

ISO Cylinder ISO Standard (15552)

CP96 Series

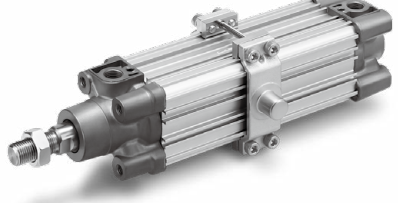
ø32, ø40, ø50, ø63, ø80, ø100, ø125

RoHS

Lightweight Up to 15% Weight reduced

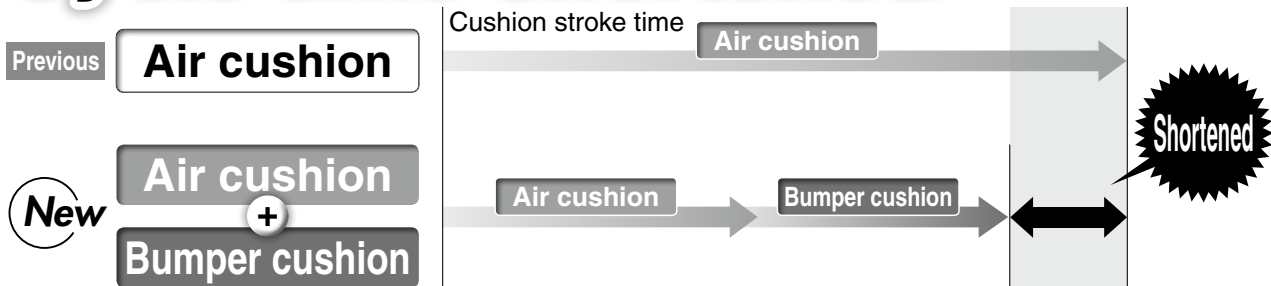
* Compared with the previous CP96 series (ø40, 100 mm stroke)

New
An adjustable position trunnion has been added.



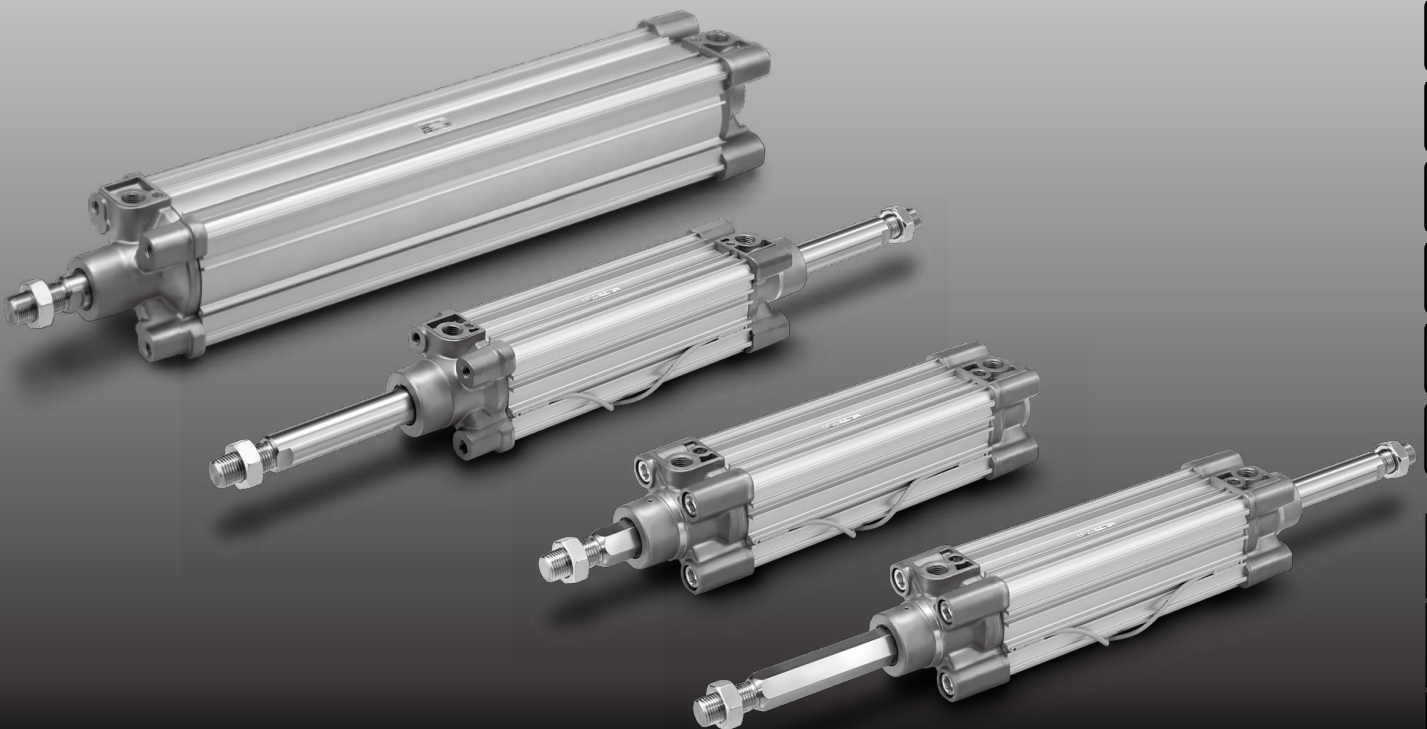
■ By adopting a new cushion method (Air cushion + Bumper cushion),

Cycle time shortened (Applicable cylinder: ø32 to ø100)



■ Bumper cushion reduces the metal noise that occurs when piston stops

(Applicable cylinder: ø32 to ø100)



- C85
- C85W
- C85-ST
- C85K
- C85K-ST
- C85R
- C75
- C75W
- C75-ST
- C75K
- C75K-ST
- C75R
- CP96
- CP96K
- C96
- C96K
- C96Y
- C55
- Auto Switch
- Made to Order
- Related Products

New CP96 Series

Weight reduced

Achieved weight reduction by changing rod cover shape and piston structure

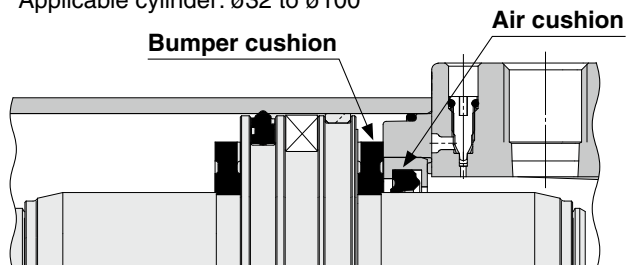
| Bore size [mm] | CP96 [kg] | Reduction rate [%] |
|----------------|-----------|--------------------|
| 32 | 0.74 | 11 |
| 40 | 1.02 | 15 |
| 50 | 1.74 | 11 |
| 63 | 2.12 | 12 |
| 80 | 3.40 | 11 |
| 100 | 4.33 | 11 |

* Compared with the previous CP96 series (100 mm stroke)

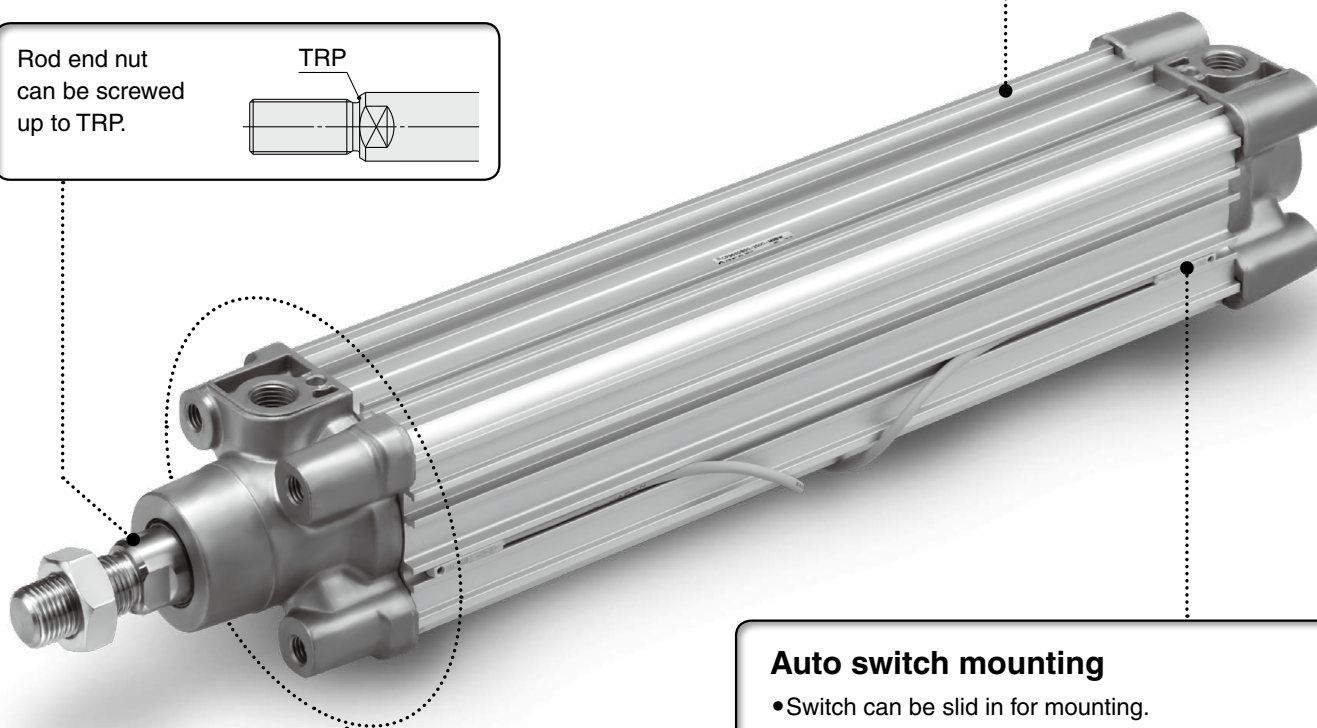
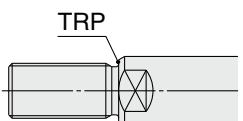
Air cushion + Bumper cushion Combined structure

- The cushion stroke time can now be reduced with the double cushioning, which improves the cycle time.
- The bumper cushion reduces the metal noise that occurs when the piston stops at the end of the stroke.

Applicable cylinder: $\varnothing 32$ to $\varnothing 100$



Rod end nut can be screwed up to TRP.

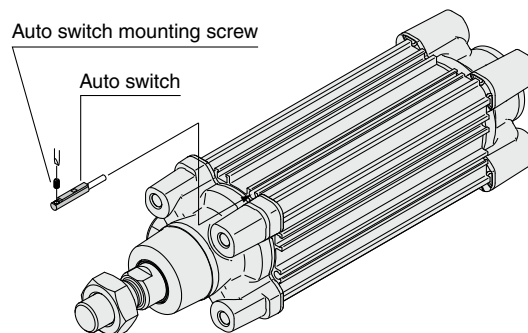


Auto switch mounting

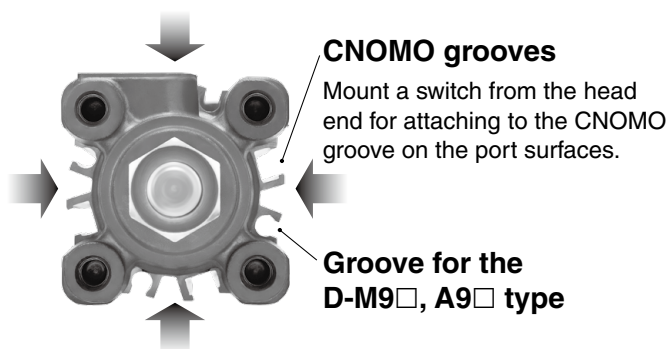
- Switch can be slid in for mounting.
- Groove for M9, A9 switches and CNOMO groove are on all four sides. Max. four sides, slide-in mountable

Auto switch can be slid in.

Mountable from both the head end and the rod end.

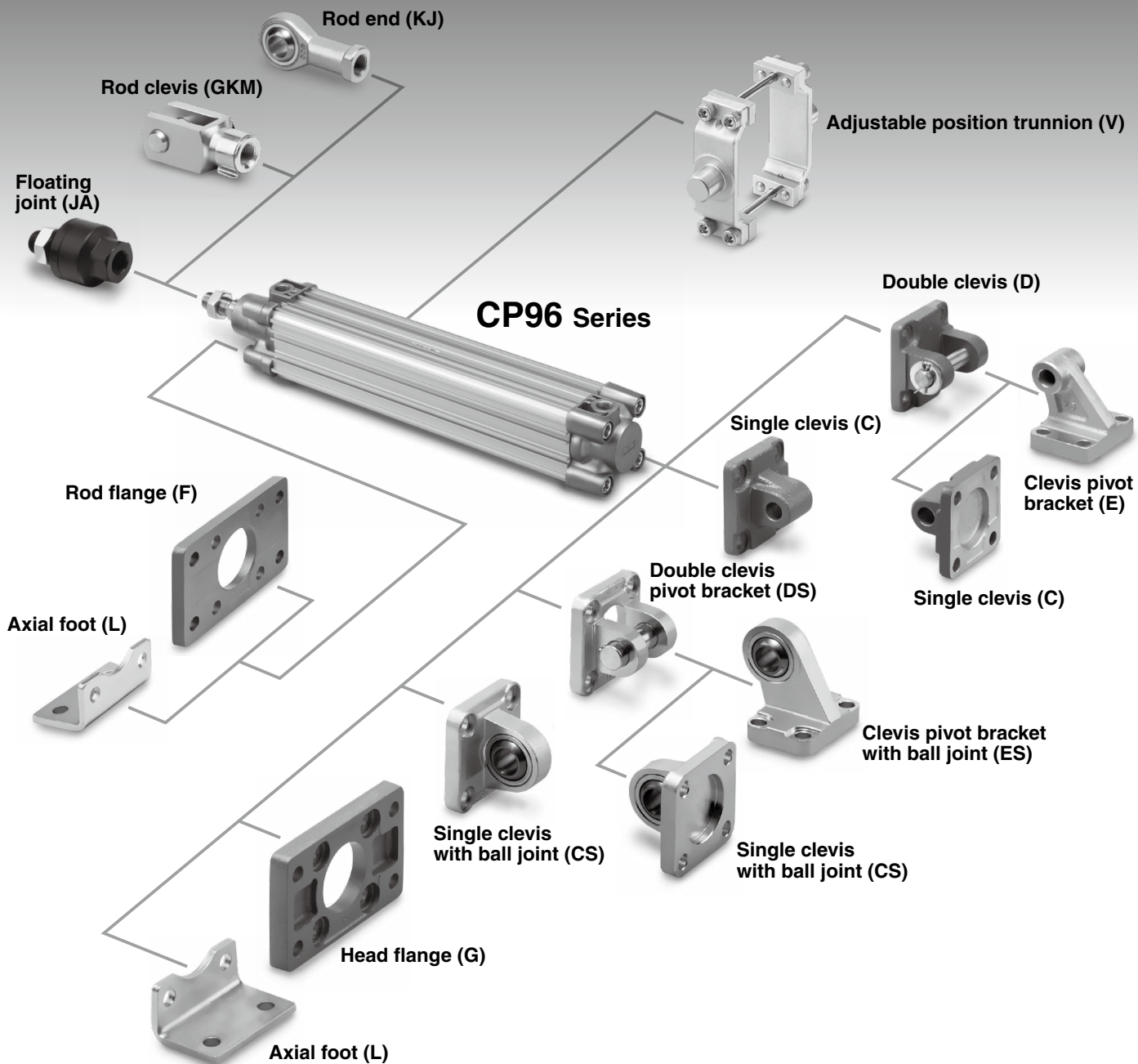


Auto switch mounting surface



Various mounting bracket options

Mounting brackets can be combined according to the operating conditions.



Series Variations

| ISO Standards | Type | Action | Bore size [mm] | | | | | | Page |
|---------------|--|---------------------------|----------------|----|----|----|----|-----|------|
| | | | 32 | 40 | 50 | 63 | 80 | 100 | |
| ISO 15552 | Standard CP96 Series | Double acting, Single rod | ● | ● | ● | ● | ● | ● | 129 |
| | | Double acting, Double rod | ● | ● | ● | ● | ● | ● | |
| | Non-rotating rod CP96K Series | Double acting, Single rod | ● | ● | ● | ● | ● | ● | 141 |
| | | Double acting, Double rod | ● | ● | ● | ● | ● | ● | |

- C85
- C85W
- C85-ST
- C85K
- C85K-ST
- C85R
- C75
- C75W
- C75-ST
- C75K
- C75K-ST
- C75R
- CP96
- CP96K
- C96
- C96K
- C96Y
- C55
- Auto Switch
- Made to Order
- Related Products

ISO Standard (15552)

Air Cylinder: Standard Type Double Acting, Single/Double Rod



CP96 Series

ø32, ø40, ø50, ø63, ø80, ø100, ø125



How to Order

CP96S **B** **32** - **100** **C** **J** **W** - []

With auto switch **CP96SD** **B** **32** - **100** **C** **J** **W** - **M9BW** **S** - []

With auto switch (Built-in magnet)

Mounting

| | |
|----------|------------------------------|
| B | Basic |
| L | Axial foot |
| F | Rod flange |
| G | Head flange |
| C | Single clevis |
| D | Double clevis |
| V | Adjustable position trunnion |

* Mounting brackets are shipped together, but not assembled.

Bore size

| | |
|------------|--------|
| 32 | 32 mm |
| 40 | 40 mm |
| 50 | 50 mm |
| 63 | 63 mm |
| 80 | 80 mm |
| 100 | 100 mm |
| 125 | 125 mm |

Cylinder stroke [mm]
Refer to "Standard Strokes" on page 130.

Cushion

| Symbol | Cushion | Bore size [mm] |
|------------|---|----------------|
| C | Air cushion on both ends + Bumper cushion | ø32 to ø100 |
| Nil | Air cushion | ø125 |

Rod boot

| | |
|------------|--------------------------------------|
| Nil | Without rod boot |
| J | Nylon tarpaulin (One end) |
| JJ | Nylon tarpaulin (Both ends) |
| K | Heat-resistant tarpaulin (One end) |
| KK | Heat-resistant tarpaulin (Both ends) |

Number of auto switches

| | |
|------------|---|
| Nil | 2 |
| S | 1 |
| 3 | 3 |
| n | n |

Auto switch

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

* For applicable auto switches, refer to the table below.

Rod

| | |
|------------|------------|
| Nil | Single rod |
| W | Double rod |

Made to Order
Refer to page 130 for details.

Applicable Auto Switches/Refer to the Web Catalog or Best Pneumatics for further information on auto switches.

| 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 | | 0.5 (Nil) | 1 (M) | 3 (L) | 5 (Z) | | IC circuit | Relay, PLC | |
| Solid state auto switch | — | Grommet | No | 3-wire (NPN) | 24 V | 5 V, 12 V | — | M9N | ● | ● | ● | ○ | ○ | IC circuit | Relay, PLC |
| | | | | 3-wire (PNP) | | | | M9P | ● | ● | ● | ○ | ○ | | |
| | | | | 2-wire | | | | M9B | ● | ● | ● | ○ | ○ | | |
| | Diagnostic indication (2-color indicator) | Grommet | Yes | 3-wire (NPN) | 24 V | 5 V, 12 V | — | M9NW | ● | ● | ● | ○ | ○ | IC circuit | |
| | | | | 3-wire (PNP) | | | | M9PW | ● | ● | ● | ○ | ○ | | |
| | | | | 2-wire | | | | M9BW | ● | ● | ● | ○ | ○ | | |
| | Water-resistant (2-color indicator) | Grommet | No | 3-wire (NPN) | 24 V | 5 V, 12 V | — | M9NA *1 | ○ | ○ | ● | ○ | ○ | IC circuit | |
| | | | | 3-wire (PNP) | | | | M9PA *1 | ○ | ○ | ● | ○ | ○ | | |
| | | | | 2-wire | | | | M9BA *1 | ○ | ○ | ● | ○ | ○ | | |
| Reed auto switch | — | Grommet | Yes | 3-wire (NPN equivalent) | 24 V | 12 V | 100 V or less | A96 | ● | — | ● | — | — | IC circuit | |
| | | | | 2-wire | | | | A93 | ● | ● | ● | ● | — | | — |
| | | | | | | | | A90 | ● | — | ● | — | — | | |

*1 Water-resistant type auto switches can be mounted on the above models, but SMC cannot guarantee water resistance.

