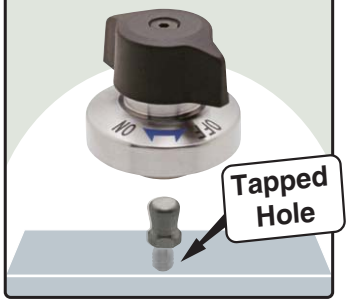
Screwless! Time Saving!

# ONE-TOUCH FASTENERS

## Alternatives To Screws

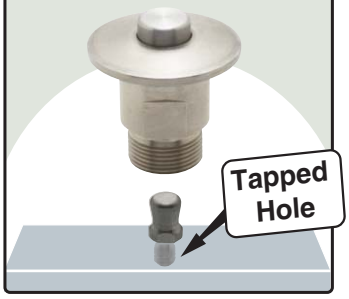
**PIN HOLDING CLAMPS** NEW

Pin clamping design enables space-saving application



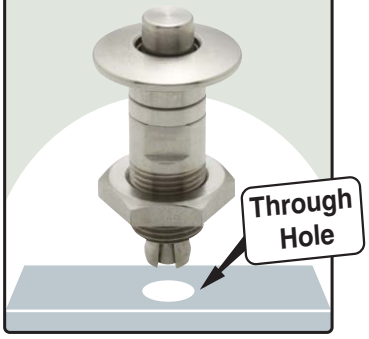

**SNAP-IN CLAMPS** NEW

Quick & easy snap-in operation




**HOLE HOLDING CLAMPS** NEW

Receptacle is not required.




Easy! Secure!

## Kaizen for Frequent Set-Ups!

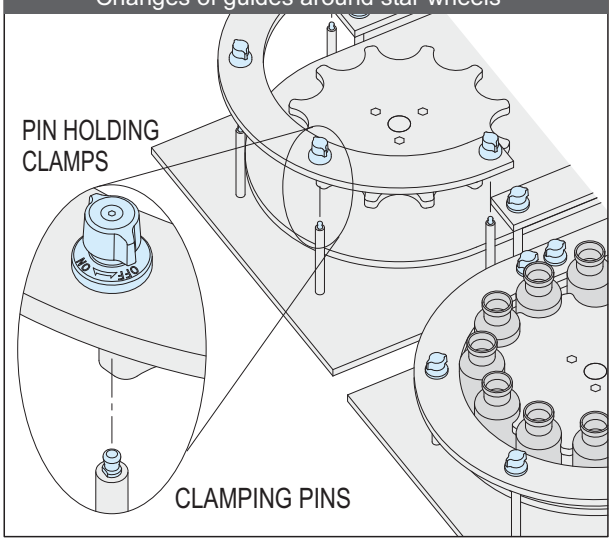
Quick fasteners alternative to screws for quick changeover with no tools! One-Touch Fasteners slash setup time and provide positive locking with easy operation.

Screw

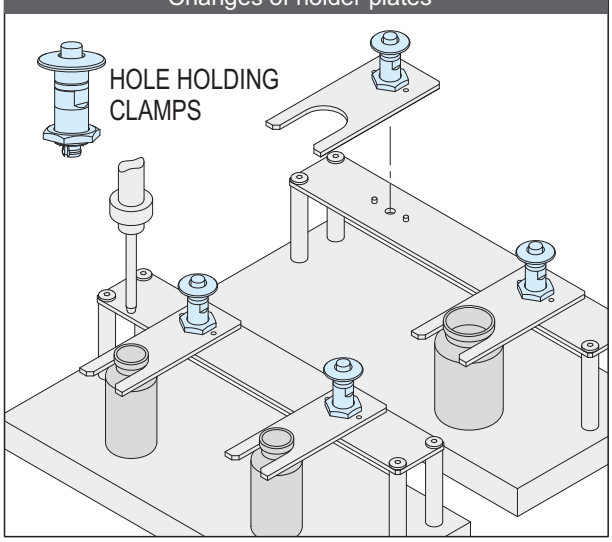

ONE-TOUCH FASTENERS

## Application Examples

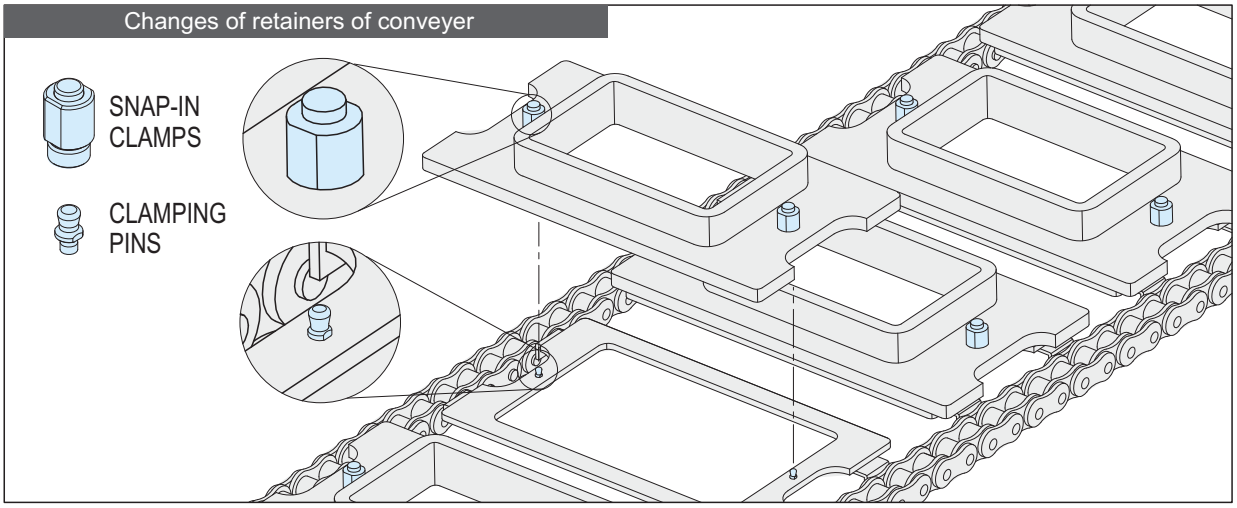
### Changes of guides around star wheels




### Changes of holder plates




### Changes of retainers of conveyer

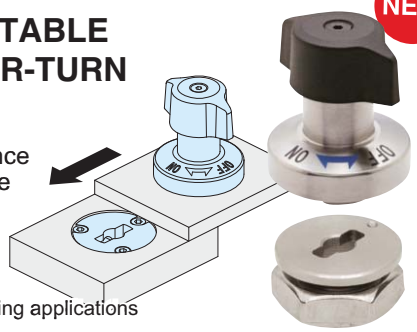



## Lineups

### RETRACTABLE QUARTER-TURN CLAMPS

NEW

No interference by retractable shank

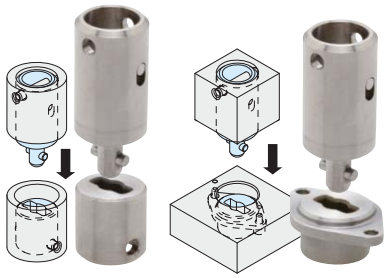


For sliding applications

### SHAFT COUPLING CLAMP

NEW

Multipurpose coupling element



### QUARTER-TURN CLAMPS

Easy-to-read ON/OFF position

### KNOB-LOCKING CLAMPS

Secure clamping with wedge. Easy-to-read ON/OFF position.

### BUTTON-LOCKING PINS

Securely locked with wedge upon releasing button.

### BALL-LOCK CLAMPINGS

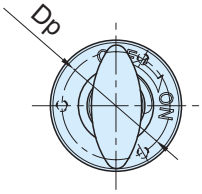
### MAGNET-LOCK CLAMPINGS

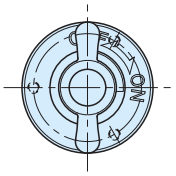
# QCTH,QCTHL
## Quarter-Turn Clamps

RoHS Stainless Steel Electroless Nickel Plated

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


QCTH
(Plastic Knob)

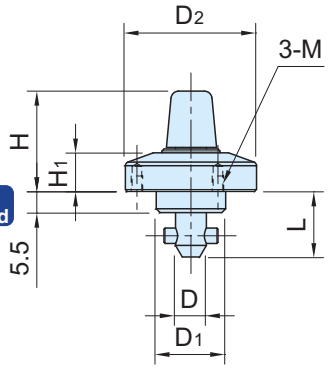


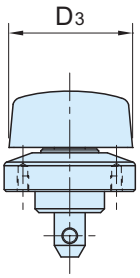



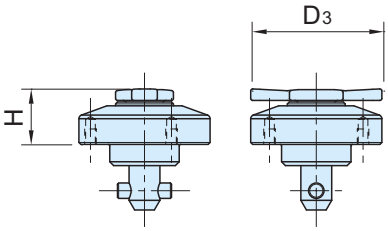


Electroless Nickel Plated

QCTH-S
(Metal Knob)



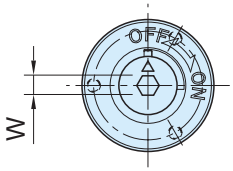



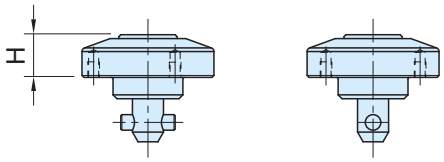

QCTH (Plastic Knob) QCTH-S (Metal Knob) QCTH-SUS (Stainless Steel)

QCTHL-S
(Low-height Knob)


Stainless Steel

QCTH-SUS
(Stainless Steel)





Electroless Nickel Plated

QCTHL-S
(Low-height Knob)

QCTHH
(Hex. Socket Head)


QCTHH
(Hex. Socket Head)
Electroless Nickel Plated

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

IMAO Products

| Size | | Proper Plate Thickness | D (+0.04 +0.08) | D1 (h9) | D2 | L | H1 | M | Dp | Clamping Force (N) | Proper Cam Receptacles |
|---|---|---|---|---|---|---|---|---|---|---|---|
| QCTH<br>QCTH-S<br>QCTHL-S | 0525-10 | 6～10 | 5 | 14 | 25 | 15.5 | 6.5 | M2x0.4 3-deep | 21 | 60 | QCTH0525-N,QCTH0525-B<br>QCTH0525-N-SUS,QCTH0525-B-SUS |
| QCTH-SUS<br>QCTHH | 0834-14 | 6～14 | 8 | 18 | 34 | 17 | 10 | M3x0.5 4-deep | 28 | 90 | QCTH0834-N,QCTH0834-B<br>QCTH0834-N-SUS,QCTH0834-B-SUS |
| | 0834-20 | 12～20 | | | | 23 | | | | | |

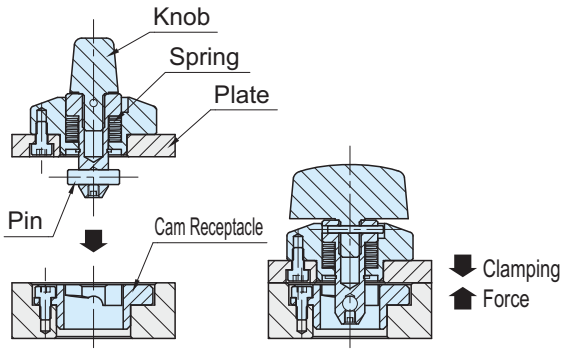
| QCTH (Plastic Knob) | | | | QCTH-S (Metal Knob) | | | | QCTHL-S (Low-height Knob) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Part Number | D3 | H | Weight ( g ) | Part Number | D3 | H | Weight ( g ) | Part Number | D3 | H | Weight ( g ) |
| QCTH0525-10 | 20 | 19 | 35 | QCTH0525-10S | 20 | 19 | 40 | QCTHL0525-10S | 25 | 11.5 | 35 |
| QCTH0834-14 | 32 | 26 | 105 | QCTH0834-14S | 32 | 25.5 | 130 | QCTHL0834-14S | 34 | 15.5 | 80 |
| QCTH0834-20 | | | 110 | QCTH0834-20S | | | 135 | QCTHL0834-20S | | | 85 |

| QCTH-SUS (Stainless Steel) | | | | QCTHH (Hex. Socket Head) | | | |
|---|---|---|---|---|---|---|---|
| Part Number | D3 | H | Weight ( g ) | Part Number | H | W | Weight ( g ) |
| QCTH0525-10-SUS | 20 | 19 | 40 | QCTHH0525-10 | 8 | 4 | 30 |
| QCTH0834-14-SUS | 32 | 25.5 | 130 | QCTHH0834-14 | 11 | 5 | 105 |
| QCTH0834-20-SUS | | | 135 | QCTHH0834-20 | | | 110 |

## Supplied With

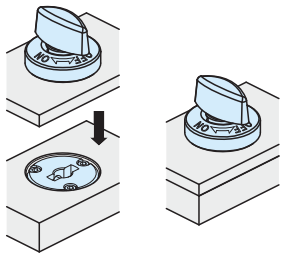
- QCTH QCTH-S QCTHL-S QCTH-SUS QCTHH 0525-10 : 3 of socket-head cap screws(stainless steel), M2x0.4-5L
- QCTH QCTH-S QCTHL-S QCTH-SUS QCTHH 0834-14、0834-20 : 3 of socket-head cap screws(stainless steel), M3x0.5-6L

## Feature




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

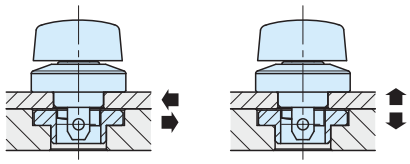
## How To Use




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



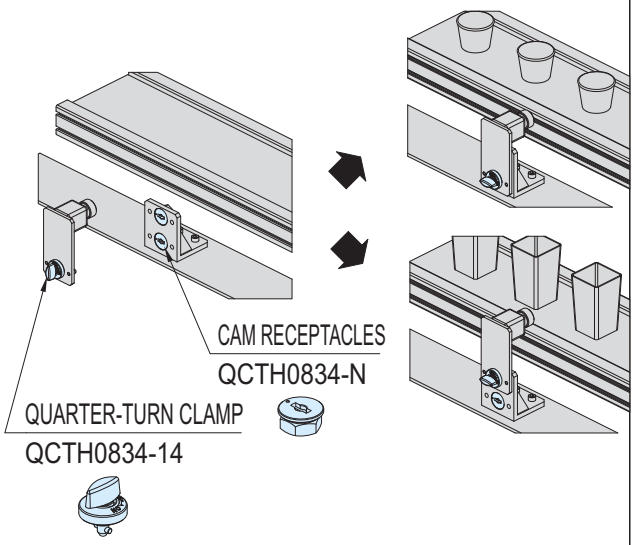

| Part Number | | Heatresistant Temperature ( ℃ ) | Shear Strength ( N ) | Tensile Strength ( N ) |
|---|---|---|---|---|
| QCTH | 0525-10 | 130 | 1800 | 1200 |
| | 0834-14 | | 3200 | 2600 |
| | 0834-20 | | | |
| QCTH-S<br>QCTHL-S<br>QCTH-SUS<br>QCTHH | 0525-10 | 200 | 1800 | 1200 |
| | 0834-14 | | 3200 | 2600 |
| | 0834-20 | | | |

### QCTH-N,QCTH-B CAM RECEPTACLES

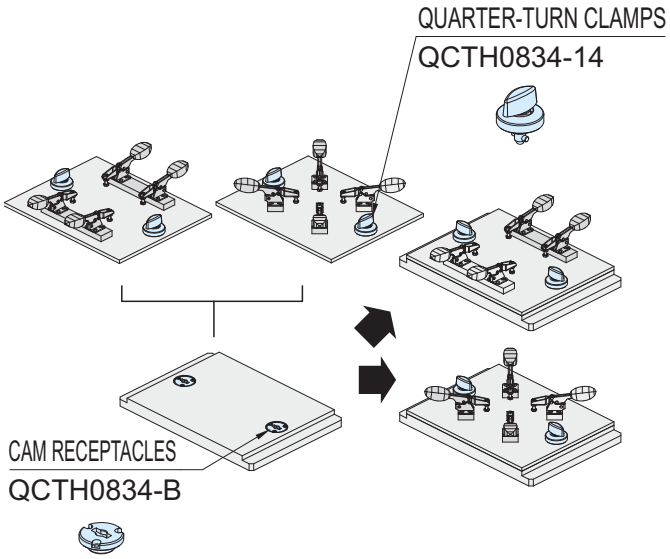
Continuing on Next Page

## Application Examples

### Changes of camera positions




### Changes of fixture plates




## How To Mount

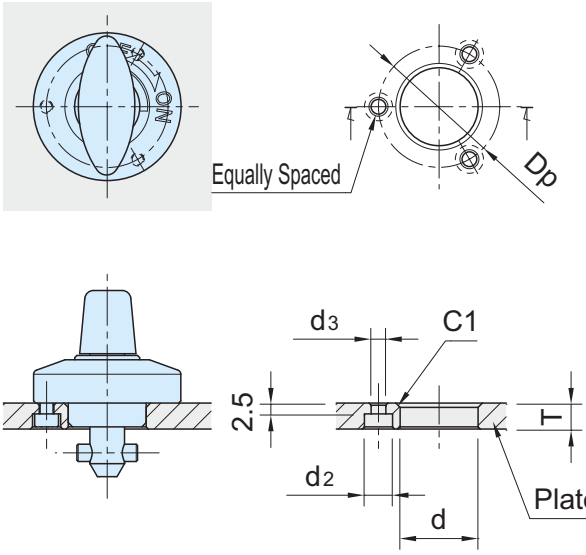



Figure A

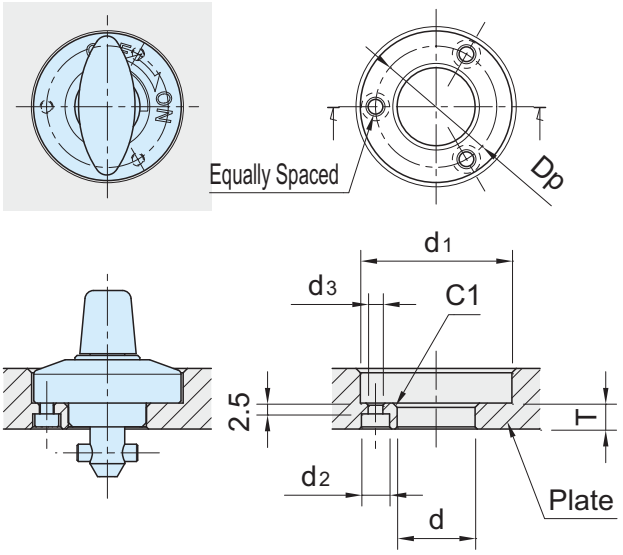
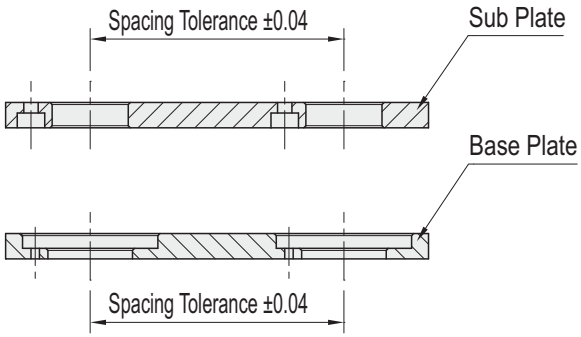



Figure B

| Part Number | | Proper Plate Thickness | Figure | d (+0.10 +0.05) | d1 | T (±0.2) | d2 | d3 | Dp |
|---|---|---|---|---|---|---|---|---|---|
| QCTH<br>QCTH-S<br>QCTHL-S<br>QCTH-SUS<br>QCTHH | 0525-10 | 6 | A | 14 | - | 6 | 4.4 | 2.4 | 21 |
| | | Over 6, 10 or less | B | | 26 | | | | |
| | 0834-14 | 6 | A | 18 | - | | 6.5 | 3.4 | 28 |
| | | Over 6, 14 or less | B | | 35 | | | | |
| | 0834-20 | 12 | A | | - | 12 | | | |
| | | Over 12, 20 or less | B | | 35 | | | | |

## Accuracies

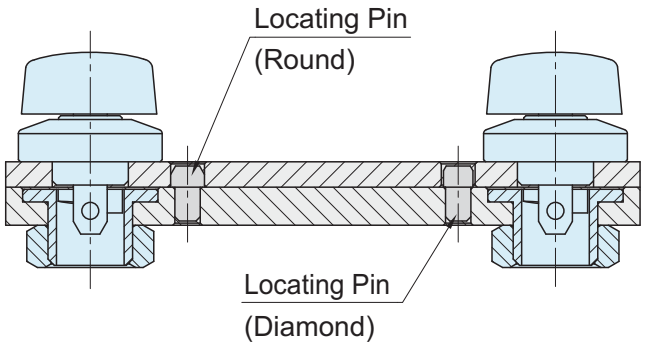
### ■Machining Accuracy




Spacing tolerance on both the sub plate and the base plate should be ±0.04.

### ■Repeatability

Repeatability is ±0.1.




For highly accurate locating, use locating pins.

## Reference

"How To Mount" of QCTH-N QCTH-B QCTH-N-SUS QCTH-B-SUS Cam Receptacles

# QCTHA
## Retractable Quarter-Turn Clamps

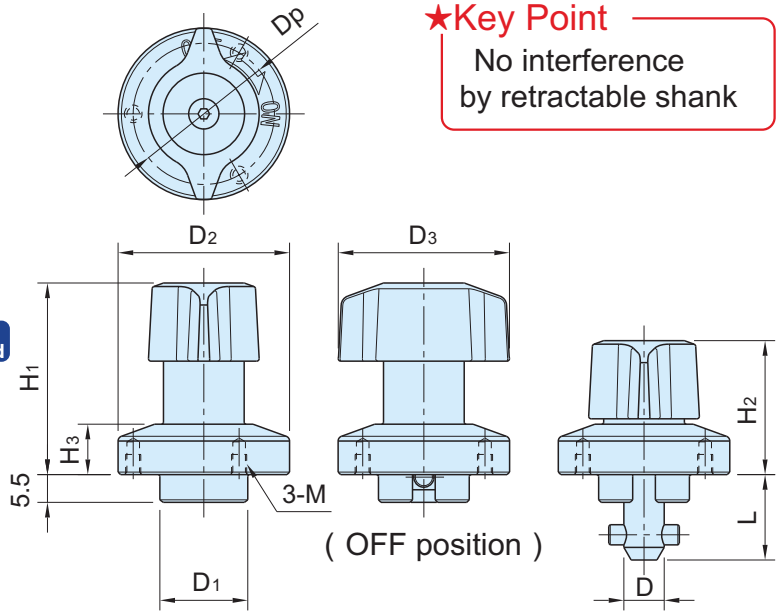
RoHS Electroless Nickel Plated

★Key Point
No interference by retractable shank


QCTHA
( Plastic Knob )
( OFF position )


QCTHA-S
( Metal Knob )
Electroless Nickel Plated


QCTHA
( ON position )




| Type | Body/Shank | Pin | Knob | Spring | Coiled spring |
|---|---|---|---|---|---|
| QCTHA | S45C steel Electroless nickel plated | SUS304 stainless steel | Polyamide ( glass-fiber reinforced ) Black | SUS304WPB stainless steel | Equivalent to SWOSC-V steel |
| QCTHA-S | | | SCS13 stainless steel ( Equivalent to SUS304 ) | | |

| Size | | Proper Plate Thickness | D (-0.04 -0.08) | D1 (h9) | D2 | D3 | L | H1 | H2 | H3 | M | Dp | Clamping Force ( N ) | Proper Cam Receptacles |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QCTHA / QCTHA-S | 0525-10 | 6～10 | 5 | 14 | 25 | 25 | 15.5 | 30 | 20 | 6.5 | M2×0.4 3-deep | 21 | 60 | QCTH0525-N,QCTH0525-B QCTH0525-N-SUS,QCTH0525-B-SUS |
| | 0834-14 | 6～14 | 8 | 18 | 34 | 34 | 17 | 38 | 26.5 | 10 | M3×0.5 4-deep | 28 | 90 | QCTH0834-N,QCTH0834-B QCTH0834-N-SUS,QCTH0834-B-SUS |

| QCTHA ( Plastic Knob ) | | QCTHA-S ( Metal Knob ) | |
|---|---|---|---|
| Part Number | Weight ( g ) | Part Number | Weight ( g ) |
| QCTHA0525-10 | 40 | QCTHA0525-10S | 50 |
| QCTHA0834-14 | 100 | QCTHA0834-14S | 120 |

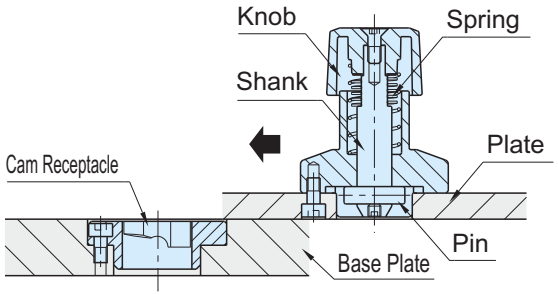
### Supplied With

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

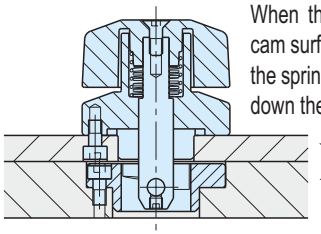
### QCTH-N,QCTH-B Cam Receptacles

IMAO Products

## Features



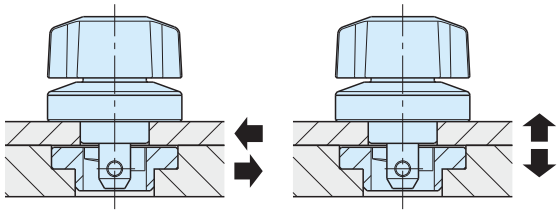

The shank retracts at the unclamping position to enable operations without interference with the base plate.



