Clamp Cylinder

# PCC

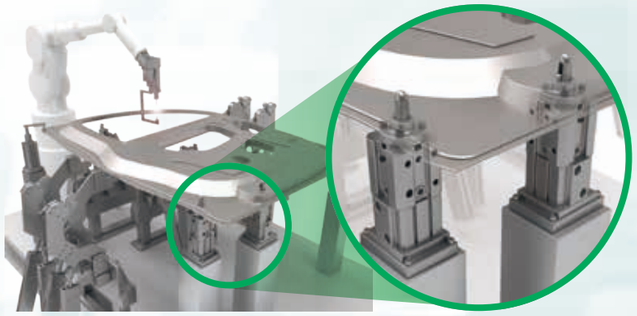
## Pin Clamp Cylinder

ø50

CONTENTS

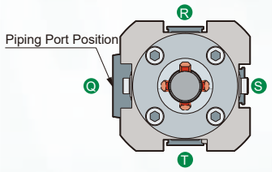
# PCC Series (Bore size ø50)

## Mainly used for positioning and clamping of chassis in automobile welding processes

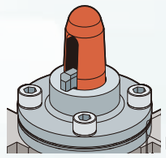


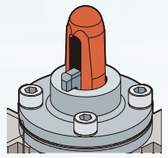
- Double Acting, basic (PCC)
- Double Acting, position locking (PCC-Q)

### Lever direction can be selected from 4 options

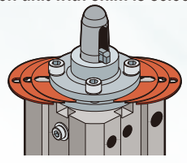



### Two types of locating pin shape are available.


Round pin


Diamond pin

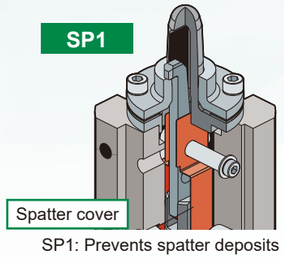
### The receiving surface position of the workpiece can be adjusted by up to 2 mm (when unit with shim is selected)



0.5mm to 2 mm adjustable
One side 1×t1+2×t0.5
(One side: 3 sheets Both sides: 6 sheets)

### Sputter countermeasures

SP1

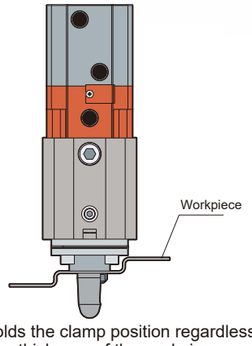



SP1: Prevents spatter deposits in the clamp lever cam groove.

### With cleaning holes as standard.

As the cleaning hole has tapered pipe threading (Rc3/8), it can be used as an air blow port for internal cleaning.

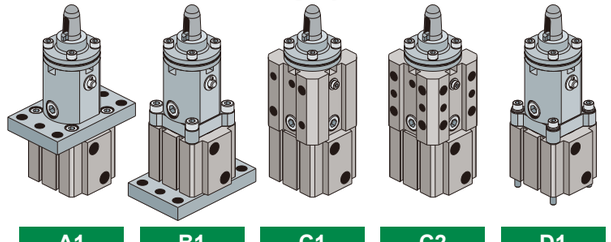
### Position locking mechanism can be selected




- It holds the clamp position regardless of the thickness of the workpiece
- It prevents the workpiece from falling out in emergencies.

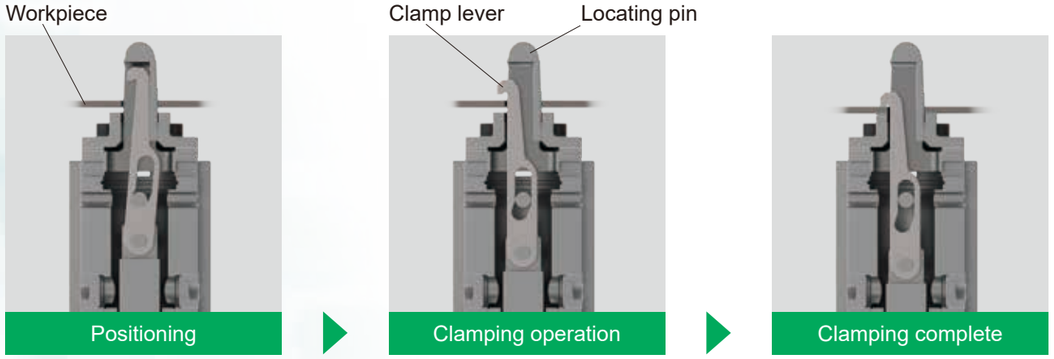
Note: The D1 type is not supported.

### Extensive mounting styles are available.

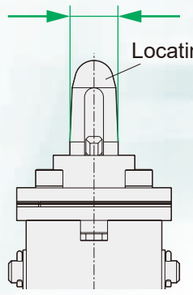


| A1 | B1 | C1 | C2 | D1 |
|---|---|---|---|---|
| Top surface flange | Bottom surface flange | Side mounting (2 surfaces) | Side mounting (2 surfaces) | Bottom mounting |

## Operation Overview




## Supports 35 standard locating pin diameters




| Code | Locating pin diameter | Applicable workpiece hole diameter | Code | Locating pin diameter | Applicable workpiece hole diameter |
|---|---|---|---|---|---|
| 125 | ø12.5 | ø13 | 179 | ø17.9 | ø18 |
| 127 | ø12.7 | | 180 | ø18.0 | |
| 128 | ø12.8 | | 195 | ø19.5 | ø20 |
| 129 | ø12.9 | | 197 | ø19.7 | |
| 130 | ø13.0 | | 198 | ø19.8 | |
| 145 | ø14.5 | ø15 | 199 | ø19.9 | |
| 147 | ø14.7 | | 200 | ø20.0 | |
| 148 | ø14.8 | | 245 | ø24.5 | ø25 |
| 149 | ø14.9 | | 247 | ø24.7 | |
| 150 | ø15.0 | | 248 | ø24.8 | |
| 155 | ø15.5 | ø16 | 249 | ø24.9 | |
| 157 | ø15.7 | | 250 | ø25.0 | |
| 158 | ø15.8 | | 295 | ø29.5 | ø30 |
| 159 | ø15.9 | | 297 | ø29.7 | |
| 160 | ø16.0 | | 298 | ø29.8 | |
| 175 | ø17.5 | ø18 | 299 | ø29.9 | |
| 177 | ø17.7 | | 300 | ø30.0 | |
| 178 | ø17.8 | | | | |

## Installed cylinder switch

Solid state 2-color indicator type
For AC Magnetic Fields

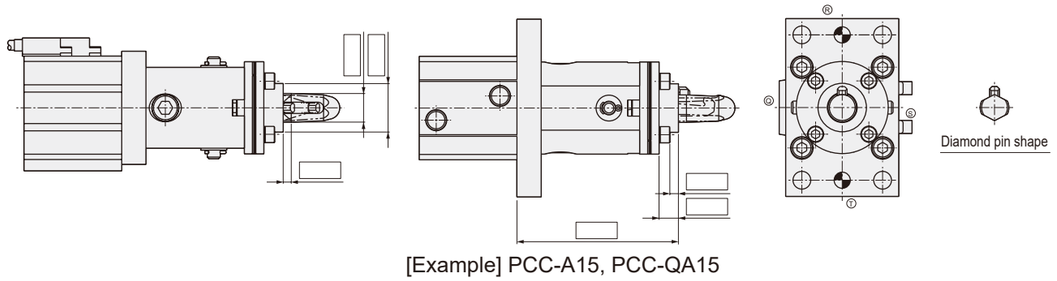
T2YD

Reed 2-color indicator type
For magnetized environment

T0Y

## Supports dimension-specified special specification products

Please inform us of your desired dimensions in the specification sheet (described on P. 892 to 896).




[Example] PCC-A15, PCC-QA15

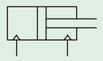
Pin Clamp Cylinder

Double Acting, Basic Type **PCC Series**

Double Acting, Fall Prevention Type **PCC-Q Series**

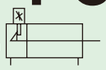
RoHS

Circuit Diagram Code



Double Acting, basic type

Circuit Diagram Code



Double Acting, Drop Prevention Type

## Model No. Notation

Basic type, without switch (Built-in magnet for switch)

PCC — C1 5 R 177 D — 2 SP1

Basic type, with switch (Built-in magnet for switch)

PCC — C1 5 R 177 D - T2YD D - 2 SP1

With fall prevention, without switch (Built-in magnet for switch)

PCC-Q C1 5 R 177 D — 2 SP1

With fall prevention, with switch (Built-in magnet for switch)

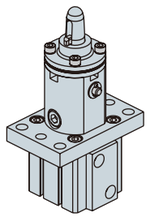
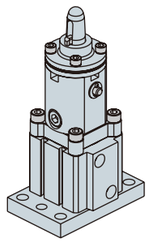
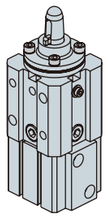
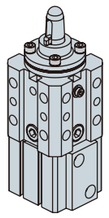
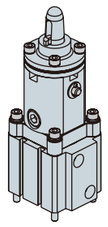
PCC-Q C1 5 R 177 D - T2YD D - 2 SP1

1 Model No. 2 Mounting Type 3 Clamp lever direction 4 Locating pin diameter 5 Locating pin shape 6 Switch Model 7 Number of Switches 8 Shim 9 Sputter countermeasures

### 1 Model No.

| Code | Content |
|---|---|
| PCC | Basic type |
| PCC-Q | With Fall Prevention |

### 2 Mounting Type

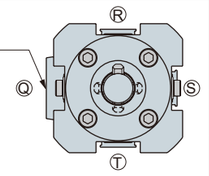
| Code | A1 | B1 | C1 | C2 | D1 *1 |
|---|---|---|---|---|---|
| Content | Top surface flange  | Bottom surface flange  | Side mounting (2 surfaces)  | Side mounting (2 surfaces)  | Bottom mounting  |

*1: When selecting fall prevention type (Q), D1 (bottom mounting) cannot be selected.





