

Compact Cylinder with Air Cushion and Lock

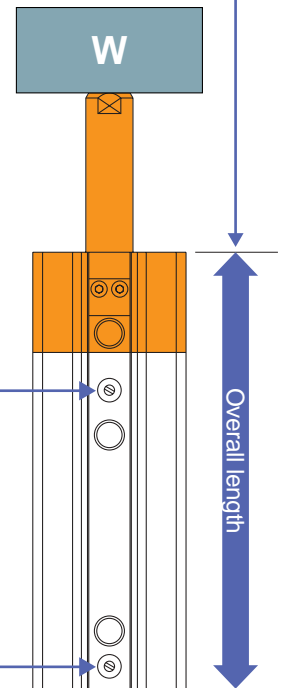


- Prevents dropping when air supply is cut off.
- Air cushion and lock unit are built inside compact cylinder.

- Compact overall length

36 to 50 mm increase in length compared to compact cylinders Series CDQ2.

| Bore size (mm) | Extension (mm) |
|----------------|----------------|
| 32 | +36 |
| 40 | +38.5 |
| 50 | +47 |
| 63 | +50 |



- Drop prevention is possible at any point of an entire stroke.
- With air cushion
Absorbs impact at stroke ends.
Reduced impulsive sound

By-pass piping is standardized.

Extension locking

Retraction locking



Applications

Prevents press fit fixtures from dropping.

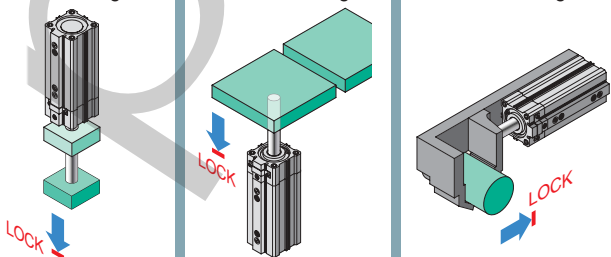
Prevents lifter from dropping.

Retains clamp condition.

Extension locking

Retraction locking

Retraction locking



Variations

| Series | Mounting | Locking direction | Bore size (mm) | Standard stroke (mm) | | | | | | |
|--------|------------------|-------------------|----------------|----------------------|----|----|----|----|----|-----|
| | | | | 20 | 25 | 30 | 40 | 50 | 75 | 100 |
| RLQ | Through hole | Extension lock | 32 | ● | ● | ● | ● | ● | ● | ● |
| | | | 40 | ● | ● | ● | ● | ● | ● | ● |
| | Both ends tapped | Retraction lock | 50 | | | ● | ● | ● | ● | ● |
| | | | 63 | | | ● | ● | ● | ● | ● |

Compact Cylinder with Air Cushion and Lock

Series RLQ

ø32, ø40, ø50, ø63

How to Order

RLQ B 32 50 M F

With auto switch RDLQ B 32 50 M F F9BW

Built-in auto

Mounting

| | |
|---|-------------------------|
| B | Through hole (standard) |
| A | Both ends tapped |
| L | Foot type |
| F | Front flange type |
| G | Rear flange type |
| D | Double clevis type |

Bore size

| | |
|----|-------|
| 32 | 32 mm |
| 40 | 40 mm |
| 50 | 50 mm |
| 63 | 63 mm |

Port thread type

| | |
|-----|-----|
| Nil | Rc |
| TN | NPT |
| TF | G |

Cylinder stroke (mm)
Refer to the standard stroke table on page 2.

Body option

| | |
|-----|---------------------------------|
| Nil | Rod end male threads (standard) |
| M | Rod end male threads |

Locking direction

| | |
|---|--------------------|
| F | Extension locking |
| B | Retraction locking |

Auto switch

Nil Without auto switch (Cylinder with built-in magnet)

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

* Select auto switch models from the table below.
* The auto switches are included when shipped (unmounted).

By-pass piping

| Nil | R | L |
|-----------------------|--|---|
| None (Emergency stop) | With by-pass piping, right-hand piping (Drop prevention) | With by-pass piping, left-hand piping (Drop prevention) |
| | | |

* The right and left indicate the piping directions viewed from the front.
* When no by-pass piping is used (when the product is used for emergency stops), solenoids for unlocking are necessary.
* For detailed information, please refer to "Pneumatic Circuit" in Specific Product Precautions on page 21.

Applicable auto switches: Refer to pages 5.3-1 through 5.3-75 of Best Pneumatics Vol.2 for detailed auto switch specifications.

| Type | Special function | Electrical entry direction | Indicator | Wiring (output) | Load voltage | | Rail mounting | | Direct mount | | Lead-wire length* (m) | | | | Pre-wired connector | Applicable load | | | |
|---|--|----------------------------|-----------|---------------------|--------------|-----------|---------------|---------|---------------|---------|-----------------------|-------|-------|----------|---------------------|-----------------|------------|------------|---|
| | | | | | DC | AC | ø32 to ø63 | | ø32 to ø63 | | 0.5 (Nil) | 3 (L) | 5 (Z) | None (N) | | IC circuit | Relay PLC | | |
| | | | | | | | Perpendicular | In-line | Perpendicular | In-line | | | | | | | | | |
| Reed switch | — | Grommet | Yes | 3-wire (NPN equiv.) | — | 5 V | — | A76H | A96V | A96 | ● | ● | — | — | — | — | | | |
| | | | | | | | | | | | — | — | 200 V | A72 | | | A72H | — | — |
| | | | | 2-wire | 24 V | 12 V | 100 V | — | — | A93V | A93 | ● | ● | — | | | — | — | — |
| | | | | | | | | A73C | — | — | — | ● | ● | ● | | | ● | | |
| Diagnostic indication (2-color display) | Grommet | — | — | — | — | A79W | — | — | — | — | — | — | — | — | — | | | | |
| Solid state switch | — | Grommet | Yes | 3-wire (NPN) | — | 5 V, 12 V | — | F7NV | F79 | F9NV | F9N | ● | ● | ○ | — | ○ | IC circuit | | |
| | | | | | | | | F7PV | F7P | F9PV | F9P | ● | ● | ○ | — | ○ | | | |
| | | 2-wire | | 12 V | — | — | F7BV | J79 | F9BV | F9B | ● | ● | ○ | — | ○ | — | — | | |
| | | | | | | | J79C | — | — | — | ● | ● | ● | ● | — | — | | | |
| | Diagnostic indication (2-color display) | Grommet | Yes | 3-wire (NPN) | — | 5 V, 12 V | — | — | F7NWV | F79W | F9NWV | F9NW | ● | ● | ○ | — | ○ | IC circuit | |
| | | | | | | | | | — | F7PW | F9PWV | F9PW | ● | ● | ○ | — | ○ | | |
| | Water resistant (2-color display) | Grommet | Yes | 2-wire | — | 12 V | — | — | — | F7BA | — | F9BA | — | ● | ○ | — | ○ | — | |
| | | | | | | | | | — | F7BAV | — | — | — | ● | ○ | — | ○ | | |
| | With diagnostic output (2-color display) | Grommet | Yes | 4-wire (NPN) | — | 5 V, 12 V | — | — | — | F79F | — | — | ● | ● | ○ | — | ○ | IC circuit | |
| | | | | | | | | | — | F7LF | — | — | ● | ● | ○ | — | ○ | | |

Lead wire length symbol 0.5 m ... Nil (Example) A73C 5 m ... Z (Example) A73CZ *Solid state switches marked with a "O" are produced upon receipt of order.
3 m ... L (Example) A73CL None ... N (Example) A73CN

Besides the models in the above table, there are some other auto switches that are applicable. For more information, refer to page 18.

Compact Cylinder with Air Cushion and Lock *Series RLQ*



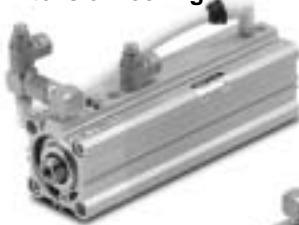
Cylinder Specifications

| Bore size (mm) | 32 | 40 | 50 | 63 |
|-------------------------------|---|----|-----|----|
| Fluid | Air | | | |
| Proof pressure | 1.5 MPa | | | |
| Maximum operating pressure | 1.0 MPa | | | |
| Minimum operating pressure | 0.2 MPa (Note) | | | |
| Ambient and fluid temperature | Without auto switch: -10 to 70°C (with no freezing) With auto switch: -10 to 60°C (with no freezing) | | | |
| Lubrication | Non-lube | | | |
| Rod end thread tolerance | JIS class 2 | | | |
| Stroke length tolerance | $^{+1.0}_0$ mm | | | |
| Piston speed | 50 to 500 mm/s | | | |
| Port size (Rc, NPT, G) | 1/8 | | 1/4 | |

Note) The minimum operating pressure of the cylinder is 0.1 MPa when the cylinder and lock are connected to separate ports.

With by-pass piping

Extension locking



Retraction locking



Lock Specifications

| Bore size (mm) | 32 | 40 | 50 | 63 |
|---------------------------------------|--|----------|-----|------|
| Locking action | Spring locking (exhaust locking) | | | |
| Unlocking pressure | 0.2 MPa or more | | | |
| Locking pressure | 0.05 MPa or less | | | |
| Locking direction | One direction (either extension locking or retraction locking) | | | |
| Maximum operating pressure | 1.0 MPa | | | |
| Unlocking port Port size | Rc | 1/8 | | |
| | NPT | | | |
| | G | M5 x 0.8 | | |
| Holding force N (Maximum static load) | 402 | 629 | 982 | 1559 |

Standard Strokes

| Bore size (mm) | Standard strokes (mm) |
|----------------|-----------------------------|
| 32, 40 | 20, 25, 30, 40, 50, 75, 100 |
| 50, 63 | 30, 40, 50, 75, 100 |

Manufacture of intermediate strokes

| | | |
|--------------|--|-------------------|
| Method | Special body type | |
| Ordering | Please refer to How to Order for the standard part numbers (page 1). | |
| Description | Available in stroke increments of 1 mm, using a special body for the specified stroke. | |
| Stroke range | Bore size (mm) | Stroke range (mm) |
| | 32, 40 | 21 to 99 |
| | 50, 63 | 31 to 99 |
| Example | Part number: RLQB32-47-B A special tube is manufactured for a 47 mm stroke. | |

Effective cushion length

| Bore size (mm) | 32 | 40 | 50 | 63 |
|-------------------------------|-----|-----|-----|----|
| Effective cushion length (mm) | 6.6 | 6.6 | 7.1 | 7 |

Allowable kinetic energy

For the allowable kinetic energy, please refer to "Selection" from page 20.

