# Pin Cylinders

## *CJP2/CJP Series*

### ø4, ø6, ø10, ø15, ø16

2 auto switches can even be mounted on a cylinder with ø4 bore size (5 mm stroke).


Double acting / ***CJP2 Series***

One-touch fitting can be connected.
(Panel mount type)

ø2 One-touch fitting, miniature fitting, and speed controller can be connected.

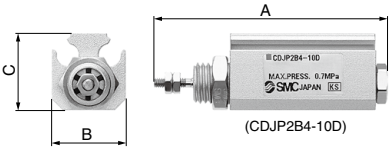

Single acting / ***CJP Series***

# Small and Light

## Double acting / CJP2 Series

- Full length: **Shortened by 6** to **9.5** mm
- Weight: **Reduced by 55** to **65**%

New aluminum body is light weight compared with the current CJP series.
(Compared with the basic model CJP cylinder without auto switch)




**Dimensions** Unit: mm

| Bore size | A | B | C |
|---|---|---|---|
| **4** | 29 + stroke (34 + stroke) | 14 | 14.5 |
| **6** | 33 + stroke (38 + stroke) | 14 | 16.5 |
| **10** | 39.5 + stroke (44.5 + stroke) | 15 | 19 |
| **16** | 43.5 + stroke (48.5 + stroke) | 20 | 24.5 |

∗ ( ): Dimension for built-in magnet type

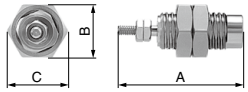
**Weight** Unit: g

| Stroke | Bore size (mm) | | | |
|---|---|---|---|---|
| | **4** | **6** | **10** | **16** |
| **5** | 11 | 16 | 27 | 42 |
| **10** | 13 | 18 | 29 | 46 |
| **15** | 15 | 21 | 32 | 50 |
| **20** | 17 | 23 | 35 | 54 |
| **25** | — | 25 | 37 | 58 |
| **30** | — | — | 40 | 63 |
| **35** | — | — | 43 | 67 |
| **40** | — | — | 45 | 71 |

## Single acting / CJP Series

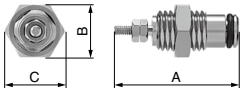
### Panel mount type (CJPB4-5)

Scale :100%




### Embedded type (CJPS4-5)

Scale :100%




**Dimensions** Unit: mm

| Bore size | A | | | B | C |
|---|---|---|---|---|---|
| | **5st** | **10st** | **15st** | | |
| **4** | 23.5 | 31.5 | 39.5 | 10 | 11.5 |
| **6** | 27.5 | 34.5 | 41.5 | 12 | 13.9 |
| **10** | 32.5 | 39 | 46 | 19 | 22 |
| **15** | 37.5 | 43.5 | 50 | 27 | 31 |

**Weight** Unit: g

| Stroke (mm) | Bore size (mm) | | | |
|---|---|---|---|---|
| | **4** | **6** | **10** | **15** |
| **5** | 10 | 10.6 | 28 | 75 |
| **10** | 13 | 13.1 | 33 | 82 |
| **15** | 15 | 15.6 | 38 | 92 |

## Variation

| Series | Action | Bore size (mm) | Standard stroke (mm) | Mounting Note 2) |
|---|---|---|---|---|
| **CJP2** | Double acting, Single rod | **4** | 5, 10, 15 (20) Note 1) | Basic Flange Foot Clevis Trunnion |
| | | **6** | 5, 10, 15, 20, 25 | |
| | | **10** | 5, 10, 15, 20, 25, 30, 35, 40 | |
| | | **16** | 5, 10, 15, 20, 25, 30, 35, 40 | |

| Series | Action | Bore size (mm) | Standard stroke (mm) | Mounting |
|---|---|---|---|---|
| **CJP** | Single acting, Spring return | **4** | 5, 10, 15 | Panel mount type, Embedded type |
| | | **6** | 5, 10, 15 | |
| | | **10** | 5, 10, 15 | |
| | | **15** | 5, 10, 15 | |

Note 1) A stroke of 20 is available with a standard product only. Note 2) Bore size of ø4 is available with basic mounting only.

## Related Products

Refer to the **Web Catalog**.

# Pin Cylinder: Double Acting, Single Rod

# *CJP2 Series*

## ø4, ø6, ø10, ø16

### How to Order

**Standard** CJP2 F 10 – 15 D – [ ] – [ ]

**Built-in magnet** CDJP2 F 10 – 15 D – [ ] – M9BW S – [ ]

**With auto switch** (Built-in magnet)

**Mounting**

| Symbol | Mounting | Standard | Built-in magnet |
|---|---|---|---|
| B | Basic | ● | ● |
| F | Flange | ● | ● |
| L | Foot | ● | ● |
| D | Clevis | ● | ● |
| T | Trunnion | ● | ● |

∗ Bore size of 4 mm is available with basic mounting only.
∗ Mounting bracket is shipped together (but not assembled).
∗ Trunnion mounting type is shipped after assembled.

**Bore size**

| | |
|---|---|
| 4 | 4 mm |
| 6 | 6 mm |
| 10 | 10 mm |
| 16 | 16 mm |

**Cylinder standard stroke (mm)**
Refer to "Standard Strokes" on page 42.

**Double acting**

**Rod end thread**

| | |
|---|---|
| Nil | With thread |
| B | Without thread |

**Auto switch**

| | |
|---|---|
| Nil | Without auto switch |

∗ For the applicable auto switch model, refer to the below table.

**Number of auto switches**

| | |
|---|---|
| Nil | 2 pcs. |
| S | 1 pc. |

**Made to Order**
(Refer to page 42.)

### Built-in Magnet Cylinder Model

If a built-in magnet cylinder without an auto switch is required, there is no need to enter the symbol for the auto switch.
(Example) CDJP2B6-20

### Applicable Auto Switches / For detailed auto switch specifications, refer to pages 1271 through to 1365.

| Type | Special function | Electrical entry | Indicator light | Wiring (Output) | Load voltage | | | Auto switch model | | Lead wire length (m)∗ | | | | Pre-wired connector | Applicable load | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | DC | | AC | Electrical entry direction | | 0.5 (Nil) | 1 (M) | 3 (L) | 5 (Z) | | | |
| | | | | | | | | Perpendicular | In-line | | | | | | | |
| Solid state auto switch | — | Grommet | Yes | 3-wire (NPN) | 24 V | 5 V, 12 V | — | M9NV | M9N | ● | ● | ● | ○ | ○ | IC circuit | Relay, PLC |
| | | | | 3-wire (PNP) | | | | M9PV | M9P | ● | ● | ● | ○ | ○ | | |
| | | | | 2-wire | | 12 V | | M9BV | M9B | ● | ● | ● | ○ | ○ | — | |
| | Diagnostic indication (2-color) | | | 3-wire (NPN) | | 5 V, 12 V | | M9NWV | M9NW | ● | ● | ● | ○ | ○ | IC circuit | |
| | | | | 3-wire (PNP) | | | | M9PWV | M9PW | ● | ● | ● | ○ | ○ | | |
| | | | | 2-wire | | 12 V | | M9BWV | M9BW | ● | ● | ● | ○ | ○ | — | |
| | Water resistant (2-color indicator) | | | 3-wire (NPN) | | 5 V, 12 V | | M9NAV∗1 | M9NA∗1 | ○ | ○ | ● | ○ | ○ | IC circuit | |
| | | | | 3-wire (PNP) | | | | M9PAV∗1 | M9PA∗1 | ○ | ○ | ● | ○ | ○ | | |
| | | | | 2-wire | | 12 V | | M9BAV∗1 | M9BA∗1 | ○ | ○ | ● | ○ | ○ | — | |
| Reed auto switch | — | Grommet | Yes | 3-wire (NPN equiv.) | — | 5 V | — | A96V∗∗ | A96∗∗ | ● | ● | ● | ● | ○ | IC circuit | — |
| | | | No | 2-wire | 24 V | 12 V | 100 V | A93V∗∗ | A93∗∗ | ● | ● | ● | ● | ○∗2 | — | Relay, PLC |
| | | | | | | 5 V, 12 V | 100 V or less | A90V∗∗ | A90∗∗ | ● | ● | ● | ● | ○∗2 | IC circuit | |

∗1 Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance.
∗2 The load voltage used is 24 VDC.

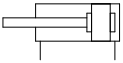
∗ Lead wire length symbols: 0.5 m ····· Nil (Example) M9NW
1 m ····· M M9NWM
3 m ····· L M9NWL
5 m ····· Z M9NWZ

∗ Auto switches marked with "○" are made to order specification.
∗ For details about auto switches with pre-wired connector, refer to pages 1340 and 1341.
∗ Auto switches are shipped together, (but not assembled).

∗∗ The D-A9□(V) switch is not attachable to ø4.