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

Clamping Force

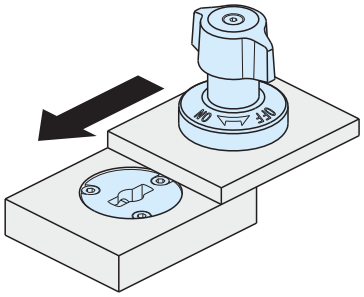
## Technical Information



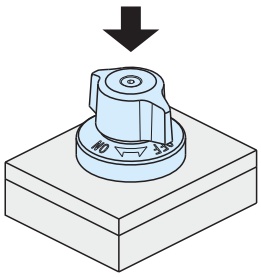
Shear Strength  Tensile Strength

| Part Number | Heatresistant Temperature ( ℃ ) | Shear Strength ( N ) | Tensile Strength ( N ) |
|---|---|---|---|
| **QCTHA0525-10** | 130 | 1800 | 1200 |
| **QCTHA0834-14** | | 3200 | 400 |
| **QCTHA0525-10S** | 200 | 1800 | 1200 |
| **QCTHA0834-14S** | | 3200 | 400 |

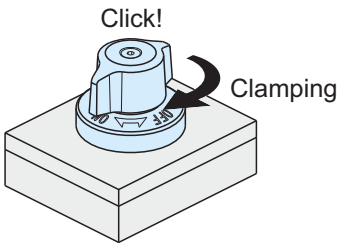
## How To Use



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



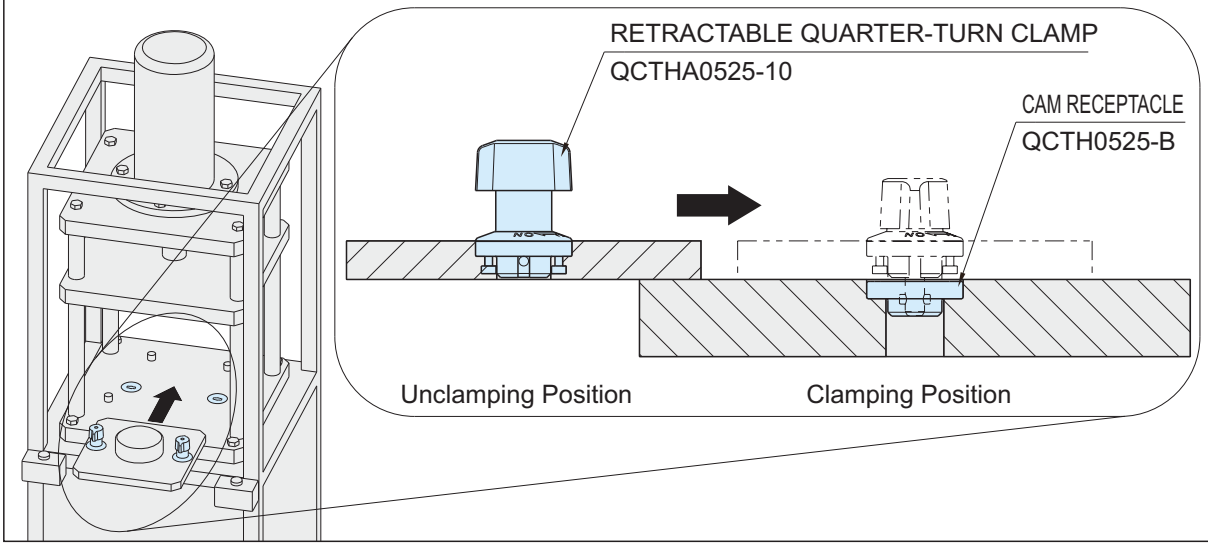
2. Insert Retractable Quarter-Turn Clamp pressing the knob.




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 unclamp ing position by the spring.

## Application Examples

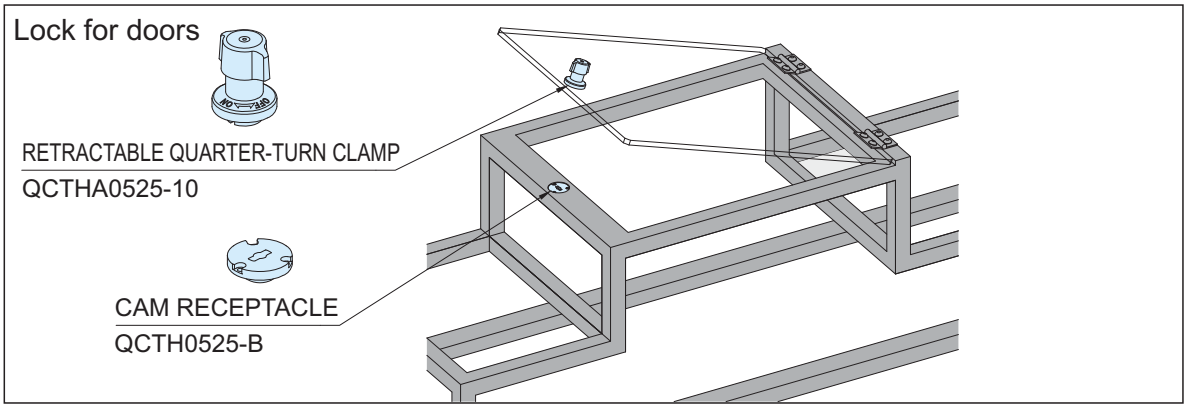
Changes of fixture plates

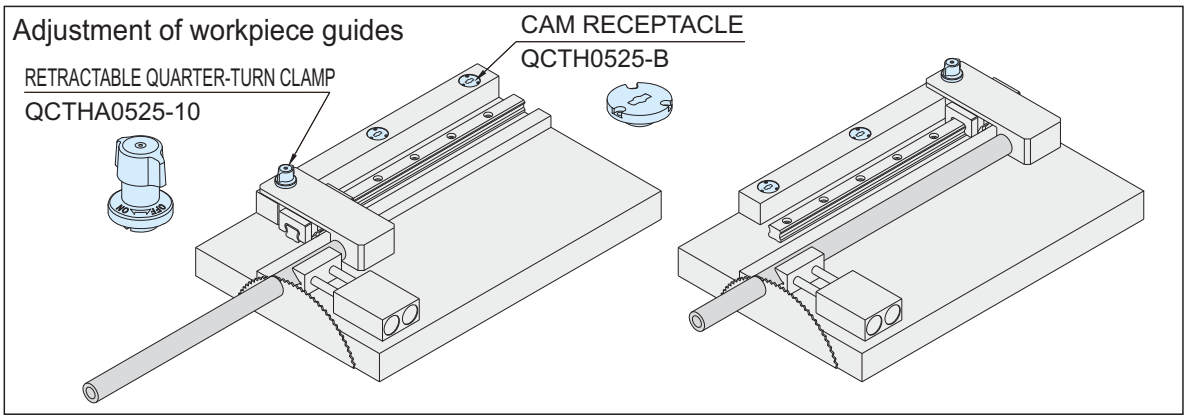



Continuing on Next Page

# QCTHA
# Retractable Quarter-Turn Clamps

## Application Examples




## How To Mount

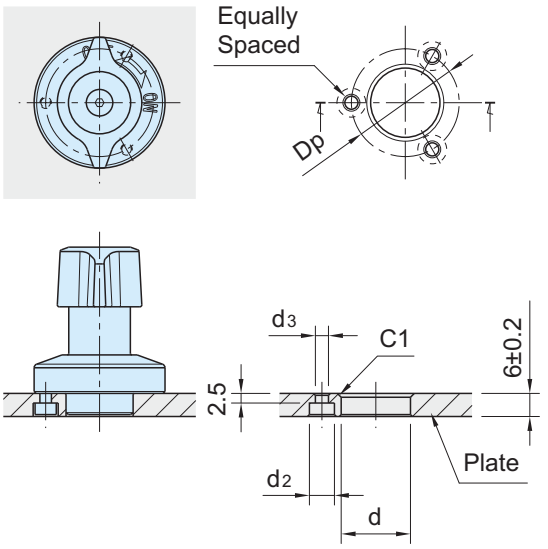



Figure A

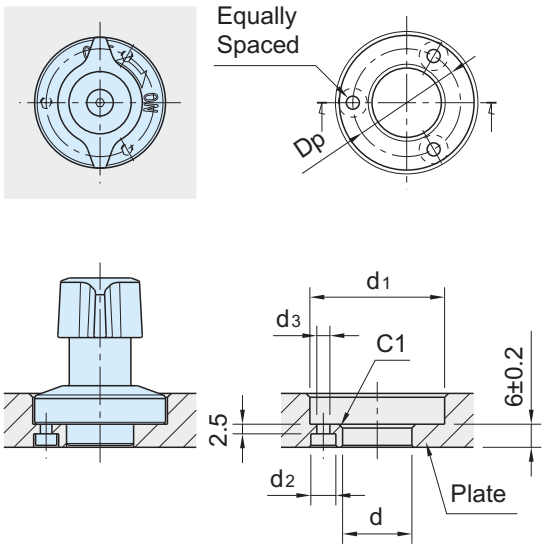


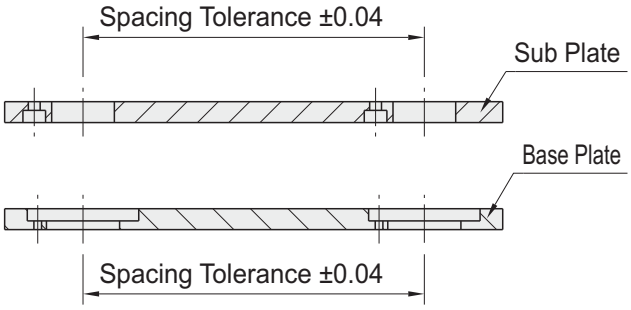

Figure B

| Part Number | | Proper Plate Thickness | Figure | d (+0.10 +0.05) | d1 | d2 | d3 | Dp |
|---|---|---|---|---|---|---|---|---|
| QCTHA<br>QCTHA-S | 0525-10 | 6 | A | 14 | - | 4.4 | 2.4 | 21 |
| | | Over 6, 10 or less | B | | 26 | | | |
| | 0834-14 | 6 | A | 18 | - | 6.5 | 3.4 | 28 |
| | | Over 6, 14 or less | B | | 35 | | | |

IMAO Products

## Accuracies

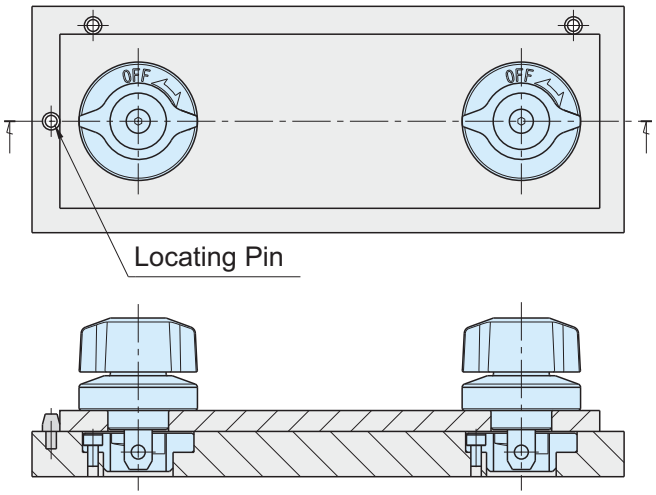
### ■Machining Accuracy




Spacing tolerance on both the sub plate and the base plate should be ±0.04.

### ■Repeatability

Repeatability is ±0.1.




For highly accurate locating, use locating components.

## Reference

"How To Mount" of QCTH-N QCTH-B QCTH-N-SUS QCTH-B-SUS Cam Receptacles

# QCTH-N,QCTH-B - Cam Receptacles

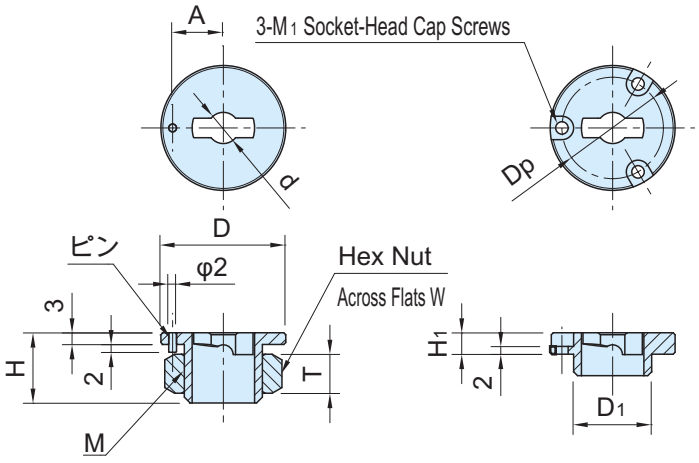
RoHS Stainless Steel Electroless Nickel Plated


QCTH-N
(Thin-Plate Mount)


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


QCTH-B
(Embedded Mount)


QCTH-B-SUS
(Embedded Mount, Stainless Steel)




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

QCTH-B QCTH-B-SUS
(Embedded Mount)
(Embedded Mount, Stainless Steel)

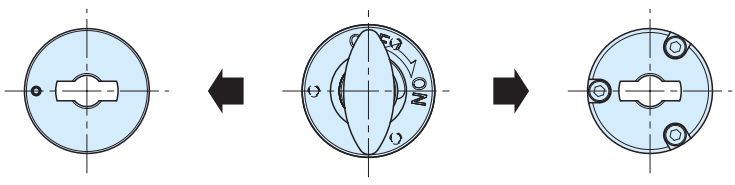
| Type | Body | Nut |
|---|---|---|
| QCTH-N | SCM440 steel Electroless nickel plated | Stainless steel |
| QCTH-B | | - |
| QCTH-N-SUS | SCS24 stainless steel (Equivalent to SUS630) | Stainless steel |
| QCTH-B-SUS | | - |

| Part Number | Proper Plate Thickness | | D | | H | d (+0.08 +0.04) | A (±0.1) | M | T | W | D1 (-0.04 -0.08) | H1 | M1 | Dp | Weight (g) | Proper Quarter-Turn Clamps | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QCTH0525-N | Thin-Plate Mount | 6~10 | 25 | -0.04 -0.08 | 16 | 5 | 10.5 | M14× 1.5 (fine thread) | 8 | 22 | - | - | - | - | 40 | QCTH | 0525-10 |
| QCTH0525-N-SUS | | | | | | | | | | | | | | | | QCTH-S | |
| QCTH0834-N | | 6~12 | 32 | | 18 | 8 | 13 | M20× 1.5 (fine thread) | 10 | 30 | | | | | 55 | QCTHL-S | 0834-14 0834-20 |
| QCTH0834-N-SUS | | | | | | | | | | | | | | | | QCTH-SUS | |
| QCTH0525-B | Embedded Mount | Over 10 | 25 | - | 9 | 5 | - | - | - | - | 14 | 4.5 | M2 | 21 | 20 | QCTHH | 0525-10 |
| QCTH0525-B-SUS | | | | | | | | | | | | | | | | QCTHA | |
| QCTH0834-B | | Over 12 | 32 | | 11 | 8 | | | | | 20 | 5.5 | M3 | 26 | 35 | QCTHA-S | 0834-14 0834-20 |
| QCTH0834-B-SUS | | | | | | | | | | | | | | | | | |

## Supplied With

- QCTH0525-B QCTH0525-B-SUS : 3 of socket-head cap screws(stainless steel), M2x0.4-5L
- QCTH0834-B QCTH0834-B-SUS : 3 of socket-head cap screws(stainless steel), M3x0.5-6L

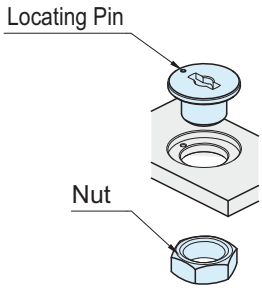
## Mounting Positions



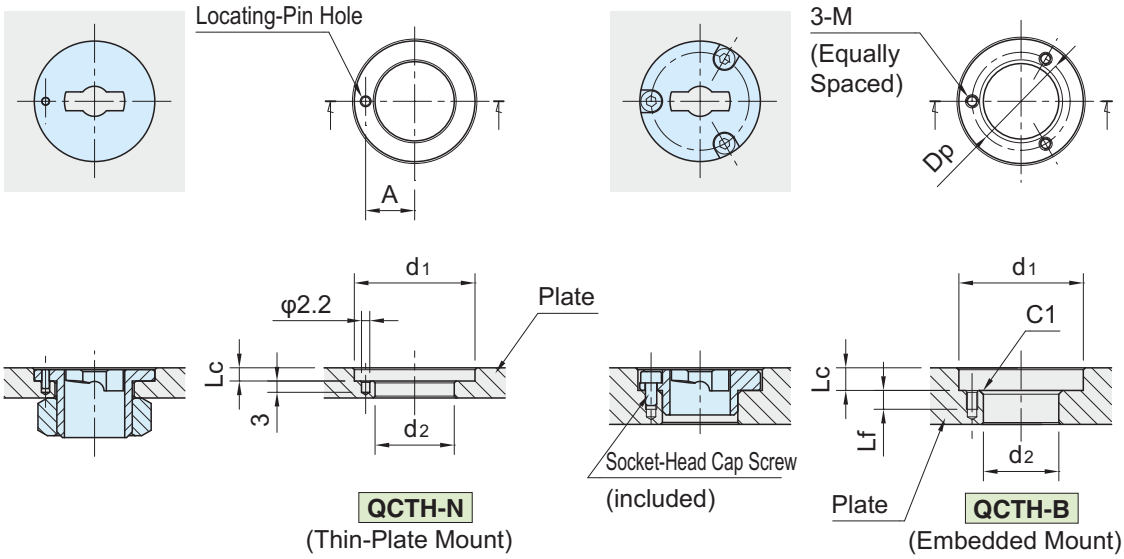

Cam Receptacle (Thin-Plate Mount) Quarter-Turn Clamp Cam Receptacle (Embedded Mount)

IMAO Products

## How To Mount




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




| Part Number | Proper Plate Thickness | | d1 | | d2 | | A (±0.1) | Lc (+0.10 0) | M | Lf | Dp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| QCTH0525-N | Thin-Plate Mount | 6～10 | 25 | +0.10 +0.05 | 15 | - | 10.5 | 3.5 | - | - | - |
| QCTH0525-N-SUS | | | | | | | | | | | |
| QCTH0834-N | | 6～12 | 32 | | 21 | | 13 | | | | |
| QCTH0834-N-SUS | | | | | | | | | | | |
| QCTH0525-B | Embedded Mount | Over 10 | 26 | - | 14 | +0.10 +0.05 | - | 5 | M2× 0.4 | 4 | 21 |
| QCTH0525-B-SUS | | | | | | | | | | | |
| QCTH0834-B | | Over 12 | 33 | | 20 | | | 6 | M3× 0.5 | 5 | 26 |
| QCTH0834-B-SUS | | | | | | | | | | | |

## Reference

"Accuracies" of QCTH QCTHL QCTHH QCTHA Quarter-Turn Clamps

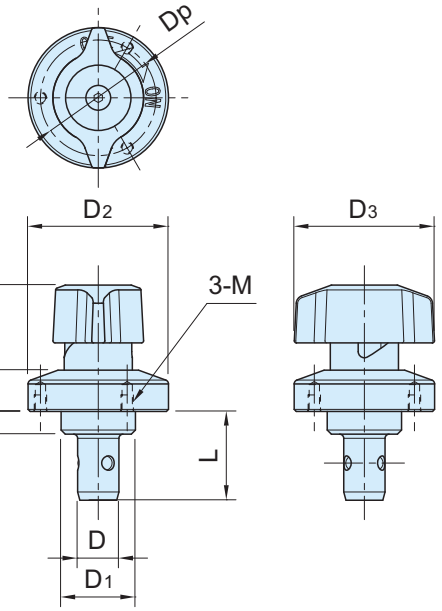
# QCWE - Knob-Locking Clamps

RoHS | Stainless Steel | Electroless Nickel Plated

Wedge


QCWE　QCWE-S　QCWE-SUS

(OFF position)




QCWE

(ON potision)

★Key Point

Secure clamping with wedge.

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

| Size | | Proper Plate Thickness | D (-0.05 -0.10) | D1 (h9) | D2 | D3 | L | H | H1 | M | Dp | Clamping Force ( N ) | Proper Receptacle |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QCWE QCWE-S QCWE-SUS | 0625-10 | 6～10 | 6 | 14 | 25 | 25 | 19.5 | 24.5 | 6.5 | M2×0.4 3 deep | 21 | 30 | QCBU0608-M12 QCBU0608-M12SUS |
| | 1034-14 | 6～14 | 10 | 18 | 34 | 34 | 21.5 | 31 | 10 | M3×0.5 4 deep | 28 | 50 | QCBU1012-M16 QCBU1012-M16SUS |
| | 1034-20 | 12～20 | | | | | 27.5 | | | | | | |

| 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 |

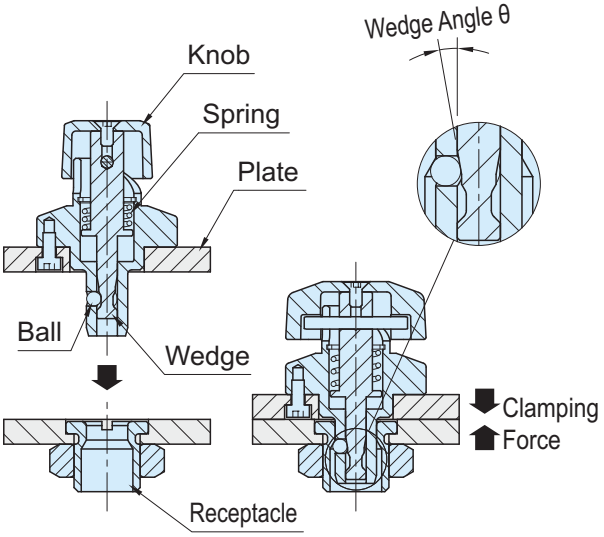
**QCBU-M　BALL-LOCK RECEPTACLES**

## Supplied With

- QCWE QCWE-S QCWE-SUS 0625-10 :
  3 of socket-head cap screws(stainless steel), M2x0.4-5L
- QCWE QCWE-S QCWE-SUS 1034-14、1034-20 :
  3 of socket-head cap screws(stainless steel), M3x0.5-6L

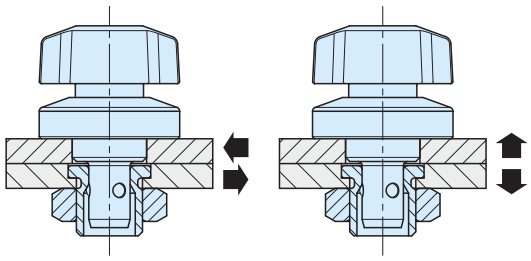
IMAO Products

## Feature



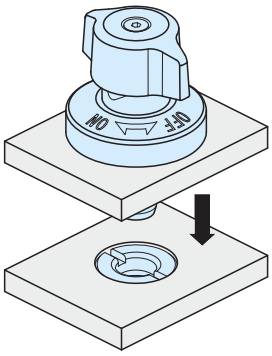

The wedge of the locking pin pushes out the ball onto the taper of the receptacle, for clamping of the two plates.

## Technical Information

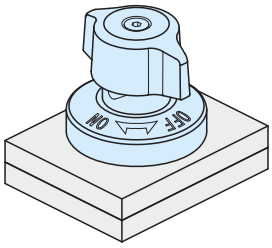



| Size | | Heatresistant Temperature ( ℃ ) | Shear Strength ( N ) | Tensile Strength ( N ) |
|---|---|---|---|---|
| QCWE | 0625-10 | 130 | 3000 | 500 |
| | 1034-14 | | 9000 | 1500 |
| | 1034-20 | | | |
| QCWE-S<br>QCWE-SUS | 0625-10 | 200 | 3000 | 500 |
| | 1034-14 | | 9000 | 1500 |
| | 1034-20 | | | |