Series RLQ



Theoretical Output

Unit: N

Metal Bracket Part No.

| Bore size (mm) | Foot ^{Note 1)} | Flange | Double clevis ^{Note 3)} |
|----------------|-------------------------|----------|----------------------------------|
| 32 | CLQ-L032 | CLQ-F032 | CLQ-D032 |
| 40 | CLQ-L040 | CLQ-F040 | CLQ-D040 |
| 50 | CLQ-L050 | CLQ-F050 | CLQ-D050 |
| 63 | CLQ-L063 | CLQ-F063 | CLQ-D063 |

Note 1) When ordering foot brackets, order 2 pieces per cylinder.

Note 2) The following parts are included with each mounting bracket.

Foot, Flange/Body mounting bolts
Double clevis/Clevis pins, C-type snap ring for axis, Body mounting bolts, Flat washer

Note 3) Clevis pins and snap rings are included with the double clevis type.

| Bore size (mm) | Operating direction | Operating pressure (MPa) | | |
|----------------|---------------------|--------------------------|------|------|
| | | 0.3 | 0.5 | 0.7 |
| 32 | IN | 181 | 302 | 422 |
| | OUT | 241 | 402 | 563 |
| 40 | IN | 317 | 528 | 739 |
| | OUT | 377 | 628 | 880 |
| 50 | IN | 495 | 825 | 1150 |
| | OUT | 589 | 982 | 1370 |
| 63 | IN | 841 | 1400 | 1960 |
| | OUT | 935 | 1560 | 2180 |

Weight of auto switch mounting bracket/ Part No. (Rail mounting)

| Bore size (mm) | Mounting bracket Part No. | Note |
|------------------|---------------------------|---|
| 32, 40 50, 63 | BQ-2 | <ul style="list-style-type: none"> Switch mounting screw (M3 x 0.5 x 10 /) Switch spacer Switch mounting nut |

| Applicable switch | |
|--|---|
| Reed switch | Solid state switch |
| D-A7□, A80 D-A73C, A80C D-A7□H, A80H D-A79W | D-F7□, J79 D-F7□V D-J79C D-F7□W, J79W D-F7□WV D-F7BAL, F7BAVL D-F7□F D-F7NTL |

[Stainless steel mounting screw kit]

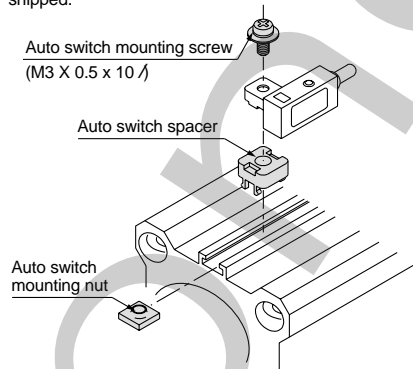
Use the following stainless steel mounting screw kit (including nuts) as required by the operating environment.

(Auto switch spacer must be ordered separately.)

BBA2: For D-A7/A8/F7/J7

The above stainless steel screw kit is used for water resistant auto switch types D-F7BAL and F7BAVL when they are shipped mounted on a cylinder.

Also, BBA2 is included when an auto switch alone is shipped.



When auto switches are mounted, add the weight of the auto switch and mounting bracket multiplied by the quantity.

Auto switch mounting bracket weight

| Mounting bracket part No. | Bore | Weight (g) |
|---------------------------|------------|------------|
| BQ-2 | ø32 to ø63 | 1.5 |

Refer to pages 5.3-1 through 5.3-75 of Best Pneumatics Vol. 2 for the auto switch weight.

Weight

Basic weight: Mounting hole through (Type B)

Unit: (g)

| Bore size (mm) | Standard strokes (mm) | | | | | | |
|----------------|-----------------------|-----|------|------|------|------|------|
| | 20 | 25 | 30 | 40 | 50 | 75 | 100 |
| 32 | 531 | 552 | 575 | 620 | 665 | 779 | 889 |
| 40 | 675 | 698 | 721 | 768 | 814 | 929 | 1044 |
| 50 | — | — | 1200 | 1272 | 1344 | 1525 | 1705 |
| 63 | — | — | 1603 | 1683 | 1763 | 1961 | 2159 |

Basic weights: Mounting hole double end tapped (type A)

Unit: (g)

| Bore size (mm) | Standard strokes (mm) | | | | | | |
|----------------|-----------------------|-----|------|------|------|------|------|
| | 20 | 25 | 30 | 40 | 50 | 75 | 100 |
| 32 | 531 | 552 | 576 | 622 | 669 | 788 | 901 |
| 40 | 708 | 734 | 759 | 810 | 861 | 993 | 1120 |
| 50 | — | — | 1258 | 1338 | 1416 | 1621 | 1819 |
| 63 | — | — | 1756 | 1849 | 1941 | 2183 | 2412 |

Additional weight

Unit: (g)

| Bore size (mm) | 32 | 40 | 50 | 63 |
|---|---------|-----|-----|-----|
| Magnet | 11 | 13 | 14 | 22 |
| Rod end male threads | Threads | 26 | 27 | 53 |
| | Nut | 17 | 17 | 32 |
| Foot (including mounting bolt) | 137 | 149 | 221 | 288 |
| Front flange type (including mounting bolt) | 174 | 208 | 351 | 523 |
| Rear flange type (including mounting bolt) | 159 | 192 | 326 | 498 |
| Double clevis type (including pin, snap ring, bolt and flat washer) | 145 | 190 | 373 | 518 |
| With by-pass piping | 149 | 149 | 263 | 263 |

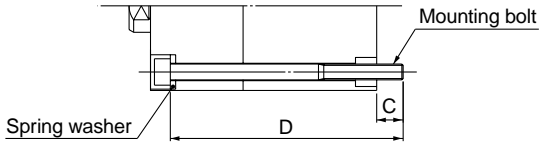
Calculation (example) **RLQD32-20M-B**

- Basic weight: RLQA32-20-□ 531 g
 - Additional weight: Magnet 11 g
 - Rod end male threads 43 g
 - Double clevis 145 g
- 730 g

Mounting bolt for R□LQB

Mounting/Mounting bolts are available for the through hole type R□LQB. Ordering: Prefix "Bolt" to the bolt to be used.

Example) Bolt M5 x 90 / 2 pcs.

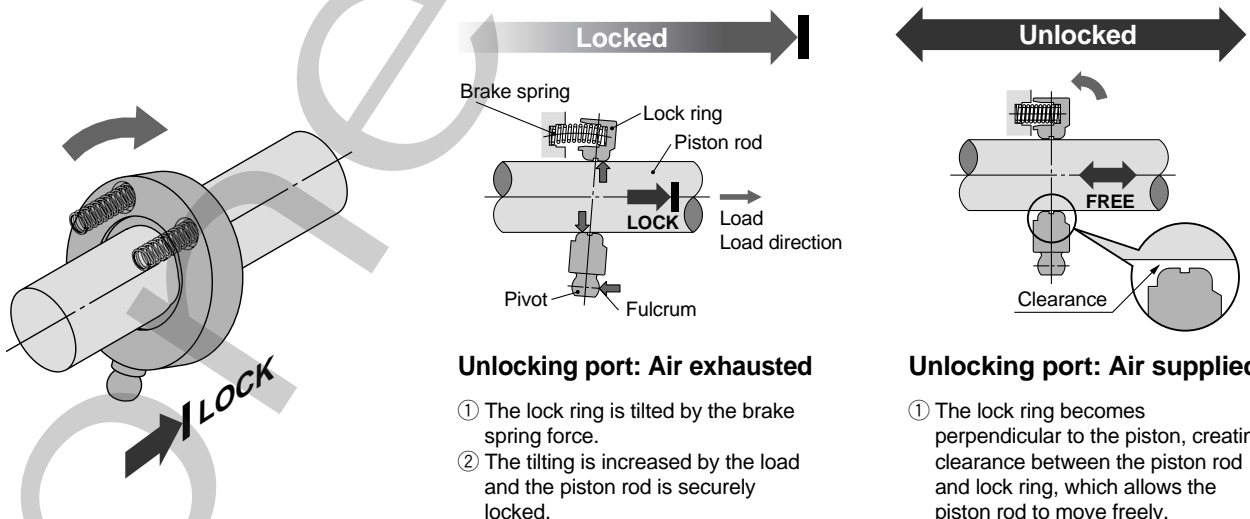


Note) When mounting ø50 to ø63 cylinders from the rod side, be sure to use the attached flat washers because the bearing surface is limited.