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

* Solid state auto switches marked with "○" are produced upon receipt of order.

* Since there are other applicable auto switches than listed above, refer to page 146 for details.

* The D-A9□/M9□/M9□W/M9□A auto switches are shipped together, but not assembled.

* The D-Y59A, Y69A, Y7P, Y7□W, Z7□, Z80 cannot be mounted on the CP96 series.

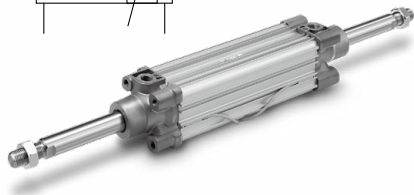
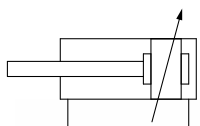
Moreover, the D-M9□□ and A9□ auto switches cannot be mounted on square groove of the CP96 series.

Specifications



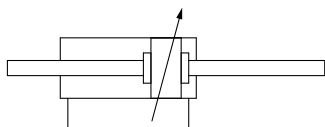
Symbol

Air cushion + Bumper cushion



Symbol

Air cushion + Bumper cushion



Made to Order

(For details, refer to pages 148 to 155.)

| Symbol | Specifications |
|--------|---|
| -XA□ | Change of rod end shape |
| -XB6 | Heat-resistant cylinder (-10 to 150°C) |
| -XC4 | With heavy duty scraper |
| -XC7 | Tie-rod, tie-rod nut, etc. made of stainless steel |
| -XC10 | Dual stroke cylinder/Double rod type |
| -XC11 | Dual stroke cylinder/Single rod type |
| -XC22 | Fluororubber seal |
| -XC35 | With coil scraper |
| -XC65 | Made of stainless steel (Combination of -XC7 and -XC68) |
| -XC68 | Made of stainless steel (with hard chrome plated piston rod) |
| -XC85 | Grease for food processing equipment |
| -XC88 | Spatter-resistant coil scraper, Lube-retainer, grease for welding (Piston rod: Stainless steel 304) |
| -XC89 | Spatter-resistant coil scraper, Lube-retainer, grease for welding (Piston rod: S45C) |

Refer to pages 145 and 146 for cylinders with auto switches.

- Auto Switch Proper Mounting Position (Detection at stroke end)
- Minimum Stroke for Auto Switch Mounting
- Operating Range
- How to Mount and Move the Auto Switch

| Bore size [mm] | 32 | 40 | 50 | 63 | 80 | 100 | 125 |
|---------------------------------------|---|-------|-------|-------|-------|-------|----------------|
| Action | Double acting | | | | | | |
| Fluid | Air | | | | | | |
| Proof pressure | 1.5 MPa | | | | | | |
| Max. operating pressure | 1.0 MPa | | | | | | |
| Min. operating pressure | 0.05 MPa | | | | | | |
| Ambient and fluid temperatures | Without auto switch: -20 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing) | | | | | | |
| Lubrication | Not required (Non-lube) | | | | | | |
| Operating piston speed | 50 to 1000 mm/s | | | | | | 50 to 700 mm/s |
| Allowable stroke tolerance | Up to 500 | | | | | | +1.0 0 |
| | 501 to 1000 | | | | | | +1.4 0 |
| | 1001 to 1500 | | | | | | +1.8 0 |
| | 1501 to 2000 | | | | | | +2.2 0 |
| Cushion | Air cushion on both ends + Bumper cushion | | | | | | Air cushion |
| Port size | G 1/8 | G 1/4 | G 1/4 | G 3/8 | G 3/8 | G 1/2 | G 1/2 |
| Mounting | Basic, Axial foot, Rod flange, Head flange, Single clevis, Double clevis, Center trunnion, Adjustable position trunnion | | | | | | |

Standard Strokes

| Bore size [mm] | Standard stroke [mm] | Max. stroke |
|----------------|---|-------------|
| 32 | 25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500 | 2000 |
| 40 | 25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500 | 2000 |
| 50 | 25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600 | 2000 |
| 63 | 25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600 | 2000 |
| 80 | 25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600, 700, 800 | 2000 |
| 100 | 25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600, 700, 800 | 2000 |
| 125 | — | 2000 |

* Aside from the standard strokes, intermediate strokes are also available in 1 mm increments and are produced upon receipt of order.

* Strokes exceeding the max. stroke are available as a special order.

Accessories

| Mounting | | Basic | Foot | Rod flange | Head flange | Single clevis | Double clevis | Adjustable position trunnion |
|----------|-------------|-------|------|------------|-------------|---------------|---------------|------------------------------|
| Standard | Rod end nut | ● | ● | ● | ● | ● | ● | ● |
| | Clevis pin | — | — | — | — | — | ● | — |
| Option | Rod end | ● | ● | ● | ● | ● | ● | ● |
| | Rod clevis | ● | ● | ● | ● | ● | ● | ● |
| | Rod boot | ● | ● | ● | ● | ● | ● | ● |

* Do not use a rod end (or floating joint) together with a single clevis with a ball joint (or clevis pivot bracket with a ball joint).

* Refer to pages 137 to 140 for dimensions and part numbers of the accessories.

⚠ Precautions

Be sure to read this before handling the products. Refer to page 219 for safety instructions. For actuator and auto switch precautions, refer to the “Handling Precautions for SMC Products” and the “Operation Manual” on the SMC website: <http://www.smcworld.com>

C85
C85W
C85-ST
C85K
C85K-ST
C85R
C75
C75W
C75-ST
C75K
C75K-ST
C75R
CP96
CP96K
C96
C96K
C96Y
C55
Auto Switch
Made to Order
Related Products

CP96 Series

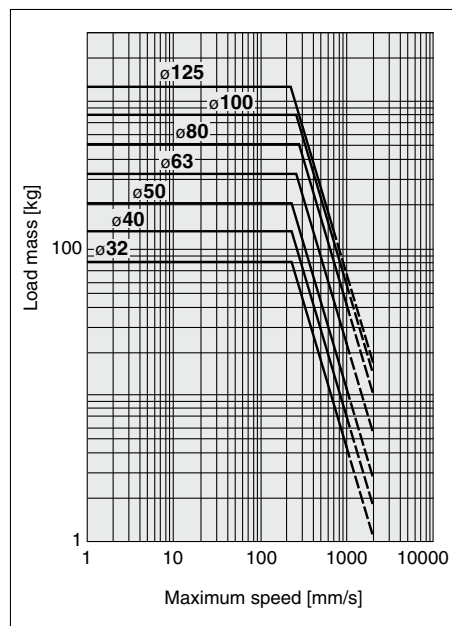
Theoretical Output



Allowable Kinetic Energy

| Bore size [mm] | Rod size [mm] | Operating direction | Piston area [mm ²] | Operating pressure [MPa] | | | | | | | | |
|----------------|---------------|---------------------|--------------------------------|--------------------------|------|------|------|------|------|------|-------|-------|
| | | | | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 |
| 32 | 12 | OUT | 804 | 161 | 241 | 322 | 402 | 482 | 563 | 643 | 724 | 804 |
| | | IN | 691 | 138 | 207 | 276 | 346 | 415 | 484 | 553 | 622 | 691 |
| 40 | 16 | OUT | 1257 | 251 | 377 | 503 | 629 | 754 | 880 | 1006 | 1131 | 1257 |
| | | IN | 1056 | 211 | 317 | 422 | 528 | 634 | 739 | 845 | 950 | 1056 |
| 50 | 20 | OUT | 1963 | 393 | 589 | 785 | 982 | 1178 | 1374 | 1570 | 1767 | 1963 |
| | | IN | 1649 | 330 | 495 | 660 | 825 | 989 | 1154 | 1319 | 1484 | 1649 |
| 63 | 20 | OUT | 3117 | 623 | 935 | 1247 | 1559 | 1870 | 2182 | 2494 | 2805 | 3117 |
| | | IN | 2803 | 561 | 841 | 1121 | 1402 | 1682 | 1962 | 2242 | 2523 | 2803 |
| 80 | 25 | OUT | 5027 | 1005 | 1508 | 2011 | 2514 | 3016 | 3519 | 4022 | 4524 | 5027 |
| | | IN | 4536 | 907 | 1361 | 1814 | 2268 | 2722 | 3175 | 3629 | 4082 | 4536 |
| 100 | 25 | OUT | 7854 | 1571 | 2356 | 3142 | 3927 | 4712 | 5498 | 6283 | 7068 | 7854 |
| | | IN | 7363 | 1473 | 2209 | 2945 | 3682 | 4418 | 5154 | 5890 | 6627 | 7363 |
| 125 | 32 | OUT | 12272 | 2454 | 3682 | 4909 | 6136 | 7363 | 8590 | 9817 | 11045 | 12272 |
| | | IN | 11468 | 2294 | 3440 | 4587 | 5734 | 6881 | 8027 | 9174 | 10321 | 11468 |

* Theoretical output [N] = Pressure [MPa] x Piston area [mm²]



Weight (Guide)

| Bore size [mm] | | 32 | 40 | 50 | 63 | 80 | 100 | 125 |
|---------------------------------------|------------------------------|------|------|------|------|------|------|-------|
| Basic weight | Basic | 0.46 | 0.66 | 1.14 | 1.48 | 2.42 | 3.25 | 6.82 |
| | Foot | 0.62 | 0.86 | 1.52 | 1.94 | 3.31 | 4.34 | 9.42 |
| | Flange | 0.66 | 0.89 | 1.61 | 2.06 | 3.72 | 5.06 | 10.92 |
| | Single clevis | 0.62 | 0.89 | 1.51 | 2.08 | 3.49 | 4.98 | 10.97 |
| | Double clevis | 0.66 | 0.98 | 1.59 | 2.19 | 3.70 | 5.36 | 11.07 |
| | Adjustable position trunnion | 0.60 | 0.95 | 1.47 | 2.16 | 3.22 | 4.80 | 8.75 |
| Additional weight per 50 mm of stroke | All mounting brackets | 0.14 | 0.18 | 0.30 | 0.32 | 0.49 | 0.54 | 0.84 |
| Accessories | Rod end | 0.07 | 0.11 | 0.22 | 0.40 | 0.40 | 1.20 | |
| | Rod clevis | 0.09 | 0.15 | 0.34 | 0.69 | 1.84 | | |

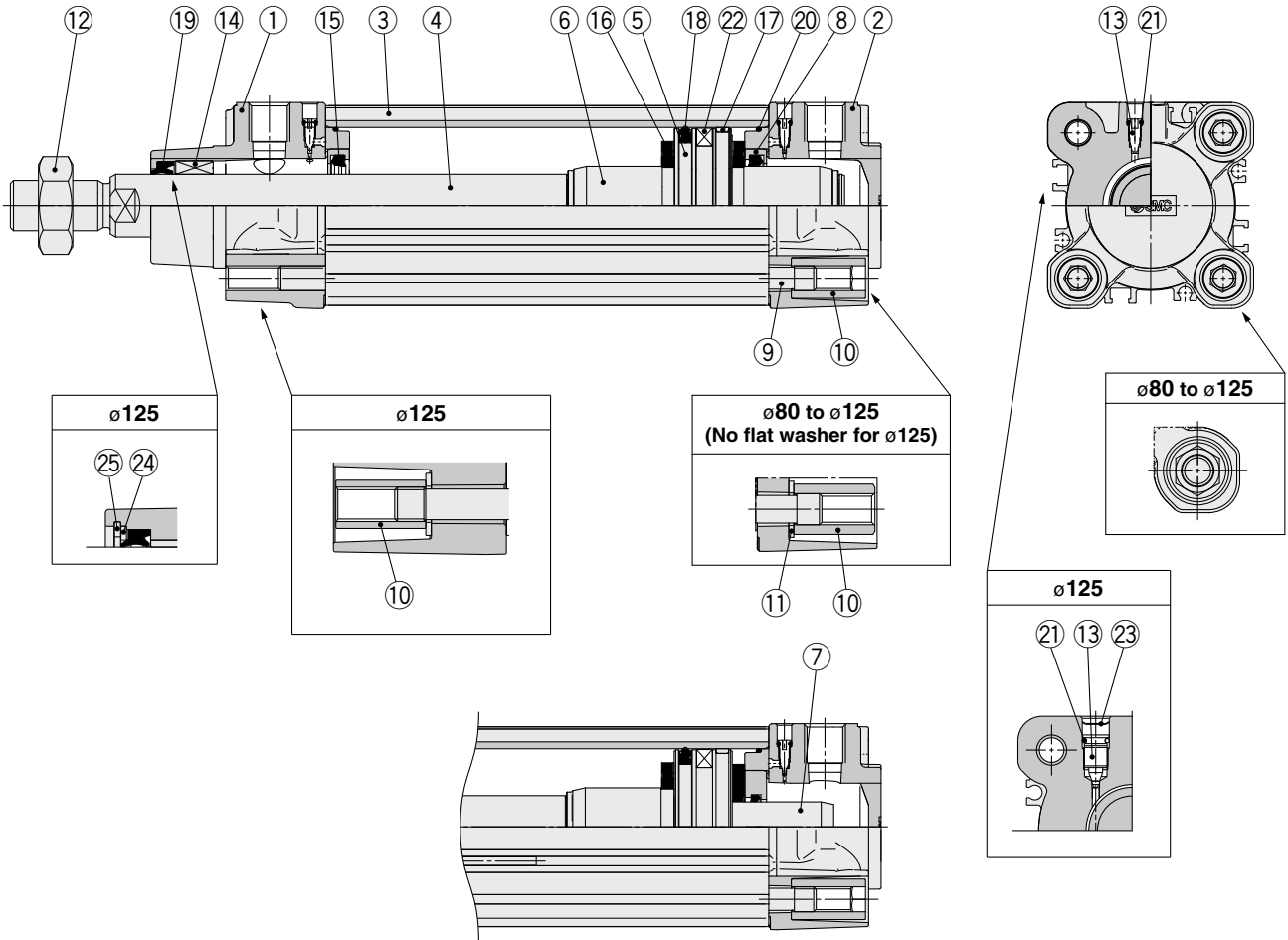
Calculation: Example) **CP96SD40-100C**

- Basic weight 0.98 [kg] (Double clevis, ø40)
- Additional weight 0.18 (kg/50 st)
- Cylinder stroke 100 [st]

$$0.98 + 0.18 \times 100 \div 50 = 1.34 \text{ [kg]}$$

(Example) Find the upper limit of rod end load when an air cylinder of ø63 is operated at 500 mm/s. From a point indicating 500 mm/s on the axis of abscissas, extend a line upward and find a point where it intersects with a line for the 63 mm bore size. Extend a line from the intersection to the left and find a load mass 80 kg.

Construction



Component Parts

| No. | Description | Material | Note |
|-----|----------------------|-------------------|------------------|
| 1 | Rod cover | Aluminum die-cast | |
| 2 | Head cover | Aluminum die-cast | |
| 3 | Cylinder tube | Aluminum alloy | |
| 4 | Piston rod | Carbon steel | |
| 5 | Piston | Aluminum alloy | ø32 to ø63, ø125 |
| | | Aluminum die-cast | ø80, ø100 |
| 6 | Cushion ring A | Aluminum alloy | |
| 7 | Cushion ring B | Aluminum alloy | |
| 8 | Cushion seal holder | Aluminum alloy | ø32 to ø100 |
| 9 | Tie-rod | Carbon steel | |
| 10 | Tie-rod nut | Steel | |
| 11 | Flat washer | Steel | ø80, ø100 |
| 12 | Rod end nut | Steel | |
| 13 | Cushion valve | Resin | ø32 to ø100 |
| | | Steel wire | ø125 |
| 14 | Bushing | Bearing alloy | |
| 15 | Cushion seal | Urethane | |
| 16 | Bumper | Urethane | ø32 to ø100 |
| 17 | Wear ring | Resin | |
| 18 | Piston seal | NBR | |
| 19 | Rod seal | NBR | |
| 20 | Cylinder tube gasket | NBR | |
| 21 | Cushion valve seal | NBR | |
| 22 | Magnet | | |
| 23 | Retaining ring | Steel for spring | ø125 |
| 24 | Rod seal holder | Stainless steel | ø125 |
| 25 | Retaining ring | Steel for spring | ø125 |

Replacement Parts/Seal Kit (Single rod)

| Bore size [mm] | Kit no. | Contents |
|----------------|----------|----------------------------------|
| 32 | CS95-32 | Kits include items ⑮, ⑰ to ⑳. |
| 40 | CS95-40 | |
| 50 | CS95-50 | |
| 63 | CS95-63 | |
| 80 | CS95-80 | |
| 100 | CS96-100 | |
| 125 | CS96-125 | |

* Seal kits consist of items ⑮, ⑰ to ⑳ and can be ordered by using the seal kit number corresponding to each bore size.

* The seal kit includes a grease pack (10 g for ø32 to ø50, 20 g for ø63 and ø80, 30 g for ø100 and ø125).

Order with the following part number when only the grease pack is needed.
Grease pack part number: GR-S-010 (10 g), GR-S-020 (20 g)

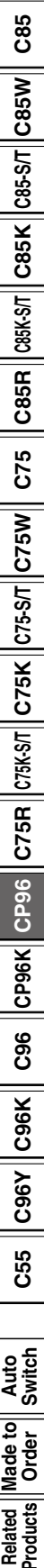
Seal Kit (Double rod)

| Bore size [mm] | Kit no. | Contents |
|----------------|-----------|----------------------------------|
| 32 | CS95W-32 | Kits include items ⑮, ⑱ to ㉑. |
| 40 | CS95W-40 | |
| 50 | CS95W-50 | |
| 63 | CS95W-63 | |
| 80 | CS95W-80 | |
| 100 | CS96W-100 | |
| 125 | CS96W-125 | |

* Seal kits consist of items ⑮, ⑱ to ㉑ and can be ordered by using the seal kit number corresponding to each bore size.

* The seal kit includes a grease pack (10 g for ø32 to ø50, 20 g for ø63 and ø80, 30 g for ø100 and ø125).