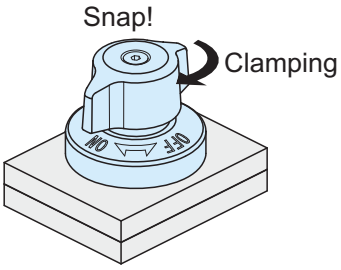
## How To Use




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

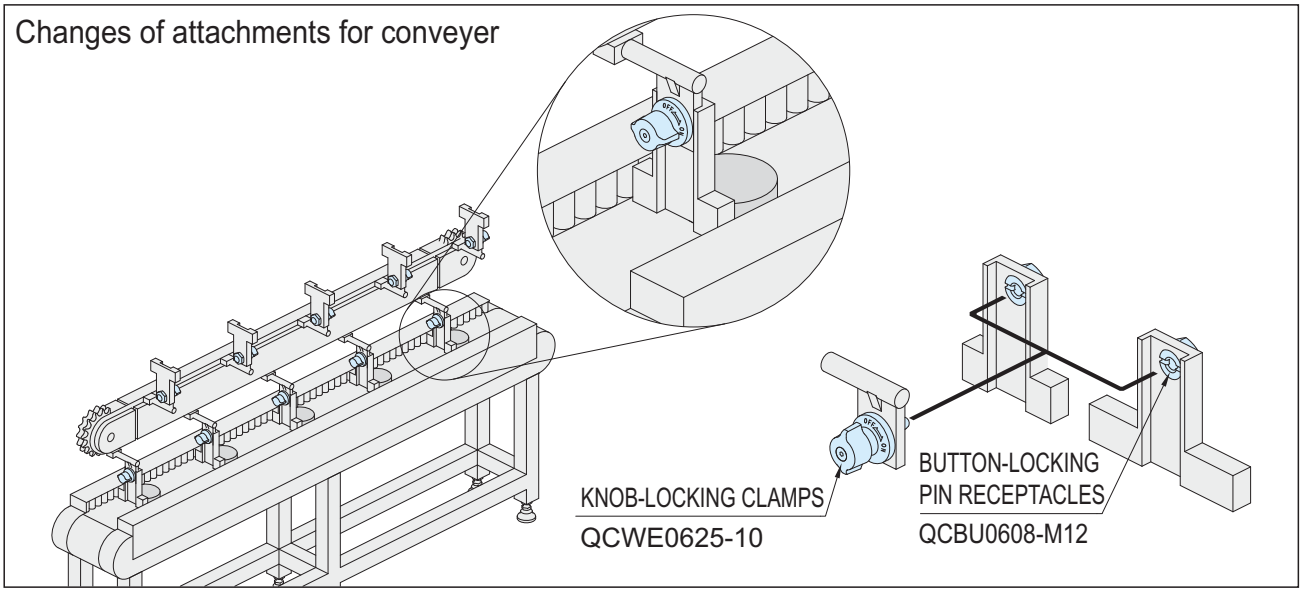



2. Insert the Knob-Locking Clamp.




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

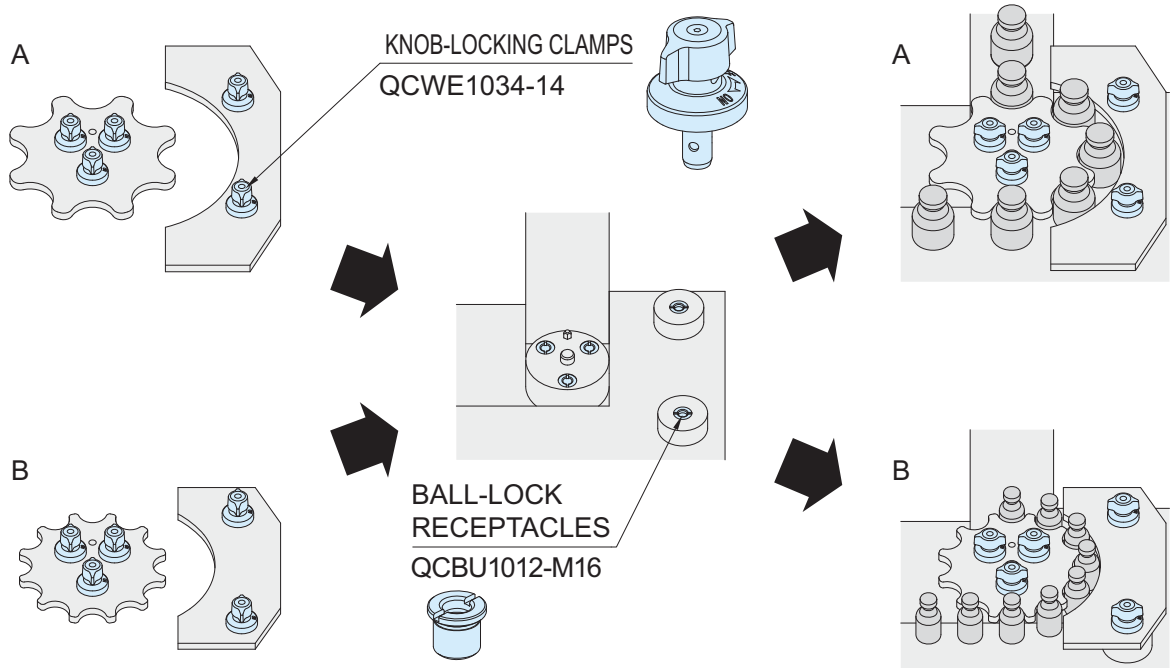
## Application Examples




Continuing on Next Page

## Application Examples

Changes of star wheels and guide plates




## How To Mount

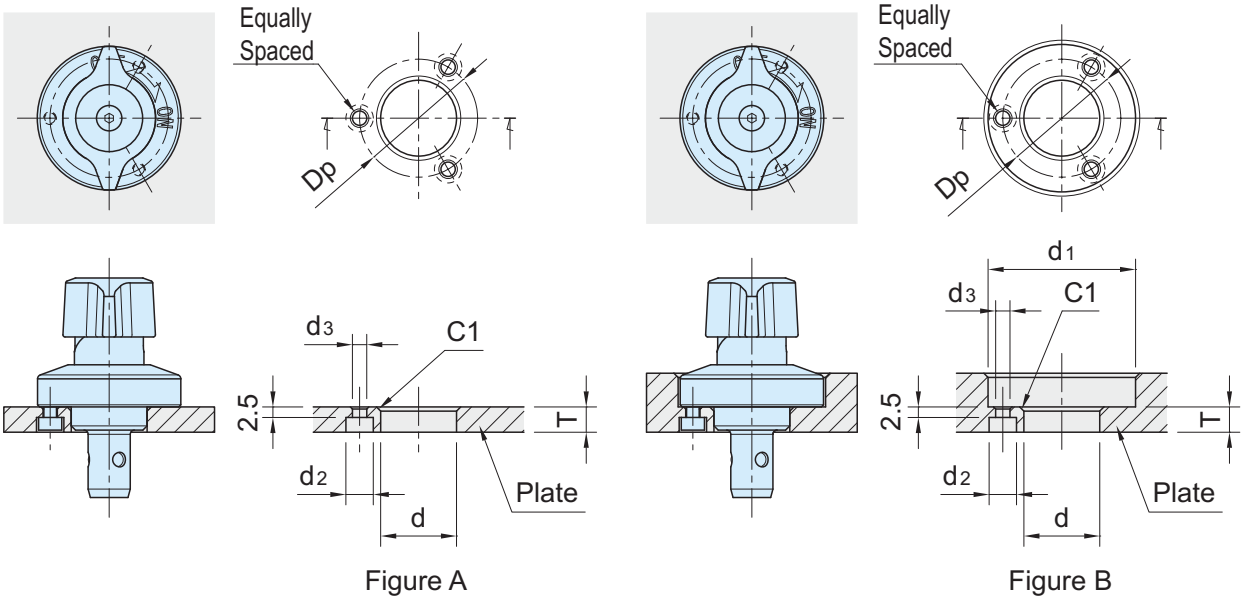


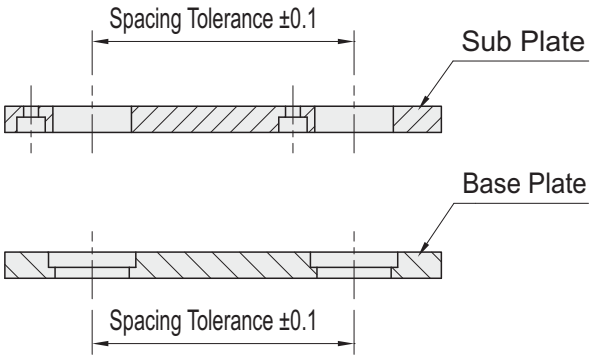

Figure A

Figure B

| Size | | Proper Plate Thickness | Figure | d (+0.10 +0.05) | d1 | T (±0.2) | d2 | d3 | Dp |
|---|---|---|---|---|---|---|---|---|---|
| QCWE<br>QCWE-S<br>QCWE-SUS | 0625-10 | 6 | A | 14 | - | 6 | 4.4 | 2.4 | 21 |
| | | Over 6, 10 or less | B | | 26 | | | | |
| | 1034-14 | 6 | A | 18 | - | | 6.5 | 3.4 | 28 |
| | | Over 6, 14 or less | B | | 35 | | | | |
| | 1034-20 | 12 | A | | - | 12 | | | |
| | | Over 12, 20 or less | B | | 35 | | | | |

## Accuracies

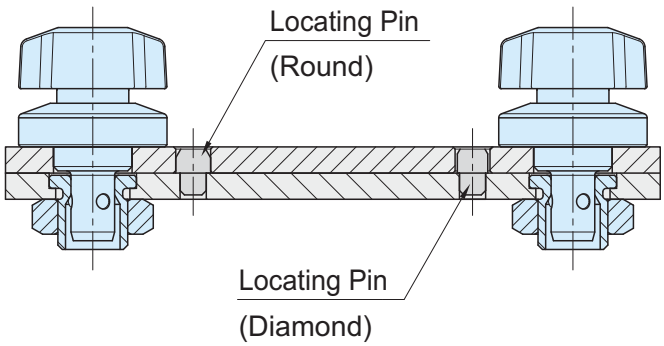
### ■Machining Accuracy




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

### ■Repeatability

Repeatability is ±0.25.




For highly accurate locating, use locating pins.

# QCBU,QCBUS - Button-Locking Pins

RoHS | Stainless Steel | Electroless Nickel Plated | Heat resistance: 180°C

Wedge

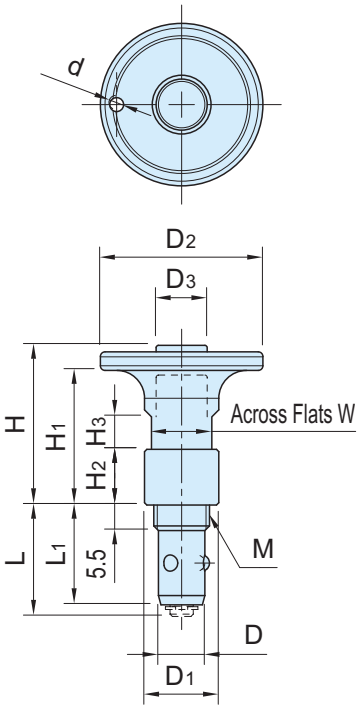
★Key Point
Secure clamping with wedge


**QCBU**
(Standard)

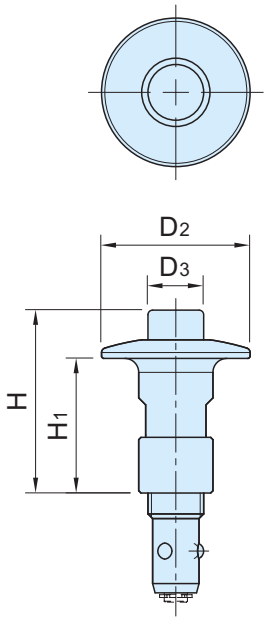

**QCBU-SUS**
(Stainless Steel)


**QCBUS**
(Cylindrical)

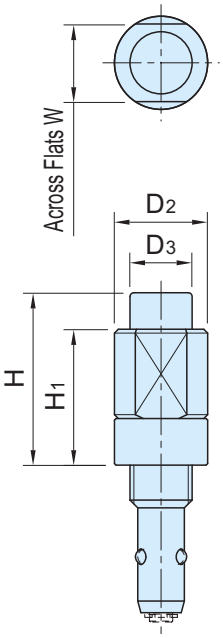

**QCBUS-SUS**
(Cylindrical, Stainless Steel)




**QCBU**




**QCBU-SUS**




**QCBUS** **QCBUS-SUS**

| Part Number | | Body | Button | | Ball | Coiled Spring | Snap Ring | O-Ring |
|---|---|---|---|---|---|---|---|---|
| QCBU | 0608-10 | S45C steel Electroless nickel plated | S45C steel | Electroless nickel plated Quenched and tempered | SUS440 stainless steel Quenched and tempered | SUS304WPB stainless steel | Stainless steel | Fluororubber(FKM) |
| QCBUS | 1012-16 | | | | | | | - |
| QCBU-SUS | 0608-10 | SUS303 stainless steel | SUS420J2 stainless steel | | | | | Fluororubber(FKM) |
| QCBUS-SUS | 1012-16 | | | | | | | - |

| Part Number | | Proper Plate Thickness | D (-0.05 -0.10) | M | D1 | L | L1 | H2 | H3 | W | Clamping Force (N) | Proper Receptacles |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QCBU QCBUS | 0608-10 | 6 ~ 10 | 6 | M 8 × 1.25 | 12 | 21 | 19 | 6 | 5.5 | 10 | 30 | QCBU0608-M12 QCBU0608-M12SUS |
| QCBU-SUS QCBUS-SUS | 1012-16 | 6 ~ 16 | 10 | M12× 1.5 (Fine Thread) | 16 | 23.5 | 21.5 | 12 | 7 | 13 | 50 | QCBU1012-M16 QCBU1012-M16SUS |

IMAO Products

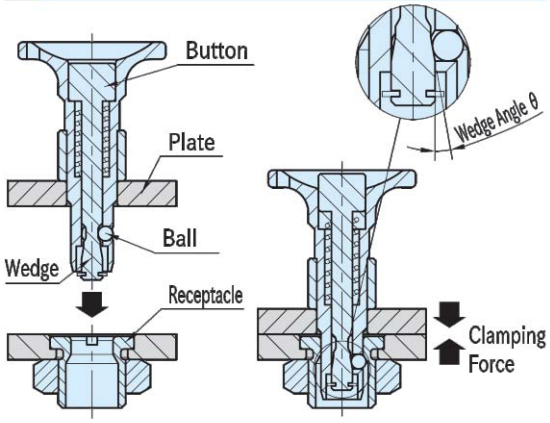
| QCBU (Standard) | | | | | | |
|---|---|---|---|---|---|---|
| Part Number | $D_2$ | $D_3$ | H | $H_1$ | d | Weight (g) |
| QCBU0608-10 | 25 | 8 | 22 | 18 | - | 30 |
| QCBU1012-16 | 35 | 11 | 34.5 | 29 | 3 | 75 |

| QCBU-SUS (Stainless Steel) | | | | | |
|---|---|---|---|---|---|
| Part Number | $D_2$ | $D_3$ | H | $H_1$ | Weight (g) |
| QCBU0608-10-SUS | 23 | 8 | 26 | 18 | 30 |
| QCBU1012-16-SUS | 32 | 12 | 39.5 | 29 | 75 |

| QCBUS (Cylindrical) | | | | | |
|---|---|---|---|---|---|
| Part Number | $D_2$ | $D_3$ | H | $H_1$ | Weight (g) |
| QCBUS0608-10 | 12 | 8 | 22 | 17.5 | 30 |
| QCBUS1012-16 | 16 | 11 | 34.5 | 28 | 50 |

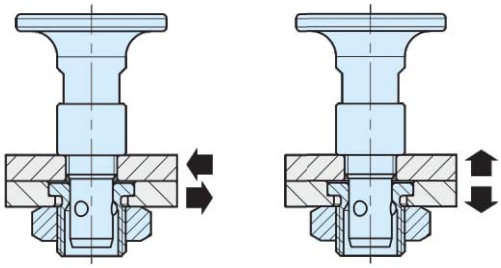
| QCBUS-SUS (Cylindrical,Stainless Steel) | | | | | |
|---|---|---|---|---|---|
| Part Number | $D_2$ | $D_3$ | H | $H_1$ | Weight (g) |
| QCBUS0608-10SUS | 12 | 8 | 22 | 17.5 | 30 |
| QCBUS1012-16SUS | 16 | 11 | 34.5 | 28 | 50 |

## Feature



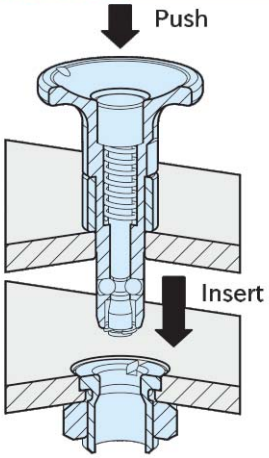

The wedge of the locking pin pushes out the ball onto the taper of the receptacle, for clamping of the two plates.

## Technical Information

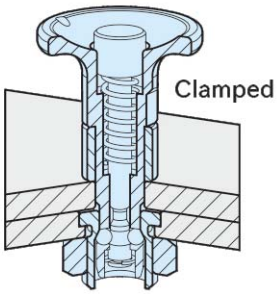



| Part Number | | Heatresistant Temperature (℃) | Shear Strength (N) | Tensile Strength (N) |
|---|---|---|---|---|
| QCBU<br>QCBUS | 0608-10 | 180 | 3000 | 500 |
| QCBU-SUS<br>QCBUS-SUS | 1012-16 | | 9000 | 1500 |

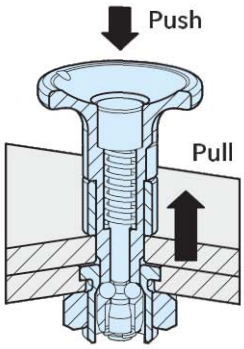
## How To Use




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.

## QCBU-M Ball-Lock Receptacles

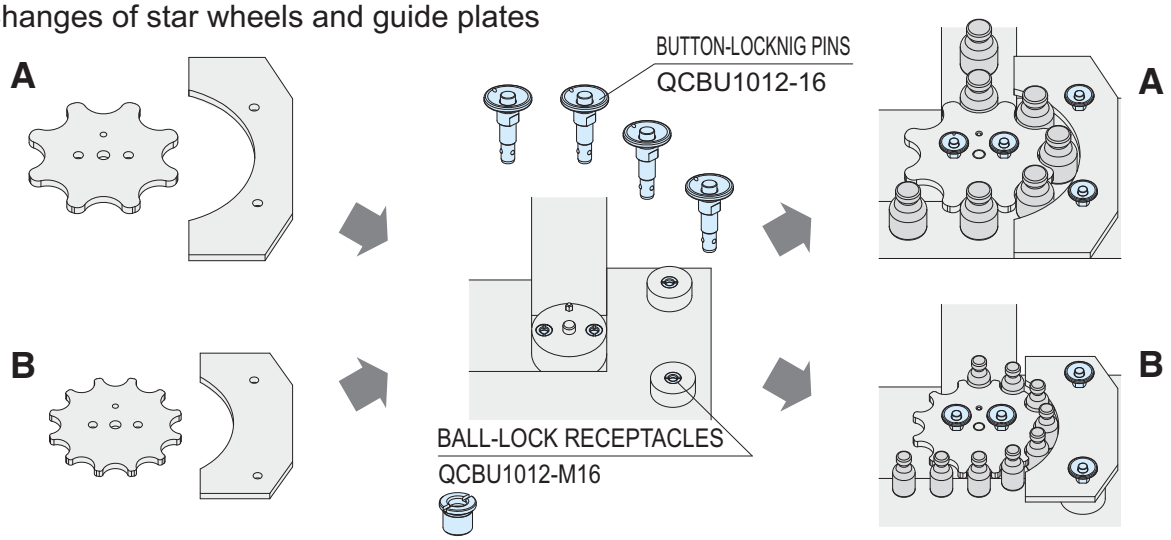
## Note

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.

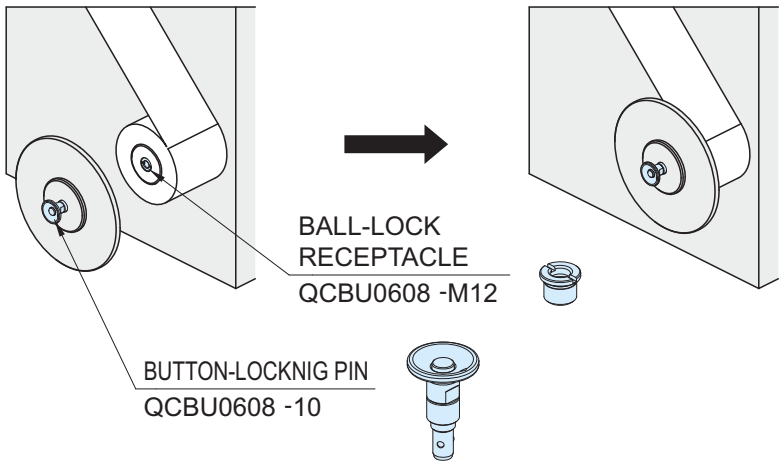
Continuing on Next Page

## Application Examples

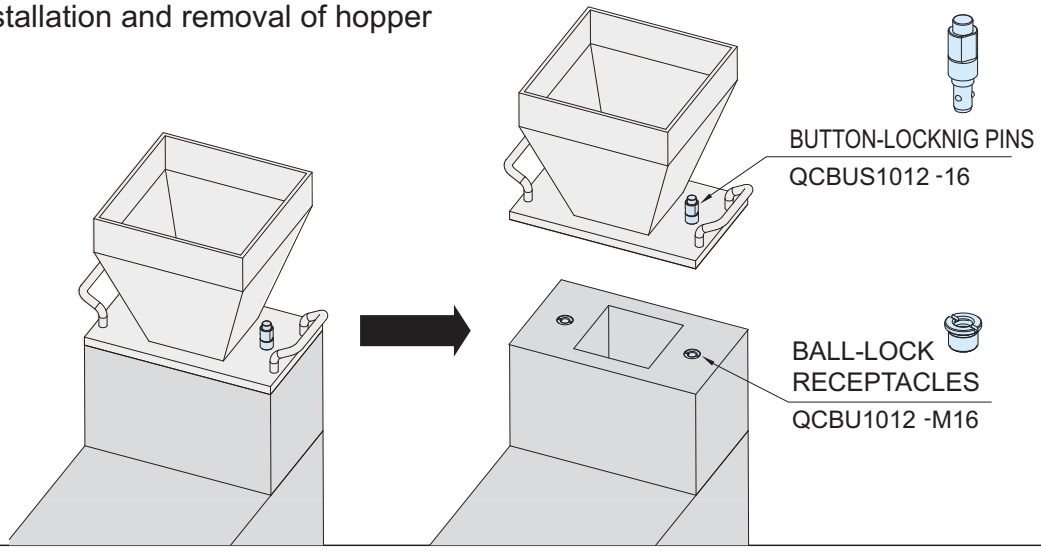
Changes of star wheels and guide plates




Installation and removal of stopper plate for rolls

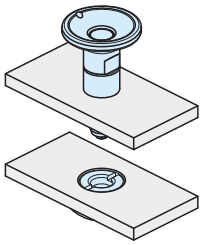



Installation and removal of hopper



## How To Mount

Fixed Installation



| Part Number | | Proper Plate Thickness | Figure | M | d2 |
|---|---|---|---|---|---|
| QCBU<br>QCBUS | 0608-10 | 6 | A | M 8 × 1.25 | - |
| | | Over 6, 10 or less | B | | 13 |
| QCBU-SUS<br>QCBUS-SUS | 1012-16 | 6 | A | M12× 1.5 (Fine Thread) | - |
| | | Over 6, 16 or less | B | | 17 |

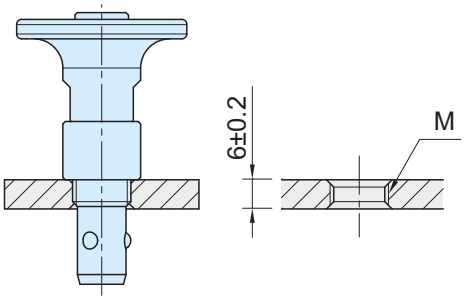



Figure A

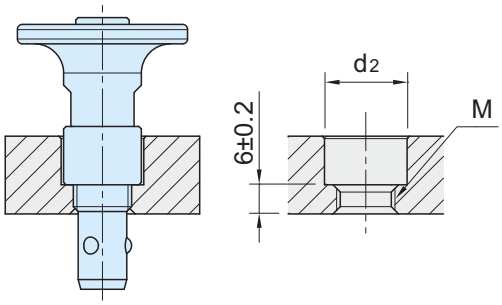
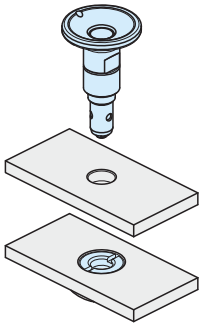



Figure B

Unfixed installation (Except QCBUS QCBUS-SUS type)



| Part Number | | Proper Plate Thickness | Figure | d1 (+0.1 0) | d2 |
|---|---|---|---|---|---|
| QCBU<br>QCBU-SUS | 0608-10 | 6 | C | 8 | - |
| | | Over 6, 10 or less | D | | 13 |
| | 1012-16 | 6 | C | 12 | - |
| | | Over 6, 16 or less | D | | 17 |

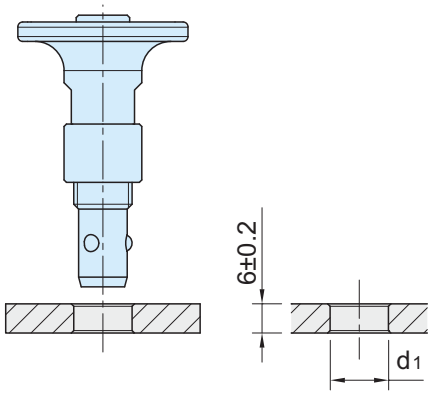



Figure C

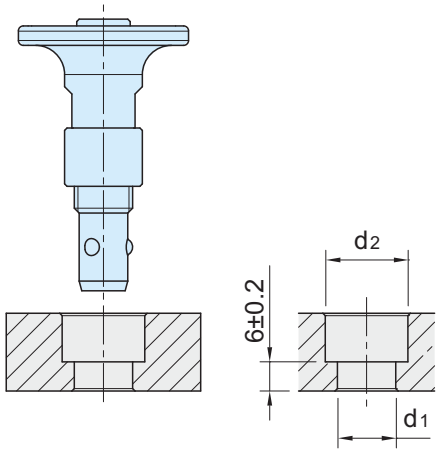
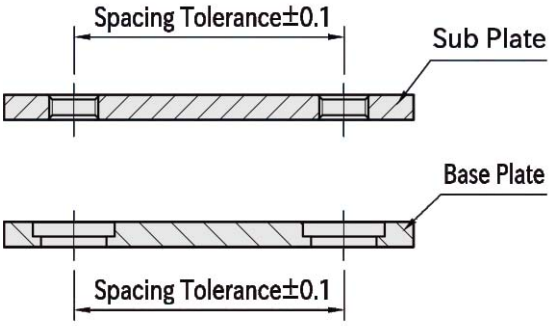



Figure D

Continuing on Next Page

## Accuracies

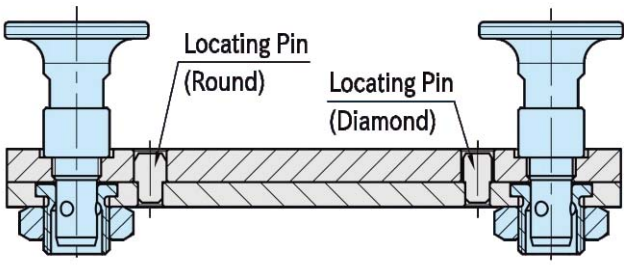
### ■Machining Accuracy




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

### ■Repeatability

Repeatability is ±0.25 for both fixed and unfixed installations.




For highly accurate locating, use locating pins.

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http://**www.imao.biz/en/**

for more details of our latest information,
CAD downloads or movie data.