**Symbol**

Double acting, Single rod, Rubber bumper



Made to Order

### Made to Order: Individual Specifications

(For details, refer to page 51.)

| Symbol | Specifications |
|---|---|
| **-X1666** | Interchangeability of clevis and trunnion types |

### Made to Order

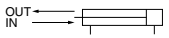
Click here for details

| Symbol | Specifications |
|---|---|
| **-XA□** | Change of rod end type |
| **-XB6** | Heat resistant cylinder (150°C) |
| **-XB7** | Cold resistant cylinder |
| **-XC19** | Intermediate stroke (5 mm spacer) |
| **-XC22** | Fluororubber seals |

## Theoretical Output

(N)

| Bore size (mm) | Operating direction | Operating pressure (MPa) | | |
|---|---|---|---|---|
| | | 0.3 | 0.5 | 0.7 |
| **4** | IN | 2.8 | 4.7 | 6.6 |
| | OUT | 3.8 | 6.3 | 8.8 |
| **6** | IN | 6.4 | 10.6 | 14.8 |
| | OUT | 8.5 | 14.1 | 19.8 |
| **10** | IN | 19.8 | 33.0 | 46.2 |
| | OUT | 23.6 | 39.3 | 55.0 |
| **16** | IN | 51.8 | 86.4 | 121.0 |
| | OUT | 60.3 | 100.5 | 140.7 |




### Moisture Control Tube IDK Series

When operating an actuator with a small diameter and a short stroke at a high frequency, the dew condensation (water droplet) may occur inside the piping depending on the conditions.
Simply connecting the moisture control tube to the actuator will prevent dew condensation from occurring. For details, refer to the **Web Catalog**.

## Specifications

| | | |
|---|---|---|
| **Action** | | Double acting, Single rod |
| **Maximum operating pressure** | | 0.7 MPa |
| **Minimum operating pressure** | **ø4** | 0.15 MPa |
| | **ø6** | 0.12 MPa |
| | **ø10, ø16** | 0.06 MPa |
| **Proof pressure** | | 1 MPa |
| **Ambient and fluid temperature** | | Without auto switch: –10 to 70°C<br>With auto switch: –10 to 60°C (No freezing) |
| **Lubrication** | | Not required (Non-lube) |
| **Stroke length tolerance** | | $^{+1.0}_{0}$ |
| **Rod end type** | | With thread/Without thread |
| **Piston speed** | | 10 to 500 mm/s* |
| **Cushion** | | Rubber bumper |
| **Mounting** Note) | | Basic, Flange, Foot, Clevis, Trunnion |

Note) Bore size of ø4 is available with basic mounting only. The piston speed for a bore size of ø4 is 50 to 500 mm/s.

## Standard Equipment Accessory

| Accessory / Mounting | Mounting nut (1 pc.) | Rod end nut (2 pcs.) (with thread) | Trunnion (with pin) |
|---|---|---|---|
| Basic | ● | ● | — |
| Flange | ● | ● | — |
| Foot | ● | ● | — |
| Clevis | — | ● | — |
| Trunnion | — | ● | ● |

## Standard Stroke

| Bore size (mm) | Stroke (mm) |
|---|---|
| **4** | 5, 10, 15, 20 Note) |
| **6** | 5, 10, 15, 20, 25 |
| **10, 16** | 5, 10, 15, 20, 25, 30, 35, 40 |

* 20 stroke of bore size 4 mm is standard type only.

## Option

| Bore size (mm) / Description | 6 | 10 | 16 |
|---|---|---|---|
| Auto switch | D-A9□(V), D-M9□(V), D-M9□W(V) | | |
| Single knuckle joint | I-P006A | I-P010A | I-P016A |
| Double knuckle joint (with pin) | Y-P006A | Y-P010A | Y-P016A |

* Refer to page 48 for dimensions.

## Mounting Bracket Part No.

| Bore size (mm) / Bracket | 6 | 10 | 16 |
|---|---|---|---|
| Flange | CP-F006A | CP-F010A | CP-F016A |
| Foot | CP-L006A | CP-L010A | CP-L016A |
| Trunnion (with pin) | CP-T006A | CP-T010A | CP-T016A |

## Weight

(g)

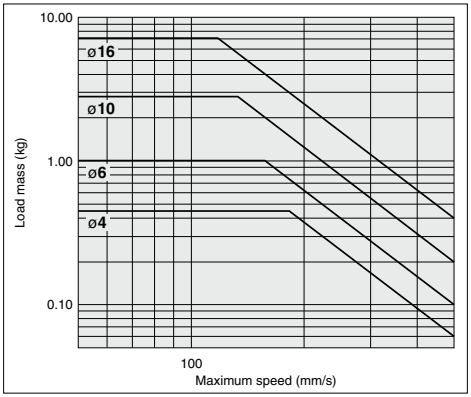
| Stroke (mm) / Mounting | | Bore size (mm) | | | |
|---|---|---|---|---|---|
| | | **4** | **6** | **10** | **16** |
| Basic weight | 5 | 11 | 16 | 27 | 42 |
| | 10 | 13 | 18 | 29 | 46 |
| | 15 | 15 | 21 | 32 | 50 |
| | 20 | 17 | 23 | 35 | 54 |
| | 25 | — | 25 | 37 | 58 |
| | 30 | — | — | 40 | 63 |
| | 35 | — | — | 43 | 67 |
| | 40 | — | — | 45 | 71 |
| Bracket weight | Flange | — | 5 | 6 | 16 |
| | Foot | — | 7 | 9 | 24 |
| | Clevis | — | 2 | 5 | 8 |
| | Trunnion (with pin) | — | 15 | 25 | 70 |
| Additional weight for built-in magnet | | 2 | 3 | 5 | 7 |

## Allowable Kinetic Energy

### ⚠Caution

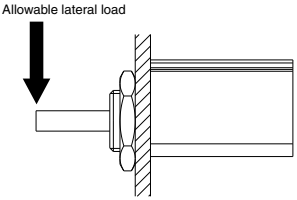
**When driving an inertial load, operate a cylinder with kinetic energy within the allowable value. The range in the chart below that is delineated by bold solid lines indicates the relation between load mass and maximum driving speeds.**

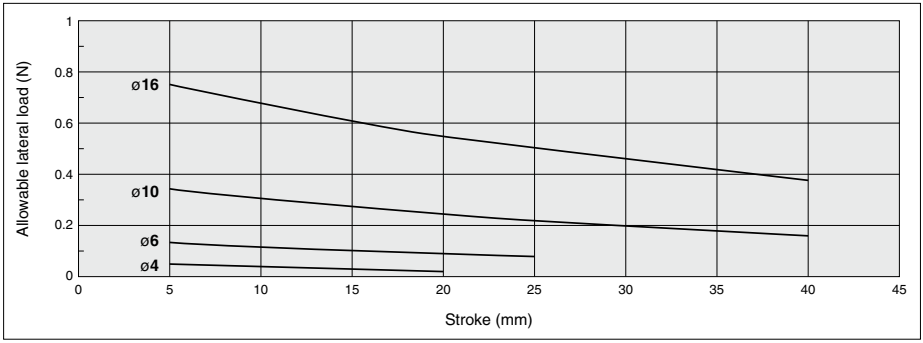
| Bore size (mm) | 4 | 6 | 10 | 16 |
|---|---|---|---|---|
| Piston speed (m/s) | 0.05 to 0.5 | | | |
| Allowable kinetic energy (J) | $0.75 \times 10^{-2}$ | $1.2 \times 10^{-2}$ | $2.5 \times 10^{-2}$ | $5.0 \times 10^{-2}$ |




## Allowable Lateral Load

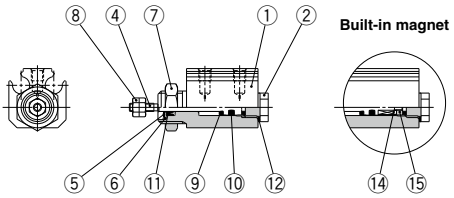
**Strictly observe the limiting range of lateral load on a piston rod. (Refer to the below graph.) If this product is used beyond the limits, it may shorten the machine life or cause damage.**



