FIXTURE CHANGING SYSTEM

FLEX LOCATORS

FLEX ZERO BASES

QUICK ZERO SETTING DEVICE
FIXTURE CHANGING SYSTEM

FLEX LOCATORS

PNEUMATIC FLEX LOCATOR PINS
Part No. AMWF-W

PNEUMATIC FLEX LOCATOR BUSHINGS
Part No. AMWF-BU

PNEUMATIC FLEX LOCATOR PINS
Part No. AMWF-L-S

PNEUMATIC FLEX LOCATOR BUSHINGS
Part No. AMWF-BU

ONE-TOUCH FLEX LOCATOR CLAMPERS (Knob)
Part No. CP723

ONE-TOUCH FLEX LOCATOR CLAMPERS
Part No. CP722

ONE-TOUCH FLEX LOCATOR CLAMPERS
Part No. CP727

ONE-TOUCH FLEX LOCATOR CLAMPERS (Hexagon Head)
Part No. CP730

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QUICK ZERO SETTING DEVICE

CLAMPING PINS
Part No. CP185

PROTECTING COVER
Part No. CP185-P

BASE (QUICK ZERO SETTING DEVICE)
Part No. QZSD-C6-B

HOLDER (QUICK ZERO SETTING DEVICE)
Part No. QZSD-C6-H

PLATE (QUICK ZERO SETTING DEVICE)
Part No. QZSD-C6-P

CAD Download: https://www.imao.biz/en
Flex Locators provide "precise locating" and "easy operation" by movable tapered pin or bushing.

Simple and low cost types with only locating function

<table>
<thead>
<tr>
<th>Standard</th>
<th>Through Hole</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locating Repeatability</td>
<td>10μm</td>
</tr>
<tr>
<td>Locating Repeatability</td>
<td>10μm</td>
</tr>
</tbody>
</table>
## ONE-TOUCH FLEX LOCATORS

Locating and clamping functions

### Knob
- **Locating Repeatability**: 10µm
- **Clamping Force**: 350N, 600N

### Handle
- **Locating Repeatability**: 10µm
- **Clamping Force**: 600N, 700N

### Hexagon Head
- **Locating Repeatability**: 8µm
- **Clamping Force**: 1700N, 3000N, 4500N
- (Adjustable-torque wrenches are available to control clamping force.)

### Cam Handle
- **Locating Repeatability**: 8µm
- **Clamping Force**: 600N, 1200N, 1800N

## PNEUMATIC FLEX LOCATORS

Easier and faster pneumatic operation

### Flange Diameter φ70 / φ85
- **Locating Repeatability**: 3µm
- **Clamping Force**: 4kN, 6.3kN

### Flange Diameter φ40 / φ51
- **Locating Repeatability**: ±10µm
- **Clamping Force**: 250N, 350N

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AMWF-W  PNEUMATIC FLEX LOCATOR PINS

(Tapered Type)  (Straight Type)

<table>
<thead>
<tr>
<th>Body</th>
<th>Cylinder</th>
<th>Ball</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCM440 steel</td>
<td>S45C steel</td>
<td>SUS440C stainless steel</td>
</tr>
<tr>
<td>Induction hardened</td>
<td>Induction hardened</td>
<td></td>
</tr>
<tr>
<td>Black oxide finished</td>
<td>Electroless nickel plated</td>
<td></td>
</tr>
<tr>
<td>Precision ground</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Air Output Hole for Checking

4-M For Socket-Head Cap Screws

M1 for Removal

Checking Port

Unclamping Port

Clamping Port

Reference

- How To Use PNEUMATIC FLEX LOCATORS
- How To Install PNEUMATIC FLEX LOCATORS

Note

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

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### Feature

#### Structure and Locating Mechanism

- When the air pressure is lowered by an air leakage, the wedge mechanism and the spring prevent prompt lowering of the clamping force.
  - Clamping Force at 0 Mpa Air Pressure (Clamping Force of Spring)
    - AMWF40Type…1.2kN
    - AMWF50Type…1.8kN
- Can check if the fixture plate is clamped properly by applying air through the checking hole.

#### Functions

- **Locating with Tapered Type**
  - Overall tapered surface is the reference plane.
- **Clamping with Straight Type**
  - Precise dual contact provides excellent locating repeatability at 3 μm.

### Related Product

**AMWF-BU PNEUMATIC FLEX LOCATOR BUSHINGS**

### Table of Specifications

<table>
<thead>
<tr>
<th>Size</th>
<th>D1 (g6)</th>
<th>D2</th>
<th>H1</th>
<th>D</th>
<th>D3</th>
<th>H (±0.003)</th>
<th>M</th>
<th>H3</th>
<th>D5 (±0.05)</th>
<th>H2</th>
<th>Lf</th>
<th>M1</th>
<th>Dp</th>
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<tbody>
<tr>
<td>AMWF-W-T</td>
<td>40</td>
<td>48</td>
<td>47.5</td>
<td>15</td>
<td>70</td>
<td>38</td>
<td>12</td>
<td>M5</td>
<td>8</td>
<td>16</td>
<td>35</td>
<td>6</td>
<td>60</td>
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<tr>
<td>AMWF-W-S</td>
<td>50</td>
<td>58</td>
<td>57.5</td>
<td>19</td>
<td>85</td>
<td>48</td>
<td>15</td>
<td>M6</td>
<td>10</td>
<td>20</td>
<td>44</td>
<td>6</td>
<td>72</td>
</tr>
</tbody>
</table>

*) At least 0.45 MPa is required for unclamping.
The maximum operating air pressure is 1 MPa.
AMWF-BU PNEUMATIC FLEX LOCATOR BUSHINGS

(Tapered Type)  (Diamond Type)  (Straight Type)

Body
- SCM440 steel
- Quenched & tempered
- Black oxide finish
- Precision ground