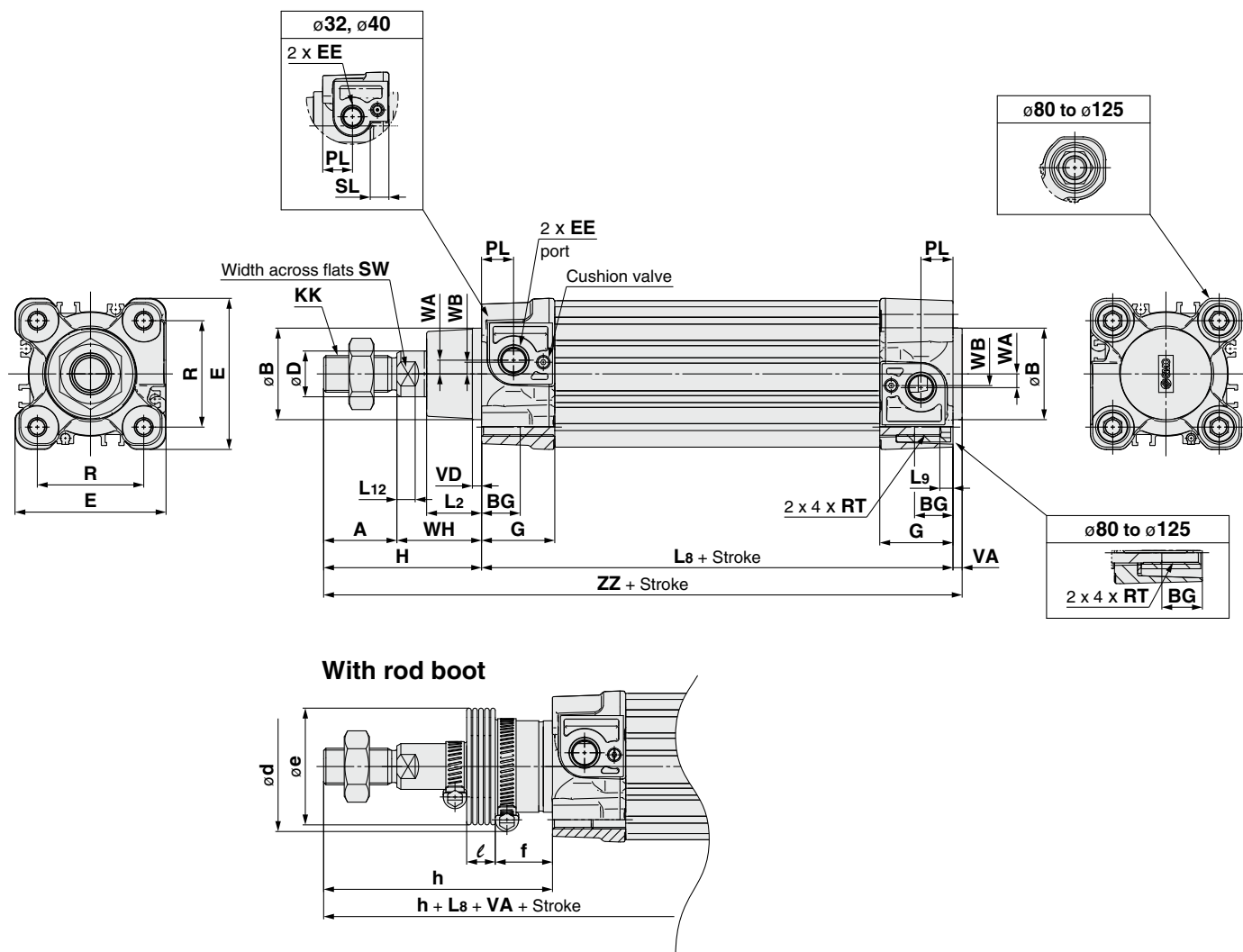
Order with the following part number when only the grease pack is needed.
Grease pack part number: GR-S-010 (10 g), GR-S-020 (20 g)



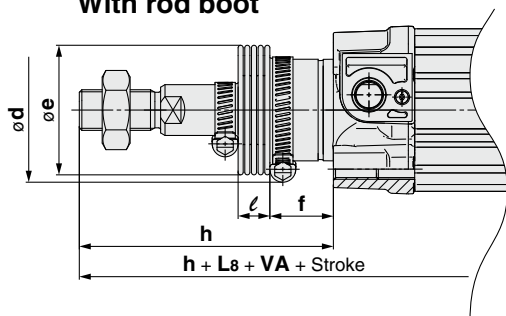
CP96 Series

Dimensions

Basic: CP96S (D) B Bore size - Stroke C (J)



With rod boot



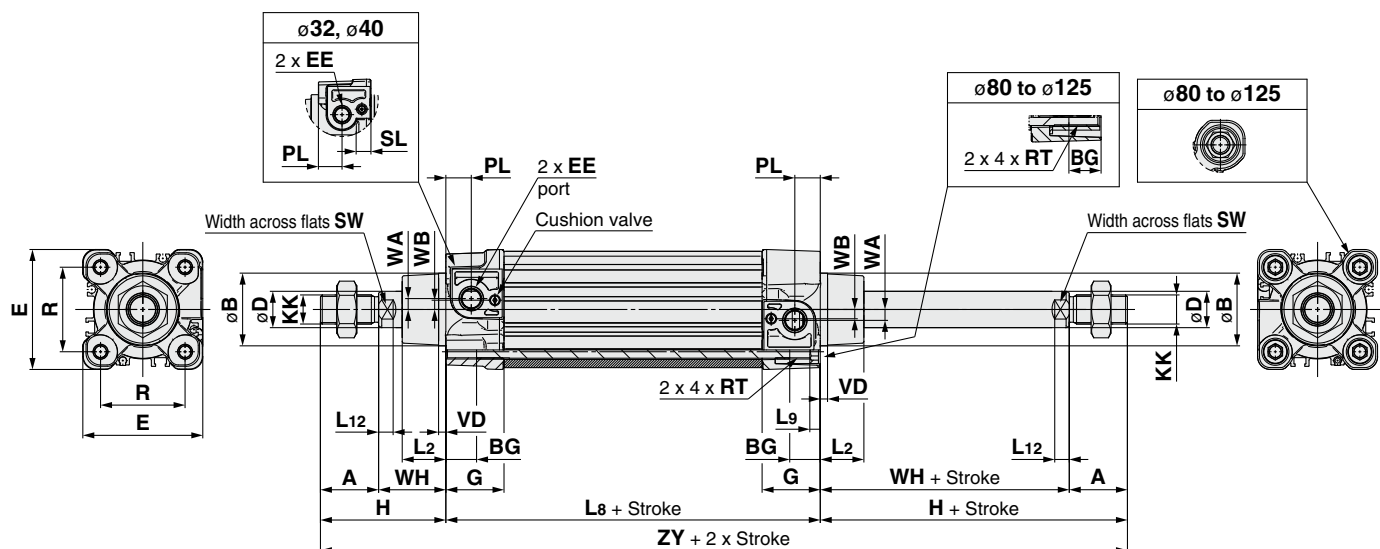
| Bore size [mm] | Stroke range*1 [mm] | | A | øB d11 | BG | øD | E | EE | G | H | KK | L2 | L8 | L9 | L12 | PL | R | RT | SL | SW | VA | VD | WA | WB | WH | ZZ |
|----------------|---------------------|---------------|----|--------|----|----|-----|-------|------|-----|------------|----|-----|----|-----|----|------|------------|----|----|----|----|------|-----|----|-----|
| | Without rod boot | With rod boot | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | Up to 2000 | Up to 1000 | 22 | 30 | 16 | 12 | 47 | G 1/8 | 28.9 | 48 | M10 x 1.25 | 15 | 94 | 4 | 6 | 13 | 32.5 | M6 x 1 | 8 | 10 | 4 | 4 | 4 | 7 | 26 | 146 |
| 40 | Up to 2000 | Up to 1000 | 24 | 35 | 16 | 16 | 54 | G 1/4 | 32.6 | 54 | M12 x 1.25 | 17 | 105 | 4 | 6.5 | 14 | 38 | M6 x 1 | 8 | 13 | 4 | 4 | 5 | 8.9 | 30 | 163 |
| 50 | Up to 2000 | Up to 1000 | 32 | 40 | 16 | 20 | 66 | G 1/4 | 32 | 69 | M16 x 1.5 | 24 | 106 | 5 | 8 | 14 | 46.5 | M8 x 1.25 | — | 17 | 4 | 4 | 6 | 5.1 | 37 | 179 |
| 63 | Up to 2000 | Up to 1000 | 32 | 45 | 16 | 20 | 77 | G 3/8 | 38.6 | 69 | M16 x 1.5 | 24 | 121 | 5 | 8 | 16 | 56.5 | M8 x 1.25 | — | 17 | 4 | 4 | 9 | 6.3 | 37 | 194 |
| 80 | Up to 2000 | Up to 1000 | 40 | 45 | 17 | 25 | 99 | G 3/8 | 38.4 | 86 | M20 x 1.5 | 30 | 128 | — | 10 | 16 | 72 | M10 x 1.5 | — | 22 | 4 | 4 | 11.5 | 6 | 46 | 218 |
| 100 | Up to 2000 | Up to 1000 | 40 | 55 | 17 | 25 | 118 | G 1/2 | 42.9 | 91 | M20 x 1.5 | 32 | 138 | — | 10 | 18 | 89 | M10 x 1.5 | — | 22 | 4 | 4 | 17 | 10 | 51 | 233 |
| 125 | Up to 2000 | Up to 1000 | 54 | 60 | 20 | 32 | 144 | G 1/2 | 58 | 119 | M27 x 2 | 40 | 160 | — | 13 | 19 | 110 | M12 x 1.75 | — | 27 | 6 | 6 | 17 | 15 | 65 | 285 |

*1 Minimum stroke for trunnion mounting: 1 mm for bore size 32 to 80, 5 mm for bore size 100, 10 mm for bore size 125

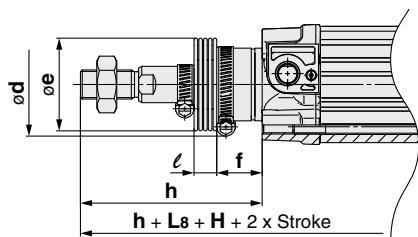
| Bore size [mm] | ød | øe | f | ℓ | | | | | | | | | | | | | | | | h | | | | | | | | | | | | | | | |
|----------------|----|----|----|---------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|---------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|--|--|--|--|--|--|--|--|
| | | | | 1 to 50 | 51 to 100 | 101 to 150 | 151 to 200 | 201 to 300 | 301 to 400 | 401 to 500 | 501 to 600 | 601 to 700 | 701 to 800 | 801 to 900 | 901 to 1000 | 1 to 50 | 51 to 100 | 101 to 150 | 151 to 200 | 201 to 300 | 301 to 400 | 401 to 500 | 501 to 600 | 601 to 700 | 701 to 800 | 801 to 900 | 901 to 1000 | | | | | | | | |
| 32 | 54 | 36 | 23 | 12.5 | 25 | 37.5 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 75 | 88 | 100 | 113 | 138 | 163 | 188 | 213 | 238 | 263 | 288 | 313 | | | | | | | | |
| 40 | 54 | 36 | 23 | 12.5 | 25 | 37.5 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 75 | 88 | 100 | 113 | 138 | 163 | 188 | 213 | 238 | 263 | 288 | 313 | | | | | | | | |
| 50 | 64 | 51 | 25 | 12.5 | 25 | 37.5 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 87 | 100 | 112 | 125 | 150 | 175 | 200 | 225 | 250 | 275 | 300 | 325 | | | | | | | | |
| 63 | 64 | 51 | 25 | 12.5 | 25 | 37.5 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 87 | 100 | 112 | 125 | 150 | 175 | 200 | 225 | 250 | 275 | 300 | 325 | | | | | | | | |
| 80 | 68 | 56 | 30 | 12.5 | 25 | 37.5 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 103 | 116 | 128 | 141 | 166 | 191 | 216 | 241 | 266 | 291 | 316 | 341 | | | | | | | | |
| 100 | 76 | 56 | 32 | 12.5 | 25 | 37.5 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 103 | 116 | 128 | 141 | 166 | 191 | 216 | 241 | 266 | 291 | 316 | 341 | | | | | | | | |
| 125 | 82 | 75 | 40 | 10 | 20 | 30 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 130 | 140 | 150 | 160 | 180 | 200 | 220 | 240 | 260 | 280 | 300 | 320 | | | | | | | | |

Dimensions

Basic: CP96S (D) B Bore size - Stroke C (J) W



With rod boot at one end



| Bore size [mm] | Stroke range*1 [mm] | A | øB d11 | BG | øD | E | EE | G | H | KK | L2 | L8 | L9 | L12 | PL | R | RT | SL | SW | VD | WA | WB | WH | ZY |
|----------------|---------------------|----|--------|----|----|-----|-------|------|-----|------------|----|-----|----|-----|----|------|------------|----|----|----|------|-----|----|-----|
| 32 | Up to 1000 | 22 | 30 | 16 | 12 | 47 | G 1/8 | 28.9 | 48 | M10 x 1.25 | 15 | 94 | 4 | 6 | 13 | 32.5 | M6 x 1 | 8 | 10 | 4 | 4 | 7 | 26 | 190 |
| 40 | Up to 1000 | 24 | 35 | 16 | 16 | 54 | G 1/4 | 32.6 | 54 | M12 x 1.25 | 17 | 105 | 4 | 6.5 | 14 | 38 | M6 x 1 | 8 | 13 | 4 | 5 | 8.9 | 30 | 213 |
| 50 | Up to 1000 | 32 | 40 | 16 | 20 | 66 | G 1/4 | 32 | 69 | M16 x 1.5 | 24 | 106 | 5 | 8 | 14 | 46.5 | M8 x 1.25 | — | 17 | 4 | 6 | 5.1 | 37 | 244 |
| 63 | Up to 1000 | 32 | 45 | 16 | 20 | 77 | G 3/8 | 38.6 | 69 | M16 x 1.5 | 24 | 121 | 5 | 8 | 16 | 56.5 | M8 x 1.25 | — | 17 | 4 | 9 | 6.3 | 37 | 259 |
| 80 | Up to 1000 | 40 | 45 | 17 | 25 | 99 | G 3/8 | 38.4 | 86 | M20 x 1.5 | 30 | 128 | — | 10 | 16 | 72 | M10 x 1.5 | — | 22 | 4 | 11.5 | 6 | 46 | 300 |
| 100 | Up to 1000 | 40 | 55 | 17 | 25 | 118 | G 1/2 | 42.9 | 91 | M20 x 1.5 | 32 | 138 | — | 10 | 18 | 89 | M10 x 1.5 | — | 22 | 4 | 17 | 10 | 51 | 320 |
| 125 | Up to 1000 | 54 | 60 | 20 | 32 | 144 | G 1/2 | 58 | 119 | M27 x 2 | 40 | 160 | — | 13 | 19 | 110 | M12 x 1.75 | — | 27 | 6 | 17 | 15 | 65 | 398 |

*1 Minimum stroke for trunnion mounting: 1 mm for bore size 32 to 80, 5 mm for bore size 100, 10 mm for bore size 125

| Bore size [mm] | ød | øe | f | l | | | | | | | | | | | | h | | | | | | | | | | | |
|----------------|----|----|----|---------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|---------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| | | | | 1 to 50 | 51 to 100 | 101 to 150 | 151 to 200 | 201 to 300 | 301 to 400 | 401 to 500 | 501 to 600 | 601 to 700 | 701 to 800 | 801 to 900 | 901 to 1000 | 1 to 50 | 51 to 100 | 101 to 150 | 151 to 200 | 201 to 300 | 301 to 400 | 401 to 500 | 501 to 600 | 601 to 700 | 701 to 800 | 801 to 900 | 901 to 1000 |
| 32 | 54 | 36 | 23 | 12.5 | 25 | 37.5 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 75 | 88 | 100 | 113 | 138 | 163 | 188 | 213 | 238 | 263 | 288 | 313 |
| 40 | 54 | 36 | 23 | 12.5 | 25 | 37.5 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 75 | 88 | 100 | 113 | 138 | 163 | 188 | 213 | 238 | 263 | 288 | 313 |
| 50 | 64 | 51 | 25 | 12.5 | 25 | 37.5 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 87 | 100 | 112 | 125 | 150 | 175 | 200 | 225 | 250 | 275 | 300 | 325 |
| 63 | 64 | 51 | 25 | 12.5 | 25 | 37.5 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 87 | 100 | 112 | 125 | 150 | 175 | 200 | 225 | 250 | 275 | 300 | 325 |
| 80 | 68 | 56 | 30 | 12.5 | 25 | 37.5 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 103 | 116 | 128 | 141 | 166 | 191 | 216 | 241 | 266 | 291 | 316 | 341 |
| 100 | 76 | 56 | 32 | 12.5 | 25 | 37.5 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 103 | 116 | 128 | 141 | 166 | 191 | 216 | 241 | 266 | 291 | 316 | 341 |
| 125 | 82 | 75 | 40 | 10 | 20 | 30 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 130 | 140 | 150 | 160 | 180 | 200 | 220 | 240 | 260 | 280 | 300 | 320 |

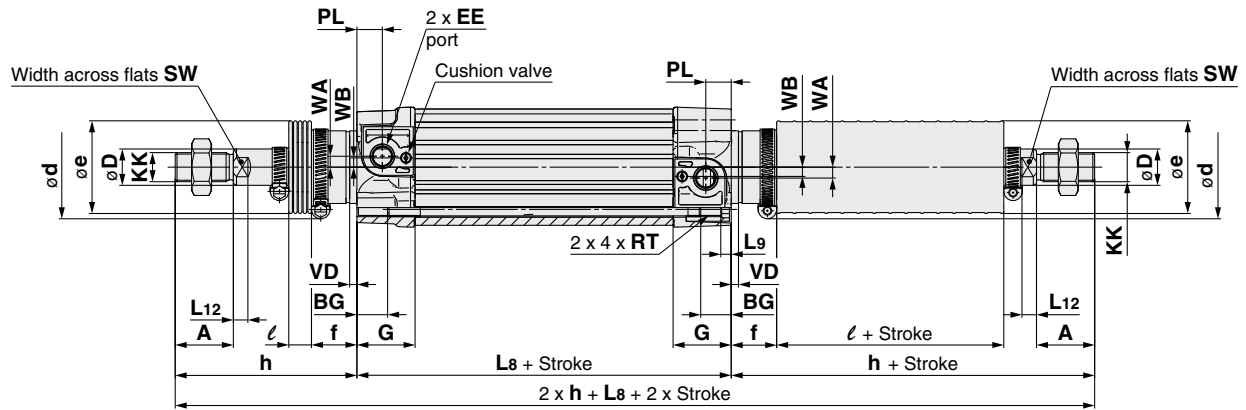
- CP85
- CP85W
- CP85-ST
- CP85K
- CP85K-ST
- CP85R
- CP75
- CP75W
- CP75-ST
- CP75K
- CP75K-ST
- CP75R
- CP96
- CP96K
- CP96
- CP96K
- CP96Y
- CP55
- Auto Switch
- Made to Order
- Related Products

CP96 Series

Dimensions

Basic: CP96S (D) B Bore size - Stroke C (JJ) W

With rod boot at both ends



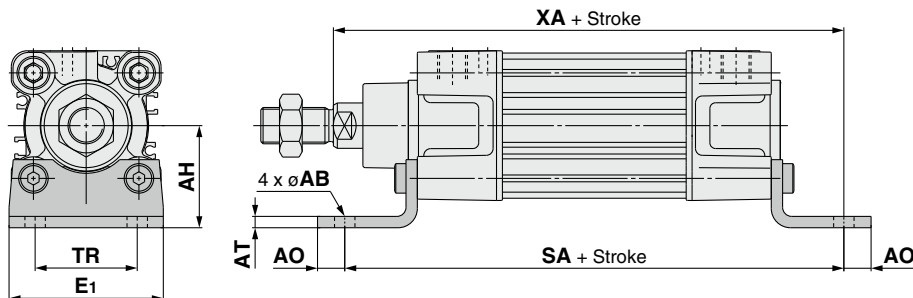
| Bore size [mm] | Stroke range*1 [mm] | A | BG | øD | E | EE | G | KK | L8 | L9 | L12 | PL | R | RT | SL | SW | VD | WA | WB |
|----------------|---------------------|----|----|----|-----|-------|------|------------|-----|----|-----|----|------|------------|----|----|----|------|-----|
| 32 | Up to 1000 | 22 | 16 | 12 | 47 | G 1/8 | 28.9 | M10 x 1.25 | 94 | 4 | 6 | 13 | 32.5 | M6 x 1 | 8 | 10 | 4 | 4 | 7 |
| 40 | Up to 1000 | 24 | 16 | 16 | 54 | G 1/4 | 32.6 | M12 x 1.25 | 105 | 4 | 6.5 | 14 | 38 | M6 x 1 | 8 | 13 | 4 | 5 | 8.9 |
| 50 | Up to 1000 | 32 | 16 | 20 | 66 | G 1/4 | 32 | M16 x 1.5 | 106 | 5 | 8 | 14 | 46.5 | M8 x 1.25 | — | 17 | 4 | 6 | 5.1 |
| 63 | Up to 1000 | 32 | 16 | 20 | 77 | G 3/8 | 38.6 | M16 x 1.5 | 121 | 5 | 8 | 16 | 56.5 | M8 x 1.25 | — | 17 | 4 | 9 | 6.3 |
| 80 | Up to 1000 | 40 | 17 | 25 | 99 | G 3/8 | 38.4 | M20 x 1.5 | 128 | — | 10 | 16 | 72 | M10 x 1.5 | — | 22 | 4 | 11.5 | 6 |
| 100 | Up to 1000 | 40 | 17 | 25 | 118 | G 1/2 | 42.9 | M20 x 1.5 | 138 | — | 10 | 18 | 89 | M10 x 1.5 | — | 22 | 4 | 17 | 10 |
| 125 | Up to 1000 | 54 | 20 | 32 | 144 | G 1/2 | 58 | M27 x 2 | 160 | — | 13 | 19 | 110 | M12 x 1.75 | — | 27 | 6 | 17 | 15 |