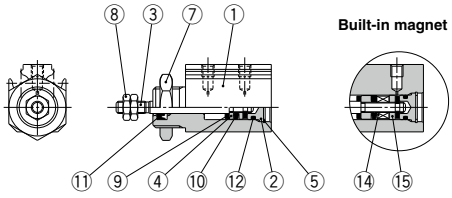



## Construction

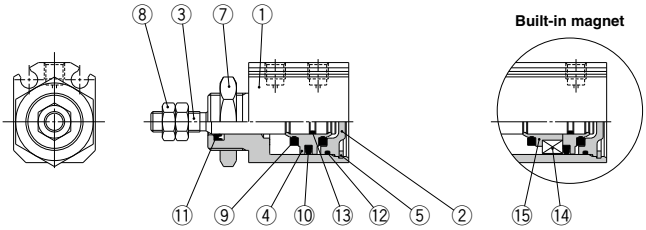
### C□JP2B4




### C□JP2B6




### C□JP2B10, 16




**Component Parts**

| No. | Description | | Material | Note |
|---|---|---|---|---|
| 1 | **Body** | | Aluminum alloy | Hard anodized |
| 2 | **Head cover** | ø**4**, ø**6**, ø**10** | Brass | Electroless nickel plated |
| | | ø**16** | Aluminum alloy | Chromated |
| 3 | **Piston rod** | | Stainless steel | |
| 4 | **Piston** | ø**4** | Stainless steel | |
| | | ø**6**, ø**10** | Brass | |
| | | ø**16** | Aluminum alloy | Chromated |
| 5 | **Retaining ring** | | Tool steel | Phosphate coating |
| 6 | **Seal retainer** | | Special steel | Nickel plated |
| 7 | **Mounting nut** | | Brass | Electroless nickel plated |
| 8 | **Rod end nut** | | Steel | Zinc chromated |
| 9 | **Bumper** | | Urethane rubber | |
| 10 | **Piston seal** | | NBR | |
| 11 | **Rod seal** | | NBR | |
| 12 | **Gasket** | ø**4** | Stainless steel + NBR | |
| | | ø**6**, ø**10**, ø**16** | NBR | |
| 13 | **Piston gasket** | | NBR | |
| 14 | **Magnet** | | — | |
| 15 | **Magnet retainer** | ø**4**, ø**6**, ø**10** | Brass | |
| | | ø**16** | Aluminum alloy | Chromated |

**Replacement Parts: Seal Kit**

**Standard**

| Bore size (mm) | Kit no. | Contents |
|---|---|---|
| **6** | CJP2B6D-PS | Set of left nos. ⑩, ⑪, ⑫. |
| **10** | CJP2B10D-PS | |
| **16** | CJP2B16D-PS | |

∗ Seal kit includes a grease pack (5 g).
Order with the following part number when only the grease pack is needed.
**Grease pack part number: GR-L-005** (5 g)

**XB6/Heat-resistant cylinder (–10 to 150°C)**

| Bore size (mm) | Kit no. | Contents |
|---|---|---|
| **6** | CJP2B6D-XB6-PS | Set of left nos. ⑩, ⑪, ⑫. |
| **10** | CJP2B10D-XB6-PS | |
| **16** | CJP2B16D-XB6-PS | |

∗ Seal kit includes a grease pack (5 g).
Order with the following part number when only the grease pack is needed.
**Grease pack part number: GR-F-005** (5 g)

**XB7/Cold-resistant cylinder**

| Bore size (mm) | Kit no. | Contents |
|---|---|---|
| **6** | CJP2B6D-XB7-PS | Set of left nos. ⑩, ⑪, ⑫. |
| **10** | CJP2B10D-XB7-PS | |
| **16** | CJP2B16D-XB7-PS | |

∗ Seal kit includes a grease pack (5 g).
Order with the following part number when only the grease pack is needed.
**Grease pack part number: GR-T-005** (5 g)

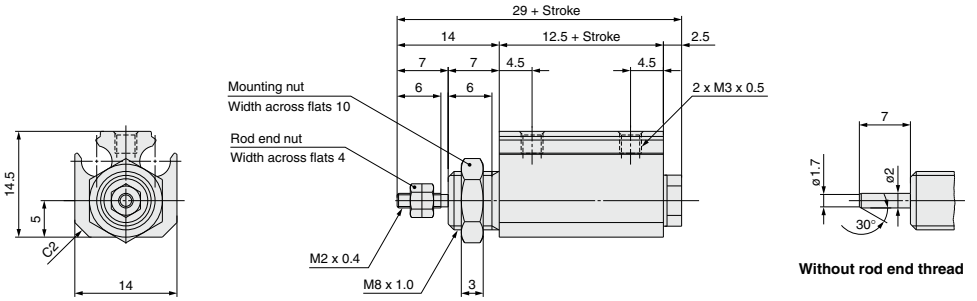
**XC22/Fluororubber seal**

| Bore size (mm) | Kit no. | Contents |
|---|---|---|
| **6** | CJP2B6D-XC22-PS | Set of left nos. ⑩, ⑪, ⑫. |
| **10** | CJP2B10D-XC22-PS | |
| **16** | CJP2B16D-XC22-PS | |

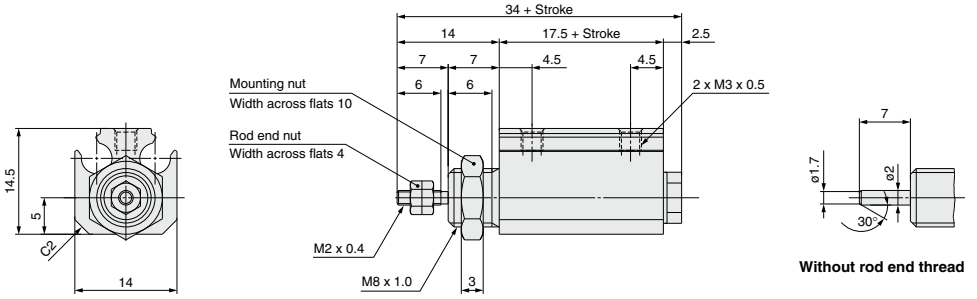
∗ Seal kit includes a grease pack (5 g).
Order with the following part number when only the grease pack is needed.
**Grease pack part number: GR-L-005** (5 g)

## Dimensions: Basic Mounting (ø4)

### Standard: CJP2B4

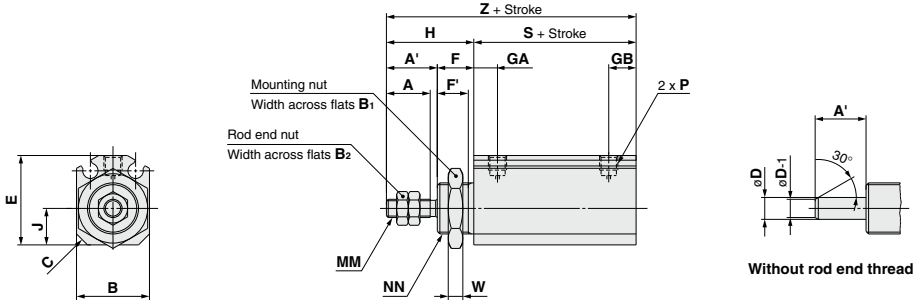



### Built-in magnet: CDJP2B4



## Dimensions: Basic Mounting (ø6 to ø16)

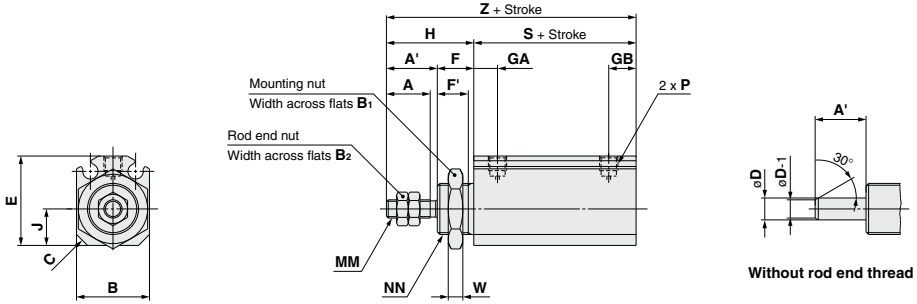
### Standard: CJP2B6 to 16




(mm)

| Symbol / Bore size | A | A' | B | $B_1$ | $B_2$ | C | D | E | F | F' | GA | GB | H | J | MM | NN | P | S | W | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **6** | 7 | 9 | 14 | 14 | 5.5 | 2 | 3 | 16.5 | 8 | 6.5 | 5.5 | 6.5 | 17 | 6 | M3 x 0.5 | M10 x 1.0 | M3 x 0.5 | 16 | 3 | 33 |
| **10** | 10 | 12 | 15 | 17 | 7 | 2.5 | 4 | 19 | 8 | 6.5 | 6 | 7 | 20 | 7 | M4 x 0.7 | M12 x 1.0 | M3 x 0.5 | 19.5 | 3 | 39.5 |
| **16** | 12 | 14 | 20 | 19 | 8 | 3 | 6 | 24.5 | 10 | 8.5 | 6.5 | 7.5 | 24 | 10 | M5 x 0.8 | M14 x 1.0 | M5 x 0.8 | 19.5 | 4 | 43.5 |