<table>
<thead>
<tr>
<th>Size</th>
<th>D₁ (g6)</th>
<th>H₂</th>
<th>D₂</th>
<th>H₁</th>
<th>M</th>
<th>H₃</th>
<th>D</th>
<th>D₃ (±0.003)</th>
<th>d (±0.05)</th>
<th>M₁</th>
<th>Dp</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMWF-BU-T</td>
<td>40</td>
<td>28</td>
<td>10</td>
<td>27.5</td>
<td>15</td>
<td>M5</td>
<td>2.5</td>
<td>60</td>
<td>8</td>
<td>16</td>
<td>M5×0.8</td>
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<tr>
<td>AMWF-BU-D</td>
<td>40</td>
<td>36</td>
<td>14</td>
<td>35.5</td>
<td>19</td>
<td>M6</td>
<td>3.5</td>
<td>75</td>
<td>10</td>
<td>20</td>
<td>M6×1</td>
</tr>
</tbody>
</table>

CAD Download: https://www.imao.biz/en
### Feature

**Locating with Tapered Type**
- For setting reference position

**Locating with Diamond Type**
- For locating reference at rotational direction

### Part Numbers and Weights

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMWF40-BU-T</td>
<td>160</td>
</tr>
<tr>
<td>AMWF40-BU-D</td>
<td>159</td>
</tr>
<tr>
<td>AMWF40-BU-S</td>
<td>163</td>
</tr>
<tr>
<td>AMWF50-BU-T</td>
<td>323</td>
</tr>
<tr>
<td>AMWF50-BU-D</td>
<td>322</td>
</tr>
<tr>
<td>AMWF50-BU-S</td>
<td>330</td>
</tr>
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</table>

### Reference
- How To Use PNEUMATIC FLEX LOCATORS
- How To Install PNEUMATIC FLEX LOCATORS

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**Related Product**

**AMWF-W** PNEUMATIC FLEX LOCATOR PINS
How To Install PNEUMATIC FLEX LOCATORS

■ Mounting Hole Dimensions for Pins

![Diagram showing mounting hole dimensions for pins]

<table>
<thead>
<tr>
<th>Size</th>
<th>d (H6)</th>
<th>H1</th>
<th>d1 (H8)</th>
<th>H</th>
<th>d2</th>
<th>M</th>
<th>Dp</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMWF40-W</td>
<td>48</td>
<td>12</td>
<td>48</td>
<td>16</td>
<td>50</td>
<td>M5</td>
<td>60</td>
</tr>
<tr>
<td>AMWF50-W</td>
<td>58</td>
<td>16</td>
<td>58</td>
<td>20</td>
<td>60</td>
<td>M6</td>
<td>72</td>
</tr>
</tbody>
</table>

■ Mounting Hole Dimensions for Bushings

![Diagram showing mounting hole dimensions for bushings]

<table>
<thead>
<tr>
<th>Size</th>
<th>d3 (H6)</th>
<th>H3</th>
<th>d4 (H10)</th>
<th>H2</th>
<th>M1</th>
<th>Dp1</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMWF40-BU</td>
<td>28</td>
<td>12</td>
<td>28</td>
<td>16</td>
<td>M5</td>
<td>50</td>
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<tr>
<td>AMWF50-BU</td>
<td>36</td>
<td>16</td>
<td>36</td>
<td>20</td>
<td>M6</td>
<td>62</td>
</tr>
</tbody>
</table>

■ Spacing Tolerance

Allowable Tolerance ±0.02

![Diagram showing spacing tolerance]

■ How to Remove Pins
For easier removal, insert screws into the tapped holes and screw them.

![Diagram showing pin removal]

■ How to Remove Bushings
For easier removal, insert screws into the tapped holes and screw them.

![Diagram showing bushing removal]
How To Use PNEUMATIC FLEX LOCATORS

Application Example

**For clamping at 2 points**

Tapered Bushing

Diamond Bushing

Tapered Pins

**For clamping at 4 points**

Straight Bushings

Tapered Bushing

Diamond Bushing

Tapered Pin

Straight Pin

Positioning Order of Bushings

Mount the Tapered Bushings and Diamond Bushings as in the figure below for locating fixture plates. Pay attention to the mounting direction of the Diamond Bushings, since the direction for use at 2 points and the direction for use at 4 points differ.

**For clamping at 2 points**

Locating Reference

Tapered Bushing

90°

Locating Reference

Diamond Bushing

Mounting Direction

**For clamping at 4 points**

Locating Reference

Tapered Bushing

Straight Bushing

Locating Reference

Diamond Bushing

Mounting Direction
AMWF-L-S  PNEUMATIC FLEX LOCATOR PINS

AMWF-L-S

AMWF-L-S-G

Unclamping Port M5×0.8

(Port Style)  (Direct Style)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>D1</th>
<th>H3</th>
<th>D2</th>
<th>H1</th>
<th>D</th>
<th>H</th>
<th>D3</th>
<th>H2</th>
<th>d</th>
<th>Lf</th>
<th>D4</th>
<th>Dp</th>
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<tbody>
<tr>
<td>AMWF18L-4S</td>
<td>24</td>
<td>8</td>
<td>23.4</td>
<td>29.5</td>
<td>40</td>
<td>8</td>
<td>12</td>
<td>25</td>
<td>4.5</td>
<td>3.5</td>
<td>8</td>
<td>32</td>
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<tr>
<td>AMWF26L-4S</td>
<td>32</td>
<td>8.5</td>
<td>31.4</td>
<td>31.7</td>
<td>51</td>
<td>9.5</td>
<td>16</td>
<td>28.5</td>
<td>5.5</td>
<td>4</td>
<td>9.5</td>
<td>41</td>
</tr>
<tr>
<td>AMWF18L-4S-G</td>
<td>24</td>
<td>8</td>
<td>23.4</td>
<td>24.5</td>
<td>40</td>
<td>8</td>
<td>12</td>
<td>25</td>
<td>4.5</td>
<td>3.5</td>
<td>8</td>
<td>32</td>
</tr>
<tr>
<td>AMWF26L-4S-G</td>
<td>32</td>
<td>8.5</td>
<td>31.4</td>
<td>25.5</td>
<td>51</td>
<td>9.5</td>
<td>16</td>
<td>28.5</td>
<td>5.5</td>
<td>4</td>
<td>9.5</td>
<td>41</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th>M</th>
<th>Air Pressure (MPa)</th>
<th>Clamping Force (N)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMWF18L-4S</td>
<td></td>
<td>0.5</td>
<td>250</td>
<td>154</td>
</tr>
<tr>
<td>AMWF26L-4S</td>
<td></td>
<td></td>
<td>350</td>
<td>289</td>
</tr>
<tr>
<td>AMWF18L-4S-G</td>
<td>M4×0.7</td>
<td></td>
<td>250</td>
<td>136</td>
</tr>
<tr>
<td>AMWF26L-4S-G</td>
<td>M5×0.8</td>
<td></td>
<td>350</td>
<td>252</td>
</tr>
</tbody>
</table>

