

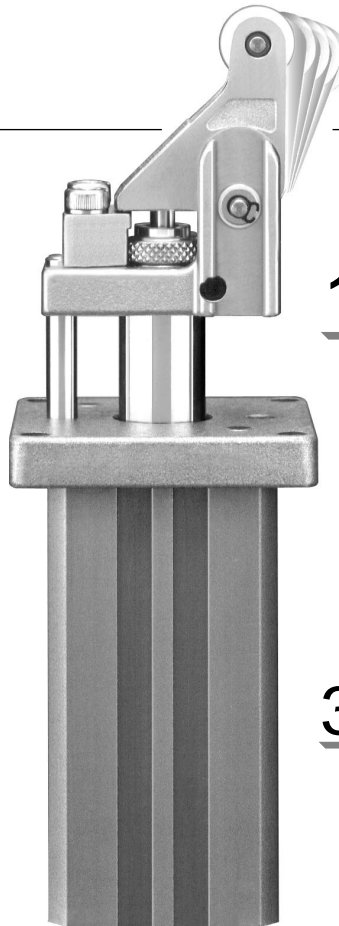
# Heavy Duty Stopper Cylinder

## Series RSH

ø20, ø32, ø50, ø63, ø80

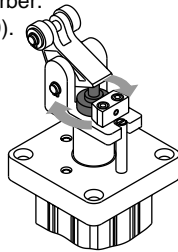
### Capable of stopping pallets softly

### Stopper cylinder with built-in shock absorber



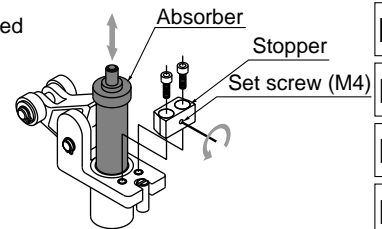
#### 1 Absorption energy can be adjusted depending on load speeds.

Transported object can be stopped softly due to built-in adjustable style shock absorber. (ø50 to ø80).



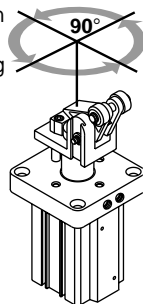
#### 2 Easy to maintain shock absorber.

The shock absorber can easily be removed by loosening set screws.

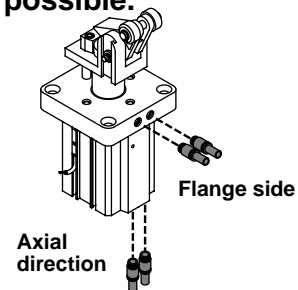


#### 3 Rotatable stopper lever

Stopper lever can be rotated in 360° (4 positions every 90°) depending on desired stopping direction. (ø20 rotatable in 180°, 2 positions only.)



#### 4 Piping from 2 directions is possible.



MK/MK2

RSQ/RSG

RSH

CE1

CE2

ML2B

ML1C

REA

REC

RHC

MTS

CC

#### Option

**With locking mechanism**

Even in the case of a light pallet, the locking mechanism prevents the pallet from rebounding due to spring force of the shock absorber.

**With cancel cap**

The cancel cap holds the lever horizontally allowing a pallet to pass.

**With lever detection switch**

When the lever is in an upright position (in absorbing energy), the switch will turn ON or OFF to indicate that the pallet has reached the stopping position. (Refer to p.4.3-12 for details.)

#### ● Oversized piston rod

| Bore size(mm) | Rod dia(mm) |
|---------------|-------------|
| ø20           | ø14         |
| ø32           | ø20         |
| ø50           | ø32         |
| ø63           | ø40         |
| ø80           | ø50         |

#### ● 3 actuating methods

1. Single acting
2. Double acting
3. Double acting with spring

● **Auto switch attachment**  
Auto switches can be selected that do not protrude from cylinder body.

● **2 roller materials available to suit application requirements.** (Resin or rolled steel)

#### ■ Variation

| Series | Mounting | Action        | Rod end configuration | Standard variation | Option  |            |                  | Bore size (mm) | Standard stroke (mm) |    |    |    |   |   |
|--------|----------|---------------|-----------------------|--------------------|---------|------------|------------------|----------------|----------------------|----|----|----|---|---|
|        |          |               |                       | Built-in magnet    | Locking | Cancel cap | Proximity switch |                | 15                   | 20 | 30 | 40 |   |   |
| RSH    | Flange   | Double acting | Lever style           | Adjustable         | ●       | ●          | ●                | ●              | ●                    | ●  | ●  | ●  | ● | ● |
|        |          |               |                       |                    | ●       | ●          | ●                | ●              | ●                    | ●  | ●  | ●  | ● |   |
|        |          |               |                       |                    | ●       | ●          | ●                | ●              | ●                    | ●  | ●  | ●  | ● | ● |
|        |          |               |                       |                    | ●       | ●          | ●                | ●              | ●                    | ●  | ●  | ●  | ● | ● |
|        |          |               |                       |                    | ●       | ●          | ●                | ●              | ●                    | ●  | ●  | ●  | ● | ● |

# Heavy Duty Stopper Cylinder

## Series *RSH*

ø20, ø32, ø50, ø63, ø80

### How to Order

Heavy Duty Stopper Cylinder

RSH 20-15 D L [ ] Z73 [ ]

**Bore size**

|    |      |
|----|------|
| 20 | 20mm |
| 32 | 32mm |
| 50 | 50mm |
| 63 | 63mm |
| 80 | 80mm |

**Stroke**

|       |      |
|-------|------|
| 20    | 15mm |
| 32    | 20mm |
| 50/63 | 30mm |
| 80    | 40mm |

**Action**

|   |                             |
|---|-----------------------------|
| D | Double acting               |
| B | Double acting with spring   |
| T | Single acting/Spring extend |

**Roller material**

|   |              |
|---|--------------|
| L | Resin        |
| M | Rolled steel |

**Number of auto switches**

|   |   |
|---|---|
| — | 2 |
| S | 1 |

**Auto switch**

|   |  |
|---|--|
| — | Without auto switch (Cylinder built-in magnet) |
|---|--|

\* Refer to the table below for auto switch model nos.

**Option (1)**

|                  |                             |
|------------------|-----------------------------|
| —                | Without option              |
| D                | With locking mechanism      |
| C                | With cancel cap             |
| S <sup>(2)</sup> | With lever detection switch |

(1) The options can be combined, provided that the priority order is indicated as D, C, S.