# QCBU-M - Ball-Lock Receptacles

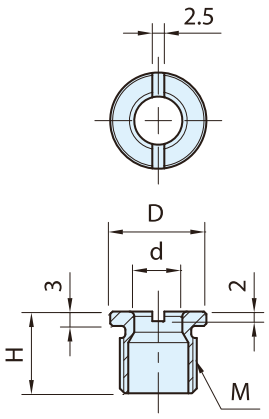
RoHS Heat resistance: 180℃

Electroless Nickel Plated

QCBU-M

Stainless Steel

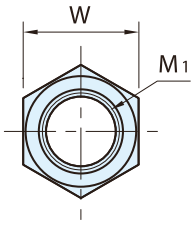
QCBU-M-SUS

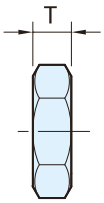



| Type | Body |
|---|---|
| QCBU-M | S45C steel<br>Electroless nickel plated |
| QCBU-M-SUS | SUS303 stainless steel |

| Part Number | Proper Plate Thickness | d (+0.4 +0.2) | D (h9) | M | H | Weight (g) | Proper Knob-Locking Clamps | Proper Button-Locking Pins |
|---|---|---|---|---|---|---|---|---|
| QCBU0608-M12 | 6 or more | 6 | 16 | M12× 1.5 (Fine Thread) | 15 | 9 | QCWE0625-10<br>QCWE0625-10S<br>QCWE0625-10-SUS | QCBU0608-10,QCBUS0608-10<br>QCBU0608-10-SUS<br>QCBUS0608-10SUS |
| QCBU0608-M12SUS | | | | | | | | |
| QCBU1012-M16 | | 10 | 20 | M16× 1.5 (Fine Thread) | 17 | 13 | QCWE1034-14,QCWE1034-14S<br>QCWE1034-20,QCWE1034-20S<br>QCWE1034-14-SUS,QCWE1034-20-SUS | QCBU1012-16,QCBUS1012-16<br>QCBU1012-16-SUS<br>QCBUS1012-16SUS |
| QCBU1012-M16SUS | | | | | | | | |

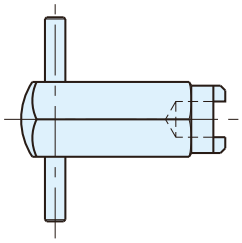
Order Separately Nut (Stainless Steel)

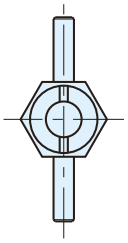


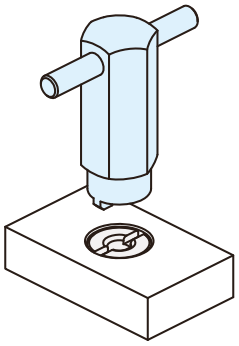




| Part Number | M1 | T | W |
|---|---|---|---|
| NDX12-NUT-SUS | M12× 1.5 (Fine Thread) | 6 | 19 |
| NDX16-NUT-SUS | M16× 1.5 (Fine Thread) | 8 | 24 |

Order Separately Installation Wrench







| Part Number |
|---|
| PW16 |

| Body |
|---|
| Steel(S45C)<br>Black oxide finish |

IMAO Products

## How To Mount

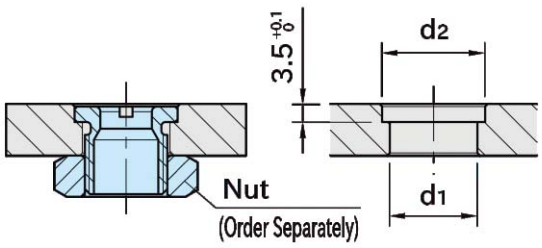



Figure A

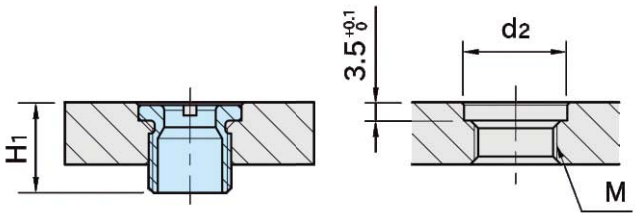
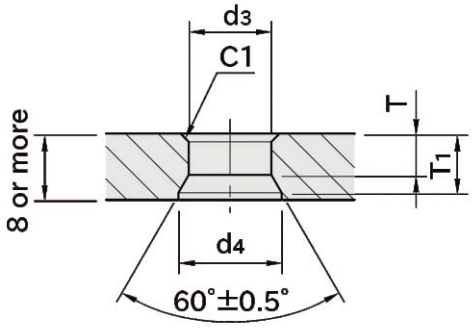



Figure B

| Part Number | | Proper Plate Thickness | Figure | M | d1 | d2 (+0.10 +0.05) | H1 |
|---|---|---|---|---|---|---|---|
| QCBU-M<br>QCBU-M-SUS | 12 | 6~10 | A | - | 13 | 16 | - |
| | | Over 10 | B | M12×1.5(Fine Thread) | - | | 15.5 |
| | 16 | 6~10 | A | - | 17 | 20 | - |
| | | Over 10 | B | M16×1.5(Fine Thread) | - | | 17.5 |

## Without Ball-Lock Receptacle

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




| Dimensions | | | | Proper Knob-Locking | | Proper Button-Locking Pins | |
|---|---|---|---|---|---|---|---|
| d3 (+0.4 +0.2) | d4 | T (±0.1) | T1 | | | | |
| 6 | 8 or more | 4.9 | (6.6) | QCWE<br>QCWE-S<br>QCWE-SUS | 0625-10<br>1034-14<br>1034-20 | QCBU<br>QCBU-SUS<br>QCBUS<br>QCBUS-SUS | 0608-10<br>1012-16 |
| 10 | 12.5 or more | 5 | (7.2) | | | | |

## Reference

"Accuracies" of QCWE Knob-Locking Clamps and QCBU QCBUS Button-Locking Pins

# QCPC - Pin Holding Clamps

RoHS Stainless Steel Electroless Nickel Plated

Wedge

QCPC

Electroless Nickel Plated

QCPC-S

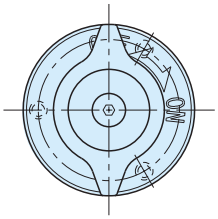
Stainless Steel

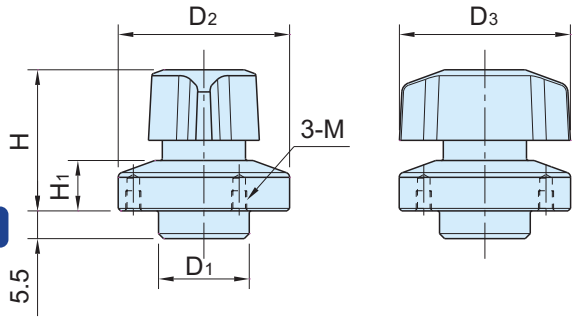
QCPC-SUS

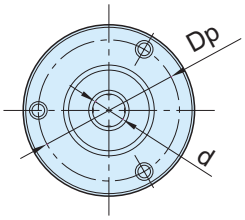
( OFF position )

QCPC

( ON position )






## ★Key Point

Pin clamping design enables space-saving application.

| Type | Body | Knob | Ball | Spring |
|---|---|---|---|---|
| QCPC | 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 ) | Proper Clamping Pins |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QCPC QCPC-S QCPC-SUS | 0625-10 | 6 ~ 10 | 6 | 14 | 25 | 25 | 23 | 6.5 | M2×0.4 3-deep | 21 | 7 | QCPC0625-M4-SUS |
| | 0834-14 | 6 ~ 14 | 8 | 18 | 34 | 34 | 28 | 10 | M3×0.5 4-deep | 28 | 9 | QCPC0834-M5-SUS |

| 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 |

## QCPC-M Clamping Pin

## 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

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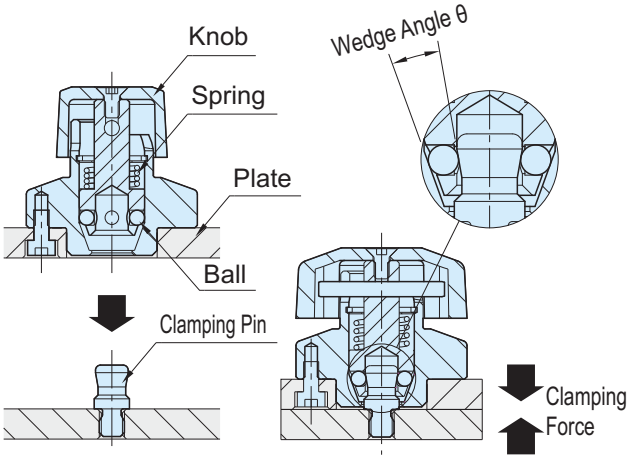
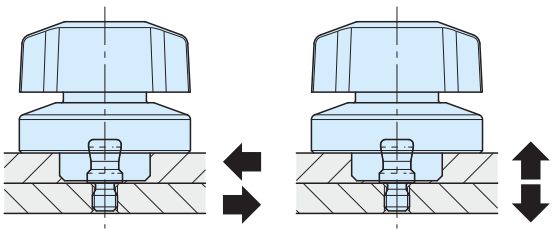
## Feature



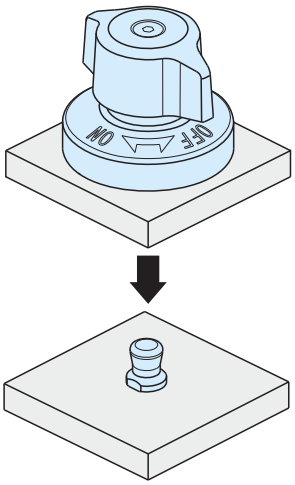

Four balls hold the Clamping Pin to pull the plate for clamping.

## Technical Information

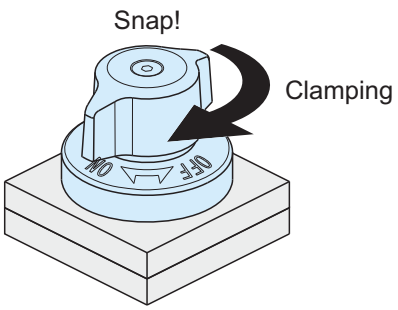



| Size | | Heatresistant Temperature (℃) | Shear Strength (N) | Tensile Strength (N) |
|---|---|---|---|---|
| QCPC | 0625-10 | 130 | 1100 | 250 |
| | 0834-14 | | 1800 | 400 |
| QCPC-S<br>QCPC-SUS | 0625-10 | 200 | 1100 | 250 |
| | 0834-14 | | 1800 | 400 |

## How To Use



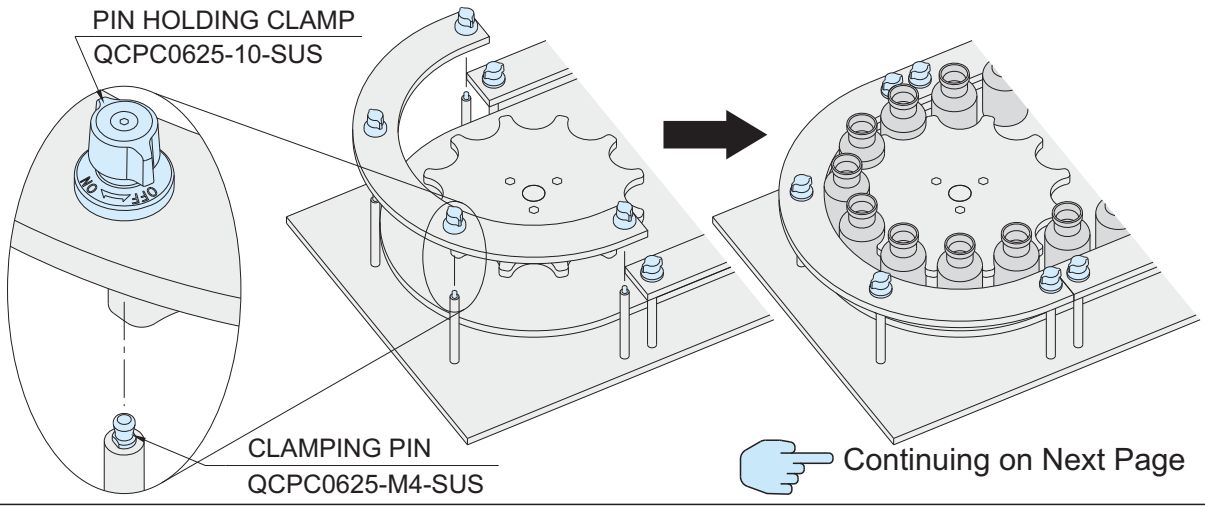

1. Ensure that the knob is positioned at the "OFF" mark and put Pin Holding Clamp over the Clamping Pin.




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

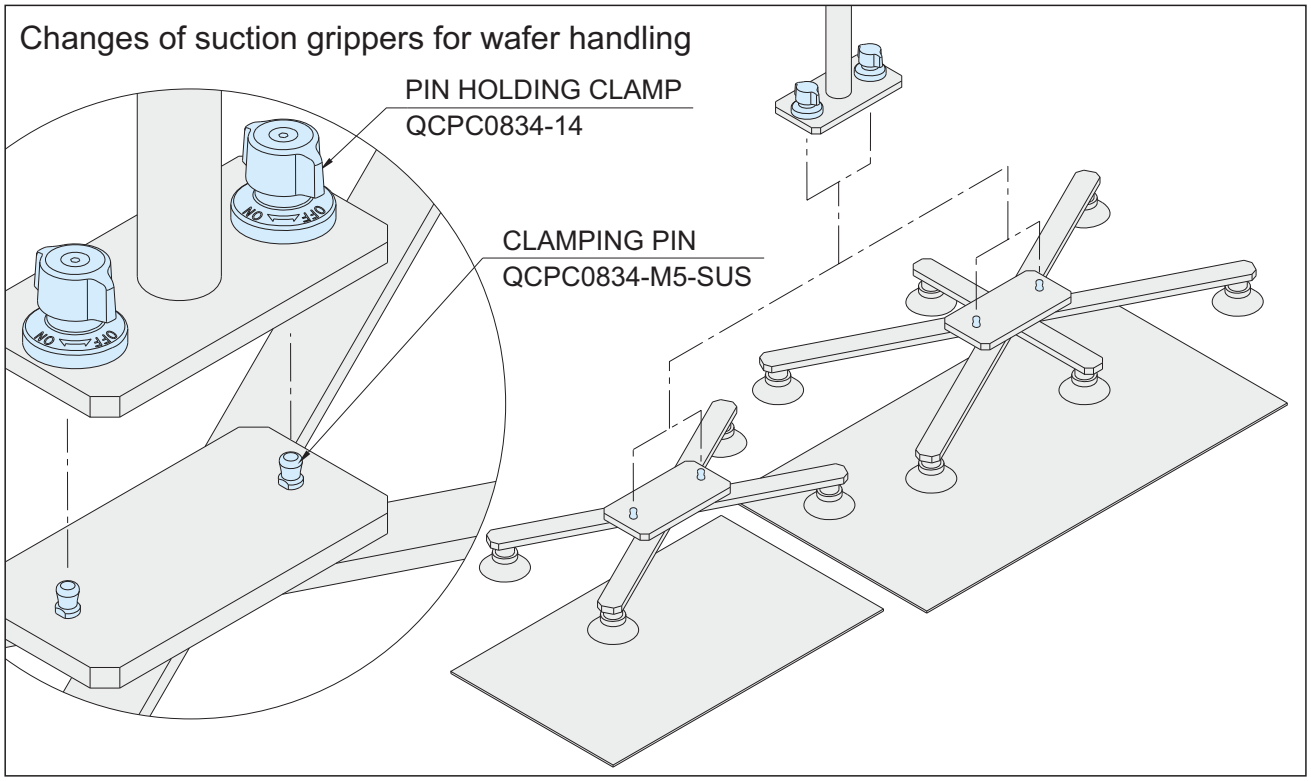
## Application Examples

Changes of guides around star wheels




Continuing on Next Page

## Application Examples




## How To Mount

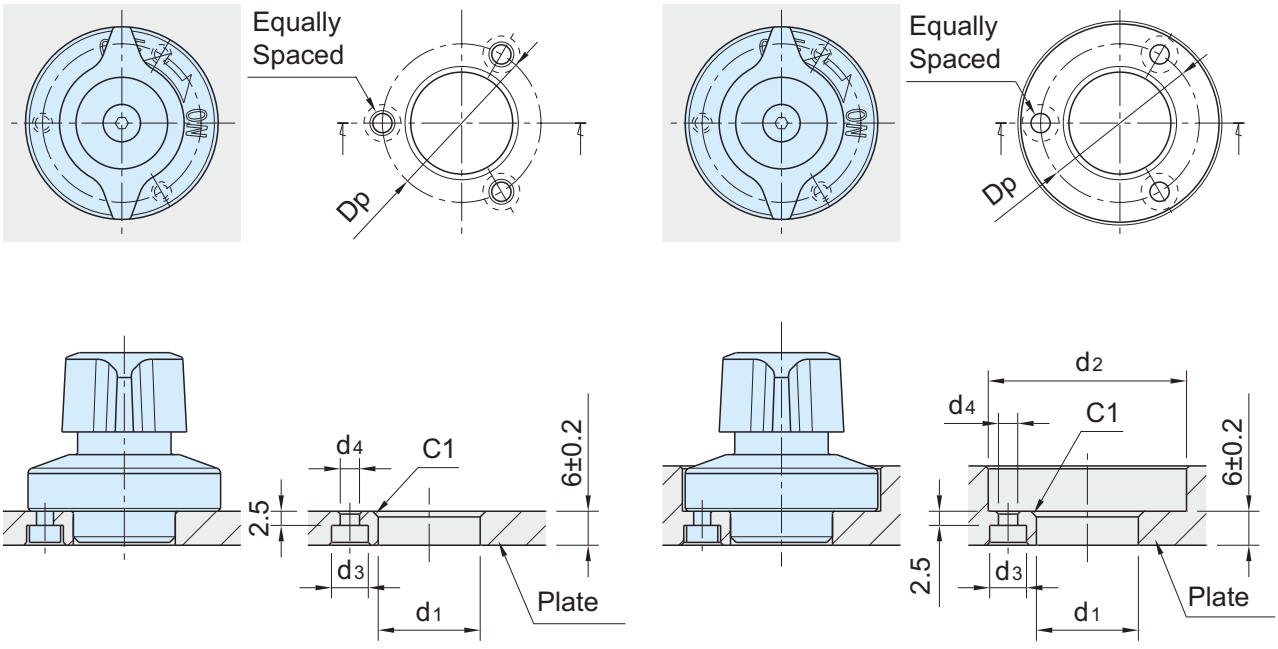


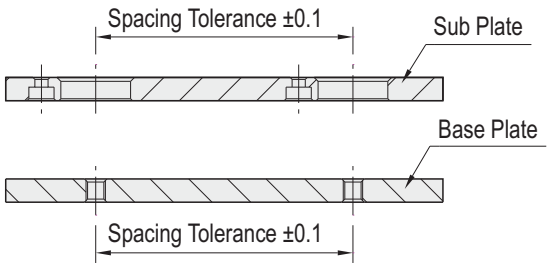

Figure A

Figure B

| Size | | Proper Plate Thickness | Figure | $d_1$ $(^{+0.10}_{+0.05})$ | $d_2$ | $d_3$ | $d_4$ | Dp |
|---|---|---|---|---|---|---|---|---|
| QCPC<br>QCPC-S<br>QCPC-SUS | 0625-10 | 6 | A | 14 | - | 4.4 | 2.4 | 21 |
| | | Over 6, 10 or less | B | | 26 | | | |
| | 0834-14 | 6 | A | 18 | - | 6.5 | 3.4 | 28 |
| | | Over 6, 14 or less | B | | 35 | | | |

## Accuracies

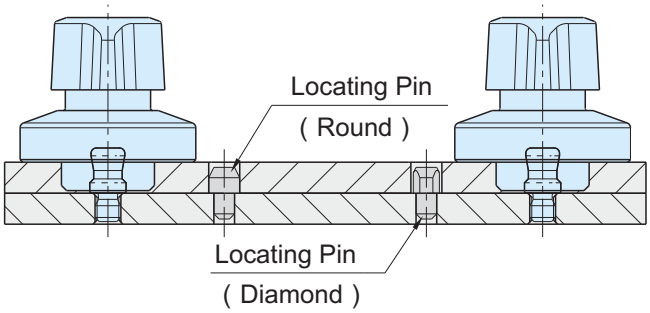
### ■Machining Accuracy




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

### ■Repeatability

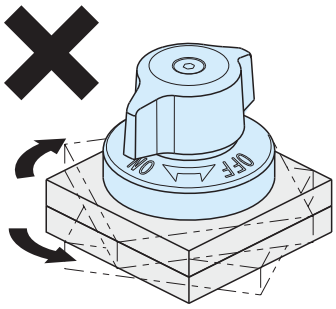
Repeatability is ±0.25.




For highly 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.



# QCOW,QCOWS - Snap-In Clamps

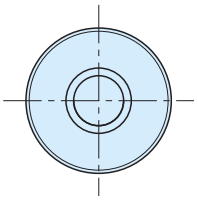
RoHS Stainless Steel Heat resistance: 180°C

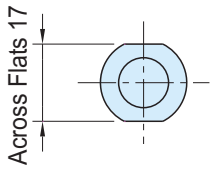
Wedge

| Body/Button | Ball | Spring | O-Ring |
|---|---|---|---|
| SUS303 stainless steel | SUS440C stainless steel | SUS304WPB stainless steel | Fluororubber (FKM) |

QCOW

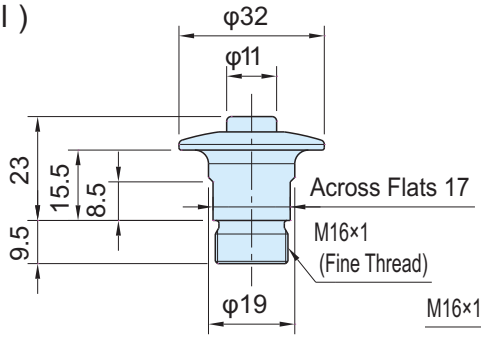
( Stainless Steel )





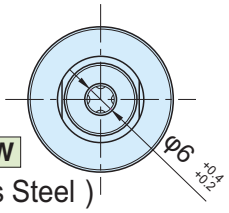

QCOWS

( Cylindrical, Stainless Steel )



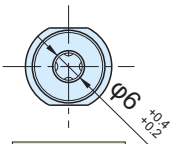

★Key Point

Quick & easy snap-in operation




QCOW

( Stainless Steel )



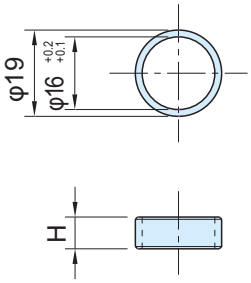

QCOWS

( Cylindrical, Stainless Steel )

| Part Number | Proper Plate Thickness | Clamping Force ( N ) | Weight ( g ) | Proper Clamping Pin |
|---|---|---|---|---|
| QCOW 0616-10SUS | 3~10 | 6 | 65 | QCPC0625-M4-SUS |
| QCOWS0616-10SUS | 3~27 | | 50 | |

# QCOW - Spacers

RoHS Stainless Steel Heat resistance: 180°C




| Spacer |
|---|
| SUS303 stainless steel |

| Part Number | Proper Plate Thickness | H (±0.05) | Weight ( g ) | Proper Snap-In Clamps |
|---|---|---|---|---|
| QCOW0616-04-SUS | 6 | 4 | 2.5 | QCOW0616-10SUS QCOWS0616-10SUS |
| QCOW0616-05-SUS | 5 | 5 | 3 | |
| QCOW0616-06-SUS | 4 | 6 | 3.5 | |
| QCOW0616-07-SUS | 3 | 7 | 4 | |

| QCPC-M | Clamping Pin |
|---|---|
|  | |

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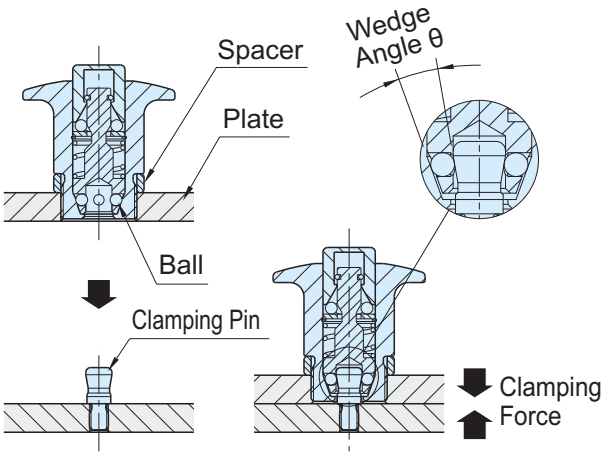
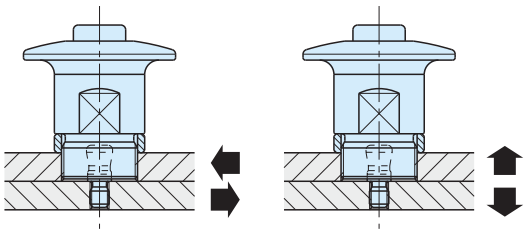
## Feature




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

## Technical Information

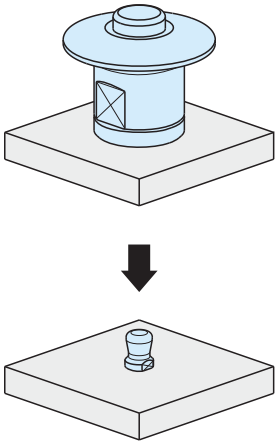
- Heatresistant Temperature 180℃
- Mechanical Strength



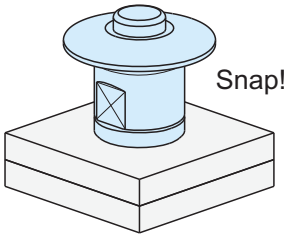
Shear Strength 1100N

Tensile Strength 250N

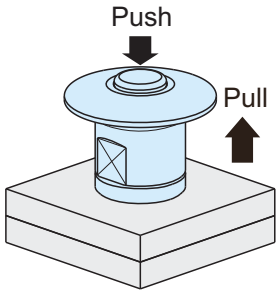
## How To Use



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

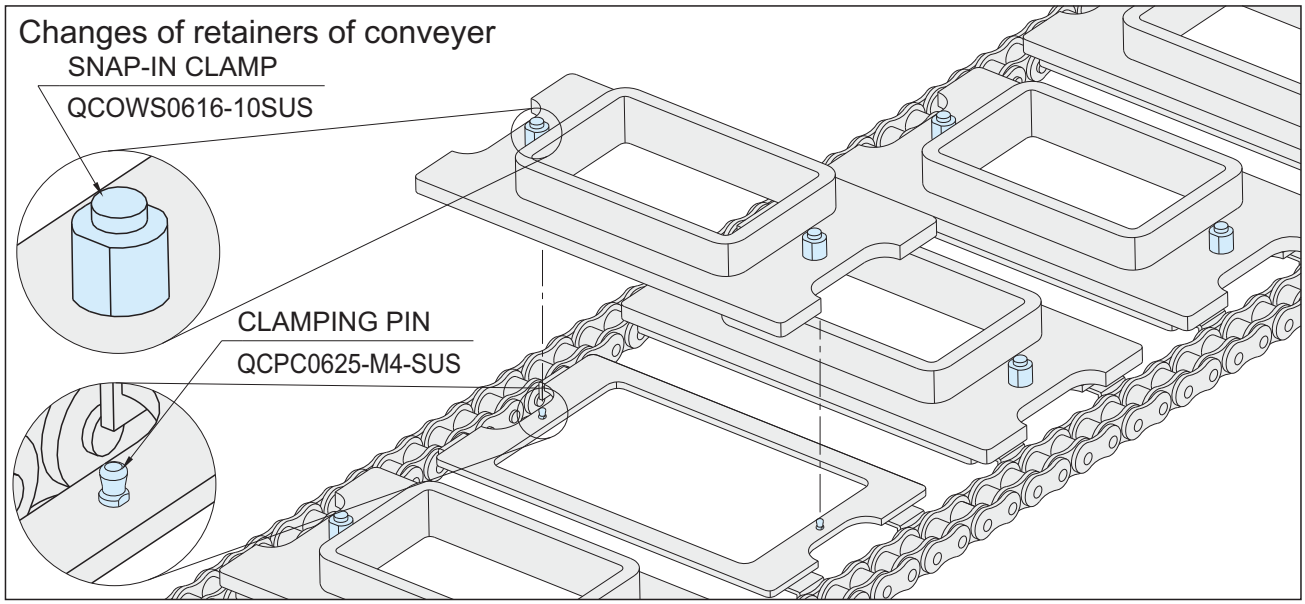



2. Clamped instantly as the pin is inserted.




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

## Application Examples

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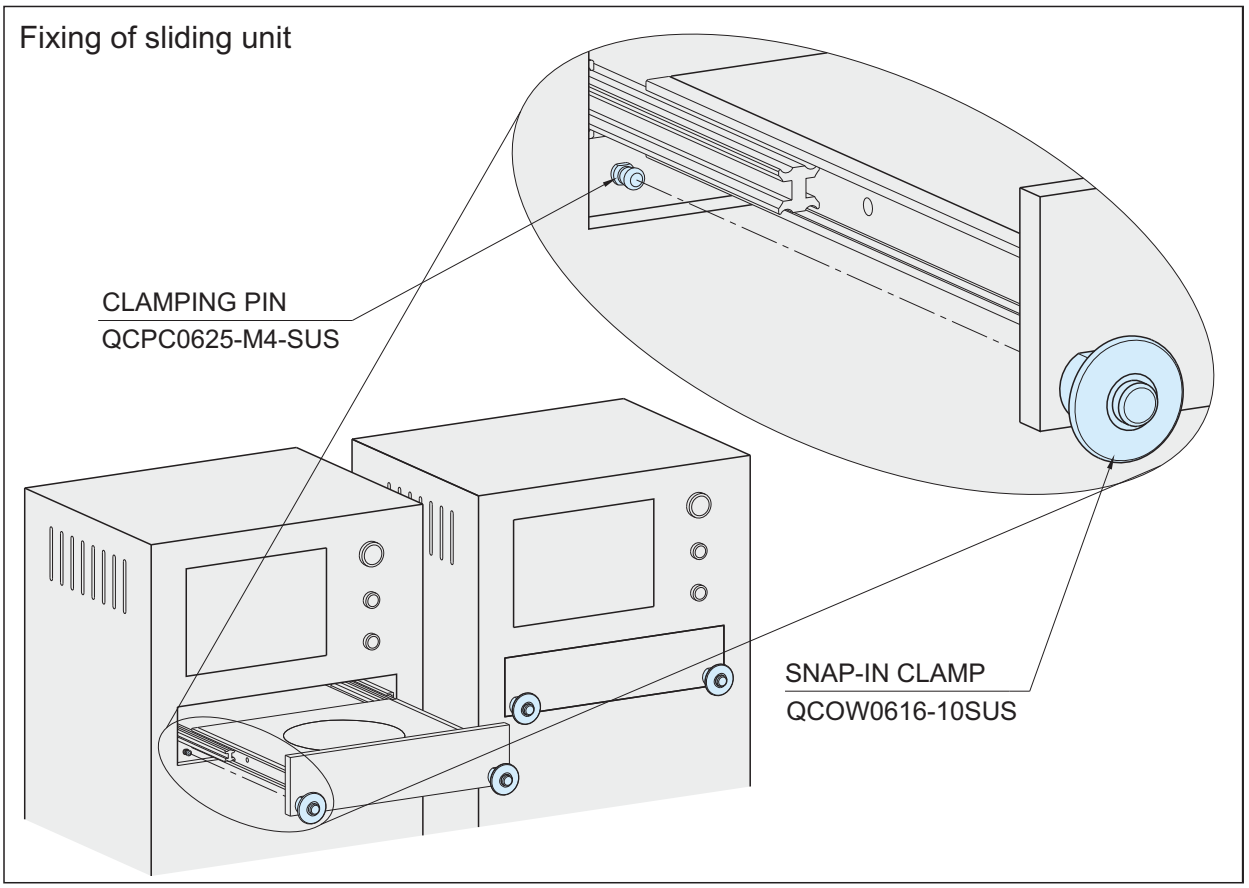
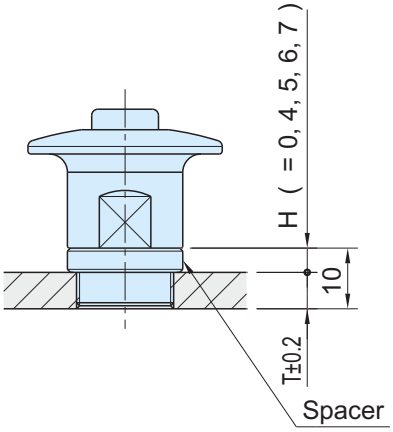
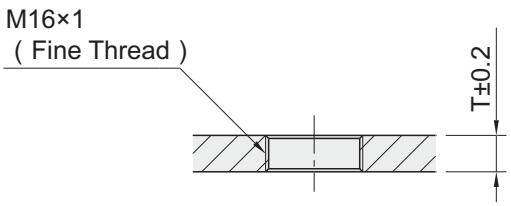
## Application Examples