### 3 Clamp lever direction

| Code | Content |
|---|---|
| Q | Piping Port Position  |
| R | |
| S | |
| T | |

### 4 Locating pin diameter

| Code | Locating pin diameter | Applicable workpiece hole diameter | Code | Locating pin diameter | Applicable workpiece hole diameter |
|---|---|---|---|---|---|
| 125 | ø12.5 | ø13 | 179 | ø17.9 | ø18 |
| 127 | ø12.7 | | 180 | ø18.0 | |
| 128 | ø12.8 | | 195 | ø19.5 | ø20 |
| 129 | ø12.9 | | 197 | ø19.7 | |
| 130 | ø13.0 | | 198 | ø19.8 | |
| 145 | ø14.5 | ø15 | 199 | ø19.9 | |
| 147 | ø14.7 | | 200 | ø20.0 | |
| 148 | ø14.8 | | 245 | ø24.5 | ø25 |
| 149 | ø14.9 | | 247 | ø24.7 | |
| 150 | ø15.0 | | 248 | ø24.8 | |
| 155 | ø15.5 | ø16 | 249 | ø24.9 | |
| 157 | ø15.7 | | 250 | ø25.0 | |
| 158 | ø15.8 | | 295 | ø29.5 | ø30 |
| 159 | ø15.9 | | 297 | ø29.7 | |
| 160 | ø16.0 | | 298 | ø29.8 | |
| 175 | ø17.5 | ø18 | 299 | ø29.9 | |
| 177 | ø17.7 | | 300 | ø30.0 | |
| 178 | ø17.8 | | | | |

Note: Consult with us separately for other locating pin diameters.

### 5 Locating pin shape

| Code | Content |
|---|---|
| Blank | Round pin |
| D | Diamond pin |

### 6 Switch Model No.

For switch details, refer to P. 1457. Switches are shipped with the product.

| Contact | Indicator LED Special Function | Wiring (Output) | Load Voltage (V) AC | Load Voltage (V) DC | Load Current (mA) AC | Load Current (mA) DC | Lead wire *1 Straight | Lead wire *1 L-shape | |
|---|---|---|---|---|---|---|---|---|---|
| Solid State | 2-Color for AC Magnetic Field | 2-wire | — | 24 ± 10% | — | 5 to 20 | T2YD□ | – |  |
| | | | — | | — | | T2YDT□ | – | |
| | For 2-color AC Magnetic Field Connector specifications | | — | | — | | T2YDU | – | |

*1: Insert the code selected in the "*Lead wire length" table into "□" of the switch model number.
*2: Consult with us separately regarding H type and V type magnetic field resistant switches.
*3: Switches other than the above models are also available. (Custom Product) For details, refer to P. 1457.

*** Lead wire length**

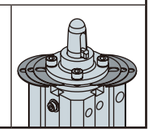
| Code | Content |
|---|---|
| Blank | 1 m (Standard) |
| 3 | 3 m (Option) |
| 5 | 5m (Option) |

Example) Lead wire length
1 m T2YD
3 m T2YD3
5 m T2YD5

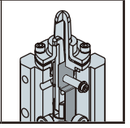
### 7 Number of Switches

| Code | Content |
|---|---|
| R | With unclamp side switch |
| H | With clamp side switch |
| D | With switches on both sides |

### 8 Shim

| Code | Content | |
|---|---|---|
| 0 | Without shim | |
| 2 | With 2 mm shim |  |

### 9 Sputter countermeasures

| Code | Content | |
|---|---|---|
| Blank | No sputter countermeasures | |
| SP1 | With sputter cover |  |

## Common Specifications

| Item | PCC/PCC-Q |
|---|---|
| Bore Size mm | 50 |
| Operation type | Double Acting Type |
| Operating Fluid | Compressed Air |
| Max Operating Pressure MPa | 0.5 |
| Min Operating Pressure MPa | PCC: 0.2 PCC-Q: 0.25 (36 psi) |
| Proof Pressure MPa | 1.0 |
| Ambient Temperature °C | -10 to 60 (No freezing) |
| Port Size | Rc1/4 |
| Operating Piston Speed mm/s | 50 to 300 |
| Cushion | None |
| Lubrication | Not Required |

## Theoretical clamping force

(Unit: N)

| Pressure (MPa) | 0.2 | 0.3 | 0.4 | 0.5 |
|---|---|---|---|---|
| Clamping force (N) | 329 | 494 | 659 | 824 |

## Clamp part specifications

| Item | | PCC/PCC-Q | |
|---|---|---|---|
| Clamp stroke | mm | With shim | Without shim |
| | | 10 to 12 | 12 |
| Escape stroke | mm | 5 | |
| Locating pin shape | | Round Shape | Diamond type |
| Clamp lever | | Single jaw | |

## Drop prevention (lock) part specifications

| Item | PCC-Q |
|---|---|
| Drop prevention (lock) method | Circular slit method |
| Lock Direction | Lock during clamping (cylinder forward direction) |
| Locking Force N | 943 |
| Max Operating Pressure MPa | 0.5 |
| Min Operating Pressure MPa | 0.25 (Note) |
| Port Size | Rc1/4 |
| Lubrication | Not Required |

Note: Depending on the non-operating conditions, it may operate from 0.05 MPa, so please be careful about residual pressure and exhaust pressure.

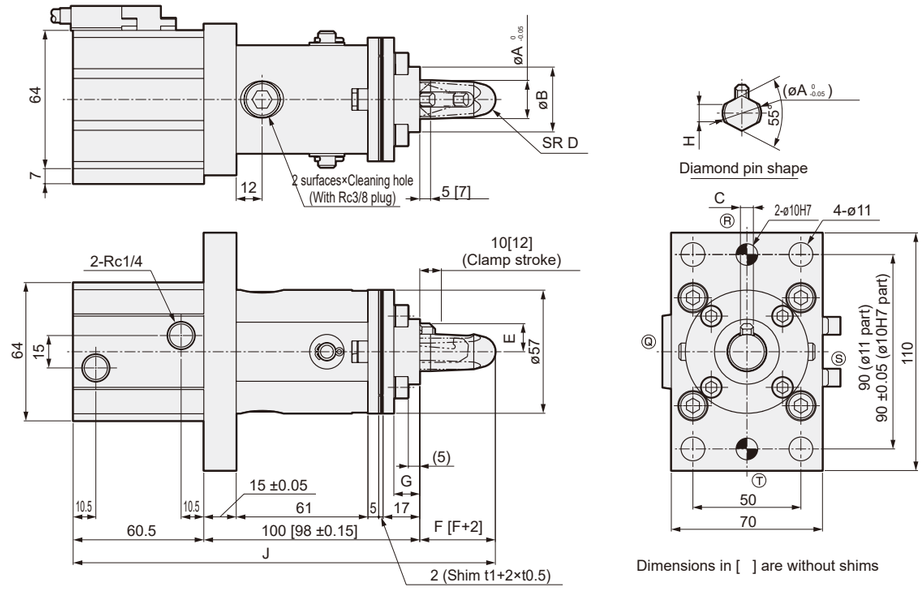
## Cylinder Weight

(Unit: kg)

| Model/Mounting Type | Standard Type | | | | | With Fall Prevention | | | |
|---|---|---|---|---|---|---|---|---|---|
| Locating pin diameter (mm) | A1 | B1 | C1 | C2 | D1 | A1 | B1 | C1 | C2 |
| ø12.5 to ø13.0 | 1.8 | 2.0 | 2.0 | 2.0 | 1.7 | 2.2 | 2.4 | 2.4 | 2.4 |
| ø14.5 to ø15.0 | 1.8 | 2.0 | 2.0 | 2.0 | 1.7 | 2.2 | 2.4 | 2.4 | 2.4 |
| ø15.5 to ø16.0 | 1.8 | 2.0 | 2.0 | 2.0 | 1.7 | 2.2 | 2.4 | 2.4 | 2.4 |
| ø17.5 to ø18.0 | 1.9 | 2.0 | 2.0 | 2.0 | 1.8 | 2.3 | 2.4 | 2.4 | 2.4 |
| ø19.5 to ø20.0 | 1.9 | 2.1 | 2.0 | 2.0 | 1.8 | 2.3 | 2.5 | 2.4 | 2.4 |
| ø24.5 to ø25.0 | 2.0 | 2.1 | 2.1 | 2.1 | 1.9 | 2.4 | 2.5 | 2.5 | 2.5 |
| ø29.5 to ø30.0 | 2.1 | 2.2 | 2.2 | 2.2 | 2.0 | 2.5 | 2.6 | 2.6 | 2.6 |