**(2) Lever detection switch**  
(Refer to p.4.3-12 for details)

| Model      | Applicable bore size (mm) |
|------------|---------------------------|
| E2E-X1C1   | ø20, ø32                  |
| E2E-X2D1-N | ø50, ø63, ø80             |

### Applicable Auto Switches/Refer to the p.5.3-2 for further information on auto switch.

| Model              | Special function | Electrical entry | Indicator light | Wiring (Output) | Load voltage |     | Auto switch model |         | Lead wire length(m)* |       |       | Applicable load |           |           |
|--------------------|------------------|------------------|-----------------|-----------------|--------------|-----|-------------------|---------|----------------------|-------|-------|-----------------|-----------|-----------|
|                    |                  |                  |                 |                 | DC           | AC  | Lead wire entry   |         | 0.5 (—)              | 3 (L) | 5 (Z) | IC              | Relay PLC |           |
|                    |                  |                  |                 |                 |              |     | Perpendicular     | In-line |                      |       |       |                 |           |           |
| Reed switch        | —                | Grommet          | Yes             | 3 wire          | —            | 5V  | —                 | —       | Z76                  | ●     | ●     | —               | IC        | —         |
|                    |                  |                  |                 | 2 wire          | 24V          | 12V | 100V              | —       | Z73                  | ●     | ●     | ●               | —         | Relay PLC |
|                    |                  |                  |                 |                 |              | 5V  | ≤100V             | —       | Z80                  | ●     | ●     | —               | IC        | —         |
| Solid state switch | —                | Grommet          | Yes             | 3 wire (NPN)    | 24V          | 5V  | —                 | Y69A    | Y59A                 | ●     | ●     | ○               | IC        | Relay PLC |
|                    |                  |                  |                 | 3 wire (PNP)    |              | 5V  |                   | Y7PV    | Y7P                  | ●     | ●     | ○               | —         |           |
|                    |                  |                  |                 | 2 wire          |              | 12V |                   | Y69B    | Y59B                 | ●     | ●     | ○               | —         |           |
|                    |                  |                  |                 | 3 wire (NPN)    |              | 5V  |                   | Y7NWV   | Y7NW                 | ●     | ●     | ○               | IC        |           |
|                    |                  |                  |                 | 3 wire (PNP)    |              |     |                   | 12V     | Y7PWV                | Y7PW  | ●     | ●               | ○         |           |
|                    |                  |                  |                 | 2 wire          |              | 12V |                   | Y7BWV   | Y7BW                 | ●     | ●     | ○               | —         |           |
|                    |                  |                  |                 |                 |              | —   |                   | Y7BAL   | —                    | —     | ●     | ○               | —         |           |

\* Lead wire length symbol 0.5m ..... (—) (Example) Y69B  
 3m ..... L Y69BL  
 5m ..... Z Y69BZ

● Available  
 — Not available

\*\*Solid state auto switches marked with a "○" are manufactured upon receipt of order.

\*\*\*D-A7□, D-A8□, D-F7□ and D-J7□ are available as option.

# Heavy Duty Stopper Cylinder *Series RSH*

## Models

| Construction          | Mounting | Action                                     | Bore size (mm)              | Rod end configuration              | Applicable auto switch |                      |
|-----------------------|----------|--|-----------------------------|------------------------------------|------------------------|----------------------|
|                       |          |  |                             |                                    | Reed switch            | Solid state switch   |
| Fixed mounting height | Flange   | Double with spring<br>Single/spring extend | ø20, ø32<br>ø50, ø63<br>ø80 | Lever with built-in shock absorber | D-Z7<br>D-Z8           | D-Y5<br>D-Y6<br>D-Y7 |



## Specifications

| Bore size (mm)                | ø20   | ø32       | ø50       | ø63       | ø80       |
|-------------------------------|---|-----------|-----------|-----------|-----------|
| Action                        | Double acting, Single acting (spring extend), Double acting with spring |           |           |           |           |
| Rod end configuration         | Lever with built-in shock absorber                                      |           |           |           |           |
| Fluid                         | Air   |           |           |           |           |
| Proof pressure                | 1.5MPa  |           |           |           |           |
| Max. operating pressure       | 1.0MPa  |           |           |           |           |
| Ambient and fluid temperature | -10 to +60°C (No freezing)  |           |           |           |           |
| Lubrication                   | Not required  |           |           |           |           |
| Cushion                       | Rubber bumper   |           |           |           |           |
| Stroke length tolerance       | +1.4<br>0   |           |           |           |           |
| Mounting                      | Flange  |           |           |           |           |
| Port size                     | M5 X 0.8  | Rc(PT)1/8 | Rc(PT)1/8 | Rc(PT)1/4 | Rc(PT)1/4 |
| Auto switch                   | Attachable  |           |           |           |           |

## Standard Stroke (mm)

| Bore size (mm) | Standard stroke |
|----------------|-----------------|
| ø20            | 15              |
| ø32            | 20              |
| ø50            | 30              |
| ø63            | 30              |
| ø80            | 40              |

## Weight (kg)

| Action                    | Rod end configuration              | Bore size (mm) | Weight |
|---------------------------|------------------------------------|----------------|--------|
| Double acting             | Lever with built-in shock absorber | ø20            | 0.41   |
|                           |                                    | ø32            | 0.75   |
| Single acting             |                                    | ø50            | 2.03   |
| Double acting with spring |                                    | ø63            | 3.56   |
|                           |                                    | ø80            | 6.33   |

## Applicable Auto Switch Model

| Auto Switch        | Model             | Electrical entry/Function                   | Page   |
|--------------------|-------------------|---|--------|
| Reed switch        | <b>D-Z7□/Z80</b>  | Grommet (In-line)                           | 5.3-23 |
|                    | <b>D-Y59□/Y7P</b> | Grommet (In-line)                           | 5.3-40 |
| Solid state switch | <b>D-Y69□/Y7P</b> | Grommet (Perpendicular)                     | 5.3-40 |
|                    | <b>D-Y7□W</b>     | Grommet (2 color, In-line)                  | 5.3-48 |
|                    | <b>D-Y7□WV</b>    | Grommet (2 color, Perpendicular)            | 5.3-48 |
|                    | <b>D-F7BAL</b>    | Grommet (2 color, Water resistant, In-line) | 5.3-57 |

MK/MK2

RSQ/RSG

RSH

CE1

CE2

ML2B

ML1C

REA

REC

RHC

MTS

CC

# Series RSH

## Operation Range

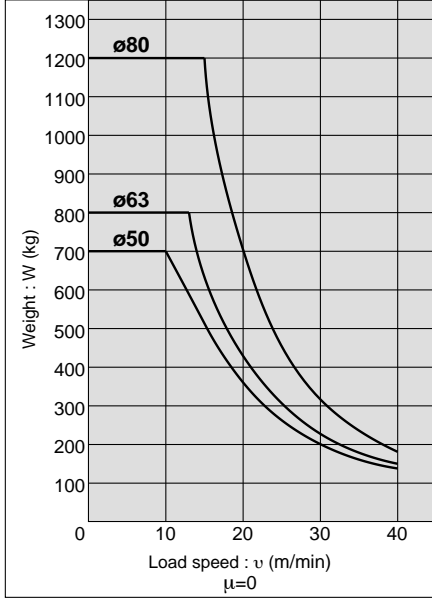
(Example) Load weight of 300kg, load speed of 20m/min, friction coefficient of  $\mu = 0.1$

(How to read graph)

Find the intersection of the vertical axis representing the weight of 300kg and the horizontal axis representing the speed of 20m/min. in the graph shown below and select the bore size  $\phi 63$  positioned within the operating range of the cylinder.