Reference
- How To Install PNEUMATIC FLEX LOCATORS
- How To Use PNEUMATIC FLEX LOCATORS

Related Product
- AMWF-BU  PNEUMATIC FLEX LOCATOR BUSHINGS

CAD Download : https://www.imao.biz/en
**AMWF-BU**  
**PNEUMATIC FLEX LOCATOR BUSHINGS**

**Reference**
- How To Install PNEUMATIC FLEX LOCATORS
- How To Use PNEUMATIC FLEX LOCATORS

**Related Product**
AMWF-L-S PNEUMATIC FLEX LOCATOR PINS

### Feature

**AMWF18-BU**
- D1 (g6): 20
- H2: 7.5
- D1: 19.6
- H1: 10.5
- D: 36
- H: 8
- d (E7): 12.1
- d1: 4.5
- Lf: 3.5
- D3: 8
- M: M4 x 0.7
- Dp: 28
- Weight (g): 57

**AMWF26-BU**
- D1 (g6): 25
- H2: 7
- D1: 24.6
- H1: 11
- D: 44
- H: 9.5
- d (E7): 16.1
- d1: 5.5
- Lf: 4
- D3: 9.5
- M: M5 x 0.8
- Dp: 34
- Weight (g): 97

Supply air for unclamping. The wedge goes up and releases the balls.

Quick clamping and unclamping reduce set-up time in production equipment.

Release air for clamping. The wedge goes down and pushes the balls to pull down the bushing. Can keep clamped without air supply.

Locating Repeatability: ±10 μm  
The bushing is centered and clamped when the 3 balls are pushed out to gain high locating repeatability.
How To Install PNEUMATIC FLEX LOCATORS

**Mounting Hole Dimensions**

- **Pins**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>d₁ (H7)</th>
<th>H₁</th>
<th>d₂</th>
<th>H₂</th>
<th>d₃</th>
<th>d</th>
<th>H (±0.05)</th>
<th>M₁</th>
<th>Dp</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMWF18L-4S</td>
<td>24</td>
<td>8.5</td>
<td>23.8</td>
<td></td>
<td></td>
<td>41</td>
<td>8.5</td>
<td>M4×0.7 Depth 8</td>
<td>32</td>
</tr>
<tr>
<td>AMWF26L-4S</td>
<td>32</td>
<td>9</td>
<td>31.8</td>
<td></td>
<td></td>
<td>52</td>
<td>10</td>
<td>M5×0.8 Depth10</td>
<td>41</td>
</tr>
<tr>
<td>AMWF18L-4S-G</td>
<td>24</td>
<td>8.5</td>
<td>23.8</td>
<td>25.5</td>
<td>14</td>
<td>41</td>
<td>8.5</td>
<td>M4×0.7 Depth 8</td>
<td>32</td>
</tr>
<tr>
<td>AMWF26L-4S-G</td>
<td>32</td>
<td>9</td>
<td>31.8</td>
<td>26.5</td>
<td>20</td>
<td>52</td>
<td>10</td>
<td>M5×0.8 Depth10</td>
<td>41</td>
</tr>
</tbody>
</table>

- **Bushings**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>d₅ (H7)</th>
<th>H₃</th>
<th>d₆</th>
<th>d₄</th>
<th>H₄ (±0.05)</th>
<th>M₂</th>
<th>Dp₁</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMWF18-BU</td>
<td>20</td>
<td>8</td>
<td>19.8</td>
<td>37</td>
<td>8.5</td>
<td>M4×0.7 Depth 8</td>
<td>28</td>
</tr>
<tr>
<td>AMWF26-BU</td>
<td>25</td>
<td>7.5</td>
<td>24.8</td>
<td>45</td>
<td>10</td>
<td>M5×0.8 Depth10</td>
<td>34</td>
</tr>
</tbody>
</table>

**Spacing Tolerance**

- **AMWF-BU** (Bushing)
- **AMWF-L-S** (Port Style)
- **AMWF-L-S-G** (Direct Style)
How To Use PNEUMATIC FLEX LOCATORS

■How to Use

The pins should be mounted in the direction shown in the above figures.

■How to Remove (Direct Style Pins)
For easier removal, insert screws into the tapped holes and screw them.

■How to Remove (Bushings)
For easier removal, insert screws into the tapped holes and screw them.

Note

<table>
<thead>
<tr>
<th>Size</th>
<th>Max. Loading Capacity (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMWF18</td>
<td>400</td>
</tr>
<tr>
<td>AMWF26</td>
<td>560</td>
</tr>
</tbody>
</table>

- If the total load exceeds the maximum loading capacity, the locating repeatability may exceed ±10 μm.
- In vertical use, the locating repeatability may exceed ±10 μm.
- Pins and Bushings should be positioned equally against the center of the fixture plate.
- For Port Style Pins, use with air joint that is available commercially.

Note: The maximum 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 each of [AMWF-L-S] Pins and [AMWF-BU] Bushings are used.
CP723  ONE-TOUCH FLEX LOCATOR CLAMPERS (Knob)

Body / Shank  Tapered Pin  Knob  Pin
SCM440 steel Black oxide finished  SCM440 steel Nitrocarburized
(SCS13 stainless steel (Equivalent to SUS304)  SUS304 stainless steel

Key Point
Space saving operation

<table>
<thead>
<tr>
<th>Part Number</th>
<th>D1 (g6)</th>
<th>H2</th>
<th>D</th>
<th>H1</th>
<th>H3</th>
<th>D2</th>
<th>H</th>
<th>θ</th>
<th>Dp</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP723-0632R-04</td>
<td>16</td>
<td>7.5</td>
<td>32</td>
<td>27</td>
<td>12</td>
<td>5.5</td>
<td>22</td>
<td>120°</td>
<td>25.5</td>
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<tr>
<td>CP723-0840R-06</td>
<td>25</td>
<td>9.5</td>
<td>40</td>
<td>32</td>
<td>15.5</td>
<td>8</td>
<td>26</td>
<td>130°</td>
<td>34</td>
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</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Clamping Force(N)</th>
<th>Lifting Force (N)</th>
<th>Weight (g)</th>
<th>Proper One-Touch Flex Locator Bushing</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP723-0632R-04</td>
<td>350</td>
<td>30</td>
<td>96</td>
<td>CP727-0632R</td>
</tr>
<tr>
<td>CP723-0840R-06</td>
<td>600</td>
<td>100</td>
<td>211</td>
<td>CP727-0840R</td>
</tr>
</tbody>
</table>