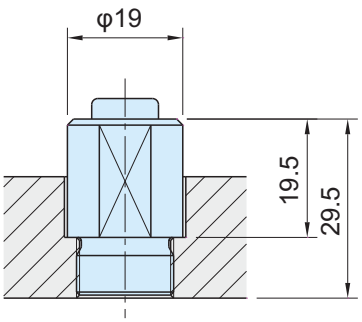

## How To Mount

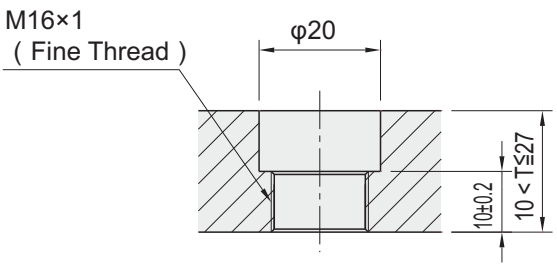
For 3 to 10mm-thick plate



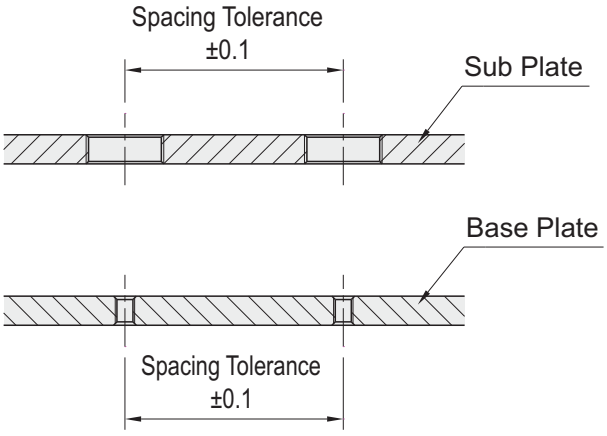

For over 10mm-thick plate



## Accuracies

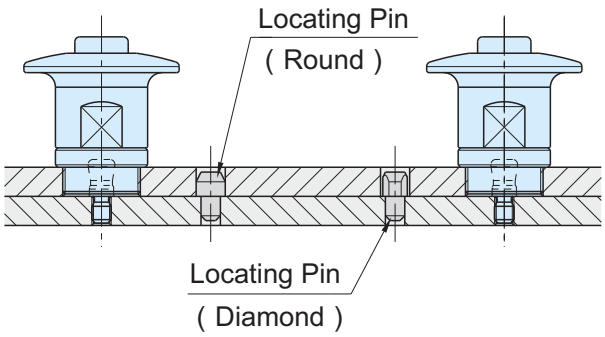
### ■Machining Accuracy




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

### ■Repeatability

Repeatability is ±0.25.

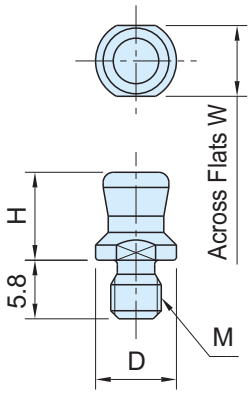



For highly accurate locating, use locating pins.

RoHS Stainless Steel Heat resistance: 180°C

QCPC0625-M4-SUS

QCPC0834-M5-SUS



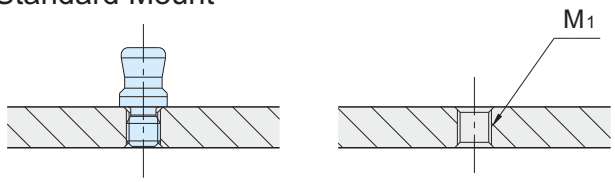

| Clamping Pin |
|---|
| SUS630 stainless steel |

| 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<br>QCPC0625-10S<br>QCPC0625-10-SUS | QCOW0616-10SUS<br>QCOWS0616-10SUS |
| **QCPC0834-M5-SUS** | 8 | M5×0.8 | 8.7 | 7 | 3 | QCPC0834-14<br>QCPC0834-14S<br>QCPC0834-14-SUS | - |

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

## How To Mount

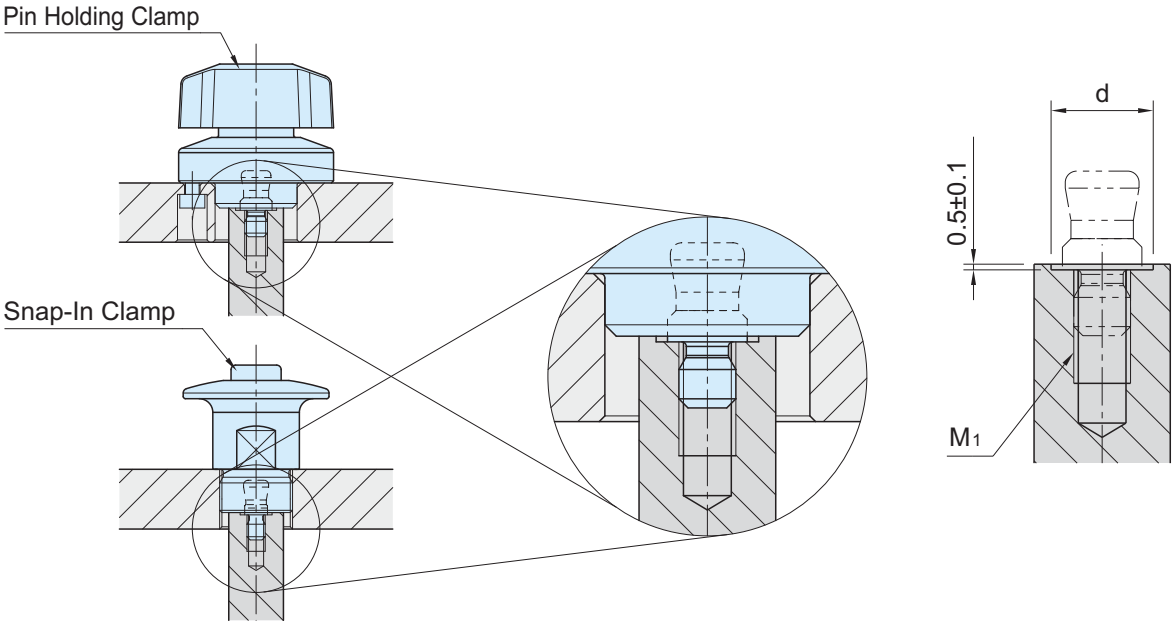
### Standard Mount




| Part Number | $M_1$ | d |
|---|---|---|
| **QCPC0625-M4-SUS** | M4×0.7 | 7 |
| **QCPC0834-M5-SUS** | M5×0.8 | 9 |

### Space-Saving Mount

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



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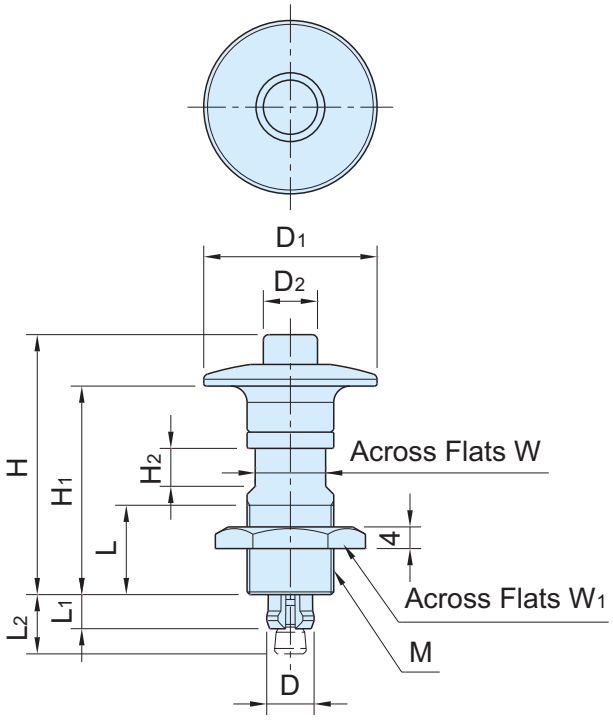
# QCHC - Hole Holding Clamps

RoHS | Stainless Steel | Heat resistance: 180°C

Wedge

QCHC-03

QCHC-06



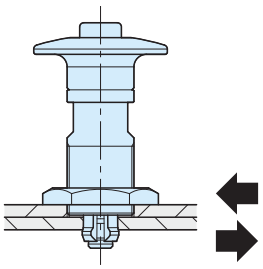

| Part Number | Body/Nut | Spacer | Spring/Snap Ring |
|---|---|---|---|
| QCHC-03 | SUS303 stainless steel | SUS303 stainless steel | SUS304WPB stainless steel |
| QCHC-06 | | – | |

★Key Point

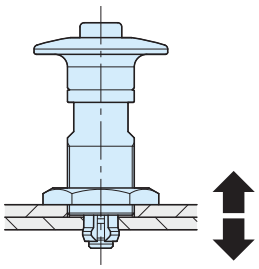
Receptacle is not required.

| Part Number | Proper Base Plate Thickness | Proper Plate Thickness | D | M | D1 | D2 | H | L | H1 | L1 | L2 | H2 | W | W1 | Clamping Force ( N ) | Weight ( g ) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QCHC0612-03-SUS | 3 | 3～ 8 | 6.5 | M12×1 ( Fine Thread ) | 23 | 8 | 37 | 12.5 | 29 | 6.5 | 10.5 | 5.5 | 10 | 19 | 3 | 40 |
| QCHC0612-06-SUS | 6 | | | | | | 34 | | 26 | 9.5 | 13.5 | | | | | |
| QCHC0816-03-SUS | 3 | 3～12 | 8.5 | M16×1 ( Fine Thread ) | 32 | 10 | 48 | 16.5 | 38.5 | 6.5 | 11 | 7 | 13 | 24 | 6 | 80 |
| QCHC0816-06-SUS | 6 | | | | | | 45 | | 35.5 | 9.5 | 14 | | | | | |

## Technical Information



Shear Strength

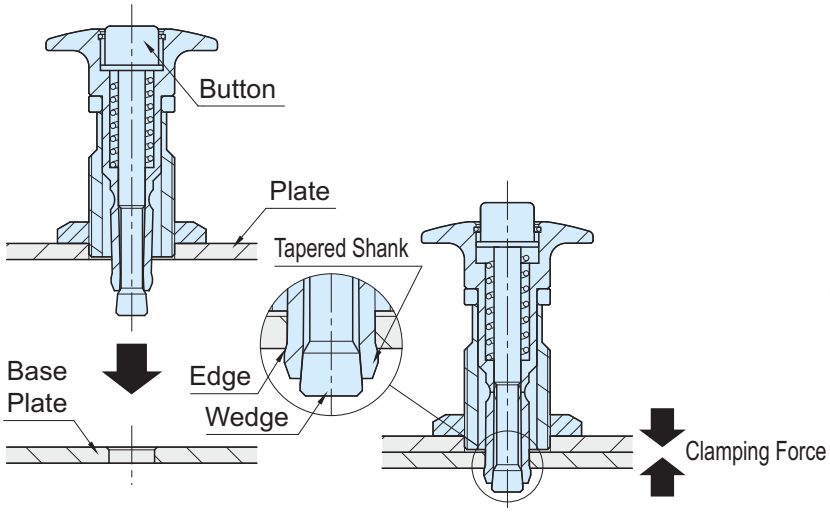


Tensile Strength

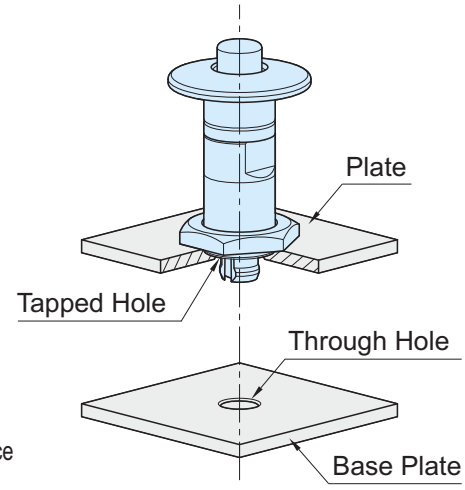
| Part Number | Heat Resistant Temperature ( ℃ ) | Shear Strength ( N ) | Tensile Strength ( N ) |
|---|---|---|---|
| QCHC0612-03-SUS | 180 | 200 | 150 |
| QCHC0612-06-SUS | | | |
| QCHC0816-03-SUS | | 400 | 300 |
| QCHC0816-06-SUS | | | |

IMAO Products

## Features

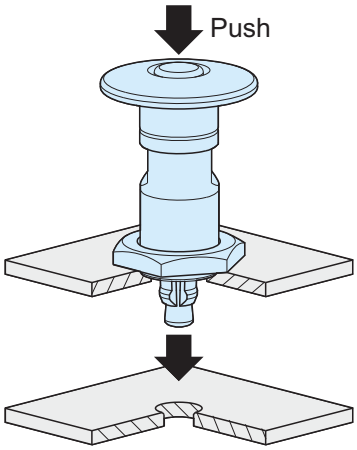



The tapered shank expanded by the wedge pushes out the edge of the hole on the base plate, and the two plates are clamped.

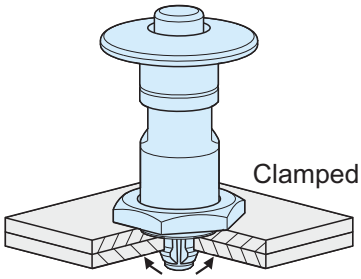



Just a tapped hole and a through hole are required.

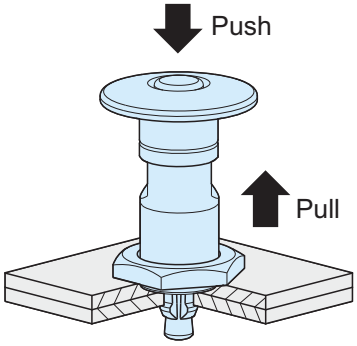
## How To Use




1. Insert Hole Holding Clamp pressing the button.



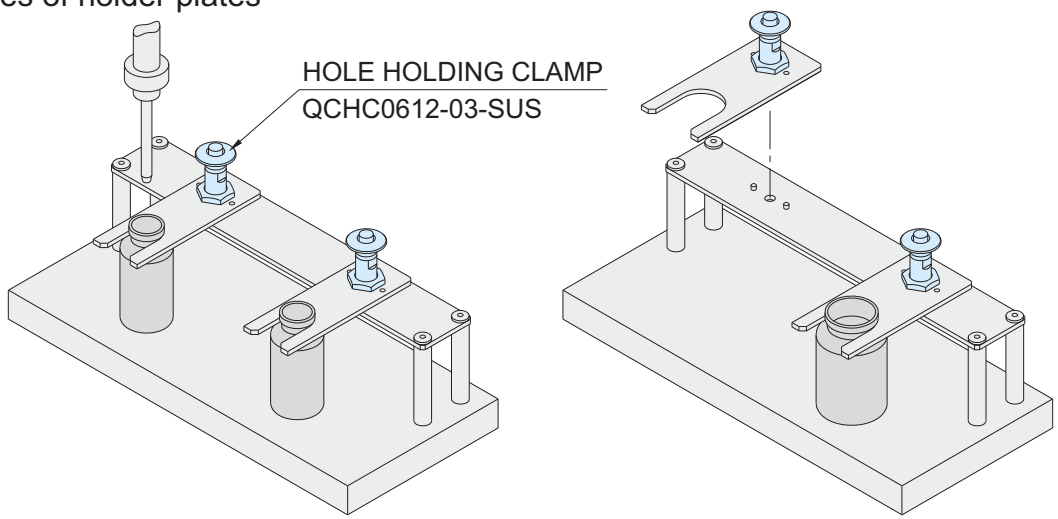

2. The slitted part on the shank expands once the button is released, and the plate is clamped.




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

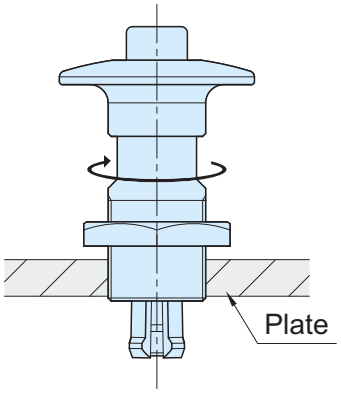
## Application Example

Changes of holder plates

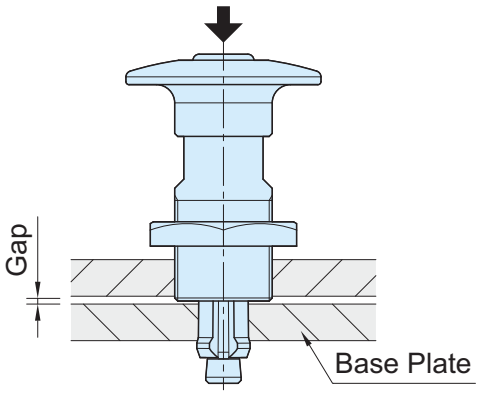



Continuing on Next Page

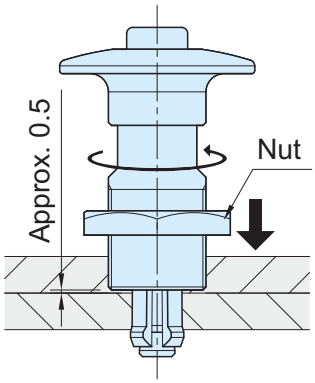
## How To Mount




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

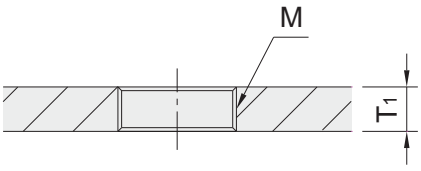



2. Insert the clamp pushing the button.




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

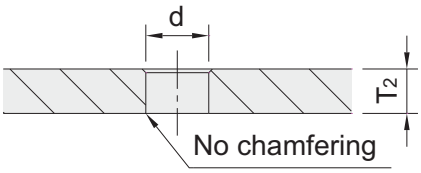
### ■Mounting Hole on Plate




| Part Number | M | $T_1$ |
|---|---|---|
| QCHC-0612 | M12×1 ( Fine Thread ) | 3～ 8 |
| QCHC-0816 | M16×1 ( Fine Thread ) | 3～12 |

### ■Mounting Hole on Base Plate

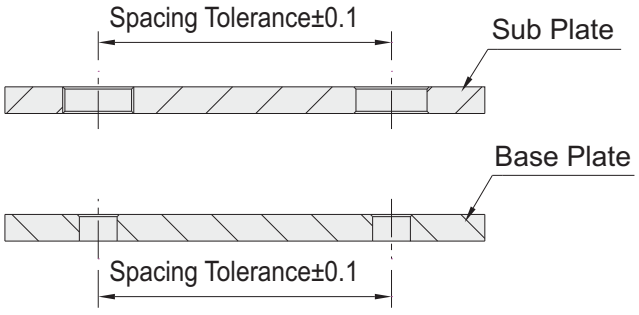
Use hard metals such as stainless steels for the base plate.




| Part Number | d ( ±0.1 ) | $T_2$ |
|---|---|---|
| QCHC0612-03-SUS | 6.5 | 3 |
| QCHC0612-06-SUS | | 6 |
| QCHC0816-03-SUS | 8.5 | 3 |
| QCHC0816-06-SUS | | 6 |

## Accuracies

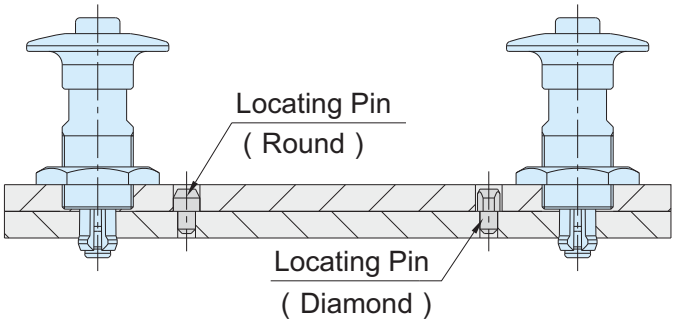
### ■Machining Accuracy




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

### ■Repeatability

Repeatability is ±0.25.




For highly accurate locating, use locating pins.

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http://**www.imao.biz/en/**

for more details of our latest information,
CAD downloads or movie data.

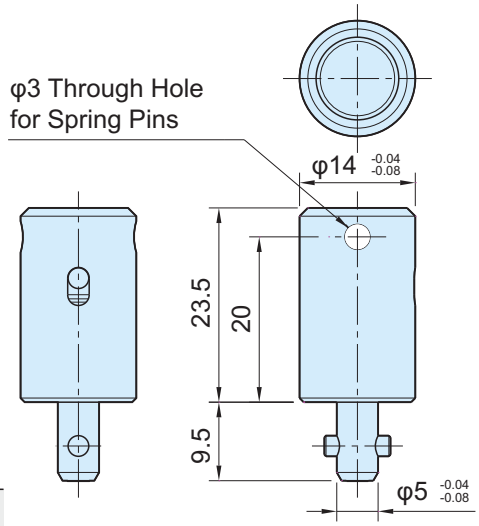
# QCSJ - Shaft Coupling Clamp

RoHS Electroless Nickel Plated Heat resistance: 200°C

★Key Point

Multipurpose coupling element

| Part Number | Clamping Force ( N ) | Weight (g) |
|---|---|---|
| **QCSJ0514A** | 30 | 25 |




| Body/Shank | Pin | Spring |
|---|---|---|
| S45C steel<br>Electroless nickel plated | SUS304<br>stainless steel | SUS304-CSP<br>stainless steel |

**Note**

Spring pins are not supplied.

# QCSJ-S,QCSJ-B - Cam Receptacles

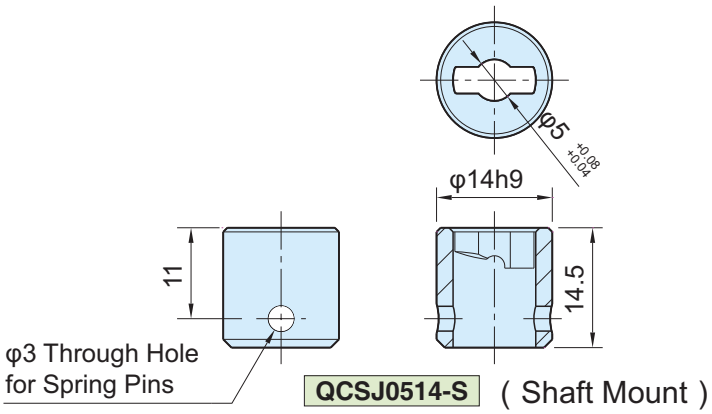
RoHS Electroless Nickel Plated

QCSJ0514-S ( Shaft Mount )

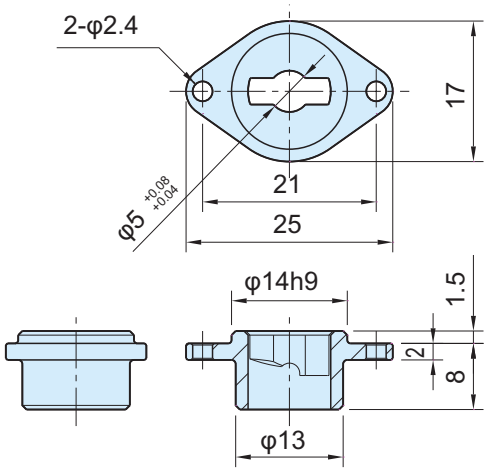
QCSJ0514-B ( Plate Mount )

| Body |
|---|
| SCM440 steel<br>Quenched and tempered<br>Electroless nickel plated |

| Part Number | Weight ( g ) |
|---|---|
| **QCSJ0514-S** | 10 |
| **QCSJ0514-B** | 8 |




QCSJ0514-S ( Shaft Mount )




QCSJ0514-B ( Plate Mount )

**Supplied With**

QCSJ0514-B

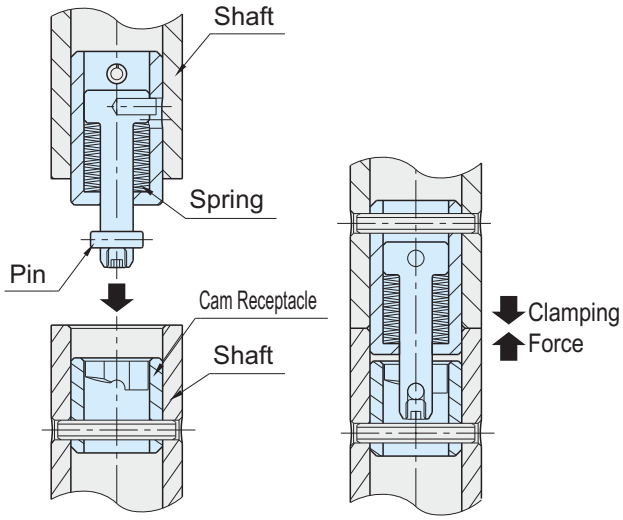
(stainless steel), M2×0.4-5L

**Note**

Spring pins to mount QCSJ0514-S are not supplied.