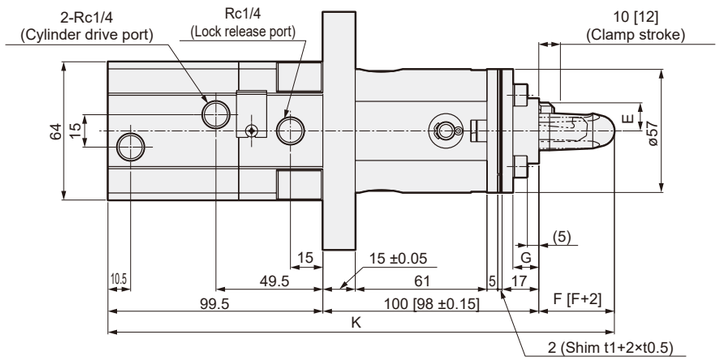
## Dimensional Drawings

● Top flange (A1)
・PCC-A1




Dimensions in [ ] are without shims

● Top flange (QA1)
(with position locking)
・PCC-QA1

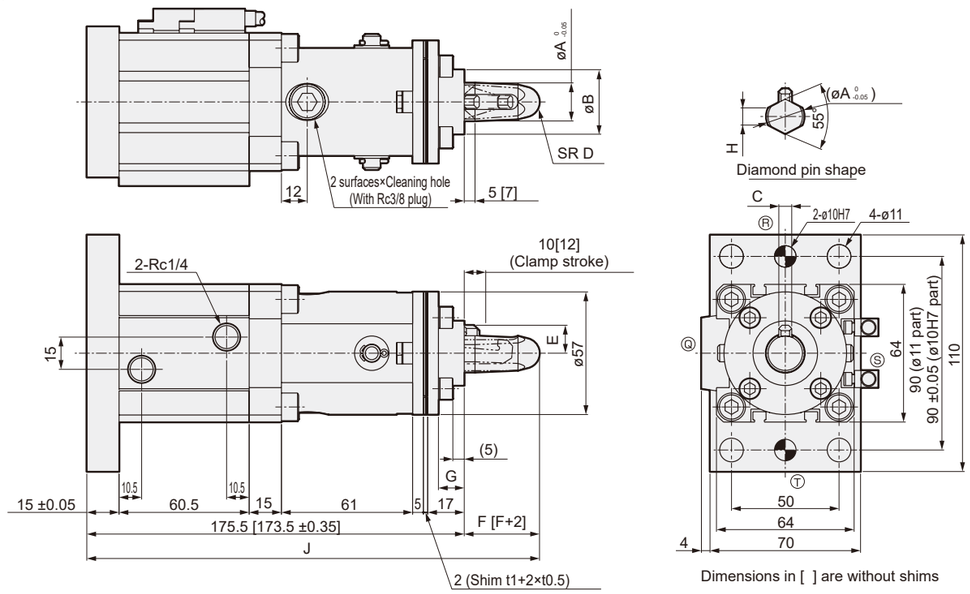



| Code | Common Dimensions (mm) | | | | | | | | | | Code | Common Dimensions (mm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Locating pin diameter (mm) | A | B | C | D | E | F | G | H | J | K | Locating pin diameter (mm) | A | B | C | D | E | F | G | H | J | K |
| ø12.5 | 12.5 | 30 | 4.5 | 5 | 9.5 | 30 | 12 | 6 | 190.5 | 229.5 | ø17.9 | 17.9 | 30 | 6 | 7 | 13 | 35 | 12 | 8 | 195.5 | 234.5 |
| ø12.7 | 12.7 | 30 | 4.5 | 5 | 9.5 | 30 | 12 | 6 | 190.5 | 229.5 | ø18.0 | 18.0 | 30 | 6 | 7 | 13.5 | 35 | 12 | 8 | 195.5 | 234.5 |
| ø12.8 | 12.8 | 30 | 4.5 | 5 | 9.5 | 30 | 12 | 6 | 190.5 | 229.5 | ø19.5 | 19.5 | 30 | 6 | 8 | 14 | 35 | 12 | 10 | 195.5 | 234.5 |
| ø12.9 | 12.9 | 30 | 4.5 | 5 | 9.5 | 30 | 12 | 6 | 190.5 | 229.5 | ø19.7 | 19.7 | 30 | 6 | 8 | 14 | 35 | 12 | 10 | 195.5 | 234.5 |
| ø13.0 | 13.0 | 30 | 4.5 | 5 | 10 | 30 | 12 | 7 | 190.5 | 229.5 | ø19.8 | 19.8 | 30 | 6 | 8 | 14 | 35 | 12 | 10 | 195.5 | 234.5 |
| ø14.5 | 14.5 | 30 | 6 | 5 | 11 | 30 | 12 | 7 | 190.5 | 229.5 | ø19.9 | 19.9 | 30 | 6 | 8 | 14 | 35 | 12 | 10 | 195.5 | 234.5 |
| ø14.7 | 14.7 | 30 | 6 | 5 | 11 | 30 | 12 | 7 | 190.5 | 229.5 | ø20.0 | 20.0 | 30 | 6 | 8 | 14.5 | 35 | 12 | 10 | 195.5 | 234.5 |
| ø14.8 | 14.8 | 30 | 6 | 5 | 11 | 30 | 12 | 7 | 190.5 | 229.5 | ø24.5 | 24.5 | 40 | 6 | 9 | 16.5 | 35 | 11.5 | 12 | 195.5 | 234.5 |
| ø14.9 | 14.9 | 30 | 6 | 5 | 11 | 30 | 12 | 7 | 190.5 | 229.5 | ø24.7 | 24.7 | 40 | 6 | 9 | 16.5 | 35 | 11.5 | 12 | 195.5 | 234.5 |
| ø15.0 | 15.0 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 190.5 | 229.5 | ø24.8 | 24.8 | 40 | 6 | 9 | 16.5 | 35 | 11.5 | 12 | 195.5 | 234.5 |
| ø15.5 | 15.5 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 190.5 | 229.5 | ø24.9 | 24.9 | 40 | 6 | 9 | 16.5 | 35 | 11.5 | 12 | 195.5 | 234.5 |
| ø15.7 | 15.7 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 190.5 | 229.5 | ø25.0 | 25.0 | 40 | 6 | 9 | 17 | 35 | 11.5 | 12 | 195.5 | 234.5 |
| ø15.8 | 15.8 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 190.5 | 229.5 | ø29.5 | 29.5 | 40 | 6 | 12 | 19.5 | 35 | 11.5 | 14 | 195.5 | 234.5 |
| ø15.9 | 15.9 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 190.5 | 229.5 | ø29.7 | 29.7 | 40 | 6 | 12 | 19.5 | 35 | 11.5 | 14 | 195.5 | 234.5 |
| ø16.0 | 16.0 | 30 | 6 | 6 | 12 | 30 | 12 | 7 | 190.5 | 229.5 | ø29.8 | 29.8 | 40 | 6 | 12 | 19.5 | 35 | 11.5 | 14 | 195.5 | 234.5 |
| ø17.5 | 17.5 | 30 | 6 | 7 | 13 | 35 | 12 | 8 | 195.5 | 234.5 | ø29.9 | 29.9 | 40 | 6 | 12 | 19.5 | 35 | 11.5 | 14 | 195.5 | 234.5 |
| ø17.7 | 17.7 | 30 | 6 | 7 | 13 | 35 | 12 | 8 | 195.5 | 234.5 | ø30.0 | 30.0 | 40 | 6 | 12.5 | 20 | 35 | 11.5 | 15 | 195.5 | 234.5 |
| ø17.8 | 17.8 | 30 | 6 | 7 | 13 | 35 | 12 | 8 | 195.5 | 234.5 | | | | | | | | | | | |

Note: For dimensions of models with switches, see P. 890 and 891.

## Dimensional Drawings

● Bottom flange (B1)
・PCC-B1





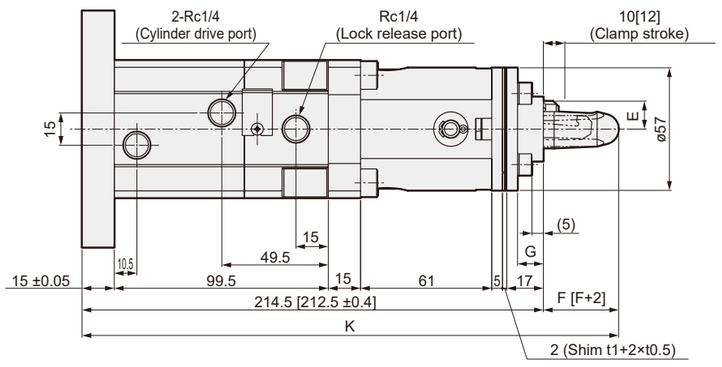


Diamond pin shape




Dimensions in [ ] are without shims

● Bottom flange (QB1)
(with position locking)
・PCC-QB1




| Code | Common Dimensions (mm) | | | | | | | | | | Code | Common Dimensions (mm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Locating pin diameter (mm) | A | B | C | D | E | F | G | H | J | K | Locating pin diameter (mm) | A | B | C | D | E | F | G | H | J | K |
| ø12.5 | 12.5 | 30 | 4.5 | 5 | 9.5 | 30 | 12 | 6 | 205.5 | 244.5 | ø17.9 | 17.9 | 30 | 6 | 7 | 13 | 35 | 12 | 8 | 210.5 | 249.5 |
| ø12.7 | 12.7 | 30 | 4.5 | 5 | 9.5 | 30 | 12 | 6 | 205.5 | 244.5 | ø18.0 | 18.0 | 30 | 6 | 7 | 13.5 | 35 | 12 | 8 | 210.5 | 249.5 |
| ø12.8 | 12.8 | 30 | 4.5 | 5 | 9.5 | 30 | 12 | 6 | 205.5 | 244.5 | ø19.5 | 19.5 | 30 | 6 | 8 | 14 | 35 | 12 | 10 | 210.5 | 249.5 |
| ø12.9 | 12.9 | 30 | 4.5 | 5 | 9.5 | 30 | 12 | 6 | 205.5 | 244.5 | ø19.7 | 19.7 | 30 | 6 | 8 | 14 | 35 | 12 | 10 | 210.5 | 249.5 |
| ø13.0 | 13.0 | 30 | 4.5 | 5 | 10 | 30 | 12 | 7 | 205.5 | 244.5 | ø19.8 | 19.8 | 30 | 6 | 8 | 14 | 35 | 12 | 10 | 210.5 | 249.5 |
| ø14.5 | 14.5 | 30 | 6 | 5 | 11 | 30 | 12 | 7 | 205.5 | 244.5 | ø19.9 | 19.9 | 30 | 6 | 8 | 14 | 35 | 12 | 10 | 210.5 | 249.5 |
| ø14.7 | 14.7 | 30 | 6 | 5 | 11 | 30 | 12 | 7 | 205.5 | 244.5 | ø20.0 | 20.0 | 30 | 6 | 8 | 14.5 | 35 | 12 | 10 | 210.5 | 249.5 |
| ø14.8 | 14.8 | 30 | 6 | 5 | 11 | 30 | 12 | 7 | 205.5 | 244.5 | ø24.5 | 24.5 | 40 | 6 | 9 | 16.5 | 35 | 11.5 | 12 | 210.5 | 249.5 |
| ø14.9 | 14.9 | 30 | 6 | 6 | 11 | 30 | 12 | 7 | 205.5 | 244.5 | ø24.7 | 24.7 | 40 | 6 | 9 | 16.5 | 35 | 11.5 | 12 | 210.5 | 249.5 |
| ø15.0 | 15.0 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 205.5 | 244.5 | ø24.8 | 24.8 | 40 | 6 | 9 | 16.5 | 35 | 11.5 | 12 | 210.5 | 249.5 |
| ø15.5 | 15.5 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 205.5 | 244.5 | ø24.9 | 24.9 | 40 | 6 | 9 | 16.5 | 35 | 11.5 | 12 | 210.5 | 249.5 |
| ø15.7 | 15.7 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 205.5 | 244.5 | ø25.0 | 25.0 | 40 | 6 | 9 | 17 | 35 | 11.5 | 12 | 210.5 | 249.5 |
| ø15.8 | 15.8 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 205.5 | 244.5 | ø29.5 | 29.5 | 40 | 6 | 12 | 19.5 | 35 | 11.5 | 14 | 210.5 | 249.5 |
| ø15.9 | 15.9 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 205.5 | 244.5 | ø29.7 | 29.7 | 40 | 6 | 12 | 19.5 | 35 | 11.5 | 14 | 210.5 | 249.5 |
| ø16.0 | 16.0 | 30 | 6 | 6 | 12 | 30 | 12 | 7 | 205.5 | 244.5 | ø29.8 | 29.8 | 40 | 6 | 12 | 19.5 | 35 | 11.5 | 14 | 210.5 | 249.5 |
| ø17.5 | 17.5 | 30 | 6 | 7 | 13 | 35 | 12 | 8 | 210.5 | 249.5 | ø29.9 | 29.9 | 40 | 6 | 12 | 19.5 | 35 | 11.5 | 14 | 210.5 | 249.5 |
| ø17.7 | 17.7 | 30 | 6 | 7 | 13 | 35 | 12 | 8 | 210.5 | 249.5 | ø30.0 | 30.0 | 40 | 6 | 12.5 | 20 | 35 | 11.5 | 15 | 210.5 | 249.5 |
| ø17.8 | 17.8 | 30 | 6 | 7 | 13 | 35 | 12 | 8 | 210.5 | 249.5 | | | | | | | | | | | |