*1 Minimum stroke for trunnion mounting: 1 mm for bore size 32 to 80, 5 mm for bore size 100, 10 mm for bore size 125

| Bore size [mm] | ød | øe | f | ℓ | | | | | | | | | | | | h | | | | | | | | | | | |
|----------------|----|----|----|---------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|---------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| | | | | 1 to 50 | 51 to 100 | 101 to 150 | 151 to 200 | 201 to 300 | 301 to 400 | 401 to 500 | 501 to 600 | 601 to 700 | 701 to 800 | 801 to 900 | 901 to 1000 | 1 to 50 | 51 to 100 | 101 to 150 | 151 to 200 | 201 to 300 | 301 to 400 | 401 to 500 | 501 to 600 | 601 to 700 | 701 to 800 | 801 to 900 | 901 to 1000 |
| 32 | 54 | 36 | 23 | 12.5 | 25 | 37.5 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 75 | 88 | 100 | 113 | 138 | 163 | 188 | 213 | 238 | 263 | 288 | 313 |
| 40 | 54 | 36 | 23 | 12.5 | 25 | 37.5 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 75 | 88 | 100 | 113 | 138 | 163 | 188 | 213 | 238 | 263 | 288 | 313 |
| 50 | 64 | 51 | 25 | 12.5 | 25 | 37.5 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 87 | 100 | 112 | 125 | 150 | 175 | 200 | 225 | 250 | 275 | 300 | 325 |
| 63 | 64 | 51 | 25 | 12.5 | 25 | 37.5 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 87 | 100 | 112 | 125 | 150 | 175 | 200 | 225 | 250 | 275 | 300 | 325 |
| 80 | 68 | 56 | 30 | 12.5 | 25 | 37.5 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 103 | 116 | 128 | 141 | 166 | 191 | 216 | 241 | 266 | 291 | 316 | 341 |
| 100 | 76 | 56 | 32 | 12.5 | 25 | 37.5 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 103 | 116 | 128 | 141 | 166 | 191 | 216 | 241 | 266 | 291 | 316 | 341 |
| 125 | 82 | 75 | 40 | 10 | 20 | 30 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 130 | 140 | 150 | 160 | 180 | 200 | 220 | 240 | 260 | 280 | 300 | 320 |

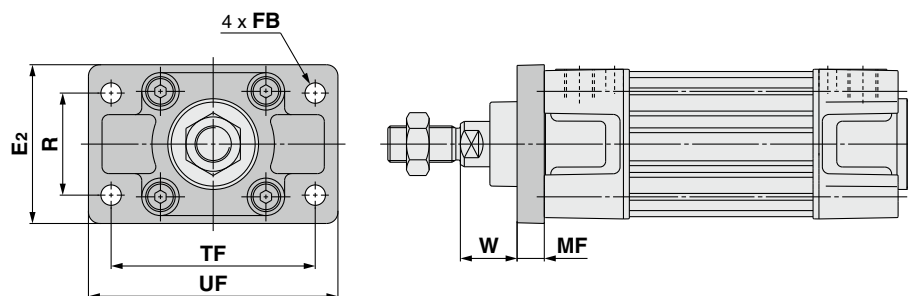
Dimensions: With Mounting Bracket (Dimensions are common to single rod and double rod.)

Axial foot (L)



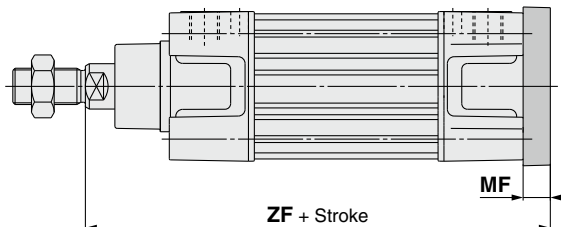
| Bore size [mm] | E1 | TR | AH | AO | AT | AB | SA | XA |
|----------------|----------|----|----|---------|-----|------|-----|-----|
| 32 | 48 | 32 | 32 | 10 | 4.5 | 7 | 142 | 144 |
| 40 | 55 | 36 | 36 | 11 | 4.5 | 10 | 161 | 163 |
| 50 | 68 | 45 | 45 | 12 | 5.5 | 10 | 170 | 175 |
| 63 | 80 | 50 | 50 | 12 | 5.5 | 10 | 185 | 190 |
| 80 | 100 | 63 | 63 | 14 | 6.5 | 12 | 210 | 215 |
| 100 | 120 | 75 | 71 | 16 | 6.5 | 14.5 | 220 | 230 |
| 125 | Max. 157 | 90 | 90 | Max. 25 | 8 | 16 | 250 | 270 |

Rod flange (F)



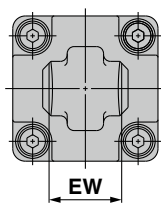
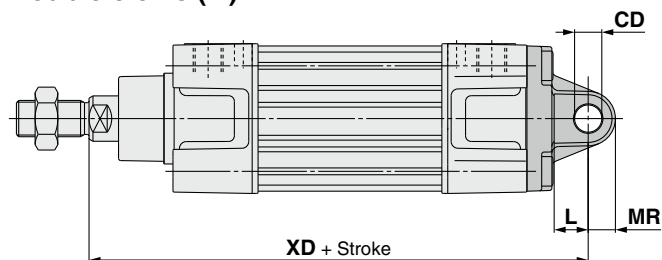
| Bore size [mm] | R | TF | FB | E2 | UF | W | MF |
|----------------|----|-----|----|----------|----------|----|----|
| 32 | 32 | 64 | 7 | 50 | 79 | 16 | 10 |
| 40 | 36 | 72 | 9 | 55 | 90 | 20 | 10 |
| 50 | 45 | 90 | 9 | 70 | 110 | 25 | 12 |
| 63 | 50 | 100 | 9 | 80 | 120 | 25 | 12 |
| 80 | 63 | 126 | 12 | 100 | 153 | 30 | 16 |
| 100 | 75 | 150 | 14 | 120 | 178 | 35 | 16 |
| 125 | 90 | 180 | 16 | Max. 157 | Max. 224 | 45 | 20 |

Head flange (G)

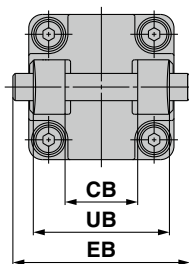


| Bore size [mm] | MF | ZF |
|----------------|----|-----|
| 32 | 10 | 130 |
| 40 | 10 | 145 |
| 50 | 12 | 155 |
| 63 | 12 | 170 |
| 80 | 16 | 190 |
| 100 | 16 | 205 |
| 125 | 20 | 245 |

**Single clevis (C)
 Double clevis (D)**



Single clevis (C)



Double clevis (D)

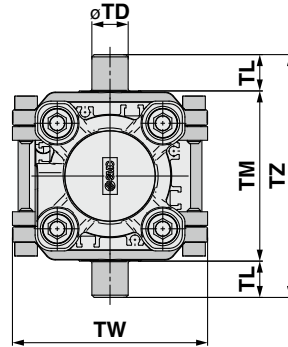
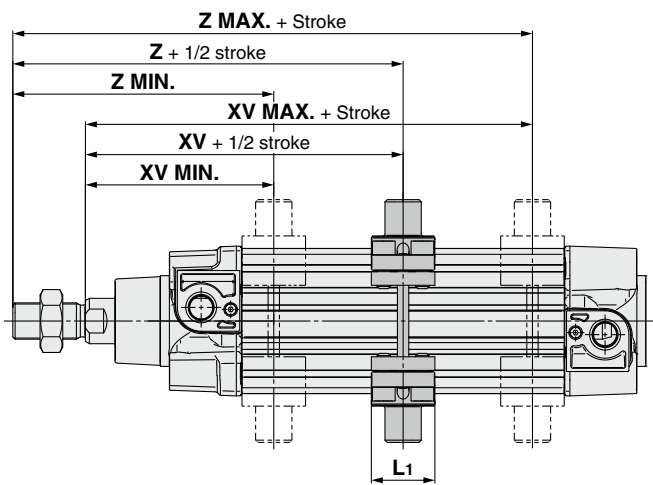
| Bore size [mm] | EW | CD H9 | L | MR | XD | UB h14 | CB H14 | EB |
|----------------|------------------------------------|-------|---------|---------|-----|--------|--------|----------|
| 32 | 26 ^{-0.2} _{-0.6} | 10 | 12 | 9.5 | 142 | 45 | 26 | 65 |
| 40 | 28 ^{-0.2} _{-0.6} | 12 | 15 | 12 | 160 | 52 | 28 | 75 |
| 50 | 32 ^{-0.2} _{-0.6} | 12 | 15 | 12 | 170 | 60 | 32 | 80 |
| 63 | 40 ^{-0.2} _{-0.6} | 16 | 20 | 16 | 190 | 70 | 40 | 90 |
| 80 | 50 ^{-0.2} _{-0.6} | 16 | 20 | 16 | 210 | 90 | 50 | 110 |
| 100 | 60 ^{-0.2} _{-0.6} | 20 | 25 | 20 | 230 | 110 | 60 | 140 |
| 125 | 70 ^{-0.5} _{-1.2} | 25 | Min. 30 | Max. 26 | 275 | 130 | 70 | Max. 157 |

- C85
- C85W
- C85-ST
- C85K
- C85K-ST
- C85R
- C75
- C75W
- C75-ST
- C75K
- C75K-ST
- C75R
- CP96
- CP96K
- C96
- C96K
- C96Y
- C55
- Auto Switch
- Made to Order
- Related Products

CP96 Series

Dimensions: With Mounting Bracket (Dimensions are common to single rod and double rod.)

Adjustable position trunnion (V)



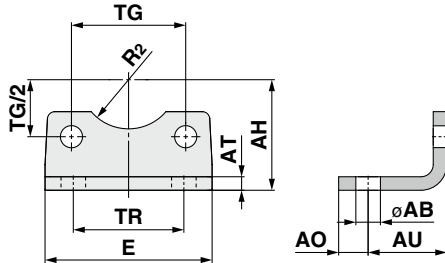
| [mm] | | | | | | | |
|----------------|--------------------|-----|----|--------|-----|----------------|-----|
| Bore size [mm] | Part no. (Bracket) | TM | TL | øTD e8 | TW | L ₁ | TZ |
| 32 | V5032P | 50 | 12 | 12 | 64 | 25 | 74 |
| 40 | V5040P | 63 | 16 | 16 | 74 | 28 | 95 |
| 50 | V5050P | 75 | 16 | 16 | 86 | 28 | 107 |
| 63 | V5063P | 90 | 20 | 20 | 101 | 36 | 130 |
| 80 | V5080P | 110 | 20 | 20 | 121 | 36 | 150 |
| 100 | V5100P | 132 | 25 | 25 | 144 | 48 | 182 |
| 125 | V5125P | 160 | 25 | 25 | 169 | 48 | 210 |

| [mm] | | | | | | | |
|----------------|---------|--------|--------|-------|---------|--------|------------------------|
| Bore size [mm] | Minimum | | Middle | | Maximum | | Trunnion holding force |
| | XV MIN. | Z MIN. | XV | Z | XV MAX. | Z MAX. | |
| 32 | 67.4 | 89.4 | 73 | 95 | 78.6 | 100.6 | 3500 N |
| 40 | 76.6 | 100.6 | 82.5 | 106.5 | 87.4 | 111.4 | 5000 N |
| 50 | 83 | 115 | 90 | 122 | 97 | 129 | 5000 N |
| 63 | 93.6 | 125.6 | 97.5 | 129.5 | 101.4 | 133.4 | 11000 N |
| 80 | 98.8 | 138.8 | 110 | 150 | 121.2 | 161.2 | 11000 N |
| 100 | 117.9 | 157.9 | 120 | 160 | 122.1 | 162.1 | 14000 N |
| 125 | 147 | 201 | 145 | 199 | 143 | 197 | 14000 N |

CP96 Series Accessories

Dimensions: Mounting Brackets

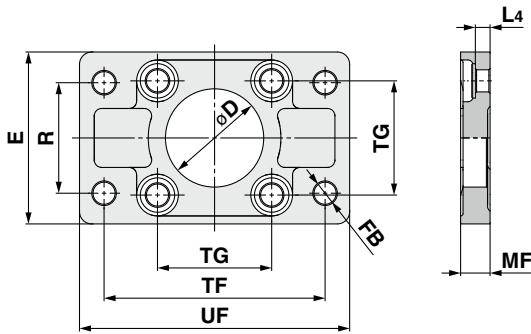
Axial foot (L)



| Bore size [mm] | Part no. | AB | TG ± 0.2 | E | TR | AO | AU | AH | AT | R ₂ | Screw size |
|----------------|----------|------|--------------|----------|----|---------|----|----|-----|----------------|------------|
| 32 | L5032 | 7 | 32.5 | 48 | 32 | 10 | 24 | 32 | 4.5 | 15 | M6 x 16L |
| 40 | L5040 | 10 | 38 | 55 | 36 | 11 | 28 | 36 | 4.5 | 17.5 | M6 x 16L |
| 50 | L5050 | 10 | 46.5 | 68 | 45 | 12 | 32 | 45 | 5.5 | 20 | M8 x 20L |
| 63 | L5063 | 10 | 56.5 | 80 | 50 | 12 | 32 | 50 | 5.5 | 22.5 | M8 x 20L |
| 80 | L5080 | 12 | 72 | 100 | 63 | 14 | 41 | 63 | 6.5 | 22.5 | M10 x 20L |
| 100 | L5100 | 14.5 | 89 | 120 | 75 | 16 | 41 | 71 | 6.5 | 27.5 | M10 x 20L |
| 125 | L5125 | 16 | 110 | Max. 157 | 90 | Max. 25 | 45 | 90 | 8 | 30 | M12 x 25L |

* Supplied with 2 foot brackets and 4 mounting screws.

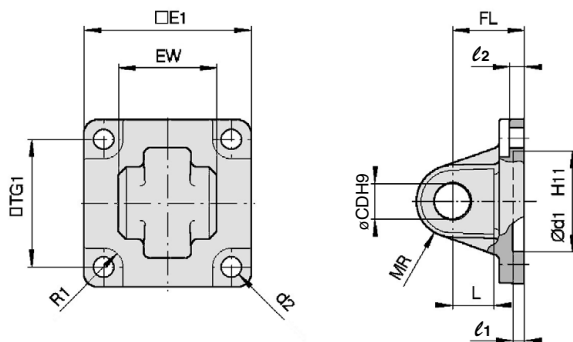
Flange (F, G)



| Bore size [mm] | Part no. | D H ₁₁ | ∅FB | TG ± 0.2 | E | R | MF | TF | UF | L ₄ | Screw size |
|----------------|----------|-------------------|-----|--------------|----------|----|----|-----|----------|----------------|------------|
| 32 | F5032 | 30 | 7 | 32.5 | 50 | 32 | 10 | 64 | 79 | 5 | M6 x 20L |
| 40 | F5040 | 35 | 9 | 38 | 55 | 36 | 10 | 72 | 90 | 5 | M6 x 20L |
| 50 | F5050 | 40 | 9 | 46.5 | 70 | 45 | 12 | 90 | 110 | 6.5 | M8 x 20L |
| 63 | F5063 | 45 | 9 | 56.5 | 80 | 50 | 12 | 100 | 120 | 6.5 | M8 x 20L |
| 80 | F5080 | 45 | 12 | 72 | 100 | 63 | 16 | 126 | 153 | 9 | M10 x 25L |
| 100 | F5100 | 55 | 14 | 89 | 120 | 75 | 16 | 150 | 178 | 9 | M10 x 25L |
| 125 | F5125 | 60 | 16 | 110 | Max. 157 | 90 | 20 | 180 | Max. 224 | 10.5 | M12 x 25L |

* Supplied with 4 mounting screws.

Single clevis (C)

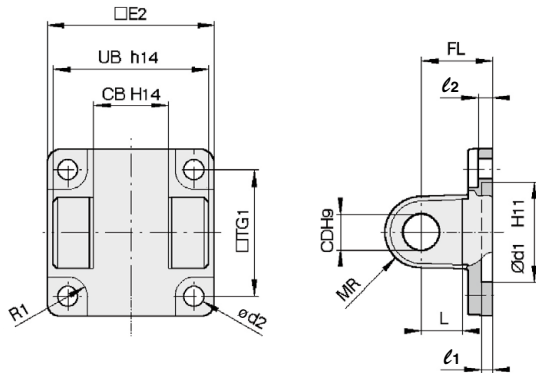


| Bore size [mm] | Part no. | E ₁ | EW | TG ₁ | FL | l ₁ | L | l ₂ | ∅d ₁ | ∅CD | MR | ∅d ₂ | R ₁ |
|----------------|----------|----------------|------------------------------------|-----------------|----|----------------|----|----------------|-----------------|-----|-----|-----------------|----------------|
| 32 | C5032 | 45 | 26 ^{-0.2} _{-0.6} | 32.5 | 22 | 5 | 12 | 5.5 | 30 | 10 | 9.5 | 6.6 | 6.5 |
| 40 | C5040 | 51 | 28 ^{-0.2} _{-0.6} | 38 | 25 | 5 | 15 | 5.5 | 35 | 12 | 12 | 6.6 | 6.5 |
| 50 | C5050 | 64 | 32 ^{-0.2} _{-0.6} | 46.5 | 27 | 5 | 15 | 6.5 | 40 | 12 | 12 | 9 | 8.5 |
| 63 | C5063 | 74 | 40 ^{-0.2} _{-0.6} | 56.5 | 32 | 5 | 20 | 6.5 | 45 | 16 | 16 | 9 | 8.5 |
| 80 | C5080 | 94 | 50 ^{-0.2} _{-0.6} | 72 | 36 | 5 | 20 | 10 | 45 | 16 | 16 | 11 | 11 |
| 100 | C5100 | 113 | 60 ^{-0.2} _{-0.6} | 89 | 41 | 5 | 25 | 10 | 55 | 20 | 20 | 11 | 12 |
| 125 | C5125 | Max. 157 | 70 ^{-0.5} _{-1.2} | 110 | 50 | 7 | 30 | 10 | 60 | 25 | 26 | 13.5 | 10 |

* Supplied with 4 mounting screws.

Dimensions: Mounting Brackets, Pivot Brackets for Cylinder Mounting

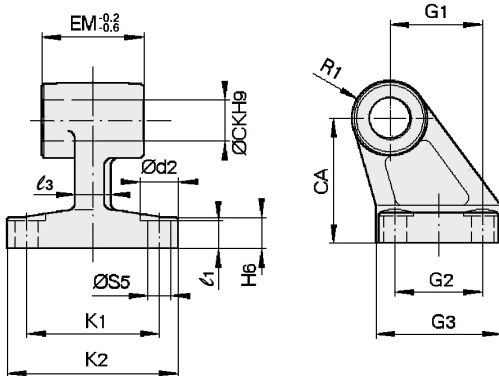
Double clevis (D)



| Bore size [mm] | Part no. | TG ₁ | FL | l ₁ | L | l ₂ | Ød ₁ | ØCD | MR | Ød ₂ | R ₁ | E ₂ | UB | CB |
|----------------|----------|-----------------|----|----------------|----|----------------|-----------------|-----|-----|-----------------|----------------|----------------|-----|----|
| 32 | D5032 | 32.5 | 22 | 5 | 12 | 5.5 | 30 | 10 | 9.5 | 6.6 | 6.5 | 48 | 45 | 26 |
| 40 | D5040 | 38 | 25 | 5 | 15 | 5.5 | 35 | 12 | 12 | 6.6 | 6.5 | 56 | 52 | 28 |
| 50 | D5050 | 46.5 | 27 | 5 | 15 | 6.5 | 40 | 12 | 12 | 9 | 8.5 | 64 | 60 | 32 |
| 63 | D5063 | 56.5 | 32 | 5 | 20 | 6.5 | 45 | 16 | 16 | 9 | 8.5 | 75 | 70 | 40 |
| 80 | D5080 | 72 | 36 | 5 | 20 | 10 | 45 | 16 | 16 | 11 | 11 | 95 | 90 | 50 |
| 100 | D5100 | 89 | 41 | 5 | 25 | 10 | 55 | 20 | 20 | 11 | 12 | 115 | 110 | 60 |
| 125 | D5125 | 110 | 50 | 7 | 30 | 10 | 60 | 25 | 26 | 13.5 | 10 | Max. 157 | 130 | 70 |

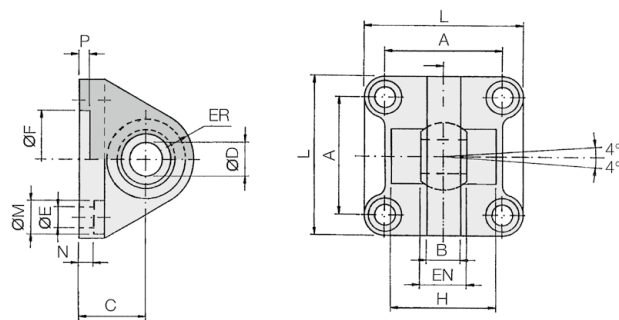
* Supplied with 4 mounting screws, clevis pin, and clevis pin bracket.

