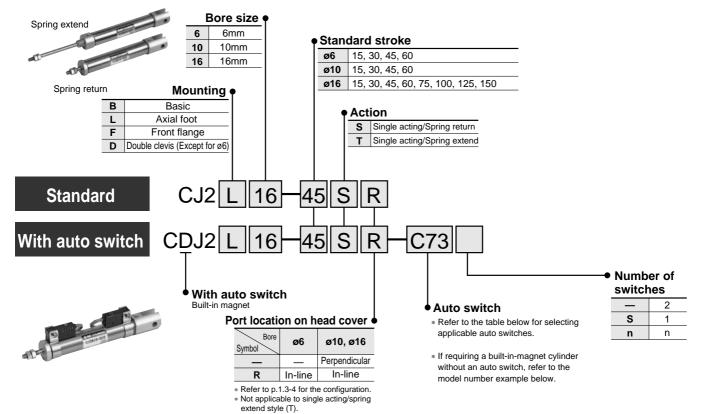
Standard: Single Acting Spring Return/Extend

Series CJ2

How to Order



| Applicable Auto Switches/Refer to p.5.3-2 for further information on auto switch. | | | | | | | | | | | | | | | | | | |
|---|--|----------------------|----------|------------------------------|--------------|---------|-------|----------------|---------|------------|-------|-----------|-----------|-----------|----|--------------|---|--|
| | Special function | | 2 | | Load voltage | | Auto | switch m | odel | Lead wire* | | | | | | | | |
| Style | | Electrical | ndicator | Wiring (Output) | | | AC | Band Ra | Rail (ø | 10, ø16) | 0.5 | 3 | 5 | None | | icable ad | | |
| | | entry | 르 | (Output) | | DC | AC | (ø6, ø10, ø16) | Perp. | In-line | (—) | (L) | (Z) | (N) | 10 | au | | |
| | | | | 3 wire (NPN) | — | 5V | | C76 | _ | A76H | • | • | _ | _ | IC | | | |
| tc | | Grommet | Yes | | — | | 200V | | A72 | A72H | • | \bullet | — | — | | | | |
| Ň | | | | | | 12V | 100V | C73 | A73 | A73H | • | ٠ | • | - | | | | |
| ğ | | | No | 2 wire | | 5V, 12V | ≤100V | C80 | A80 | A80H | • | ullet | — | — | IC | Relay | | |
| Reed switch | | Connector | Yes | 2 wire | 24V | 12V | — | C73C | A73C | | • | ullet | \bullet | \bullet | | PLC | | |
| | | CONNECTOR | No |] [| 5V, 12V | ≤24V | C80C | A80C | _ | ٠ | ullet | • | \bullet | IC | | | | |
| | Diagnostic indication (2 color) | Grommet | Yes | | | — | | | A79W | — | ٠ | ullet | — | - | _ | | | |
| | | Grommet Connector | | 3 wire (NPN) 3 wire (PNP) | 5V, 12V | | H7A1 | F7NV | F79 | ٠ | ullet | \circ | - | IC | | | | |
| | | | t | | | | H7A2 | F7PV | F7P | ٠ | ullet | 0 | - | | | | | |
| ء | | | | 2 wire | | 12V | | — | H7B | F7BV | J79 | ٠ | ullet | 0 | - | | | |
| state switch | | | | 2 | | | | H7C | J79C | | • | ullet | \bullet | \bullet | _ | | | |
| s | | | | 3 wire (NPN) 3 wire (PNP) | | 5V, 12V | | H7NW | F7NWV | F79W | ٠ | ullet | 0 | - | IC | | | |
| ate | Diagnostic indication (2 color) | | Yes | | 24V | | | H7PW | — | F7PW | ٠ | ullet | \circ | - | | Relay PLC | | |
| lst | () | | lies | | 240 | | | H7BW | F7BWV | J79W | ٠ | ullet | \circ | - | | 1.20 | | |
| Solid | Water resistant (2 color) | Grommet | | 2 wire | | | | 12V | — | H7BA | — | F7BA | — | • | 0 | - | | |
| | With timer | | | 3 wire (NPN) | | | | — | — | F7NT | — | ٠ | 0 | - | IC |] | | |
| | With diagnostic output (2 color) | 1 | | 4 wire | 1 | 5V, 12V | | H7NF | — | F79F | ٠ | • | 0 | - | | | | |
| | Latch with diagnostic output (2 color) | put | | | | (NPN) | | _ | | H7LF | _ | F7LF | • | • | 0 | _ | _ | |
| * Lea | * Lead wire length 0.5m e.g.) C73C 5mZ e.g.) C73CZ | | | | | | | | | | | | | | | | | |
| | 3m·······L C73CL None······N C73CN | | | | | | | | | | | | | | | | | |

 \ast Solid state switches marked with" \bigcirc " are manufactured upon receipt of order.