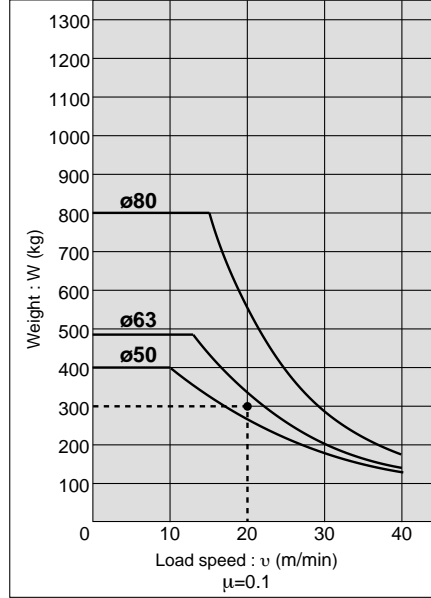
**Graph①**

Bore size  $\phi 50, \phi 63, \phi 80 / \mu = 0$



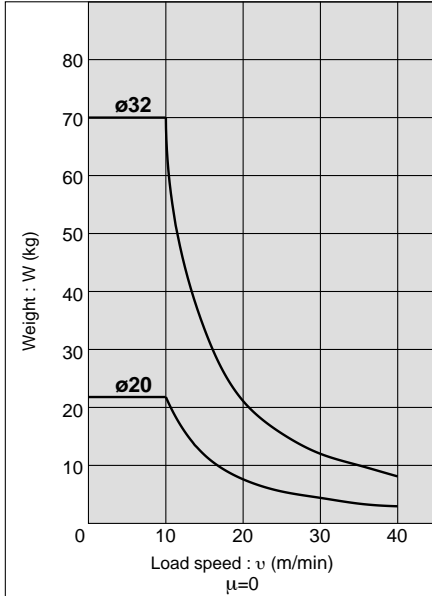
**Graph②**

Bore size  $\phi 50, \phi 63, \phi 80 / \mu = 0.1$



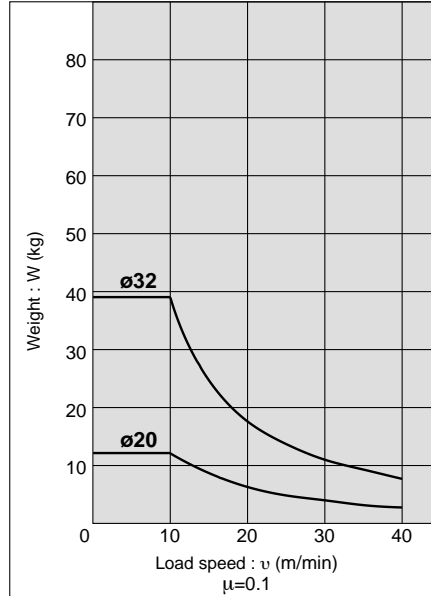
**Graph③**

Bore size  $\phi 20, \phi 32 / \mu = 0$



**Graph④**

Bore size  $\phi 20, \phi 32 / \mu = 0.1$

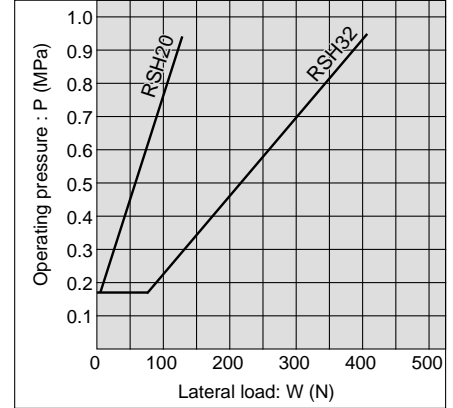


## Lateral Load and Operating Pressure

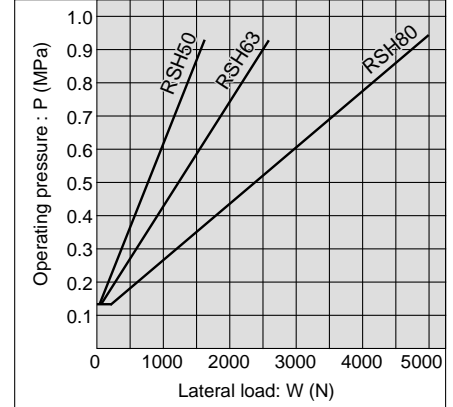
Greater lateral loads need higher cylinder operating pressures.

Set the operation pressure by using the graph as a guideline.

**RSH20, 32**



**RSH50, 63, 80**



## Operation Guide

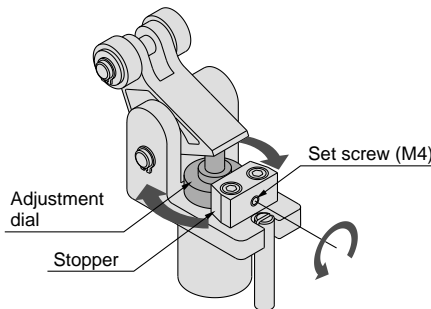
### ① Adjustment of shock absorber capacity (ø50 to ø80)

When a transported object is to stop softly loosen the set screw (M4) on the stopper section, turn the adjustment dial to set the energy absorption value for the transported object, and select a suitable absorbing position (drag). After adjustment, fasten the set screw tightly.

#### Note 1) during adjustment

Drag on shock absorber should be set at max. value. When energy of the transported object is greater than the drag of the absorber. Excessive load on the lever section may cause malfunction.

**Note 2)** On the ø20 and ø32 type, the drag of the shock absorber cannot be changed, but the stroke of the shock absorber is possible to change by adjusting height of the adjustment dail.

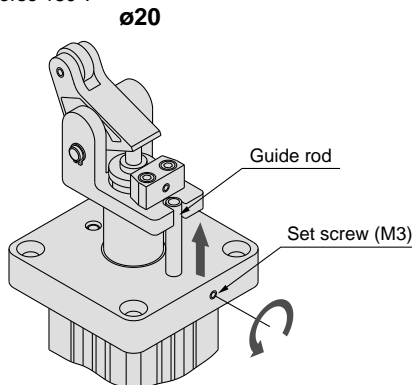


### ② Change of stopping direction and piping position

Stopping direction and piping position can be changed in 90° increments. (ø20 : 180°)

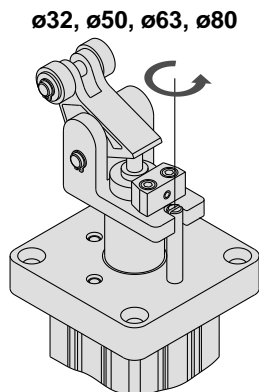
#### ●ø20

Loosen the set screw (M3) located on the side of rod cover and pull out guide rod out of cover. Rotation of lever section is free and possible to reverse 180°.



#### ●ø32 to ø80

Loosen guide rod (end notch) with screwdriver (-). Rotation of lever section is free and possible to change in 90° increments.

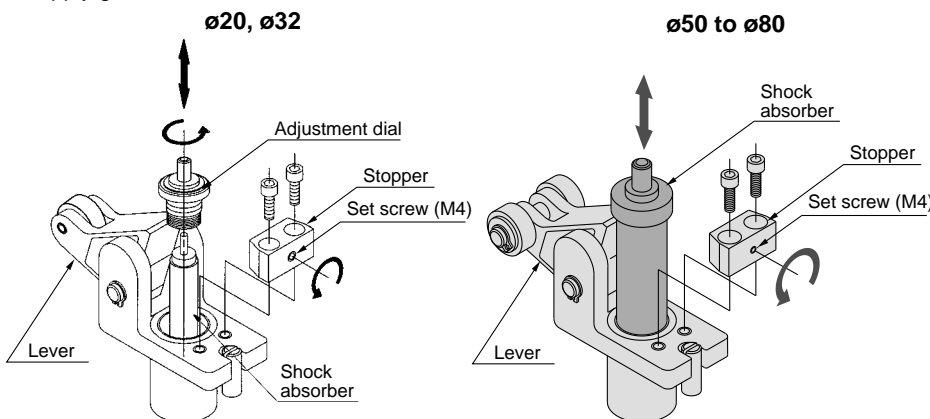


### ③ Replacing the shock absorber during maintenance

Loosen the hexagon socket bolts in the stopper and the set screw (M4) that is used for securing the shock absorber, and remove the stopper from the lever holder. Tilt the lever 90° and pull the shock absorber out. (On the ø20 or ø32 type, after removing the stopper, loosen the adjustment dail; then, pull the shock absorber out.)