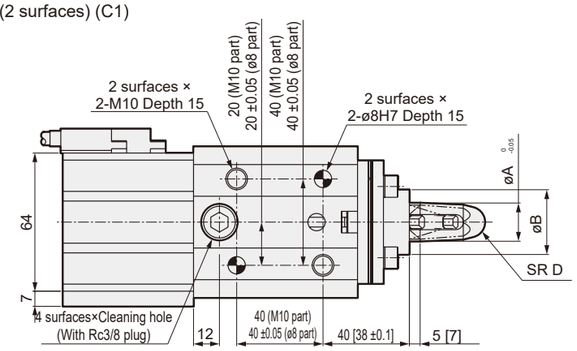
Note: For dimensions of models with switches, see P. 890, 891.

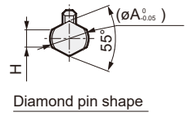




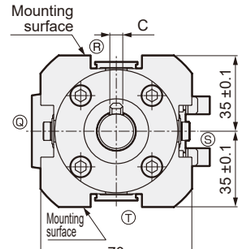
## Dimensional Drawings

● Side mounting (2 surfaces) (C1)
・PCC-C1



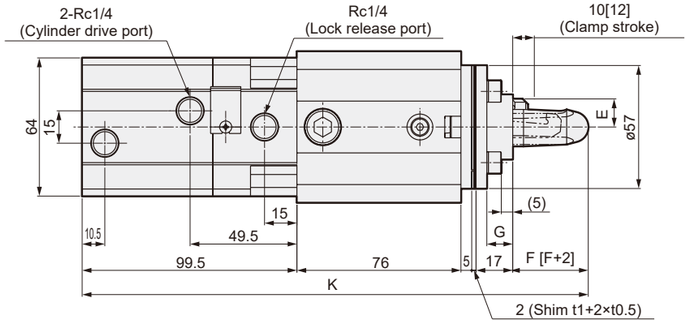




Diamond pin shape




Dimensions in [ ] are without shims

● Side mounting (2 surfaces)
(C1)
(with position locking)
・PCC-QC1

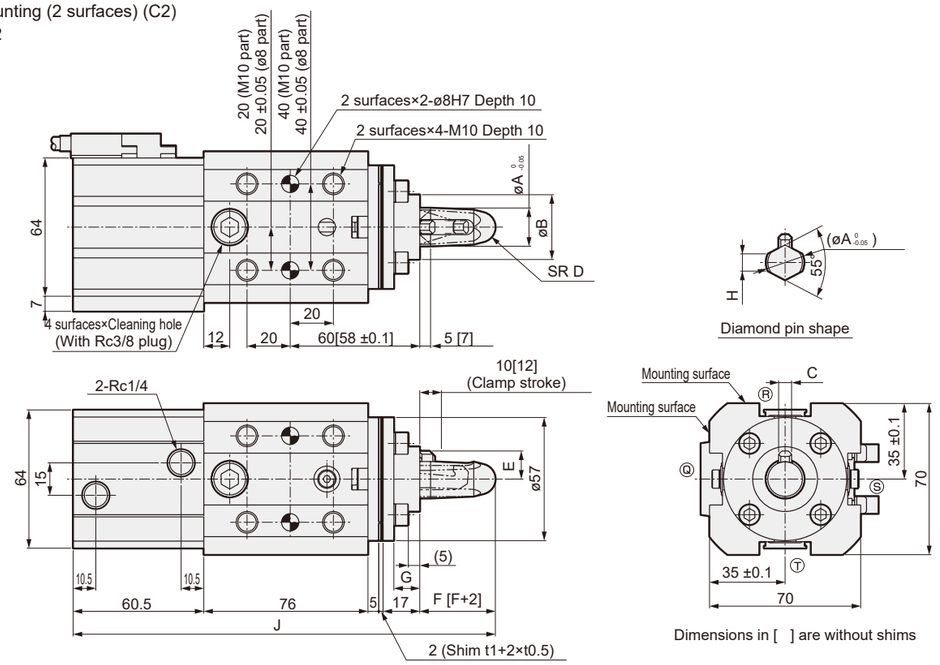



| Code | Common Dimensions (mm) | | | | | | | | | | Code | Common Dimensions (mm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Locating pin diameter (mm) | A | B | C | D | E | F | G | H | J | K | Locating pin diameter (mm) | A | B | C | D | E | F | G | H | J | K |
| ø12.5 | 12.5 | 30 | 4.5 | 5 | 9.5 | 30 | 12 | 6 | 190.5 | 229.5 | ø17.9 | 17.9 | 30 | 6 | 7 | 13 | 35 | 12 | 8 | 195.5 | 234.5 |
| ø12.7 | 12.7 | 30 | 4.5 | 5 | 9.5 | 30 | 12 | 6 | 190.5 | 229.5 | ø18.0 | 18.0 | 30 | 6 | 7 | 13.5 | 35 | 12 | 8 | 195.5 | 234.5 |
| ø12.8 | 12.8 | 30 | 4.5 | 5 | 9.5 | 30 | 12 | 6 | 190.5 | 229.5 | ø19.5 | 19.5 | 30 | 6 | 8 | 14 | 35 | 12 | 10 | 195.5 | 234.5 |
| ø12.9 | 12.9 | 30 | 4.5 | 5 | 9.5 | 30 | 12 | 6 | 190.5 | 229.5 | ø19.7 | 19.7 | 30 | 6 | 8 | 14 | 35 | 12 | 10 | 195.5 | 234.5 |
| ø13.0 | 13.0 | 30 | 4.5 | 5 | 10 | 30 | 12 | 7 | 190.5 | 229.5 | ø19.8 | 19.8 | 30 | 6 | 8 | 14 | 35 | 12 | 10 | 195.5 | 234.5 |
| ø14.5 | 14.5 | 30 | 6 | 5 | 11 | 30 | 12 | 7 | 190.5 | 229.5 | ø19.9 | 19.9 | 30 | 6 | 8 | 14 | 35 | 12 | 10 | 195.5 | 234.5 |
| ø14.7 | 14.7 | 30 | 6 | 5 | 11 | 30 | 12 | 7 | 190.5 | 229.5 | ø20.0 | 20.0 | 30 | 6 | 8 | 14.5 | 35 | 12 | 10 | 195.5 | 234.5 |
| ø14.8 | 14.8 | 30 | 6 | 5 | 11 | 30 | 12 | 7 | 190.5 | 229.5 | ø24.5 | 24.5 | 40 | 6 | 9 | 16.5 | 35 | 11.5 | 12 | 195.5 | 234.5 |
| ø14.9 | 14.9 | 30 | 6 | 5 | 11 | 30 | 12 | 7 | 190.5 | 229.5 | ø24.7 | 24.7 | 40 | 6 | 9 | 16.5 | 35 | 11.5 | 12 | 195.5 | 234.5 |
| ø15.0 | 15.0 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 190.5 | 229.5 | ø24.8 | 24.8 | 40 | 6 | 9 | 16.5 | 35 | 11.5 | 12 | 195.5 | 234.5 |
| ø15.5 | 15.5 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 190.5 | 229.5 | ø24.9 | 24.9 | 40 | 6 | 9 | 16.5 | 35 | 11.5 | 12 | 195.5 | 234.5 |
| ø15.7 | 15.7 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 190.5 | 229.5 | ø25.0 | 25.0 | 40 | 6 | 9 | 17 | 35 | 11.5 | 12 | 195.5 | 234.5 |
| ø15.8 | 15.8 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 190.5 | 229.5 | ø29.5 | 29.5 | 40 | 6 | 12 | 19.5 | 35 | 11.5 | 14 | 195.5 | 234.5 |
| ø15.9 | 15.9 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 190.5 | 229.5 | ø29.7 | 29.7 | 40 | 6 | 12 | 19.5 | 35 | 11.5 | 14 | 195.5 | 234.5 |
| ø16.0 | 16.0 | 30 | 6 | 6 | 12 | 30 | 12 | 7 | 190.5 | 229.5 | ø29.8 | 29.8 | 40 | 6 | 12 | 19.5 | 35 | 11.5 | 14 | 195.5 | 234.5 |
| ø17.5 | 17.5 | 30 | 6 | 7 | 13 | 35 | 12 | 8 | 195.5 | 234.5 | ø29.9 | 29.9 | 40 | 6 | 12 | 19.5 | 35 | 11.5 | 14 | 195.5 | 234.5 |
| ø17.7 | 17.7 | 30 | 6 | 7 | 13 | 35 | 12 | 8 | 195.5 | 234.5 | ø30.0 | 30.0 | 40 | 6 | 12.5 | 20 | 35 | 11.5 | 15 | 195.5 | 234.5 |
| ø17.8 | 17.8 | 30 | 6 | 7 | 13 | 35 | 12 | 8 | 195.5 | 234.5 | | | | | | | | | | | |

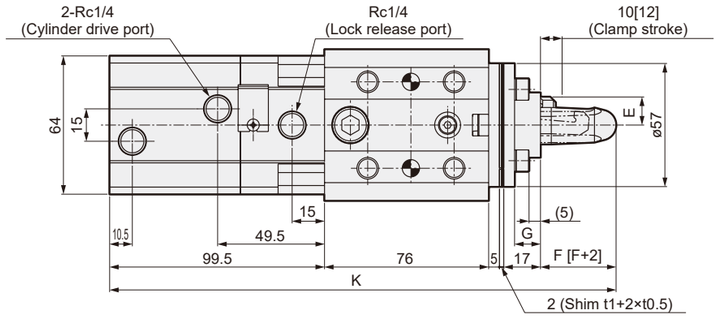
Note: For dimensions of models with switches, see P. 890 and 891.