Part No.of Cylinder with Built-in Magnet

Symbol "-A" (rail mounting) or "-B" (band mounting) should be suffixed to the part No. of the cylinder with auto switch.

| Ev | Rail mounting | CDJ2B16-60S-A |
|-----|---------------|---------------|
| LA. | Band mounting | CDJ2B10-45S-B |

Standard: Single Acting Spring Return/Extend Series CJ2



JIS symbol

Single acting/ Spring return

Single acting/ Spring extend



Made to Order

Refer to p.5.4-1 for made to order products of series CJ2 single acting style.

ecaut ons

Be sure to read before handling. Refer to

- p.0-39 to 0-46 for Safety Instructions and
- common precautions.

\land Caution

Mounting

- ① During installation, secure the rod cover and tighten by applying an appropriate tightening force to the retaining nut or to the rod cover body. If the head cover is secured or the head cover body is tightened, the cover could rotate, leading to a deviation.
- 2 Tighten the retaining screws to an appropriate tightening torque within the range given below. ø6: 2.1 to 2.5Nm, ø10: 5.9 to 6.4Nm, ø16: 10.8 to 11.8Nm
- 3 In the case of the single acting cylinder, do not operate it in such a way that a load would be applied during the retraction of the piston rod of the spring return style, or during the extension of the piston rod of the spring extend style. 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 will not be able to retract to the end of the stroke.
- ④ In the case of the single acting cylinder, a breather hole is provided in the cover surface. Make sure not to block this hole during installation, as this could lead to a malfunction.
- (5) To remove and install the snap ring for the knuckle pin or the clevis pin, use an appropriate pair of pliers (tool for installing a C type snap ring). In particular, use a pair of ultra-mini pliers such as the Super Tool CSM-07A for removing and installing the snap rings on the ø10 cylinder.
- 6 In the case of the auto switch rail mounting, do not remove the rail that is mounted. Because the retaining screws extend into the cylinder, this could lead to an air leak.

Specifications

| Action | | Single acting/Spring return | Single acting/Spring extend | |
|---------------------------|----------|--|-------------------------------------|---|
| Fluid | | Α | ir | |
| Proof pressure | | 1.05 | MPa | |
| Max. operating pressure | | 0.71 | MPa | |
| NA:- | ø6 | 0.2MPa | 0.25MPa | |
| Min. operating pressure | ø10, ø16 | 0.15 | MPa | |
| Ambient and fluid tempera | ture | Without auto switch: -10°C to 70°C | C, With auto switch: -10°C to 60°C* | С |
| Cushion | | Rubber bumper Non-lube JIS class 2 +1.0 0 | | |
| Lubrication | | | | |
| Thread tolerance | | | | |
| Stroke tolerance | | | | |
| Piston speed | | 50 to 750mm/s | | С |
| ø6 | | 0.012J | | |
| Allowable kinetic energy | ø10 | 0.0 | 35J | С |
| | ø16 | 0.0 | 90J | ~ |
| freezing | | 1 | | С |

Standard Stroko

Μ

| Standard Stroke (mm | | | | | |
|---------------------------|-----------------------------------|--|--|--|--|
| Bore size Standard stroke | | | | | |
| 6 | 15, 30, 45, 60 | | | | |
| 10 | 15, 30, 45, 60 | | | | |
| 16 | 15, 30, 45, 60, 75, 100, 125, 150 | | | | |

Spring Force

| Spring Fo | | | |
|-----------|-----------|-----------------|-----|
| Bore size | Retracted | (N) Extended | C95 |
| (mm) | position | position | CA1 |
| 6 | 3.72 | 1.77 | |
| 10 | 6.86 | 3.53 | CS1 |
| 16 | 14.2 | 6.86 | ••• |

MB

Minimum Strokes for Auto Switch Mounting

| Nounting | Auto switch model | Number of switches | Min. stroke (mm) |
|---------------------|---|------------------------|------------------------|
| Band mounting | 5.05 | 2 (same surface) | 50 |
| | D-C7 D-C8 | 2(different surfaces) | 15 |
| ntin | D-00 | 1 | 10 |
| Ino | D-H7 | 2 (same surface) | 60 |
| E F | D-H7⊡W ⁽¹⁾ D-H7BAL ⁽¹⁾ | 2 (different surfaces) | 15 |
| anc | D-H7NF ⁽¹⁾ | 1 | 10 |
| B | D-C73C | 2(same surface) | 65 |
| ø6 | D-C80C | 2(different surfaces) | 15 |
| ø10 | D-H7C | 1 | 10 |
| ø16 | | 2(same surface) | 65 |
| | D-H7LF ⁽¹⁾ | 2 (different surfaces) | 25 |
| | | 1 | 15 |
| | D-A7/A8 D-A7⊡H/A80H | 2 | 10 |
| | D-A73C/A80C | 1 | 5 |
| iting | D-F7 D-J79 | 2 | 5 |
| (g g) Rail mounting | D-F7⊡V D-J79C | 1 | 5 |
| | D-A79W D-F7⊡W D-J79W | 2 | 15 |
| | D-F7BAL D-F7⊡WV D-F79F | 1 | 10 |
| | D-F7LF | 2 | 15 |
| | | 1 | 15 |