### Built-in magnet: CDJP2B6 to 16

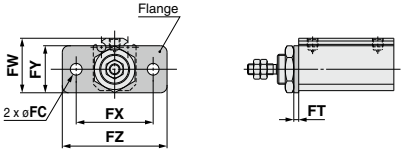



(mm)

| Symbol / Bore size | A | A' | B | $B_1$ | $B_2$ | C | D | E | F | F' | GA | GB | H | J | MM | NN | P | S | W | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **6** | 7 | 9 | 14 | 14 | 5.5 | 2 | 3 | 16.5 | 8 | 6.5 | 5.5 | 6.5 | 17 | 6 | M3 x 0.5 | M10 x 1.0 | M3 x 0.5 | 21 | 3 | 38 |
| **10** | 10 | 12 | 15 | 17 | 7 | 2.5 | 4 | 19 | 8 | 6.5 | 6 | 7 | 20 | 7 | M4 x 0.7 | M12 x 1.0 | M3 x 0.5 | 24.5 | 3 | 44.5 |
| **16** | 12 | 14 | 20 | 19 | 8 | 3 | 6 | 24.5 | 10 | 8.5 | 6.5 | 7.5 | 24 | 10 | M5 x 0.8 | M14 x 1.0 | M5 x 0.8 | 24.5 | 4 | 48.5 |

## Mounting Bracket Dimensions

### Flange: C(D)JP2F6 to 16

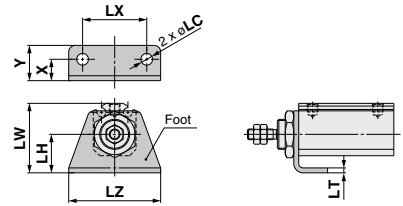



**Flange** (mm)

| Bore size \ Symbol | FC | FT | FW | FX | FY | FZ |
|---|---|---|---|---|---|---|
| **6** | 3.4 | 1.6 | 18.5 | 24 | 16 | 32 |
| **10** | 4.5 | 1.6 | 21 | 28 | 18 | 37 |
| **16** | 5.5 | 2.3 | 25.5 | 36 | 22 | 49 |

∗ Other dimensions are the same as basic mounting.

### Foot: C(D)JP2L6 to 16

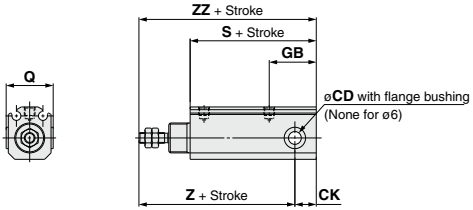



**Foot** (mm)

| Bore size \ Symbol | X | Y | LC | LH | LT | LW | LX | LZ |
|---|---|---|---|---|---|---|---|---|
| **6** | 6.5 | 10.5 | 3.4 | 11 | 1.6 | 21.5 | 20 | 28 |
| **10** | 7 | 12 | 4.5 | 13 | 1.6 | 25 | 24 | 33 |
| **16** | 10 | 16.5 | 5.5 | 18 | 2.3 | 32.5 | 30 | 43 |

∗ Other dimensions are the same as basic mounting.

### Clevis: C(D)JP2D6 to 16

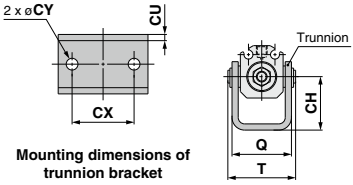



**Clevis** (mm)

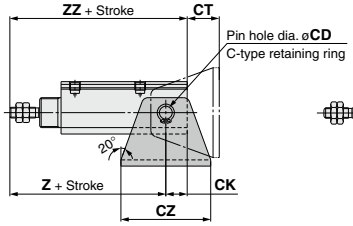
| Bore size \ Symbol | CD | CK | GB | Q |
|---|---|---|---|---|
| **6** | $3^{+0.040}_{0}$ | 4 | 11.5 | — |
| **10** | $5^{+0.065}_{0}$ | 6.5 | 18 | $17^{0}_{-0.5}$ |
| **16** | $6^{+0.065}_{0}$ | 10 | 22 | $22^{0}_{-0.5}$ |

| Bore size \ Symbol | S | | Z | | ZZ | |
|---|---|---|---|---|---|---|
| | Without magnet | Built-in magnet | Without magnet | Built-in magnet | Without magnet | Built-in magnet |
| **6** | 21 | 26 | 34 | 39 | 38 | 43 |
| **10** | 30.5 | 35.5 | 44 | 49 | 50.5 | 55.5 |
| **16** | 34 | 39 | 48 | 53 | 58 | 63 |

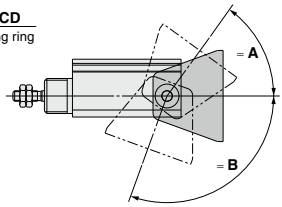
### Trunnion: C(D)JP2T6 to 16




**Mounting dimensions of trunnion bracket**




### Rotation angle




**Trunnion** (mm)

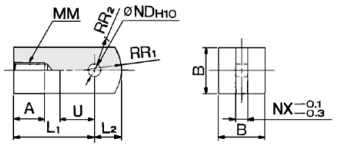
| Bore size \ Symbol | CD | CH | CK | CT | CU | CX | CY | CZ | Q | T | Z | | ZZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Without magnet | Built-in magnet | Without magnet | Built-in magnet |
| **6** | 3 | 16 | 4 | 12 | 1.6 | 18 | 3.4 | 26 | 18.5 | 20.4 | 34 | 39 | 38 | 43 |
| **10** | 5 | 20 | 6.5 | 13.5 | 1.6 | 24 | 4.5 | 33 | 20.5 | 23.9 | 44 | 49 | 50.5 | 55.5 |
| **16** | 6 | 25 | 10 | 15 | 2.9 | 29 | 5.5 | 42 | 28 | 31.7 | 48 | 53 | 58 | 63 |

| Applicable bore | ø6 | ø10 | ø16 |
|---|---|---|---|
| = **A** | 54° | 62° | 55° |
| = **B** | 110° | 110° | 102° |

∗ Provided as guidelines.
The values are varied depending on the condition.

# *CJP2 Series*
# Accessory Bracket Dimensions

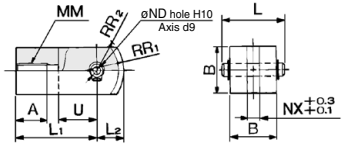
## Single knuckle joint




Material: Rolled steel

| Part no. | Applicable bore size (mm) | A | B | $L_1$ | $L_2$ | MM | $ND_{H10}$ | NX | $R_1$ | $R_2$ | U |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **I-P006A** | 6 | 5 | 6 | 12 | 3.5 | M3 x 0.5 | $3^{+0.040}_{0}$ | 3 | 5 | 4 | 5 |
| **I-P010A** | 10 | 6.5 | 10 | 16 | 5.5 | M4 x 0.7 | $5^{+0.048}_{0}$ | 5 | 8 | 6.3 | 7 |
| **I-P016A** | 16 | 7 | 12 | 19 | 7 | M5 x 0.8 | $6^{+0.048}_{0}$ | 6 | 10 | 7.8 | 9 |

## Double knuckle joint

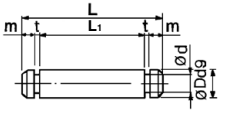



∗ Knuckle pin and retaining ring are included.

Material: Rolled steel

| Part no. | Applicable bore size (mm) | A | B | L | $L_1$ | $L_2$ | MM | $ND_{d9}$ | $ND_{H10}$ | NX | $R_1$ | $R_2$ | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Y-P006A** | 6 | 5 | 6 | 9 | 12 | 3.5 | M3 x 0.5 | $3^{-0.020}_{-0.045}$ | $3^{+0.040}_{0}$ | 3 | 5 | 4 | 5 |
| **Y-P010A** | 10 | 6.5 | 10 | 13.6 | 16 | 5.5 | M4 x 0.7 | $5^{-0.030}_{-0.060}$ | $5^{+0.048}_{0}$ | 5 | 8 | 6.3 | 7 |
| **Y-P016A** | 16 | 7 | 12 | 15.8 | 19 | 7 | M5 x 0.8 | $6^{-0.030}_{-0.060}$ | $6^{+0.048}_{0}$ | 6 | 10 | 7.8 | 9 |

## Knuckle pin

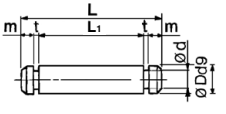



Material: Stainless steel

| Part no. | Applicable bore size (mm) | D d9 | L | d | $L_1$ | m | t | Retaining∗ ring |
|---|---|---|---|---|---|---|---|---|
| **IY-P006** | 6 | $3^{-0.020}_{-0.045}$ | 9 | 2.85 | 6.2 | 0.75 | 0.65 | Clip C-type 3 |
| **IY-P010** | 10 | $5^{-0.030}_{-0.060}$ | 13.6 | 4.8 | 10.2 | 1 | 0.7 | C-type 5 |
| **IY-P015** | 16 | $6^{-0.030}_{-0.060}$ | 15.8 | 5.7 | 12.2 | 1 | 0.8 | C-type 6 |