R□LQB

| Model | C | D | Mounting bolt |
|-------------|------|------------|---------------|
| R□LQB32-20 | 8 | 90 | M5 x 90 / |
| R□LQB32-25 | | 95 | M5 x 95 / |
| R□LQB32-30 | | 100 | M5 x 100 / |
| R□LQB32-40 | | 110 | M5 x 110 / |
| R□LQB32-50 | | 120 | M5 x 120 / |
| R□LQB32-75 | | 145 | M5 x 145 / |
| R□LQB32-100 | | 170 | M5 x 170 / |
| R□LQB40-20 | 9 | 100 | M5 x 100 / |
| R□LQB40-25 | | 105 | M5 x 105 / |
| R□LQB40-30 | | 110 | M5 x 110 / |
| R□LQB40-40 | | 120 | M5 x 120 / |
| R□LQB40-50 | | 130 | M5 x 130 / |
| R□LQB40-75 | | 155 | M5 x 155 / |
| R□LQB40-100 | 13.5 | 180 | M5 x 180 / |
| R□LQB50-30 | | 120 | M6 x 120 / |
| R□LQB50-40 | | 130 | M6 x 130 / |
| R□LQB50-50 | | 140 | M6 x 140 / |
| R□LQB50-75 | | 165 | M6 x 165 / |
| R□LQB50-100 | 190 | M6 x 190 / | |
| R□LQB63-30 | 12.5 | 125 | M8 x 125 / |
| R□LQB63-40 | | 135 | M8 x 135 / |
| R□LQB63-50 | | 145 | M8 x 145 / |
| R□LQB63-75 | | 170 | M8 x 170 / |
| R□LQB63-100 | | 195 | M8 x 195 / |

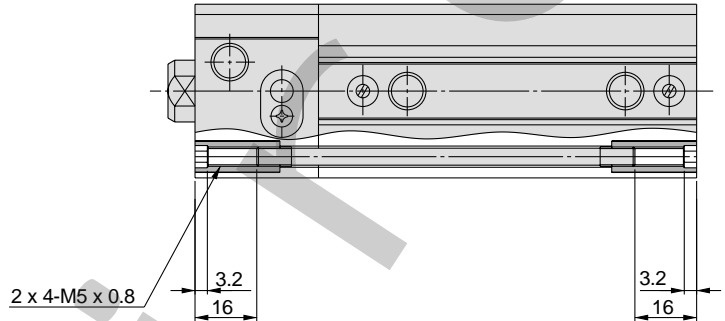
Working principle



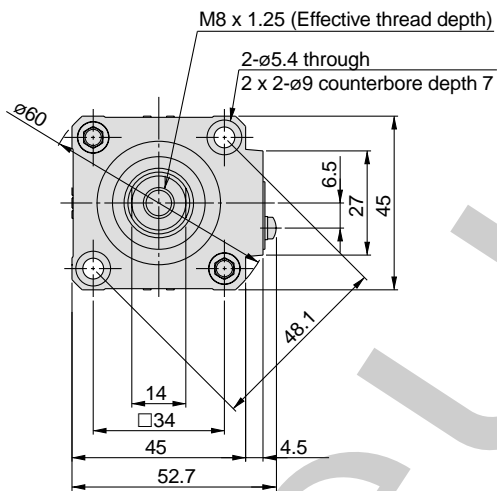
Series RLQ

Dimensions/ø32 (Emergency Stop)

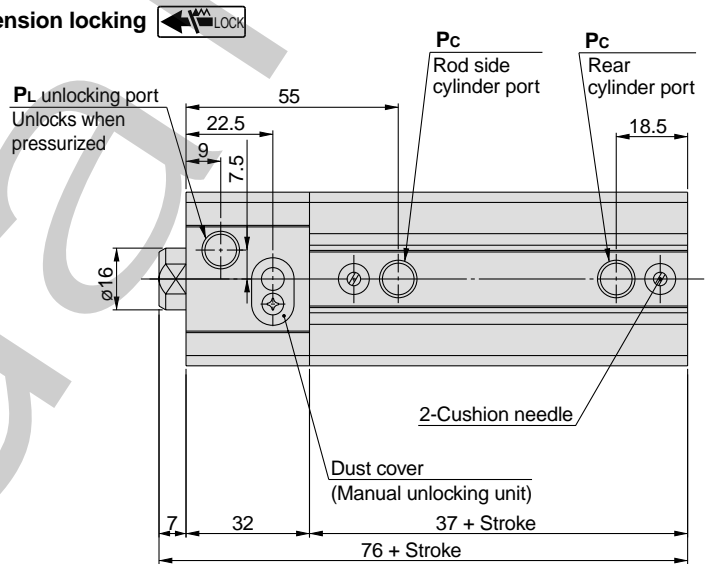
Both ends tapped: R□LQA32



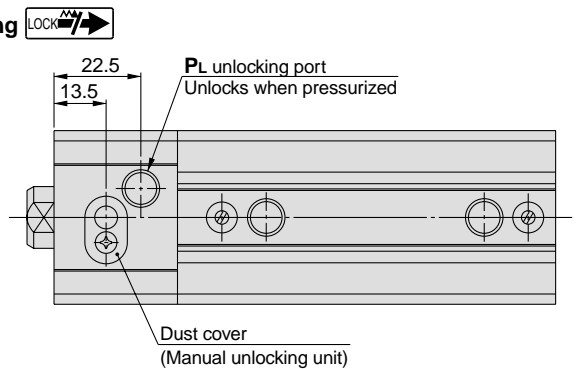
Standard (through hole): R□LQB32



Extension locking

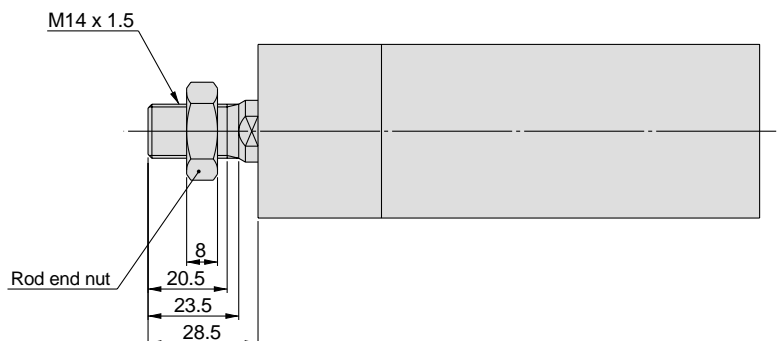


Retraction locking



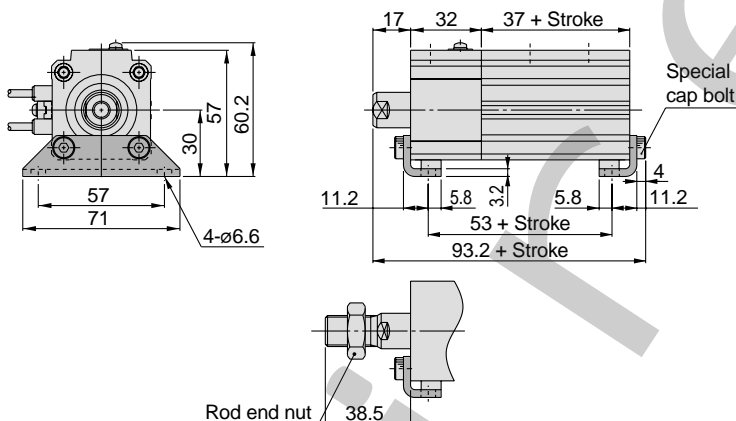
| Port thread type | Pc | PL |
|------------------|-----|----------|
| Rc | 1/8 | 1/8 |
| NPT | | 1/8 |
| G | | M5 x 0.8 |

Rod end male threads

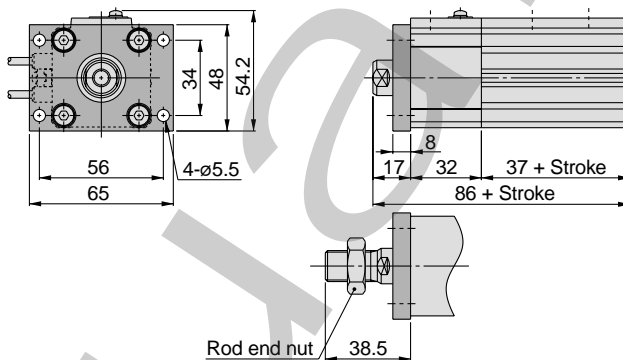


Dimensions/ø32 (Emergency Stop)

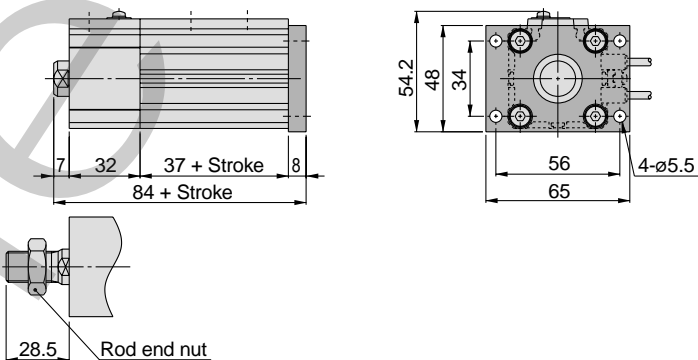
Foot type/R□LQL32



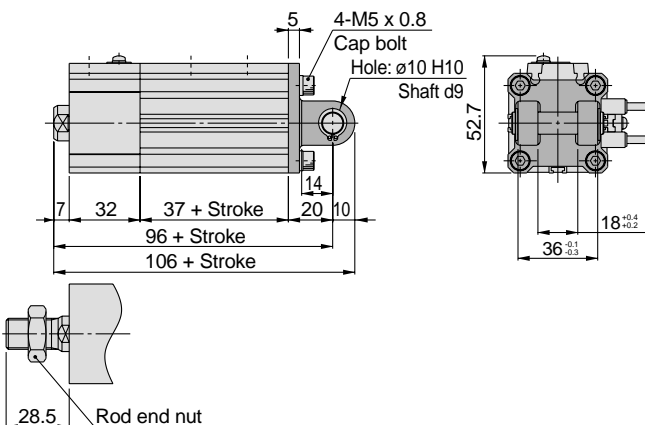
Front flange type/R□LQF32



Rear flange/R□LQG32



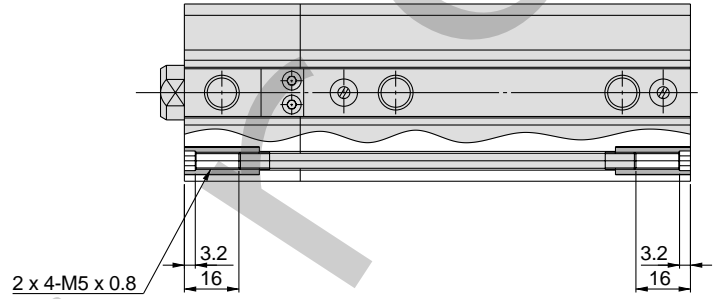
Double clevis/R□LQD32



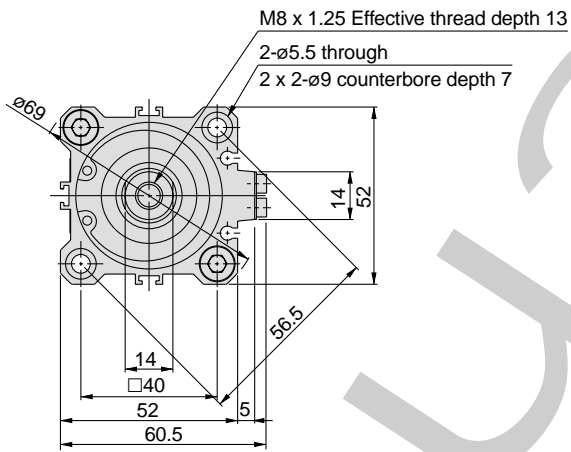
Series RLQ

Dimensions/ $\varnothing 40$ (Emergency Stop)