Clevis pivot bracket (E)



| Bore size [mm] | Part no. | Ød ₂ | ØCK | ØS ₅ | K ₁ | K ₂ (Max.) | l ₃ (Max.) | G ₁ | l ₁ | G ₂ | EM | G ₃ (Max.) | CA | H ₆ | R ₁ |
|----------------|----------|-----------------|-----|-----------------|----------------|-----------------------|-----------------------|----------------|----------------|----------------|------------------------------------|-----------------------|----|----------------|----------------|
| 32 | E5032 | 11 | 10 | 6.6 | 38 | 51 | 10 | 21 | 7 | 18 | 26 ^{-0.2} _{-0.6} | 31 | 32 | 8 | 10 |
| 40 | E5040 | 11 | 12 | 6.6 | 41 | 54 | 10 | 24 | 9 | 22 | 28 ^{-0.2} _{-0.6} | 35 | 36 | 10 | 11 |
| 50 | E5050 | 15 | 12 | 9 | 50 | 65 | 12 | 33 | 11 | 30 | 32 ^{-0.2} _{-0.6} | 45 | 45 | 12 | 12 |
| 63 | E5063 | 15 | 16 | 9 | 52 | 67 | 14 | 37 | 11 | 35 | 40 ^{-0.2} _{-0.6} | 50 | 50 | 12 | 15 |
| 80 | E5080 | 18 | 16 | 11 | 66 | 86 | 18 | 47 | 12.5 | 40 | 50 ^{-0.2} _{-0.6} | 60 | 63 | 14 | 15 |
| 100 | E5100 | 18 | 20 | 11 | 76 | 96 | 20 | 55 | 13.5 | 50 | 60 ^{-0.2} _{-0.6} | 70 | 71 | 15 | 19 |
| 125 | E5125 | 20 | 25 | 14 | 94 | 124 | 30 | 70 | 17 | 60 | 70 ^{-0.5} _{-1.5} | 90 | 90 | 20 | 22.5 |

Single clevis with ball joint (CS)



| Bore size [mm] | Part no. | A | B (Max.) | C | ØD _{H7} | EN _{0 -0.1} | ER (Max.) | ØFH ₁₁ | ØE | L | ØM | N | P | H _{±0.5} |
|----------------|----------|------|----------|----|------------------|----------------------|-----------|-------------------|------|-----|------|-----|---|-------------------|
| 32 | CS5032 | 32.5 | 10.5 | 22 | 10 | 14 | 15 | 30 | 6.6 | 45 | 10.5 | 5.5 | 5 | — |
| 40 | CS5040 | 38 | 12 | 25 | 12 | 16 | 18 | 35 | 6.6 | 55 | 11 | 5.5 | 5 | — |
| 50 | CS5050 | 46.5 | 15 | 27 | 16 | 21 | 20 | 40 | 9 | 65 | 15 | 6.5 | 5 | 51 |
| 63 | CS5063 | 56.5 | 15 | 32 | 16 | 21 | 23 | 45 | 9 | 75 | 15 | 6.5 | 5 | — |
| 80 | CS5080 | 72 | 18 | 36 | 20 | 25 | 27 | 45 | 11 | 95 | 18 | 10 | 5 | 70 |
| 100 | CS5100 | 89 | 18 | 41 | 20 | 25 | 30 | 55 | 11 | 115 | 18 | 10 | 5 | — |
| 125 | CS5125 | 110 | 25 | 50 | 30 | 37 | 40 | 60 | 13.5 | 140 | 20 | 10 | 7 | 100 |

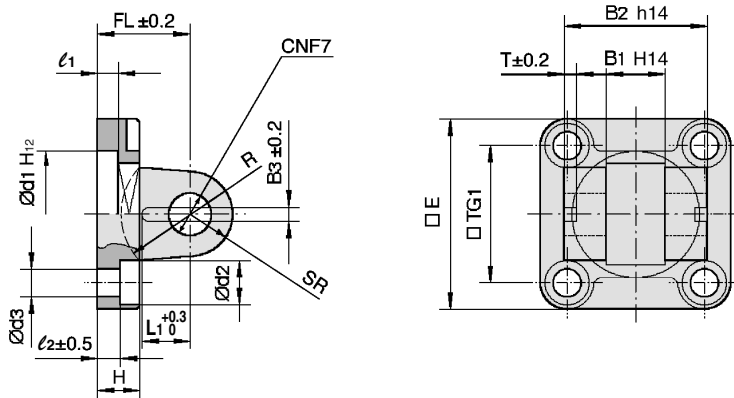
* Supplied with 4 mounting screws.

- C85
- C85W
- C85-ST
- C85K
- C85K-ST
- C85R
- C75
- C75W
- C75-ST
- C75K
- C75K-ST
- C75R
- CP96
- CP96K
- C96
- C96K
- C96Y
- C55
- Auto Switch
- Made to Order
- Related Products

CP96 Series

Dimensions: Pivot Brackets for Cylinder Mounting

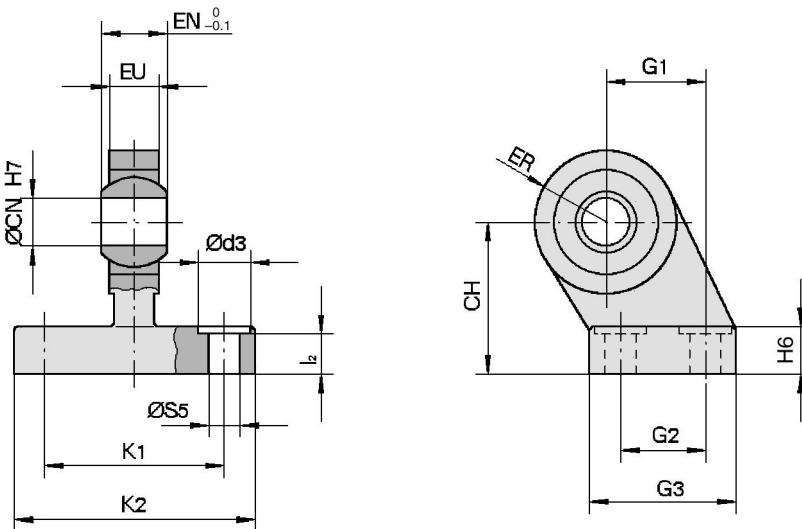
Double clevis pivot bracket (DS)/for ES accessory



| Bore size [mm] | Part no. | E | B ₁ | B ₂ | B ₃ | L ₁ | TG ₁ | T | l ₁ (Min.) | l ₂ | FL | H (Max.) | ød ₁ | ød ₂ | ød ₃ | øCN | SR (Max.) | R |
|----------------|----------|-----|----------------|----------------|----------------|----------------|-----------------|---|-----------------------|----------------|----|----------|-----------------|-----------------|-----------------|-----|-----------|----|
| 32 | DS5032 | 45 | 14 | 34 | 3.3 | 11.5 | 32.5 | 3 | 5 | 5.5 | 22 | 10 | 30 | 10.5 | 6.6 | 10 | 11 | 17 |
| 40 | DS5040 | 55 | 16 | 40 | 4.3 | 12 | 38 | 4 | 5 | 5.5 | 25 | 10 | 35 | 11 | 6.6 | 12 | 13 | 20 |
| 50 | DS5050 | 65 | 21 | 45 | 4.3 | 14 | 46.5 | 4 | 5 | 6.5 | 27 | 12 | 40 | 15 | 9 | 16 | 18 | 22 |
| 63 | DS5063 | 75 | 21 | 51 | 4.3 | 14 | 56.5 | 4 | 5 | 6.5 | 32 | 12 | 45 | 15 | 9 | 16 | 18 | 25 |
| 80 | DS5080 | 95 | 25 | 65 | 4.3 | 16 | 72 | 4 | 5 | 10 | 36 | 16 | 45 | 18 | 11 | 20 | 22 | 30 |
| 100 | DS5100 | 115 | 25 | 75 | 6.3 | 16 | 89 | 4 | 5 | 10 | 41 | 16 | 55 | 18 | 11 | 20 | 22 | 32 |
| 125 | DS5125 | 140 | 37 | 97 | 6.3 | 24 | 110 | 6 | 7 | 10 | 50 | 20 | 60 | 20 | 13.5 | 30 | 30 | 42 |

* Supplied with 4 mounting screws, clevis pin, and clevis pin bracket.

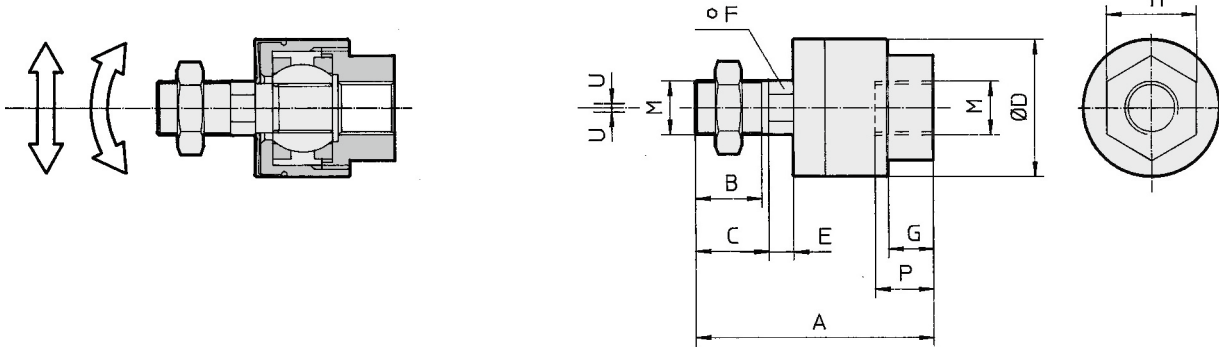
Clevis pivot bracket with ball joint (ES)



| Bore size [mm] | Part no. | ød ₃ | øCN | øS ₅ | K ₁ | K ₂ (Max.) | l ₂ | G ₁ | G ₂ | G ₃ (Max.) | EN | EU | CH | H ₆ | ER (Max.) |
|----------------|----------|-----------------|-----|-----------------|----------------|-----------------------|----------------|----------------|----------------|-----------------------|----|------|----|----------------|-----------|
| 32 | ES5032 | 11 | 10 | 6.6 | 38 | 51 | 8.5 | 21 | 18 | 31 | 14 | 10.5 | 32 | 10 | 15 |
| 40 | ES5040 | 11 | 12 | 6.6 | 41 | 54 | 8.5 | 24 | 22 | 35 | 16 | 12 | 36 | 10 | 18 |
| 50 | ES5050 | 15 | 16 | 9 | 50 | 65 | 10.5 | 33 | 30 | 45 | 21 | 15 | 45 | 12 | 20 |
| 63 | ES5063 | 15 | 16 | 9 | 52 | 67 | 10.5 | 37 | 35 | 50 | 21 | 15 | 50 | 12 | 23 |
| 80 | ES5080 | 18 | 20 | 11 | 66 | 86 | 11.5 | 47 | 40 | 60 | 25 | 18 | 63 | 14 | 27 |
| 100 | ES5100 | 18 | 20 | 11 | 76 | 96 | 12.5 | 55 | 50 | 70 | 25 | 18 | 71 | 15 | 30 |
| 125 | ES5125 | 20 | 30 | 13.5 | 94 | 124 | 17 | 70 | 60 | 90 | 37 | 25 | 90 | 20 | 40 |

Dimensions: Piston Rod Accessories

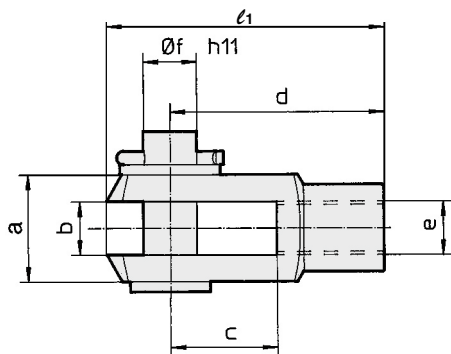
Floating joint: JA



| Bore size [mm] | Part no. | M | A | B | C | ØD | E | F | G | H | P | U | Load [kN] | Weight [g] | Angle |
|----------------|--------------|------------|------|------|----|------|------|----|------|----|----|------|-----------|------------|-------|
| 32 | JA30-10-125 | M10 x 1.25 | 49.5 | 19.5 | — | 24 | 5 | 8 | 8 | 17 | 9 | 0.5 | 2.5 | 70 | ±0.5° |
| 40 | JA40-12-125 | M12 x 1.25 | 60 | 20 | — | 31 | 6 | 11 | 11 | 22 | 13 | 0.75 | 4.4 | 160 | |
| 50, 63 | JA50-16-150 | M16 x 1.5 | 71.5 | 22 | — | 41 | 7.5 | 14 | 13.5 | 27 | 15 | 1 | 11 | 300 | |
| 80, 100 | JAH50-20-150 | M20 x 1.5 | 101 | 28 | 31 | 59.5 | 11.5 | 24 | 16 | 32 | 18 | 2 | 18 | 1080 | |
| 125 | JA125-27-200 | M27 x 2 | 123 | 34 | 38 | 66 | 13 | 27 | 20 | 41 | 24 | 2 | 28 | 1500 | |

* Black color

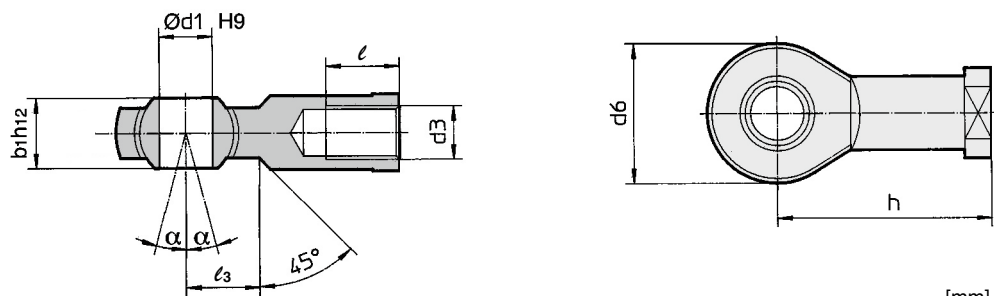
Rod clevis: GKM (ISO 8140)



| Bore size [mm] | Part no. | e | b | d | Øf h11 (Shaft) | Øf H9 (Hole) | l ₁ | c (Min.) | a (Max.) |
|----------------|----------|------------|---------------------------------------|-----|----------------|--------------|----------------|----------|----------|
| 32 | GKM10-20 | M10 x 1.25 | 10 ^{+0.5} / _{+0.15} | 40 | 10 | 10 | 52 | 20 | 20 |
| 40 | GKM12-24 | M12 x 1.25 | 12 ^{+0.5} / _{+0.15} | 48 | 12 | 12 | 62 | 24 | 24 |
| 50, 63 | GKM16-32 | M16 x 1.5 | 16 ^{+0.5} / _{+0.15} | 64 | 16 | 16 | 83 | 32 | 32 |
| 80, 100 | GKM20-40 | M20 x 1.5 | 20 ^{+0.5} / _{+0.15} | 80 | 20 | 20 | 105 | 40 | 40 |
| 125 | GKM30-54 | M27 x 2 | 30 ^{+0.5} / _{+0.15} | 110 | 30 | 30 | 148 | 54 | 55 |

* Supplied with clevis pin and clevis pin bracket.

Rod end: KJ (ISO 8139)



| Bore size [mm] | Part no. | d ₃ | Ød ₁ H ₉ | h | d ₆ (Max.) | b ₁ h ₁₂ | l (Min.) | α | l ₃ |
|----------------|----------|----------------|--------------------------------|-----|-----------------------|--------------------------------|----------|----|----------------|
| 32 | KJ10D | M10 x 1.25 | 10 | 43 | 28 | 14 | 20 | 4° | 15 |
| 40 | KJ12D | M12 x 1.25 | 12 | 50 | 32 | 16 | 22 | 4° | 17 |
| 50, 63 | KJ16D | M16 x 1.5 | 16 | 64 | 42 | 21 | 28 | 4° | 23 |
| 80, 100 | KJ20D | M20 x 1.5 | 20 | 77 | 50 | 25 | 33 | 4° | 27 |
| 125 | KJ27D | M27 x 2 | 30 | 110 | 70 | 37 | 51 | 4° | 36 |

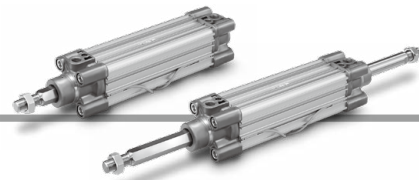
- C85
- C85W
- C85-ST
- C85K
- C85K-ST
- C85R
- C75
- C75W
- C75-ST
- C75K
- C75K-ST
- C75R
- CP96
- CP96K
- C96
- C96K
- C96Y
- C55
- Auto Switch
- Made to Order
- Related Products

ISO (15552) Standard

Air Cylinder: Non-rotating Rod Type Double Acting, Single/Double Rod

CP96K Series

ø32, ø40, ø50, ø63, ø80, ø100



How to Order

CP96K **B** **32** - **100** **C** **W**

With auto switch **CP96KD** **B** **32** - **100** **C** **W** - **M9BW** **S**

With auto switch
(Built-in magnet)

Mounting

| | |
|----------|------------------------------|
| B | Basic |
| L | Axial foot |
| F | Rod flange |
| G | Head flange |
| C | Single clevis |
| D | Double clevis |
| V | Adjustable position trunnion |

* Mounting brackets are shipped together, but not assembled.

Bore size

| | |
|------------|--------|
| 32 | 32 mm |
| 40 | 40 mm |
| 50 | 50 mm |
| 63 | 63 mm |
| 80 | 80 mm |
| 100 | 100 mm |

Number of auto switches

| | |
|------------|---|
| Nil | 2 |
| S | 1 |
| 3 | 3 |
| n | n |

Auto switch

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

* For applicable auto switches, refer to the table below.

Rod

| | |
|------------|------------|
| Nil | Single rod |
| W | Double rod |

Air cushion on both ends + Bumper cushion

Cylinder stroke [mm]
Refer to "Maximum Strokes" on page 142.