∗ Included

## Trunnion pin

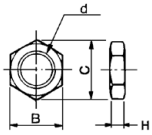



Material: Stainless steel

| Part no. | Applicable bore size (mm) | D d9 | L | d | $L_1$ | m | t | Retaining∗ ring |
|---|---|---|---|---|---|---|---|---|
| **CT-P006** | 6 | $3^{-0.020}_{-0.045}$ | 20.4 | 2.85 | 17.6 | 0.75 | 0.65 | Clip C-type 3 |
| **CT-P010** | 10 | $5^{-0.030}_{-0.060}$ | 23.9 | 4.8 | 20.5 | 1 | 0.7 | C-type 5 |
| **CT-P015** | 16 | $6^{-0.030}_{-0.060}$ | 31.7 | 5.7 | 28.1 | 1 | 0.8 | C-type 6 |

∗ Included

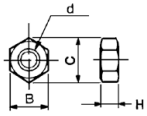
## Mounting nut




Material: Brass

| Part no. | Applicable bore size (mm) | d | H | B | C |
|---|---|---|---|---|---|
| **SNPS-004** | 4 | M8 x 1.0 | 3 | 10 | 11.5 |
| **SNP-006** | 6 | M10 x 1.0 | 3 | 14 | 16.2 |
| **SNP-010** | 10 | M12 x 1.0 | 3 | 17 | 19.6 |
| **SNP-015** | 16 | M14 x 1.0 | 4 | 19 | 21.9 |

## Rod end nut

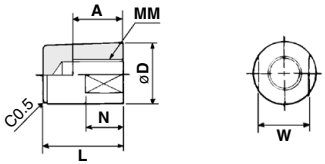



Material: Iron

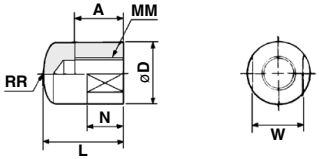
| Part no. | Applicable bore size (mm) | d | H | B | C |
|---|---|---|---|---|---|
| **NTJ-004** | 4 | M2 x 0.4 | 1.6 | 4 | 4.6 |
| **NTP-006** | 6 | M3 x 0.5 | 1.8 | 5.5 | 6.4 |
| **NTP-010** | 10 | M4 x 0.7 | 2.4 | 7 | 8.1 |
| **NTP-015** | 16 | M5 x 0.8 | 3.2 | 8 | 9.2 |

## Rod end cap

### Flat type: CJ-CF□□□




### Round type: CJ-CR□□□



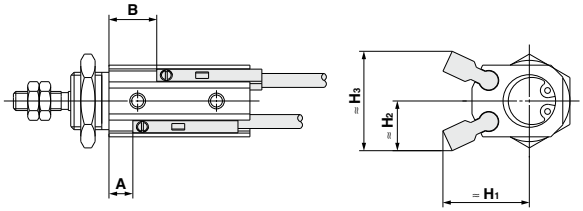

Material: Polyacetal

| Part no. | | Applicable bore size (mm) | A | D | L | MM | N | RR | W |
|---|---|---|---|---|---|---|---|---|---|
| Flat type | Round type | | | | | | | | |
| **CJ-CF004** | **CJ-CR004** | 4 | 5 | 6 | 9 | M2 x 0.4 | 3 | 6 | 5 |
| **CJ-CF006** | **CJ-CR006** | 6 | 6 | 8 | 11 | M3 x 0.5 | 5 | 8 | 6 |
| **CJ-CF010** | **CJ-CR010** | 10 | 8 | 10 | 13 | M4 x 0.7 | 6 | 10 | 8 |
| **CJ-CF016** | **CJ-CR016** | 16 | 10 | 12 | 15 | M5 x 0.8 | 7 | 12 | 10 |

# Auto Switch Mounting 1

## Auto Switch Proper Mounting Position (Detection at Stroke End) and Its Mounting Height

### D-A9□(V), D-M9□(V), D-M9□W(V), D-M9□A(V)



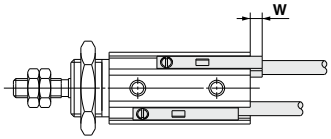

**Applicable Auto Switches: D-A9□, D-A9□V** (mm)

| Bore size | A (When detecting at extended stroke end position) | B (When detecting at retracted stroke end position) | | | | | | | | H1 | H2 | H3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 5 st | 10 st | 15 st | 20 st | 25 st | 30 st | 35 st | 40 st | | | |
| ø4 | — | — | — | — | — | — | — | — | — | — | — | — |
| ø6 | 1 | 6 | 11 | 16 | 21 | 26 | — | — | — | 13 | 10 | 20 |
| ø10 | 1 | 6 | 11 | 16 | 21 | 26 | 31 | 36 | 41 | 16 | 9.5 | 19 |
| ø16 | 1 | 6 | 11 | 16 | 21 | 26 | 31 | 36 | 41 | 18 | 12 | 24 |

**Applicable Auto Switches: D-M9□, D-M9□V, D-M9□W, D-M9□WV, D-M9□A, D-M9□AV** (mm)

| Bore size | A (When detecting at extended stroke end position) | B (When detecting at retracted stroke end position) | | | | | | | | H1 | H2 | H3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 5 st | 10 st | 15 st | 20 st | 25 st | 30 st | 35 st | 40 st | | | |
| ø4 | 4 | 9 | 14 | 19 | — | — | — | — | — | 14.5 | 11.5 | 23 |
| ø6 | 5 | 10 | 15 | 20 | 25 | 30 | — | — | — | 15 | 11.5 | 23 |
| ø10 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 18 | 10.5 | 21 |
| ø16 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 20 | 13 | 26 |

Note) Only adjust the setting position after confirming the auto switch is properly activated.




**Mounting: Basic, Flange, Foot** (mm)

| Auto switch model / Bore size | D-M9□ D-M9□W | D-M9□V D-M9□WV | D-M9□A | D-M9□AV | D-A9□V | D-A9□ |
|---|---|---|---|---|---|---|
| | W | | | | | |
| ø4 | 6 | 4 | 8 | 6 | — | — |
| ø6 | 6 | 4 | 8 | 6 | 2 | 4.5 |
| ø10 | 2.5 | 0.5 | 4.5 | 2.5 | 0 | 1 |
| ø16 | 2.5 | 0.5 | 4.5 | 2.5 | 0 | 1 |

**Mounting: Clevis, Trunnion** (mm)

| Auto switch model / Bore size | D-M9□ D-M9□W | D-M9□V D-M9□WV D-A9□ D-A9□V | D-M9□A | D-M9□AV |
|---|---|---|---|---|
| | W | | | |
| ø4 | — | — | — | — |
| ø6 | 1 | 0 | 3 | 2 |
| ø10 | 0 | 0 | 2 | 2 |
| ø16 | 0 | 0 | 2 | 2 |

∗ 0 (zero) denotes the auto switch does not protrude from the end surface.
Note) Adjust the auto switch after confirming the operating conditions in the actual setting.

# Auto Switch Mounting 2

## Operating Range

(mm)

| Auto switch model | Bore size | | | |
|---|---|---|---|---|
| | 4 | 6 | 10 | 16 |
| D-A9□(V) | — | 5 | 6 | 7 |
| D-M9□(V)<br>D-M9□W(V)<br>D-M9□A(V) | 2.5 | 2.5 | 3 | 3.5 |

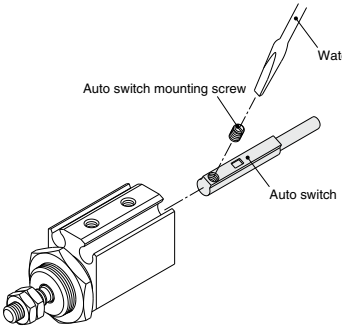
∗ Since the operating range is provided as a guideline including hysteresis, it cannot be guaranteed (assuming approximately ±30% dispersion). It may vary substantially depending on an ambient environment.

## Minimum Stroke for Auto Switch Mounting

(mm)

| No. of auto switches mounted | Applicable auto switch model | |
|---|---|---|
| | D-M9□, D-M9□V | D-M9□W, D-M9□WV<br>D-M9□A, D-M9□A(V)<br>D-A9□, D-A9□V |
| 1 | 5 | 5 |
| 2 | 5 | 10 |

## Mounting and Moving Auto Switches




① Fit an auto switch into the auto switch mounting groove to set it roughly to the mounting position for an auto switch.
② After reconfirming the detecting position, tighten the auto switch mounting screw∗ to secure the auto switch.
③ Modification of the detecting position should be made in the condition of ①.

∗ When tightening an auto switch mounting screw, use a watchmaker's screwdriver with a handle of approximately 5 to 6 mm in diameter. (Use a tightening torque of approximately 0.10 to 0.20 N·m.)