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

How To Use

Mounting Hole Dimension

<table>
<thead>
<tr>
<th>Part Number</th>
<th>d (H7)</th>
<th>H4 (±0.05)</th>
<th>d1</th>
<th>H5</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP723-0632R-04</td>
<td>16</td>
<td>8</td>
<td>33</td>
<td>4</td>
</tr>
<tr>
<td>CP723-0840R-06</td>
<td>25</td>
<td>10</td>
<td>41</td>
<td>6</td>
</tr>
</tbody>
</table>

Supplied With
- CP723-0632R-04: Four pieces of hex. socket-head cap screws M3X0.5-8L
- CP723-0840R-06: Four pieces of hex. socket-head cap screws M3X0.5-10L

Reference
How To Use ONE-TOUCH FLEX LOCATORS (Handle / Knob)

CAD Download: https://www.imao.biz/en
**CP722 ONE-TOUCH FLEX LOCATOR CLAMPERS**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Tapered Pin</th>
<th>Clamping Force (N)</th>
<th>Lifting Force (N)*</th>
<th>Weight (g)</th>
<th>Proper One-Touch Flex Locator Bushing</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP722-0840R-06</td>
<td>With</td>
<td>600</td>
<td>100</td>
<td>220</td>
<td>CP727-0840R</td>
</tr>
<tr>
<td>CP722-0840R-06N</td>
<td>Without</td>
<td>700</td>
<td>—</td>
<td>215</td>
<td></td>
</tr>
</tbody>
</table>

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

### How To Use

- **Mounting Hole Dimension**
  Can be used with plates of 10mm ~ 22mm thickness.

- **Installation on 10mm-thick Plate**

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

### Reference

How To Use ONE-TOUCH FLEX LOCATORS (Handle / Knob)

### Supplied With

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

CAD Download: https://www.imao.biz/en
# CP727 ONE-TOUCH FLEX LOCATOR BUSHINGS

**Body**
- SCM440 steel
- Nitrocarburized

## How To Use

### Mounting Hole Dimension

![Mounting Hole Diagram]

### How to Remove

Insert screws into the tapped holes to lift up the bushing for removal.

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

## Reference

How To Use ONE-TOUCH FLEX LOCATORS (Handle / Knob)

## Table

<table>
<thead>
<tr>
<th>Part Number</th>
<th>D (g6)</th>
<th>H</th>
<th>D1</th>
<th>H1</th>
<th>H2</th>
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<tr>
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## Notes
- How To Use ONE-TOUCH FLEX LOCATORS
- Fixture Changing System
- CAD Download: [https://www.imao.biz/en](https://www.imao.biz/en)
**How To Use ONE-TOUCH FLEX LOCATORS (Handle / Knob)**

**Feature**

- The plates are located by fitting of the tapered pin and the tapered bushing.
- The pin contacts the cam surface inside the bushing, and it compresses the inner spring, then the plates are clamped.

Note: CP722-0840R-06N does not have locating function.

Two pair of clamping and unclamping positions of handle can be chosen for CP722.

**How To Operate**

1. Ensure the handle is positioned at "OFF" mark.
2. Insert the clamper to the bushing.
3. Turn the handle to "ON" mark for clamping.

*) Follow back these steps for unclamping.
*) Same operation for Knob style.
Tightening Order

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

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

How To Use

Horizontal Assembly of Fixture Plate
Note: Ensure not to lift the fixture plate up and down with gripping the handle of the clamps.

Vertical Assembly of Fixture Plate
Locating repeatability is 20 μm.

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<tr>
<th>Size</th>
<th>Max. Loading Capacity(N)</th>
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<td>CP727</td>
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<table>
<thead>
<tr>
<th>Size</th>
<th>Max. Loading Capacity(N)</th>
</tr>
</thead>
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<tr>
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<td>0632R</td>
</tr>
<tr>
<td>CP727</td>
<td>0840R</td>
</tr>
</tbody>
</table>

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

**Body**
- SCM440 steel Nitrocarburized
- SCM435 steel Black oxide finished
- Quenched & tempered
- SUJ2 steel

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<thead>
<tr>
<th>Part Number</th>
<th>D1 (g6)</th>
<th>D3 (±0.01)</th>
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<th>D</th>
<th>H1</th>
<th>H3</th>
<th>D2</th>
<th>H</th>
<th>W</th>
<th>M</th>
<th>Dp</th>
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<td>12</td>
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<tr>
<td>CP730-1246LH</td>
<td>22</td>
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<td>27</td>
<td>14</td>
<td>12</td>
<td>40</td>
<td>13</td>
<td>M5×0.8 Depth 7</td>
<td>45</td>
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</table>

**How To Use**

**Mounting Hole Dimension**

**Supplied With**
- CP730-0939: Four pieces of hex. socket-head cap screws M4×0.7-10L
- CP730-1246: Four pieces of hex. socket-head cap screws M4×0.7-15L
- CP730-1656: Four pieces of hex. socket-head cap screws M5×0.8-20L

**Reference**

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

**Related Product**

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

CAD Download: [https://www.imao.biz/en](https://www.imao.biz/en)
# CP731

**ONE-TOUCH FLEX LOCATOR CLAMPERS (Cam Handle)**

**Rohs**

**Body** | Cam Handle | Ball
---|---|---
SCM440 steel Nitrocarburized | SCM440 steel Black oxide finished | SUJ2 steel Quenched & tempered