## Dimensional Drawings

● Side mounting (2 surfaces) (C2)
・PCC-C2




● Side mounting (2 surfaces) (C2)
(with position locking)
・PCC-QC2




| Code | Common Dimensions (mm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Locating pin diameter (mm) | A | B | C | D | E | F | G | H | J | K |
| ø12.5 | 12.5 | 30 | 4.5 | 5 | 9.5 | 30 | 12 | 6 | 190.5 | 229.5 |
| ø12.7 | 12.7 | 30 | 4.5 | 5 | 9.5 | 30 | 12 | 6 | 190.5 | 229.5 |
| ø12.8 | 12.8 | 30 | 4.5 | 5 | 9.5 | 30 | 12 | 6 | 190.5 | 229.5 |
| ø12.9 | 12.9 | 30 | 4.5 | 5 | 9.5 | 30 | 12 | 6 | 190.5 | 229.5 |
| ø13.0 | 13.0 | 30 | 4.5 | 5 | 10 | 30 | 12 | 7 | 190.5 | 229.5 |
| ø14.5 | 14.5 | 30 | 6 | 5 | 11 | 30 | 12 | 7 | 190.5 | 229.5 |
| ø14.7 | 14.7 | 30 | 6 | 5 | 11 | 30 | 12 | 7 | 190.5 | 229.5 |
| ø14.8 | 14.8 | 30 | 6 | 5 | 11 | 30 | 12 | 7 | 190.5 | 229.5 |
| ø14.9 | 14.9 | 30 | 6 | 5 | 11 | 30 | 12 | 7 | 190.5 | 229.5 |
| ø15.0 | 15.0 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 190.5 | 229.5 |
| ø15.5 | 15.5 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 190.5 | 229.5 |
| ø15.7 | 15.7 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 190.5 | 229.5 |
| ø15.8 | 15.8 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 190.5 | 229.5 |
| ø15.9 | 15.9 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 190.5 | 229.5 |
| ø16.0 | 16.0 | 30 | 6 | 6 | 12 | 30 | 12 | 7 | 190.5 | 229.5 |
| ø17.5 | 17.5 | 30 | 6 | 7 | 13 | 35 | 12 | 8 | 195.5 | 234.5 |
| ø17.7 | 17.7 | 30 | 6 | 7 | 13 | 35 | 12 | 8 | 195.5 | 234.5 |
| ø17.8 | 17.8 | 30 | 6 | 7 | 13 | 35 | 12 | 8 | 195.5 | 234.5 |

| Code | Common Dimensions (mm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Locating pin diameter (mm) | A | B | C | D | E | F | G | H | J | K |
| ø17.9 | 17.9 | 30 | 6 | 7 | 13 | 35 | 12 | 8 | 195.5 | 234.5 |
| ø18.0 | 18.0 | 30 | 6 | 7 | 13.5 | 35 | 12 | 8 | 195.5 | 234.5 |
| ø19.5 | 19.5 | 30 | 6 | 8 | 14 | 35 | 12 | 10 | 195.5 | 234.5 |
| ø19.7 | 19.7 | 30 | 6 | 8 | 14 | 35 | 12 | 10 | 195.5 | 234.5 |
| ø19.8 | 19.8 | 30 | 6 | 8 | 14 | 35 | 12 | 10 | 195.5 | 234.5 |
| ø19.9 | 19.9 | 30 | 6 | 8 | 14 | 35 | 12 | 10 | 195.5 | 234.5 |
| ø20.0 | 20.0 | 30 | 6 | 8 | 14.5 | 35 | 12 | 10 | 195.5 | 234.5 |
| ø24.5 | 24.5 | 40 | 6 | 9 | 16.5 | 35 | 11.5 | 12 | 195.5 | 234.5 |
| ø24.7 | 24.7 | 40 | 6 | 9 | 16.5 | 35 | 11.5 | 12 | 195.5 | 234.5 |
| ø24.8 | 24.8 | 40 | 6 | 9 | 16.5 | 35 | 11.5 | 12 | 195.5 | 234.5 |
| ø24.9 | 24.9 | 40 | 6 | 9 | 16.5 | 35 | 11.5 | 12 | 195.5 | 234.5 |
| ø25.0 | 25.0 | 40 | 6 | 9 | 17 | 35 | 11.5 | 12 | 195.5 | 234.5 |
| ø29.5 | 29.5 | 40 | 6 | 12 | 19.5 | 35 | 11.5 | 14 | 195.5 | 234.5 |
| ø29.7 | 29.7 | 40 | 6 | 12 | 19.5 | 35 | 11.5 | 14 | 195.5 | 234.5 |
| ø29.8 | 29.8 | 40 | 6 | 12 | 19.5 | 35 | 11.5 | 14 | 195.5 | 234.5 |
| ø29.9 | 29.9 | 40 | 6 | 12 | 19.5 | 35 | 11.5 | 14 | 195.5 | 234.5 |
| ø30.0 | 30.0 | 40 | 6 | 12.5 | 20 | 35 | 11.5 | 15 | 195.5 | 234.5 |

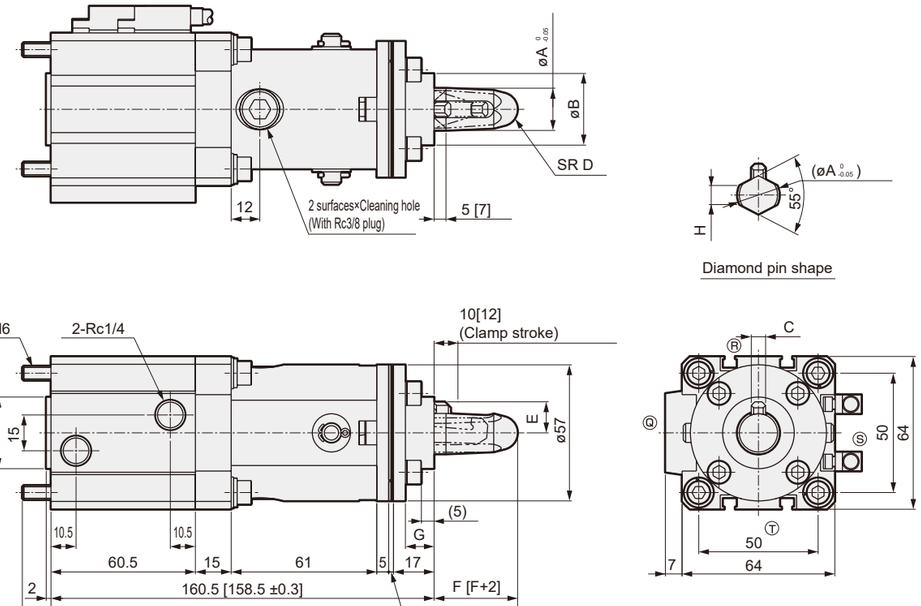
Note: For dimensions of models with switches, see P. 890 and 891.





## Dimensional Drawings

● Bottom mounting (D1)
・PCC-D1

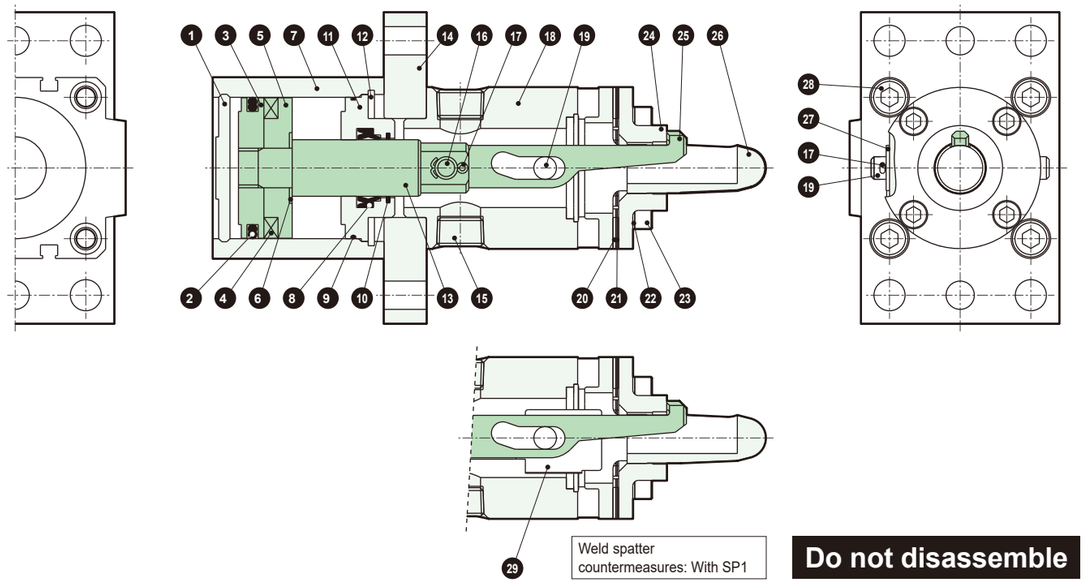



| Code | Common Dimensions (mm) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Locating pin diameter (mm) | A | B | C | D | E | F | G | H | J |
| ø12.5 | 12.5 | 30 | 4.5 | 5 | 9.5 | 30 | 12 | 6 | 190.5 |
| ø12.7 | 12.7 | 30 | 4.5 | 5 | 9.5 | 30 | 12 | 6 | 190.5 |
| ø12.8 | 12.8 | 30 | 4.5 | 5 | 9.5 | 30 | 12 | 6 | 190.5 |
| ø12.9 | 12.9 | 30 | 4.5 | 5 | 9.5 | 30 | 12 | 6 | 190.5 |
| ø13.0 | 13.0 | 30 | 4.5 | 5 | 10 | 30 | 12 | 7 | 190.5 |
| ø14.5 | 14.5 | 30 | 6 | 5 | 11 | 30 | 12 | 7 | 190.5 |
| ø14.7 | 14.7 | 30 | 6 | 5 | 11 | 30 | 12 | 7 | 190.5 |
| ø14.8 | 14.8 | 30 | 6 | 5 | 11 | 30 | 12 | 7 | 190.5 |
| ø14.9 | 14.9 | 30 | 6 | 5 | 11 | 30 | 12 | 7 | 190.5 |
| ø15.0 | 15.0 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 190.5 |
| ø15.5 | 15.5 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 190.5 |
| ø15.7 | 15.7 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 190.5 |
| ø15.8 | 15.8 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 190.5 |
| ø15.9 | 15.9 | 30 | 6 | 6 | 11.5 | 30 | 12 | 7 | 190.5 |
| ø16.0 | 16.0 | 30 | 6 | 6 | 12 | 30 | 12 | 7 | 190.5 |
| ø17.5 | 17.5 | 30 | 6 | 7 | 13 | 35 | 12 | 8 | 195.5 |
| ø17.7 | 17.7 | 30 | 6 | 7 | 13 | 35 | 12 | 8 | 195.5 |
| ø17.8 | 17.8 | 30 | 6 | 7 | 13 | 35 | 12 | 8 | 195.5 |