Note 1) Cannot be mounted on ø6 cylinder.

| | Bore size (mm) | | | 16 |
|---------------|-----------------------------|----|----|-----|
| | 15 Stroke | 11 | 28 | 63 |
| | 30 Stroke | 16 | 35 | 80 |
| | 45 Stroke | 18 | 44 | 102 |
| Basic weight* | 60 Stroke | 23 | 53 | 124 |
| | 75 Stroke | _ | _ | 145 |
| | 100 Stroke | _ | _ | 188 |
| | 125 Stroke | _ | _ | 224 |
| | 150 Stroke | _ | _ | 250 |
| Mounting | Axial foot | 8 | 8 | 20 |
| bracket | Front flange | 5 | 5 | 15 |
| weight | Double clevis** (with pins) | _ | 4 | 10 |

* This basic weight includes weights of mounting nut and rod end nut.

** The mounting nut is not attached to the double clevis, so the mounting nut weight is already reduced.

Calculation example) CJ2L10-45S

•Basic weight:----- 44 (ø10-45 stroke)

44+8=52g

Weight/Spring Extend (T)

| Weight/Spring Extend (T) (g) | | | | | | | |
|------------------------------|-----------------------------|----|----|-----|--|--|--|
| | Bore size (mm) | 6 | 10 | 16 | | | |
| | 15 Stroke | 17 | 28 | 64 | | | |
| | 30 Stroke | 21 | 34 | 80 | | | |
| | 45 Stroke | 23 | 43 | 100 | | | |
| Basic weight* | 60 Stroke | 27 | 51 | 121 | | | |
| - | 75 Stroke | — | | 140 | | | |
| | 100 Stroke | — | | 178 | | | |
| | 125 Stroke | — | _ | 212 | | | |
| | 150 Stroke | — | _ | 236 | | | |
| Mounting | Axial foot | 8 | 8 | 20 | | | |
| bracket | Front flange | 5 | 5 | 15 | | | |
| weight | Double clevis** (with pins) | — | 4 | 10 | | | |

* This basic weight includes weights of mounting nut and rod end nut. ** The mounting nut is not attached to the double clevis, so the mounting

nut weight is already reduced.

Calculation example) CJ2L10-45T

•Basic weight: ·· ······ 43 (ø10-45 stroke) •Mounting bracket weight: 8 (Axial foot)

43+8=52g

Mounting Bracket Part No.

| Mounting brookst | Bore size (mm) | | | | | | |
|--|----------------|----------|----------|--|--|--|--|
| Mounting bracket | 6 | 10 | 16 | | | | |
| Foot | CJ-L006B | CJ-L010B | CJ-L016B | | | | |
| Flange | CJ-F006B | CJ-F010B | CJ-F016B | | | | |
| T bracket* | | CJ-T010B | CJ-T016B | | | | |
| * T bracket is used with double clevis (D) | | | | | | | |

* T bracket is used with double clevis (D).

Auto Switch Mounting Bracket Part No. (Band mounting)

| Bore size (mm) | Bracket part No. | Note | | |
|-------------------|------------------|-------------------|--|--|
| 6 | BJ2-006 | Common use to all | | |
| 10 | BJ2-010 | of D-C7, C8 and | | |
| 16 | BJ2-016 | D-H7 | | |

Note) A set of stainless steel mounting screws "BBA4" is attached. (A switch mounting band is not attached. Please order the band separately.) "BBA4" screws are used for D-C7/C8/H7. "D-H7BAL" switch is set on the cylinder with the screws above when shipped.

Also, when a switch only is shipped, "BBA4" screws are attached.

Mounting Accessories/Refer to p.1.3-12 for details.

| Mounting | | Basic | Axial foot | Front flange | Double clevis [*] |
|----------|-----------------------|-------|------------|-----------------|-------------------------------|
| Ird | Mounting nut | • | | • | — |
| Standard | Rod end nut | • | | • | • |
| | Clevis pin | _ | — | _ | • |
| L | Single knuckle joint | • | | • | • |
| Option | Double knuckle joint* | • | | • | • |
| 0 | T bracket | | — | — | • |

* Double clevis or double knuckle joint are packaged with pins and set rings. Refer to p.1.3-4 for the accessory weight.