\* Precautions during assembly

After replacing the shock absorber, properly tighten the bolts and the set screw; then, apply grease on the cross section of the rod of the shock absorber.



## ⚠️ Precautions

Be sure to read before handling. Refer to p.0-39 to 0-46 for Safety Instructions and common precautions on the products mentioned in this catalog.

### Selection

#### ⚠️ Caution

❶ Do not allow a pallet to collide with the cylinder when the lever is upright.

With a shock absorber integrated lever style, if the subsequent pallet collides with the cylinder when the lever is upright (after the shock absorber has absorbed the energy), all of the pallet's energy will be applied to the cylinder body. Therefore, do not allow the pallet to collide with the cylinder.

❷ Do not scratch or gouge the sliding portion of the piston.

The piston rod is not hardened. Do not operate the cylinder if there is the risk of scratching or gouging the piston rod, such as by contact with a sharp section on a pallet, as this could cause malfunction.

❸ Using a stopper cylinder to act as an intermediate stop for a load that is connected directly to a cylinder, etc.:

The operating range given in the catalog is applicable only for stopping the pallets on a conveyor. Contact SMC if a stopper cylinder is to be used for stopping a load that is connected directly to a cylinder, as this will cause the cylinder's thrust to act as a horizontal load.

### Mounting

#### ⚠️ Caution

❶ Do not apply rotational torque to the cylinder rod.

Install so that the cylinder's contact surface will be parallel to the pallet's contact surface to prevent rotational torque from being applied on the cylinder rod.

### Operation

#### ⚠️ Caution

❶ In the case of the model with locking mechanism, do not apply an external force from the opposite side when the lever is locked.

During the adjustment of a conveyor, move the pallets with the cylinder lowered.

❷ Do not apply oil on the sliding portion of the piston rod.

This could cause a malfunction such as improper retraction of the cylinder.

❸ Do not get your hands caught during cylinder operation.

During cylinder operation, the lever holder moves vertically. Therefore, be careful to avoid getting your hands or fingers caught between the rod cover and the lever holder.

MK/MK2

RSQ/RSG

**RSH**

CE1

CE2

ML2B

ML1C

REA

REC

RHC

MTS

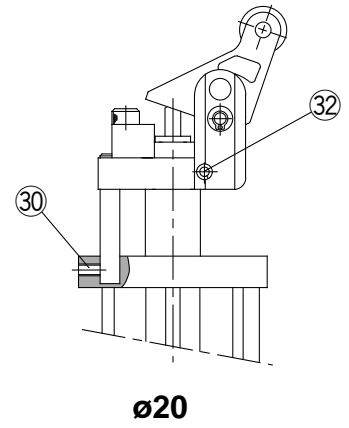
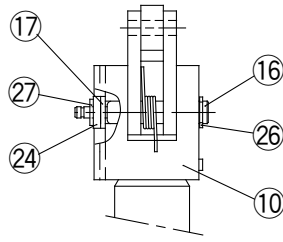
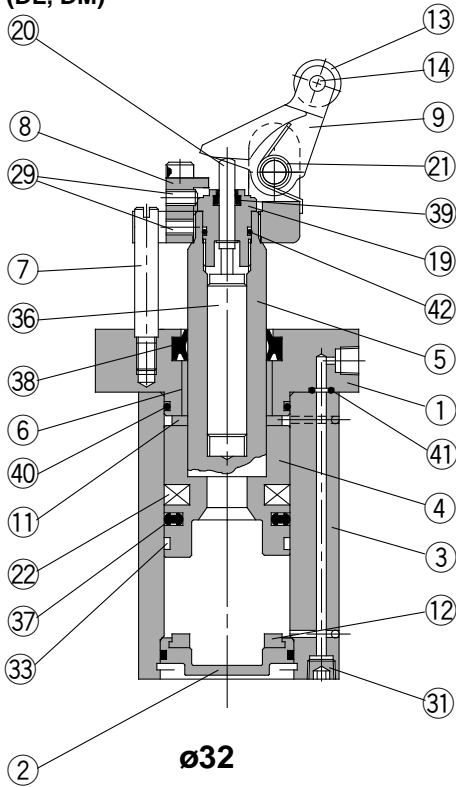
CC

# Series RSH

## Constuction

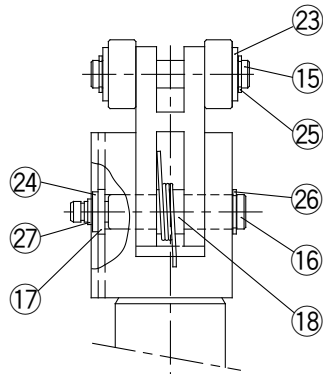
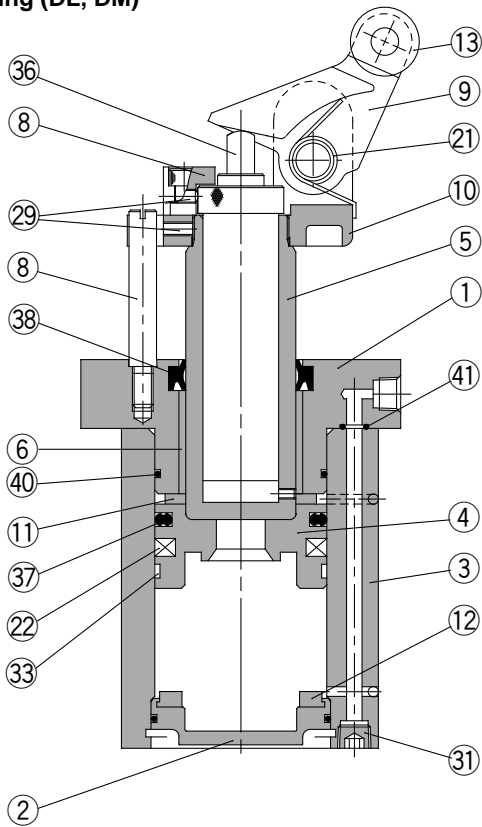
### ø20, ø32

Double acting (DL, DM)

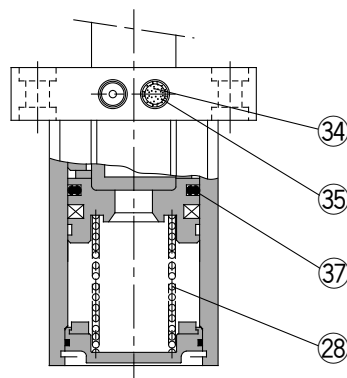


### ø50, ø63, ø80

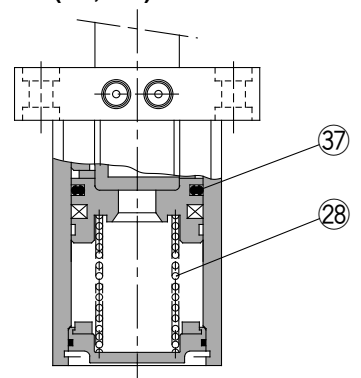
Double acting (DL, DM)