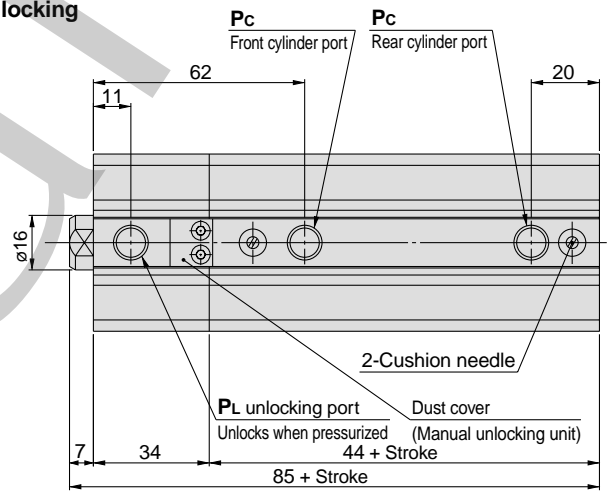
Both ends tapped/R□LQA40



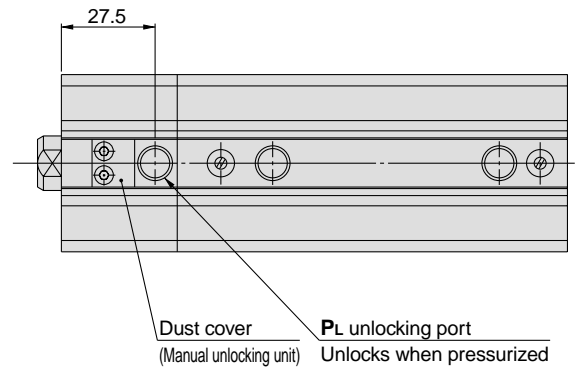
Standard type (through hole)/R□LQB40



Extension locking

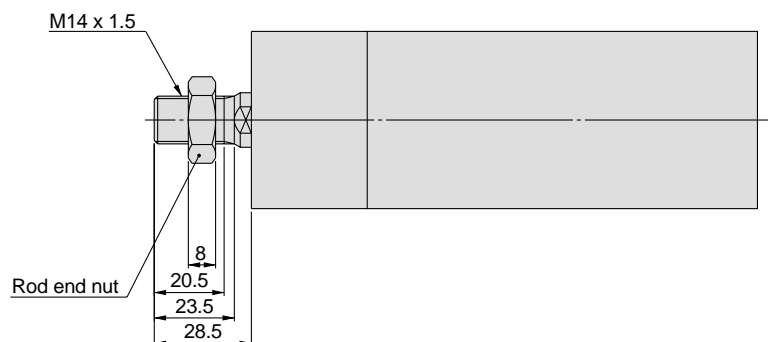


Retraction locking



| Port thread type | Pc | PL |
|------------------|-----|----------|
| Rc | 1/8 | 1/8 |
| NPT | | 1/8 |
| G | | M5 x 0.8 |

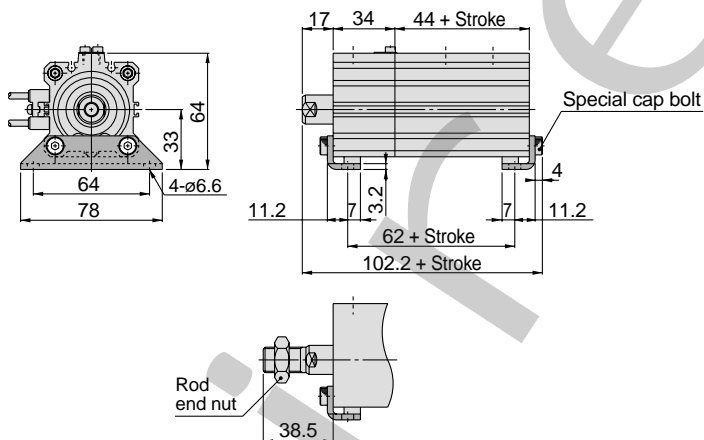
Rod end male threads



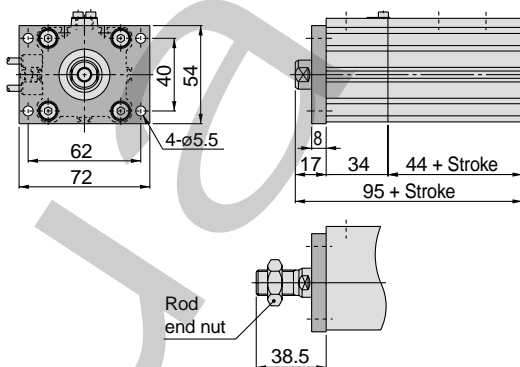
Compact Cylinder with Air Cushion and Lock **Series RLQ**

Dimensions/ø40 (Emergency Stop)

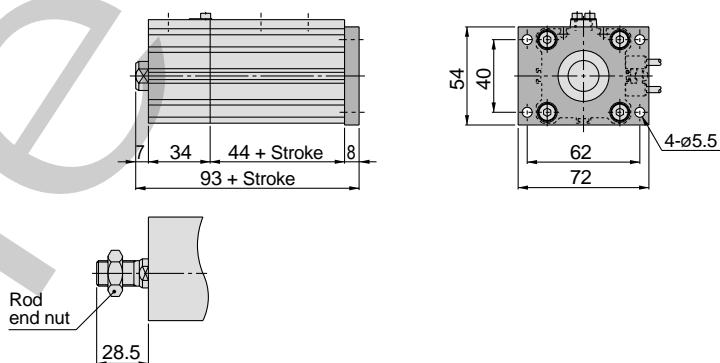
Foot/R□LQL40



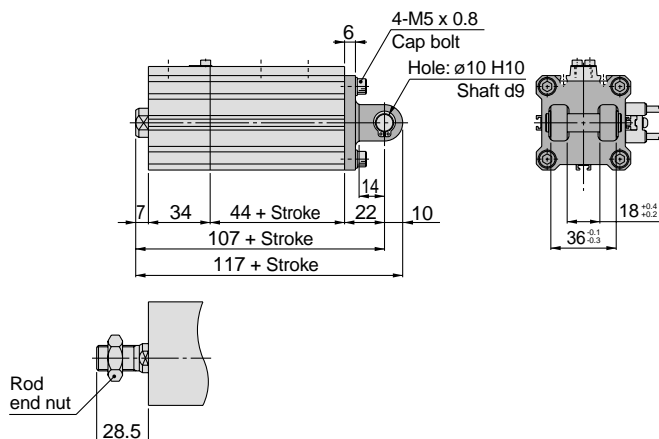
Front flange/R□LQF40



Rear flange/R□LQG40



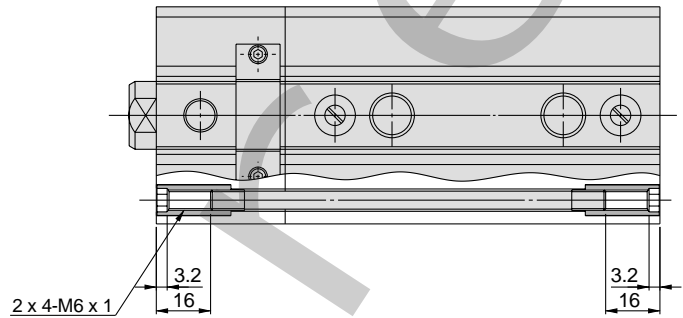
Double clevis/R□LQD40



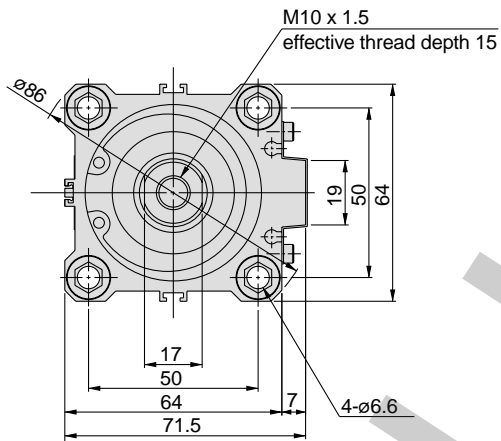
Series RLQ

Dimensions/ø50 (Emergency Stop)