| Code | Common Dimensions (mm) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Locating pin diameter (mm) | A | B | C | D | E | F | G | H | J |
| ø17.9 | 17.9 | 30 | 6 | 7 | 13 | 35 | 12 | 8 | 195.5 |
| ø18.0 | 18.0 | 30 | 6 | 7 | 13.5 | 35 | 12 | 8 | 195.5 |
| ø19.5 | 19.5 | 30 | 6 | 8 | 14 | 35 | 12 | 10 | 195.5 |
| ø19.7 | 19.7 | 30 | 6 | 8 | 14 | 35 | 12 | 10 | 195.5 |
| ø19.8 | 19.8 | 30 | 6 | 8 | 14 | 35 | 12 | 10 | 195.5 |
| ø19.9 | 19.9 | 30 | 6 | 8 | 14 | 35 | 12 | 10 | 195.5 |
| ø20.0 | 20.0 | 30 | 6 | 8 | 14.5 | 35 | 12 | 10 | 195.5 |
| ø24.5 | 24.5 | 40 | 6 | 9 | 16.5 | 35 | 11.5 | 12 | 195.5 |
| ø24.7 | 24.7 | 40 | 6 | 9 | 16.5 | 35 | 11.5 | 12 | 195.5 |
| ø24.8 | 24.8 | 40 | 6 | 9 | 16.5 | 35 | 11.5 | 12 | 195.5 |
| ø24.9 | 24.9 | 40 | 6 | 9 | 16.5 | 35 | 11.5 | 12 | 195.5 |
| ø25.0 | 25.0 | 40 | 6 | 9 | 17 | 35 | 11.5 | 12 | 195.5 |
| ø29.5 | 29.5 | 40 | 6 | 12 | 19.5 | 35 | 11.5 | 14 | 195.5 |
| ø29.7 | 29.7 | 40 | 6 | 12 | 19.5 | 35 | 11.5 | 14 | 195.5 |
| ø29.8 | 29.8 | 40 | 6 | 12 | 19.5 | 35 | 11.5 | 14 | 195.5 |
| ø29.9 | 29.9 | 40 | 6 | 12 | 19.5 | 35 | 11.5 | 14 | 195.5 |
| ø30.0 | 30.0 | 40 | 6 | 12.5 | 20 | 35 | 11.5 | 15 | 195.5 |

Note: For dimensions of models with switches, see P. 890 and 891.

## Internal Structure Diagram/Material (PCC-A1)



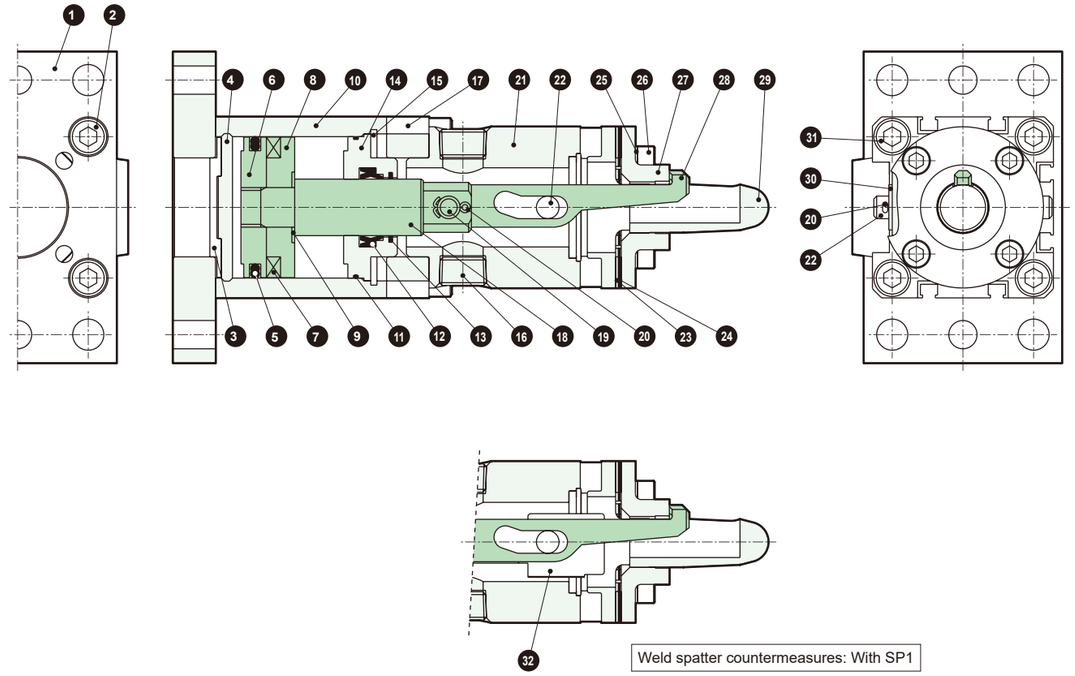

**Do not disassemble**

| Part No. | Part Name | Material | Part No. | Part Name | Material |
|---|---|---|---|---|---|
| 1 | Cover | Aluminum Alloy | 16 | Hinge pin (2) | Steel |
| 2 | Piston Packing | Nitrile Rubber | 17 | Split Pin | Steel |
| 3 | Piston | Aluminum Alloy | 18 | Guide | Aluminum Alloy |
| 4 | Piston magnet | Plastic | 19 | Hinge pin (1) | Steel |
| 5 | Spacer | Special resin | 20 | Shim 1 | Stainless Steel |
| 6 | Spacer washer | Stainless Steel | 21 | Shim 0.5 | Stainless Steel |
| 7 | Cylinder Body | Aluminum Alloy | 22 | Belleville washer | Steel |
| 8 | Rod Packing | Nitrile Rubber | 23 | Hexagon Socket Head Cap Screw | Steel |
| 9 | Rod metal gasket | Nitrile Rubber | 24 | Spacer | Steel |
| 10 | Coil Scraper | Phosphor bronze | 25 | Clamp lever | Steel |
| 11 | Rod Metal | Aluminum Alloy | 26 | Locating pin | Steel |
| 12 | C-type Retaining Ring | Steel | 27 | Plain Washer | Steel |
| 13 | Piston Rod | Steel | 28 | Hexagon Socket Head Cap Screw | Steel |
| 14 | Flange | Aluminum Alloy | 29 | Sputter cover | Copper Alloy |
| 15 | Plug | Steel | | | |





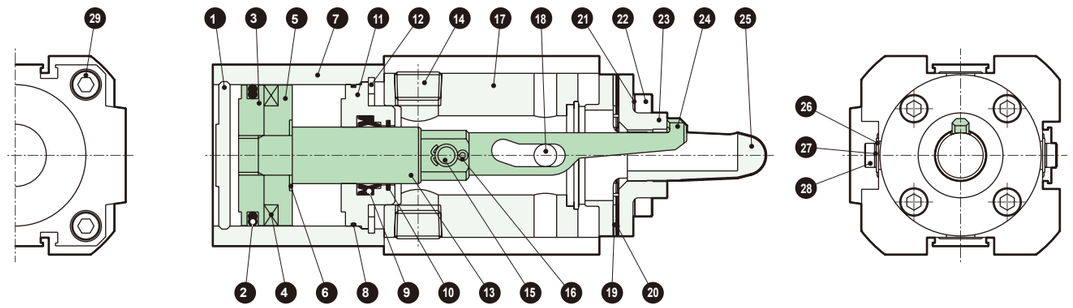
## Internal Structure Diagram/Material (PCC-B1)

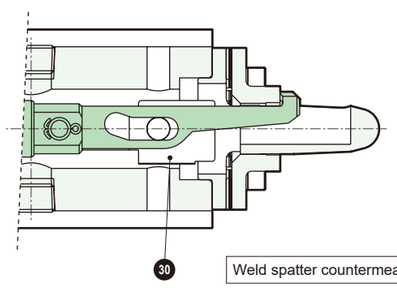



**Do not disassemble**

| Part No. | Part Name | Material | Part No. | Part Name | Material |
|---|---|---|---|---|---|
| 1 | Flange | Aluminum Alloy | 17 | Color | Aluminum Alloy |
| 2 | Hexagon Socket Head Cap Screw | Steel | 18 | Piston Rod | Steel |
| 3 | Spigot joint ring | Aluminum Alloy | 19 | Hinge pin (2) | Steel |
| 4 | Cover | Aluminum Alloy | 20 | Split Pin | Steel |
| 5 | Piston Packing | Nitrile Rubber | 21 | Guide | Aluminum Alloy |
| 6 | Piston | Aluminum Alloy | 22 | Hinge pin (1) | Steel |
| 7 | Piston magnet | Plastic | 23 | Shim 1 | Stainless Steel |
| 8 | Spacer | Special resin | 24 | Shim 0.5 | Stainless Steel |
| 9 | Spacer washer | Stainless Steel | 25 | Belleville washer | Steel |
| 10 | Cylinder Body | Aluminum Alloy | 26 | Hexagon Socket Head Cap Screw | Steel |
| 11 | Rod metal gasket | Nitrile Rubber | 27 | Spacer | Steel |
| 12 | Rod Packing | Nitrile Rubber | 28 | Clamp lever | Steel |
| 13 | Coil Scraper | Phosphor bronze | 29 | Locating pin | Steel |
| 14 | Rod Metal | Aluminum Alloy | 30 | Plain Washer | Steel |
| 15 | C-type Retaining Ring | Steel | 31 | Hexagon Socket Head Cap Screw | Steel |
| 16 | Plug | Steel | 32 | Sputter cover | Copper Alloy |