<table>
<thead>
<tr>
<th>Part Number</th>
<th>( D_1 ) (g6)</th>
<th>( D_3 ) (+0.03 / -0.06)</th>
<th>( H_2 )</th>
<th>( D )</th>
<th>( H_1 )</th>
<th>( D_2 )</th>
<th>( H )</th>
<th>( M )</th>
<th>( D_p )</th>
<th>( R )</th>
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<table>
<thead>
<tr>
<th>Part Number</th>
<th>Clamping Force (N)</th>
<th>Operating Load (N)</th>
<th>Weight (g)</th>
<th>Proper Bushing</th>
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<tbody>
<tr>
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<td>160</td>
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## How To Use

### Mounting Hole Dimension

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<tr>
<th>Size</th>
<th>( d_1 ) (H7)</th>
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<th>( H_5 )</th>
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## 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)

CAD Download: https://www.imao.biz/en
**CP735 ONE-TOUCH FLEX LOCATOR BUSHINGS**

(Tapered Type)

(Straight Type)

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<tr>
<th>Part Number</th>
<th>Type</th>
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<th>d</th>
<th>H₁</th>
<th>Dp</th>
<th>M</th>
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<th>Weight (g)</th>
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* The lifting force is the power of the inner spring of the body to push up the movable tapered bushing.

**How To Use**

**Mounting Hole Dimension**

<table>
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<tr>
<th>Size</th>
<th>d₁ (H₇)</th>
<th>H₂</th>
<th>d₂</th>
<th>H₃</th>
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<td>CP735-1656</td>
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<td>24.5</td>
<td>20</td>
<td>34</td>
<td>M₅x0.8</td>
</tr>
</tbody>
</table>

**Spacing Tolerance**

Allowable Tolerance ±0.02

**Related Product**

- CP730 ONE-TOUCH FLEX LOCATOR CLAMPERS (Hexagon Head)
- CP731 ONE-TOUCH FLEX LOCATOR CLAMPERS (Cam Handle)
- CP735-P ONE-TOUCH FLEX LOCATOR (PROTECTING COVERS)

**Reference**

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

---

**CP735-P**  
**ONE-TOUCH FLEX LOCATOR PROTECTING COVERS**

<table>
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<tr>
<th>Part Number</th>
<th>D</th>
<th>H</th>
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<th>Weight (g)</th>
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<tr>
<td>CP735-1246P</td>
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<td>19</td>
<td>12</td>
<td>M5×0.8</td>
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<td>16</td>
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<td>CP735-1656S</td>
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**Body** | **O-Ring**
---|---
A5052 aluminum | Red | NBR nitrile rubber
CP-TCW ADJUSTABLE-TORQUE WRENCHES

<table>
<thead>
<tr>
<th>Type</th>
<th>Handle</th>
<th>Ratchet</th>
<th>Adapter</th>
<th>Socket</th>
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<tbody>
<tr>
<td>CP-TCW</td>
<td>SCM440 steel Quenched &amp; tempered Painted Orange</td>
<td>SCM415 steel Carburized-hardened Black oxide finished</td>
<td>SCM435 steel Quenched &amp; tempered Black oxide finished</td>
<td>Cr-V chrome-vanadium steel Chrome plated</td>
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<td>CP-TCW-S</td>
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<thead>
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Without Socket

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<td>CP-TCW 8</td>
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<td>CP-TCW 10</td>
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With Socket

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<th>H6</th>
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<td>23.8</td>
<td>30</td>
<td>529</td>
</tr>
</tbody>
</table>

CAD Download: https://www.imao.biz/en
**How To Use**

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

1. Snap-in installation of the socket

**How To Set Torque**

The preset torque is roughly set to its maximum tightening torque.

1. Loosen the locking screw.
2. Turn the hex key CCW to fine adjust the torque-adjusting screw.
3. Measure the torque with a torque wrench.
   - Connect a torque wrench on the Adjustable-Torque Wrench.
   - Turn the handle in the tightening direction and fine adjust the depth of torque-adjusting screw to reach to the handle clicking position at desired torque.
4. Fasten the locking screw at the desired torque.

**Part Number**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Proper ONE-TOUCH FLEX LOCATOR CLAMPERS</th>
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<tbody>
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<td>CP730-1246LH CP730-1246SH</td>
</tr>
<tr>
<td>CP-TCW 10-S</td>
<td>CP730-1656LH CP730-1656SH</td>
</tr>
</tbody>
</table>

**Technical Information**

- For initial several thousand operations, the tightening torque will decrease. (See the graph below)
- Measure the torque regularly, and fine adjust the depth of torque-adjusting screw as needed.
- The tightening torque can vary. (Max.±15%)
- Not recommended for precise torque management.

**Note**

- Do not overtighten or overloosen the torque-adjusting screw.

**Reference Torque Adjusting Range**

<table>
<thead>
<tr>
<th>Size</th>
<th>Rotation</th>
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<tbody>
<tr>
<td>CP-TCW</td>
<td>6  3/4</td>
</tr>
<tr>
<td>CP-TCW 8-S</td>
<td>10  3/4</td>
</tr>
</tbody>
</table>

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

**Reference**

See [ATCL ADJUSTABLE-TORQUE HANDLES] page for further information.

**Related Product**

[CP730] ONE-TOUCH FLEX LOCATOR CLAMPERS (Hexagon Head)
How To Use ONE-TOUCH FLEX LOCATORS (Hexagon Head / Cam Handle)

**Feature**

- The plate is located by fitting of the tapered parts.
- When the clamping screw or the cam handle is tightened, the balls go 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 clamer 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 clamer to the bushing.
3. Tighten the cam handle.
   Note: For unclamping, follow back these steps.
How To Use

Horizontal Assembly
Two sets of tapered pin and straight pin

Use tapered or straight pin and bush as a set.

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

Vertical Assembly
In vertical assembly, the locating repeatability is 10 μm.