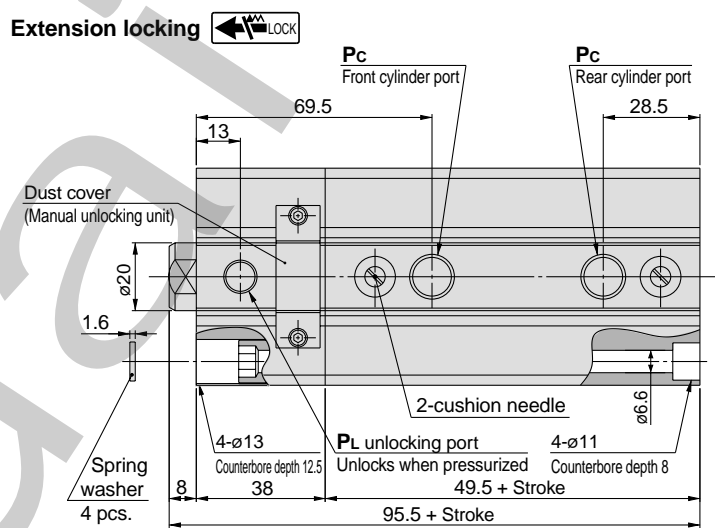
Both ends tapped/R□LQA50



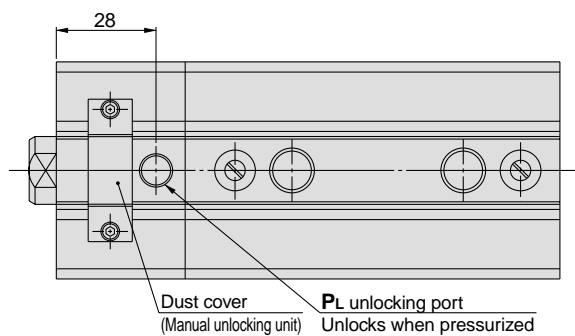
Standard (through)/R□LQB50



Extension locking

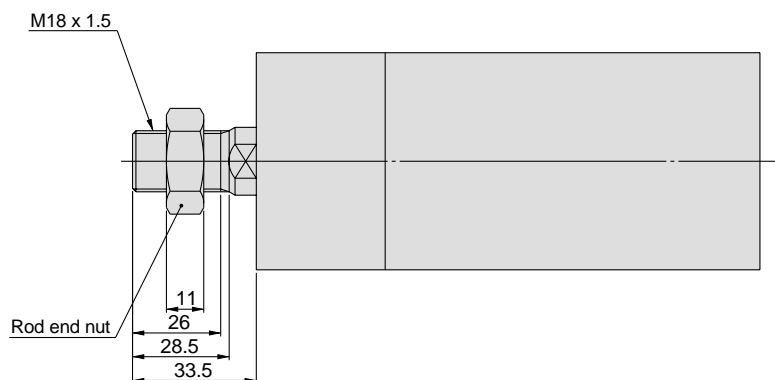


Retraction locking



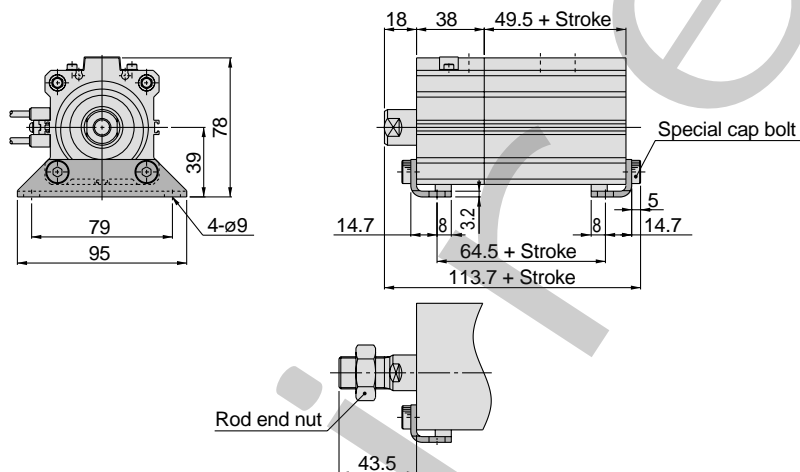
| Port thread type | Pc | PL |
|------------------|-----|----------|
| Rc | 1/4 | 1/8 |
| NPT | | |
| G | | M5 x 0.8 |

Rod end male threads

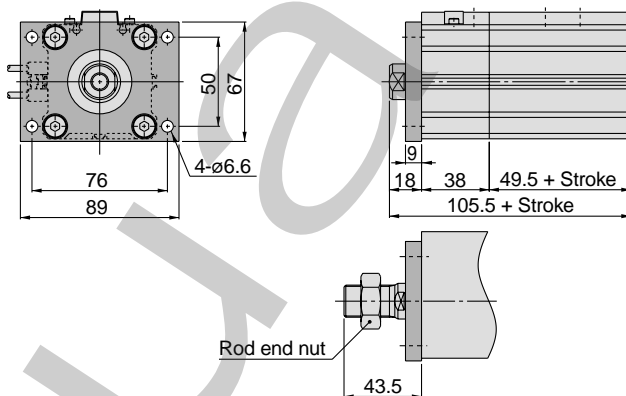


Dimensions/ø50 (Emergency Stop)

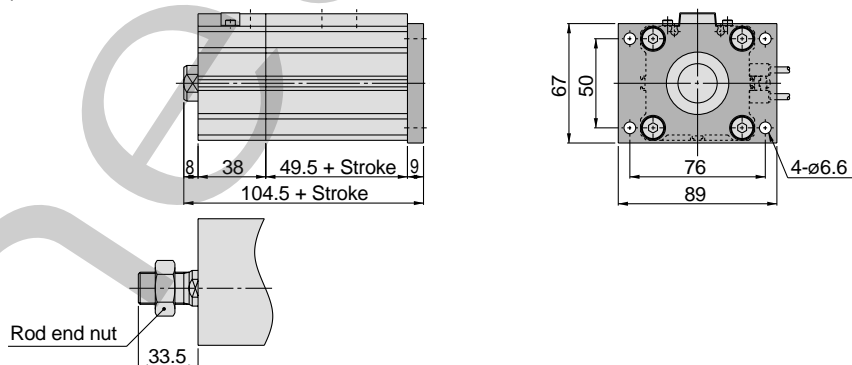
Foot type/R□LQL50



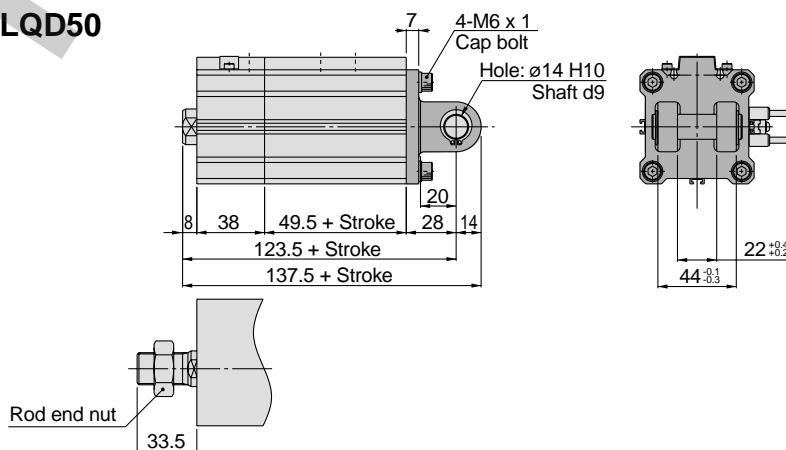
Front flange type/R□LQF50



Rear flange/R□LQG50



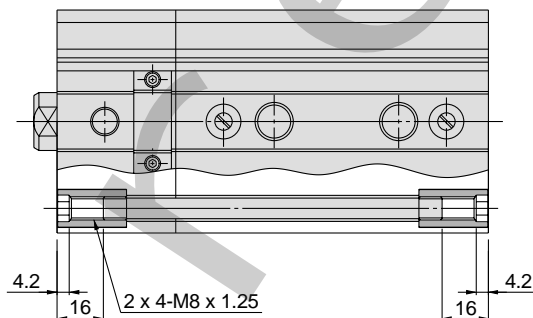
Double clevis/R□LQD50



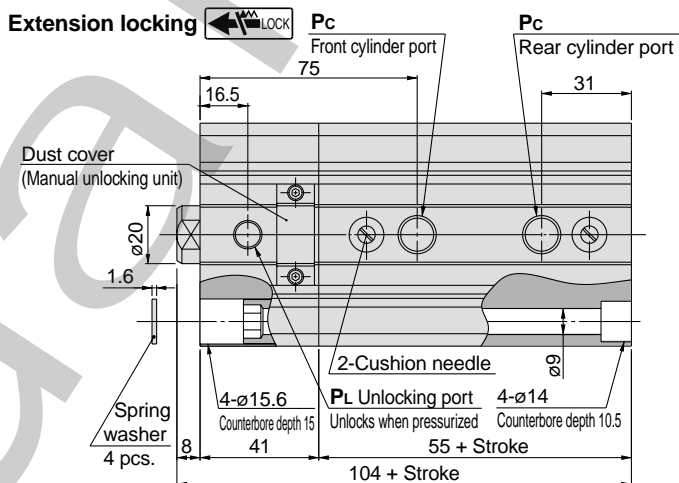
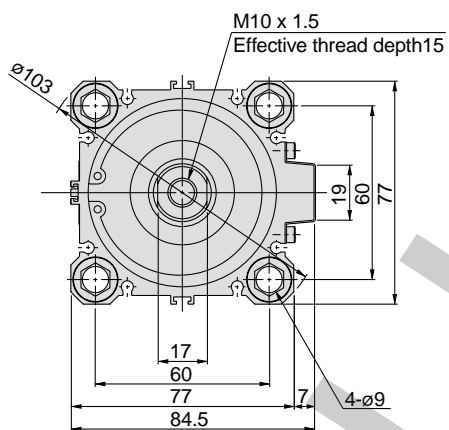
Series RLQ

Dimensions/ø63 (Emergency Stop)