Single acting (TL, TM)



Double acting built-in spring (BL, BM)



# Heavy Duty Stopper Cylinder *Series RSH*

## Component Parts (Single Acting)

| No. | Description              | Material   | Note                |
|-----|--------------------------|--|---------------------|
| ①   | Rod cover                | Aluminum alloy   | Metallic silver     |
| ②   | Head cover               | Aluminum alloy   | White anodized      |
| ③   | Cylinder tube            | Aluminum alloy   | Hard anodized       |
| ④   | Piston                   | Aluminum alloy   | Chromated           |
| ⑤   | Piston rod               | ø20: Stainless steel<br>ø32, ø50, ø63, ø80: Carbon steel | Hard chrome plated  |
| ⑥   | Bush                     | Lead bronze casting                                      |                     |
| ⑦   | Guide rod                | Carbon steel   | Hard chrome plated  |
| ⑧   | Stopper                  | Stainless steel  |                     |
| ⑨   | Lever                    | Carbon steel   | White nickel plated |
| ⑩   | Lever holder             | Carbon steel   | White nickel plated |
| ⑪   | Bumper A                 | Urethane   |                     |
| ⑫   | Bumper B                 | Urethane   | -□□L                |
| ⑬   | Roller                   | Resin<br>Rolled steel                                    | -□□M                |
| ⑭   | Spring pin               | Carbon tool steel  |                     |
| ⑮   | Roller pin               | Carbon steel   |                     |
| ⑯   | Lever pin                | Carbon steel   |                     |
| ⑰   | Ring A                   | Aluminum alloy   | White anodized      |
| ⑱   | Ring B                   | Aluminum alloy   | White anodized      |
| ⑲   | Adjustment dial          | Aluminum alloy   |                     |
| ⑳   | End rod                  | Special steel  |                     |
| ㉑   | Lever spring             | Stainless steel wire                                     |                     |
| ㉒   | Magnet                   | Synthetic rubber   |                     |
| ㉓   | Flat washer              | Copper wire  | Nickel plated       |
| ㉔   | Flat washer              | Copper wire  | Nickel plated       |
| ㉕   | C retaining ring for rod | Carbon tool steel  |                     |
| ㉖   | C retaining ring for rod | Carbon tool steel  |                     |
| ㉗   | C retaining ring for rod | Carbon tool steel  |                     |
| ㉘   | Return spring            | Piano wire   |                     |
| ㉙   | Hexagon socket set screw | Chrome molybdenum steel                                  |                     |
| ㉚   | Hexagon socket set screw | Chrome molybdenum steel                                  | Used for ø20 only   |
| ㉛   | Hexagon socket plug      | Chrome molybdenum steel                                  | Nickel plated       |
| ㉜   | Spring pin               | Carbon tool steel  | Used for ø20 only   |
| ㉝   | Wear ring                | Resin  |                     |
| ㉞   | Element                  | Sintered metal BC  | ø20: Plug with hole |
| ㉟   | Snap ring                | Copper wire  |                     |
| ㊱   | Shock absorber           | —  |                     |
| ㊲   | Piston seal              | NBR  |                     |
| ㊳   | Rod seal                 | NBR  |                     |
| ㊴   | Scraper                  | NBR  |                     |
| ㊵   | Tube gasket              | NBR  |                     |
| ㊶   | O ring                   | NBR  |                     |
| ㊷   | O ring                   | NBR  |                     |

|            |
|------------|
| MK/MK2     |
| RSQ/RSG    |
| <b>RSH</b> |
| CE1        |
| CE2        |
| ML2B       |
| ML1C       |
| REA        |
| REC        |
| RHC        |
| MTS        |
| CC         |

## Replacement Parts: Seal Kit

| Bore size (mm) | Kit No.   |                    |        | Contents       |
|----------------|-----------|--------------------|--------|----------------|
|                | Double    | Double with spring | Single |                |
| <b>20</b>      | RSH20D-PS | RSH20T-PS          |        | Set of above ㉟ |
| <b>32</b>      | RSH32D-PS | RSH32T-PS          |        | to ㊱.          |
| <b>50</b>      | RSH50D-PS | RSH50T-PS          |        | Set of above ㉟ |
| <b>63</b>      | RSH63D-PS | RSH63T-PS          |        | to ㊱.          |
| <b>80</b>      | RSH80D-PS | RSH80T-PS          |        | (except ㉟)     |

\*Packing set includes piston seal ㉟, rod seal ㊱, scraper ㉟, tube gasket ㊱, O ring ㊱ and ㊱ (ø20 to ø32), or piston seal ㉟, rod seal ㊱, tube gasket ㊱, O ring ㊱ (ø50 to ø80).

## Replacement Parts: Shock absorber

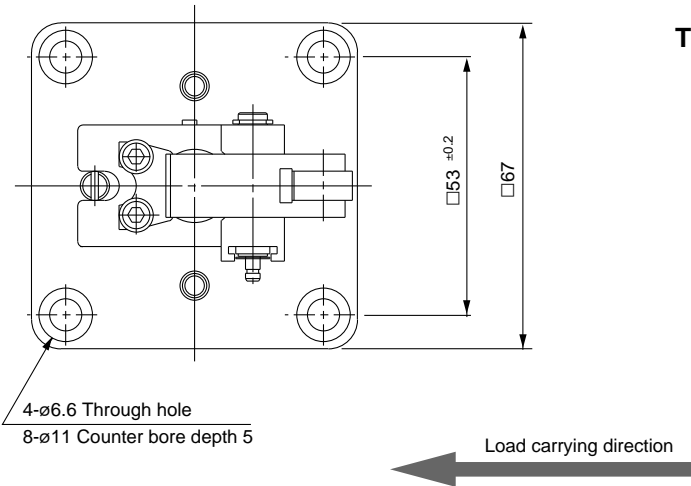
| Bore size (mm) | Part No. |
|----------------|----------|
| <b>20</b>      | RSH-R20  |
| <b>32</b>      | RSH-R32  |
| <b>50</b>      | RSH-R50  |
| <b>63</b>      | RSH-R63  |
| <b>80</b>      | RSH-R80  |