<table>
<thead>
<tr>
<th>Size</th>
<th>Max. Loading Capacity(N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP730</td>
<td>0939 400</td>
</tr>
<tr>
<td></td>
<td>1246 600</td>
</tr>
<tr>
<td></td>
<td>1656 1000</td>
</tr>
<tr>
<td>CP735</td>
<td>0939 250</td>
</tr>
<tr>
<td></td>
<td>1246 400</td>
</tr>
<tr>
<td></td>
<td>1656 600</td>
</tr>
</tbody>
</table>

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 clamer and tapered bushing are used.
CP720 FLEX LOCATOR PIN

How To Use

■ Mouting Hole Dimension
- R0.4 or less
- C0.5
- d1

■ Spacing Tolerance
- Allowable Tolerance ±0.02

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)

Part Number | D (g6) | H2 | H | M | H1 | d | Weight (g) | Proper Flex Locator Bushings
---|---|---|---|---|---|---|---|---
CP720-16032 | 16 | 5.5 | 11.5 | M5×0.8 (Prepared Hole 4.2) | 6 | 8 | 18 | CP725-16032
CP720-25050 | 25 | 10 | 20 | M8×1.25 (Prepared Hole 6.8) | 11.5 | 11 | 49 | CP725-25050
CP720-38070 | 38 | 15 | 29.5 | M10×1.5 (Prepared Hole 8.5) | 18 | 14 | 176 | CP725-38070
CP720-56095 | 56 | 22 | 43.5 | M16×2 (Prepared Hole 14) | 28.5 | 20 | 569 | CP725-56095

Body
- SCM440 steel Nitrocarburized
CP725  FLEX LOCATOR BUSHINGS (Blind)

*9563&$)"/*(*/(44:45&.

CAD Download : https://www.imao.biz/en

How To Use

- Mouting Hole Dimension

- Spacing Tolerance

Reference

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

Related Product

CP720  FLEX LOCATOR PINNS

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\times0.5  | 25.5  | 110  | 60
CP725-25050  | 50  | 10  | 32  | 9  | M4  | 5  | M4\times0.7  | 42  | 180  | 160
CP725-38070  | 70  | 15  | 48  | 14 | M5  | 9  | M5\times0.8  | 60  | 400  | 508
CP725-56095  | 95  | 22  | 70  | 21 | M6  | 15 | M6\times1  | 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 Remove

For removal, insert screws into the tapped holes and screw it.
**CP725-P**

**FLEX LOCATOR PROTECTING COVERS**

![Image of CP725-P Flex Locator]

**Part Number**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>D</th>
<th>H</th>
<th>M</th>
<th>W</th>
<th>Weight (g)</th>
<th>Proper Flex Locator Bushings</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP725-16032P</td>
<td>12</td>
<td>4</td>
<td>M3x0.5</td>
<td>2</td>
<td>3</td>
<td>CP725-16032</td>
</tr>
<tr>
<td>CP725-25050P</td>
<td>19</td>
<td>6</td>
<td>M4x0.7</td>
<td>2.5</td>
<td>5</td>
<td>CP725-25050</td>
</tr>
<tr>
<td>CP725-38070P</td>
<td>29</td>
<td>7</td>
<td>M5x0.8</td>
<td>3</td>
<td>14</td>
<td>CP725-38070</td>
</tr>
<tr>
<td>CP725-56095P</td>
<td>44</td>
<td>8</td>
<td>M6x1</td>
<td>4</td>
<td>35</td>
<td>CP725-56095</td>
</tr>
</tbody>
</table>

**How to Install**

Mount on Flex Locator Bushings onto the tapped hole as a protective cover.

**How To Install FLEX LOCATORS (Blind)**

**Feature**

- Movable Tapered Bushing

**How To Install**

**Bushings on Base Plate**

- Fixture plate is lifted down, and tapered pin engages with tapered bushing.
- Movable tapered bushing goes down, and fixture plate contacts with base plate.

**Pins on Base Plate**
How To Use FLEX LOCATORS (Blind)

**Tightening Order**

1. Ensure that each plate is in close contact.*
2. Tighten the screws temporarily in order of 1→2→3→4. For temporary tightening, the tightening torque should be approximately 50% of the final tightening.
3. Tighten the screws finally in order of 1→2→3→4.

*) The fixture plate may be pushed up by the lifting force of CP725 Flex Locator Bushings. In such cases, tighten the screws loosely in order of 1→2→3→4, and make 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.

<table>
<thead>
<tr>
<th>Size</th>
<th>Max. Loading Capacity (kN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP720</td>
<td>16032 0.8</td>
</tr>
<tr>
<td>CP725</td>
<td>25050 1.2</td>
</tr>
<tr>
<td>CP725</td>
<td>38070 2</td>
</tr>
<tr>
<td>CP725</td>
<td>56095 2.2</td>
</tr>
</tbody>
</table>

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 CP720 Flex Locator Pins and CP725 Flex Locator Bushings are used.
**CP721 FLEX LOCATOR PINS**

### How To Use

**Mounting Hole Dimensions for Press Fit**

**Installation of the Flex Locator Pins on the Fixture Plate**

- **Fixture Plate**
- **Base Plate**
- **Flex Locator Bushing**
- **Clamping Screw**
- **Flex Locator Pin**

**Installation of the Flex Locator Pins on the Base Plate**

- **Fixture Plate**
- **Flex Locator Bushing**
- **Base Plate**

**Spacing Tolerance**

- **Allowable Tolerance ±0.02**

### Reference

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

### Table: Proper Flex Locator Bushings

<table>
<thead>
<tr>
<th>Part Number</th>
<th>D1 (p6)</th>
<th>H1</th>
<th>D</th>
<th>H</th>
<th>M: Material</th>
<th>d1</th>
<th>Weight (g)</th>
<th>Proper Flex Locator Bushing</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP721-12025</td>
<td>12</td>
<td>4.5</td>
<td>15</td>
<td>10</td>
<td>M10x1.5</td>
<td>8.5</td>
<td>6</td>
<td>CP726-12025</td>
</tr>
<tr>
<td>CP721-15032</td>
<td>15</td>
<td>7.5</td>
<td>20</td>
<td>15</td>
<td>M12x1.75</td>
<td>10.2</td>
<td>16</td>
<td>CP726-15032</td>
</tr>
<tr>
<td>CP721-20045</td>
<td>20</td>
<td>10</td>
<td>30</td>
<td>20</td>
<td>M16x2</td>
<td>14</td>
<td>47</td>
<td>CP726-20045</td>
</tr>
</tbody>
</table>