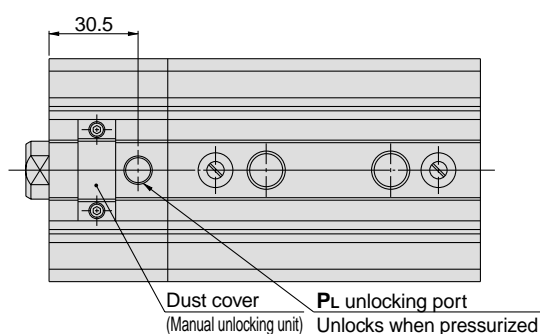
Both ends tapped/R□LQA63



Standard (through hole)/R□LQB63

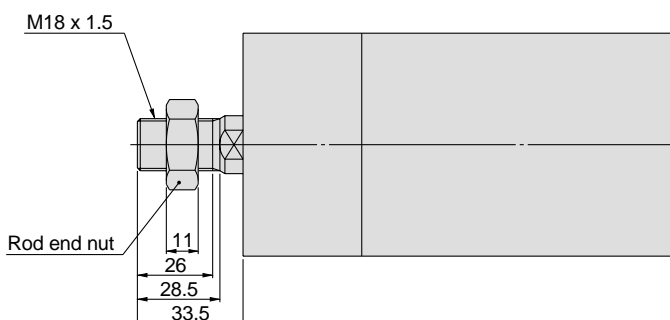


Retraction locking



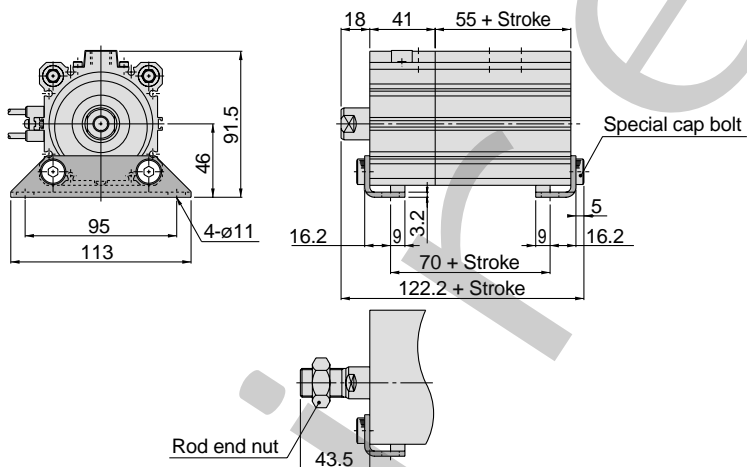
| Port thread type | Pc | PL |
|------------------|-----|----------|
| Rc | 1/4 | 1/8 |
| NPT | | |
| G | | M5 x 0.8 |

Rod end male threads

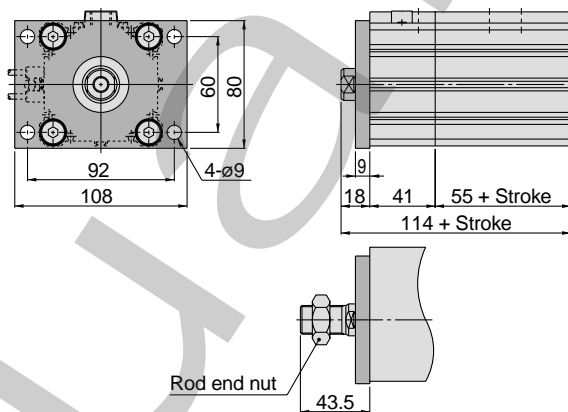


Dimensions/∅63 (Emergency Stop)

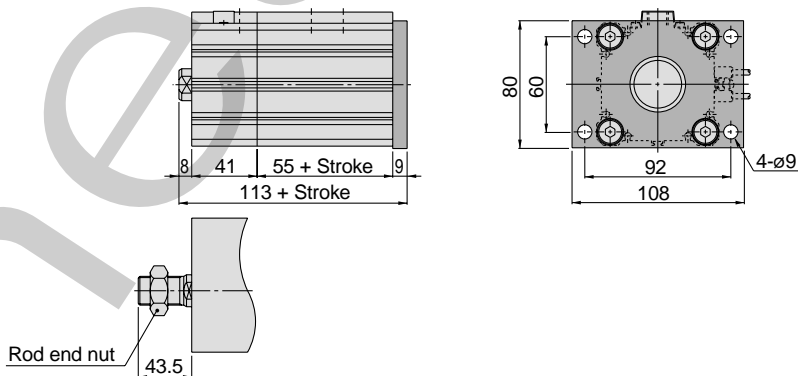
Foot type/R□LQL63



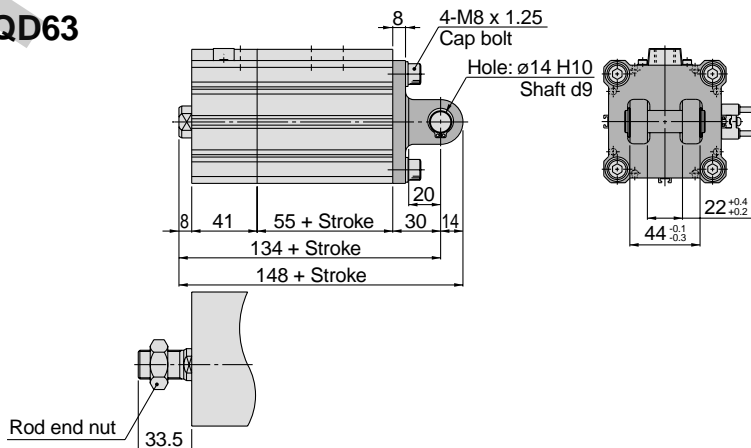
Front flange type/R□LQF63



Rear flange/R□LQG63



Double clevis/R□LQD63

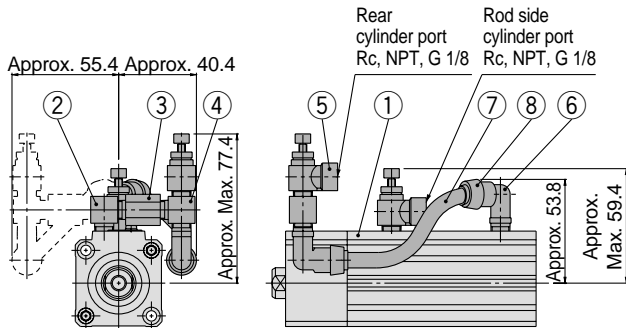


Series RLQ

Dimensions/Cylinder with By-Pass Piping

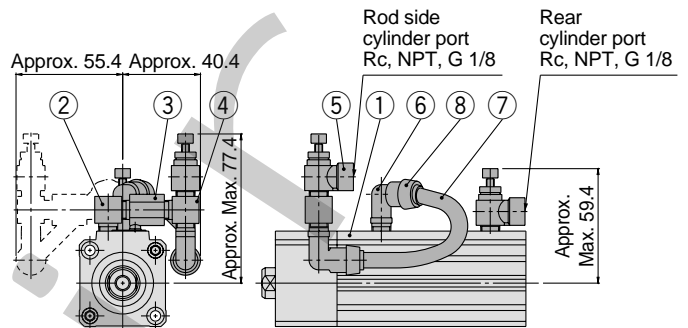
R□LQB32-F□

Extension locking, Right-hand piping
(The dotted lines illustrate the left-hand piping.)



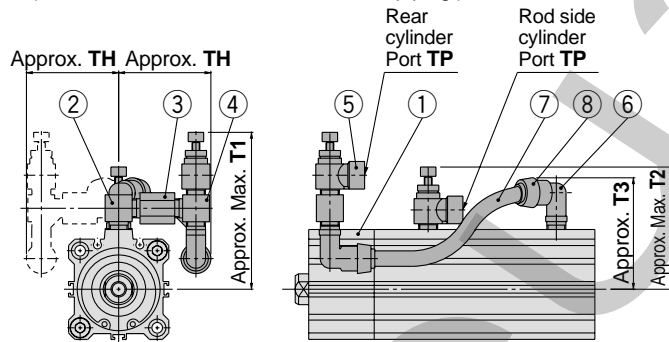
R□LQB32-B□

Retraction locking, Right-hand piping
(The dotted lines illustrate the left-hand piping.)



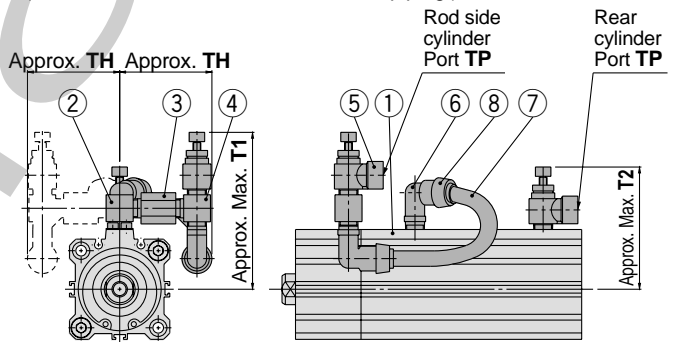
R□LQB40/50/63-F□

Extension locking, Right-hand piping
(The dotted lines illustrate the left-hand piping.)



R□LQB40/50/63-B□

Retraction locking, Right-hand piping
(The dotted lines illustrate the left-hand piping.)



| Description | T1 | T2 | T3 | TH | TP |
|-------------|------|------|------|------|----------------|
| RLQ40 | 81.4 | 63.4 | 57.8 | 47.9 | Rc, NPT, G 1/8 |
| RLQ50 | 93.3 | 73.8 | 67.8 | 57.3 | Rc, NPT, G 1/4 |
| RLQ63 | 99.8 | 80.3 | 74.3 | 57.3 | Rc, NPT, G 1/4 |

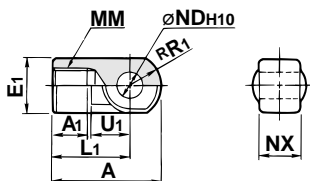
Cylinder with by-pass piping component parts

| No. | Description | Quantity | Part No. |
|-----|--|----------|--|
| 1 | Compact Cylinder with Air Cushion and Lock | 1 | |
| 2 | PT elbow | 1 | |
| 3 | Restrictor | 1 | |
| 4 | PT tee | 1 | |
| 5 | Metal speed controller | 2 | ø32, 40: AS2200-(N, F)01-S ø50, 63: AS2200-(N, F)02-S |
| 6 | Male elbow | 2 | ø32, 40: KRL06-01SW2 ø50, 63: KRL06-02SW2 |
| 7 | By-pass tubing | 1 | TRB0604W |
| 8 | Spatter cover | 2 | KR-06C |

Accessories

Single knuckle joint

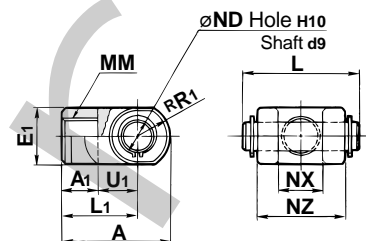
I-G04, I-G05



Material: Cast iron

Double knuckle joint

Y-G04, Y-G05



Material: Cast iron

| Part No. | Applicable cylinder bore size (mm) | A | A ₁ | E ₁ | L ₁ | MM | RR ₁ | U ₁ | ND | NX |
|----------|------------------------------------|----|----------------|----------------|----------------|-----------|-----------------|----------------|-----------------------------------|------------------------------------|
| I-G04 | 32, 40 | 42 | 14 | ∅22 | 30 | M14 x 1.5 | 12 | 14 | 10 ^{+0.058} ₀ | 18 ^{-0.3} _{-0.5} |
| I-G05 | 50, 63 | 56 | 18 | ∅28 | 40 | M18 x 1.5 | 16 | 20 | 14 ^{+0.070} ₀ | 22 ^{-0.3} _{-0.5} |