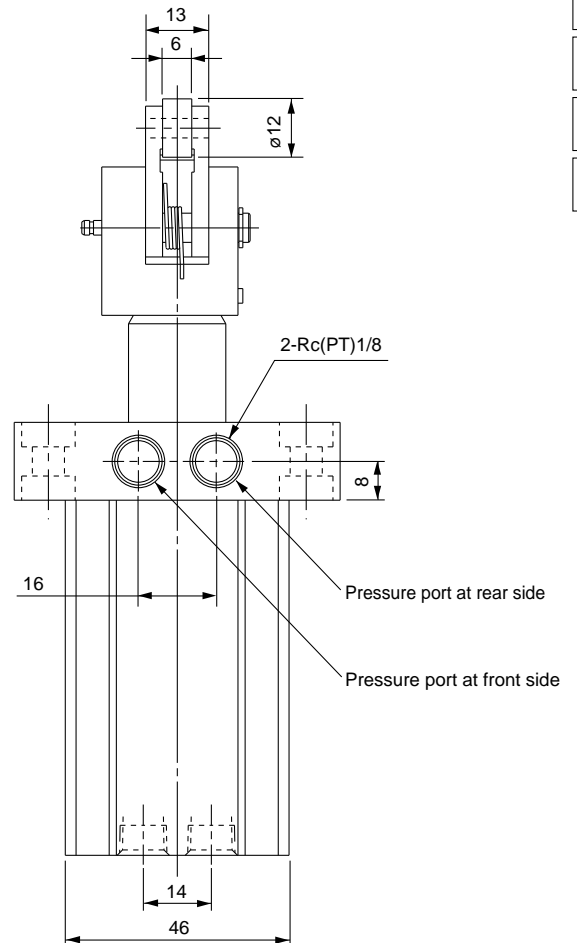
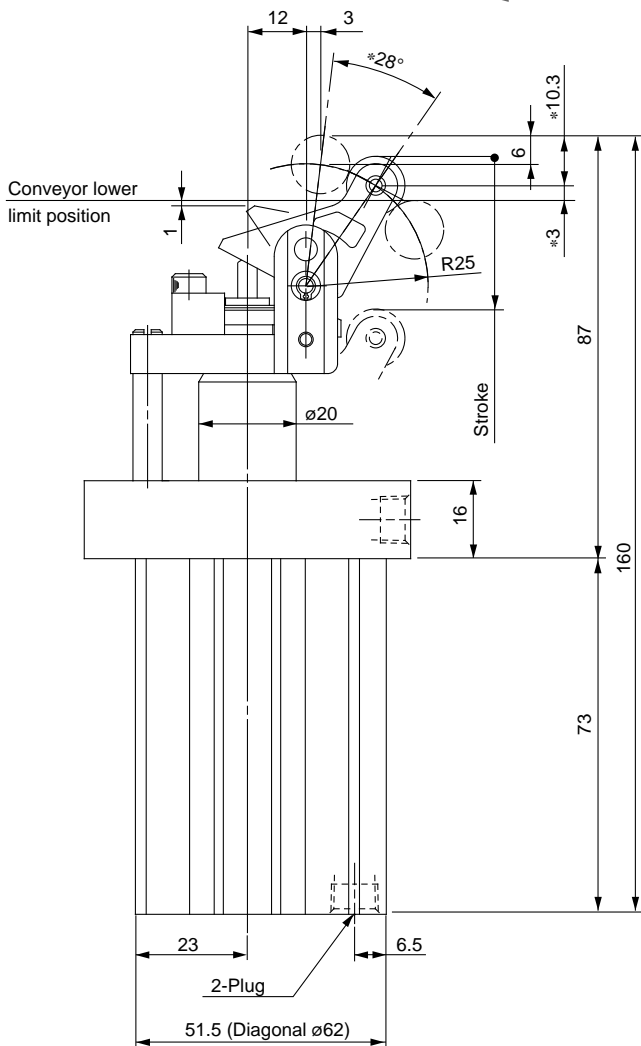


# Heavy Duty Stopper Cylinder *Series RSH*

RSH32-20□□



The figure shows an extended piston rod.



|            |
|------------|
| MK/MK2     |
| RSQ/RSG    |
| <b>RSH</b> |
| CE1        |
| CE2        |
| ML2B       |
| ML1C       |
| REA        |
| REC        |
| RHC        |
| MTS        |
| CC         |



- Note 1) The figure shows the dimensions at the max. energy absorption.
- Note 2) Dimensions with auto switch are identical to the above.
- Note 3) The figure shows an extended piston rod.
- Note 4) The dimensions marked with \* vary according to adjustment of the dial.



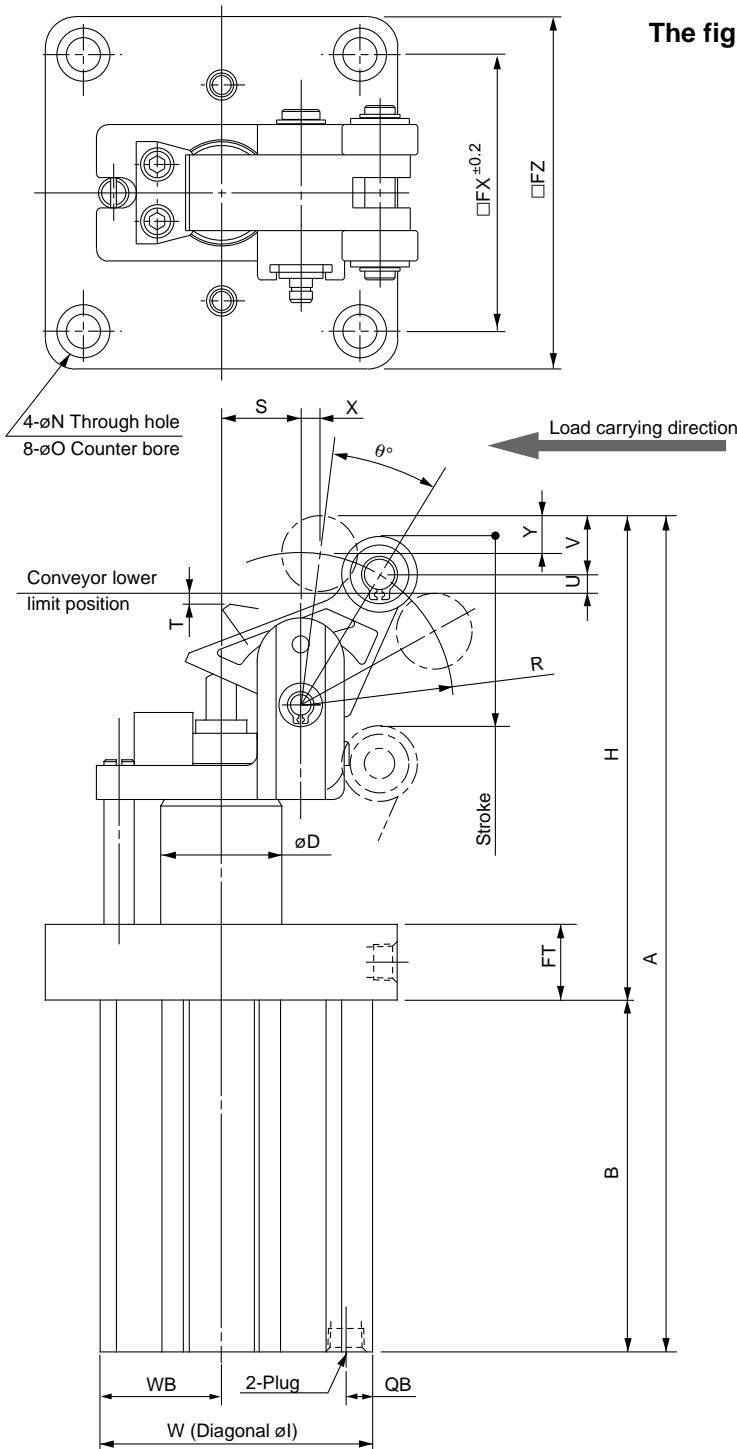
- Basic type: RSH32-20□□ ..... SRSH32A, #1 (#1+#5)
- With locking mechanism: RSH32-20□□-D ..... SRSH32A, #2 (#2+#5)
- With cancel cap: RSH32-20□□-C ..... SRSH32A, #3 (#3+#5)
- With lever detection switch: RSH32-20□□-S ..... SRSH32A, #4 (#4+#5)
- With locking mechanism + cancel cap: RSH32-20□□-DC ..... SRSH32B, #1 (#1+#5)
- With locking mechanism + lever detection switch: RSH32-20□□-DS ..... SRSH32B, #2 (#2+#5)
- With cancel cap + lever detection switch: RSH32-20□□-CS ..... SRSH32B, #3 (#3+#5)
- With locking mechanism + cancel cap + lever detection switch: RSH32-20□□-DCS ..... SRSH32B, #4 (#4+#5)