**Body**

- SCM440 steel
- Nitrocarburized
**CP726**

**FLEX LOCATOR BUSHINGS (Through)**

![Image of CP726 FLEX LOCATOR BUSHINGS](image)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>D</th>
<th>H</th>
<th>H1</th>
<th>M</th>
<th>Lifting Force (N)*</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP726-12025</td>
<td>25</td>
<td>16</td>
<td>8</td>
<td>M8×1.25 (Prepared Hole Ø 6.8)</td>
<td>540</td>
<td>46</td>
</tr>
<tr>
<td>CP726-15032</td>
<td>32</td>
<td>20</td>
<td>9</td>
<td>M10×1.5 (Prepared Hole Ø 8.5)</td>
<td>600</td>
<td>92</td>
</tr>
<tr>
<td>CP726-20045</td>
<td>45</td>
<td>26</td>
<td>11</td>
<td>M14×1.5 (Prepared Hole Ø 12.5)</td>
<td>780</td>
<td>230</td>
</tr>
</tbody>
</table>

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

**How To Use**

- Mounting Hole Dimension for Press Fit
  - Installation of the Bushings on the Base Plate
  - Installation of the Bushings on the Fixture Plate

**Spacing Tolerance**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>d (H6)</th>
<th>H2 (±0.05)</th>
<th>d1</th>
<th>H3</th>
<th>C</th>
<th>M1</th>
<th>M2</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP726-12025</td>
<td>25</td>
<td>16.5</td>
<td>25.2</td>
<td>8</td>
<td>1</td>
<td>M6×1</td>
<td>M10×1.5</td>
</tr>
<tr>
<td>CP726-15032</td>
<td>32</td>
<td>20.5</td>
<td>32.2</td>
<td>11</td>
<td>1.2</td>
<td>M8×1.25</td>
<td>M12×1.75</td>
</tr>
<tr>
<td>CP726-20045</td>
<td>45</td>
<td>26.5</td>
<td>45.2</td>
<td>15</td>
<td>1.5</td>
<td>M12×1.75</td>
<td>M16×2</td>
</tr>
</tbody>
</table>

**Reference**

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

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

**How to Remove**
Insert a screw into the tapped hole and pull it out.

---

**How To Install FLEX LOCATORS (Through)**

**Feature**

- When the fixture plate is lifted down, the tapered pin engages with the tapered receiver bushing.
- The movable tapered receiver bushing goes down by screwing the clamping screw and the fixture plate contacts with the base plate.

**How To Install**

**Bushings on Base Plate**

- **Fixture Plate**
- **Tapered Pin**
- **Tapered Bushing**
- **Screw**

**Pins on Base Plate**

- **Fixture Plate**
- **Tapered Bushing**
- **Screw**
- **Tapered Pin**
**How To Use FLEX LOCATORS (Through)**

### Tightening Order

1. Ensure that each plate is in close contact. *)
2. Tighten the screws temporarily in order of 1 → 2 → 3 → 4. For temporary tightening, the tightening torque should be approximately 50% of the final tightening.
3. Tighten the screws finally in order of 1 → 2 → 3 → 4.

*) The fixture plate may be pushed up by the lifting force of CP726 Flex Locator Bushings. In such cases, tighten the screws loosely in order of 1 → 2 → 3 → 4, and make the each plate be in close contact with each other. Then tighten the screws temporarily. For the lifting force, see the measurement table of CP726 Flex Locator Bushings.

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

### How To Use

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

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

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

### How to Remove

For removal, insert screw into the tapped hole and screw it.

<table>
<thead>
<tr>
<th>Size</th>
<th>Max. Loading Capacity (kN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP721</td>
<td>12025</td>
</tr>
<tr>
<td>CP726</td>
<td>15032</td>
</tr>
<tr>
<td>CP726</td>
<td>20045</td>
</tr>
</tbody>
</table>

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 CP721 Flex Locator Pins and CP726 Flex Locator Bushings are used.
**FLEX ZERO BASES**

Strong Clamp!

12 kN

Clamping Force

5 μm

Repeatability

FLEX ZERO BASES

Powerfully clamp both workpiece or fixture.
Pull clamp mechanism maximizes machining area.

5-axis machining with No Tool Interference!

4-point clamping by Single Operation!

CAD Download: https://www.imao.biz/en
**Key Point**

Clamp the fixture by single operation!

---

**Table**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>d (H9)</th>
<th>d₁ (H9)</th>
<th>d₂</th>
<th>Lc</th>
<th>Clamping Force (kN)</th>
<th>Allowable Tightening Torque (N·m)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP180-1515-35</td>
<td>12</td>
<td>12</td>
<td>18</td>
<td>11</td>
<td>12</td>
<td>50</td>
<td>5</td>
</tr>
<tr>
<td>CP180-2424-35</td>
<td>18</td>
<td>18</td>
<td>26</td>
<td>17.5</td>
<td>12</td>
<td>50</td>
<td>13.5</td>
</tr>
</tbody>
</table>

---

**CAD Download**: https://www.imao.biz/en
**Feature**

- Can be clamped by one operation.
- Pins are fully clamped by approx. 3 rotations of the clamping socket.

**How To Use**

**How To Locate**

Can be positioned by reference holes or finished side surfaces.

**CP180-1515-35**

- Reference Holes
- 4-R32 56
- 150
- 8

**CP180-2424-35**

- A
- 56
- 40
- 40
- 240

**CP180-2424-35**

- Reference Hole
- 28
- 10
- 10
- 11

- Use threaded pin or screw to prevent mounting fixtures or workpieces in wrong direction.

**Continuing on Next Page**
Usage Example of Error-proofing Hole
Prepare a screw etc. on M5x0.8 Depth 12 hole on CP180 Flex Zero Base to prevent mounting CP170-N Centering Clamp in wrong direction.

<CP170-N Bottom Surface>

Error-proofing Hole
(Ø10 Depth 6)

Technical Information
Repeatability: 5 μm

Related Product
- CP185 CLAMPING PINS
- CP185-P PROTECTING COVER
- CP170-N CENTERING CLAMPS

CAD Download: https://www.imao.biz/en
**CP185**

**CLAMPING PINS**

![Image of CP185 clamping pins](https://www.imao.biz/en)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>M</th>
<th>D ((\leq 0.1))</th>
<th>L</th>
<th>L</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP185-08001</td>
<td>M 8×1.25</td>
<td>12</td>
<td>4.5</td>
<td>17</td>
<td>57</td>
</tr>
<tr>
<td>CP185-10001</td>
<td>M10×1.5</td>
<td>16</td>
<td>5.5</td>
<td>20</td>
<td>66</td>
</tr>
</tbody>
</table>

**Note**

Use 4 pins as a set for mounting.