Theoretical Force

(g)

Refer to the "Single acting/spring return cylinder" in Theoretical Force Table 1 of Technical data 3 on p.5.6-7. In the case of

the spring extend style, the force at OUT side will be the ending force of the spring return, and that at the IN side will be the amount of the IN side force of the double acting style cylinder from which the beginning force of the spring return has been subtracted.

Copper Free



Copper free

To eliminate influences of copper ions or halogen ions during CRT manufacturing processes, copper and fluorine materials are not used as component parts.

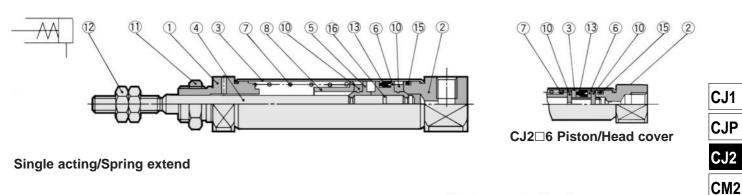


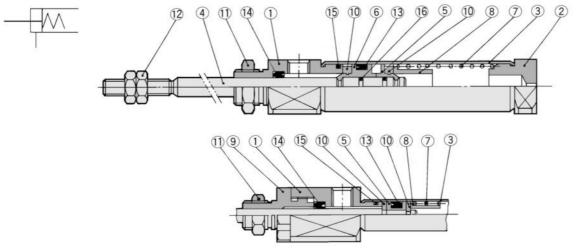
Specifications

| Action | | Single acting/Spring return | Single acting/Spring extend | | | | |
|--------------------|----------|---|-----------------------------|--|--|--|--|
| Bore size (mm) | | ø6, ø10, ø16 | | | | | |
| Max. operating pr | essure | 0.71 | ИРа | | | | |
| Min. operating | ø 6 | 0.2MPa | 0.25MPa | | | | |
| pressure | ø10, ø16 | 0.15MPa | | | | | |
| Cushion | | Rubber bumper | | | | | |
| Standard stroke (I | mm) | Same as the standard (Refer to p.1.3-21.) | | | | | |
| Auto switch | | Possible to be mounted | | | | | |
| Mounting | | Basic, Axial foot, Front flange, Double clevis (Except for ø6) | | | | | |

Construction (The cylinder cannot be disassembled.)

Single acting/Spring return





CJ2□6 Piston/Rod cover

Component Parts

| No. | Description | Material | Note | | | | |
|------------|---------------|-----------------|----------------|--|--|--|--|
| 1 | Rod cover | Aluminum alloy | White anodized | | | | |
| 2 | Head cover | Aluminum alloy | White anodized | | | | |
| 3 | Cylinder tube | Stainless steel | | | | | |
| 4 | Piston rod | Stainless steel | | | | | |
| (5) | Piston A | Brass | | | | | |
| 6 | Piston B | Brass | | | | | |
| \bigcirc | Return spring | Piano wire | | | | | |
| 8 | Spring seat | Brass | | | | | |

| No. | Description | Material | Note | | | | |
|------|------------------|----------------|-----------------------------------|--|--|--|--|
| 9 | Packing retainer | Aluminum alloy | White anodized (ø6 spring extend) | | | | |
| 10 | Bumper | Urethane | | | | | |
| 11 | Mounting nut | Brass | Nickel plated | | | | |
| 12 | Rod end nut | Rolled steel | Nickel plated | | | | |
| 13 | Piston seal | NBR | | | | | |
| 14 | Rod seal | NBR | | | | | |
| (15) | Tube gasket | NBR | | | | | |
| 16 | Piston gasket | NBR | | | | | |

C85

CG1

MB

C95

CA1

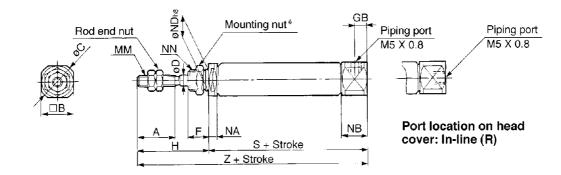
CS1

Series CJ2



Single Acting/Spring Return: Basic (B) CAD

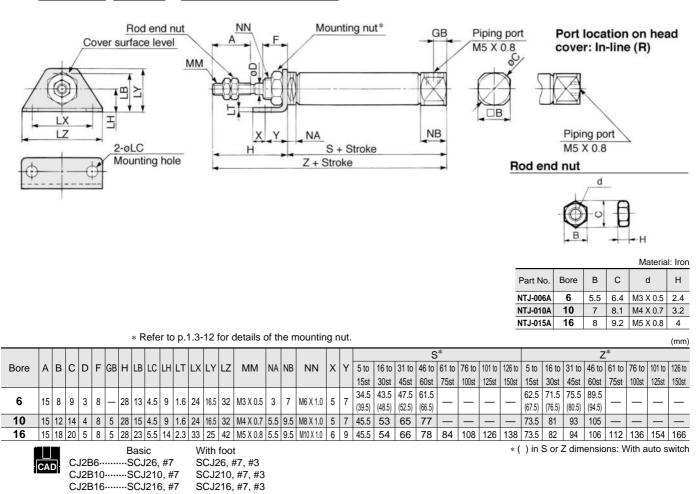
CJ2B Bore size - Stroke S Port location on head cover