**Tightening torque for auto switch mounting screw** (N·m)

| Auto switch model | Tightening torque |
|---|---|
| D-M9□(V)<br>D-M9□W(V)<br>D-A9□(V) | 0.05 to 0.15 |
| D-M9□A(V) | 0.05 to 0.10 |

# ⚠ Specific Product Precautions

**Before handling auto switches, refer to pages 26 to 30 for Auto Switches Precautions.**

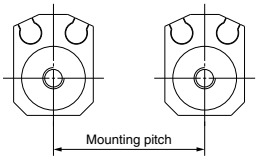
## ⚠ Caution

1. If auto switch cylinders are used in parallel, keep the distance between cylinders in accordance with the below chart.

**Mounting Pitch** (mm)

| Auto switch model | Bore size | | | |
|---|---|---|---|---|
| | 4 | 6 | 10 | 16 |
| D-A9□(V) | — | 20 | 25 | 30 |
| D-M9□(V)<br>D-M9□W(V)<br>D-M9□A(V) | 25 | 25 | 30 | 35 |

Use caution not to use them, getting closer than the specified pitch. Otherwise, it may cause auto switch to malfunction.



# Made to Order: Individual Specifications

Please contact SMC for detailed dimensions, specifications and lead times.

Made to Order

Symbol
**-X1666**

## 1 Clevis / Trunnion Type Mounting Interchangeable

**CJP2 series standard model no.** — **X1666**

**Clevis / Trunnion type mounting interchangeable (Former CJP)**

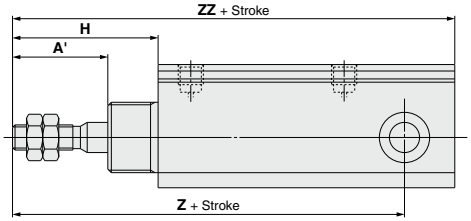
### Specifications

| | |
|---|---|
| **Applicable series** | CJP2 |
| **Bore size** | ø6, ø10, ø16 |

| | |
|---|---|
| **Other specifications** | Same as standard type. |

∗ ø6 is available for both standard and built-in magnet types.
∗ ø10 and ø16 are available for the standard type (The built-in magnet type is interchangeable.)

### Dimensions




| Bore size(mm) | A' | H | Z | ZZ |
|---|---|---|---|---|
| **6** | 18.5 (13.5) | 26.5 (21.5) | 43.5 | 47.5 |
| **10** | 17 | 25 | 49 | 55.5 |
| **16** | 19 | 29 | 53 | 63 |

∗ Dimensions other than above are same as basic type.
( ): For the built-in magnet type

# *CJP2 Series*
# Specific Product Precautions

**Be sure to read this before handling the products. Refer to page 20 for safety instructions and pages 21 to 30 for actuator and auto switch precautions.**

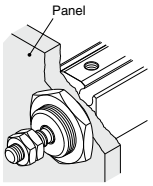
## Mounting

### ⚠Caution

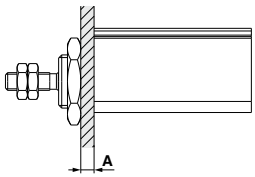
**Mounting nut maximum tightening torque and panel width**

① Do not apply more torque than the maximum torque range when mounting the cylinder or bracket. Also, do not attach a panel with a thickness beyond the specified range.

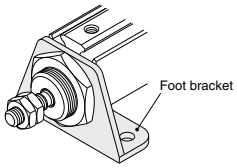
| Cylinder bore size | Thread | Maximum tightening torque (N·m) | **A** dimension maximum value (mm) |
|---|---|---|---|
| ø**4** | M8 x 1 | 6.2 | 3 |
| ø**6** | M10 x 1 | 12.5 | 4 |
| ø**10** | M12 x 1 | 21.0 | 4 |
| ø**16** | M14 x 1 | 34.0 | 5 |



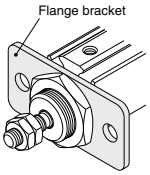

**Panel mounting**




**Panel maximum thickness**



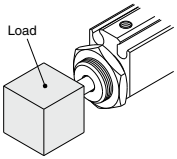

**Foot mounting**



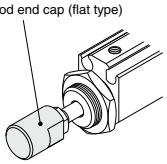

**Flange mounting**

② Do not apply more tightening torque than the below specified range when attaching a load on the rod end, rod end cap, single or double knuckle joint.

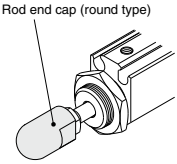
| Applicable bore size | Thread size | Maximum tightening torque (N·m) |
|---|---|---|
| ø**4** | M2 x 0.4 | 0.1 |
| ø**6** | M3 x 0.5 | 0.3 |
| ø**10** | M4 x 0.7 | 0.8 |
| ø**16** | M5 x 0.8 | 1.6 |



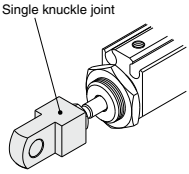

**Rod end load mounting**



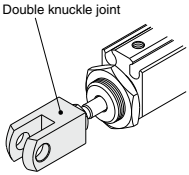

**Rod end cap (flat type) mounting**




**Rod end cap (round type) mounting**




**Single knuckle joint mounting**




**Double knuckle joint mounting**

## Piping

### ⚠Caution

**The piping port size of CJ2□6 and CJP2□10 is M3 x 0.5. If using piping tube O.D. ø6, piping is possible on M3 One-touch fittings (applicable tube O.D. ø4) when used with a reducer (KQ2R06-04A).**

∗ For details of One-touch fittings, refer to the **Web Catalog**.

## Disassembly and Maintenance

### ⚠Caution

**Snap ring installation / removal**

1. To replace seals or grease the cylinder during maintenance, use an appropriate pair of pliers (tool for installing a C-type retaining ring for hole).
   After re-installing the cylinder, make sure that the retaining ring is placed securely in the groove before supplying air.
2. To remove and install the retaining ring for the knuckle pin or the trunnion pin, use an appropriate pair of pliers (tool for installing a C-type retaining ring for hole). In particular, use a pair of ultra-mini pliers, for removing and installing the retaining rings on the ø6 cylinder.
   Do not disassemble the CJP4 cylinder. Do not loosen or remove the head cover.

# Pin Cylinder: Single Acting, Spring Return

# CJP Series

## ø4, ø6, ø10, ø15

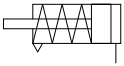
**A short stroke miniature cylinder with a shorter overall length.**

The installation space can be significantly reduced because this cylinder can be recessed directly into a machine body or installed on a panel. Thus, the machine can be made more compact.

**Embedded type** **Panel mount type**

**Symbol**

Single acting, Spring return



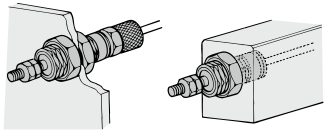
Made to Order **Made to Order (ø6 to ø15)**

Click here for details

| Symbol | Specifications |
|---|---|
| XC17 | Pin cylinder with rod quenched |
| XC22 | Fluororubber seals |

## Mounting

**Panel mount type** **Embedded type**



### Moisture Control Tube IDK Series

When operating an actuator with a small diameter and a short stroke at a high frequency, the dew condensation (water droplet) may occur inside the piping depending on the conditions.

Simply connecting the moisture control tube to the actuator will prevent dew condensation from occurring. For details, refer to the **Web Catalog**.

## How to Order

**CJP B 10 – 15 H4 – □ – □**

**Pin cylinder**

**Mounting**

| | |
|---|---|
| B | Panel mount type |
| S | Embedded type |

**Bore size**

| | |
|---|---|
| 4 | 4 mm |
| 6 | 6 mm |
| 10 | 10 mm |
| 15 | 15 mm |

**Cylinder standard stroke (mm)**

| | |
|---|---|
| ø4, ø6, ø10, ø15 | 5, 10, 15 |

**Hose nipple (Applicable to the mounting type B panel mount type (ø6 to ø15) only.)**

(Hose nipple is not attached to embedded type.)

| | |
|---|---|
| Nil | Without hose nipple * |
| H4 | For ø4/ø2.5 tubing |
| H6 | For ø6/ø4 tubing |

**Rod end thread**

| | |
|---|---|
| Nil | With thread |
| B | Without thread |

**Made to Order**

Refer to the table below.

* Refer to ⚠ caution on piping on page 57.

## Specifications

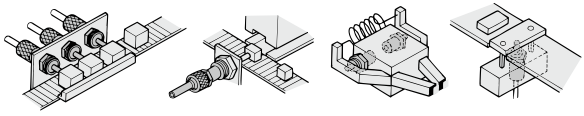
| | | | |
|---|---|---|---|
| **Action** | | Single acting, Spring return | |
| **Maximum operating pressure** | | 0.7 MPa | |
| **Minimum operating pressure** | **ø4** | 0.3 MPa | |
| | **ø6** | 0.2 MPa | |
| | **ø10, ø15** | 0.15 MPa | |
| **Proof pressure** | | 1 MPa | |
| **Ambient and fluid temperature** | | –10 to 70°C (No freezing) | |
| **Lubrication** | | Not required (Non-lube) | |
| **Piston speed** | | 50 to 500 mm/s | |
| **Cushion** | | None | |
| **Stroke length tolerance** | | $^{+1.0}_{0}$ | |
| **Rod end type** | | With thread/Without thread | |
| **Mounting** | | Panel mount type | Embedded type |
| **Accessory (Standard equipment)** | **Standard equipment** | Mounting nut (2)<br>Rod end nut (2) * | Mounting nut (1)<br>Gasket (1)<br>Rod end nut (2) * |
| | **Option** | Hose nipple (Except ø4) | — |

* When rod end is threaded.