## Internal Structure Diagram/Material (PCC-C1, PCC-C2)




Weld spatter countermeasures: With SP1

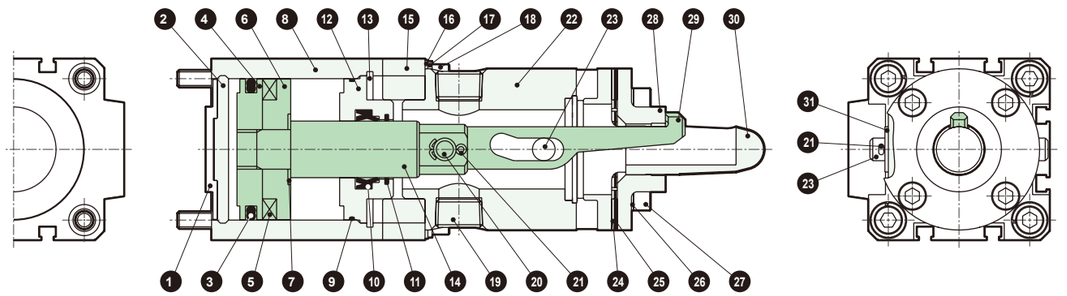
**Do not disassemble**

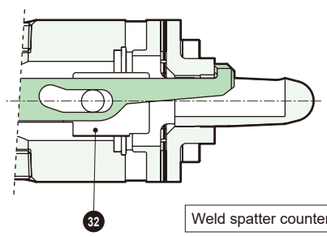
| Part No. | Part Name | Material | Part No. | Part Name | Material |
|---|---|---|---|---|---|
| 1 | Cover | Aluminum Alloy | 16 | Split Pin | Steel |
| 2 | Piston Packing | Nitrile Rubber | 17 | Guide | Aluminum Alloy |
| 3 | Piston | Aluminum Alloy | 18 | Hinge pin (1) | Steel |
| 4 | Piston magnet | Plastic magnet | 19 | Shim 1 | Stainless Steel |
| 5 | Spacer | Special resin | 20 | Shim 0.5 | Stainless Steel |
| 6 | Spacer washer | Stainless Steel | 21 | Belleville washer | Steel |
| 7 | Cylinder Body | Aluminum Alloy | 22 | Hexagon Socket Head Cap Screw | Steel |
| 8 | Rod metal gasket | Nitrile Rubber | 23 | Spacer | Steel |
| 9 | Rod Packing | Nitrile Rubber | 24 | Clamp lever | Steel |
| 10 | Coil Scraper | Phosphor bronze | 25 | Locating pin | Steel |
| 11 | Rod Metal | Aluminum Alloy | 26 | Plain Washer | Steel |
| 12 | C-type Retaining Ring | Steel | 27 | Belleville washer | Steel |
| 13 | Piston Rod | Steel | 28 | Hexagon Socket Head Cap Screw | Steel |
| 14 | Plug | Steel | 29 | Hexagon Socket Head Cap Screw | Steel |
| 15 | Hinge pin (2) | Steel | 30 | Sputter cover | Copper Alloy |





## Internal Structure Diagram/Material (PCC-D1)




Weld spatter countermeasures: With SP1

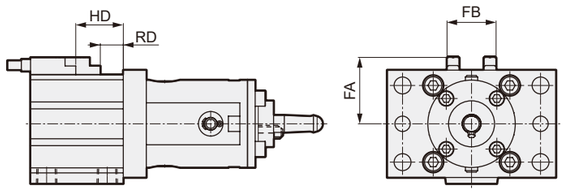
**Do not disassemble**

| Part No. | Part Name | Material | Part No. | Part Name | Material |
|---|---|---|---|---|---|
| 1 | Spigot joint ring | Aluminum Alloy | 17 | Spring washer | Steel |
| 2 | Cover | Aluminum Alloy | 18 | Hexagon Socket Head Cap Screw | Steel |
| 3 | Piston Packing | Nitrile Rubber | 19 | Plug | Steel |
| 4 | Piston | Aluminum Alloy | 20 | Hinge pin (2) | Steel |
| 5 | Piston magnet | Plastic | 21 | Split Pin | Steel |
| 6 | Spacer | Special resin | 22 | Guide | Aluminum Alloy |
| 7 | Spacer washer | Stainless Steel | 23 | Hinge pin (1) | Steel |
| 8 | Cylinder Body | Aluminum Alloy | 24 | Shim 1 | Stainless Steel |
| 9 | Rod metal gasket | Nitrile Rubber | 25 | Shim 0.5 | Stainless Steel |
| 10 | Rod Packing | Nitrile Rubber | 26 | Belleville washer | Steel |
| 11 | Coil Scraper | Phosphor bronze | 27 | Hexagon Socket Head Cap Screw | Steel |
| 12 | Rod Metal | Aluminum Alloy | 28 | Spacer | Steel |
| 13 | C-type Retaining Ring | Steel | 29 | Clamp lever | Steel |
| 14 | Piston Rod | Steel | 30 | Locating pin | Steel |
| 15 | Color | Aluminum Alloy | 31 | Plain Washer | Steel |
| 16 | Plain Washer | Steel | 32 | Sputter cover | Copper Alloy |

## PCC Series External Dimensions Diagram with Switch

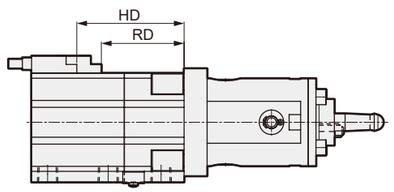
● T2YD, T2YDT, T2YDTU

• PCC-A1



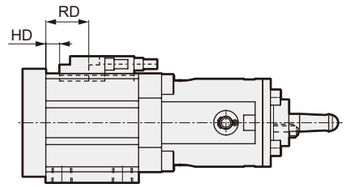

| T2YD, T2YDT, T2YDTU | | | |
|---|---|---|---|
| FA | FB | RD | HD |
| 43.3 | 32 | 12.5 | 30.5 |

• PCC-QA1



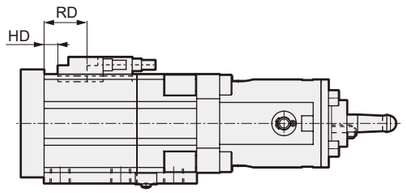

| T2YD, T2YDT, T2YDTU | | | |
|---|---|---|---|
| FA | FB | RD | HD |
| 43.3 | 32 | 51.5 | 69.5 |

• PCC-B1




| T2YD, T2YDT, T2YDTU | | | |
|---|---|---|---|
| FA | FB | RD | HD |
| 43.3 | 32 | 27.5 | 8.5 |

• PCC-QB1



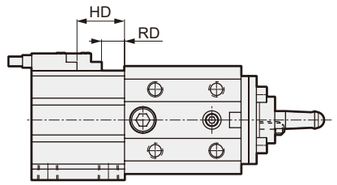

| T2YD, T2YDT, T2YDTU | | | |
|---|---|---|---|
| FA | FB | RD | HD |
| 43.3 | 32 | 27.5 | 8.5 |

Note: Switch position indicates the position at full stroke. The switch position during clamping changes depending on the workpiece thickness, so please adjust it according to the workpiece.



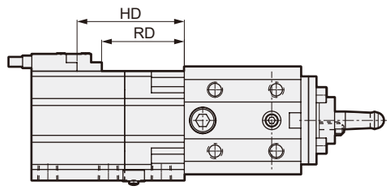
## PCC Series External Dimensions Diagram with Switch

• PCC-C1/C2



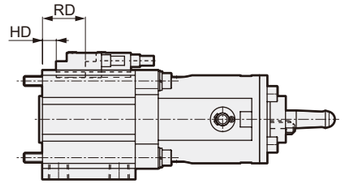

| T2YD, T2YDT, T2YDTU | | | |
|---|---|---|---|
| FA | FB | RD | HD |
| 43.3 | 32 | 12.5 | 30.5 |

• PCC-QC1/QC2




| T2YD, T2YDT, T2YDTU | | | |
|---|---|---|---|
| FA | FB | RD | HD |
| 43.3 | 32 | 51.5 | 69.5 |

• PCC-D1




| T2YD, T2YDT, T2YDTU | | | |
|---|---|---|---|
| FA | FB | RD | HD |
| 43.3 | 32 | 27.5 | 8.5 |

Note: Switch position indicates the position at full stroke. The switch position during clamping changes depending on the workpiece thickness, so please adjust it according to the workpiece.

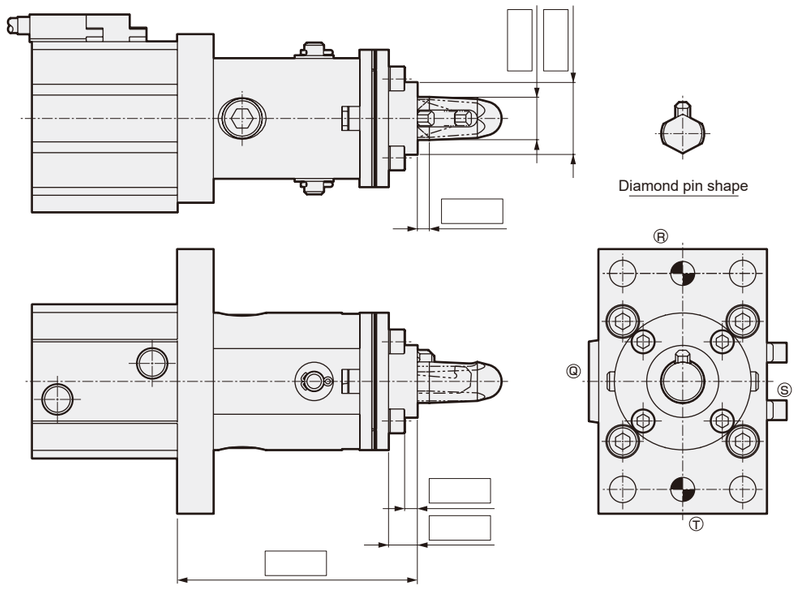
## PCC-A1 Special Order Product Specification Sheet (Please copy and use)