# Series RSH

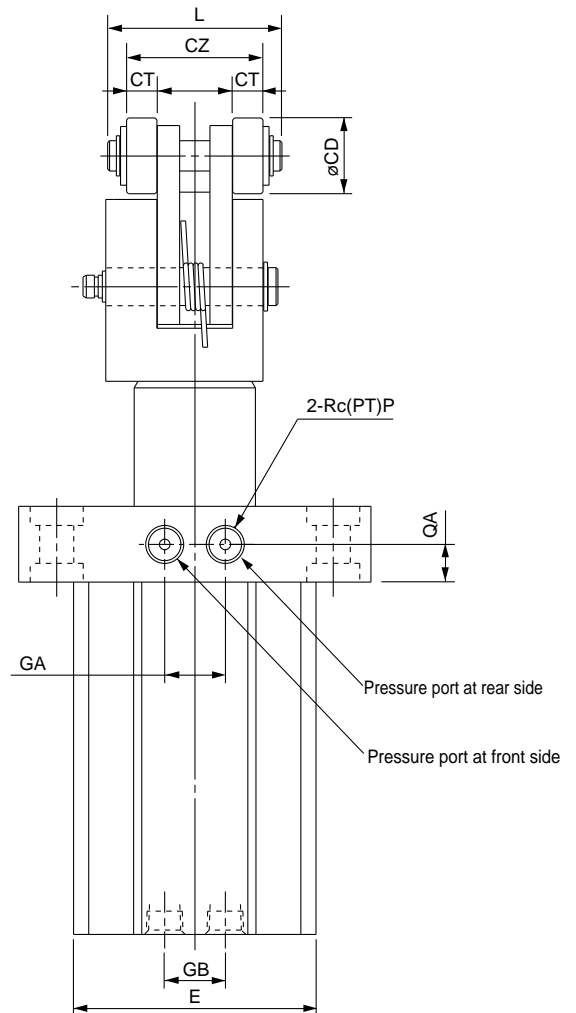
Dimensions/Bore Size:  $\varnothing 50$ ,  $\varnothing 63$ ,  $\varnothing 80$



50  
RSH63-□□□  
80



The figure shows an extended piston rod.



(mm)

| Bore (mm)        | Stroke | A     | B   | CD | CT | CZ | D  | E  | FT | FX  | FZ  | GA | GB | H     | I   | L  | N  | O          | P             | QA   | QB  |
|------------------|--------|-------|-----|----|----|----|----|----|----|-----|-----|----|----|-------|-----|----|----|------------|---------------|------|-----|
| $\varnothing 50$ | 30     | 221   | 93  | 20 | 8  | 36 | 32 | 64 | 20 | 73  | 93  | 16 | 16 | 128   | 85  | 45 | 9  | 14 depth 5 | $\frac{1}{8}$ | 10   | 7   |
| $\varnothing 63$ | 30     | 251.5 | 107 | 20 | 10 | 45 | 40 | 77 | 25 | 90  | 114 | 24 | 24 | 144.5 | 103 | 54 | 11 | 18 depth 6 | $\frac{1}{4}$ | 12.5 | 8.5 |
| $\varnothing 80$ | 40     | 299.5 | 128 | 25 | 10 | 45 | 50 | 98 | 25 | 110 | 138 | 24 | 35 | 171.5 | 132 | 56 | 13 | 20 depth 6 | $\frac{1}{4}$ | 12.5 | 10  |

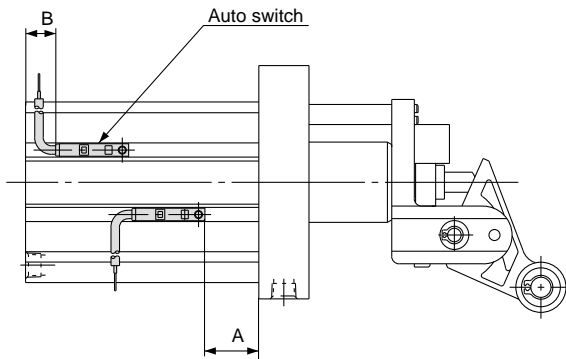
| Bore (mm)        | Stroke | R  | S    | T   | U   | V    | W    | WB   | X | Y    | $\theta^\circ$ |
|------------------|--------|----|------|-----|-----|------|------|------|---|------|----------------|
| $\varnothing 50$ | 30     | 40 | 21   | 2   | 5.5 | 15.5 | 72   | 32   | 5 | 10   | 24             |
| $\varnothing 63$ | 30     | 47 | 24.5 | 3.5 | 6.4 | 16   | 87.5 | 38.5 | 5 | 10   | 24             |
| $\varnothing 80$ | 40     | 54 | 31   | 3   | 6.7 | 19.4 | 109  | 49   | 6 | 12.5 | 23             |



Basic: RSH [Bore size]-□□□□..... SRSH [Bore size] A, #1 (#1+#5)  
w/locking mechanism: RSH [Bore size]-□□□-D..... SRSH [Bore size] A, #2 (#2+#5)  
w/cancel cap: RSH [Bore size]-□□□-C..... SRSH [Bore size] A, #3 (#3+#5)  
w/lever detection switch: RSH [Bore size]-□□□-S..... SRSH [Bore size] A, #4 (#4+#5)  
w/locking mechanism + cancel cap: RSH [Bore size]-□□□-DC..... SRSH [Bore size] B, #1 (#1+#5)  
w/locking mechanism + lever detection switch: RSH [Bore size]-□□□-DS..... SRSH [Bore size] B, #2 (#2+#5)  
w/cancel cap + lever detection switch: RSH [Bore size]-□□□-CS..... SRSH [Bore size] B, #3 (#3+#5)  
w/locking mechanism + cancel cap + lever detection switch: RSH [Bore size]-□□□-DCS..... SRSH [Bore size] B, #4 (#4+#5)

Note 1) Dimensions with auto switch are identical to the above.  
Note 2) The figure shows an extended piston rod.

## Proper Auto Switch Mounting Position



## ⚠ Precautions

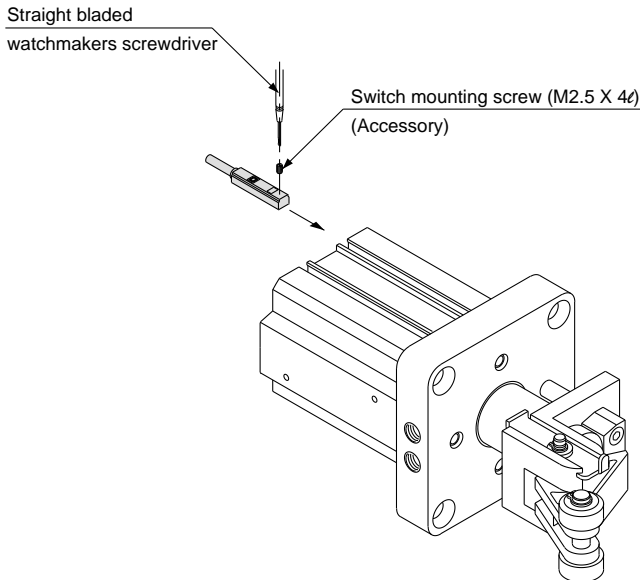
Be sure to read before handling. Refer to p.0-44 and 0-46 for common precautions of auto switches.