* For details about the hose nipple (accessory), refer to page 57.

## Application Examples

**Clamper** **Ejector** **Gripper** **Stopper**



## Standard Stroke

| Bore size (mm) | Stroke (mm) |
|---|---|
| **4** | 5, 10, 15 |
| **6** | 5, 10, 15 |
| **10** | 5, 10, 15 |
| **15** | 5, 10, 15 |

## Weight

(g)

| Model | Stroke (mm) | | |
|---|---|---|---|
| | **5** | **10** | **15** |
| **CJP□4** | 10 | 13 | 15 |
| **CJP□6** | 10.6 | 13.1 | 15.6 |
| **CJP□10** | 28 | 33 | 38 |
| **CJP□15** | 72 | 82 | 92 |

∗ Weight of hose nipple (4 g) for panel mounting is excluded.

## Theoretical Output

(N)

| Bore size (mm) | Operating direction | Operating pressure (MPa) | | |
|---|---|---|---|---|
| | | 0.3 | 0.5 | 0.7 |
| **4** | OUT | 0.97 | 3.48 | 6.00 |
| | IN | 1.0 | | |
| **6** | OUT | 4.56 | 10.2 | 15.9 |
| | IN | 1.42 | | |
| **10** | OUT | 17.6 | 33.3 | 49.0 |
| | IN | 2.45 | | |
| **15** | OUT | 42.2 | 77.5 | 113 |
| | IN | 4.41 | | |

## Spring Reaction Force

(N)

| Bore size (mm) | Stroke (mm) | Spring reaction force | |
|---|---|---|---|
| | | Secondary | Primary |
| **4** | 5, 10, 15 | 2.80 | 1.00 |
| **6** | 5, 10, 15 | 3.92 | 1.42 |
| **10** | 5, 10, 15 | 5.98 | 2.45 |
| **15** | 5, 10, 15 | 10.80 | 4.41 |

∗ Same spring force for each stroke.

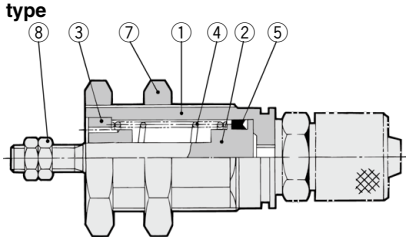
## Hose Nipple Dedicated for Panel Mount Type

(With fixed orifice)

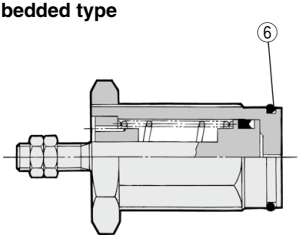
| Applicable tubing | Part no. |
|---|---|
| For ø4/ø2.5 tubing | CJ-5H-4 |
| For ø6/ø4 tubing | CJ-5H-6 |

## Construction (Not able to disassemble.)

### Panel mount type




### Embedded type




### Component Parts

| No. | Description | Material | Note | |
|---|---|---|---|---|
| 1 | **Cover** | Brass | Electroless nickel plated | |
| 2 | **Piston** | Stainless steel | | |
| 3 | **Collar** | Oil-impregnated sintered alloy | ø4 | Brass + Electroless nickel plated |
| | | | ø6, ø10 | Bronze |
| 4 | **Return spring** | Steel wire | Zinc chromated | |
| 5 | **Piston seal** | NBR | | |
| 6 | **Gasket** | NBR | Special product (O-ring) embedded type only | |
| 7 | **Mounting nut** | Brass | Electroless nickel plated | |
| 8 | **Rod end nut** | Steel | Zinc chromated | |

### Dedicated Nut / Part No.

| Description \ Bore size (mm) | **4** | **6** | **10** | **15** |
|---|---|---|---|---|
| Mounting nut | SNPS-004 | SNPS-006 | SNPS-010 | SNPS-015 |
| Rod end nut | NTJ-004 | NTP-006 | NTP-010 | NTP-015 |

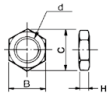
### Replacement Parts / Gasket

| Bore size (mm) | Order no. | Contents |
|---|---|---|
| **4** | CJPS4-G | Above no. ⑥ |
| **6** | CJPS6-G | |
| **10** | CJPS10-G | |
| **15** | CJPS15-G | |

∗ Dedicated for the embedded type.

∗ For the plug mounting type
∗ Since gaskets (10 pcs./set) do not include a grease pack (10 g), order it separately.
**Grease pack part number: GR-S-010** (10g)

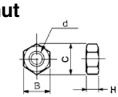
### Mounting nut




Material: Brass

| Part no. | Applicable bore size (mm) | d | H | B | C |
|---|---|---|---|---|---|
| **SNPS-004** | **4** | M8 x 1.0 | 3 | 10 | 11.5 |
| **SNPS-006** | **6** | M10 x 1.0 | 3 | 12 | 13.9 |
| **SNPS-010** | **10** | M15 x 1.5 | 4 | 19 | 22 |
| **SNPS-015** | **15** | M22 x 1.5 | 5 | 27 | 31 |

### Rod end nut




Material: Steel

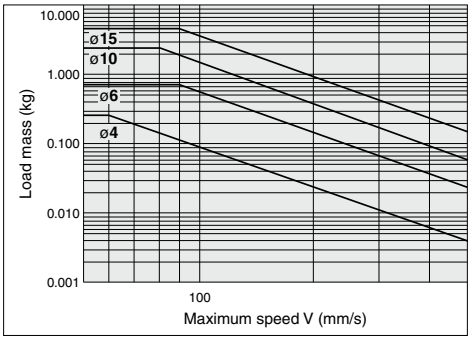
| Part no. | Applicable bore size (mm) | d | H | B | C |
|---|---|---|---|---|---|
| **NTJ-004** | **4** | M2 x 0.4 | 1.6 | 4 | 4.6 |
| **NTP-006** | **6** | M3 x 0.5 | 1.8 | 5.5 | 6.4 |
| **NTP-010** | **10** | M4 x 0.7 | 2.4 | 7 | 8.1 |
| **NTP-015** | **15** | M5 x 0.8 | 3.2 | 8 | 9.2 |

## Allowable Kinetic Energy

### ⚠Caution

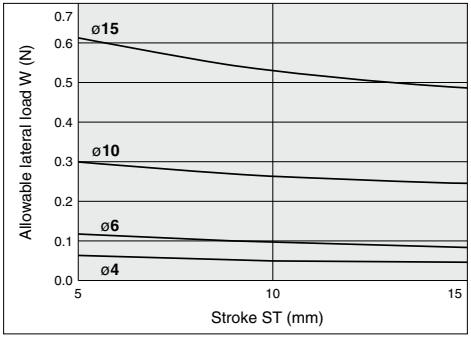
**When driving an inertial load, operate a cylinder with kinetic energy within the allowable value. The range in the chart below that is delineated by bold solid lines indicates the relation between load mass and maximum driving speeds.**

| Bore size (mm) | 4 | 6 | 10 | 15 |
|---|---|---|---|---|
| Piston speed (m/s) | 0.05 to 0.5 | | | |
| Allowable kinetic energy (J) | $0.5 \times 10^{-3}$ | $3 \times 10^{-3}$ | $8 \times 10^{-3}$ | $19 \times 10^{-3}$ |



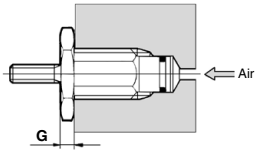

## Allowable Lateral Load

**Strictly observe the limiting range of lateral load on a piston rod. (Refer to the below graph.) If this product is used beyond the limits, it may shorten the machine life or cause damage.**

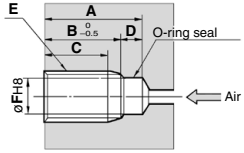


## Recommended Mounting Hole Dimensions for Embedded Type

**When embedded**




**Machining dimensions for mounting**



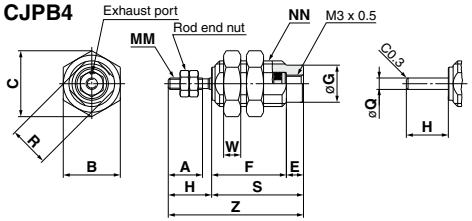

(mm)

| Bore size (mm) | Stroke | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|---|
| 4 | 5 | 12 | 8.5 | 6 | 3.5 | M8 x 1.0 | 6.5 | 3 |
| | 10 | 20 | 16.5 | 14 | | | | |
| | 15 | 28 | 24.5 | 22 | | | | |
| 6 | 5 | 16 | 12.5 | 10 | 3.5 | M10 x 1.0 | 8.5 | 3 |
| | 10 | 23 | 19.5 | 17 | | | | |
| | 15 | 30 | 26.5 | 24 | | | | |
| 10 | 5 | 17 | 13.5 | 10.5 | 3.5 | M15 x 1.5 | 12 | 4 |
| | 10 | 23.5 | 20 | 17 | | | | |
| | 15 | 30.5 | 27 | 24 | | | | |
| 15 | 5 | 19 | 14.5 | 11.5 | 4.5 | M22 x 1.5 | 19 | 5 |
| | 10 | 25 | 20.5 | 17.5 | | | | |
| | 15 | 31.5 | 27 | 24 | | | | |

Note) E and øF should be machined in a concentric manner.