1. Basic model number

**PCC-A15** □ □ □ - □ □ - □ □ **...Basic type**

**PCC-QA15** □ □ □ - □ □ - □ □ **...Drop prevention type**

2. Dimension designation area (Please fill in the blanks where necessary)




3. Other special notes



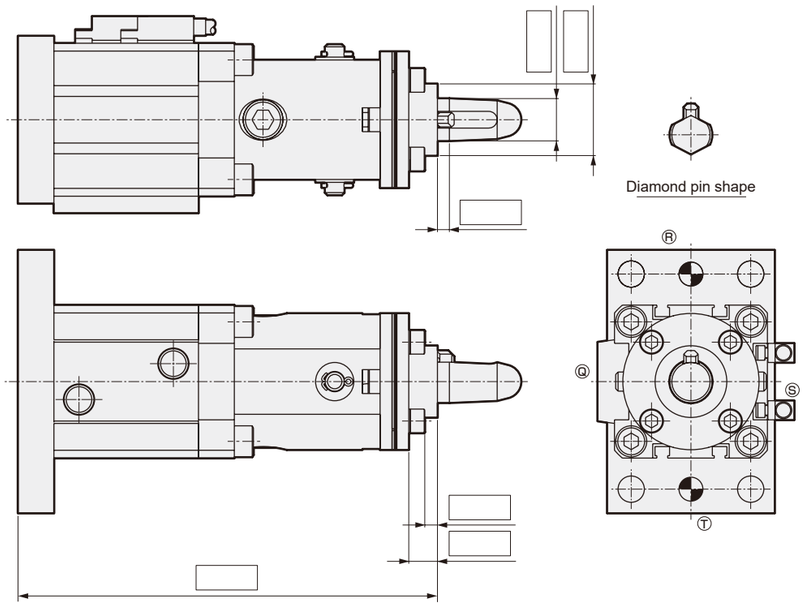
## PCC-B1 Special Order Product Specification Sheet (Please copy and use)

1. Basic model number

**PCC-B15** □ □ □ - □ □ - □ □ **...Basic type**

**PCC-QB15** □ □ □ - □ □ - □ □ **...Drop prevention type**

2. Dimension designation area (Please fill in the blanks where necessary)




3. Other special notes

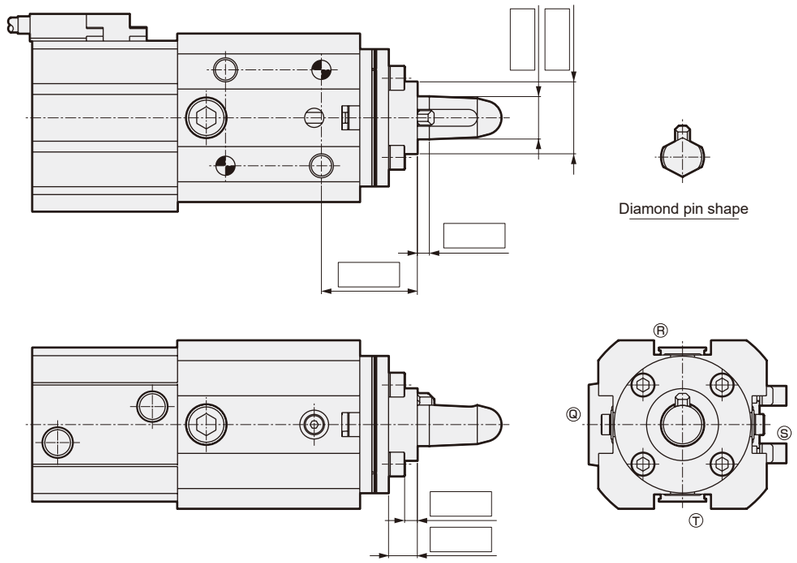
## PCC-C1 Special Order Product Specification Sheet (Please copy and use)

1. Basic model number

**PCC-C15** □ □ □ - □ - □ □ **...Basic type**

**PCC-QC15** □ □ □ - □ - □ □ **...Drop prevention type**

2. Dimension designation area (Please fill in the blanks where necessary)




3. Other special notes



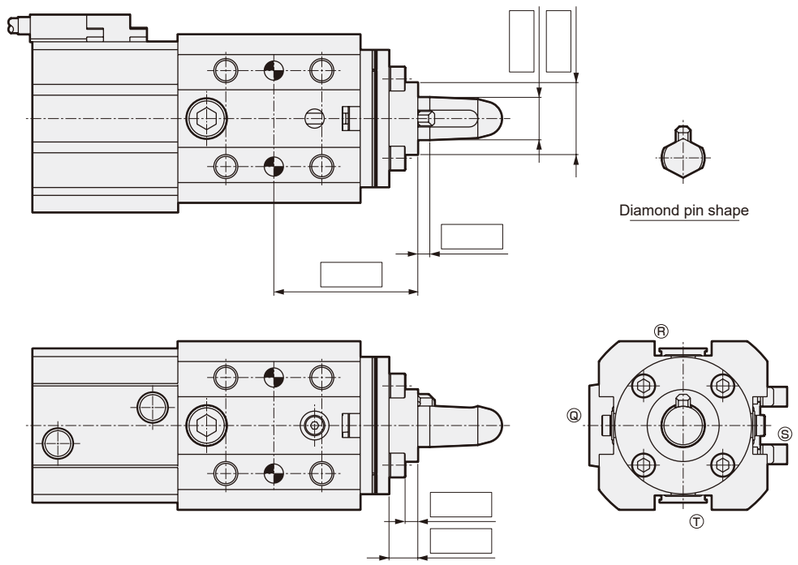
## PCC-C2 Special Order Product Specification Sheet (Please copy and use)

1. Basic model number

**PCC-C25** □ □ □ - □ - □ □ **...Basic type**

**PCC-QC25** □ □ □ - □ - □ □ **...Drop prevention type**

2. Dimension designation area (Please fill in the blanks where necessary)



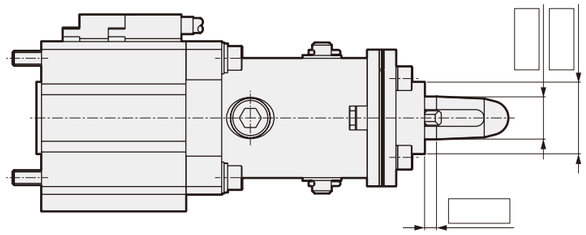

3. Other special notes

## PCC-D1 Special Order Product Specification Sheet (Please copy and use)

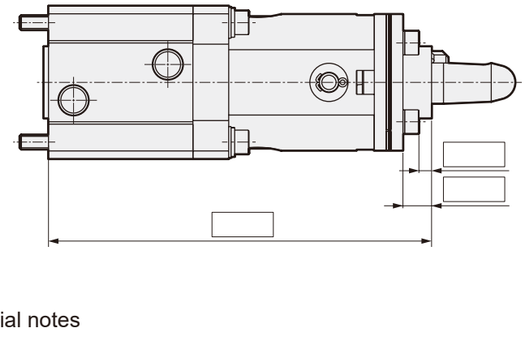
1. Basic model number

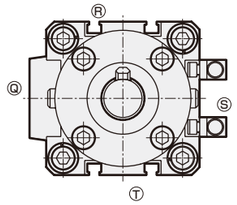
**PCC-D15 □ □ □ - □ □ - □ □ ...Basic type**

2. Dimension designation area (Please fill in the blanks where necessary)



Diamond pin shape






3. Other special notes

MEMO





Clamping
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
Cylinder Switch
Ending

# To Use This Product Safely

Be sure to read this before use. For general cylinder information, see Intro 41, and for cylinder switches, see P. 1512.

Individual Precautions: Pin clamp cylinder PCC Series

## Design / Selection

### 1. Common

**Warning**

■ This cylinder has been designed to simultaneously perform positioning and clamping of the workpiece. Do not use it for other applications, as this may cause accidents, damage to the cylinder, etc.

■ If fingers may be caught in the clamp lever, install a protective cover, etc.

■ When the circuit pressure drops due to power outage or problems in the air source, the clamping force drops, which may cause the workpiece to fall out depending on the mounting orientation of the product. Use a cylinder with fall prevention or take measures on the equipment side to prevent injury or damage to humans or machinery.

■ When mounting this cylinder to a transport robot or the like, it may not be possible to maintain clamping force due to the weight of the workpiece to be transported, inertial force during transportation, etc. Sufficiently consider the weight of the workpiece to be transferred and the inertial force of the workpiece during transfer, and take measures to prevent workpiece scattering as necessary.

### 2. Drop prevention type PCC-Q

**Warning**

■ This cylinder is equipped with position locking mechanism (for holding clamping position). When used in emergency or emergency stops (while in operation), the service life can be reduced significantly.

■ If back pressure is applied to the locking mechanism, the lock may be released. Use an individual exhaust Discrete or manifold for the valve.

■ When unlocking, make sure to supply pressure to the clamp (rod) side port, and before unlocking, check that load is not applied to the lock mechanism.

■ Due to the structure, the clamp lever moves by about 1 mm when the lock is applied.

**CAUTION**

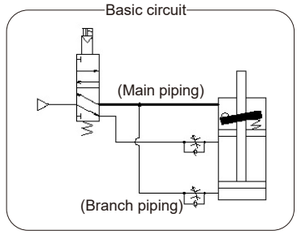
■ Set the clamping of the workpiece within the clamp stroke range.

■ When using this product in the welding process, be sure to ground to avoid current leading to the product.

■ Arrange the air piping of this cylinder (position locking) as shown in the figure below. If piping differently from the diagram below, such as piping to the fall prevention part as a single unit, it may cause a malfunctions such as response delays.

· Be sure to branch the piping for this cylinder after the valve as shown in the figure below, and pipe to the drop prevention unit (main piping) and the cylinder unit (branch piping).

· If the cylinder operation is faster than the unlocking, there is a risk that the lock will not release or the Piston Rod will jump out even if released, so design the piping so that the unlocking is faster than the cylinder operation.






## During Use

### 1. Drop prevention type PCC-Q

**Warning**

■ Do not lubricate the lock, as this may cause the holding force to decrease.

■ Do not disassemble the lock, as doing so may be dangerous.

■ Always use the product with the dust cover on, except for when performing manual release, in order to prevent failure or malfunction.

**CAUTION**

■ Remove spatter from the product upon removing the plug (R3, 8) of the product side cleaning hole. When working, do not scratch or dent the Piston Rod sliding part.

■ Locating pin and clamp lever are consumable parts. If the locating pin or clamp lever is used in a worn state, etc., the workpiece position may shift during clamping, or clamping may not be possible normally.

■ When locking the first time after leaving the lock released for long periods, a delayed response may occur in the lock. Do not leave the lock part pressurized; operate the lock part with each cylinder operation.

■ If no air pressure is supplied in vertical downward mounting, etc., holding force may not be sufficient when the lock is manually released. This may cause the clamp to release and the workpiece to fall from its own weight.