| | * Refer to p.1.3-12 for details of the mounting nut. (mm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|---|----|----|---|---|----|----|------------|-----|-----|--------------------------------------|----------------------------|------------------------------------|-----------------------|-----------------|-----------------------|---------|--------|--------|--------|--------|-------|-------|-------|-------|--------|--------|--------|--------|---|
| | | | | | | | | | | | | | | | | S | ·*) | | | | | | | Z | * | | | | | |
| Bore | A | В | С | D | F | GB | н | MM | NA | NB | ND h8 | NN | 5 to | 16 to | 31 to | 46 to | 61 to | 76 to | 101 to | 126 to | 5 to | 16 to | 31 to | 46 to | 61 to | 76 to | 101 to | 126 to | | |
| | | | | | | | | | | | | 1 | 15st | 30st | 45st | 60st | 75st | 100st | 125st | 150st | 15st | 30st | 45st | 60st | 75st | 100st | 125st | 150st | | |
| 6 | 15 | 8 | 9 | 3 | 8 | | 28 | M3 X 0.5 | 3 | 7 | 7 6 ⁰ _{-0.018} M | 7 6 ⁰ -0.018 M6 | 7 6 ⁰ _{-0.018} | M6 X 1.0 | 34.5 | 43.5 | 47.5 | 61.5 | | | | | 62.5 | 71.5 | 75.5 | 89.5 | | | | |
| 0 | 15 | 0 | 9 | 3 | 0 | _ | 20 | IVI3 A 0.5 | 3 | 1 | | | | 7 0 _{-0.018} | <i>I</i> 00.018 | 7 0 _{-0.018} | | (39.5) | (48.5) | (52.5) | (66.5) | _ | _ | _ | _ | (67.5) | (76.5) | (80.5) | (94.5) | _ |
| 10 | 15 | 12 | 14 | 4 | 8 | 5 | 28 | M4 X 0.7 | 5.5 | 9.5 | 8_0_022 | M8 X 1.0 | 45.5 | 53 | 65 | 77 | — | — | — | — | 73.5 | 81 | 93 | 105 | | — | Ι | — | | |
| 16 | 15 | 18 | 20 | 5 | 8 | 5 | 28 | M5 X 0.8 | 5.5 | 9.5 | 10_0.022 | M10 X 1.0 | 45.5 | 54 | 66 | 78 | 84 | 108 | 126 | 138 | 73.5 | 82 | 94 | 106 | 112 | 136 | 154 | 166 | | |
| | * () in S or Z dimensions: With auto switch | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

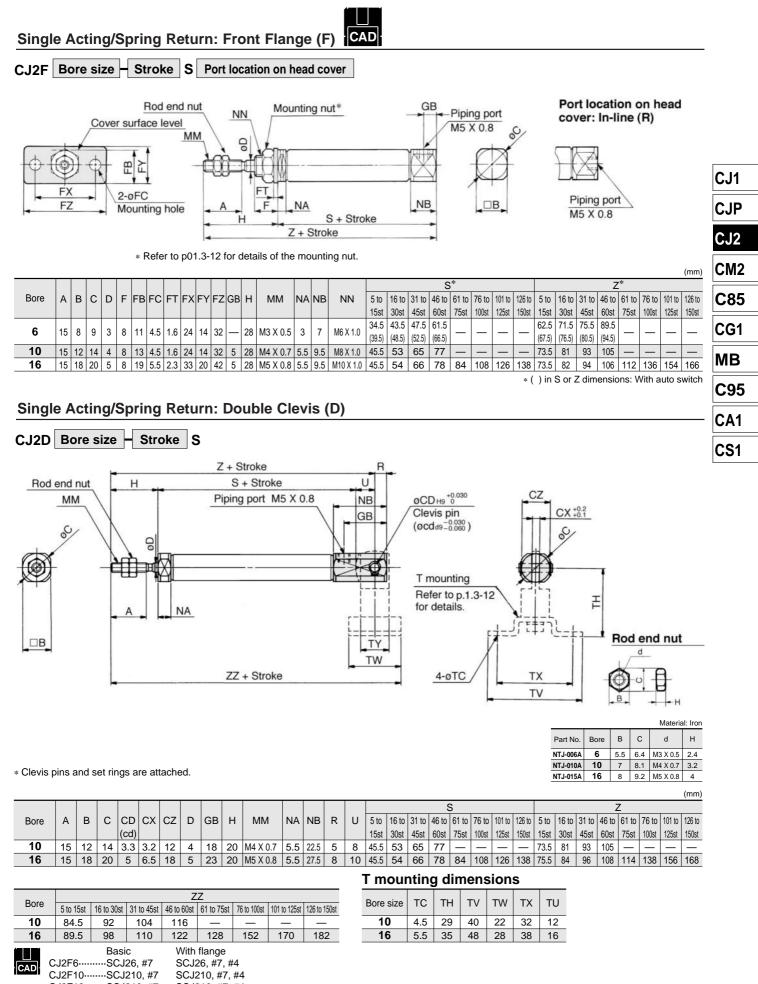
Single Acting/Spring Return: Axial Foot (L)