### Auto switch mounting position

| Auto switch model<br>Bore size (mm) | D-Z7□<br>D-Z80<br>D-Y59<br>D-Y7P |    | D-Y69□<br>D-Y7PV |     | D-Y7□W<br>D-Y7BAL |      | D-Y7□WV |      |
|-------------------------------------|----------------------------------|----|------------------|-----|-------------------|------|---------|------|
|                                     | A                                | B  | A                | B   | A                 | B    | A       | B    |
| ø20                                 | 18                               | 8  | 18               | 9.5 | 18                | 2    | 18      | 4    |
| ø32                                 | 13.5                             | 10 | 13.5             | 12  | 13.5              | 4.5  | 13.5    | 6.5  |
| ø50                                 | 21.5                             | 12 | 21.5             | 14  | 21.5              | 6.5  | 21.5    | 8.5  |
| ø63                                 | 16.5                             | 31 | 16.5             | 33  | 16.5              | 25.5 | 16.5    | 27.5 |
| ø80                                 | 26                               | 33 | 26               | 35  | 26                | 27   | 26      | 29   |

## How to Install an Auto Switch

To set the auto switch, insert the auto switch into the switch groove from the direction indicated in the following drawing. After setting at the desired position, tighten the attached switch mounting screw with a straight bladed watchmakers screwdriver.



Note) Use a watchmakers screwdriver with a grip diameter of 5 or 6mm to tighten the auto switch mounting screw. Use a tightening torque of 0.05 to 0.1Nm.  
As a rough guide, tighten the screw an additional 90° after feeling a tight resistance.

MK/MK2

RSQ/RSG

**RSH**

CE1

CE2

ML2B

ML1C

REA

REC

RHC

MTS

CC

# Lever Detection Switch (Proximity Switch)

## Proximity Switch Specifications/Manufacturer: OMRON Co. Ltd.

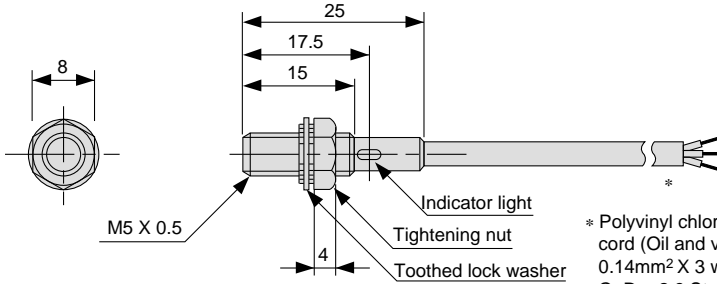
| Model no.                                | E2E-X1C1  | E2E-X2D1-N   |
|--|---|--|
| Applicable cylinder size                 | RSH20/32  | RSH50/63/80  |
| Output                                   | N. O.   |  |
| Supply voltage (Operating voltage range) | 12 to 24V DC(10 to 30V DC), Ripple 10% or less (P-P)          |  |
| Current consumption (Leakage current)    | 17mA or less  | 0.8mA or less  |
| Response frequency                       | 3kHz  | 1.5kHz   |
| Control output (Chest)                   | Open collector max. 100mA                                     | 3 to 100mA   |
| Indicator light                          | Detection indication (Red LED)                                | Working indication (Red LED)<br>Set working indication (Green LED) |
| Operating ambient temperature            | -25 to 70°C (No freezing)                                     |  |
| Operating ambient humidity               | 35 to 95%RH   |  |
| Residual voltage <sup>(1)</sup>          | 2V or less  | 3V or less   |
| Withstand voltage <sup>(2)</sup>         | 500V AC   | 1000V AC   |
| Vibration                                | Endurance 10 to 55Hz, Duplex amplitude 1.5mm XYZ direction 2h |  |
| Impact                                   | Endurance 500m/s (About 50G) XYZ direction 10 times           |  |
| Enclosure                                | IEC standard IP67 (JEM standard IP67G Drip proof, Oil proof)  |  |

Note 1) At load current 100mA and cord length 2m

Note 2) Between case and whole charging part

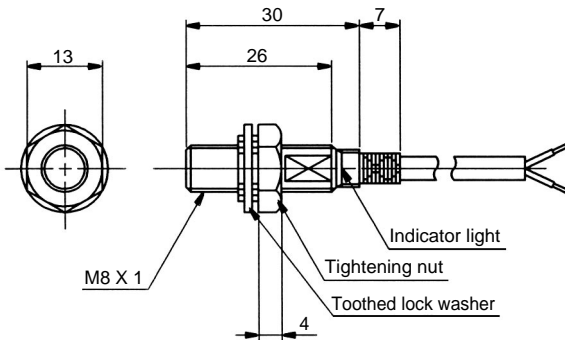
## Dimensions

### E2E-X1C1 (RSH20/32)



\* Polyvinyl chloride round cord (Oil and vibration proof)  
0.14mm<sup>2</sup> X 3 wire  
O. D. ø2.9 Standard 2m  
Cord extension (Individual metal piping) Max. 100m

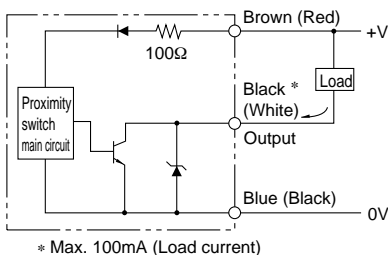
### E2E-X2D1-N (RSH50/63/80)



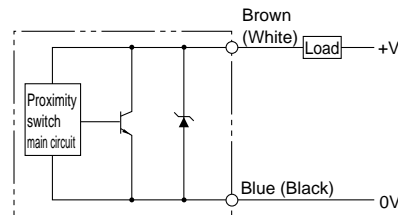
\*Polyvinyl chloride round cord  
ø3.5 (18/ø0.12) 2 wire  
Standard 2m  
Cord extension (Individual metal piping) Max. 200m

## Output Circuit

### E2E-X1C1/3-wire



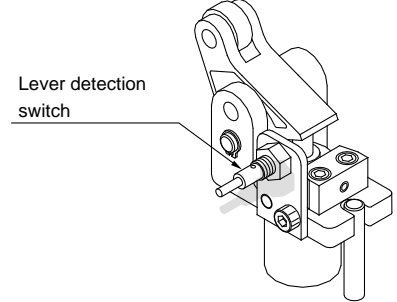
### E2E-X2D1-N/2-wire



## Mounting Position

### ●E2E-X1C1(RSH20/32)

While holding the lever in the detection range of the switch, screw in the switch gradually until the indicator light (red) turns on. Then, screw the switch in further, halfway between the turn on point and the lever.



### ●E2E-X2D1-N(RSH50/63/80)

While holding the lever in the detection range of the switch, screw in the switch until the indicator light (green) turns on. Then, give an additional half rotation of screw. After that, incline the lever by 90° and confirm that the indicator light is not on and does not show either red or green.