**How To Use**

■ Mounting Hole Dimension

![Diagram of Mounting Hole Dimension](https://www.imao.biz/en)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>d (H7)</th>
<th>Lf1</th>
<th>M</th>
<th>Lf</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP185-08001</td>
<td>12</td>
<td>5.5</td>
<td>M 8×1.25</td>
<td>12</td>
</tr>
<tr>
<td>CP185-10001</td>
<td>16</td>
<td>6.5</td>
<td>M10×1.5</td>
<td>16</td>
</tr>
</tbody>
</table>

**Spacing Tolerance**

Allowable tolerance of the mounting holes should be ±0.02.

![Diagram of Spacing Tolerance](https://www.imao.biz/en)

**Related Product**

Can be used in combination with CP170-N CENTERING CLAMPS.

![Image of Related Product](https://www.imao.biz/en)

Usage example

(CP170-08013N, CP185-08001x4pcs.)

**Body**

SCM440 steel
Nitrocarburized

**CAD Download**: [https://www.imao.biz/en](https://www.imao.biz/en)
**CP185-P**  PROTECTING COVER

---

**How To Use**

**How To Mount**
Mount on the unused grid of FLEX ZERO BASE by hex. key as a protective cover.

---

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP185-2424P</td>
<td>45</td>
</tr>
</tbody>
</table>

**Body**
S45C steel
Electroless Nickel Plated

---

CAD Download: https://www.imao.biz/en
Quick Zero Setting Device

Ideal dual-contact coupling with a polygonal taper saves manufacturing costs and improves your productivity.

- **Usabilities**
  - Precise fixture changes for wide-varity low-volume productions
  - Precise machinings that require intermediate measurements

- **Usable on**
  - 5-axis machine
  - Vertical M/C
  - CNC Rotary table

CAD Download: https://www.imao.biz/en
Ideal dual-contact of a polygonal taper provides high bending rigidity and high torsional rigidity.

High Precision

Provides accurate positioning with high repeatability and no need of centering.

Quick Change

Holder can be locked/unlocked with a hex wrench. Easy settings for everyone. Saves lots of time for setups.

Compared to HSK shank (HSK-A63)
Bending/torsional rigidity is more than double!
QZSD-C6-B BASE (QUICK ZERO SETTING DEVICE)

**Body**
- SCM420 steel
- Carburized-hardened
- Black oxide finished

**Cam Shaft**
- SCM435 steel
- Quenched and tempered
- Black oxide finished

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Clamping Force (kN)</th>
<th>Allowable Tightening Torque (N·m)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>QZSD-C6-B</td>
<td>30</td>
<td>100</td>
<td>5.2</td>
</tr>
</tbody>
</table>

CAD Download: https://www.imao.biz/en
**Feature**

- Holder can be clamped / unclamped with a hex wrench.
- Tightening / loosening can be completed with less than 180° turn.
- The cam shaft comes out of the body when the holder is unclamped. So you can check visually if the holder is unclamped or not.

![Diagram of holder and cam shaft](image)

**How To Use**

**How to Operate**

1. **Holder Mountings / Removals**
   
   Turn the cam shaft to the unclamping position and then mount / remove the holder.
   
   Note: See the notes below.

2. **Start Clamping**
   
   The holder is clamped by tightening the cam shaft with a hex wrench. In accordance with tightening of the cam shaft, it comes in the body.

3. **Fully Clamped!**

4. **Unclamping**
   
   Turn the cam shaft to the unclamping position. The cam shaft comes out of the body.
   
   Note: Turn the cam shaft fully until the holder is uncoupled from the base.

**Notes for Mountings / Removals of Holder**

- Ensure that the cam shaft is come out of the body.
- Note to mount the holder by aligning its hole and dent to the cam shaft of the base.

**Mounting-Hole Dimension**

![Dimension diagram](image)

**Related Product**

- **QZSD-C6-H** HOLDER (QUICK ZERO SETTING DEVICE)
- **QZSD-C6-P** PLATE (QUICK ZERO SETTING DEVICE)
**QZSD-C6-H HOLDER (QUICK ZERO SETTING DEVICE)**

Body: SCM420 steel, Carburized-hardened
Clamping Screw: SCM435 steel, Quenched and tempered
Black oxide finished

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>QZSD-C6-H</td>
<td>1.3</td>
</tr>
</tbody>
</table>

**Feature**
- Tapped holes for mounting fixtures on the top face.
- [CP120]-06501 OD HOLDING CLAMPS can be mounted directly.

**Related Product**
- [CP120] OD HOLDING CLAMP
- MBID ID HOLDING CLAMP
- QZSD-C6-B BASE (QUICK ZERO SETTING DEVICE)
- QZSD-C6-P PLATE (QUICK ZERO SETTING DEVICE)

**Application Example**

- With OD Holding Clamp
  - CP120-06501 can be mounted directly.
- With ID Holding Clamp
- Other Application
  - Fix a workpiece from the bottom.

**Workpiece**
- OD Holding Clamp
- ID Holding Clamp
- Custom Riser
- Custom Adapter

**Dimensions**
- φ6 G7 Depth 9
- φ28H7
- 2x3-M4×0.7 Depth 8
- P.C.D. 52 (M4×0.7)
- P.C.D. 64 (M4×0.7)
- P.C.D. 42 (M6×1)
- P.C.D. 60 (M6×1)
- 2x4-M6×1 Depth 12

**Notes**
- Related product numbers can be inserted as required.

**CAD Download**: [https://www.imao.biz/en](https://www.imao.biz/en)
QZSD-C6-P  PLATE (QUICK ZERO SETTING DEVICE)

On Request

<table>
<thead>
<tr>
<th>Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>- For mounting the device on machine tables with T-Slots.</td>
</tr>
<tr>
<td>- Mounting holes are M10 and M12 sizes.</td>
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<tr>
<td>- Custom plates are available on request.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Related Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>- QZSD-C6-B BASE (QUICK ZERO SETTING DEVICE)</td>
</tr>
<tr>
<td>- QZSD-C6-H HOLDER (QUICK ZERO SETTING DEVICE)</td>
</tr>
</tbody>
</table>

Note

This plate is a non-stock item.