Applicable Auto Switches/Refer to the Web Catalog or Best Pneumatics for further information on auto switches.

| 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 | Perpendicular | In-line | 0.5 (Nil) | 1 (M) | 3 (L) | 5 (Z) | | IC circuit | Relay, PLC | | |
| | | | | | | | | | | | | | | | | | |
| Solid state auto switch | — | Grommet | Yes | 3-wire (NPN) | 5 V, 12 V | — | M9NV | M9N | ● | ● | ● | ○ | ○ | IC circuit | Relay, PLC | | |
| | | | | 3-wire (PNP) | | | M9PV | M9P | ● | ● | ● | ○ | ○ | | | | |
| | | | | 2-wire | 12 V | | M9BV | M9B | ● | ● | ● | ○ | ○ | | | | |
| | | | | 3-wire (NPN) | 5 V, 12 V | | M9NVV | M9NW | ● | ● | ● | ○ | ○ | | | | |
| | 3-wire (PNP) | M9PVV | | M9PW | | | ● | ● | ● | ○ | ○ | | | | | | |
| | Diagnostic indication (2-color indicator) | Grommet | | Yes | 2-wire | | 12 V | M9BWW | M9BW | ● | ● | ● | ○ | ○ | | ○ | — |
| | | | | | 3-wire (NPN) | | 5 V, 12 V | M9NAV *1 | M9NA *1 | ○ | ○ | ● | ○ | ○ | | ○ | IC circuit |
| | | | | | 3-wire (PNP) | | | M9PAV *1 | M9PA *1 | ○ | ○ | ● | ○ | ○ | | ○ | IC circuit |
| 2-wire | | | 12 V | | M9BAV *1 | M9BA *1 | ○ | ○ | ● | ○ | ○ | ○ | — | | | | |
| Reed auto switch | — | Grommet | Yes | 3-wire (NPN equivalent) | — | 5 V | A96V | A96 | ● | — | ● | — | — | IC circuit | — | | |
| | | | | No | 2-wire | 24 V | 12 V | 100 V | A93V *2 | A93 | ● | ● | ● | ● | — | — | Relay, PLC |
| | | | | | | 100 V or less | A90V | A90 | ● | — | ● | — | — | IC circuit | | | |

*1 Water-resistant type auto switches can be mounted on the above models, but SMC cannot guarantee water resistance.

Please contact SMC regarding water-resistant types with the above model numbers.

*2 The 1 m lead wire is only applicable to the D-A93.

* Lead wire length symbols: 0.5 m Nil (Example) M9NW
1 m M (Example) M9NWM
3 m L (Example) M9NWL
5 m Z (Example) M9NWX

* Solid state auto switches marked with "○" are produced upon receipt of order.

* Since there are other applicable auto switches than listed above, refer to page 146 for details.

* The D-A9□/M9□/M9□W/M9□AL auto switches are shipped together, but not assembled.

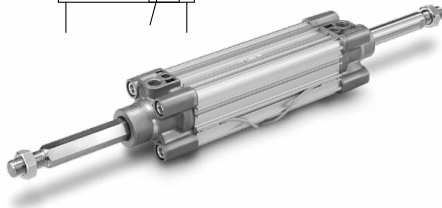
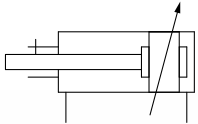
* The D-Y59A, Y69A, Y7P, Y7□W, Z7□, Z80 cannot be mounted on the CP96 series.

Moreover, the D-M9□□ and A9□ auto switches cannot be mounted on square groove of the CP96 series.

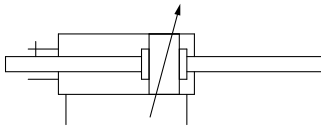
Specifications



Symbol
Air cushion + Bumper cushion



Symbol
Air cushion + Bumper cushion



| | | | | | | |
|-----------------------------------|---|-------|-------|-------|-------|-------|
| Bore size [mm] | 32 | 40 | 50 | 63 | 80 | 100 |
| Action | Double acting | | | | | |
| Fluid | Air | | | | | |
| Proof pressure | 1.5 MPa | | | | | |
| Maximum operating pressure | 1.0 MPa | | | | | |
| Minimum operating pressure | 0.05 MPa | | | | | |
| Ambient and fluid temperatures | Without auto switch: -20 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing) | | | | | |
| Lubrication | Not required (Non-lube) | | | | | |
| Operating piston speed | 50 to 1000 mm/s | | | | | |
| Allowable stroke tolerance | Up to 500 stroke: $+2_0$, 501 to 1000 stroke: $+2.4_0$ | | | | | |
| Cushion | Air cushion on both ends + Bumper cushion | | | | | |
| Port size | G 1/8 | G 1/4 | G 1/4 | G 3/8 | G 3/8 | G 1/2 |
| Mounting | Basic, Axial foot, Rod flange, Head flange, Single clevis, Double clevis, Adjustable position trunnion | | | | | |
| Non-rotating accuracy | ±0.5° | | ±0.5° | | ±0.3° | |
| Allowable rotational torque [N·m] | 0.25 | 0.45 | 0.64 | 0.79 | | |

Maximum Strokes

| | |
|----------------|----------------|
| Bore size [mm] | Maximum stroke |
| 32 | 500 |
| 40 | 500 |
| 50 | 600 |
| 63 | 600 |
| 80 | 800 |
| 100 | 800 |

- * Aside from the standard strokes, intermediate strokes are also available in 1 mm increments and are produced upon receipt of order.
- * Strokes exceeding the max. stroke are available as a special order.

Accessories

| Mounting | | Basic | Foot | Rod flange | Head flange | Single clevis | Double clevis | Adjustable position trunnion |
|----------|-------------|-------|------|------------|-------------|---------------|---------------|------------------------------|
| Standard | Rod end nut | ● | ● | ● | ● | ● | ● | ● |
| | Clevis pin | — | — | — | — | — | ● | — |
| Option | Rod end | ● | ● | ● | ● | ● | ● | ● |
| | Rod clevis | ● | ● | ● | ● | ● | ● | ● |
| | Rod boot | — | — | — | — | — | — | — |

- * Do not use a rod end (or floating joint) together with a single clevis with a ball joint (or clevis pivot bracket with a ball joint).
- * Refer to pages 137 to 140 for dimensions and part numbers of the accessories.

⚠ Precautions

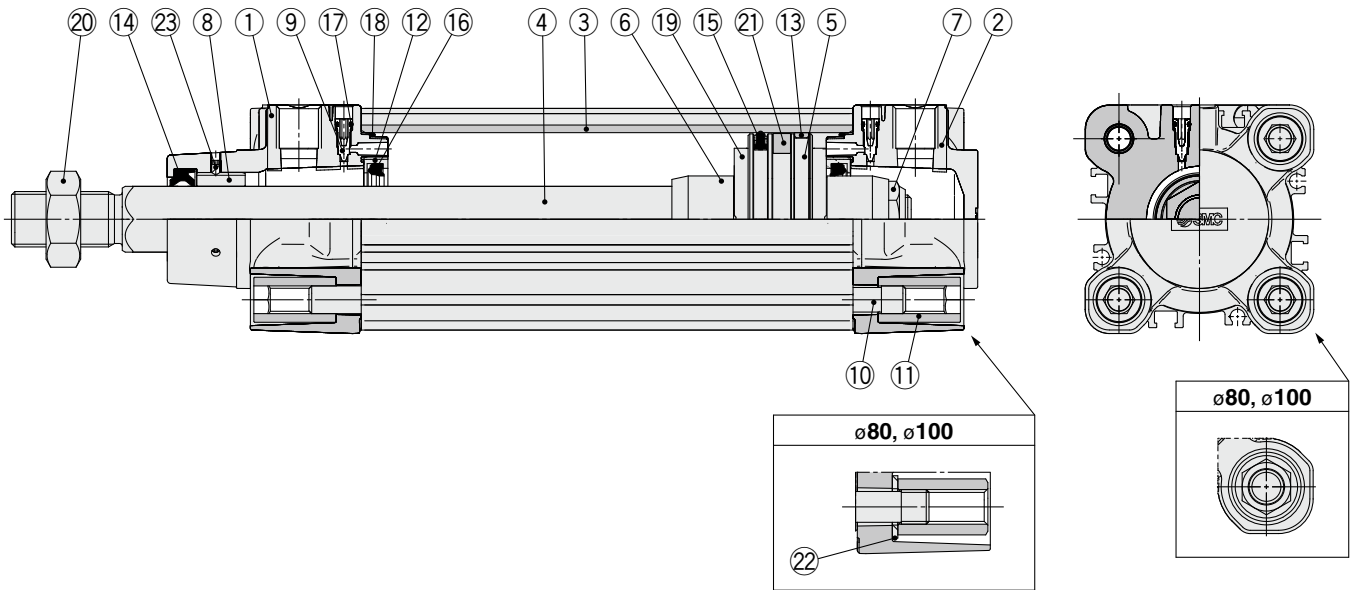
Be sure to read this before handling the products. Refer to page 219 for safety instructions. For actuator and auto switch precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: <http://www.smworld.com>

| |
|---|
| Refer to pages 145 and 146 for cylinders with auto switches. |
| <ul style="list-style-type: none"> · Auto Switch Proper Mounting Position (Detection at stroke end) · Minimum Stroke for Auto Switch Mounting · Operating Range · How to Mount and Move the Auto Switch |

C85
C85W
C85-ST
C85K
C85K-ST
C85R
C75
C75W
C75-ST
C75K
C75K-ST
C75R
C75R
CP96
CP96K
C96
C96K
C96Y
C55
Auto Switch
Made to Order
Related Products

CP96K Series

Construction



Component Parts

| No. | Description | Material | Q'ty | Note |
|-----|-------------------------------|-------------------|------|--------------------------------|
| 1 | Rod cover | Aluminum die-cast | 1 | Trivalent chromated |
| 2 | Head cover | Aluminum die-cast | 1 | Trivalent chromated |
| 3 | Cylinder tube | Aluminum alloy | 1 | Hard anodized |
| 4 | Piston rod | Stainless steel | 1 | |
| 5 | Piston | Aluminum alloy | 1 | |
| 6 | Cushion ring | Rolled steel | 2 | Trivalent zinc chromated |
| 7 | Piston nut | Rolled steel | 1 | Trivalent zinc chromated |
| 8 | Non-rotating guide | Bearing alloy | 1 | |
| 9 | Cushion valve | Resin | 2 | |
| 10 | Tie-rod | Carbon steel | 4 | Trivalent zinc chromated |
| 11 | Tie-rod nut | Rolled steel | 8 | Trivalent zinc chromated |
| 12 | Cushion seal holder | Aluminum alloy | 2 | Anodized |
| 13 | Wear ring | Resin | 1 | |
| 14 | Rod seal | NBR | 1 | |
| 15 | Piston seal | NBR | 1 | |
| 16 | Cushion seal | Urethane | 2 | |
| 17 | Cushion valve seal | NBR | 2 | |
| 18 | Cylinder tube gasket | NBR | 2 | |
| 19 | Bumper | Urethane | 2 | |
| 20 | Rod end nut | Rolled steel | 1 | Trivalent zinc chromated |
| 21 | Magnet | — | (1) | |
| 22 | Flat washer | Steel | 8 | For $\phi 80$, $\phi 100$ |
| 23 | Hexagon socket head set screw | Steel wire | 2 | Trivalent black zinc chromated |

Replacement Parts/Seal Kit (Single rod)

| Bore size [mm] | Kit no. | Contents |
|----------------|----------|----------------------------------|
| 32 | CK95-32 | Kits include items 13 to 16, 18. |
| 40 | CK95-40 | |
| 50 | CK95-50 | |
| 63 | CK95-63 | |
| 80 | CK95-80 | |
| 100 | CK96-100 | |

* Seal kits consist of items 13 to 16, 18 and can be ordered by using the seal kit number corresponding to each bore size.
 * The seal kit includes a grease pack (10 g for $\phi 32$ to $\phi 50$, 20 g for $\phi 63$ and $\phi 80$, 30 g for $\phi 100$).

Order with the following part number when only the grease pack is needed.

Grease pack part number: GR-S-010 (10 g), GR-S-020 (20 g)

Seal Kit (Double rod)

| Bore size [mm] | Kit no. | Contents |
|----------------|-----------|----------------------------------|
| 32 | CK95W-32 | Kits include items 14 to 16, 18. |
| 40 | CK95W-40 | |
| 50 | CK95W-50 | |
| 63 | CK95W-63 | |
| 80 | CK95W-80 | |
| 100 | CK96W-100 | |

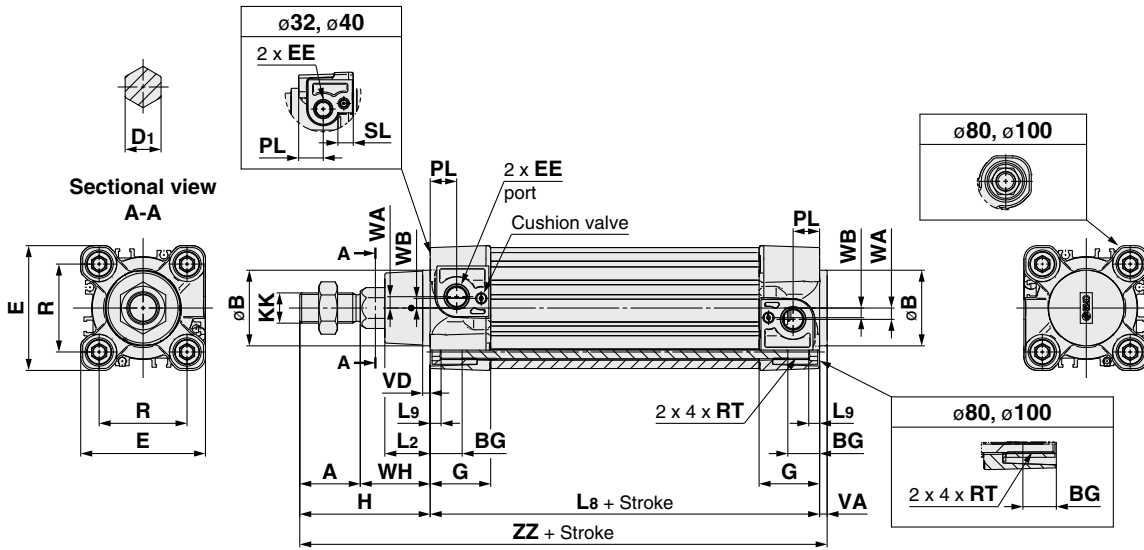
* Seal kits consist of items 14 to 16, 18 and can be ordered by using the seal kit number corresponding to each bore size.
 * The seal kit includes a grease pack (10 g for $\phi 32$ to $\phi 50$, 20 g for $\phi 63$ and $\phi 80$, 30 g for $\phi 100$).

Order with the following part number when only the grease pack is needed.

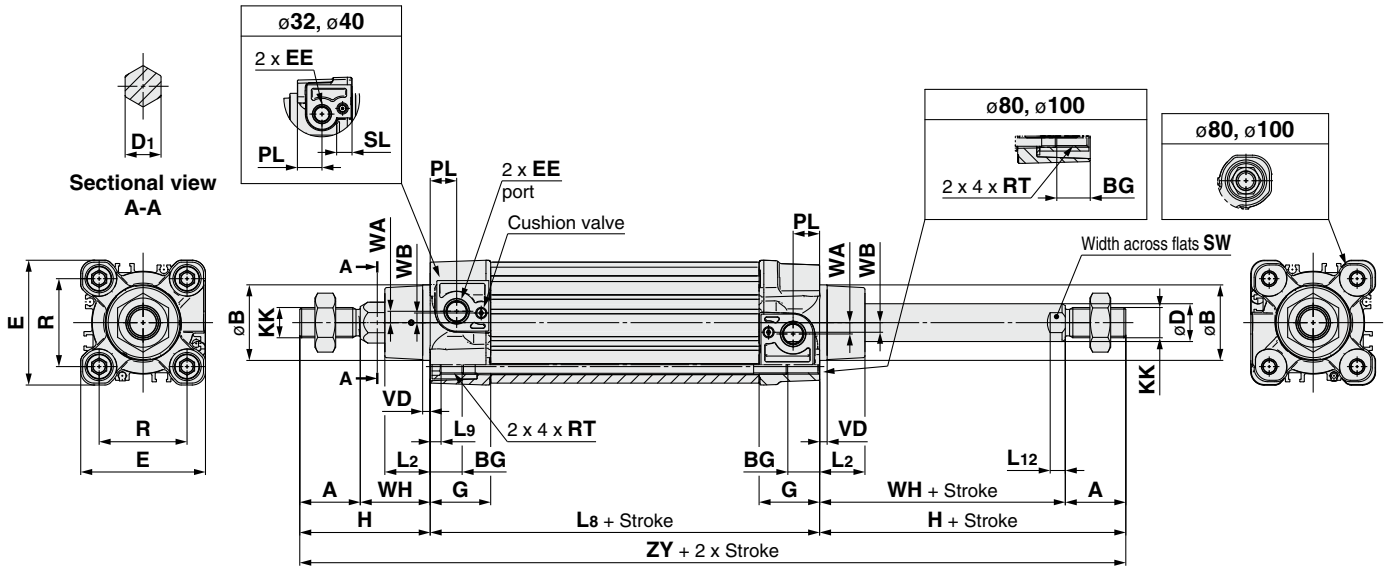
Grease pack part number: GR-S-010 (10 g), GR-S-020 (20 g)

Dimensions (Without mounting bracket)

CP96K (D) B Bore size – Stroke C



CP96K (D) B Bore size – Stroke CW

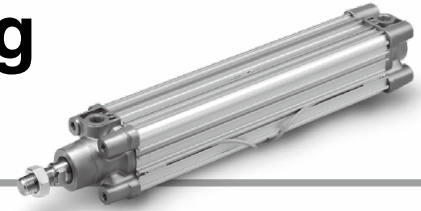


* Mounting brackets are the same as standard type. Refer to page 136 for details.

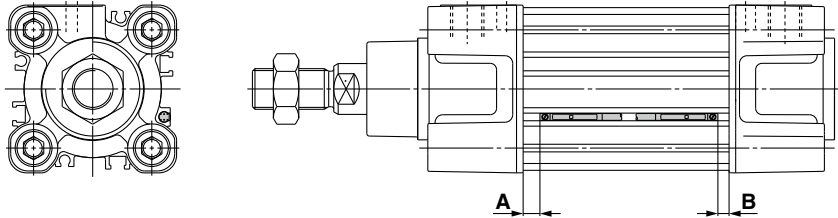
| Bore size [mm] | Stroke range [mm] | A | øB d11 | D1 | øD | EE | PL | RT | L12 | KK | SW | G | BG | L8 | VD | VA | WA | WB | WH | ZZ | ZY | E | R | L2 | L9 | H | SL |
|----------------|-------------------|----|--------|------|----|-------|----|-----------|-----|------------|----|------|----|-----|----|----|------|-----|----|-----|-----|-----|------|----|----|----|----|
| 32 | Up to 500 | 22 | 30 | 12.2 | 12 | G 1/8 | 13 | M6 x 1 | 6 | M10 x 1.25 | 10 | 28.9 | 16 | 94 | 4 | 4 | 4 | 7 | 26 | 146 | 190 | 47 | 32.5 | 15 | 4 | 48 | 8 |
| 40 | Up to 500 | 24 | 35 | 14.2 | 16 | G 1/4 | 14 | M6 x 1 | 6.5 | M12 x 1.25 | 13 | 32.6 | 16 | 105 | 4 | 4 | 5 | 8.9 | 30 | 163 | 213 | 54 | 38 | 17 | 4 | 54 | 8 |
| 50 | Up to 600 | 32 | 40 | 19 | 20 | G 1/4 | 14 | M8 x 1.25 | 8 | M16 x 1.5 | 17 | 32 | 16 | 106 | 4 | 4 | 6 | 5.1 | 37 | 179 | 244 | 66 | 46.5 | 24 | 5 | 69 | — |
| 63 | Up to 600 | 32 | 45 | 19 | 20 | G 3/8 | 16 | M8 x 1.25 | 8 | M16 x 1.5 | 17 | 38.6 | 16 | 121 | 4 | 4 | 9 | 6.3 | 37 | 194 | 259 | 77 | 56.5 | 24 | 5 | 69 | — |
| 80 | Up to 800 | 40 | 45 | 23 | 25 | G 3/8 | 16 | M10 x 1.5 | 10 | M20 x 1.5 | 22 | 38.4 | 17 | 128 | 4 | 4 | 11.5 | 6 | 46 | 218 | 300 | 99 | 72 | 30 | — | 86 | — |
| 100 | Up to 800 | 40 | 55 | 23 | 25 | G 1/2 | 18 | M10 x 1.5 | 10 | M20 x 1.5 | 22 | 42.9 | 17 | 138 | 4 | 4 | 17 | 10 | 51 | 233 | 320 | 118 | 89 | 32 | — | 91 | — |

- C85
- C85W
- C85-ST
- C85K
- C85K-ST
- C85R
- C75
- C75W
- C75-ST
- C75K
- C75K-ST
- C75R
- CP96
- CP96K
- C96
- C96K
- C96Y
- C55
- Auto Switch
- Made to Order
- Related Products

CP96 Series Auto Switch Mounting



Auto Switch Proper Mounting Position (Detection at stroke end)



Auto Switch Proper Mounting Position [mm]

| Auto switch model | D-M9□(V) D-M9□W(V) D-M9□A(V) | | D-A9□(V) | |
|-------------------|------------------------------------|------|----------|------|
| | A | B | A | B |
| Bore size | | | | |
| 32 | 14 | 10.5 | 10 | 6.5 |
| 40 | 14 | 14 | 10 | 10 |
| 50 | 15.5 | 14.5 | 11.5 | 10.5 |
| 63 | 16.5 | 15.5 | 12.5 | 11.5 |
| 80 | 21.5 | 18 | 17.5 | 14 |
| 100 | 21.5 | 19 | 17.5 | 15 |
| 125 | 16 | 16 | 12 | 12 |

- * Adjust the auto switch after confirming the operating conditions in the actual setting.
- * The D-M9□V/M9□WV/M9□AV/A9□V are mountable on ø32 to ø63.