IMAO Products

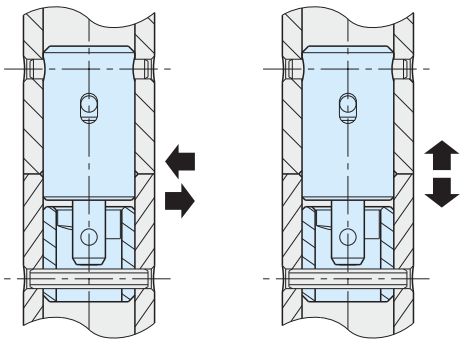
## Feature




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

## Technical Information

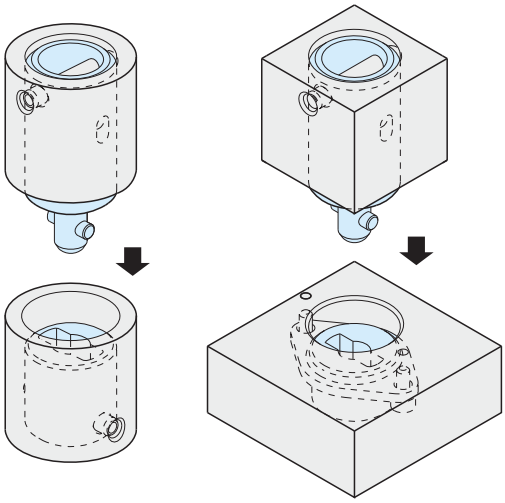
- Heatresistant Temperature 200°C
- Mechanical Strength



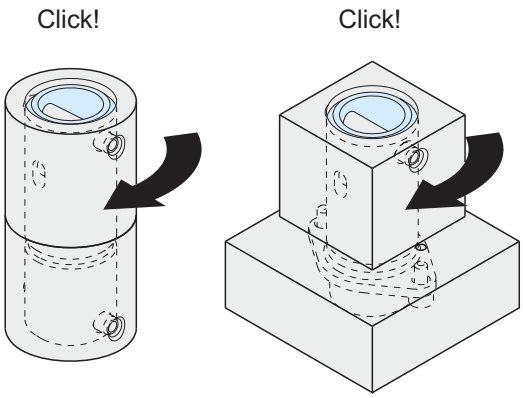
Shear Strength
1800N

Tensile Strength
1200N

## How To Use

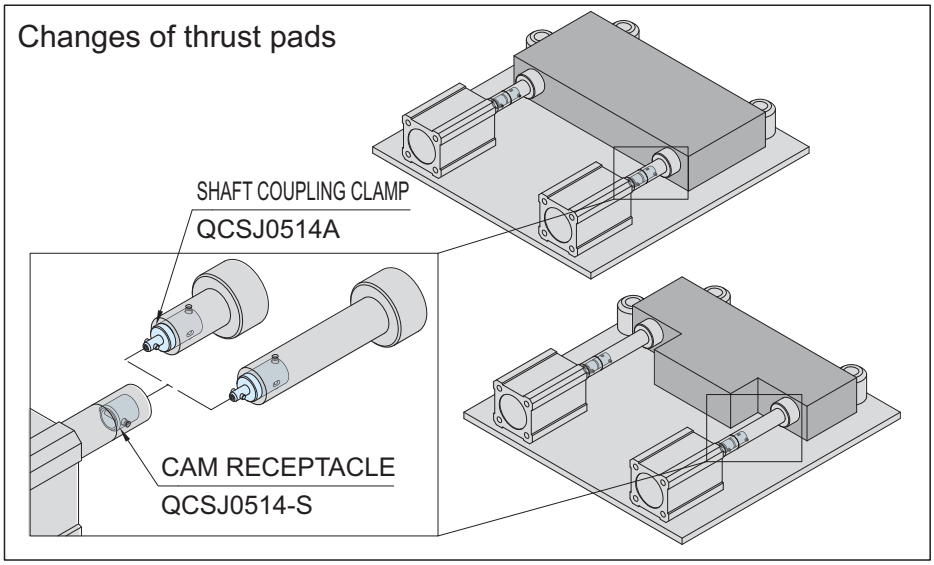


1. Insert the shaft into the keyway of Cam Receptacle.



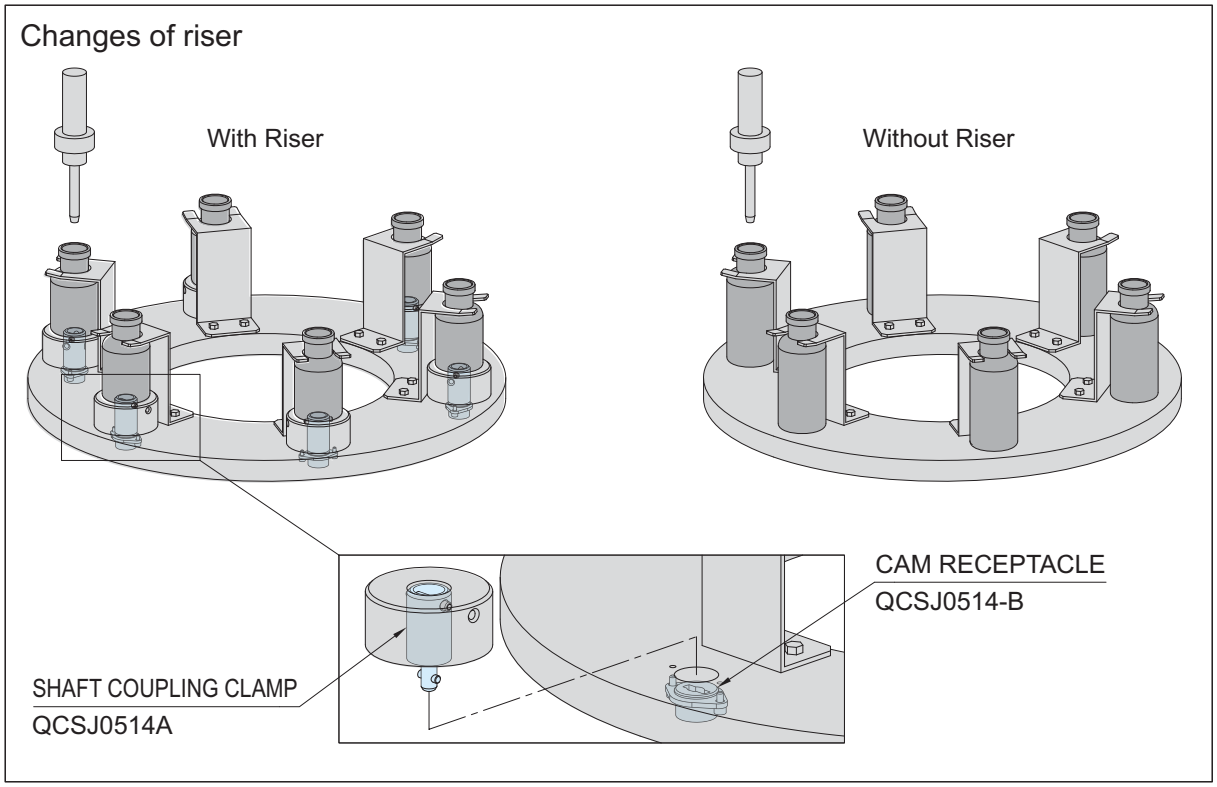

2. Turn the shaft or block for 90°to clamp. The element clicks when clamped. For unclamping, follow back these steps.

## Application Examples

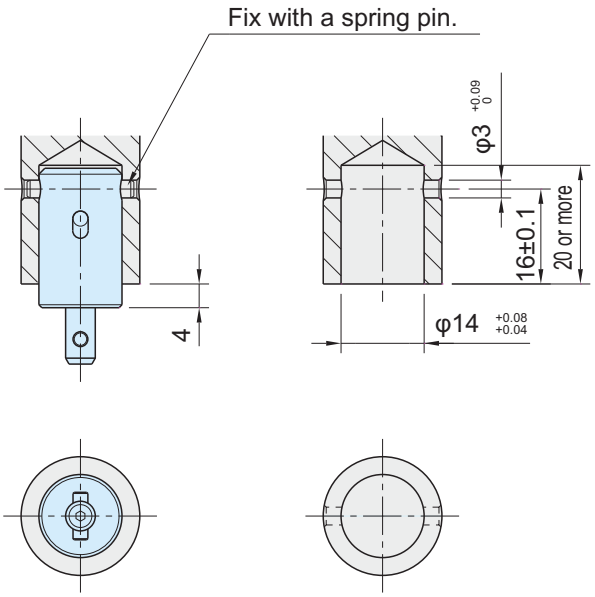



Continuing on Next Page

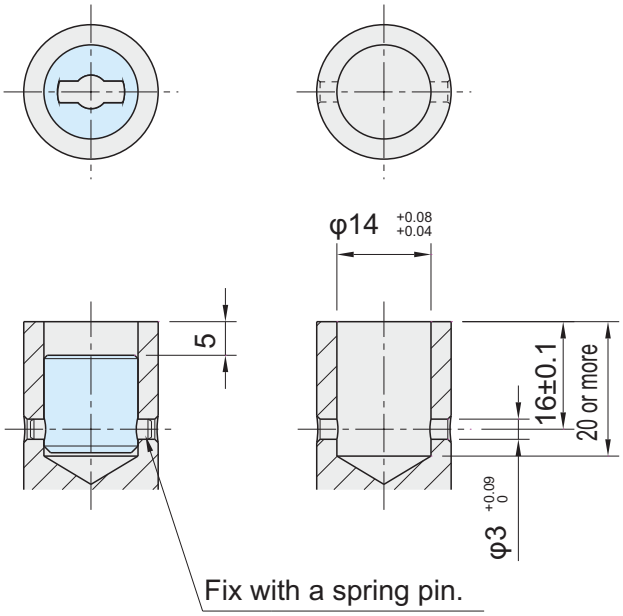
## Application Examples



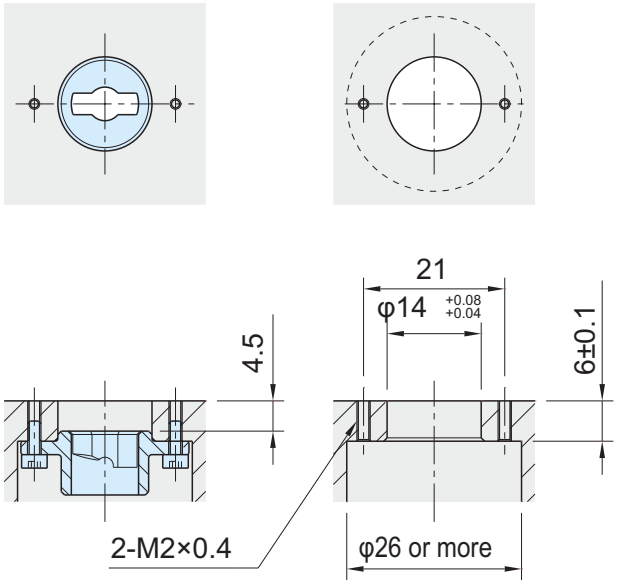

## How To Mount Shaft Coupling Clamp



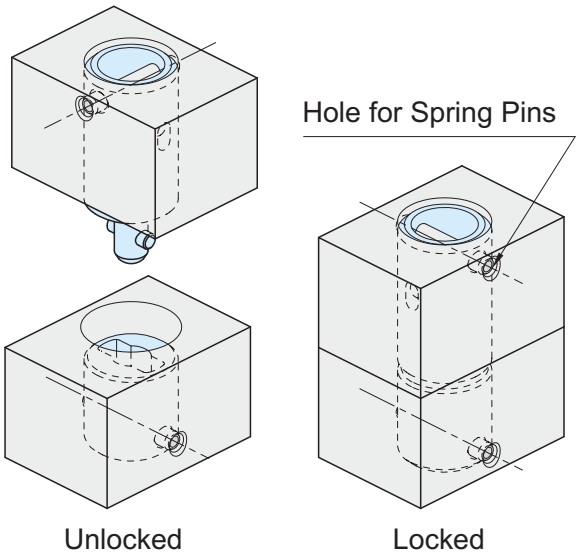
## How To Mount Cam Receptacle(Shaft Mount)




## How To Mount Cam Receptacle(Plate Mount)



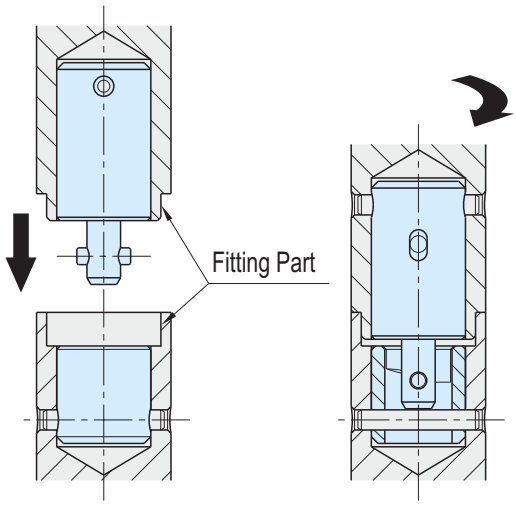

## Note




Pay attention to the direction of holes for spring pins.

## Repeatability

Repeatability is ±0.08.




Prepare male and female fittings for highly accurate locating.

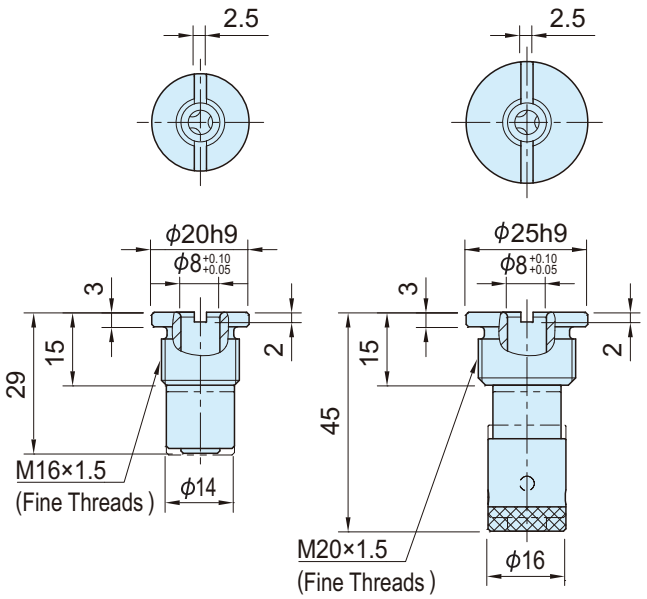
# QCBA/QCBAS - Ball-Lock Clamping Receptacles

RoHS 180°C

QCBA0816
( Standard )

QCBAS0820
( Safety Lock )

| Type | Body/Collar | Balls | Coiled Spring | Locking Knob |
|---|---|---|---|---|
| QCBA0816 | Steel (S45C) Electroless nickel plated | Stainless steel (SUS440C) Quenched and tempered | Stainless steel (SUS304WPB) | – |
| QCBAS0820 | | | | Steel (S45C) Electroless nickel plated |




QCBA0816 ( Standard )

QCBAS0820 ( Safety Lock )

**QCBA0816** ( Standard )

| Part Number | Clamping Force ( N ) | Weight ( g ) |
|---|---|---|
| QCBA0816A | 7 | 30 |
| QCBA0816B | 15 | 30 |

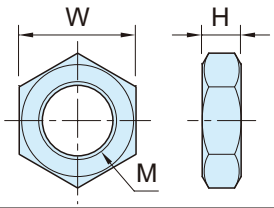
**QCBAS0820** ( Safety Lock )

| Part Number | Clamping Force ( N ) | Weight ( g ) |
|---|---|---|
| QCBAS0820A | 7 | 65 |
| QCBAS0820B | 15 | 65 |

**Related Product Page**

PW Plunger Wrench

Nut (Stainless Steel)
(Separately Sold)

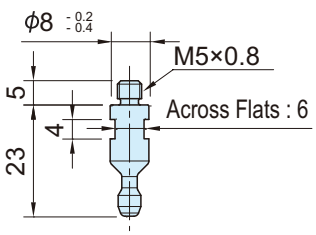



| Part Number | M (Fine Threads ) | H | W | Proper Ball-Lock Clamping Receptacles |
|---|---|---|---|---|
| NDX16-NUT-SUS | M16 x 1.5 | 8 | 24 | QCBA0816 |
| NDX20-NUT-SUS | M20 x1.5 | 10 | 30 | QCBAS0820 |

# QCBA-M - Ball-Lock Clamping Pins

RoHS 180°C

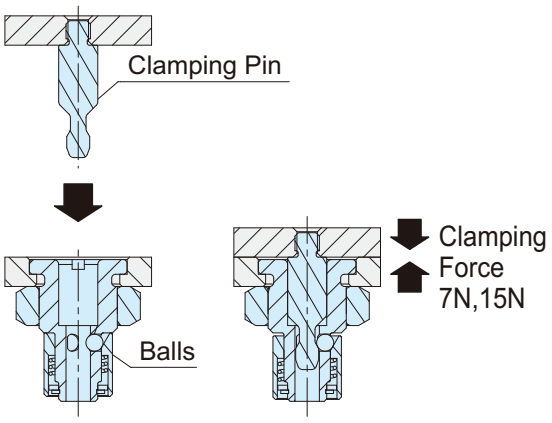
| Part Number | Weight ( g ) |
|---|---|
| QCBA0816-M5 | 7 |




| Body |
|---|
| Steel (S45C)<br>Quenched and tempered<br>Electroless nickel plated |

IMAO Products

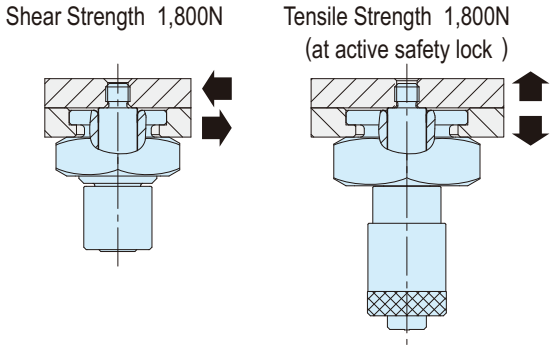
## Feature



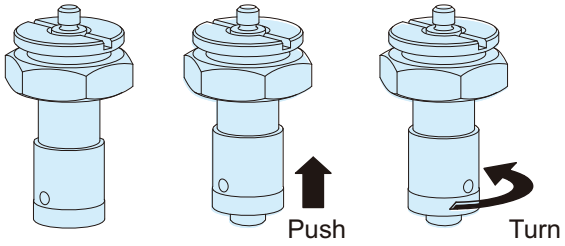

The 3 balls pull in the clamping pin.

## Technical Information

- Heat resistance : up to 180℃
- Mechanical Strength

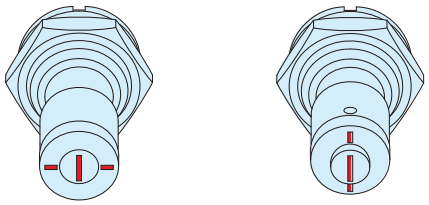



## How To Operate Safety Lock




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

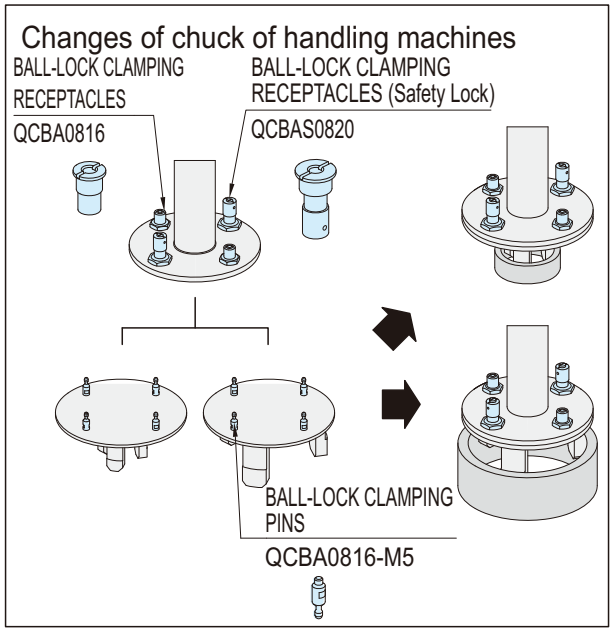
## Safety Locking Mode

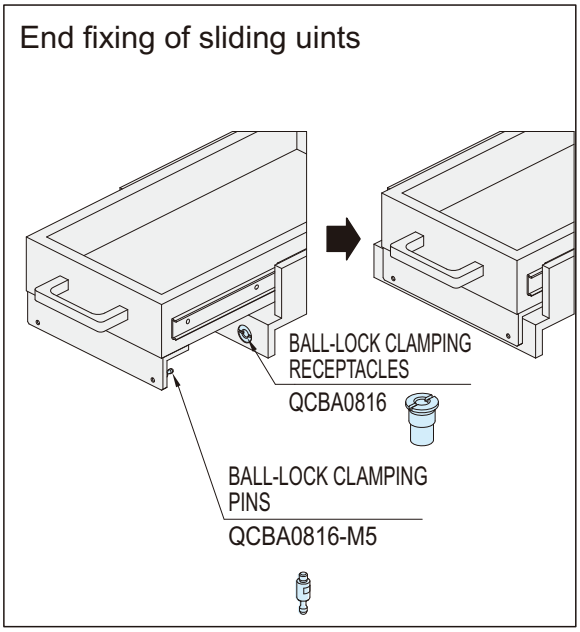


Inactive Mode  Active Mode

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

## Application Examples

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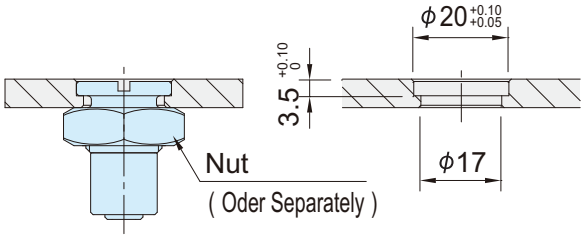
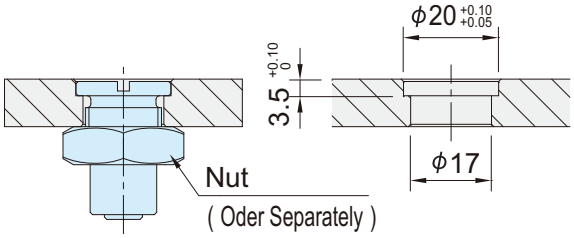
## Installation Instructions for "Standard" Ball-Lock Clamping Receptacles

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

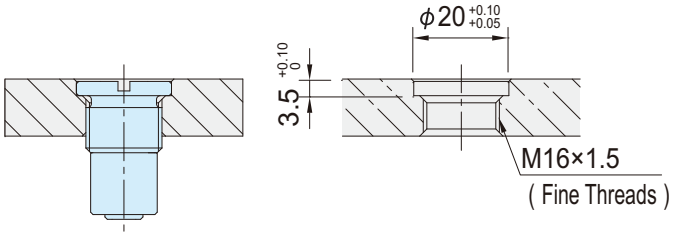



6mm

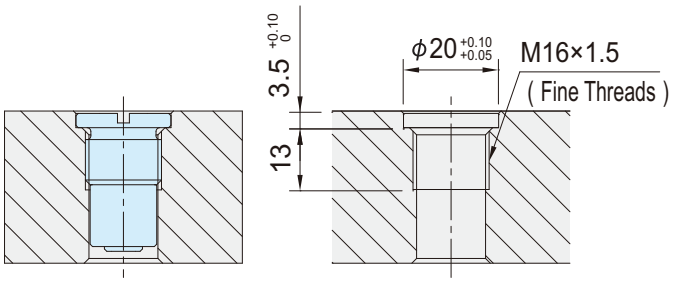



10mm

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



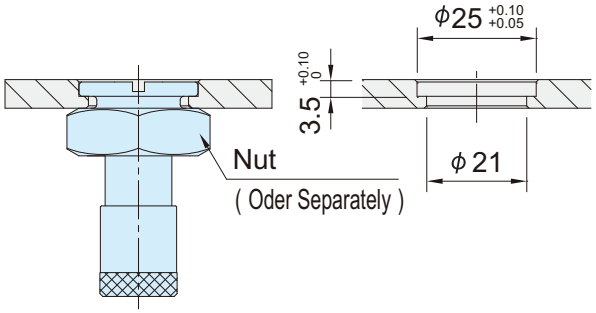

Installation in a subplate



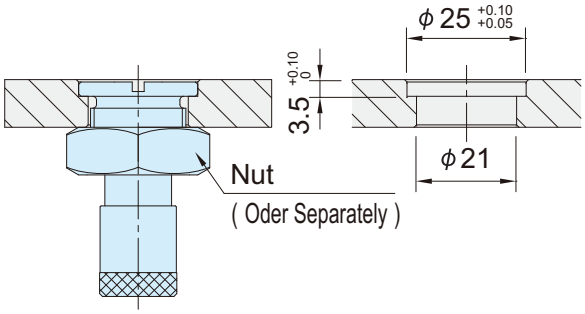

Installation in a block

## Installation Instructions for "Safety-Lock" Ball-Lock Clamping Receptacles

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

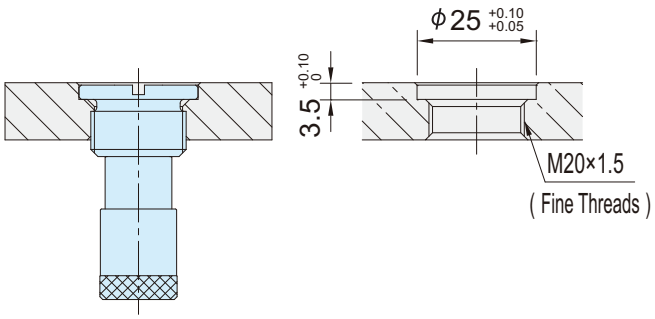



6mm

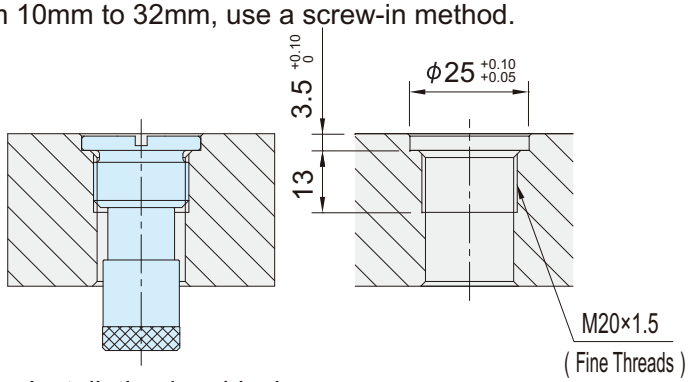



10mm

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



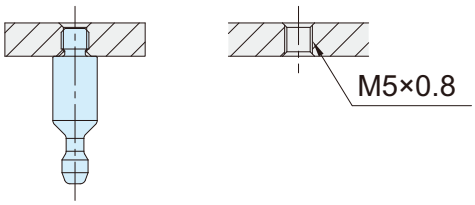

Installation in a subplate



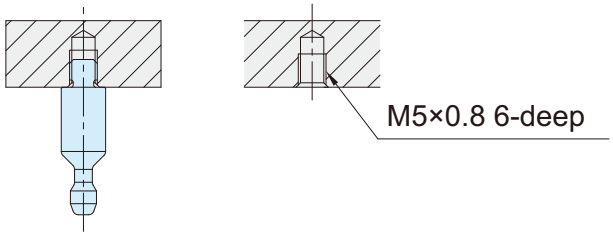

Installation in a block

## Installation Instructions for Ball-Lock Clamping Pins

Installation in 6mm-thick plates



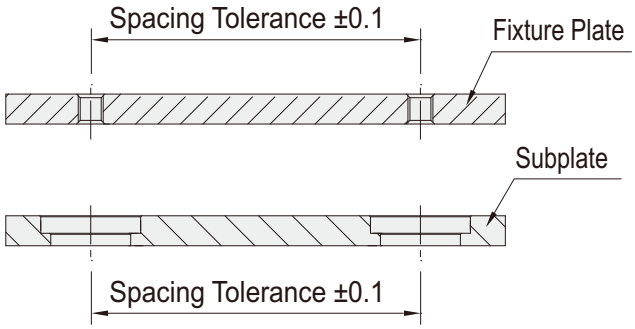

Installation in 6mm-thick plates




Installation in 6mm-thick plates

## Accuracies

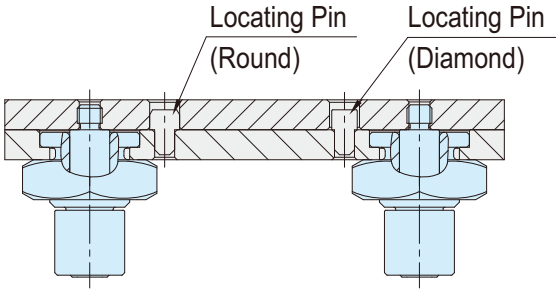
### ■Machining Accuracy




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

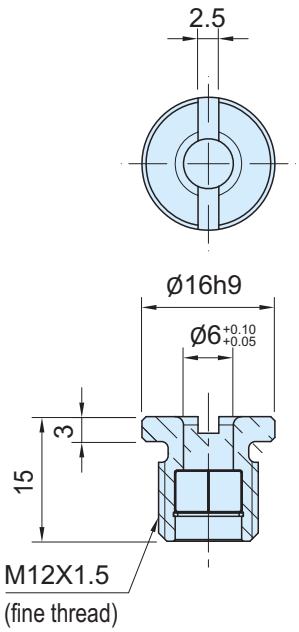
### ■Repeatability

Repeatability of ±0.25 can be maintained




For highly accurate locationg, use locating pins.