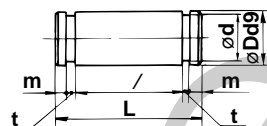
(mm)

| Part No. | Applicable cylinder bore size (mm) | A | A ₁ | E ₁ | L ₁ | MM | RR ₁ | U ₁ | ND | NX | NZ | L | Applicable pin Part No. |
|----------|------------------------------------|----|----------------|----------------|----------------|-----------|-----------------|----------------|-----------------------------------|------------------------------------|----|------|-------------------------|
| Y-G04 | 32, 40 | 42 | 16 | ∅22 | 30 | M14 x 1.5 | 12 | 14 | 10 ^{+0.058} ₀ | 18 ^{+0.5} _{+0.3} | 36 | 41.6 | IY-G04 |
| Y-G05 | 50, 63 | 56 | 20 | ∅28 | 40 | M18 x 1.5 | 16 | 20 | 14 ^{+0.070} ₀ | 22 ^{+0.5} _{+0.3} | 44 | 50.6 | IY-G05 |

(mm)

Knuckle pin and snap ring are included.

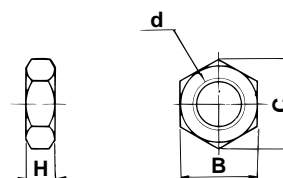
Knuckle Pin (Also used as double clevis pin)



Material: Carbon steel
(mm)

| Part No. | Applicable cylinder bore size (mm) | D | L | d | / | m | t | Applicable Snap ring |
|----------|------------------------------------|--|------|------|------|------|------|----------------------|
| IY-G04 | 32, 40 | 10 ^{-0.040} _{-0.075} | 41.6 | 9.6 | 36.2 | 1.55 | 1.15 | C type 10 for shaft |
| IY-G05 | 50, 63 | 14 ^{-0.050} _{-0.093} | 50.6 | 13.4 | 44.2 | 2.05 | 1.15 | C type 14 for shaft |

Rod End Nut



Material: Rolled steel
(mm)

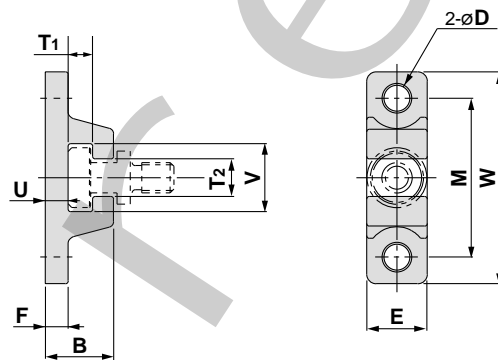
| Part No. | Applicable cylinder bore size (mm) | d | H | B | C |
|----------|------------------------------------|-----------|----|----|------|
| NT-04 | 32, 40 | M14 x 1.5 | 8 | 22 | 25.4 |
| NT-05 | 50, 63 | M18 x 1.5 | 11 | 27 | 31.2 |

Series RLQ

Simple Joint/ø32 to ø63



A type mounting bracket



Joint and mounting bracket (A type, B type) part no.



• **Applicable air cylinder bore**

| | |
|----|----------|
| 03 | ø32, ø40 |
| 05 | ø50, ø63 |

• **Mounting bracket**

| | |
|----|-------------------------|
| YA | A type mounting bracket |
| YB | B type mounting bracket |
| YU | Joint |

(mm)

| Part No. | Bore size (mm) | B | D | E | F | M | T1 | T2 |
|----------|----------------|----|-----|----|---|----|-----|----|
| YA-03 | 32, 40 | 18 | 6.8 | 16 | 6 | 42 | 6.5 | 10 |
| YA-05 | 50, 63 | 20 | 9 | 20 | 8 | 50 | 6.5 | 12 |

| Part No. | Bore size (mm) | U | V | W | Weight (g) |
|----------|----------------|---|----|----|------------|
| YA-03 | 32, 40 | 6 | 18 | 56 | 55 |
| YA-05 | 50, 63 | 8 | 22 | 67 | 100 |

| Bore size (mm) | Joint | Applicable mounting bracket | |
|----------------|-------|-----------------------------|-------------------------|
| | | A type mounting bracket | B type mounting bracket |
| 32, 40 | YU-03 | YA-03 | YB-03 |
| 50, 63 | YU-05 | YA-05 | YB-05 |

Allowable eccentricity (mm)

| Bore size | 32 | 40 | 50 | 63 |
|------------------------|----|----|-----|----|
| Eccentricity tolerance | | ±1 | | |
| Backlash | | | 0.5 | |

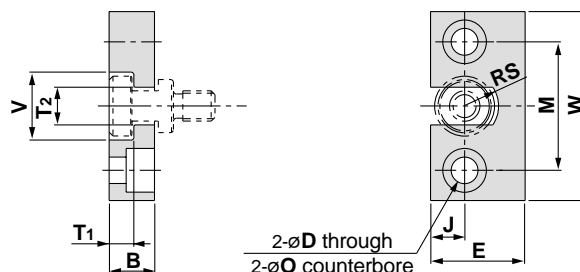
<How to order>

- Joints are not included with A type and B type mounting brackets. They must be ordered separately.

(Example)

- Cylinder size ø40 Part number
- A type mounting bracket part number YA-03
- Joint YU-03

B type mounting bracket

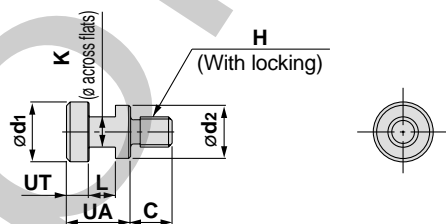


(mm)

| Part No. | Bore size (mm) | B | D | E | J | M | O |
|----------|----------------|----|---|----|----|----|----------------|
| YB-03 | 32, 40 | 12 | 7 | 25 | 9 | 34 | 11.5 depth 7.5 |
| YB-05 | 50, 63 | 12 | 9 | 32 | 11 | 42 | 14.5 depth 8.5 |

| Part No. | Bore size (mm) | RS | T1 | T2 | V | W | Weight (g) |
|----------|----------------|----|-----|----|----|----|------------|
| YB-03 | 32, 40 | 9 | 6.5 | 10 | 18 | 50 | 80 |
| YB-05 | 50, 63 | 11 | 6.5 | 12 | 22 | 60 | 120 |

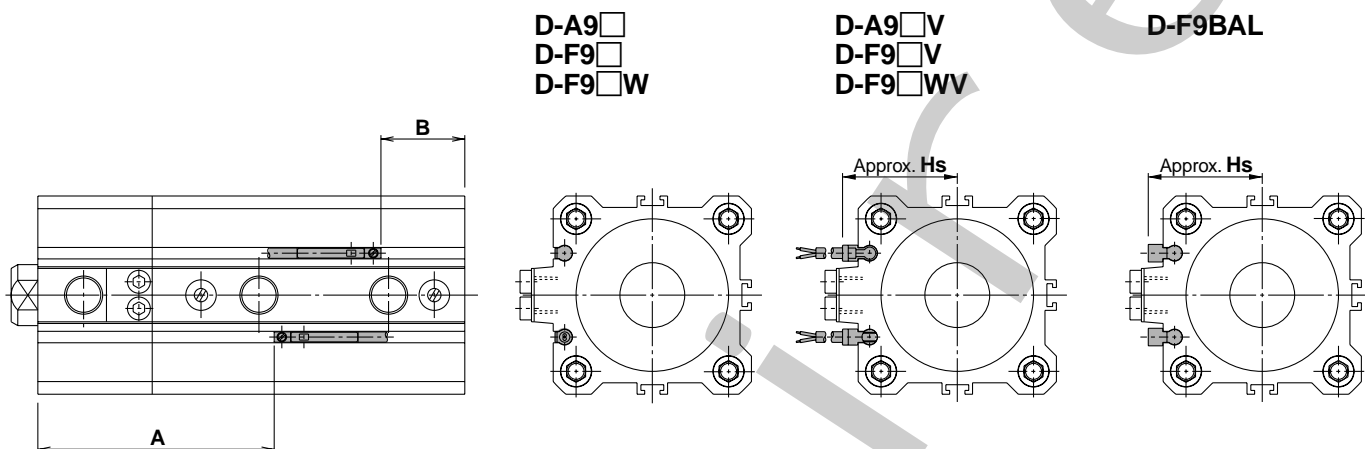
Joint



(mm)

| Part No. | Applicable bore size (mm) | UA | C | d1 | d2 | H | k | L | UT | Weight (g) |
|----------|---------------------------|----|----|------|----|-----------|----|---|----|------------|
| YU-03 | 32, 40 | 17 | 11 | 15.8 | 14 | M8 x 1.25 | 8 | 7 | 6 | 25 |
| YU-05 | 50, 63 | 17 | 13 | 19.8 | 18 | M10 x 1.5 | 10 | 7 | 6 | 40 |

Auto Switches/Proper Mounting Positions and Height for Stroke End Detection



Proper auto switch mounting position (mm)

| Bore size (mm) | D-A9□ D-A9□V | | D-F9□ D-F9□V D-F9□W D-F9□WV | | D-F9BAL | |
|----------------|-----------------|------|--------------------------------------|------|---------|------|
| | A | B | A | B | A | B |
| 32 | 44.5 | 4.5 | 48.5 | 8.5 | 47.5 | 7.5 |
| 40 | 51 | 7 | 55 | 11 | 54 | 10 |
| 50 | 55 | 12.5 | 59 | 16.5 | 58 | 15.5 |
| 63 | 60.5 | 15.5 | 64.5 | 19.5 | 63.5 | 18.5 |