Minimum Stroke for Auto Switch Mounting

| Auto switch model | Number of auto switches | 32 | 40 | 50 | 63 | 80 | 100 | 125 | |
|-------------------|---------------------------|-----------------|-----------------|----|----|----|-----|-----|--|
| D-M9□ D-M9□W | 2 (Same surface) | 50 | | | | | | | |
| | 1, 2 (Different surfaces) | 10 | | | | | | | |
| | n | 10 + 40 (n - 2) | | | | | | | |
| D-M9□V D-M9□WV | 2 (Same surface) | 40 | | | | | | | |
| | 1, 2 (Different surfaces) | 10 | | | | | | | |
| | n | 10 + 30 (n - 2) | | | | | | | |
| D-M9□A | 2 (Same surface) | 55 | 50 | | | | | | |
| | 1, 2 (Different surfaces) | 15 | 10 | | | | | | |
| | n | 15 + 40 (n - 2) | 10 + 40 (n - 2) | | | | | | |
| D-M9□AV | 2 (Same surface) | 40 | | | | | | | |
| | 1, 2 (Different surfaces) | 10 | | | | | | | |
| | n | 10 + 30 (n - 2) | | | | | | | |
| D-A9□ | 2 (Same surface) | 50 | | | | | | | |
| | 1, 2 (Different surfaces) | 10 | | | | | | | |
| | n | 10 + 40 (n - 2) | | | | | | | |
| D-A9□V | 2 (Same surface) | 40 | | | | | | | |
| | 1, 2 (Different surfaces) | 10 | | | | | | | |
| | n | 10 + 30 (n - 2) | | | | | | | |

* n = 3, 4, 5...

* The D-M9□V/M9□WV/M9□AV/A9□V are mountable on ø32 to ø63.

Operating Range

| Auto switch model | Bore size | | | | | | |
|------------------------------------|-----------|----|-----|-----|-----|------|------|
| | 32 | 40 | 50 | 63 | 80 | 100 | 125 |
| D-M9□(V) D-M9□W(V) D-M9□A(V) | 4 | 4 | 5 | 6 | 5.5 | 6 | 7 |
| D-A9□(V) | 7 | 8 | 8.5 | 9.5 | 9.5 | 10.5 | 12.5 |

* Values which include hysteresis are for guideline purposes only, they are not a guarantee (assuming approximately ±30% dispersion) and may change substantially depending on the ambient environment.

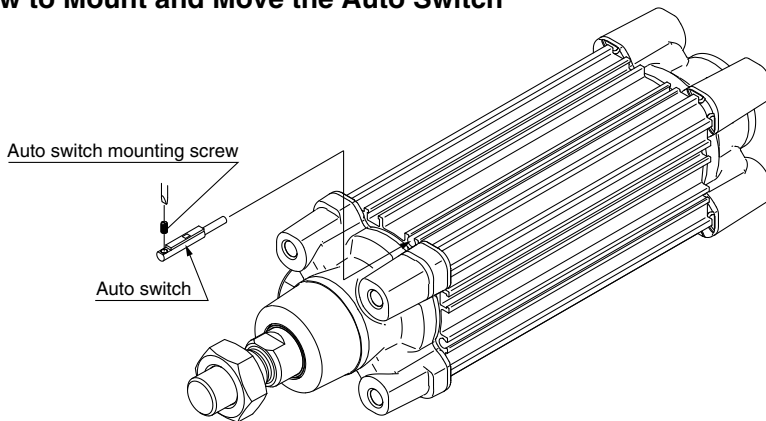
* The D-M9□V/M9□WV/M9□AV/A9□V are mountable on ø32 to ø63.

How to Mount and Move the Auto Switch

<Applicable Auto Switch>

Solid state switch **D-M9N(V)/M9P(V)/M9B(V)**
D-M9NW(V)/M9PW(V)/M9BW(V)
D-M9NA(V)/M9PA(V)/M9BA(V)
 Reed switch..... **D-A90(V)/A93(V)/A96(V)**

How to Mount and Move the Auto Switch



• Use a watchmaker's screwdriver with a handle diameter of 5 to 6 mm when tightening the auto switch mounting screw.

Auto switch mounting screw tightening torque [N·m]

| Auto switch model | Tightening torque |
|---|-------------------|
| D-M9□(V) D-M9□W(V) D-M9□A(V) | 0.05 to 0.15 |
| D-A9□(V) | 0.10 to 0.20 |

- * As a guide, turn 90° from the position where it comes to feel tight.
- * The D-M9□ and A9□ cannot be mounted on square groove of the CP96 series.
- * The D-M9□V/M9□WV/M9□AV/A9□V are mountable on ø32 to ø63.

Other than the applicable auto switches listed in “How to Order”, the following auto switches are mountable.

Refer to the **Web Catalog** or Best Pneumatics for the detailed specifications.

| Type | Model | Electrical entry | Features | Applicable bore size |
|-------------|-------------------------------|-------------------------|---|----------------------|
| Solid state | D-M9NV, M9PV, M9BV | Grommet (Perpendicular) | — | ø32 to ø63 |
| | D-M9NWV, M9PWV, M9B WV | | Diagnostic indication (2-color indicator) | |
| | D-M9NAV, M9PAV, M9BAV | | Water-resistant (2-color indicator) | |
| Reed | D-A93V, A96V | | — | |
| | D-A90V | Without indicator light | | |

- * Normally closed (NC = b contact) solid state auto switches (D-M9□E(V)) are also available. For details, refer to the **Web Catalog** or Best Pneumatics.
- * With pre-wired connector is also available for solid state auto switches. For details, refer to the **Web Catalog** or Best Pneumatics.

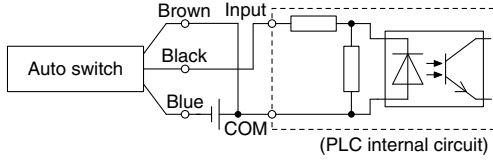
- C85
- C85W
- C85-ST
- C85K
- C85K-ST
- C85R
- C75
- C75W
- C75-ST
- C75K
- C75K-ST
- C75R
- CP96
- CP96K
- C96
- C96K
- C96Y
- C55
- Auto Switch
- Made to Order
- Related Products

Prior to Use

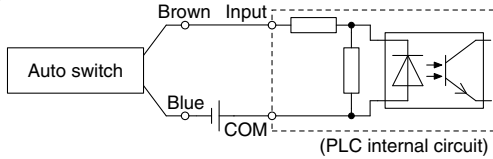
Auto Switch Connections and Examples

Sink Input Specifications

3-wire, NPN

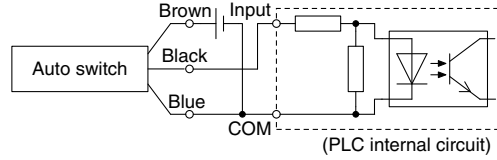


2-wire

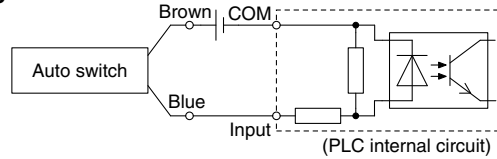


Source Input Specifications

3-wire, PNP



2-wire



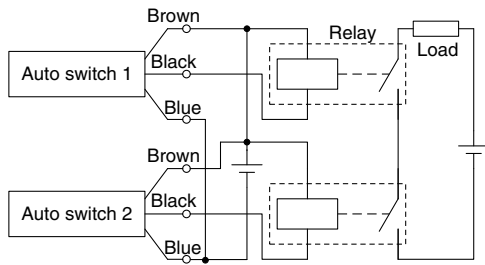
Connect according to the applicable PLC input specifications, as the connection method will vary depending on the PLC input specifications.

Examples of AND (Series) and OR (Parallel) Connections

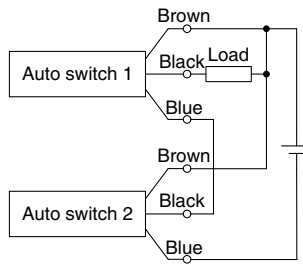
* When using solid state auto switches, ensure the application is set up so the signals for the first 50 ms are invalid.

3-wire AND connection for NPN output

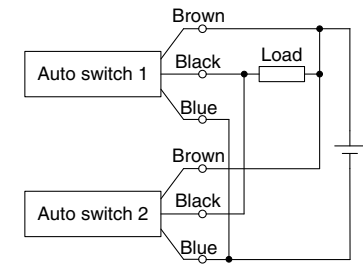
(Using relays)



(Performed with auto switches only)

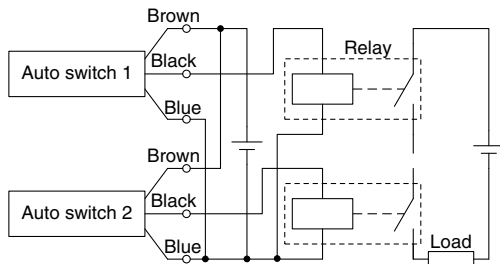


3-wire OR connection for NPN output

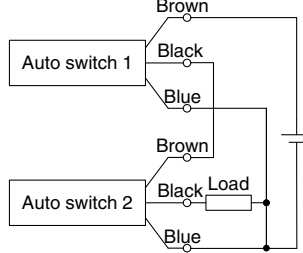


3-wire AND connection for PNP output

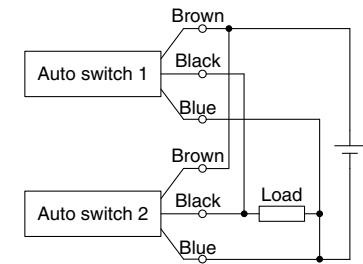
(Using relays)



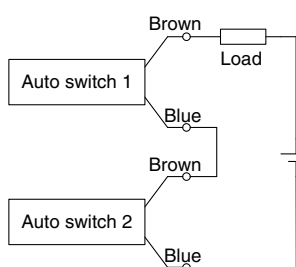
(Performed with auto switches only)



3-wire OR connection for PNP output



2-wire AND connection

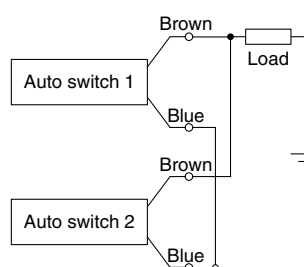


When two auto switches are connected in series, a load may malfunction because the load voltage will decline when in the ON state. The indicator lights will light up when both of the auto switches are in the ON state. Auto switches with a load voltage less than 20 V cannot be used.

$$\begin{aligned} \text{Load voltage at ON} &= \text{Power supply voltage} - \\ &\quad \text{Residual voltage} \times 2 \text{ pcs.} \\ &= 24 \text{ V} - 4 \text{ V} \times 2 \text{ pcs.} \\ &= 16 \text{ V} \end{aligned}$$

Example: Power supply is 24 VDC
Internal voltage drop in auto switch is 4 V.

2-wire OR connection



(Solid state)
When two auto switches are connected in parallel, malfunction may occur because the load voltage will increase when in the OFF state.

(Reed)
Because there is no current leakage, the load voltage will not increase when turned OFF. However, depending on the number of auto switches in the ON state, the indicator lights may sometimes grow dim or not light up, due to the dispersion and reduction of the current flowing to the auto switches.

$$\begin{aligned} \text{Load voltage at OFF} &= \text{Leakage current} \times 2 \text{ pcs.} \times \\ &\quad \text{Load impedance} \\ &= 1 \text{ mA} \times 2 \text{ pcs.} \times 3 \text{ k}\Omega \\ &= 6 \text{ V} \end{aligned}$$

Example: Load impedance is 3 k Ω .
Leakage current from auto switch is 1 mA.

CP96 Series

Simple Specials/Made to Order



Please contact SMC for detailed specifications, delivery, and prices.

Simple Specials

The following special specifications can be ordered as a simplified Made-to-Order. Please contact your local sales representative for more details.

| Symbol | Specifications | CP96 (Standard type) | |
|------------|-------------------------|-------------------------|------------|
| | | Double acting | |
| | | Single rod | Double rod |
| -XA0 to 30 | Change of rod end shape | ● | ● |

Made to Order

| Symbol | Specifications | CP96 (Standard type) | |
|--------|---|-------------------------|------------|
| | | Double acting | |
| | | Single rod | Double rod |
| -XB6 | Heat-resistant cylinder (-10 to 150°C)*1 | ● | ● |
| -XC4 | With heavy duty scraper | ● | ● |
| -XC7 | Tie-rod, tie-rod nut, etc. made of stainless steel | ● | ● |
| -XC10 | Dual stroke cylinder/Double rod type | ● | ● |
| -XC11 | Dual stroke cylinder/Single rod type | ● | ● |
| -XC22 | Fluororubber seal | ● | ● |
| -XC35 | With coil scraper | ● | ● |
| -XC65 | Made of stainless steel (Combination of -XC7 and -XC68) | ● | ● |
| -XC68 | Made of stainless steel (with hard chrome plated piston rod) | ● | ● |
| -XC88 | Spatter-resistant coil scraper, Lube-retainer, grease for welding (Piston rod: Stainless steel 304) | ● | ● |
| -XC89 | Spatter-resistant coil scraper, Lube-retainer, grease for welding (Piston rod: S45C) | ● | ● |

*1 The products with an auto switch are not compatible.

- C85
- C85W
- C85-ST
- C85K
- C85K-ST
- C85R
- C75
- C75W
- C75-ST
- C75K
- C75K-ST
- C75R
- CP96
- CP96K
- C96
- C96K
- C96Y
- C55
- Auto Switch
- Made to Order
- Related Products

CP96 Series Simple Specials

The following changes are dealt with through the Simple Specials System.

For details, refer to the Simple Specials
in the Web Catalog.
<http://www.smcworld.com>

1 Change of Rod End Shape

Symbol

-XA0 to -XA30

Applicable Series

| Description | Model | Action | Symbol for change of rod end shape |
|---------------|---------|---------------------------|------------------------------------|
| Standard type | CP96S | Double acting, Single rod | XA0 to 30 |
| | CP96S-W | Double acting, Double rod | XA0 to 30 |

⚠ Precautions

- SMC will make appropriate arrangements if no dimension, tolerance, or finish instructions are given in the diagram.
- Standard dimensions marked with "*" will be as follows to the rod diameter (D). Enter any special dimension you require.
 $D \leq 6 \rightarrow D - 1 \text{ mm}$, $6 < D \leq 25 \rightarrow D - 2 \text{ mm}$, $D > 25 \rightarrow D - 4 \text{ mm}$
- In the case of the double rod type and single acting retraction type, enter the dimensions when the rod is retracted.
- Only one side of a double rod can be manufactured.
- "A0" is the same shape as the standard type. (The specifications of A0 are that only dimensions A and H are changed from the standard type.)

| | | | | |
|------------------------|------------------------|------------------------|------------------------|------------------------|
| Symbol: A0 | Symbol: A1 | Symbol: A2 | Symbol: A3 | Symbol: A4 |
| Symbol: A5 | Symbol: A6 | Symbol: A7 | Symbol: A8 | Symbol: A9 |
| Symbol: A10 | Symbol: A11 | Symbol: A12 | Symbol: A13 | Symbol: A14 |
| Symbol: A15 | Symbol: A16 | Symbol: A17 | Symbol: A18 | Symbol: A19 |
| Symbol: A20 | Symbol: A21 | Symbol: A22 | Symbol: A23 | Symbol: A24 |
| Symbol: A25 | Symbol: A26 | Symbol: A27 | Symbol: A28 | Symbol: A29 |
| Symbol: A30 | | | | |

CP96 Series Made to Order

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



1 Heat-resistant Cylinder (−10 to 150°C)

Symbol

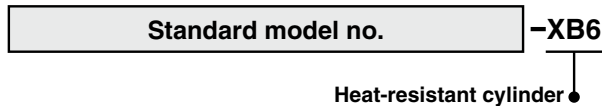
-XB6

Air cylinder which changed the seal material and grease, so that it could be used even at higher temperature up to 150°C.

Applicable Series

| Description | Model | Action |
|---------------|----------------|---------------------------|
| Standard type | CP96S | Double acting, Single rod |
| | CP96S-W | Double acting, Double rod |

How to Order



Specifications

| | |
|---|-----------------------|
| Ambient temperature range | −10 to 150°C |
| Seal material | Fluororubber |
| Grease | Heat-resistant grease |
| Specifications other than above and external dimensions | Same as standard type |

- * Operate without lubrication from a pneumatic system lubricator.
- * Please contact SMC for details on the maintenance intervals for this cylinder, which differ from those of the standard cylinder.
- * In principle, it is impossible to make built-in magnet type and the one with auto switch.
But, as for the one with auto switch, and the heat-resistant cylinder with heat-resistant auto switch, since it will be differed depending on the series, please contact SMC.
- * Piston speed is ranged from 50 to 500 mm/s.

Warning Precautions

Be aware that smoking cigarettes etc. after your hands have come into contact with the grease used in this cylinder can create a gas that is hazardous to humans.

2 With Heavy Duty Scraper

Symbol

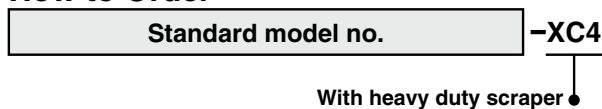
-XC4

It is suitable for using cylinders under the environment, where there are much dusts in a surrounding area by using a heavy duty scraper on the wiper ring, or using cylinders under earth and sand exposed to the die-casted equipment, construction machinery, or industrial vehicles.

Applicable Series

| Description | Model | Action | Note |
|---------------|----------------|---------------------------|-------------|
| Standard type | CP96S | Double acting, Single rod | ø32 to ø100 |
| | CP96S-W | Double acting, Double rod | ø32 to ø100 |

How to Order



Specifications: Same as standard type
Dimensions: Same as standard type

Caution

Do not replace heavy duty scrapers.

Since heavy duty scrapers are press-fit, do not replace the cover only, but rather the entire rod cover assembly.

C85

C85W

C85-ST

C85K

C85K-ST

C85R

C75

C75W

C75-ST

C75K

C75K-ST

C75R

CP96

CP96K

C96

C96K

C96Y

C55

Auto Switch

Made to Order

Related Products

CP96 Series

3 Tie-rod, Tie-rod Nut, etc. Made of Stainless Steel

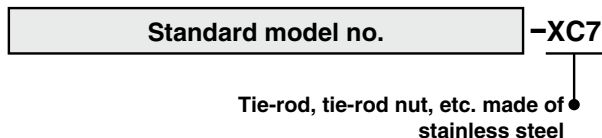
Symbol
-XC7

When using in locations where the rust generation or corrosion likelihood exists, the standard parts material have been partly changed to the stainless steel.

Applicable Series

| Description | Model | Action |
|---------------|----------------|---------------------------|
| Standard type | CP96S | Double acting, Single rod |
| | CP96S-W | Double acting, Double rod |

How to Order



Specifications

| | |
|----------------------------------|---|
| Parts changed to stainless steel | Tie-rod, Tie-rod nut, Mounting bracket nut, Spring washer, Lock nut |
| Specifications other than above | Same as standard type |
| Dimensions | Same as standard type |

* For bore size $\phi 125$, the cushion valve, rod seal holder, and retaining ring will also be stainless steel.