CJ2L Bore size - Stroke S Port location on head cover



The data shows auto switch styles.
Please delete the unnecessary parts.

Standard: Single Acting Spring Return/Extend Series CJ2

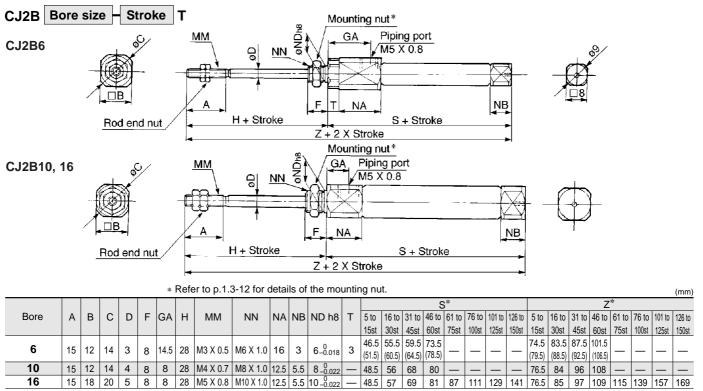


CJ2F16......SCJ216, #7 SCJ216, #7, #4 * The data shows auto switch styles.

Please delete the unnecessary parts.

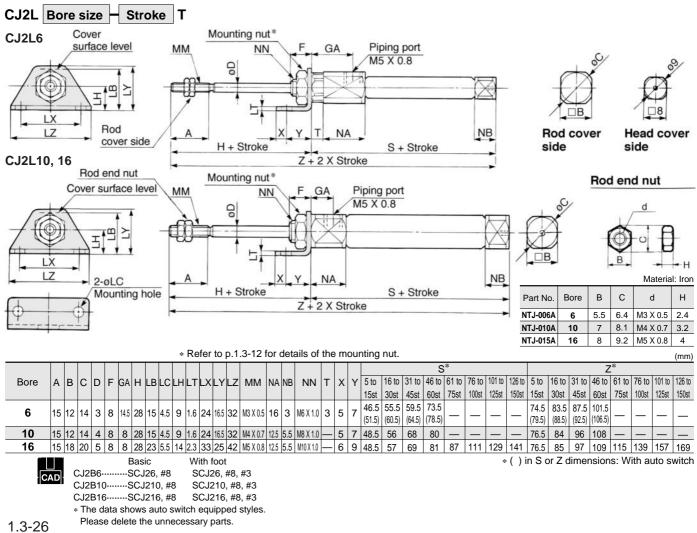
Series CJ2

Single Acting/Spring Extend: Basic (B)

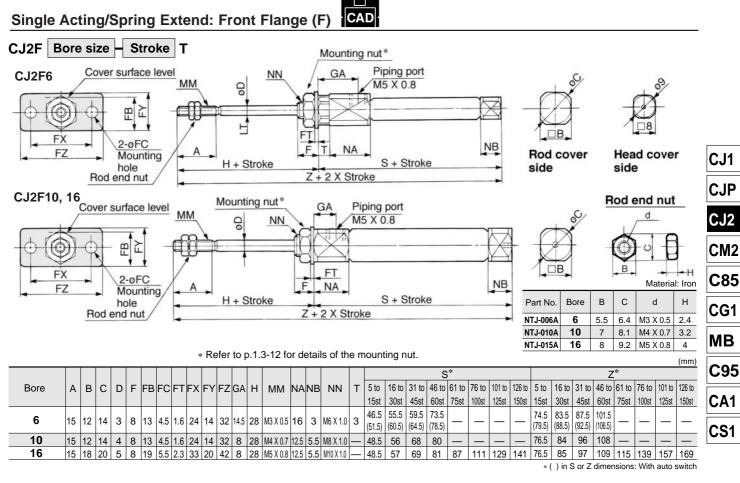


* () in S or Z dimensions: With auto switch

Single Acting/Spring Extend: Axial Foot (L)