# QCMA - Magnet-Lock Clamping Receptacles



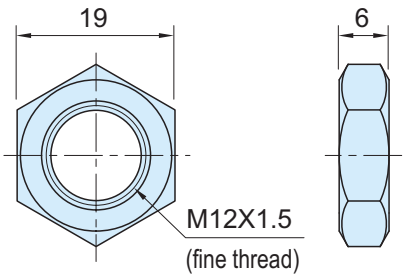

| Body | Magnet |
|---|---|
| Stainless Steel(SUS304) | Neodymium |

| Part Number | Clamping Force (N) | Weight (g) |
|---|---|---|
| **QCMA0612A** | 7 | 12 |

**Related Product Page**

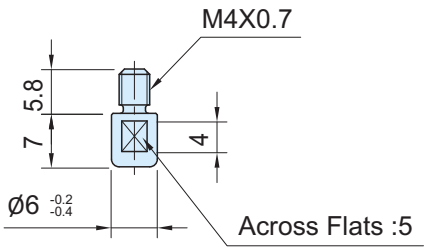
PW Plunger Wrench

**Separately Sold** **Nut (Stainless Steel)**




| Part Number |
|---|
| **NDX12-NUT-SUS** |

# QCMA-M - Magnet-Lock Clamping Pins

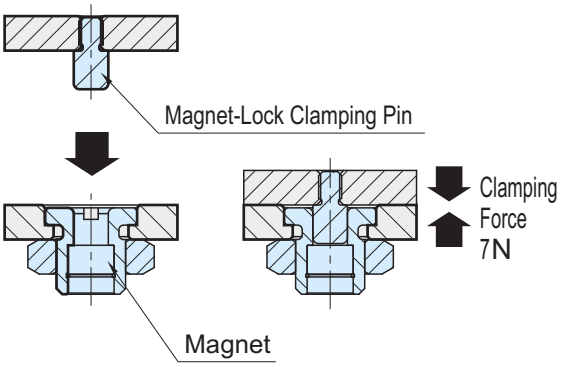



| Body/Stud |
|---|
| Steel(S45C)<br>Electroless nickel plated |

| Part Number | Weight (g) |
|---|---|
| **QCMA0612-M4** | 2 |

IMAO Products

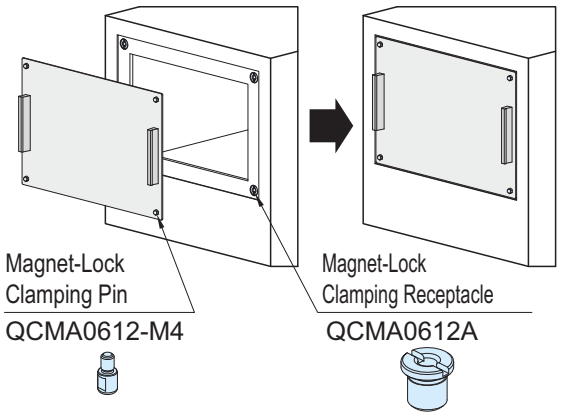
## Feature




The magnet pulls in the clamping pin.

## Application Example

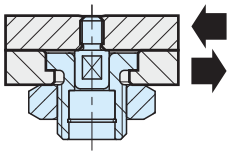
**Installation/removal of maintenance cover plate of machines**




## Technical Information

- Heat resistance : up to 80°C
- Mechanical Strength

Shear Strength 900N

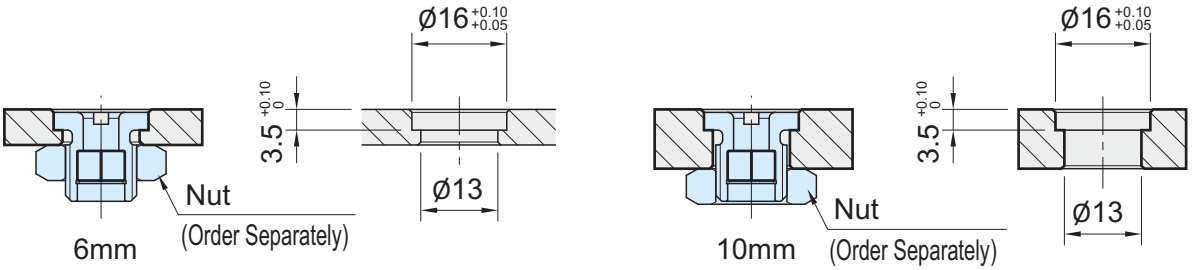


IMAO Products

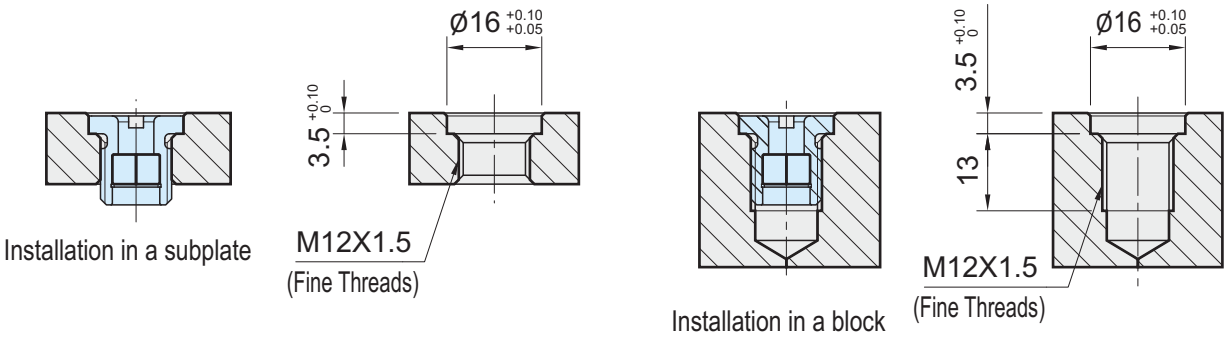
Continuing on Next Page

## Installation Instructions for Magnet-Lock Clamping Receptacles

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

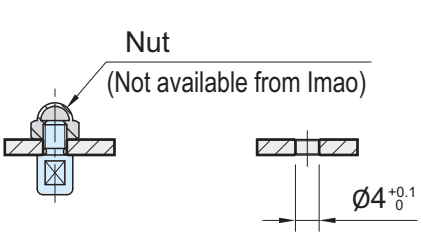



For installation in a subplate of thickness over 10mm, use a screw-in method.

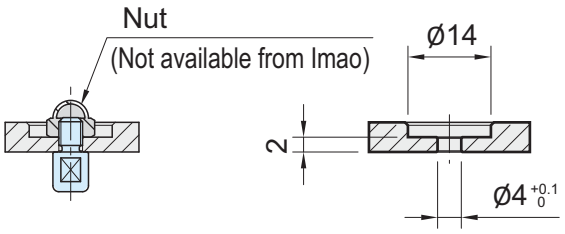



## Installation Instructions for Magnet-Lock Clamping Pins

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

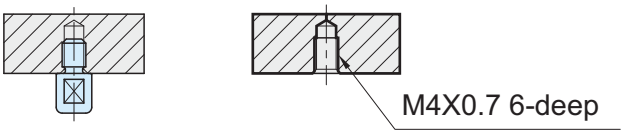



Installation in a plate of thickness ranging from 2 to 2.6mm.



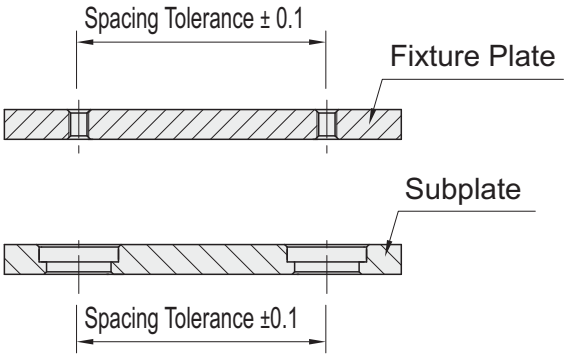

Installation in fixture plates of thickness ranging from over 2.6mm to 6mm.

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



## Accuracies

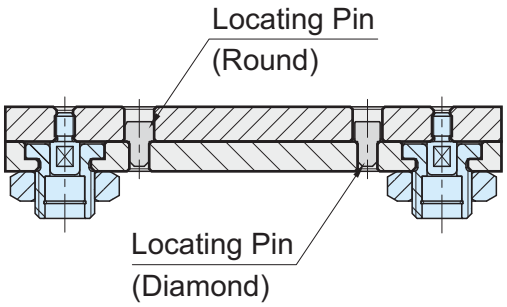
### Machining Accuracy




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

### Repeatability

Repeatability of ±0.25 can be maintained




For highly accurate locationg, use locating pins.

## ONE-TOUCH SLIDING LOCKS

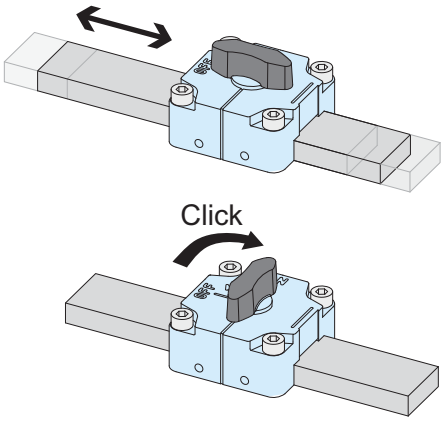
**New solution for sliding adjustment!**

# ONE-TOUCH SLIDING LOCKS

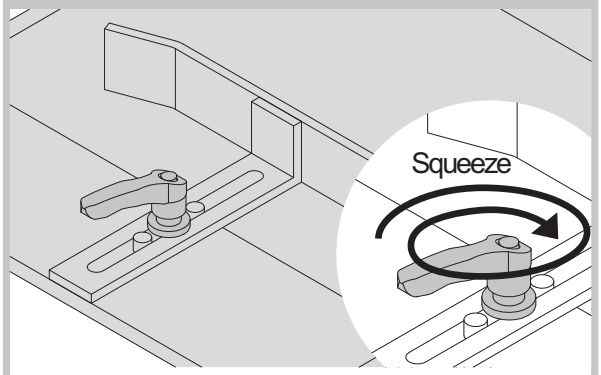
What is One-touch Sliding Lock?

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.

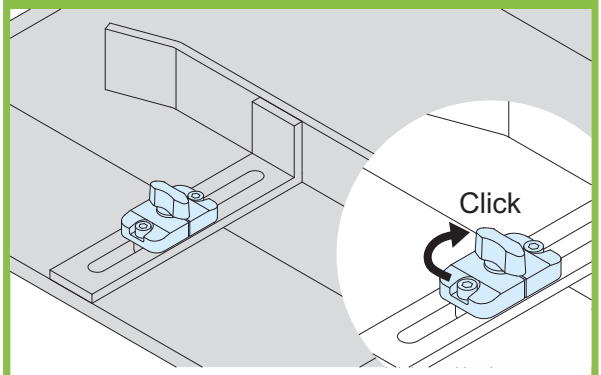



### Conventional Method



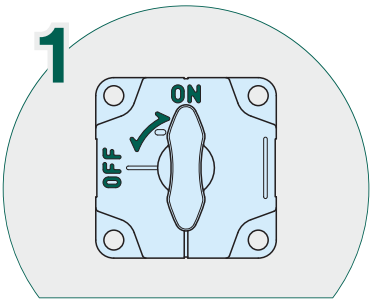

Required to tighten by main force to prevent misalignment.

### IMAO's Method



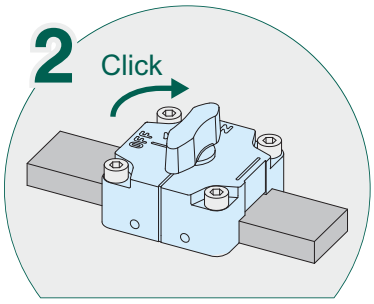

Prevents misalignment with easy operation!

## Features



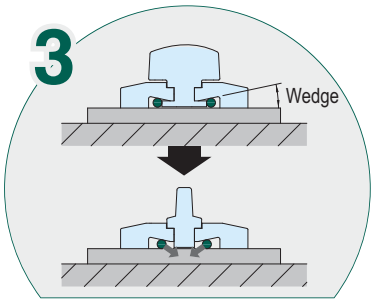

### High Visibility

Easy-to-read ON/OFF position




### Leveling of Operation

The knob clicks
when it is locked/unlocked.

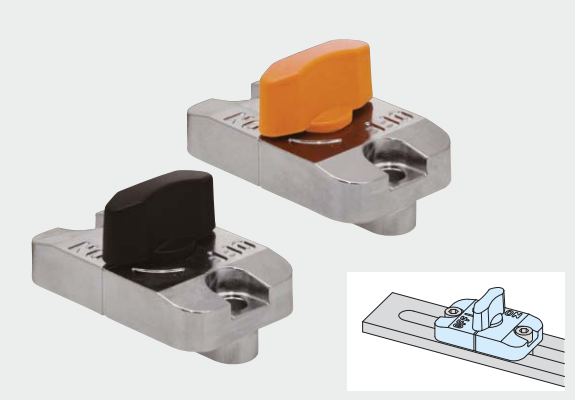



### Secure Locking

Secure locking with
wedge structure.

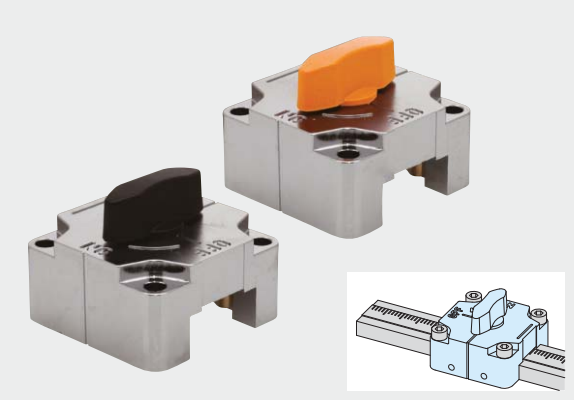
## Lineups

### Sliding Locks For Slotted Hole



For slotted holes

### Sliding Locks For Square Bar

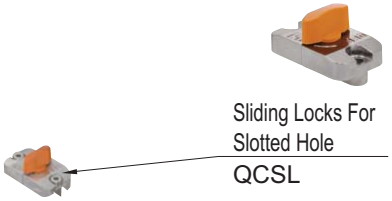


For commercially-available square bars

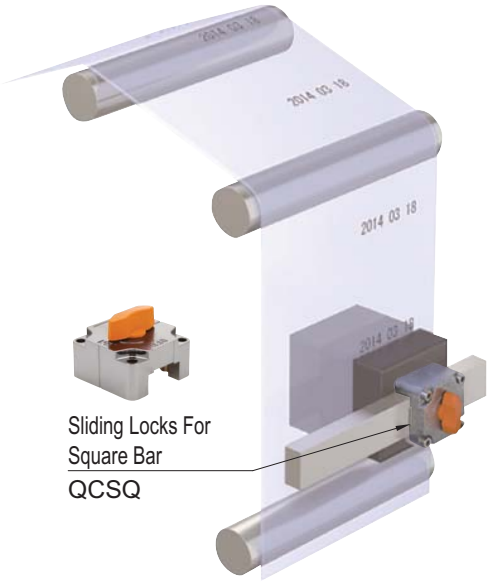
## Applications

### For Adjusting Camera Position


### For Adjusting Workpiece Guide




### For Adjusting Stamp Base Position



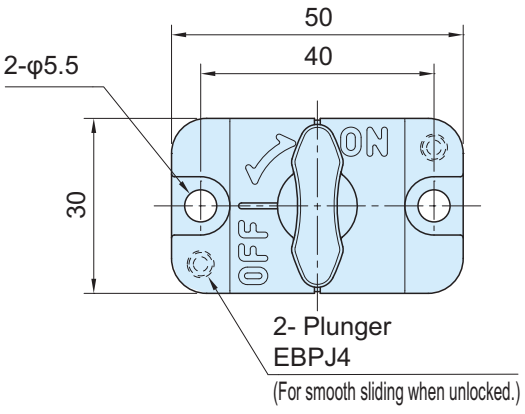
# QCSL - Sliding Locks
## For Slotted Hole

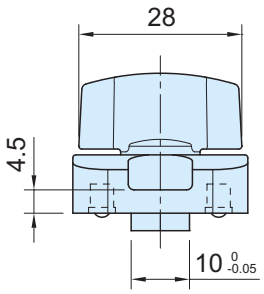
| Type | Body | Knob | Shafts / Wedge | Ball Plunger |
|---|---|---|---|---|
| QCSL-OG<br>QCSL-BK | Die-cast zinc<br>Chrome plated | Polyamide<br>(glass-fiber reinforced) | Stainless steel | Polyacetal |
| QCSL-S | | SCS13 stainless steel<br>(Equivalent to SUS304) | | |

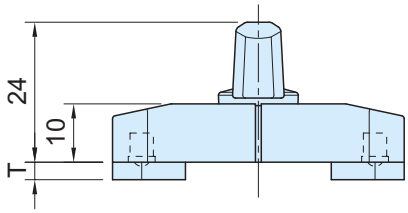
QCSL-OG
(Plastic Knob, Orange)

QCSL-BK
(Plastic Knob, Black)

QCSL-S
(Metal Knob)

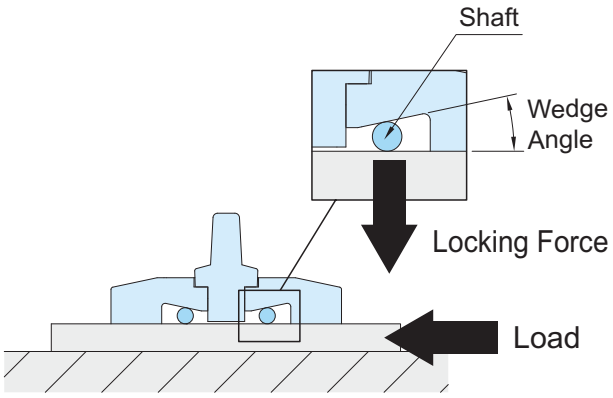


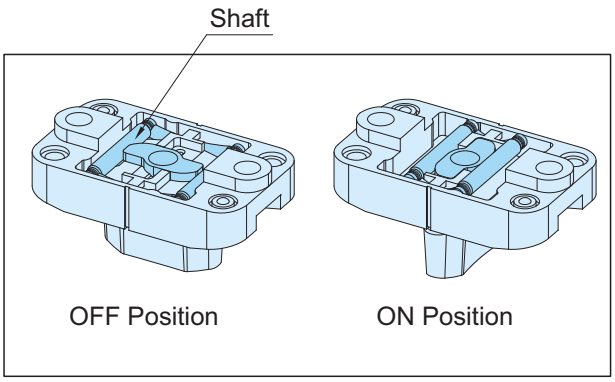




### ■Locking Mechanism

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

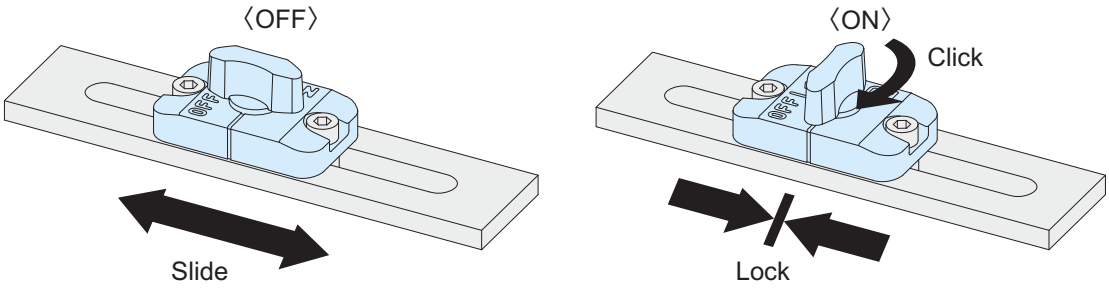



| QCSL-OG (Plastic Knob, Orange) | | QCSL-BK (Plastic Knob, Black) | | QCSL-S (Metal Knob) | | T |
|---|---|---|---|---|---|---|
| Part Number | Weight ( g ) | Part Number | Weight ( g ) | Part Number | Weight ( g ) | (+0.2 0) |
| QCSL1003-OG | 80 | QCSL1003-BK | 80 | QCSL1003-S | 95 | 3 |
| QCSL1006-OG | 80 | QCSL1006-BK | 80 | QCSL1006-S | 95 | 6 |

## How To Use

### ■Operating Instructions

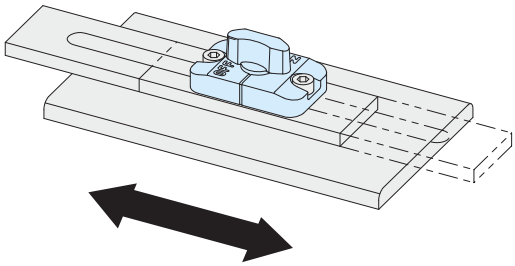



The slide is locked when the knob is at “ON” position.

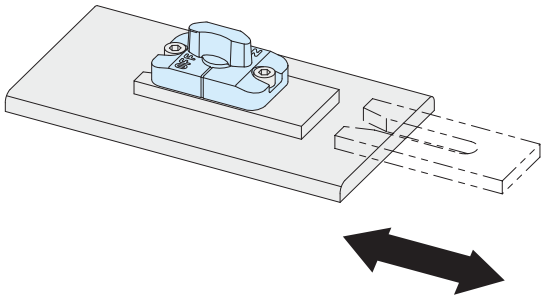
### ■Usage Instructions

* Refer to the “Notes” for safety use.

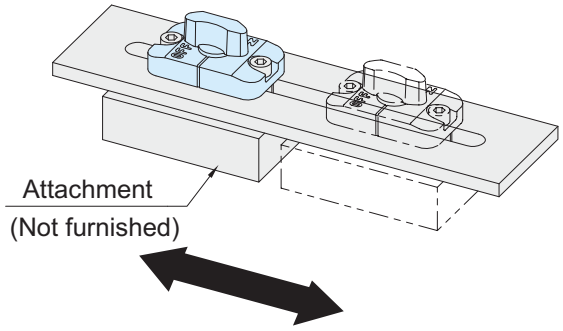
①Slide the steel bar.



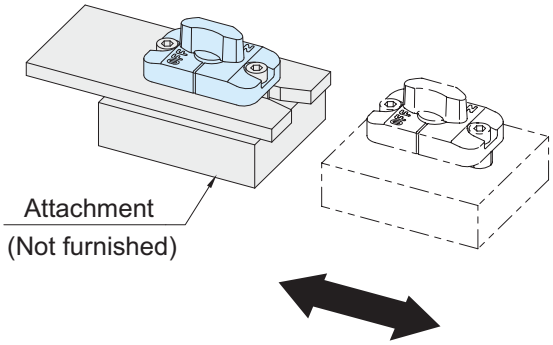
②Attach/remove the steel bar.



③Slide the Sliding Locks For Slotted Hole.

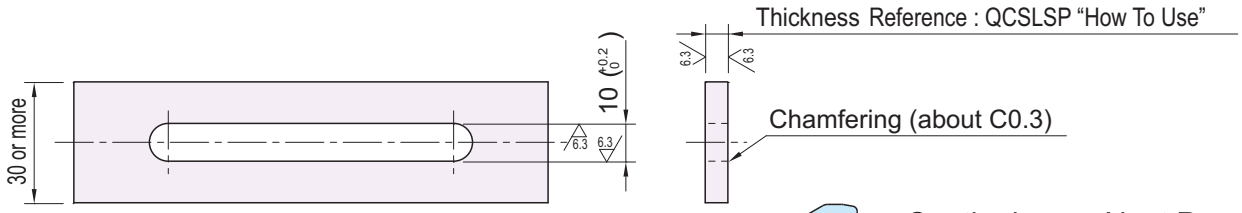



④Attach/remove the Sliding Locks For Slotted Hole.