## Dimensions: Panel Mount Type

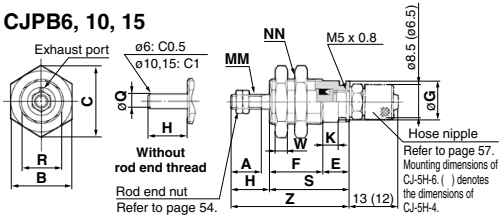
**CJPB4**




(mm)

| Bore size (mm) | A | B | C | E | F | | | G | H | K | MM |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 5st | 10st | 15st | | | | |
| 4 | 6 | 10 | 11.5 | 3 | 13 | 21 | 29 | 6.5 | 7.5 | — | M2 x 0.4 |
| 6 | 7 | 12 | 13.9 | 6 | 12.5 | 19.5 | 26.5 | 8.5 | 9 | 3.5 | M3 x 0.5 |
| 10 | 10 | 19 | 22 | 6 | 14.5 | 21 | 28 | 12 | 12 | 3.5 | M4 x 0.7 |
| 15 | 12 | 27 | 31 | 7 | 16.5 | 22.5 | 29 | 19 | 14 | 4.2 | M5 x 0.8 |

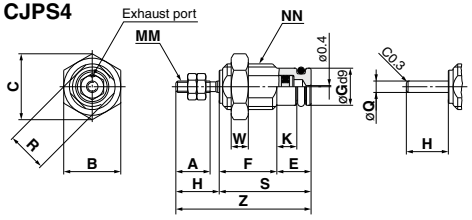
**CJPB6, 10, 15**




| Bore size (mm) | NN | R | S | | | W | Z | | | Q |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 5st | 10st | 15st | | 5st | 10st | 15st | |
| 4 | M8 x 1.0 | 7 | 16 | 24 | 32 | 3 | 23.5 | 31.5 | 39.5 | 2 |
| 6 | M10 x 1.0 | 9 | 18.5 | 25.5 | 32.5 | 3 | 27.5 | 34.5 | 41.5 | 3 |
| 10 | M15 x 1.5 | 13 | 20.5 | 27 | 34 | 4 | 32.5 | 39 | 46 | 5 |
| 15 | M22 x 1.5 | 20 | 23.5 | 29.5 | 36 | 5 | 37.5 | 43.5 | 50 | 6 |

## Dimensions: Embedded Type

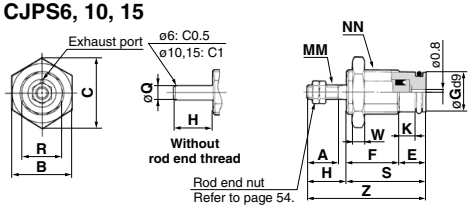
**CJPS4**




(mm)

| Bore size (mm) | A | B | C | E | F | | | G | H | K | MM |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 5st | 10st | 15st | | | | |
| 4 | 6 | 10 | 11.5 | 6 | 10 | 18 | 26 | 6.5 | 7.5 | 3.5 | M2 x 0.4 |
| 6 | 7 | 12 | 13.9 | 6 | 12.5 | 19.5 | 26.5 | 8.5 | 9 | 3.5 | M3 x 0.5 |
| 10 | 10 | 19 | 22 | 6 | 14.5 | 21 | 28 | 12 | 12 | 3.5 | M4 x 0.7 |
| 15 | 12 | 27 | 31 | 7 | 16.5 | 22.5 | 29 | 19 | 14 | 4.2 | M5 x 0.8 |

**CJPS6, 10, 15**




| Bore size (mm) | NN | R | S | | | W | Z | | | Q |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 5st | 10st | 15st | | 5st | 10st | 15st | |
| 4 | M8 x 1.0 | 7 | 16 | 24 | 32 | 3 | 23.5 | 31.5 | 39.5 | 2 |
| 6 | M10 x 1.0 | 9 | 18.5 | 25.5 | 32.5 | 3 | 27.5 | 34.5 | 41.5 | 3 |
| 10 | M15 x 1.5 | 13 | 20.5 | 27 | 34 | 4 | 32.5 | 39 | 46 | 5 |
| 15 | M22 x 1.5 | 20 | 23.5 | 29.5 | 36 | 5 | 37.5 | 43.5 | 50 | 6 |

# *CJP Series*
# Specific Product Precautions

**Be sure to read this before handling the products. Refer to page 20 for safety instructions and pages 21 to 30 for actuator and auto switch precautions.**

## Piping

### ⚠Caution

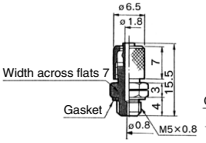
**The following fittings are recommended for this cylinder connection. However, there may be a case where the piston speed exceeds 500 mm/sec. even with the recommended fittings for this cylinder. Use a speed controller in such cases.**

| Cylinder bore size | Applicable bore size | Fitting type | Connection thread | Model |
|---|---|---|---|---|
| ø4 | ø2 | One-touch fitting | M3 x 0.5 | **KQ2□02-M3G** |
| | | Miniature fitting | | **M-3AU-2** |
| ø6<br>ø10<br>ø15 | | One-touch fitting | M5 x 0.8 | **KQ2□02-M5N** |
| | | Miniature fitting | | **M-5AU-2** |
| | ø4/2.5 | Dedicated hose nipple (with fixed orifice) | | **CJ-5H-4** |
| | ø6/4 | | | **CJ-5H-6** |

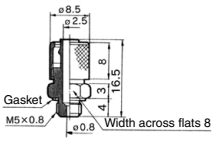
∗ Please be aware that cylinder speed may slow down on the retracting side when using the above one-touch fittings and miniature fittings with a cylinder bore size of ø15.

**Hose nipple**

**CJ-5H-4**
**(For ø4/ø2.5 tubing)**




**CJ-5H-6**
**(For ø6/ø4 tubing)**




**In addition to the above fittings and hose nipples, the below fittings can also be attached to the cylinder.**
**When using the below fittings be sure to provide a speed controller after adjusting it to 500 mm/s or less.**

| Cylinder bore size | Applicable bore size | Fitting type | Connection thread | Model |
|---|---|---|---|---|
| ø4 | 3.2 | One-touch fitting | M3 x 0.5 | **KQ2□23-M3G** |
| | 4 | | | **KQ2□04-M3G** |
| ø6<br>ø10<br>ø15 | 3.2 | | M5 x 0.8 | **KQ2□23-M5□** |
| | 4 | | | **KQ2□04-M5□** |
| | 6 | | | **KQ2□06-M5□** |

**Recommended Speed Controller**

| Applicable bore size (mm) | Connection thread | Elbow type meter-in | Universal type meter-in | In-line type meter-in |
|---|---|---|---|---|
| ø2 | M3 | AS1211F-M3-02 | — | AS1002F-02 |
| | M5 | AS1211F-M5E-02A | — | |
| ø3.2 | M3 | AS1211F-M3-23 | AS1311F-M3-23 | AS1002F-23 |
| | M5 | AS1211F-M5E-23A | AS1311F-M5E-23A | |
| ø4 | M3 | AS1211F-M3-04 | AS1311F-M3-04 | AS1002F-04 |
| | M5 | AS1211F-M5E-04A | AS1311F-M5E-04A | |
| ø6 | M5 | AS1211F-M5E-06A | AS1311F-M5E-06A | AS1002F-06 |

∗ For details about one-touch fittings, miniature fittings and speed controllers (applicable tubing O.D. ø2 only), refer to the **Web Catalog**.
Also, for details about speed controllers (applicable tubing O.D. ø3.2 to ø6), refer to the **Web Catalog**.
∗ Refer to the Fittings and Tubing Precautions (**Web Catalog**) for how to handle one-touch fittings.

## Mounting

### ⚠Caution

**Do not use it in such a way that a load could be applied to the piston rod during the retraction.**
**The spring that is built into the cylinder provides only enough force to retract the piston rod. Thus, if a load is applied, the piston rod may not be able to retract to the end of the stroke.**