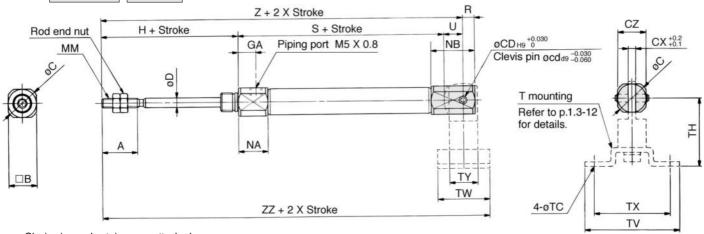


Standard: Single Acting Spring Return/Extend Series CJ2



Single Acting/Spring Extend: Double Clevis (D)





* Clevis pins and set rings are attached.

| | | | | | | | | | | | | | | | | | | ç | S | | | | | | | Z | 2 | | | |
|------|----|----|----|------|-----|----|---|----|----|----------|------|------|----|----|------|-------|-------|-------|-------|-------|--------|--------|------|-------|-------|-------|-------|-------|--------|--------|
| Bore | A | в | С | CD | сх | cz | D | GA | н | мм | NA | NB | R | υ | 5 to | 16 to | 31 to | 46 to | 61 to | 76 to | 101 to | 126 to | 5 to | 16 to | 31 to | 46 to | 61 to | 76 to | 101 to | 126 to |
| | | | _ | (cd) | - | _ | | - | | | | | | _ | 15st | 30st | 45st | 60st | 75st | 100st | 125st | 150st | 15st | 30st | 45st | 60st | 75st | 100st | 125st | 150st |
| 10 | 15 | 12 | 14 | 3.3 | 3.2 | 12 | 4 | 8 | 28 | M4 X 0.7 | 12.5 | 18.5 | 5 | 8 | 48.5 | 56 | 68 | 80 | — | _ | — | _ | 84.5 | 92 | 104 | 116 | — | — | _ | _ |
| 16 | 15 | 18 | 20 | 5 | 6.5 | 18 | 5 | 8 | 28 | M5 X 0.8 | 12.5 | 23.5 | 8 | 10 | 48.5 | 57 | 69 | 81 | 87 | 111 | 129 | 141 | 86.5 | 95 | 107 | 119 | 125 | 149 | 167 | 179 |
| | | | | | | | | | | | | | () | | т | mo | unti | na | dim | nei | one | | | | | | | | | |

| | | | | | | | | (mm) | | | | | |
|----------------|-------------|------------|------------|---------------|------------|-------------|--------------|--------------|--|--|--|--|--|
| Bore | | ZZ | | | | | | | | | | | |
| Dore | 5 to 15st | 16 to 30st | 31 to 45st | 46 to 60st | 61 to 75st | 76 to 100st | 101 to 125st | 126 to 150st | | | | | |
| 10 | 95.5 | 103 | 115 | 127 | | _ | _ | _ | | | | | |
| 16 | 100.5 | 109 | 121 | 133 | 139 | 163 | 181 | 193 | | | | | |
| | With flange | | | | | | | | | | | | |
| CJ2F6SCJ26, #8 | | | | SCJ26, #8, #4 | | | | | | | | | |

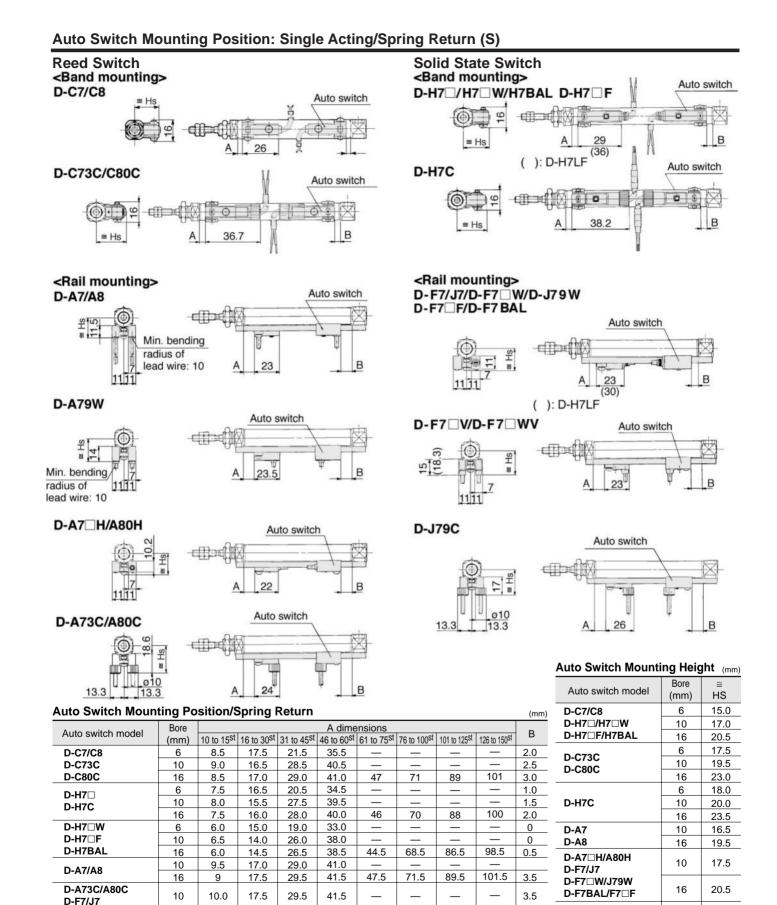
| T mounti | mounting aimensions | | | | | | | |
|-----------|---------------------|----|----|----|----|----|--|--|
| Bore size | тс | ΤН | ΤV | тw | ΤХ | ΤY | | |
| 10 | 4.5 | 29 | 40 | 22 | 32 | 12 | | |
| 16 | 5.5 | 35 | 48 | 28 | 38 | 16 | | |