### ■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.

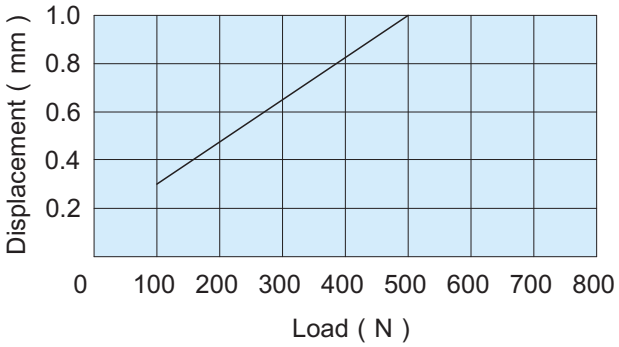


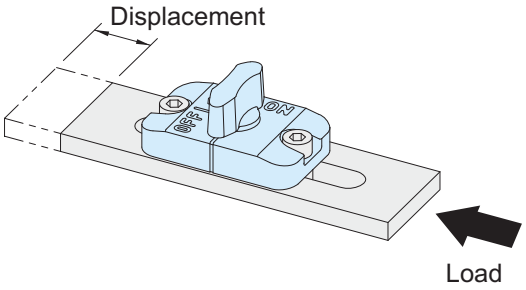

Continuing on Next Page

# QCSL - Sliding Locks
# For Slotted Hole

## 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.

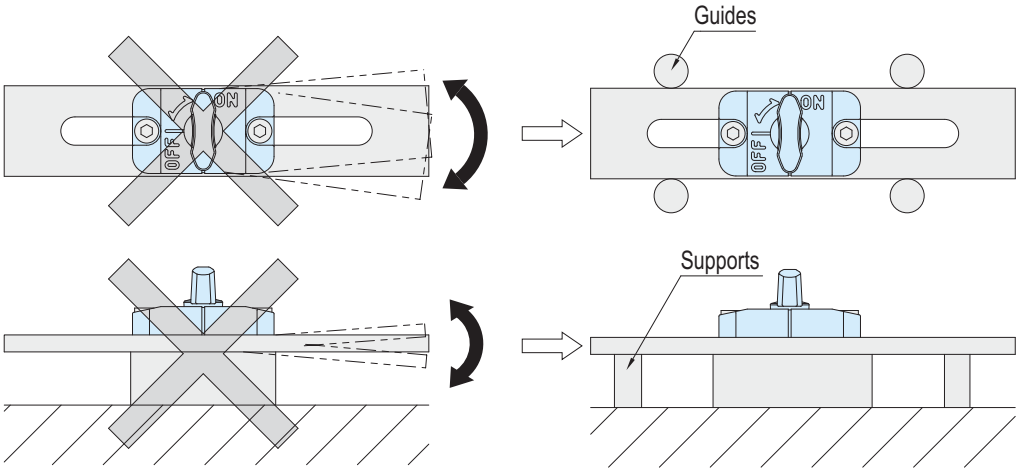
## Technical Information

- Heat resistance : Up to 90℃
- Rated load : Up to 500N

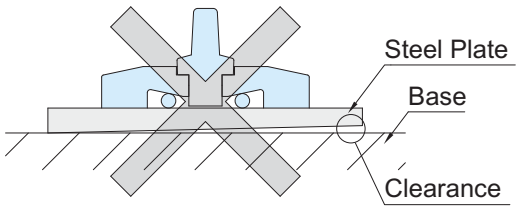
## Notes

The following conditions may cause displacement increasing or misalignment.

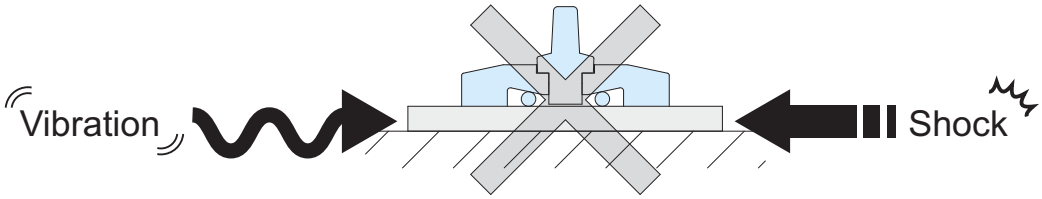
1. Use under slippage or chattering caused by vertical or horizontal loads



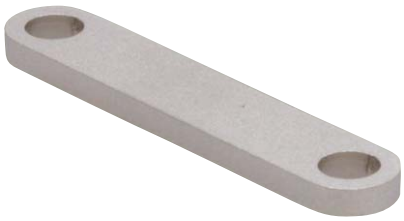

2. Use with a clearance between the steel bar and the base when the Sliding Locks at "ON" position.



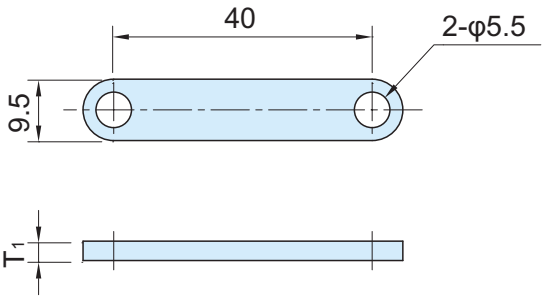

3. Use under excess shock or vibration



RoHS



| Body |
|---|
| SUS304 stainless steel |

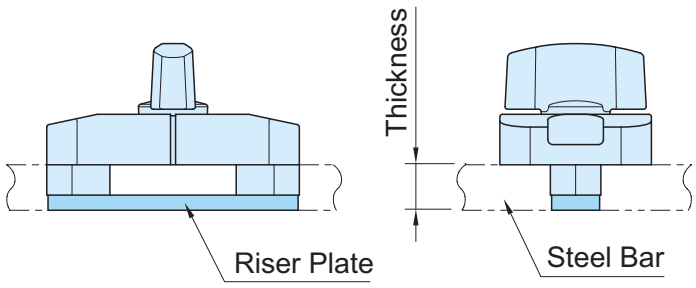



| Part Number | $T_1$ ( ±0.1 ) | Weight ( g ) |
|---|---|---|
| **QCSLSP1002** | 2 | 6 |
| **QCSLSP1003** | 3 | 10 |

## How To Use

### ■How To Use Riser Plate

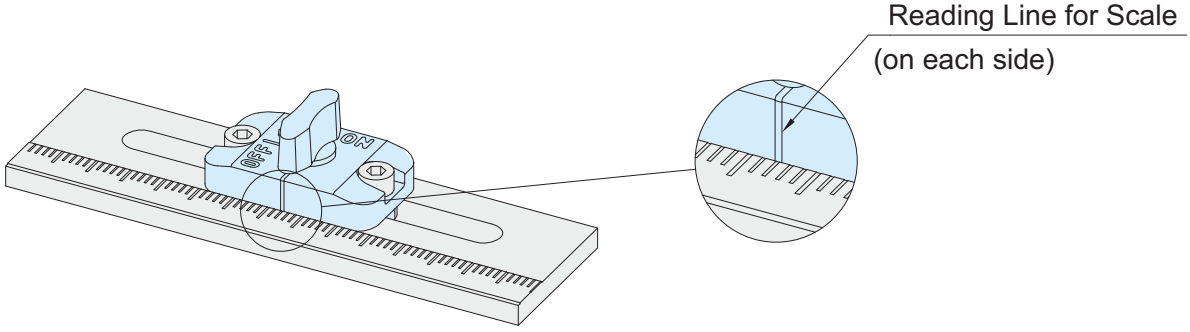
Can be used for various steel thicknesses by attaching the Riser Plates (to be ordered separately).




| Type | | Part No. of Riser Plates | Thickness of Steel Bar(h14) ( mm ) |
|---|---|---|---|
| QCSL | 1003 | - | 3 $(^{0}_{-0.25})$ |
| | | QCSLSP1002 | 5 $(^{0}_{-0.3})$ |
| | 1006 | - | 6 $(^{0}_{-0.3})$ |
| | | QCSLSP1002 | 8 $(^{0}_{-0.36})$ |
| | | QCSLSP1003 | 9 $(^{0}_{-0.36})$ |

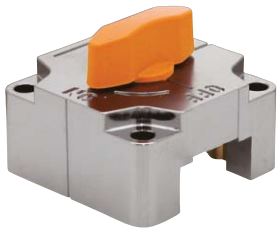
### ■How To Use Scale Plate

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



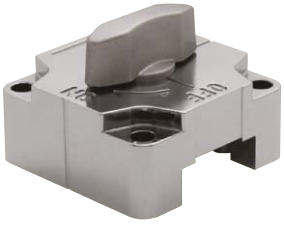
# QCSQ - Sliding Locks
## For Square Bar

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

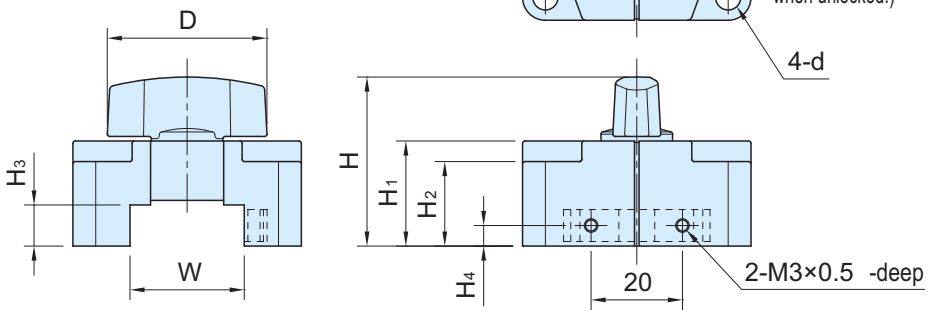


QCSQ-OG
(Plastic Knob, Orange)

QCSQ-BK
(Plastic Knob, Black)

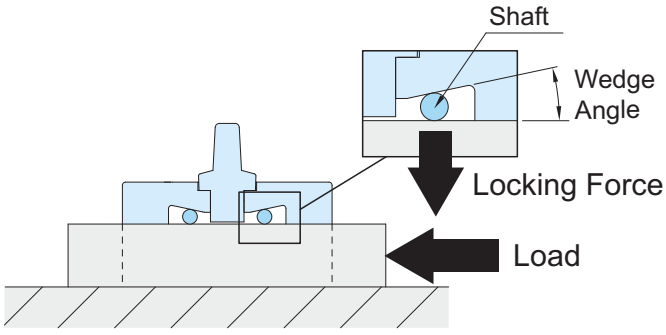


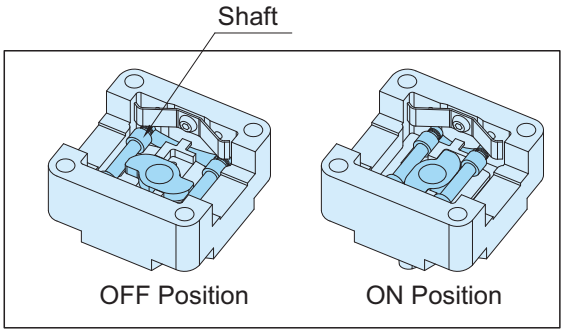
QCSQ-S
(Metal Knob)




### ■Locking Mechanism

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



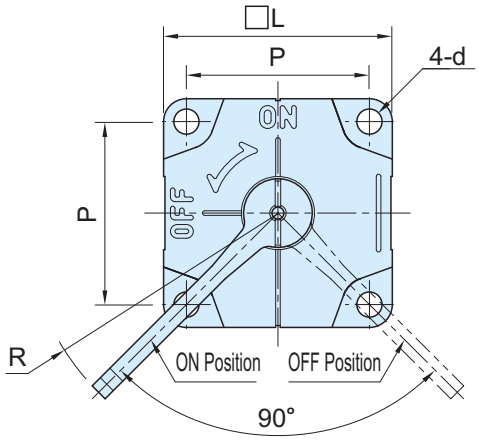

| Size | | L | H | W ($^{+0.05}_{0}$) | $H_3$ ($^{+0.2}_{0}$) | D | $H_1$ | $H_2$ | $H_4$ | P | d |
|---|---|---|---|---|---|---|---|---|---|---|---|
| QCSQ-OG<br>QCSQ-BK<br>QCSQ-S | 1212 | 40 | 36 | 12 | 12 | 28 | 22 | 18.5 | 6 | 32 | 4.5 |
| | 1616 | | 40 | 16 | 16 | | 26 | 22.5 | 8 | | |
| | 2509 | 50 | 37 | 25 | 9 | 35 | 23 | 18.5 | 4.5 | 40 | 5.5 |
| | 2512 | | 40 | | 12 | | 26 | 21.5 | 6 | | |
| | 3212 | | | 32 | | | | | | | |
| | 3216 | | 44 | | 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 |

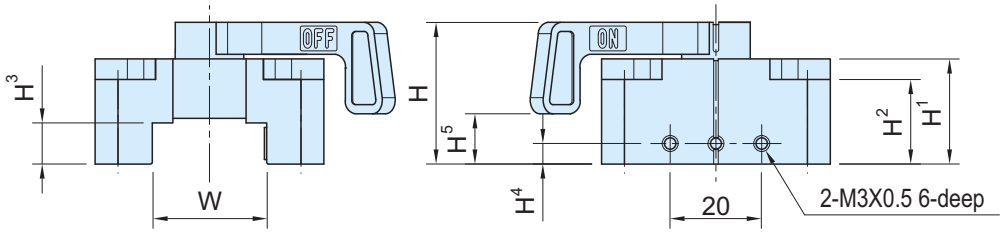
# QCSQ-L - Sliding Locks
## For Square Bar With Handle

RoHS

| 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.

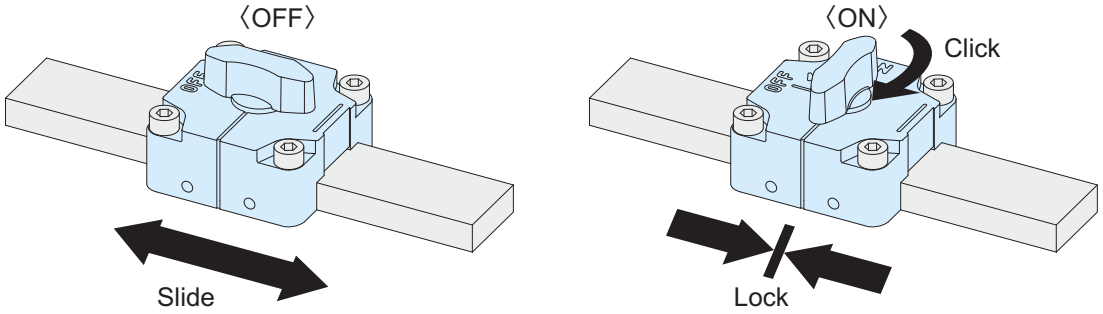



| Part Number | L | H | W (+0.05 0) | H3 (+0.2 0) | H1 | H2 | H4 | R | H5 | P | d | Weight ( g ) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QCSQ1212-L | 40 | 29 | 12 | 12 | 22 | 18.5 | 6 | 46 | 11 | 32 | 4.5 | 150 |
| QCSQ1616-L | | 33 | 16 | 16 | 26 | 22.5 | 8 | | 15 | | | 160 |
| QCSQ2509-L | 50 | 31 | 25 | 9 | 23 | 18.5 | 4.5 | 55.5 | 11 | 40 | 5.5 | 250 |
| QCSQ2512-L | | 34 | | 12 | 26 | 21.5 | 6 | | 14 | | | 260 |
| QCSQ3212-L | | | 32 | | | | | | | | | 250 |
| QCSQ3216-L | | 38 | | 16 | 30 | 25.5 | 8 | | 18 | | | 270 |

Continuing on Next Page

## How To Use

### ■Operating Instructions

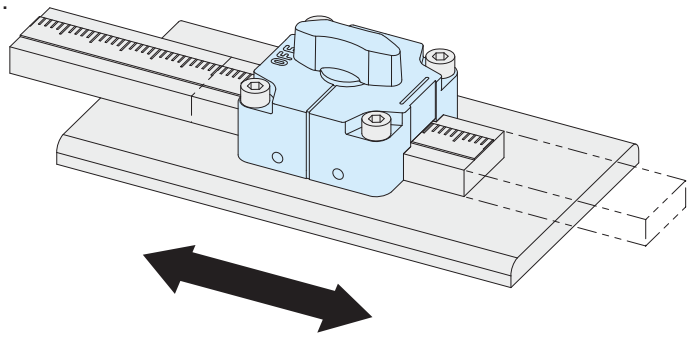



The slide is locked when the knob is at “ON” position.

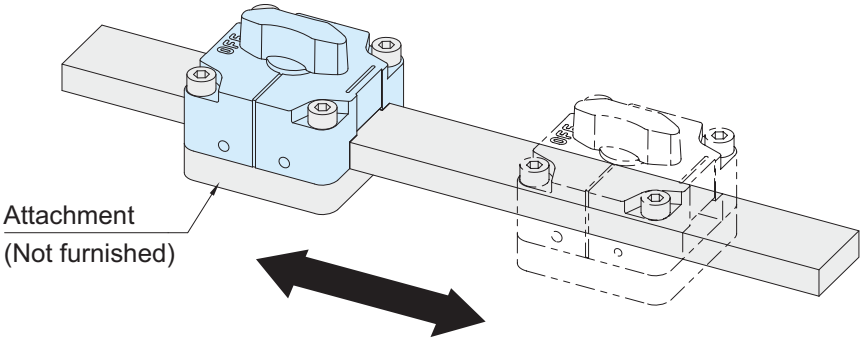
### ■Usage Instructions

* Refer to the “Notes” for safety use.

①Slide the steel bar.

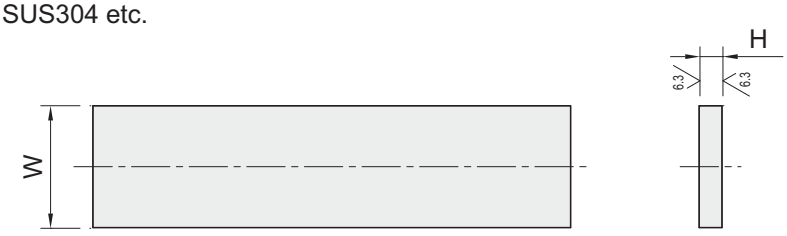


②Slide the Sliding Locks For Square Bar.




### ■Steel Bar Materials

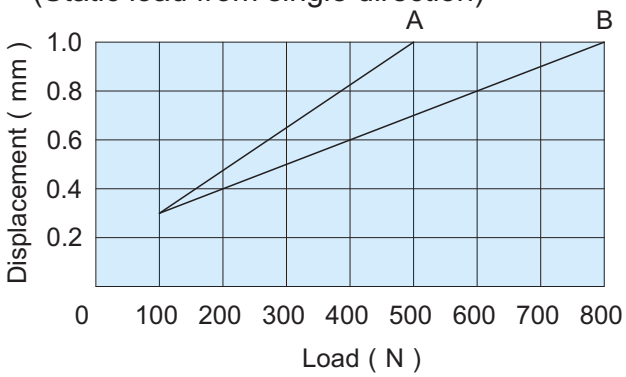
・ Usable Materials: Flat bar (JIS h14 grade) made of SS400, S45C or SUS304 etc.



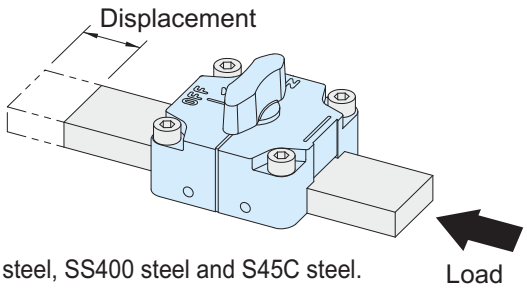

| Size | | W | H |
|---|---|---|---|
| QCSQ | 1212 | 12 ($^{0}_{-0.43}$) | 12 ($^{0}_{-0.43}$) |
| | 1616 | 16 ($^{0}_{-0.43}$) | 16 ($^{0}_{-0.43}$) |
| | 2509 | 25 ($^{0}_{-0.52}$) | 9 ($^{0}_{-0.36}$) |
| | 2512 | | 12 ($^{0}_{-0.43}$) |
| | 3212 | 32 ($^{0}_{-0.62}$) | |
| | 3216 | | 16 ($^{0}_{-0.43}$)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

## 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.

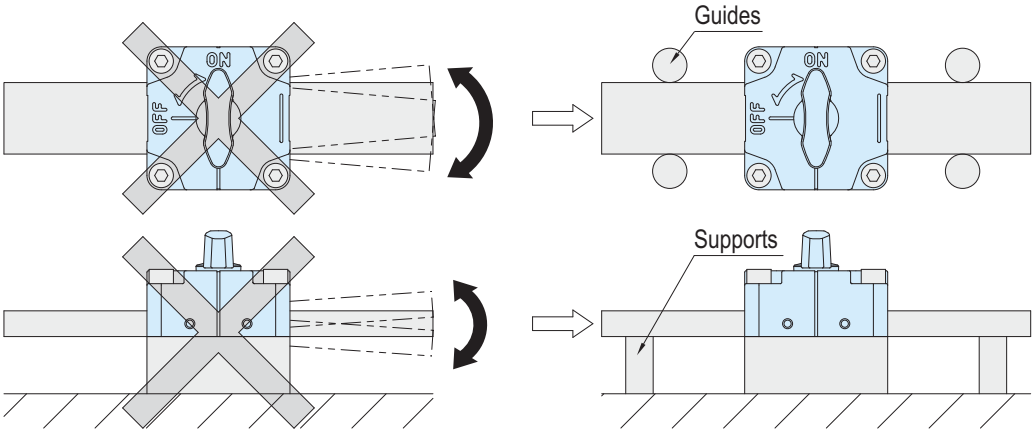
## Technical Information

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

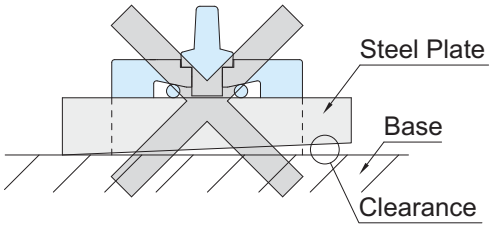
## Notes

The following conditions may cause displacement increasing or misalignment.

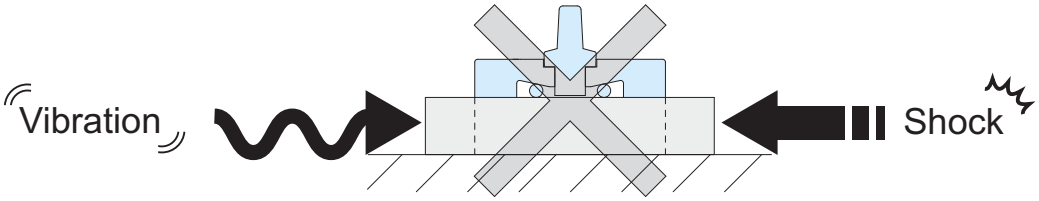
1. Use under slippage or chattering caused by vertical or horizontal loads



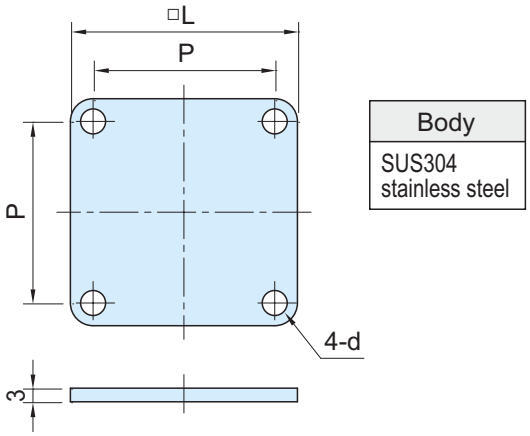

2. Use with a clearance between the steel bar and the base when the Sliding Locks at "ON" position.




3. Use under excess shock or vibration



# QCSQSP - Riser Plates For Sliding Lock



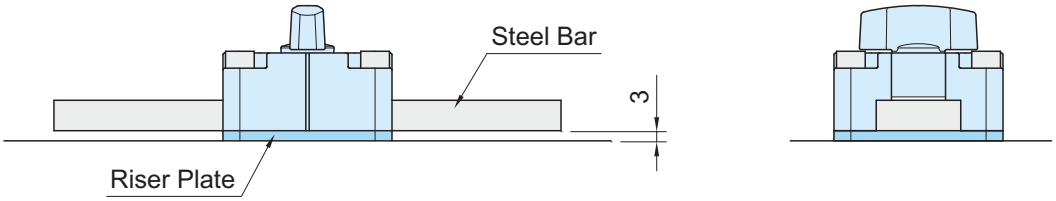

| Body |
|---|
| SUS304 stainless steel |

| Part Number | L | d | P | Weight ( g ) |
|---|---|---|---|---|
| **QCSQSP4003** | 40 | 4.5 | 32 | 35 |
| **QCSQSP5003** | 50 | 5.5 | 40 | 55 |

## How To Use

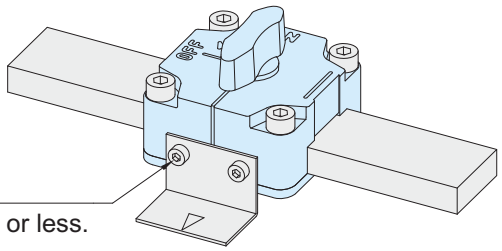
### ■How To Use Riser Plate

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

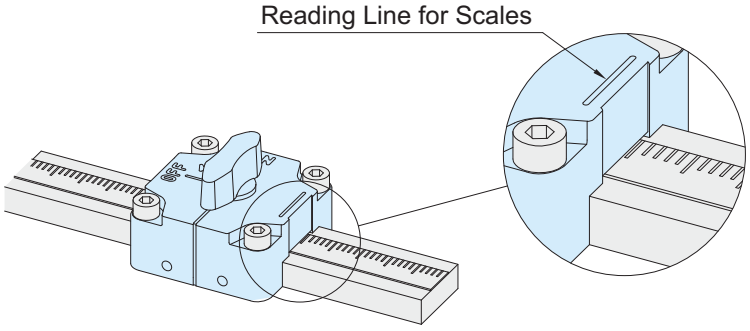
Can be used with attachments such as pointer plates and brackets.

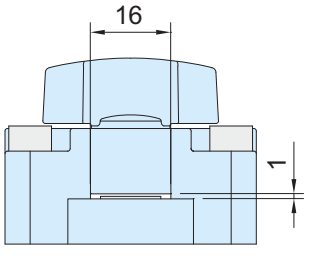



### ■How To Use Scale Plate

・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.

・ES1N Scale Plate is separately available.




Slot for Scale Plates

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