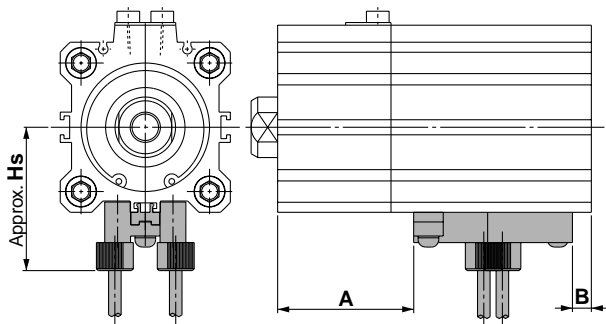
Auto switch mounting height (mm)

| Bore size (mm) | D-A9□V | D-F9□V D-F9□WV | D-F9BAL |
|----------------|--------|-------------------|---------|
| | HS | HS | HS |
| 32 | 27 | 29 | 26.5 |
| 40 | 30.5 | 32.5 | 30 |
| 50 | 36.5 | 38.5 | 36 |
| 63 | 40 | 42 | 39.5 |

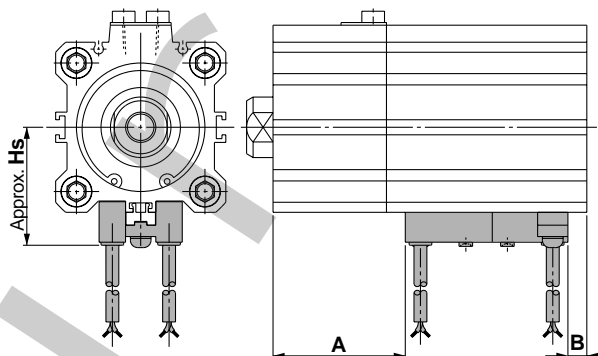
Series RLQ

Auto Switches/Proper Mounting Positions and Height for Stroke End Detection

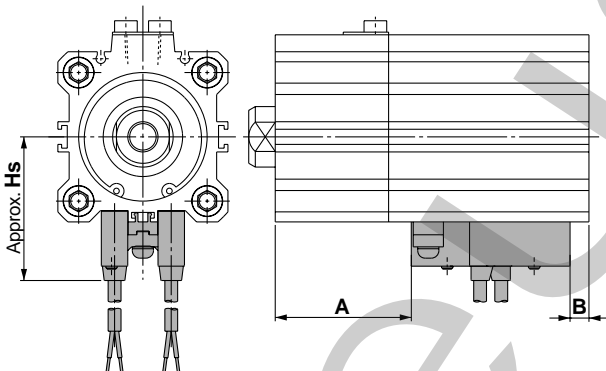
D-A73C
D-A80C
D-J79C



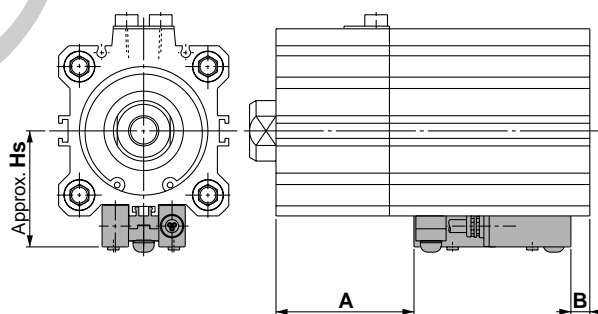
D-A7□
D-A80



D-A79W
D-F7□WV
D-F7□V
D-F7□BAVL



D-A7□H
D-A80H
D-F7□
D-J79
D-F7□W



Proper auto switch mounting position

(mm)

| Bore size (mm) | D-A7□ D-A80 | | D-A7□H, A80H, A73C, A80C D-F7□, F7□V, F79F, J79 D-J79C, F7□W, F7□WV D-J79W, F7BAL, F7BAVL | | D-A79W | | D-F7LF | | D-F7NTL | |
|----------------|----------------|------|--|-----|--------|-----|--------|------|---------|------|
| | A | B | A | B | A | B | A | B | A | B |
| 32 | 45.5 | 5.5 | 46 | 6 | 43 | 3 | 50 | 10 | 51 | 11 |
| 40 | 52 | 8 | 52.5 | 8.5 | 49.5 | 5.5 | 56.5 | 12.5 | 57.5 | 13.5 |
| 50 | 56 | 13.5 | 56.5 | 14 | 53.5 | 11 | 60.5 | 18 | 61.5 | 19 |
| 63 | 61.5 | 16.5 | 62 | 17 | 59 | 14 | 66 | 21 | 67 | 22 |

Auto switch mounting height

(mm)

| Bore size (mm) | D-A7□ D-A80 | D-A7□H, A80H D-F7□, J79, F7□W D-J79W, F7BAL D-F7□F, F7NTL | D-A73C D-A80C | D-F7□V D-F7□WV D-F7BAVL | D-J79C | D-A79W |
|----------------|----------------|--|------------------|-------------------------------|--------|--------|
| | HS | HS | HS | HS | HS | HS |
| 32 | 31.5 | 32.5 | 38.5 | 35 | 38 | 34 |
| 40 | 35 | 36 | 42 | 38.5 | 41.5 | 37.5 |
| 50 | 41 | 42 | 48 | 44.5 | 47.5 | 43.5 |
| 63 | 47.5 | 48.5 | 54.5 | 51 | 54 | 50 |

Operating range

| Auto switch type | Bore size (mm) | | | |
|---|----------------|-----|-----|------|
| | 32 | 40 | 50 | 63 |
| D-A7□, A7□H D-A73C D-A80, A80H D-A80C | 12 | 11 | 10 | 12 |
| D-A79W | 13 | 14 | 14 | 16 |
| D-A9□, A9□V | 9.5 | 9.5 | 9.5 | 11.5 |
| D-F7□, F7□V D-J79, J79C D-F7□W, F7□WV D-J79W D-F7BAL, F7BAVL D-F7NTL, F79F | 6 | 6 | 6 | 6.5 |
| D-F7LF | 7.5 | 7.5 | 7.5 | 8 |
| D-F9□, F9□V D-F9□W, F9□WV D-F9BAL | 5.5 | 5.5 | 5.5 | 6.5 |

* The operating ranges are provided as guidelines including hystereses and are not guaranteed values (assuming approximately ±30% variations). They may vary significantly with ambient environments.

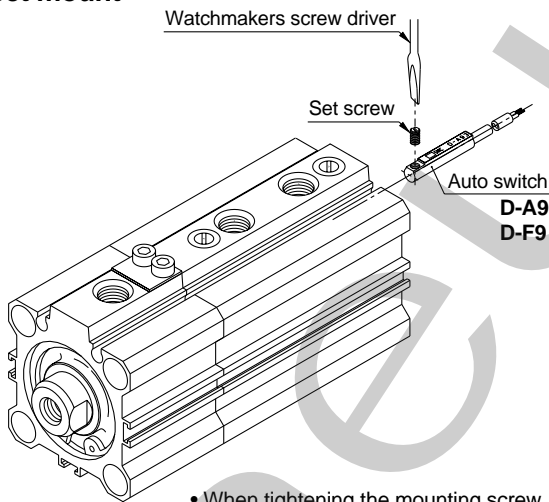
Minimum Auto Switch Mounting Stroke

| Number of auto switch | Bore size (mm) | | | |
|-----------------------|----------------------------|--|--------------------------------|--|
| | D-F7□V D-J79C D-F9□V | D-A7□ D-A80 D-A73C D-A80C D-A9□V | D-F7□WV D-F9□WV D-F7BAVL | D-A7□H D-A80H D-F7□ D-J79 D-F9□W |
| 1 pc. | 20 | 20 | 20 | 20 |
| 2 pcs. | 20 | 20 | 20 | 20 |

| Number of auto switch | Bore size (mm) | | | |
|-----------------------|----------------|--|--------|----------------|
| | D-A79W | D-F7□W D-J79W D-F7BAL D-F79F D-F9BAL | D-F7LF | D-A9□ D-F9□ |
| 1 pc. | 20 | 20 | 25 | 20 |
| 2 pcs. | 20 | 20 | 25 | 20 |

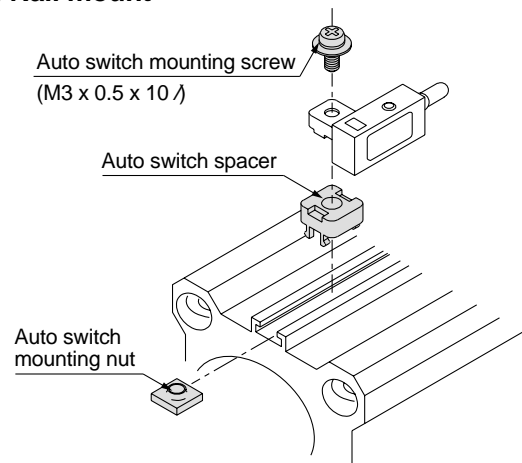
Auto Switch Mounting

Direct mount



- When tightening the mounting screw, use a watchmakers screw driver with a handle about 5 to 6 mm in diameter. Tighten with a torque of 0.10 to 0.20 N·m.

Rail mount



- Use a tightening torque of 0.5 to 0.7N·m for auto switch mounting screws.
- * Auto switch mounting brackets are packed together for cylinders with built-in magnets.

Besides the models listed in "How to Order" the following auto switches can be mounted. Refer to pages 5.3-1 through 5.3-75 of Best Pneumatics Vol. 2 for detailed specifications,

| Auto switch type | Part No. | Electrical entry | Features | Applicable bore size |
|------------------|----------|---------------------------|-------------------------|----------------------|
| Reed switches | D-A80 | Grommet (perpendicular) | Without indicator light | ø32 to ø63 |
| | D-A80H | Grommet (in-line) | | |
| | D-A80C | Connector (perpendicular) | | |
| | D-A90 | Grommet (in-line) | | |
| | D-A90V | Grommet (perpendicular) | | |
| Solid switches | D-F7NTL | Grommet (in-line) | With timer | |

* D-F7NTL is also available with pre-wired connector.

* Normally closed type (NC = b contact) solid state auto switches are also available (D-F9G, F9H).