| | Dasic | with hange |
|------------|----------------|---------------------|
| CJ2F6 | SCJ26, #8 | SCJ26, #8, #4 |
| CJ2F10 | SCJ210, #8 | SCJ210, #8, #4 |
| CJ2F16 | SCJ216, #8 | SCJ216, #8, #4 |
| * The data | shows auto swi | tch equipped styles |

Please delete the unnecessary parts.

(mm)

Series CDJ2



10

16

10

16

10

16

10

16

D-A73C/A80C

D-F7□V

D-J79C

D-A79W

D-F7 WV

23.5

26.5

20.0

23.0

23.0

26.0

19.0

22.0

D-A7 H/A80H

D-F7 V/J79C

D-F7BAL/F7 W

D-F7 F/J79W

D-F7 WV

D-A79W

16

10

16

10

16

10

16

9.5

10.5

10.0

14.0

13.5

7.0

6.5

18.0

18.0

18.5

21.5

22.0

14.5

15.0

30.0

30.0

30.5

33.5

34.0

26.5

27.0

42.0

42.0

42.5

45.5

46.0

38.5

39.0

48

48.5

52

45

72

72.5

76

69

90

90.5

94

87

102

102.5

106

99

4.0

4.0

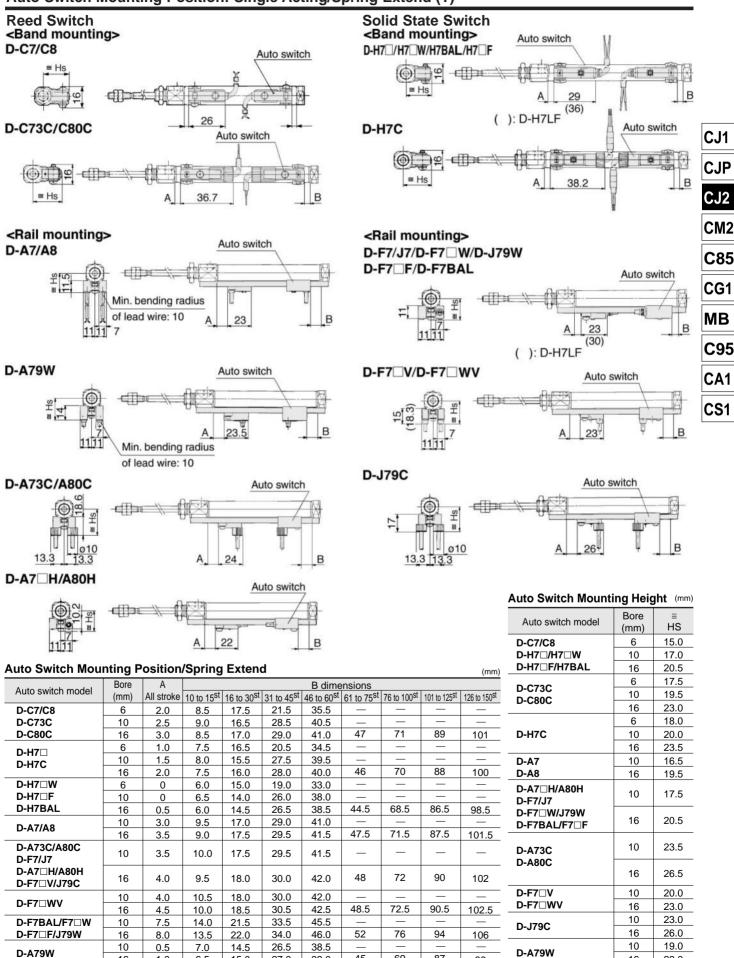
4.5

7.5

8.0

0.5

1.0



69

45

39.0

16

1.0

6.5

15.0

27.0

87

99

Auto Switch Mounting Position: Single Acting/Spring Extend (T)

16