4 Dual Stroke Cylinder/Double Rod Type

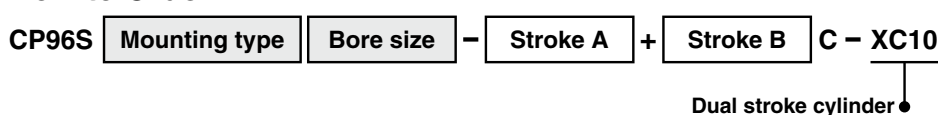
Symbol
-XC10

Two cylinders are constructed as one cylinder in a back-to-back configuration allowing the cylinder stroke to be controlled in three steps.

Applicable Series

| Description | Model | Action | Note |
|---------------|--------------|---------------------------|-----------------------|
| Standard type | CP96S | Double acting, Single rod | Excluding clevis type |

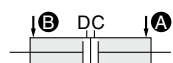
How to Order



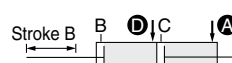
Specifications

| | |
|------------------------------------|------|
| Maximum manufacturable stroke [mm] | 1000 |
|------------------------------------|------|

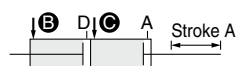
Function



When air pressure is supplied to ports **A** and **B**, both strokes A and B retract.



When air pressure is supplied to ports **A** and **D**, B out strokes.

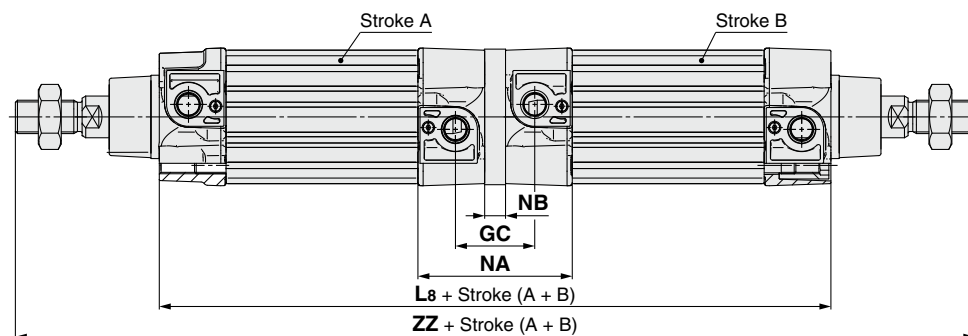


When air pressure is supplied to ports **B** and **C**, A out strokes.



When air pressure is supplied to ports **C** and **D**, both strokes A and B out strokes.

Dimensions (Dimensions other than below are the same as standard type.)



| Bore size [mm] | L8 | ZZ | NA | NB | GC |
|----------------|-----|-----|------|----|----|
| 32 | 198 | 294 | 67.8 | 10 | 36 |
| 40 | 220 | 328 | 75.2 | 10 | 38 |
| 50 | 222 | 360 | 74 | 10 | 38 |
| 63 | 252 | 390 | 87.2 | 10 | 42 |
| 80 | 270 | 442 | 90.8 | 14 | 46 |
| 100 | 290 | 472 | 99.8 | 14 | 50 |
| 125 | 334 | 572 | 130 | 14 | 52 |

Symbol
-XC11

5 Dual Stroke Cylinder/Single Rod Type

Two cylinders can be integrated by connecting them in line, and the cylinder stroke can be controlled in two stages in both directions.

Applicable Series

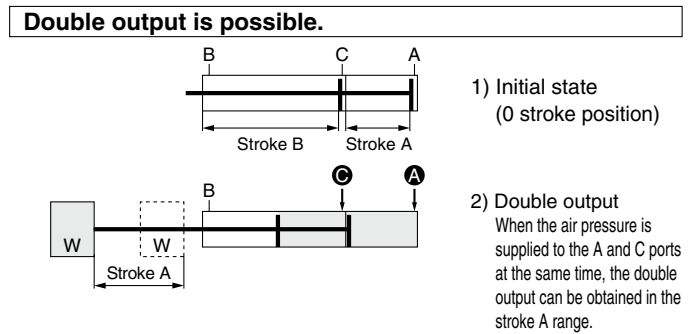
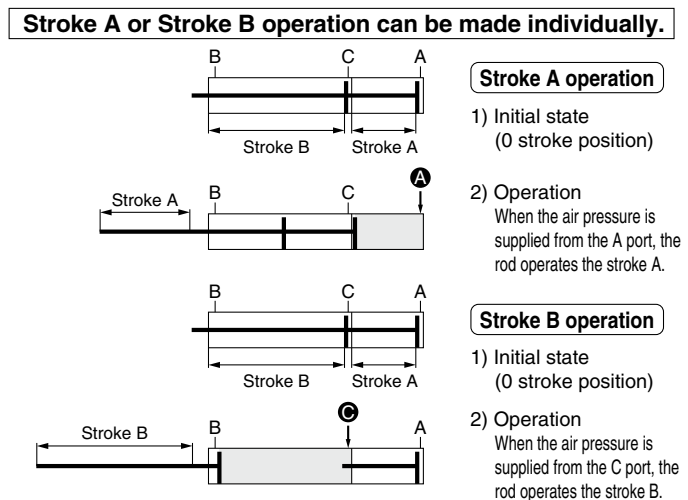
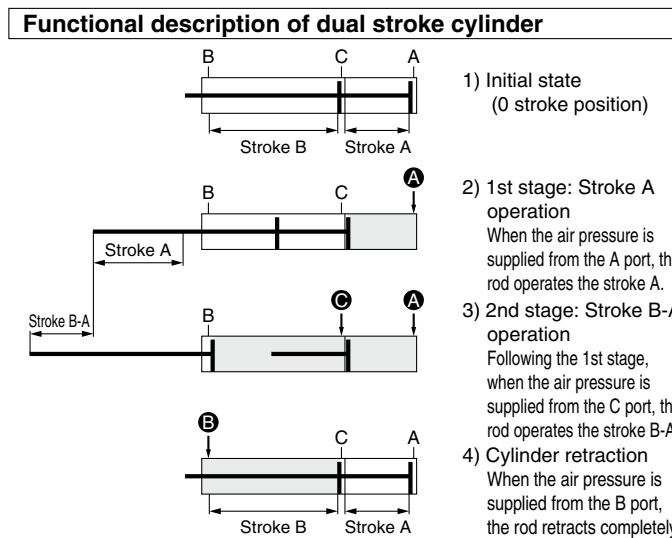
| Description | Model | Action |
|---------------|--------------|---------------------------|
| Standard type | CP96S | Double acting, Single rod |

How to Order

Specifications: Same as standard type

CP96S Mounting type Bore size - Stroke A + Stroke B-A C - XC11
Dual stroke cylinder/Single rod type

Function

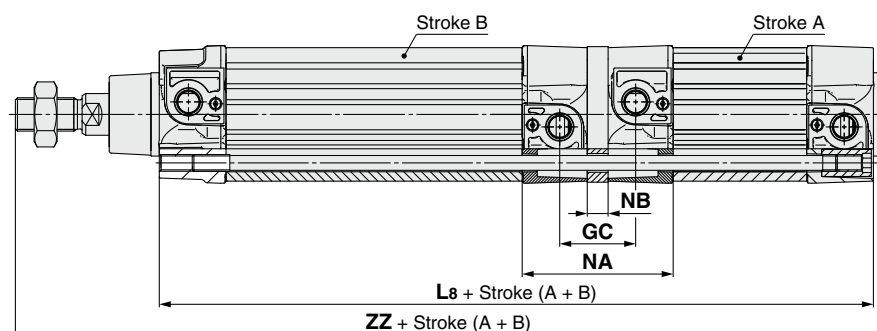


Precautions

⚠ Caution

1. Do not supply air until the cylinder is fixed with the attached bolt.
2. If air is supplied without securing the cylinder, the cylinder could lurch, posing the risk of bodily injury or damage to the peripheral equipment.

Dimensions (Dimensions other than below are the same as standard type.)



| Bore size [mm] | L8 | ZZ | NA | NB | GC |
|----------------|-----|-----|------|----|------|
| 32 | 199 | 251 | 67.2 | 10 | 35.4 |
| 40 | 221 | 279 | 74.6 | 10 | 37.4 |
| 50 | 223 | 296 | 73.4 | 10 | 37.4 |
| 63 | 253 | 326 | 86.6 | 10 | 41.4 |
| 80 | 271 | 361 | 90.2 | 14 | 45.4 |
| 100 | 291 | 386 | 99.2 | 14 | 49.4 |
| 125 | 335 | 460 | 130 | 14 | 52 |

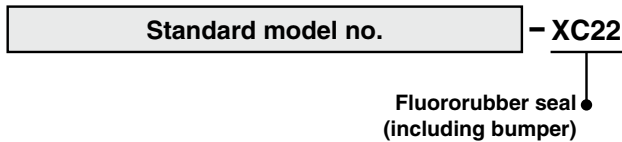
C85
C85W
C85-S7
C85K
C85K-S7
C85R
C75
C75W
C75-S7
C75K
C75K-S7
C75R
CP96
CP96K
C96
C96K
C96Y
C55
Auto Switch
Made to Order
Related Products

6 Fluororubber Seal

Applicable Series

| Description | Model | Action |
|---------------|----------------|---------------------------|
| Standard type | CP96S | Double acting, Single rod |
| | CP96S-W | Double acting, Double rod |

How to Order



Specifications

| | |
|---|---|
| Seal material | Fluororubber |
| Ambient temperature range | With auto switch: -10°C to 60°C (No freezing)*1 Without auto switch: -10°C to 70°C (No freezing) |
| Specifications other than above and external dimensions | Same as standard type |

- *1 Please contact SMC, as the type of chemical and the operating temperature may not allow the use of this product.
- * Cylinders with auto switches can also be produced; however, auto switch related parts (auto switch units, mounting brackets, built-in magnets) are the same as standard products. Before using these, please contact SMC regarding their suitability for the operating environment.

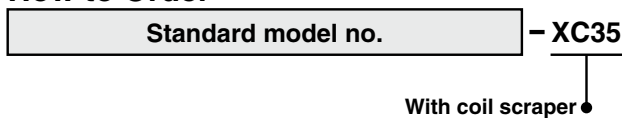
7 With Coil Scraper

It gets rid of frost, ice, weld spatter, cutting chips adhered to the piston rod, and protects the seals etc.

Applicable Series

| Description | Model | Action | Note |
|---------------|----------------|---------------------------|-------------|
| Standard type | CP96S | Double acting, Single rod | ø32 to ø100 |
| | CP96S-W | Double acting, Double rod | ø32 to ø100 |

How to Order



Specifications: Same as standard type

Dimensions: Same as standard type

Symbol
-XC65

8 Made of Stainless Steel (Combination of -XC7 and -XC68)

Suitable for the cases it is likely to generate rust by being immersed in the water and corrosion.

Applicable Series

| Description | Model | Action |
|---------------|----------------|---------------------------|
| Standard type | CP96S | Double acting, Single rod |
| | CP96S-W | Double acting, Double rod |

* There is a maximum stroke limit for CP96 cylinder.

Maximum Stroke [mm]

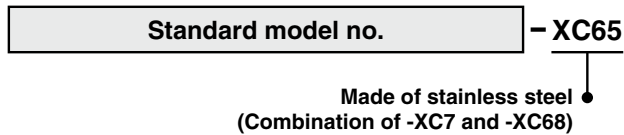
| Double acting, Single rod | Double acting, Double rod |
|--|---------------------------------|
| ø32: 1800 ø40 to ø100: 1700 ø125: 1600 | 1000 (Same as standard type) |

Specifications

| | |
|---|--|
| Parts changed to stainless steel | Piston rod, Rod end nut, Tie-rod, Tie-rod nut, Mounting bracket nut, Spring washer, Lock nut |
| Other specifications and external dimensions | Same as standard type |

* For bore size ø125, the cushion valve, rod seal holder, and retaining ring will also be stainless steel.

How to Order



Symbol
-XC68

9 Made of Stainless Steel (With Hard Chrome Plated Piston Rod)

Suitable for the cases it is likely to generate rust by being immersed in the water and corrosion.

Applicable Series

| Description | Model | Action |
|---------------|----------------|---------------------------|
| Standard type | CP96S | Double acting, Single rod |
| | CP96S-W | Double acting, Double rod |

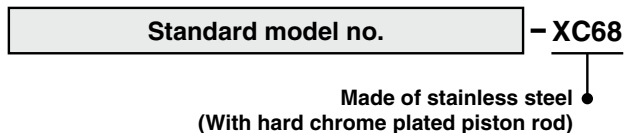
Maximum Stroke [mm]

| Double acting, Single rod | Double acting, Double rod |
|--|---------------------------------|
| ø32: 1800 ø40 to ø100: 1700 ø125: 1600 | 1000 (Same as standard type) |

Specifications

| | |
|---|-------------------------|
| Parts changed to stainless steel | Piston rod, Rod end nut |
| Other specifications and external dimensions | Same as standard type |

How to Order



- C85
- C85W
- C85-ST
- C85K
- C85K-ST
- C85R
- C75
- C75W
- C75-ST
- C75K
- C75K-ST
- C75R
- CP96
- CP96K
- C96
- C96K
- C96Y
- C55
- Auto Switch
- Made to Order
- Related Products

10 Grease for Food Processing Equipment

Food grade grease (certified by NSF-H1) is used as lubricant.

Applicable Series

| Description | Model | Action | Note |
|---------------|---------|---------------------------|-------------|
| Standard type | CP96S | Double acting, Single rod | ø32 to ø100 |
| | CP96S-W | Double acting, Double rod | ø32 to ø100 |

How to Order

Standard model no. **-XC85**

● Grease for food processing equipment

Specifications

| | |
|-------------------------------------|--------------------------------------|
| Seal material | Nitrile rubber |
| Grease | Grease for food processing equipment |
| Auto switch | Mountable |
| Dimensions | Same as those of the standard type |
| Specifications other than the above | Same as those of the standard type |

Warning Precautions

Be aware that smoking cigarettes, etc., after your hands have come into contact with the grease used in this cylinder can create a gas that is hazardous to humans.

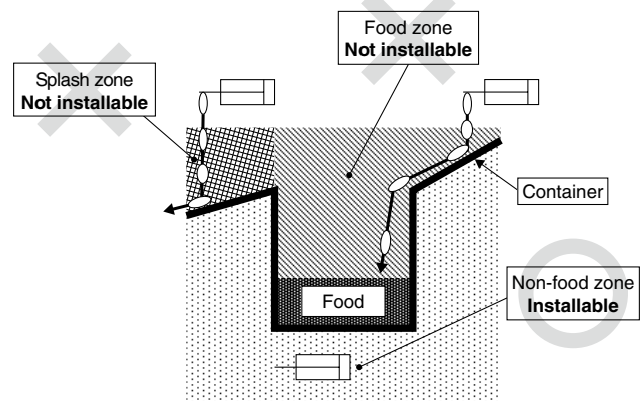
<Not installable>

Food zone.....An environment where food which will be sold as merchandize, directly touches the cylinder's components

Splash zone.....An environment where food which will not be sold as merchandize, directly touches the cylinder's components

<Installable>

Non-food zone.....An environment where there is no contact with food



- * Avoid using this product in the food zone. (Refer to the figure above.)
- * When the product is used in an area of liquid splash, or a water resistant function is required for the product, please consult SMC.
- * Operate without lubrication from a pneumatic system lubricator.
- * Use the following grease pack for the maintenance work.
GR-H-010 (Grease: 10 g)
- * Please contact SMC for details on the maintenance intervals for this cylinder, which differ from those of the standard cylinder.

11 Spatter-resistant Coil Scraper, Lube-retainer, Grease for Welding (Piston rod: Stainless steel 304)

Reduces spatter adhesion and improves durability by the use of the coil scraper, Lube-retainer and grease for welding.

Applicable Series

| Description | Model | Action | Note |
|---------------|---------|---------------------------|-------------|
| Standard type | CP96S | Double acting, Single rod | ø32 to ø100 |
| | CP96S-W | Double acting, Double rod | ø32 to ø100 |

How to Order

Standard model no. **-XC88**

● Spatter-resistant coil scraper, Lube-retainer, grease for welding (Piston rod: Stainless steel 304)

Specifications

| | |
|--|---|
| Piston rod | Stainless steel 304 (With hard chrome plated) |
| Scraper | With coil scraper, With Lube-retainer |
| Grease | Grease for welding |
| Other specifications and external dimensions | Same as standard type |

CP96 Series

12 Spatter-resistant Coil Scraper, Lube-retainer, Grease for Welding (Piston rod: S45C)

Symbol
-XC89

Reduces spatter adhesion and improves durability by the use of the coil scraper, Lube-retainer and grease for welding.

Applicable Series

| Description | Model | Action | Note |
|---------------|----------------|---------------------------|-------------|
| Standard type | CP96S | Double acting, Single rod | ø32 to ø100 |
| | CP96S-W | Double acting, Double rod | ø32 to ø100 |

How to Order

Standard model no. **-XC89**

● Spatter-resistant coil scraper, Lube-retainer, grease for welding (Piston rod: S45C)

Specifications

| | |
|---|---------------------------------------|
| Piston rod | S45C (With hard chrome plated) |
| Scraper | With coil scraper, With Lube-retainer |
| Grease | Grease for welding |
| Other specifications and external dimensions | Same as standard type |



CP96 Series

Specific Product Precautions

Be sure to read this before handling the products. Refer to page 219 for safety instructions. For actuator and auto switch precautions, refer to the “Handling Precautions for SMC Products” and the “Operation Manual” on the SMC website: <http://www.smcworld.com>

Adjustment

Warning

1. Do not open the cushion valve more than the allowable number of rotations (following table).

Although the cushion valve is caulked as a retaining mechanism, do not open the cushion valve more than the allowable number of rotations. If air is supplied and operation started without confirming the above condition, the cushion valve may be ejected from the cover.

The allowable number of rotations refers to the number of rotations until the restrictor of the cushion valve is completely opened from the completely closed state.

2. Keep the screwing torque and the unscrewing torque of the cushion valve to the allowable torque or below (following table).

If a screwing torque or unscrewing torque beyond the allowable torque is applied, the valve will be damaged when the valve is closed completely or exceeds the retaining mechanism when the valve is opened completely, which will dislocate the engagement of the screw and eject the valve.

| Bore size [mm] | Cushion valve width across flats | Hexagon wrench | Allowable number of rotations | Allowable torque [N·m] |
|----------------|----------------------------------|----------------------------------|-------------------------------|------------------------|
| 32, 40 | 2 | JIS 4648 Hexagon wrench key 2 | 4 | 0.02 |
| 50, 63 | 2 | JIS 4648 Hexagon wrench key 2 | 4.5 | 0.02 |
| 80, 100 | 3 | JIS 4648 Hexagon wrench key 3 | 5.5 | 0.06 |
| 125 | 4 | JIS 4648 Hexagon wrench key 4 | 5 | 0.10 |

3. Be certain to activate the air cushion at the stroke end.

When the air cushion is inactivated, if the allowable kinetic energy exceeds the value on page 131, the piston rod assembly or the tie-rod may be damaged. Set the air cushion to valid when operating the cylinder.

Caution

1. When mounting a foot, flange, single clevis, or double clevis mounting bracket to the cylinder, use a hexagon wrench of the size stated in the table below.

| Bore size [mm] | Width across flats | Tightening torque [N·m] |
|----------------|--------------------|-------------------------|
| 32, 40 | 4 | 4.8 |
| 50, 63 | 5 | 10.4 |
| 80, 100 | 6 | 18.2 |
| 125 | 10 | 30.1 |

2. To mount the adjustable position trunnion mounting bracket to a cylinder, refer to the assembly instructions in the operation manual on the SMC website.

C85

C85W

C85-ST

C85K

C85K-ST

C85R

C75

C75W

C75-ST

C75K

C75K-ST

C75R

CP96

CP96K

C96

C96K

C96Y

C55

Auto Switch

Made to Order

Related Products